BEFORE THE DEPARTMENT OF WATER RESOURCES

OF THE STATE OF IDAHO

IN THE MATTER OF DISTRIBUTION OF WATER TO VARIOUS WATER RIGHTS HELD BY OR FOR THE BENEFIT OF A&B IRRIGATION DISTRICT, AMERICAN FALLS RESERVOIR DISTRICT #2, BURLEY IRRIGATION DISTRICT, MILNER IRRIGATION DISTRICT, MINIDOKA IRRIGATION DISTRICT, NORTH SIDE CANAL COMPANY, AND TWIN FALLS CANAL COMPANY	**OPINION CONSTITUTING FINDINGS OF FACT, CONCLUSIONS OF LAW AND RECOMMENDATION**

Hearing was held on the Surface Water Coalition call, and the resulting Director's Orders, commencing January 18, 2008, and concluding February 5, 2008. At issue are the rights and obligations of the Idaho Ground Water Association (IGWA), members of the Surface Water Coalition (SWC), the City of Pocatello, and the United States Bureau of Reclamation (BOR). There is some repetition in the findings of fact and conclusions of law set forth in the various Director's orders and this recommendation. This results from an effort to make this recommendation coherent without repeating verbatim the orders entered by the Directors while defining the major facts, principles and conflicts at issue. This litigation is cast against a background of opposing parties that have high ground from which to plead their cases and either win or lose on positions because there must be decisions based on principles of law and determinations of fact, not because of questionable conduct.

The Surface Water Users have contributed immensely to the development of the State at great expense and risk. The financial commitments they have made to the development and operation of reclamation projects and the continuing improvement of delivery systems are immense. They have opened vast expanses of land to productivity and contributed significantly to the benefit of the State and local communities. They have done so under a state of law that

appeared to provide them with protection ("first in time, first in right") from interference with the rights they developed.

Ground water pumpers have invested significantly in the development of costly and beneficial enterprises under State approved policies. They accepted the challenge and the invitation to "make the desert bloom." They are not poachers who sneaked through an unlocked door to take water away from surface water users. They entered under State law in the open and have contributed significantly to the economic development of the State and local communities. In the case of the City of Pocatello it is a community of productive people who count on having water, the lifeblood of Idaho, available for its needs. Its policy makers must look to the welfare of its present residents and work to create a future of promise for those who follow.

The Bureau of Reclamation has partnered with Idaho to promote the State's welfare. It is unlikely that the farm economy of Idaho could have grown and developed without the enormous projects it manages. It has had to transform itself from limited roles to attempts to provide more things to more people who often compete to use the same water – irrigation, flood control, power, protection of fish, endangered species, flow augmentation of what appears to be a growing amount of demand upon the limited amount of water that falls from the sky and becomes subject to management.

The recommendations made in this decision are not based on a faulting party or a more worthy enterprise. All the participants are worthy, and in a perfect world with perfect weather all would win and proceed to do what they do best outside the legal arena.

I

HISTORICAL BACKGROUND

The current dispute arises between surface water users and ground water users. The surface water users draw natural flow water from the Snake River and from storage water held in reservoirs operated by the Bureau of Reclamation. The ground water users rely on water pumped from the Snake River Plain Aquifer. The surface water users hold water rights senior to the ground water users. The surface water users sought administration from the Director of the Department of Water Resources in the belief that their water rights were impinged upon by

ground water users. This case follows a series of decisions made by the Director in response to the request for administration.

1. The Eastern Snake River Aquifer. The Eastern Snake River Plain Aquifer (ESPA) is a source of water underlying the Eastern Snake River Plain that is approximately 170 miles long and 60 miles wide. The ESPA begins at the Teton Range near Ashton in the east and extends in a southwesterly direction following the Snake River downstream to King Hill. The ESPA comprises more than 10,800 square miles. There are estimates that it contains approximately one billion acre feet of water. The aquifer is made up primarily of fractured basalt, sometimes interspersed with river sediment or windblown material. It ranges in depth from thousands of feet to much more shallow levels. It forms a conduit for the flow of water, but that flow is neither consistent in pace nor direction. Unlike a river channel that can be observed and which flows along clearly defined lines and identifiable speeds and volumes, water in the aquifer may move as little as 0.1 feet per day to as much as 100,000 feet per day. The fractured basalt may form barriers that impede the flow of water and change its direction or may form conduits that channel the flow of water, allowing it to move quickly from one point to another. Since the movement is below ground, particular water cannot be traced from one precise point under ground to another precise point where it emerges to the surface.

2. The water in the aquifer and in the Snake River is connected. In the course of its travels water may be either ground water in the aquifer or surface water in the Snake River. It may enter or exit the river in identified locations on the river, referred to as reaches. A reach may either gain or lose water, depending on whether more water emerges from the aquifer or leaves the river to join water in the aquifer. Consequently, surface water irrigation practices and ground water pumping practices have interconnected effects on one another. That is the science that leads to this dispute.

3. The development of irrigation on the Eastern Snake River Plain. The initial development of irrigation in Idaho began in the second half of the 19th century when water was diverted from the Snake River and its tributaries and delivered to crops by channels on the ground – gravity or flood irrigation. There was no practical technology for significant movement of water from the aquifer to the surface for irrigation. Consequently, surface water use acquired

significant priority over subsequent ground water rights that developed when inexpensive electrical power allowed widespread withdrawal of water from the aquifer by pumping.

4. The Bureau of Reclamation manages a series of reservoirs that were developed to retain water for storage, flood control, and generation of electricity incidental to reservoir releases. The development of irrigation from the Snake River was accompanied by uncertainties in supplies and the potential for flooding while uncontrolled. Reservoirs were developed to capture water and retain it in storage for release at a later time when natural flow in the river is inadequate to meet irrigation needs. The legal title and beneficial use rights of the BOR and those who use the water in storage are set forth by the Idaho Supreme Court in *United States v. Pioneer Irrigation District,* 144 Idaho 116, 157 P.3d 610 (2007).

a. The BOR entered into contracts with irrigation districts for the provision of water held in storage until needed for irrigation. The reservoirs relevant to this dispute include Jackson Lake, Ririe Reservoir, Lake Walcott, American Falls Reservoir, and Palisades Reservoir. The BOR holds the following surface water rights as claimed in the SRBA for diversion of water from the Snake River for irrigation, reservoir storage for irrigation, and reservoir releases for irrigation and incidental power generation under some rights: Water Right No. 01-00284 which has been decreed with a priority date of March 30, 1921, for storage volume of 1.7 million acre feet in the American Falls Reservoir; Water Right No. 01-02064, licensed with a priority date of March 30, 1921, for 1.8 million acre feet in the American Falls Reservoir, and Water Right No. 01-02068, licensed with a priority date of June 28, 1939, for 1.4 million acre feet in Palisades Reservoir. Other rights claimed by the BOR are pending in the SRBA: 01-04052, 01-04055, 0104056, 01-04057, 01-10042, 01-10043, 01-10044, 01-10045, and 01-10053.

b. The BOR also has responsibility for some flows past Milner Dam. In addition to contract obligations to holders of storage rights the BOR has some responsibility for flows that pass Milner Dam, including mandated Federal Energy Commission bypass flows, Endangered Species Act needs and flow augmentation obligations that have been negotiated and agreed to as part of the Nez Perce settlement. BOR purchases flow augmentation water from the rental pool in which storage right holders may place water.

c. Management of the reservoir system allows water held under a storage right in one reservoir to be held in another. The various reservoirs are treated as part of a system. Water that is accounted for in one reservoir may be held in another. The reservoirs above Milner Dam fill by priority with consideration given to keeping the water stored as high in the system as possible when considering storage fill and release. Water stored high in the system can be run downstream when needed, whereas the reverse would be problematic.

5. Flood irrigation practices increased the amount of water in the aquifer through incidental recharge. Water that was not consumed by the crops or evaporation entered the ground and joined the water that was in the aquifer. As a consequence, the level of water in the aquifer rose above what the level would be absent the irrigation practices. This trend continued until the middle of the twentieth century at which time there were approximately 1.83 million acres under irrigation. At that time two developments occurred. In the 1950's Idaho Power had abundant inexpensive electrical power for which it needed a market in the summer. Idaho Power and the State of Idaho through its policy makers encouraged ground water development and the expansion of water use by pumping from the aquifer. This made practical irrigation of areas that were impractical for gravity flow irrigation from the river. It was, as the promotional literature of the day stated, the way to make the desert bloom. That is what happened. Over 50,000 ground water rights for agricultural and municipal use were developed, and vast quantities of water began to be withdrawn from the aquifer for those purposes.

6. The changes in irrigation practices. Coordinate with the development of ground water pumping was a change in irrigation practices by many surface water users who moved away from flooding the ground to use of sprinkler irrigation. Flooding or gravity irrigation often used more water than was necessary for crop growth. Additionally, gravity flow often meant crops at the beginning of the diversion received more water than crops further down the line and that it was impractical to deliver water to some property that could otherwise produce crops. A collateral effect of this change was a reduction of the incidental recharge to the aquifer that had occurred with flooding practices.

7. Consumptive use from ground water pumping has resulted in a net reduction in aquifer recharge ranging from approximately 1.6 to 3.0 million acre feet per year,

averaging in the area of 2 to 2.2 million acre feet per year. Large scale ground water pumping has contributed to a decline in ground water levels ranging between five and 60 feet throughout the ESPA. (Koreny Direct, p. 7).

8. The variability and unpredictability of weather creates risks which must be allocated between surface and ground water users. Long term weather forecasting has limited reliability, and the so-called average year is unusual, reflecting the average of high and low water years rather than a customary amount of precipitation that can be predicted with a high degree of certainty. The problem has accentuated over the past approximate twenty years when it appears that wet years are wetter and dry years drier. For example, 1997 was apparently an exceptionally wet year that created problems of managing more water than the reservoir system could accommodate. A period of years beginning in 2000 brought long term dry years which adversely affected the amount of natural flow water and the ability to fill reservoirs adequately to meet all needs. In 2007 the BOR made a judgment to release reservoir water based on the information it had. Unfortunately, the summer of 2007 turned into a historically hot and dry period, sometimes classified as a 200 year event. There was no way to recapture the water that was released, creating stress on natural flow and storage. Weather dictates water management to a large degree.

a. The reservoir system was developed to create a buffer against the uncertainty of weather. Water can be stored to be released when needed. If curtailment or replacement water is ordered to assure a greater amount of water in storage, ground water users are damaged, and there is the risk that the curtailed or replaced water will not be needed. If on the other hand curtailment or replacement by the ground water users is not ordered, the senior surface water users have the risk of running short of water or acquiring water through rental or lease, casting a significant risk and expense on them.

b. To date the system has not run out of water, and it appears there will be water available somewhere to meet irrigators' needs. During the last prolonged drought period there was water available somewhere at a price. Acquisition of that water may be very expensive and difficult, however. Conjunctive management means that risks must be allocated as to timing and expense, based on water forecasts which, using the best available science, may be wrong. At some point in the irrigation season it is clear

what the needs and the availability of water are, but that may come well into the season when everybody is scrambling to find a source for water and the price when found is high.

9. The need for conjunctive management of surface and ground water arose when it became apparent that the actions of one group had an effect upon the other. Ground water pumping increased, incidental recharge diminished, and additional water rights were licensed. No doubt many people understood the connection between the water on the surface in the Snake River and its tributaries and the water below the ground in the aquifer. Nonetheless, for a significant period of time the connection was ignored as the administration of surface water and ground water progressed independent of one another. Ultimately the connection was acknowledged and the need for conjunctive management became apparent. A series of drought years brought the problem to a head, and the Surface Water Coalition requested administration by the Director of the Idaho Department of Water Resources.

II

THE SURFACE WATER COALITION AND THE WATER RIGHTS OF ITS MEMBERS

1. The Surface Water Coalition consists of seven irrigation districts and canal companies below American Falls Reservoir that divert natural flow water from the Snake River and who hold storage water rights in various BOR reservoirs, providing irrigation water to nearly 700,000 acres. The SWC diverts reach gains emanating from the Eastern Snake Plain Aquifer (ESPA) and any tributaries below Blackfoot and reach gains and runoff that is not diverted by other upstream senior priority surface users that flows through Blackfoot into the American Falls reach. Water that would otherwise be natural flow that would pass the use of SWC members is captured to fill the SWC reservoir storage space in the Upper Snake Basin storage system for use when needed.

The members of SWC are the A & B Irrigation District (A & B), American Falls Reservoir District #2 (AFRD #2), Burley Irrigation District (BID), Milner Irrigation District (Milner), Minidoka Irrigation District (MID), North Side Canal Company (NSCC), and the Twin Falls Canal Company (TFCC). The members of the SWC share common interests in many

respects, but there are variations in the priority of their rights in both natural flow water and water from storage and the degree to which each is dependent upon either natural flow or storage. The natural flow rights of SWC accumulate to approximately 14,000 cubic feet per second (cfs) with priority dates ranging from 1900 to 1968, as recommended by the Director of the Department of Water Resources (IDWR). The members of SWC have storage contracts with the BOR for space in reservoirs which combine for approximately 2.3 million acre- feet (af) of water. The priority dates for the storage water rights range from 1906 to 1939.

2. The A & B Irrigation District. A & B holds natural flow right number 01-00014 for 267 cfs with a priority date of April 1, 1939, and storage water rights in American Falls Reservoir for 46,826 acre feet with a priority date of March 30, 1921, and 90,800 acre feet in Palisades Reservoir with a priority date of July 28, 1939, for combined storage rights of 137,626 acre feet.

3. The American Falls Reservoir District # 2. AFRD #2 holds natural flow right number 01-006 for 1,700 cfs with a priority date of March 30, 1921, and storage water rights in American Falls Reservoir for 393,550 with a priority date of March 30, 1921.

4. The Burley Irrigation District. BID holds natural flow right number 01-00211B for 655.88 cfs with a priority date of March 26, 1903, and natural flow right number 01-00214B for 380 cfs with a priority date of August 6, 1908, and natural flow right number 01-00008 for 163.4 cfs with a priority date of April 1, 1939. BID also has a storage rights in Lake Walcott for 31,892 acre feet with a priority date of December 14, 1909, 2,672 acre feet in Palisades Reservoir with a priority date of March 29, 1921, 155,395 acre feet in American Falls Reservoir with a priority date of March 30, 1921, 36,528 acre feet in Palisades Reservoir with a priority date of July 28, 1939, for combined storage rights of 226,487 acre feet.

5. The Milner Irrigation District. Milner holds natural flow right number 01-00017 for 135 cfs with a priority date of November 14, 1916, and natural flow right 01-00009 for 121 cfs with a priority date of April 1, 1939, and natural flow right number 01-02050 for 37 cfs with a priority date of July 11, 1968. Milner has storage rights of 44,951 acre feet in American Falls Reservoir with a priority date of March 30, 1921, and 45,640 acre feet in Palisades Reservoir with a priority date of July 28, 1939, for combined storage rights of 90,591 acre feet.

6. The Minidoka Irrigation District. MID holds natural flow rights number 01-00211A for 1,070 cfs with a priority date of March 26, 1903, right number 01-00214A for 620 cfs with a priority date of August 6, 1908, and right number 01-00008 for 266.6 acre feet with a priority date of April 1, 1939. MID has storage rights of 127,040 acre feet in Jackson Lake with a priority date of August 23, 1906, 58,990 acre feet in Jackson Lake with a priority date of August 18, 1910, 63,308 acre feet in Lake Walcott with a priority date of December 14, 1909, 5,328 acre feet in Palisades Reservoir with a priority date of March 29, 1921, 82,216 acre feet in American Falls Reservoir with a priority date of March 30, 1921, and 29,672, acre feet in Palisades Reservoir with a priority date of July 28, 1939, for combined storage rights of 336,554 acre feet.

7. The North Side Canal Company. NSCC holds natural flow rights 01-00210 for 400 cfs with a priority date of October 11, 1900, right number 01-00212 for 2,250 cfs with a priority date of October 7, 1905, right number 01-00213 for 890 cfs with a priority date of June 16, 1908, right number 01-00005 for 300 cfs with a priority date of December 23, 1915, and right number 01-00016 for 1,260 cfs with a priority date of August 6, 1920. NSCC has storage rights for 312,007 acre feet in Jackson Lake with a priority date of May 24, 1913, 9,248 acre feet in American Falls Reservoir with a priority date of March 29, 1921, 116,600 acre feet in Palisades Reservoir with a priority date of March 29, 1921, and 422,043 acre feet in American Falls Reservoir with a priority date of March 30, 1921.

8. The Twin Falls Canal Company. TFCC holds natural flow rights 01-00209 for 3,000 cfs with a priority date of October 11, 1900, right number 01-00004 for 600 cfs with a priority date of December 22, 1915, and right 01-00010 for 180 cfs with a priority date of April 1, 1939. TFCC has storage rights of 97,183 acre feet in Jackson Lake with a priority date of May 24, 1913, and 147,582 acre feet in American Falls Reservoir with a priority date of March 29, 1921, for combined storage rights of 244,765 acre feet. Twin Falls Canal Company has filed for irrigation to 196,162 acres, the amount IDWA has recommended. TFCC delivers water to 202,690 shares.

9. The members of SWC differ in their reliance on natural flow water and storage water.

a. MID, BID, A&B, AFRD #2 and Milner rely primarily on water from their storage contracts with the BOR. Their natural flow rights are relatively junior and commonly only provide water during the runoff period between April and June in years of moderate to good snowpack and runoff. When there is a low snowpack, such as the period from 2001 through 2004, the natural flow rights produce very little water. During the runoff period when there is water passing Blackfoot, these entities are able to divert natural flow water. When senior users upstream from Blackfoot divert the water that would otherwise pass Blackfoot, the senior natural flow rights of TFCC and NSCC command the inflow to the river downstream of Blackfoot, leaving little or no water for the natural flow rights of other canals in the Blackfoot to Milner reach.

b. NSCC has a natural flow right of 400 cfs with a priority date of 1900. This, along with TFCC which has a much larger natural flow right of the same date, commonly takes all of the natural flow downstream of Blackfoot. However, because of its limited amount of the natural flow right NSCC relies primarily on its extensive storage rights, cumulating to approximately 860,000 acre feet.

c. TFCC has a natural flow right of 3,000 cfs with a priority date of 1900. However, TFCC has a much smaller storage right, some 245,000 acre feet. While NSCC is primarily dependent upon its storage rights to meet its needs, TFCC is primarily dependent upon its natural flow rights to meet its needs.

10. The SWC members rely upon Snake River reach gains in the Near Blackfoot to Milner reach of the Snake River. There has been a declining trend in reach gains for the irrigation season. The SWC members attribute a substantial amount of the declines to ground water pumping and seek curtailment or an effective form of mitigation to remediate the condition they allege. If natural flow declines early in the irrigation season, there is a greater need to use storage water.

11. An undetermined number of individual irrigators within SWC may hold supplemental ground water rights which the former Director found to be minimal in effect. It would seem that any such ground water rights would be junior to the surface irrigation rights and subject to curtailment.

12. The Surface Water Coalition members may use water from both natural flow and storage with an accounting at the end of the irrigation season. The Coalition members divert what water they need as long as they have water available in storage. At the end of the year there is application of an accounting model to determine what portion of the water they consumed during the year was considered to be natural flow and what portion was considered to be storage. As long as the Coalition members have a positive number in their storage account they divert what they need during the season and there are not day to day adjustments or shutdowns by the watermasters. If they exceed their storage rights an accounting is done and reimbursement for the overage is required.

III

THE IDAHO GROUND WATER APPROPRIATORS, INC. AND THE WATER RIGHTS OF ITS MEMBERS

1. IGWA is a non-profit corporation incorporated in 1994 to protect and represent the interests of farmers, municipalities, businesses, and other users who depend upon ground water pumped from the Eastern Snake Plain Aquifer. Exhibit 4500 sets for a list of current members, and exhibit 4503 is a map reflecting the location of the ground water districts. Farmers and ranchers who are members of the districts irrigate in excess of 737,000 acres with more than 3,000 wells pumping from the ESPA. Their rights evolved from the late 1940's to 1992 when a moratorium was declared on the licensing of ground water pumping.

2. IGWA holds no storage rights in the reservoirs managed by the Bureau of Reclamation. Consequently at the present time there is no dedicated body of water IGWA can use for mitigation. It must contract with those holding rights to obtain replacement water in lieu of curtailment.

a. It would be very desirable to have a mechanism for IGWA to have an independent right to storage water which it could apply as replacement water as an alternative to curtailment and perhaps mitigate its own losses when the water is not necessary for replacement by selling the use for flow augmentation or other needs. Whether this is possible within the existing system is not clear. However, the example of the City of Pocatello holding a storage right for 50,000 acre-feet for water it cannot

access at the present time but which it can use for mitigation or sale may indicate this is an avenue that might be pursued if there is either uncontracted water held by BOR or the storage capacity of the system is expanded.

3. Nearly all ground water rights are junior to water rights held by the Surface Water Coalition. The extended development of ground water pumping began in the 1950's when Idaho Power had abundant electricity to market at low rates in the summer to operate the pumps necessary to lift water from the aquifer. Because of the late development of ground water pumping, nearly all of the ground water rights are junior to the water rights held by the Surface Water Coalition members.

4. Approximately 90% of the total steady state depletions due to ground water pumping have manifested themselves in the Snake River. Because of the erratic patterns of basalt with some other soil interspersed in the aquifer the rate of flow and route of water in the aquifer is different from surface water flow. There may be a significant period of time, extending to decades, from taking water from the aquifer to seeing the depletion in the Snake River.

5. The moratorium on ground water pumping in 1992 did not immediately result in what is described as a steady state condition, and dynamic equilibrium has not been fully attained. Steady state will be the point when the full effect of ground water pumping is realized and any declines in river flow may be attributed to something other than ground water pumping. That point has not yet been reached. This is the reverse side of the process whereby curtailment does not result immediately in increases to the Snake River flow equal to curtailment. The moratorium in 1992 has caused a leveling off of the effects of ground water pumping on the Snake River, but there are continuing depletions. As of the time the May 2, 2005, Order was entered there was approximately 10% more effect to be felt in the future from the ground water pumping that had already occurred. While 10% sounds small, when applied to an approximate average of two million acre- feet withdrawn annually from the aquifer, it means that somewhere in the area of 200,000 acre-feet of impact from ground water pumping is yet to be felt before steady state conditions are reached, a condition that will occur in increments that might take 100 years to complete.

6. For many years the Eastern Snake River Plain Aquifer was treated as a separate source from the Snake River and its tributaries with little regard for the effect that ground water pumping might have on surface water users. There may have been local concerns and concerns within the scientific community as to the long term effect of ground water pumping on the Snake River. But those concerns were not a part of State policy for many years as pumping flourished and the aquifer was treated as a vast reservoir unlimited in its capacity to supply water as long as it could be reached.

IV

THE CITY OF POCATELLO

The City of Pocatello is participating in this case based on concerns over its existing water supply and the possibility that new supplies it acquires may be junior to SWC's rights, and, consequently, subject to curtailment in the future. The City expects significant growth, as reflected in its Comprehensive Plan. The availability of a reliable water supply is critical to such growth.

The original water supply for Pocatello came from surface water diversions from Mink Creek and Gibson Jack Creek which are tributaries of the Portneuf River southwest of the City. These rights developed between 1869 and 1917 and are unrelated to the ESPA. The City also has a number of water rights that derive from the Lower Portneuf Valley Aquifer that date from 1905 (1924 according to the recommendation of IDWR) to 1992. The City's rights that derive from the ESPA date from 1939 to 1984, according to Exhibit 3005. Additionally Pocatello has a 50,000 acre-feet storage account in Palisades Reservoir on the Snake River. At the present time there a no means of diversion to deliver the storage water to Pocatello, but the stored water is available to be used as a mitigation alternative to curtailment or sale to others to meet replacement water requirements.

V

THE UNITED STATES BUREAU OF RECLAMATION

1. The United States Bureau of Reclamation operates the series of reservoirs that hold storage water for irrigation and has contracts with members of the Surface Water

Coalition and the City of Pocatello for water held in storage at the various reservoirs. The Bureau of Reclamation is a water resource agency that was created in 1902 to help settle the west by building irrigation projects so farming could develop. As part of the reservoir projects the Bureau of Reclamation entered into contracts with irrigation districts for the provision of water in storage. The reservoir facilities in the Upper Snake River region, starting at the upper end of the region, include Jackson Lake Dam which was built in the early 1900's with 847,000 acre-feet of active capacity. Palisdades Dam was built in 1956, with active storage capacity of about 1.2 million acre-feet. There is water that physically cannot be released and some inactive space for water referred to as the power head which is required to start a turbine. There is a dam at Island Park on Henry's Fork which holds about 135,000 acre-feet which was built in 1935 to provide supplemental water for the Fremont Madison Irrigation District. SWC has no interest in the Island Park Reservoir, except that water may be stored anywhere in the system. The same is true for a small reservoir called Grassy Lake Dam in Wyoming that also provides supplemental water to Fremont Madison Irrigation District. In 1976 the Corps of Engineers built Ririe Dam and Reservoir on Willow Creek, which is a tributary to the Snake River. Ririe was built primarily for flood control but has an irrigation component. Operation and maintenance of the Ririe facility was transferred to BOR in 1976. American Falls Dam and Reservoir was built in 1927 at the lower end of the system. It has 1.7 million acre-feet of active capacity and has a FERC licensed Idaho Power Plant. The last BOR reservoir on the system is Minidoka Dam or Lake Walcott which is a storage facility and diversion dam, plus a power plant. Though not a part of the BOR system, Milner Dam and Reservoir is important in that it is the point of diversion for water to Twin Falls Canal Company and North Side Canal Company.

2. There was a prolonged drought in the 1930's which demonstrated that the existing reservoir system was inadequate to meet irrigation needs in a long drought, leading eventually to the construction of Palisades to provide more storage. There is debate over whether the extended drought in the 1930's was less or more severe than the extended drought in the first half of this decade, sometimes described as a five hundred year event. Regardless, the reservoir system at that time was not adequate to meet the needs of irrigators in an extended drought period. The attempt to rectify that situation led to the construction of Palisades Dam and Reservoir, primarily as a storage facility for irrigation but combining multiple purposes including power and flood control which reduced the cost to irrigators. Part of the consideration for the

construction was irrigators entering into a winter water savings program whereby they gave up the practice of running natural flow water year round, not diverting for 150 consecutive days. In exchange for giving up the practice of running water in the winter to allow Palisades to fill they acquired priority rights to storage in the reservoir. A collateral effect of the winter savings program was a reduction of the incidental recharge to the aquifer.

3. There was an expectation when the reservoirs were built that they would fill approximately two-thirds of the time, and historically they have filled roughly two-thirds of the time. The significance of this relates to the questions of whether ground water pumping has defeated the expectations of storage in the reservoir system and whether the water that would accrue to the Snake River from the curtailment of ground water pumping would have anyplace to be stored in the reservoir system or whether it would flow in Snake River, potentially passing SWC members to go to another State.

a. The answer to the first question is that the reservoir system has not been defeated by ground water pumping, but it has been affected. It is desirable to fill the reservoirs, and they could be filled earlier and more often if there were curtailment. This result would assist BOR in its compound functions. The relevant function in this case is the ability to deliver water to irrigation space holders in the amounts contracted.

b. The answer to the second question is that there is capacity in the reservoir system to accommodate the influx of additional water from curtailment in a number of years. Secondary to this result is that natural flow rights would be supplied longer and allow storage water to be held longer. There are years in which water going into the Snake River as a result of ground water curtailment would pass the reservoir system and go beyond Milner Dam, potentially benefitting others who are not parties to this proceeding, including Idaho Power, those concerned with the Endangered Species Act, the Nez Perce settlement and any other flow augmentation interests, and the State of Oregon. It is not the purpose of this litigation to meet those other interests. The purpose is to define the legal rights and obligations of the parties to this proceeding and how those rights are consistent with or contrary to State policy. Collateral consequences to other interests are for another forum.

4. Space holder contracts are agreements between BOR and Irrigation Districts whereby the Districts have the right to storage space for water in the reservoirs which they may use when there is water in the space.

5. The irrigation districts are obligated for repayment of construction costs and costs of operation and maintenance of the reservoir system. The reservoir system was not a gift from the federal government to Idaho. The irrigation districts that have rights to water in the reservoirs have obligations for repayment of construction costs and for contributions to operation and maintenance of the system.

6. In addition to the storage of water for irrigation the BOR has responsibility for flood control, some production of electrical power incident to the release of water from storage, the management of water to meet requirements of the Federal Energy Commission, the Endangered Species Act and the Nez Perce Settlement. Life was simpler when the primary purpose of reclamation projects was to open the West to development so men and women with strong minds and backs could raise healthy crops and children. The reservoir system had this development as its principle purpose. There is now a need to parse water among many competing interests. Below Jackson Lake there is concern for a cutthroat trout fishery. Below American Falls and Walcott Idaho there are four species of snails that are protected under the Endangered Species Act. There are energy needs and settlement rights. The Nez Perce Agreement between the United States, the State, and the Nez Perce in which irrigation districts participated established flow augmentation rights dependent upon water conditions, defined by the so-called Rainbow Chart. The total flow augmentation due, if available, is 487,000 acre feet, 60,000 of which is attributable to the Nez Perce Agreement. Of the 487,000 acre feet, 185,000 comes from the Upper Snake Reservoir system. To fulfill its obligations under the Nez Perce Agreement, BOR sometimes leases water from different water banks, including the upper Snake which encompasses SWC members. Sometimes water is available from the rental pool, when there has been a good water year. Other times flow augmentation is not available from the rental pool, such as 2007 when the parameters of the rainbow chart associated with the Nez Perce Agreement were not met.

Beyond these obligations there is a need to manage the system to avoid flooding, which at times is inconsistent with holding water for irrigation.

7. The Bureau of Reclamation is a proper party to these proceedings. The nature of the relationship between the BOR and the irrigation districts with which it has contracts is described in *United States v. Pioneer Irrigation District,* 144 Idaho 106, 157 P. 3d 610 (2007). Additionally, it has interests that can be impacted by decisions concerning the allocation of water. Whether a party or not the BOR has responsibilities and practices which are essential to understand to evaluate the claims of the competing water users. The same evidence would have been needed even if BOR had not remained in the case

VI

CREATION AND OPERATION OF WATER DISTRICTS

1. On November 19, 2001, the State of Idaho sought authorization from the Snake River Basin Adjudication (SRBA) District Court for the interim administration of water rights by the Director in all parts of the Department's Administrative Basins 35 and 41 overlying the ESPA in the American Falls area and all or parts of Basins 36 and 43 overlying the ESPA in the Thousand Springs area. The District Court granted the motion on January 8, 2002, finding that the water supply in basins 35, 36, 41, and 43 was not adequate at that time and was projected to be inadequate at times in the future to satisfy all water rights, concluding that interim administration in accordance with the Director's reports and partial decrees was "reasonably necessary to protect senior water rights in accordance with the prior appropriation doctrine as established by Idaho law." After notice and hearing, the Director issued two orders on February 19, 2002, creating Water District No. 120 and Water District No. 130 pursuant to the provisions of Idaho Code section 43-604. Subsequently the boundaries of Water District 120 and 130 have been expanded and the Director has issued orders creating additional water districts, including 100, 110 and 140.

2. The Water Districts were created to provide for the administration of water rights to protect prior surface and ground water rights. Watermasters in Districts 120 and 130, acting under the direction and supervision of the Director have the duties to curtail illegal diversions, measure and report the diversions under water rights, enforce the provisions of any

stipulated agreement, and curtail out-of-priority diversions which the Director determined to be causing injury to senior surface and ground water rights, unless the out-of-priority diversions were covered by a stipulated agreement or mitigation plan approved by the Director.

VII

THE CALLS AND THE DIRECTOR'S ORDERS

1. On January 14, 2005, the Surface Water Coalition delivered a letter to the Director of the Idaho Department of Water Resources headed "Request for Water Right Administration in Water District 120 (portion of the Eastern Snake Plain Aquifer)/ Request for Delivery of Water to Senior Surface Water Rights." The letter noted that there were "negotiations with groundwater users to find a long term agreement that will restore their water supplies and stabilize the declining spring flows and aquifer levels." However, the letter requested conjunctive administration of water rights, asserting that both natural flow and storage water rights have been reduced by depletions to the aquifer caused by junior ground water pumping which has caused material injury to the Surface Water Coalition: "Curtailment of junior ground water rights must therefore occur over a period of time unless substantial aquifer recovery occurs as a result of artificial or natural recharge in excess of the present rate of groundwater depletions."

2. An order for the administration of water rights was issued by the former Director on May 2, 2005. In response to the request for administration the former Director entered an Order February 14, 2005, requesting information from each member of the Coalition, including water diversion data, irrigated acreage, and crop data for the irrigation seasons from 1990 through 2004. Thereafter the former Director entered an Amended Order dated May 2, 2005, which superseded an April 19, 2005, Order. The Order predicted material injury to SWC members in 2005 of 133,400 acre-feet, consisting of shortages, plus carryover shortfalls. The Order established a 27,700 acre-feet replacement water obligation on IGWA, predicting that to be the material injury to the Surface Water Coalition. This figure was adjusted down to 27,006 acre-feet in the third supplemental order dated June 29, 2006, after a final accounting of the water determined to be due in 2005, resulting in the mitigation water for 2005 being supplied in

2006. There was no new obligation for replacement water in 2006 because the reservoirs filled. The May 2, 2005 Amended Order, together with subsequent orders, is at issue in this proceeding.

3. The May 2, 2005 Order outlined the procedural background, the applicable science, the water rights of the parties, and made findings of fact and conclusions of law determining among other things:

a. Junior water pumping caused material injury to senior surface water irrigators affecting natural flow and storage rights.

b. IGWA was directed to provide replacement water or face curtailment.

c. The Order utilized a "minimum full supply" standard in predicting material injury, applying the amount of water SWC members used in 1995 as the anticipated minimum amount they should have available in 2005 to meet crop needs, subject to adjustment.

d. The Order utilized the unregulated flow at the Heise Gage to predict the water supply.

e. The effects of curtailment from different dates were simulated using the Eastern Snake Aquifer Model.

f. The Order predicted material injury to members of SWC and concluded that there must either be curtailment or replacement water provided by IGWA.

4. The Supplemental Order Amending Replacement Water Requirements dated July 22, 2005, followed the protocol outlined in the May 2, 2005 Order by monitoring weather conditions affecting the water supply and making additional findings. The Director recapitulated the process outlined in the May 2, 2005, Order as follows:

For each member of the Surface Water Coalition, the Director (1) averaged the 2002 and 2004 natural flow diversions; (2) estimated the 2005 storage allocation based on the average of the volume of water stored after April 1, 2002, and after April 1, 2004, added to the water actually in storage on April 1, 2005, less estimated 2005 evaporation; and (3) summed the average natural flow diversions and estimated 2005 storage allocations. The sum of natural flow diversions averaged for 2002 and 2004 and the estimated 2005 storage allocations based on the

actual storage as of April 1, 2005, and the storage after April 1, averaged for 2002 and 2004 was deemed the predicted 2005 water supply for each Surface Water Coalition member.

The 2005 water supply was subtracted from the water supply in 1995 which had been determined to reflect a "minimum full supply." If the difference was greater than zero the difference was the "Predicted Shortage in 2005." The Director noted that there were changes in water supplies available for the remainder of 2005 from those predicted, finding that there was higher precipitation and lower temperatures than anticipated and that the unregulated flow at the Heise Gage was between the levels of 2002 and 2004. The Director revised findings in the prior Order to reflect that "only American Falls Reservoir District #2 has any remaining reasonably likely predicted shortages in 2005 (13,200 acre-feet)." Further, "The predicted shortage in the water supply available in 2005 to the American Falls Reservoir District #2 is 13,200 acre-feet, and the predicted material injuries to the American Falls Reservoir District #2 and the Twin Falls Canal Company are 64,400 acre-feet and 5,400 acre feet respectively." However, the Supplemental Order did not reduce the minimum amount of replacement water (27,700 acre-feet) provided by IGWA. This replacement water was to be allocated by the Director "among the members of the Surface Water Coalition to offset actual shortages in the water supplies available to the individual members of the Coalition, as necessary, or to offset shortages in carry-over storage held by individual members of the Coalition at the end of 2005, as determined by the Director to be reasonably needed."

5. The Second Supplemental Order Amending Replacement Water Requirements was entered December 27, 2005, in response to IGWA's Petition for Reconsideration of July 22, Supplemental Order and Twin Falls Canal Company's Request for End of Year Accounting. The Second Supplemental Order reflected that only the Minidoka Irrigation District exceeded the assigned minimum full supply, and the Order modified the minimum full supply for the Burley and Minidoka Irrigation Districts. The Director observed that the use of less than the minimum full supply by the other districts could either indicate that the districts did not need that much water or they conserved out of concerns for future shortages. The Director determined that only the Twin Falls Canal Company had shortages and suffered material injury. This was based on findings that the unprecedented precipitation in May and June which benefited storage had less beneficial impact on TFCC because of its relatively small amount of storage, relying primarily on natural flow. The reach gains providing its natural flow rights

between Near Blackfoot and Neeley Gage "declined dramatically beginning in about the second week of July, recovering in August to levels similar to those observed in August of prior years...."

In Finding 22 the Director set forth the results of simulated curtailment scenarios of junior priority ground water rights, summarizing the result of full curtailment: "Curtailing all ground water diversions in Water Districts No. 120 and No. 130 for one year would, over time, increase reach gains in the Snake River between the Near Blackfoot Gage and the Minidoka Gage by a total amount of 621,300 acre-feet, which is more than four times the material injury preliminarily determined to have occurred in 2005 to the water rights held by or for the benefit of the Surface Water Coalition members." Other scenarios reflecting the results of curtailment of ground water pumping were outlined. Curtailment back to July 23, 1977, was utilized in determining the amount of replacement water due. The Order found that there were only incremental increases in reach gains resulting from the lease and non-use of water rights held by FMC Idaho, LLC, the non-irrigation of leased lands, and mitigation actions implemented in Water District No. 130. The Order set forth the actions necessary by IGWA to avoid curtailment.

6. On June 29, 2006, the Director entered the Third Supplemental Order Amending Replacement Water Requirements Final, 2005 & Estimated 2006. The Order reviewed the history of actions by the parties and the Department, including entry of an Order Staying proceedings and Amended Scheduling Order on February 10, 2006, staying proceedings for 60 days. The Director concluded that only Twin Falls Canal Company suffered material injury in 2005. The remainder of the replacement water that IGWA was to supply in 2005 was to be supplied to the Twin Falls Canal Company at the beginning of the irrigation season rather than as reservoir carryover storage in 2005 in the event the reservoir storage space held by the Twin Falls Canal Company would fill in 2006 with the additional carryover of 27,006 acre-feet. The Director concluded that while "there is no reasonably likely material injury to any member of the Surface Water Coalition predicted during the 2006 season, the Director should continue to monitor water supply and climatic conditions in 2006 and require additional replacement water or curtailment in the event material injury occurs." The Director predicted material injury based on a regression analysis of the years 1990 through 2005, estimating the material injury to be one standard deviation below the best-fit trendlines. This is a difficult analysis to grasp for the non-

scientist, but apparently the effect is to conservatively estimate the natural flow that would be available to members of the Surface Water Coalition, causing an increase in the computed amount of predicted shortfall.

7. On July 17, 2006, the Director entered a Fourth Supplemental Order on Replacement Water Requirements for 2005. This Order recounts a complex trail of steps to determine the amount of replacement water provided, finding among other things that the replacement water credited to IGWA improperly excluded a credit of 1,133 acre-feet from a lease by IGWA of ground water used by TFCC that was held and not used by FMC Idaho. Further steps were outlined for compliance with replacement requirements.

8. On May 23, 2007, the Director entered the Fifth Supplemental Order Amending Replacement Water Requirements Final 2006 & Estimated 2007. The Director determined that none of the SWC members had shortages or material injury, except the appearance of a 39,916 acre-foot shortage for the Twin Falls Canal Company. However, since TFCC diverted 80,078 acre-feet less than its minimum full supply of 1,075,900 and carried over 40,162 acre-feet more than its reasonable carryover storage supply of 38,400 acre-feet, the Director determined that it was not materially injured in 2006.

Finding 22 provided that "If crop evapotranspiration is greater in 2007, or precipitation during the irrigation season is less than in 1995, the amounts of water diverted in 1995 may be less than what is needed for a full supply in 2007. If crop evapotranspiration is less in 2007, or precipitation during the irrigation season is greater than in 1995, the amounts of water diverted in 1995 may be more than what is needed for a full supply in 2007." Twin Falls Canal Company was the only member of the Surface Water Coalition predicted to have a material injury during the 2007 irrigation season – 58,914 acre-feet. The Order concluded that IGWA would be able to acquire sufficient storage water to mitigate for material injury to TFCC and that, "The calculated water debt resulting from Twin Falls Canal Company's irrigation season diversions will be replaced by the Ground Water Districts during or **at the end of the irrigation season from storage water procured by the Ground Water Districts which will be credited to the storage water account of Twin Falls Canal Company."** (emphasis added). However, the Order also provided that "The replacement water will be delivered to Twin Falls Canal Company as it is

needed during the irrigation season...," quoting from IGWA's 2007 Replacement Water Plan. Conclusion of Law 4. That was not done.

The Order concluded that involuntary curtailment should not be required to meet the obligation and provided that, "Mitigation debits and credits resulting from year-to-year mitigation will continue to accrue and carry forward until such time as the storage space held by the members of the Surface Water Coalition under contract with the USBR fills. At that time, any remaining debits and credits will cancel." Conclusion of Law 5.

9. The Sixth Supplemental Order Amending Replacement Water Requirements and Order Approving IGWA's 2007 Replacement Water Plan entered July 11, 2007, approved IGWA's Amended Joint Replacement Water Plan (exhibit 4502A) for 2007, giving the ground water districts the option of providing water to meet the mitigation plan or, if the water was not available, to pay Twin Falls Canal Company at the rental pool rate. The Sixth Supplemental Order approved IGWA's replacement water plan in which IGWA would underwrite or guarantee Twin Falls Canal Company had a full minimum supply of 1,075,000 acre-feet. Other matters of consequence developed in the process.

a. Flood control releases were greater than anticipated. Consequently, the earlier expectation that the reservoir would fill did not occur, resulting in 264,546.9 acre-feet of storage less than expected.

b. By July 8, 2007, only Twin Falls Canal Company and North Side Canal Company were diverting from natural flow. All other SWC members were dependent upon their storage water.

c. The Director properly departed from the earlier practice of utilizing only the Heise Gage to predict natural flow for the irrigation season. Up until this Order the Director had used data collected at the Heise Gage in the early season to provide information with which to make predictions as to natural flow supplies for the irrigation season. However, the Director concluded in Finding 11 that, "In order to predict natural flow supplies for TFCC for the remainder of the irrigation season, it is no longer appropriate to use data from the Heise Gage, as virtually all reach gains to the Snake River that are available to TFCC are a result of return flows and not flow into the system

from springtime runoff." This change was appropriate, since the Heise Gage would provide no useful information at that stage of the irrigation season. The Heise Gage is a sufficiently reliable predictor of spring runoff to utilize early in the process, but once weather conditions and the state of storage are known the process should be expanded to incorporate whatever sources will provide the most current information.

d. The Order provided that the Director would make a final determination of the amounts of mitigation required and actually provided after the final accounting for surface water diversions for 2007 was complete. The Order provided:

"To the extent less mitigation is provided than was actually required, a mitigation obligation will carry forward to 2008 and be added to any new mitigation determined to be required for 2008. To the extent more mitigation is provided than was actually required, a mitigation credit will carry forward to 2008 and be subtracted from any new mitigation determined to be required for 2008."

10. The Seventh Supplemental Order entered December 20, 2007, determined that Twin Falls Canal Company used less than the minimum full supply established in the May 2, 2005 Order, resulting in a reduction of the replacement water required to 17,345 acre feet. This adjustment required IGWA to acquire 14,345 acre feet of the water it was short to transfer to the Director for the use of Twin Falls Canal Company. A final accounting was to take place in 2008. The transfer from the Director to the Twin Falls Canal Company was completed during the course of this hearing. Following the pattern from 2005, rather than the water being provided in the year it was determined to be due, it was provided in the subsequent year. Issues presented by the Seventh Supplemental Order are addressed separately in this recommendation.

11. The former Director properly included Water District 130 in the orders for administration. The Surface Water Coalition did not request administration in District 130. However, the former Director determined ground water depletions in Water District 130, as well as District 120, were impacting members of the Surface Water Coalition and that the Coalition could not selectively seek administration. Consequently, District 130 was included in the orders that have been entered.

12. Unless modified explicitly or by necessity from the recommendations in this opinion, the findings and conclusions of the Director's in the various Orders are accepted.

VIII

THE EFFECT OF THE AMOUNT LICENSED OR DECREED AND THE BURDENS OF PROOF

1. There is a presumption that a senior water user is entitled to the amount of water set forth in a license or decree. *American Falls Reservoir District No. 2 v. Idaho Department of Water Resources,* 143 Idaho 862, 878, 154 P. 3d 433, 449 (2007), addressed the threshold burden in a water adjudication in discussing the Conjunctive Management Rules when there is a decree. The logic applies to the rights claimed in this case unless they are subsequently altered by decree in the Snake River Basin Adjudication.

> The Rules should not be read as containing a burden-shifting provision to make the petitioner re-prove or re-adjudicate the right which he already has. We note that in the Initial Order entered in this case, the Director requested extensive information from American Falls for the prior fifteen irrigation seasons, to which American Falls objected in part. While there is no question that some information is relevant and necessary to the Director's determination of how best to respond to a delivery call, the burden is not on a senior water rights holder to reprove an adjudicated right. The presumption under Idaho law is that the senior is entitled to his decree water right, but there certainly may be some post-adjudication facts which are relevant to the determination of how much water is actually needed. The Rules may not be applied in such a way as to force the senior to demonstrate an entitlement to the water in the first place; that is presumed by the filing of a petition containing information about the decreed right.

2. The senior water right holder must allege material injury under oath setting for the basis of that belief.

The Rules require the petitioner, that is the senior water rights holder, to file a petition alleging that by reason of diversion of water by junior priority ground water rights holders, the petition is suffering material injury. That is consistent with the statutory provision which requires a surface priority water right holder claiming injury by junior water right holders pumping from an aquifer to file a "written statement under oath" setting forth "the facts upon which [he] founds his belief that the use of his right is being adversely affected" by the pumping. I. C. sec. 42-237b. The Rules further provide that the petitioner file a description of his water rights, including the decree, license, permit or claim for such right, the water diversion and delivery system he is using and the beneficial use being made. The Rules then provide three additional types of information which must be provided by the petition; however, the Rules are clear in saying that the additional information should be provided only *if available* to the petitioner.

Id. 878.

SWC made the threshold showing that is required.

3. The licensed or decreed amount of a water right is a maximum amount to which the right holder is entitled. The right holder is presumed entitled to that amount, and the burden is upon a junior right holder to show a defense to a call for the amount of water licensed or decreed. *AFRD #2, at 878,879.*

4. "Once the initial determination is made that material injury is occurring or will occur, the junior then bears the burden of proving that the call would be futile or to challenge, in some other constitutionally permissible way, the senior's call." *AFRD #2, at 879.*

5. The Surface Water Coalition made the showing that its members had licensed or decreed water rights and that material injury was occurring. There was evidence submitted indicating that ground water reduces reach gains upon which SWC members are dependent and that there have been crop losses resulting from water shortages.

6. The process utilized in this case deviated from that anticipated by the Supreme Court. The former Director did not have the benefit of *AFRD #2* when SWC made its request for administration in this case. The Court anticipated that once the initial showing of material injury was made by a senior water user the burden would shift to the junior ground water users to show a defense to the senior's call. In this case the former Director explained his thinking, responding to questions concerning the use of 1995 to establish a base number for a minimum full supply:

> Q. Was the year 1995 cast in stone, Mr. Dreher?
>
> A. No. It was a starting point. It – under this whole conflict that had developed, my view was that it was the State's responsibility – the department's responsibility to initially take the burden of determining the extent of injury and the appropriate recourse. Some might say, well, that burden should be put on the juniors. They ought to have to prove the negative. They ought to come in and prove that they're not causing injury.
>
> Well, the reason I disagree with that is because it's the State that authorized those junior-priority diversions. It's the State that issued the licenses. And the junior rightholders, even though they're junior and even though they are subject to all prior rights, their rights are real too. They had just been decreed in the SRBA, and I didn't think it was appropriate to say, okay, prove that you're not causing any injury; we – the State has

issued these water rights, we've issued these decrees, now you prove that you're not causing injury. I didn't think that was the appropriate way to do this.

Similarly, it certainly was inappropriate to, at least in my view, put the burden on the seniors. Okay. You allege you're being injured. Now, prove it. I didn't think that was appropriate.

And so in developing this May 2nd Order, I tried to develop a process under which the State would take the initial burden of making these determinations, and then there would be a hearing – I didn't anticipate that I wouldn't be the hearing officer, but I did anticipate that there would be a hearing – under which the factual issues and the legal issues were resolved.

And during that hearing process either side of this, either the ground water side or the surface water side, could have and probably would have brought forward information about why 1995 was or wasn't a good year to use for the minimum full supply. Again, not the amount that was needed for 2005, but what would be the minimum amount that would be needed. And certainly, in that process I would have been open to considering other methodologies, other criteria. But I thought it was important that the State take the first step to try to bring some resolution to this. The idea was that doing it this way might bring the two sides closer together. I guess it didn't work.

Tr. Vol. I, pp. 50-52.

7. The methodology adopted by the former Director makes sense and is consistent with the construction of the Conjunctive Management Rules but does not acknowledge the burdens anticipated by the Supreme Court in AFRD #2 which was decided after the May 2, 2005, Order. The senior surface water users have the initial burden of establishing their water rights and material injury to those rights. After the senior has made that initial showing, the burden shifts to the junior right holders to show a defense to the senior's call. The methodology applied by the former Director is consistent with the structure of the Conjunctive Management Rules. In applying that methodology the Supreme Court anticipated that the Director would approach the resolution of the call applying the presumption favoring the senior right holder, once the threshold showing of material injury has been met by the senior right holder. It is not clear that the Director applied the burdens. Those burdens remain in this proceeding.

8. The Director has the authority and the responsibility to investigate claims when a call is made that may result in curtailment. Whether the Director approached the case applying the legal burdens established in AFRD #2 or not, the Director had the authority and the responsibility to develop the facts upon which a well-informed decision could be made and to

make a decision from the best information developed. To do otherwise would be irresponsible to the public interest and often unduly expensive to the parties.

9. IGWA and Pocatello have the burden of establishing defenses to SWC's claims.

10. The parties may rely on facts developed by the Director and in the absence of more persuasive contrary evidence the Director's findings are accepted.

IX

MATERIAL INJURY

1. CM Rule 10.14 defines material injury, as "Hindrance to or impact upon the exercise of a water right caused by the use water by another person as determined in accordance with Idaho Law, as set forth in Rule 42." CM Rule 10.14. CM Rule 42 provides:

DETERMINING MATERIAL INJURY AND REASONABLENESS OF WATER DIVERSIONS (RULE 42).

Factors. Factors the Director may consider in determining whether the holders of water rights are suffering material injury and using water efficiently and without waste include, but are not limited to, the following:

a. The amount of water available in the source from which the water right is diverted.

b. The effort or expense of the holder of the water right to divert water from the source.

c. Whether the exercise of junior-priority ground water rights individually or collectively affects the quantity and timing of when water is available to, and the cost of exercising, a senior-priority surface or ground water right. This may include the seasonal as well as the multi-year and cumulative impacts of all ground water withdrawals from the area having a common ground water supply.

d. If for irrigation, the rate of diversion compared to the acreage of land served, the annual volume of water diverted, the system diversion and conveyance efficiency, and the method of irrigation water application.

e. The amount of water being diverted and used compared to the water rights.

f. The existence of water measuring and recording devices.

g. The extent to which the requirements of the holder of a senior-priority water right could be met with the user's existing facilities and water supplies by employing reasonable diversion and conveyance efficiency and conservation practices; provided, however, **the holder of a surface water storage right shall be entitled to maintain a reasonable amount of carry-over storage to assure water supplies for future dry years. In determining a reasonable amount of carry-over storage water, the Director shall consider the average annual rate of fill of storage reservoirs and the average annual carry-over for prior comparable water conditions and the projected water supply for the system.** (emphasis added).

h. The extent to which the requirements of the senior-priority surface water right could be met using alternate reasonable means of diversion or alternate points of diversion, including the construction of wells or the use of existing wells to divert and use water from the area having a common ground water supply under the petitioner's surface water right priority.

2. A hindrance to reasonable carry-over storage constitutes material injury. The argument has been made that storage is not a beneficial use of water. The logic of this position is that beneficial use is the measure of a water right, and until there is insufficient water to serve crop needs there is no impingement on beneficial use and no material injury to a water right. The logic has sense to it, but fails. CM Rule 10.14 is broad enough to encompass a storage right, and CM Rule 42.01.g. sets forth the right to carryover storage in enumerating factors that may be considered in determining if there is material injury. Storage water is held to meet crop needs as requirements arise, and that right is protected.

3. Ground water pumping has hindered SWC members in the use of their water rights by diverting water that would otherwise go to fulfill natural flow or storage rights. Once it is established that the Snake River and the Eastern Snake Plain Aquifer are connected the conclusion is inevitable that withdrawal of water from the aquifer reduces flow in the Snake River. At any given time there is a finite amount of water. If it goes one place and is consumed in the growing of crops, it cannot go to another. That does not mean that all water withdrawn from pumping has an adverse effect on surface water users dependent upon the Snake River. Sometimes there is enough water entering the system to fill all needs. In such circumstances conjunctive management is unnecessary or minimal. Times of shortage call the CM Rules into play. The evidence in this case establishes that during recent periods of water shortage ground water pumping has affected the quantity and timing of water available to SWC members. Natural flow rights have been exhausted earlier and storage has been used earlier and more

extensively, limiting the application of water during the irrigation season and diminishing the amount of carryover storage to which the surface water users are entitled.

4. The members of the Surface Water Coalition suffered material injury from ground water pumping in 2004, and it was reasonable to predict material injury in 2005. In determining predicted material injury for 2005 the former Director observed in Finding 109 that none of the members of SWC had "identified lands that are entitled to receive surface water but have not been irrigated or where crops could not be harvested because of shortages in surface water supplies available to members of the Coalition under the members' various rights. The Coalition simply alleges that material injury is occurring because in recent years members of the Coalition have been unable to divert natural flow at the diversion rates authorized under the members' rights for as long a period of time as the members otherwise could, but for depletions caused by diversions of ground water under junior priority rights." However, IDWR staff contacted University of Idaho Agricultural Extension Agents and U.S. Department of Agriculture Farm Service County Directors in Lincoln, Gooding, Jerome, and Twin Falls counties and determined that there were estimated losses of 35% because of shortages in surface water supplies, though not primarily the result of shortages from the Snake River. Findings 110, 111. Reports indicated that "North Side Canal Company has carefully managed water diverted to minimize waste, shareholders have reduced nozzle sizes on sprinkler systems, and that estimated losses in crop production because of shortages in surface water supplies were about 5 percent in 2004." Finding 112. The FSA Director reported a ten day shut off at the end of May in 2004 for corn growers served by American Falls Reservoir District #2 that had substantial impact on some growers, stressing crops, but yields were near normal. However, the fourth cutting of hay was foregone so that available water could be used to finish corn crops. Estimated crop production losses were to be 15% in 2004. Id. In Jerome County the FSA Director reported that shortages caused only slight declines in crop production. Finding 113. Lands served by the Twin Falls Canal Company had some loss in crop production, the last cutting of hay reduced, and corn crops reduced, though largely because of delayed harvest, not water shortages. Finding 114. What this all adds up to is that water shortages adversely impacted crops and influenced crop decisions, e.g. foregoing a cutting of hay to supply water to corn crops.

5. After the senior-water users show a licensed or adjudicated right and a hindrance to that right, the factors set forth in CM Rule 42.01 are in the nature of defenses to the claim of material injury. At some point a determination has been made that a licensed or adjudicated water right holder has an entitlement in priority to a certain amount of water if that water can be applied to a beneficial use. That right is not absolute. Nature may change the course of a river. Water may not be available through no cause related to junior users. However, to the extent water is available within the amount of the water right but is diminished by junior users, the presumption favors the senior users' rights to the water. That right may be limited or lost by consideration of the factors in 42.01.

X

THE ESPA MODEL AND ITS APPLICATION

1. Conjunctive management of surface and ground water required the development of a model to understand the interaction of the two. Conjunctive management of surface and ground water rights depends upon an understanding of the hydrology of surface and ground water and the relationship between the two. Unlike the history of surface water administration in which a watermaster could monitor water he or she could see and understand the immediate effect of curtailment, the relationship between surface water and ground water rights is much more complex. The same water may be surface water at one point and ground water at another. When it is surface water it may be tracked with some certainty as to amount, direction, and speed or flow. When it is ground water its course is hidden. Water that enters the aquifer at the eastern end may take a century to exit at the western end. There have been numerous studies of the geology of the aquifer and ground water resources of the Eastern Snake River Plain dating from 1902 (Russell). See S. P. Garabedian, *Hydrology and Digital Simulation of the Regional Aquifer System, Eastern Snake River Plain, Idaho.* Pp. 10, 11. None of the studies provided an adequate basis for actual administration of water rights between ground and surface water. Consequently, IDWR contracted with the University of Idaho Water Resources Institute to develop a new and enhanced model. The model was developed with broad based representation, including a substantial number of the witnesses who testified for competing interests in this litigation and the prior Thousand Springs case. The model was calibrated to a 22 year data set from 1980 through 2002. The model divides the Eastern Snake River Plain into square mile cells which are

assumed to be homogenous in their composition. It is described as "a numerical ground-water model of the Eastern Snake River Plain which is calibrated to a sufficient time period to represent a wide range of aquifer stresses."

2. The ESPAM was used to determine a curtailment date that would supply the amount of water in the Near Blackfoot to Minidoka reach that the former Director had determined to be material injury. After the Director made a determination of the amount of material injury to the surface water users caused by ground water pumping, the ESPAM was used to determine the priority date for curtailment that would remediate the material injury.

3. There are two versions of the ESPAM, Version 1.0 and Version 1.1. Version 1.0 was the initial model and was used in formulation of the May 2, 2005, Order. Subsequently, it was discovered that there were some calibration errors in the model and it was revised to correct those errors. The errors were the result of including water that spilled from the end of a ditch and returned to the river. This showed up in the river as gains for accounting purposes, but it did not represent an interaction between the river and the aquifer. According to Dr. Wylie who performed the model runs, the results between the two models would have been in the area of 435 acre feet one way or the other. This is a small amount in considering the volume of water to be replaced. The former Director began using the Version 1.1 as soon as it became available.

4. There are limitations in the use of the model. The aquifer is not uniform in its geology. It is composed of fractured basalt that may lie in random patterns, sometimes interspersed with soil of a different composition. There may be variations within the model cells, contrary to the assumption of homogeneity. Hydrologists describe a cone that is created when water is pumped. Water from connected areas then flows to the cone. The assumption for model purposes is that the cone is uniform, but it may not be, since the aquifer is not uniform in structure. The scientists know these things and developed the model to account for them.

5. The model cannot predict the effect of a particular well on a particular spring. Conclusions must be drawn on a regional basis. Withdrawal of water from wells in certain cells will have an effect on spring flows within a particular reach or reaches, not that a particular well will have a certain effect upon a particular spring in a reach. The closer the well is to a spring source the more likely there is to be an immediate effect.

6. The model is calibrated with a six month stress period; consequently, there is a greater degree of uncertainty in attempting to reflect reach gains in a period of time less than six months. Less water is needed in the spring when weather is cooler, soil retention of water higher, and precipitation more likely than in the summer when temperatures rise and precipitation usually drops. These patterns occur within less than the six month calibration period. Ideally the changes in reach gains from curtailment could be focused more precisely as to timing so there would be an understanding of whether curtailment delivered water when most needed. That, however, is not the state of science at this time.

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

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

9. It was appropriate to use the ESPAM in making the conjunctive management decisions in this case. The ESPAM versions used by the former Director were the best science available. Decisions had to be made and will have to be made. The limitations of the model are

identifiable and important, but they do not preclude reliance upon it. It has an acceptable level of reliability based on peer reviewed science.

10. As improvements are made that lead to a more reliable model those results should be utilized. Doubtless the science of the relationship between the Snake River and the aquifer has not been exhausted. If study and application of the model leads to refinements or revelations, those improvements should be applied as they occur.

XI

THE SYSTEM OF WATER STORAGE

1. The rental pool is a pool of water, primarily among other storage users, which may be used as a means to move storage water from one entity within the water district to another entity without subjecting that storage space to forfeiture. There are rental pool procedures that set forth the manner in which the rental pool is to be operated. The procedures are within the authority of the Water Resource Board that designates what is called the Committee of Nine in Water District 1 as the elected representatives of interests within the district. The Committee of Nine is in charge of the local rental pool. The watermaster is the manager of the rental pool. If an entity holding a storage right with water in the rental pool rents water to another entity an accounting is done deducting the amount rented from the storage right holder's account and transferring it to the entity renting the water.

a. The primary purpose of the rental pool is to provide additional irrigation water to space holders within the water district. Only after the primary purpose has been satisfied is additional water available for use by non-space holders.

b. When a final accounting is done for the water year the amount that a lessee has rented is the first water deducted from the lessee's account. The water that one entity rents from another entity is treated as the first storage water used by the entity receiving the water. If the entity that leases the water from another does not use it during the irrigation season, that entity runs the risk of losing the water unless it has storage space to hold it.

c. If an entity overdraws its storage account it is billed for the excess storage used or has to make rentals or private leases to make up for the excess.

2. According to Rental Pool Procedures Rule 2.25 for Water District 1, useable reservoir system capacity for the reservoirs delivering water to the Water District 1 area was been determined to be 4,172,708 acre feet.

3. There is a hierarchy for the rental of water from the rental pool in times of scarcity.

4. The price for water in the rental pool varies on a supply-demand basis, beginning at $5.00 per acre-foot, plus 10% to the Water Resource Board, plus 80 cents administrative fee, for a cost per acre foot of $6.80, going up to $18.00 per acre-foot, plus 10%, plus 80 cents, for a total of $20.60 per acre-foot.

5. Private leases are another form of obtaining water from a space holder. A private lease is a private agreement between a willing buyer and a willing seller that the water district is not involved in except to account for where the water comes from and where it goes. The water district charges an administrative fee for the accounting but does not set the rate that is negotiated. For purposes of refilling in subsequent years the space that has been used for a private lease becomes the most junior space in the reservoir system.

6. Flow augmentation is water released to the river from storage to meet Endangered Species Act concerns and the requirements of the Nez Perce Settlement Agreement. Flow augmentation benefits salmon, steelhead, snails, and whatever other creatures are dependent upon water and are protected.

7. The Director of the Department of Water Resources does not hold space in the reservoirs, but the Director does have the authority under Title 42, Chapter 6, to supervise the distribution of water. The Director instituted a system of assignment whereby IGWA acquires the required replacement water by private lease and then transfers the water to the Director to then direct it to the entity entitled to receive it. This has created conceptual difficulties because the Director has no storage space, and the system of accounting for water requires that the water be assigned to a storage account. If the Director has not assigned or

allocated the water by the final accounting in late February or March the water reverts back to the lessor. The conceptual difficulty should not defeat the practical result of getting water from IGWA to the entity that is entitled to it.

a. In the absence of a mechanism for the Director to hold storage space, the water should be accounted for in the storage holder's account subject to IGWA's contractual right, which is in turn subject to the Director's right to order distribution of the water to the proper entity, at which time it is accounted for in that entity's account. If the assignment has not been completed by the final accounting, the water should remain in the lessor's storage account, subject to the Director's right to direct assignment of the water, provided there is space available in the lessor's account. The problem arises if the lessor's storage space fills with water not impounded by the Director in which case there apparently is no existing system to allocate the water to any account. This is an accounting problem, not one of science. It should be solved by amendment of the accounting system or, if necessary by legislation establishing a system. Regardless of the method utilized, once a replacement water plan has been approved the water should be available to the entity entitled to use it. This can be accomplished by a direct transfer from the account of the spaceholder supplying the water to the account of the entity entitled to receive it. If there is a need to have an assignment to the Director, it is not apparent. This has become a flashpoint of unnecessary controversy, evident in the recent hearing when IGWA had obtained the right to water to be transferred to the Twin Falls Canal Company but TFCC did not see the water in its account. When the Director approves a replacement water plan, that plan should identify where the replacement water will go and set a time frame. When IGWA contracts for the replacement water there seems to be no reason to pass the water through the Director. His directions for transfer are sufficient.

XII

THE ROLE OF PUBLIC INTEREST IN CONSIDERING CURTAILMENT

1. The public interest is a proper interest to be considered in responding to a request for the administration of water rights. The concept of "first in time, first in right" is a

fundamental principle in Idaho water law. Idaho Code section 42-106 provides, "As between appropriators, the first in time is first in right." Case law has enforced this rule for generations. However, this principle is not without limitation. In *American Falls Reservoir District No. 2 v. Idaho Department of Water Resources,* 143 Idaho 862, 878, 154 P. 3d 433, 449 (2007), the Supreme Court cited *Schodde v. Twin Falls Land and Water Co.* 224 U.S. 107, 32 S. Ct. 470, 56 L. Ed. 686 (1912), noting that "evaluation of whether a diversion is reasonable in the administrative context should not be deemed a re-adjudication." In *Schodde* the U. S. Supreme Court was interpreting Idaho law. The Idaho Supreme Court would not be bound by the interpretation, but the Idaho Court has cited it favorably, and the Legislature has had nearly one hundred years to address issues presented by *Schodde* and act otherwise. It has not done so. The facts of *Schodde* have limited application to this case but the case reflects that the public interest is a factor to be considered in water rights litigation that impacts the public.

Article XV, Section 5 of the Idaho Constitution acknowledges the priority in time of water rights but passed to the Legislature the authority to subject that priority to "such reasonable limitations as to the quantity of water used and times of use as the legislature, having due regard both to such priority of right and the necessities of those subsequent in time of settlement or improvement, may by law prescribe." The Legislature responded in Idaho Code section 42-106: "As between appropriators, the first in time is first in right." This provision must be read in the context of Idaho Code section 42-101:

> Water being essential to the industrial prosperity of the state, and all agricultural development throughout the greater portion of the state depending upon its just apportionment to, and economical use by, those making a beneficial application of the same, its control shall be in the state, which, in providing for its use shall equally guard all the various interests involved. All the waters of the state, when flowing in their natural channels, including the waters of all natural springs and lakes within the boundaries of the state are declared to be the property of the state, whose duty it shall be to supervise their appropriation and allotment to those diverting the same therefrom for any beneficial purpose is recognized and confirmed; and the right to the use of any of the public waters which have heretofore been or may hereafter be allotted or beneficially applied, shall not be considered as being a property right in itself, but such right shall become the complement of, or one of the appurtenances of, the land or other thing which, through necessity, said water is being applied; and the right to continue the use of any such water shall never be denied or prevented from any cause than the failure on the part of the user thereof to pay the ordinary charges or assessments which may be made to cover the expenses for delivery of such water.

Idaho Code section 42-602 vests supervision of the distribution and control of water in the Director of the Department of Water Resources, this authority to be accomplished by watermasters. Section 42-602 provides that, "The director of the department of water resources shall distribute water in water districts in accordance with the prior appropriation doctrine." This provision raises the question of whether the Director may consider the public interest in making a determination that there should or should not be curtailment or other mitigation or is to look solely at the timing of the water right and the amount stated in the license or decree. It is clear that the Legislature did not intend to grant the Director broad powers to do whatever the Director might think right. However, it is clear also that the Legislature did not intend to sum up water law in a single sentence of the Director's authority. The appropriation must be for "some useful or beneficial purpose." Idaho Code section 42-104. A water user cannot waste water. These principles remain. Similarly, the constrictions of Idaho Code section 42-101 that water is the property of the state "which, in providing for its use shall equally guard all the various interests involved."

AFRD #2 recognized a presumption that the senior water right holder is entitled to the licensed or decreed water right. However, "Once the initial determination is made that material injury is occurring or will occur, the junior then bears the burden of proving that the call would be futile or to challenge in some constitutionally permissible way, the senior's call." The Rules for Conjunctive Management of Surface and Ground Water Resources (CM Rules), Rule 20.01, acknowledge the prior appropriation doctrine: "These rules acknowledge all elements of the prior appropriation doctrine as established by Idaho law." However, Rule 20.03 acknowledges other elements:

> **Reasonable Use of Surface and Ground Water.** These rules integrate the administration and use of surface and ground water in a manner consistent with the traditional policy of reasonable use of both surface and ground water. The policy of reasonable use includes the concepts of priority in time and superiority in right being subject to conditions of reasonable use as the legislature may by law prescribe as provided in Article XV, Section 5, Idaho Constitution, optimum development of water resources in the public interest prescribed in Article XV, Section 7, Idaho Constitution, and full economic development as defined by Idaho law. An appropriator is not entitled to command the entirety of large volumes of water in a surface or ground water source to support his appropriation contrary to the public policy of reasonable use of water as described in this rule.

In *AFRD #2* the Supreme Court determined that the Conjunctive Management Rules are not facially unconstitutional. Rule 20.03 is at the heart of the rules and how they will be applied. Had any Rule been subject to a facial challenge, 20.03 was one. It was adopted October 7, 1994, and has remained untouched by the Legislature or the Supreme Court. It incorporates the law as it has developed. "First in time, first in right" is fundamental to water administration whether considering surface to surface or conjunctive management of ground water and surface water, but the principle is subject to consideration of the public interest. The Director is not limited to counting the number of acre-feet in a storage account and the number of cubic feet per second in the license or decree and comparing the priority date to other priority dates and then ordering curtailment to achieve whatever result that action will obtain regardless of actual need for the water and the consequences to the State, its communities and citizens. Application of the water to a beneficial use must be present, not simply a desire to use the maximum right in the license or decree because that simplifies management of the water right.

These conclusions have significance in considering several issues in this case. They affect the Director's use of the so-called "trim line," a point of departure beyond which curtailment will not be considered. It affects the Director's consideration of alternatives to curtailment. The public interest affects determination of whether there will be curtailment or other mitigation to provide for carryover storage water, drawing a line between what is reasonable and what is hording. It affects consideration of issues of farm efficiency as opposed to achievable farm efficiency. Consideration of the public interest gives relevance to evidence of the economic impact of curtailment upon the State and local communities.

XIII

USE OF THE MINIMUM FULL SUPPLY ANALYSIS

1. The concept of a minimum full supply addresses issues in Conjunctive Management Rule 42 concerning (a) material injury and (b) the reasonableness of SWC member water diversions. Rule 42 sets forth factors the Director may consider in determining material injury and the reasonableness of diversions, but the rule does not set forth an analytical framework for application of those and other factors that may be relevant. The former Director

was called upon to develop a protocol in uncharted administration. Central to the process utilized by the former Director is the concept of a minimum full supply.

2. As developed in the May 2, 2005 Order a minimum full supply is an attempt to predict the minimum amount of water the surface water users need to meet their crop requirements, below which curtailment is necessary if the minimum is not met as a consequence of junior ground water depletions. The minimum full supply as initially determined was to be subject to change according to conditions. According to the former Director, the sum of shortages to the minimum full supply and to reasonable carryover constituted the material injury entitling the members of the Surface Water Coalition to curtailment or other remediation. Tr. Vol. I p. 97. The former Director described the minimum full supply as a base amount, not fixed, that could be adjusted during the year as weather conditions, cropping decisions, and the availability of water could be determined more precisely. A final accounting of need would be made as the year developed when all factors of need could be seen.

3. The amount determined to be a minimum full supply affects the determination of whether there is material injury from ground water pumping and the extent of mitigation if there is material injury. If the minimum full supply is set high, the likelihood of finding material injury resulting from ground water pumping is greater. If the minimum full supply is set at a lower level the likelihood of finding material injury decreases, because in theory the needs of the surface water irrigators are satisfied with the lesser amount.

4. The minimum full supply is not linked to the licensed or decreed water right or to the storage space to which an irrigator is entitled. The licensed or decreed right and the amount of storage for which there is a contract with BOR set maximums. If an irrigator needed more water than those rights, the irrigator could not obtain curtailment of junior water rights. The irrigator would have to obtain water at his or her own expense. The minimum full supply is intended to establish the amount necessary to meet water needs independent of the licensed, decreed or contracted rights.

5. Application of the concept of a minimum full supply has been difficult to understand. Unfortunately, a problem in this case is reflected in a comment made by the former

Director in response to a question by counsel for IGWA concerning carryover storage: "Well, apparently I've made this process so confusing that now you're confusing me." Tr., Vol. II, p. 340. Part of this hearing objective is to clarify the process applied and identify how that either fits or conflicts with established law.

The process followed by the former Director is best described in answer to questions propounded on behalf of BOR:

> Q. So the first thing you did when you did your analysis is you reviewed the licenses or decrees to determine what amount of water constituted the maximum full supply of the calling entity's natural flow; is that correct?
>
> A. Well, the maximum amount of water that they were entitled to divert. It didn't have to do with the supply. But you're right, the first thing I did was looked at the licenses and decrees to determine what the maximum amounts that could be diverted or diverted to storage in the case of the Bureau of Reclamation.
>
> Q. Okay. The second thing is you utilized the forecasted runoff of flows at Heise as of April 1st; is that correct?
>
> A. Correct.
>
> Q. Third, from that forecast you projected the natural flow and storage for each calling and surface entity?
>
> A. Projected the natural flow anticipated to be available and the storage anticipated to be available for each of the entities that were making a call; yes.
>
> Q. Fourth, you determined the need of the surface water users by looking at 15 years of deliveries from 1990 to 2004 and determined that 1995 was a year that represented the minimum full supply for each of the entities?
>
> A. 1995 was the most recent year, except for the Twin Falls Canal Company, when a full supply was delivered. And it became the floor of what represented the minimum full supply that would be needed.
>
> Q. And so the 1995 deliveries were the deliveries you thought the calling entity should receive of both natural flow of storage subject to possibly changing climatic conditions during the irrigation season?
>
> A. Correct.
>
> Q. And that was for their minimum full supply?
>
> A. Correct.
>
> Tr. Vol. II, pp. 302-304.

The former Director projected the carryover the surface entities should have for 2006 by taking the water deliveries for 2002 and 2004 and averaging the two together, assuming that the natural flow available in the storage accruals in 2006 were the same as the average of those two years.

The former Director looked to the year 1995 to determine a measure for a minimum full supply. At trial the following colloquy took place:

> Q. But you used the year 1995, did you not? Because that was the year in that 15 year period of record that used the least water to deliver five-eighths and three-quarters of an inch at the headgate?
>
> A. That's correct.
>
> Vol. I, Tr. pp. 147, 148.

The concept was that, "You know, what I think I said in my deposition is that I went through determination of how much was needed on an annual basis to make sure that we were, on the one hand, providing the minimum supply on an annual basis that would be needed, providing a means to adjust that for climatic variations in the growing season and at the same time providing for maximum utilization of the resource." Vol. I, Tr. p. 148. The former Director gave further explanation of the concept of a minimum fully supply:

> The – we started with what we termed the minimum full supply, which was based upon the amount needed in 1995. And the intent was then to make adjustments – that was the floor. The intent was to make adjustment either above or potentially below, but more likely above, if the climatic conditions varied substantially from what was substantially overall the – the irrigation season from what occurred in 1995. Tr., Vol. II, p.282.

To finish the process the former Director took the projected natural flow and the projected storage that would be available in 2005. He added those amounts together to develop the predicted 2005 supply in Finding 116. He then subtracted the predicted 2005 supply from the minimum full supply needed to determine whether there would be overall shortages or surpluses. The conclusion was that there would be shortages that would result in material injury. The former Director then used the ESPA Model and the boundaries of the water districts and the ground water districts to allocate how much of the shortage was attributable to each water district and each ground water district.

5. The practicalities of hydrology justify a departure in ground water administration from surface to surface water administration in the interest of irrigators and the public. In surface to surface water administration the watermasters are able to observe the conditions of crops and know the immediate effect of curtailing a junior surface water user to deliver water to another surface water user. Curtailment may be partial or complete for a brief period during which the junior user's crop may survive until curtailment ends. In ground water to surface water administration there is not the immediacy of response in the delivery of water to a senior user. Curtailment of the ground water users may well not put water into the field of the senior surface water user in time to remediate the damage caused by a shortage, whereas the curtailment is devastating to the ground water user and damaging to the public interest which benefits from a prosperous farm economy. Consequently, the former Director sought to determine the likelihood of shortages in advance in order to takes steps to have the ground water users prepared to provide timely replacement water in the season of need to avoid curtailment. The ground water users do not have storage water rights. Consequently, the aim was to have a decision in place to alert them as to the amount of water they would need to secure by contract to supply replacement water in the irrigation season and avoid curtailment. The concept of a minimum full supply was a step in this process to predict the likelihood of a shortage and the amount and allocation of replacement water in the event of shortage.

6. Use of the process of establishing a minimum full supply departs from the practice of recognizing a call at the level of the licenses or decrees, understanding that if less water is needed less will be delivered. The history of surface to surface water administration has been that if a senior water user made a call within the licensed or decreed right the watermaster shut down delivery of water to a junior water user if necessary to deliver the licensed or decreed amount to the senior. Historically the senior user gets the licensed or decreed amount of water without analyzing a minimum full supply and through that process limiting delivery of the water. SWC maintains the same process should be applicable in the ground water to surface water management. The logic of SWC in objecting to the Director's use of a minimum full supply is difficult to avoid. The irrigation districts have water rights at a certain level. The senior users are presumed to have the full extent of their rights if they can apply the water to the beneficial use for which it was appropriated. If a portion of the water is not available as a result of junior ground water pumping, there should be curtailment of the

junior rights in the absence of a mitigation agreement. Starting with this protocol the ground water users would know at the beginning of the water season that they would have to stand ready to provide mitigation up to the full extent of SWC's rights or face curtailment when a shortage attributable to them occurred. The surface water users would have maximum protection to their rights. The detriment is that the ground water users might well incur the expense of leasing water that is not needed. If they did not have lease agreements in place the acquisition of water might be exceptionally expensive or they might not be able to obtain replacement water and be curtailed. That would ruin them for the season and possibly fail to get water to the surface users in time of need. Additionally, it would not eliminate mid-season disputes when the surface water users claim they need every acre-foot of their rights and the ground water users maintain that there is no such need so the water would not be applied to a beneficial use.

7. Use of the minimum full supply analysis starts at a different point from recognizing the right of a senior right holder to receive the full amount of the licensed or decreed right, attempting to make an advance judgment of need. Inherent in the application of the minimum full supply is the assumption that, if it accurately defines need, use of water above that amount would not be applied to a beneficial use and would constitute waste. This strains against the assumption that the senior users are entitled to the full extent of their rights licensed or decreed rights which at some point has been determined to be an amount they could beneficially use. The hedge built into the concept of a minimum full supply as initially outlined in the May 2, 2005 Order is that the minimum full supply is a base that can be raised if more is needed to satisfy crop and storage requirements. Inherent in the prospect of using a baseline approach in ground water to surface water use is the possibility that it might translate back to the surface to surface administration and change the historical practice.

8. The attempt to project the amount of water that is necessary for the members of SWC to fully meet crop needs within the licensed or decreed amounts is an acceptable approach to conjunctive management, but there have been applications of the concept of a minimum full supply that should be modified if the use of the protocol is to be retained. Whether one starts at the full amount of the licensed or decreed right and works down when the full amount is not needed or starts at a base and works up according to need, the end result should be the same. However, there should be adjustments if the process of establishing a base

different from the licensed amount is to be utilized in future administration. These might well have been addressed but for the interruption of the process by challenges to the validity of the Conjunctive Management Rules and the consequent uncertainty in the process.

a. 1995 was a wetter than average year, diminishing the validity of use of that year to establish the base for a minimum full supply and underestimating the material injury likely to occur in 2005 and subsequent years. According to the Snake River Heise Natural Flow information from 1911-2004 (exhibit 1000) 1995 was in the top third of wet years. Overall it was a wetter than average year. This warps the determination of a base supply downward. If precipitation saturates the soil and relieves the need for the use of irrigation either from natural flow or storage the amount necessary from natural flow and storage declines. Basing the minimum full supply on a wet year makes it likely that material injury was underestimated in 2005 and subsequent years, unless an adjustment is made at the outset to account for the effects of a greater than average amount of precipitation through the year.

b. The process adopted in the Director's minimum full supply has been objected to as focusing on supply in establishing the base rather than the amount of water that is necessary to fully satisfy the irrigator's needs under the water rights. The fact that the 1995 water year provided full headgate deliveries does not by itself tell whether all that water was applied to a beneficial use or whether there was more water than could be applied to a beneficial use.

c. Use of the protocol of a minimum full supply is not an avenue to modify licensed or decreed rights. A challenge to the validity of a licensed or decreed amount of water must come through another avenue than application of the minimum full supply. The use of the concept of a minimum full supply tempts administration that requires the senior surface water users to alter their practices or show why they have not while permitting the junior users to continue pumping the full amount of their rights out of priority.

d. When conditions changed in 2007 the minimum full supply was not adjusted. The year 2007 created a vexing problem. The snowpack runoff that occurred

in April, May, and June was below the long term average for the district, resulting in less natural flow in the river. This led to a greater demand on storage water. The summer turned into a hot, dry period for humans, beasts, and particularly crops. The increased temperature and lower precipitation also led to greater demand on storage water. 2007 was either the first or second highest storage use year since Palisades Reservoir was built according to Lyle Swank, the watermaster for District 1. It was the type of situation envisioned in establishing the minimum full supply that would call for adjustments. However, as appealing as the concept of flexibility is, implementation is more difficult than the principle. Procedures for adjustment were not in place. Steve Burrell, who is responsible for monitoring river flows, diversion data, and maintaining a database of diversions and river flows throughout the state, testified that the minimum full supply became a hard and fast number, absent explicit instructions on how to adjust the baseline:

Q. Okay. So you were using the 1995 minimum full supply baseline as a hard-and-fast number?

A . That is – yes. We were using the same methodology as was used in the May 2005 order.

****

Q. So I guess at this point in time it's your position – or I shouldn't say yours – the Department's position that no matter what, the baseline for 1995 applied? That was the minimum full supply, period; correct?

A. Correct.

Tr., Vol. II, pp. 648, 649.

e. There must be adjustments as conditions develop if any baseline supply concept is to be used. The reality of the risk in use of the minimum full supply appeared in the Seventh Supplemental Order illustrated by the treatment of American Falls Reservoir District which was entitled to reasonable carryover of 51,200 acre-feet but had only 3,495 acre-feet to carry over. It would appear that they were injured by the shortage in the amount of 47,705 acre-feet. However, this amount was discounted and adjusted downward because American Falls Reservoir District diverted water in excess of the

minimum full supply – the diversion was 433,414 acre-feet whereas the minimum full supply defined from use of the year 1995 was 405,600 acre-feet. Steve Burrell was questioned on this point:

> Q. So it's now the director's position that if any entity diverts more than their minimum full supply, it will count against the reasonable carryover that they're entitled to have at the end of the year for purposes of a call?
>
> A. I guess, yes, in the absence of any information or any instructions on how to proceed with modifying the minimum full supply, that is the approach being taken.
>
> Tr., Vol. II, p. 669.

The same process was applied to North Side Canal Company. The Director had determined that North Side had reasonable carryover of 83,300 acre-feet. It had only 61,004 acre-feet to carry over. Instead of finding that North Side had injury of 22,296 acre-feet, the Director determined that it had no injury. This process of reducing the injury to carryover storage was unique to 2007, based upon the observation that some members of the Surface Water Coalition used only their full minimum supply or less. Consequently, the conclusion was reached that those who exceeded the full minimum supply may not have needed it which precluded mitigation or replacement water to cover the excess used. This conclusion was based on looking at the Surface Water Coalition as a whole and the total diversions in relation to 1995.

American Falls and North Side both used water within their water rights, not in excess of their licensed or adjudicated rights. The record does not show if there were or were not special circumstances that distinguished American Falls and North Side from the other members of the Surface Water Coalition, nor does there appear to be evidence showing the water was not applied to a beneficial use. The fact that other members of SWC lived within their minimum full supplies is evidence tending to show that American Falls and North Side could have done so, but it is not conclusive. The others may have conserved in fear of a follow up year as bad as 2007, or they may have managed better. There does not appear to have been an examination of the irrigation practices of the entities that exceeded the minimum fully supply and no finding that the entities were wasting water. According to Steve Burrell the approach of treating the minimum full supply as a fixed amount was employed because of a lack of explicit instructions on how to evaluate the minimum full supply in the prior orders. Tr., Vol. II, p.674. The process utilized

runs contrary to the presumptive right of a senior water user noted in *AFRD # 2* and contrary to the expectations under which the water users were operating since the May 2, 2005, Order.

f. Affidavits that had been submitted by the canal company managers should have been considered. Affidavits were submitted by canal company managers in June concerning water needs and demands for 2007. Those affidavits should have been considered, along with an opportunity for IGWA to respond.

g. Using the minimum full supply as a fixed amount in effect readjudicates a water right outside the processes of the SRBA. Treating the minimum full supply as a cap reducing the right to mitigation in carryover storage has profound consequences. In practical effect it adjudicates a new amount of the water right outside the SRBA without a determination of specific factors warranting a reduction. Additionally, predictability is a strong value in water administration. The 1995 minimum full supply established in the May 2, 2005, Order as a minimum base that could be moved up if conditions warranted was treated as a maximum carrying adverse consequences if exceeded. Logic would indicate that a supply adequate in a wet year would not be adequate in an extremely hot and dry year. Using the minimum supply as the fixed supply departs from the original concept. As long as the minimum full supply was subject to adjustment as conditions changed, it was only a starting point and had limited significance even though based on a questionable year. When treated as a fixed amount in 2007 it had great significance beyond its intended purpose.

XIV

THE DEVELOPMENT OF AN AVERAGE YEARLY IRRIGATION SUPPLY FOR SURFACE WATER COALITION MEMBERS

1. The licensed or decreed amount of a water right is a maximum which if used to establish yearly need would often over predict material injury. Using the maximum amount in determining a level of water that will be needed would in instances be higher than the amount necessary. Although it could be adjusted down, it would require commitments to be made for the acquisition of water that at times would not be needed. It would not encourage reasonable conservation as required in CM Rule 42.01.

2. Predictions of need should be based on an average year of need, subject to adjustment up or down depending upon the particular water conditions for the irrigation season. This is the initial concept behind the minimum full supply. The development of an acceptable baseline subject to adjustment for changing conditions retains the value of having senior rights while providing some level of protection against unnecessary curtailment. The concept is good, but the minimum full supply identified by the Director has no defenders from the parties. A brief summary of objections to the Director's minimum full supply can be stated:

a. It is based on a wet year. To get to an average moisture year an adjustment would be necessary to determine how much greater the minimum full supply would be if the weather equated to an average year when an adequate amount of water was delivered.

b. It is based on a decade old year that does not reflect current efficiencies such as the increased use of sprinkler irrigation and computer monitoring or changes in the amount of land irrigated.

c. It has an emphasis on supply rather than need. That is the amount of water that provided full headgate deliveries. Those may or may not have been needed in that wet year.

3. The parties have attempted to establish water budgets that reflect the needs of SWC members using sophisticated analytical techniques, but the parties' analyses are too far apart to reconcile. There are scientific approaches well beyond what water was taken and used that the parties have utilized in order to establish the amount of water SWC members actually need to meet full crop years over time. They have considered soil composition using different approaches, the losses in conveyance, evaporation, and crop needs. It is enlightening science. The irony in this case is that surface water and ground water expert testimony used much of the same information and in some respects the same approaches and came up with a difference of 869,000 acre-feet for an average diversion budget analysis of SWC districts for the period from 1990 through 2006. Sullivan Rebuttal Report, November 7, 2007, page 17. The total under the SWC analysis is 3,274,948 acre-feet as compared to the Pocatello analysis of the ground water users' analysis of 2,405,861. The Director's minimum full supply amount of 3,105,000 falls between the two, though much closer to the SWC analysis. The process does not

promote much faith in the science of water budget analysis. From the mass of material submitted in this case conclusions must be drawn, and while one might expect the "Who's Who" of experts testifying to lead the lay person to an area of reconcilable conclusion, that has not occurred.

The ground water users' analysis differs dramatically from the SWC calculations and the Director's minimum fully supply in the conclusions concerning North Side Canal Company and Twin Falls Canal Company. For North Side there is a 473,217 acre-foot difference between the SWC analysis and the ground water users' analysis and a 354,558 acre-foot difference with the Director's minimum full supply. Evidence submitted concerning North Side's terrain and length of system make it highly unlikely that North Side could raise crops to full maturity with the number of cuttings otherwise possible with the smaller amount of water calculated by the ground water users. Only unusual weather conditions would provide enough water. The same is true for Twin Falls Canal Company where the difference is in excess of 310,000 acre-feet. Subtracting that much water from irrigation in a year would not meet crop needs utilizing the systems and practices in place.

4. The recommendation is that the ground water users' average diversion budget analysis for the period from 1990-2006 not be accepted in determining a baseline supply to predict needs. There is much impressive work and much analysis that can be utilized in the reports and testimony. However, the end result would not lead to an acceptable baseline.

5. The conclusions in SWC's expert testimony are closer to being acceptable, but there are problems in areas of analysis that preclude outright acceptance of the conclusions. Again, there is useful analysis, but the conclusions are more likely to lead to yearly controversy than resolution, which unfortunately may be the fate of any baseline. The conveyance loss values do not appear reliable and the element of soil moisture does not appear to be adequately addressed.

6. The minimum full supply established in the May 2, 2005, Order is inadequate to predict the water needs of SWC on an annual basis. There are too many unaccounted variables in the minimum fully supply analysis to be continued in use as the baseline for predicting the likelihood of material injury.

7. In the absence of acceptable average budget analysis amounts from either party, the Department must modify the minimum full supply analysis as a method of establishing a baseline of predicted water need for projecting material injury. The use of the term "minimum full supply" has become a lightning rod of discontent for all parties. SWC focuses on "minimum," reading it to restrict their rights below the licensed or decreed amount. There is danger it may be applied in that fashion when it should not. The ground water experts focus on the term "supply," reading it to imply that the measure was based on how much water was available to SWC members regardless of whether needed or not. That too is a danger if misapplied. The approach adopted in the May 2, 2005, Order was a response to a call for curtailment which required a response. It was never intended as a final word. Within this context it is time for the Department to move to further analysis to meet the goal of the minimum full supply but with the benefit of the extended information and analysis offered by the parties and available to its own staff. It would be desirable to recommend the results of one or the other studies conducted by the parties. As indicated, that recommendation cannot be made. The analysis of each does, however, speak to the factors to be considered.

Properly applied the minimum full supply approach is an attempt to measure, for purposes of determining if there should be curtailment, the amount of water senior surface users need to raise crops of their choosing to maturity with the number of cuttings weather conditions will allow. Within this context there are issues of the reasonableness of diversion and conveyance practices, and the conservation efforts of the water users. Those are addressed separately in this recommendation. The concept of a baseline is that it is adjustable as weather conditions or practices change, and that those adjustments will occur in an orderly, understood protocol.

It is appropriate to use historical information when crops were adequately irrigated and to test that information to determine if the usage involved waste. The Director chose 1995 because it reflected a time when full headgate deliveries occurred and crops were apparently adequately irrigated. If 1995 could be considered an average irrigation year in all the factors to be considered in establishing a baseline average it would be acceptable in the absence of compelling reasons to accept either the ground water users' conclusions or SWC's conclusions. The isolation of a year when there are known facts as to the supply and use may be reasonable if it is subjected

to the type of analysis applied by both the surface and ground water users. However, focusing on a single year can only be a starting point, not sufficient without material adjustments. Those adjustments are reflected in the analyses of the ground water users and the surface water users in attempting to establish annual diversion requirements.

a. To the extent 1995 is utilized it should be adjusted to determine how much the need for irrigation water was depressed by the well-above average precipitation and how much less loss from evaporation there would have been from depressed temperatures compared to a normal temperature year. This would result in an increase in the baseline utilized by the Director. The objection that arriving at a baseline by using the amount delivered in a specific year emphasized supply rather than need is worthy of consideration. However, the evidence does not establish waste in the use of water in 1995. Absent evidence of waste it is appropriate to assume that the water was applied to a beneficial use.

b. If there have been significant cropping changes resulting in either greater or less need for water, those should be factored. This is an area of caution. Cropping decisions are matters for the irrigators acting within their water rights. Those decisions should be driven by the market. The fact that a particular crop may take less water does not dictate that it be planted.

c. Changes in facilities, diversion, conveyance, and irrigation practices from earlier years should be considered, e.g. the extent to which conversions to sprinklers have affected water use over time. This again must be considered with caution to avoid rewriting a water right through the process of determining a baseline water need for predictions of material injury. There may be legitimate reasons to revert to gravity flow in the future or change other practices.

d. Analysis of soil conditions to determine how water is retained or lost is a factor. Soil may hold water to be used by crops in the future. The fact that water may be applied to the ground when there are no plants growing does not mean the water is wasted. That depends on the nature of the soil and the amount of soil. Some soil retains water well, other does not. This affects the timing and extent of water delivery.

e. Non-irrigated acres should not be considered in determining the irrigation supply necessary for SWC members. IGWA has established that at least 6,600 acres claimed by TFCC in its district are not irrigated. Similar information was submitted concerning the Minidoka Irrigation District, indicating that the claimed acreage of 75,152 includes 5,008 acres not irrigated and Burley Irrigation District has some 2,907 acres of the 47,622 acres claimed not irrigated. These amounts may, of course, change as acreage is removed from irrigation or possibly added back.

f. Calculation of a water budget should be based on acres, not shares. The allocation of water within a district is a matter of internal management, but the calculation of a water budget in determining if there will be curtailment should be based on acres not shares.

g. Full headgate delivery for Twin Falls Canal Company should be calculated at 5/8 inch instead of 3/4 inch. The former Director accepted Twin Falls Canal Company's response that 3/4 inch constituted full headgate deliver, and TFCC continued to assert that position at hearing. This is contradicted by the internal memoranda and information given to the shareholders in the irrigation district. It is contrary to a prior judicial determination. It is inconsistent with some of the structural facilities and exceeds similar SWC members with no defined reason. Any conclusions based on full headgate delivery should utilize 5/8 inch.

8. The sources of information for reevaluating the water conditions should be expanded, as occurred in the sixth supplemental order when the Heise Gage was no longer a valid measure of natural flow. Initial use of the Heise Gage unregulated flow is reasonable as a starting point in predicting the water supply, but as the year progresses and adjustments become necessary other sources utilized by the irrigation districts to monitor and predict their water supplies should be included.

XV

THE REASONABLENESS OF THE SURFACE WATER COALITION'S DIVERSION SYSTEMS AND CONVEYANCE PRACTICES

An issue presented in this case is the efficiency of the various members of the Surface Water Coalition. This relates to considerations in CM Rule 42 which the Director may take into account in determining if there is material injury and the reasonableness of the amount of water diversions. The two ideas are related.

1. CM Rule 42.01g provides that in considering whether there is material injury to a senior water user and use of water by the senior without waste the Director may consider, "The extent to which the requirements of the holder of a senior-priority water right could be met with the user's existing facilities and water supplies by employing reasonable diversion and conveyance efficiency and conservation practices..." It is relevant to consider how much water is necessary to irrigate crops to maturity.

2. If the means of diversion utilizing existing facilities, the methods of conveyance, or the conservation practices are not reasonable the water wasted does not constitute material injury attributable to the junior ground water pumpers, even if the diversion is within the amount of the water right. Curtailment will not be invoked to make up for water lost through the use of unreasonable diversion or conveyance practices or unreasonable use of the water.

3. The existing facilities utilized by the Surface Water Coalition members are reasonable. The evidence does not show substandard facilities for diversion or conveyance. The members of the Surface Water Coalition have improved their conveyance practices since the time the water rights were licensed or decreed. All of the members have changed significant portions of their irrigation practices from gravity flow to sprinkler systems which generally deliver water to the crop more efficiently. Sprinkler practice is not perfect. Evidence from the Twin Falls Canal Company indicates that water from gravity flow that exceeds the need of the initial crop is captured and applied to other portions of the district by water paths that develop. The same process does not occur with sprinkler systems. Also, there are limitations with sprinklers on applying water into corner portions of property. Overall, however, the use of sprinklers is more efficient than gravity flow, and sprinklers are increasingly used by the

members of SWC. Additionally, at least Twin Falls Canal Company and North Side Canal Company have gone extensively to the use of computer monitoring of water use to assure its proper application.

There are various factors that might be considered that cause difference in the efficiency of diversion and conveyance within the irrigation districts. For example, the North Side Canal Company is very long, requiring more time for water to move from the initial diversion to the end of the system. There will be differences in the amount of evaporation and potentially of conveyance losses. Additionally, if the delivery of water at the beginning of the system is shut off, when the water is again turned on it takes considerable time for water to reach the far end of the system. Damage to the crops may occur during the delay. This simply says that there is no precise formula that can be applied from one SWC member to another. Differences exist. This does not mean that one district is using reasonable facilities and practices and another not. There is no evidence of decayed or damaged systems that are allowed to continue or practices that cause water to be wasted in transit. The evidence in this case indicates that each of the SWC members is operating with reasonable diversion and conveyance efficiency.

4. Full headgate delivery for Twin Falls Canal Company should be calculated at 5/8 inch instead of 3/4 inch. The former Director accepted Twin Falls Canal Company's response that 3/4 inch constituted full headgate deliver, and TFCC continued to assert that position at hearing. This is contradicted by the internal memoranda and information given to the shareholders in the irrigation district. It is contrary to a prior judicial determination. It is inconsistent with some of the structural facilities and exceeds similar SWC members with no defined reason. Any conclusions based on full headgate delivery should utilize 5/8 inch.

XVI

THE CONCEPT OF ACHIEVABLE FARM EFFICIENCY

Once it is determined that the systems of diversion and conveyance of the SWC members are reasonable, the question becomes whether that system is being operated reasonably. Are the practices in place reasonable in conserving water or are the SWC members claiming and using more water than is necessary to develop healthy crops to full maturity utilizing the systems and practices in place.

1. The concept of achievable farm efficiency. Pocatello offered the testimony of C. Eugene Franzoy, an expert in water management, who testified that "achievable farm efficiency is a measure of what the irrigation system is capable of achieving given the existing physical conditions." Mr. Franzoy differentiated between "farm efficiency" which refers to the actual efficiency of the farm operation as opposed to the "achievable farm efficiency" that he maintains can be achieved with existing physical conditions with a high level of management.

2. Reasonableness, not achievable farm efficiency, is the standard in determining whether irrigators are wasting water. CM Rule 42.01.g. provides that "in determining whether water rights holders are suffering material injury and using water efficiently and without waste" the Director may consider "[t]he extent to which the requirements of the holder of a senior-priority water right could be met with the user's existing facilities and water supplies by **employing reasonable diversion and conveyance efficiency and conservation practices... .**" (emphasis added). Achievable farm efficiency through a highly managed system is certainly desirable if the process of getting there is reasonable, but there are considerations other than the hypothetical most efficient use of water that limits that result. There are likely labor costs or associated management difficulties that must be considered in whether an irrigator can get the maximum benefit of water without on occasions exceeding that amount. The amount of those costs has not been identified but almost certainly exists. The irrigation districts have a limited scope of operation. They deliver water to the actual irrigators. There are a large number of irrigators. It would be speculation to determine the cost and the reasonableness of extending the districts' management into the realm of each irrigator.

The closer farm efficiency gets to achievable farm efficiency the better, but the fact that there is a difference does not mean the irrigation districts' practices are unreasonable. The lessons learned from analysis of achievable farm efficiency may be very valuable to irrigators, but the standard for determining whether water is being applied to a beneficial use without waste is whether the district is reasonable in the use of the water with existing diversion and conveyance facilities, consistent with reasonable conservation practices.

3. The members of the Surface Water Coalition are employing reasonable conservation practices. There is evidence the members of SWC monitor the use of water closely. It is very clear that during the drought period they did not apply the full extent of their

water rights throughout the irrigation season. They withheld water and rationed it according to conditions. Had they not used the water reasonably they likely would have suffered catastrophic losses.

4. If the Director identifies reasonable conservation practices that are not being utilized, the Director may consider that fact in future determination of need. This is not a static system, and as improvements either in technology or management practices that fall within reasonable costs are identified the Director may consider whether they have been implemented in making the decision of whether ground water pumpers should be curtailed.

XVII

THE RIGHT TO CARRYOVER STORAGE

1. The development of carryover storage was a response to the uncertainty when the flow of the Snake River was unregulated. The unregulated flow of the Snake River did not provide a reliable source of water for irrigators represented by SWC and other water users. Early runoff might well exceed the needs of irrigators and pass unused while later runoff was insufficient to meet crop needs. Reservoirs were developed to contain the water at times when it was not needed for irrigation, primarily the winter and early spring, and release it when most needed, principally July and August.

2. Some members are primarily dependent upon water held in storage, and their crop needs would seldom be met if they were dependent upon their natural flow rights. The Twin Falls Canal Company has a very early and large natural flow right which commands much of the natural flow of the Snake River. The North Side Canal Company has the same early priority to natural flow, but its early priority right is much smaller than that of the Twin Falls Canal Company. NSCC relies upon a very large storage right, as do other members of the Surface Water Coalition. All members of SWC hold storage water rights that are prior in time to the ground water rights held by IGWA.

3. Storage water rights are entitled to protection but are subject to defenses, as are the natural flow rights. Idaho Code section 42-607 does not classify storage water differently from natural flow. But for the reservoir system it would all be natural flow. Conjunctive

Management Rule 10.25 defines a water right as, "The legal right to divert and use or to protect in place the public waters of the state of Idaho where such right is evidenced by a decree, a permit or license issued by the Department, a beneficial or constitutional use right or a right based on federal law." In *American Falls Reservoir District No. 2 v. Idaho Department of Water Resources,* 143 Idaho 862, 880, 881, 154 P. 3d 433, 451,452 (2007), the Supreme Court stated the law:

> The district court's decision is based on the assumption that storage rights are property rights entitled to legal protection. *Washington County Irrigation Dist. v. Talboy,* 55 Idaho 382, 385, 43 P.2d 943, 945 (1935). In *Talboy*, this Court held that when water is stored, it becomes "the property of the appropriators ... impressed with the public trust to apply it to a beneficial use." *Id.* Importantly, *Talboy* did not address the issue of carryover. The Court has also held that if one appropriates water for a beneficial use, he has a valuable right entitled to protection. *Murray v. Public Utilities Comm'n,* 27 Idaho 603, 619, 150 P. 47, 50 (1915); *Bennett v. Twin Falls North Side Land & Water Co.* 27 Idaho 643, 651, 150 P. 336,339 (1915). Nevertheless, that property right is still subject to other requirements of the prior appropriation doctrine.

The former Director's description of storage water being supplemental in finding 72 of the May 2, 2005, Order can be misleading in appearing to minimize the significance of the storage rights. However, his explanation in testimony clarifies that this description relates to the order of use of natural flow and storage rights. That is, natural flow rights must be exercised before a call by a senior user can be made. The storage water rights are considered after the natural flow rights have been utilized. The storage water rights are protected and subject to defenses.

4. SWC members are entitled to carry over the entire amount of their contracted storage rights when there is sufficient water and curtailment is not sought. There has been some confusion caused by the Director's perceived limitation on carryover storage. The Director did not rewrite the contracts the irrigation districts have with BOR or interfere with the right to carryover storage water when available. The limitation only applies to an amount to be obtained from curtailment or mitigation water from the ground water users. If the irrigation district's needs for carryover can be met without curtailment, there will be zero carryover storage provided by curtailment or replacement. There is still a right to as much carryover as water supplies will provide within the limits of the contract. The perception that the Director determined some irrigation districts were not entitled to carryover storage is in error.

5. There is a right to reasonable carryover of storage water and there may be curtailment or a requirement of mitigation to meet that amount. IGWA and Pocatello have presented expert testimony and argument that there is no basis for curtailment when a surface water user has unused water in storage in the reservoirs. It is not an unreasonable argument and, if adopted, would simplify analysis in this case in light of the fact that in 2005, 2006, and 2007 the Coalition members had some positive balance in their storage accounts, though Twin Falls Canal Company's positive balance in the last year results from the rental of 40,000 acre-feet. The logic of the ground water users' position is that it is a question of timing and that it places the issue of curtailment or mitigation in the actual year of shortage, not in a prospective analysis that might never develop if there is sufficient water in storage to meet irrigation needs. However, the position advocated by IGWA and Pocatello runs contrary to the Conjunctive Management Rules, the decision of the Idaho Supreme Court, and the history defining the purposes of the elaborate BOR reservoir system. Conjunctive Management Rule 42.01.g. provides the following:

DETERMINING MATERIAL INJURY AND REASONABLENESS OF WATER DIVERSIONS (RULE 42).

Factors. Factors the Director may consider in determining whether the holders of water rights are suffering material injury and using water efficiently and without waste include, but are not limited to, the following:

> **g.** The extent to which the requirements of the holder of a senior-priority water right could be met with the user's existing facilities and water supplies by employing reasonable diversion and conveyance efficiency and conservation practices; provided, however, **the holder of a surface water storage right shall be entitled to maintain a reasonable amount of carry-over storage to assure water supplies for future dry years. In determining a reasonable amount of carry-over storage water, the Director shall consider the average annual rate of fill of storage reservoirs and the average annual carry-over for prior comparable water conditions and the projected water supply for the system.** (emphasis added).

The Supreme Court reviewed the law relative to carryover in *AFRD #2, p. 881,* distinguishing *Glavin v. Salmon River Canal Co.,* 44 Idaho 583, 258 P. 532 (1927), which "invalidated a rule adopted by a canal company that allowed an individual shareholder of the company to hold-over his allotted share of stored water free from limitations, which reduced the allocated amount of other shareholders." The Supreme Court noted that *Rayl v. Salmon River Canal Co.,* 66 Idaho 199, 157 P.2d 76 (1945), limited *Glavin* to the facts in that case. The Court

in *AFRD #2* stated a "recognition that it is permissible for the canal company to hold water over from one year to the next absent abuse." However that right has limitations:

> Concurrent with the right to use water in Idaho "first in time," is the obligation to put that water to beneficial use. To permit excessive carryover of stored water without regard to the need for it, would be in itself unconstitutional. The CM Rules are not facially unconstitutional in permitting some discretion in the Director to determine whether the carryover water is reasonably necessary for future needs. *Id.*

6. When calling for curtailment of junior ground water users there are limitations on the rights to carryover storage water from curtailment. AFRD # 2 establishes that there is a balance between the right to carryover storage water and limitations upon that right:

> At oral argument, one of the irrigation district attorneys candidly admitted that their position was that they should be permitted to fill their entire storage water right, regardless of whether there was any indication that it was necessary to fulfill current or future needs and even though the irrigation districts routinely sell or lease the water for uses unrelated to the original rights. This is simply not the law of Idaho. While the prior appropriation doctrine certainly gives pre-eminent rights to those who put water to beneficial use first in time, this is not an absolute rule without exception. As previously discussed, the Idaho Constitution and statutes do not permit waste and require water to be put to beneficial use or be lost. Somewhere between the absolute right to use a decreed water right and an obligation not to waste it and to protect the public's interest in this valuable commodity, lies an area for the exercise of discretion by the Director. This is certainly not unfettered discretion, nor is it discretion to be exercised without any oversight. That oversight is provided by the courts, and upon a properly developed record, this Court can determine whether that exercise of discretion is being properly carried out. For the purposes of this appeal, however, the CM Rules are not facially defective in providing some discretion in the Director to carry out this difficult and contentious task. This Court upholds the reasonable carryover provisions in the CM Rules. *AFRD # 2, p. 882*

7. The history of the development of the reservoir system, most recently Palisades, makes it clear that storage of water was a primary purpose to prevent disaster during periods of shortage as have been experienced in the recent past. The reservoir system tamed the river and contained runoff for a particular year so water could be used when needed. Irrigators could invest substantially in the development and improvement of delivery systems and crop planning knowing that water would be available.

8. The ground water pumping at issue in this case developed subsequent to the storage rights under consideration. Ground water users developed their rights against the

background of an existing system that was designed with storage as a primary purpose in coordination with the development of substantial surface irrigation systems dependent upon the storage water. The contractual rights to the storage water were in place when ground water pumpers entered the arena.

9. The amount of carryover storage is limited by the elusive concept of reasonableness, restricting curtailment to fulfilling the licensed or adjudicated purpose of the storage. In *AFRD # 2* the Supreme Court made it clear that there are standards of reasonableness that may limit the absolute right to fill storage rights completely if curtailment is required to do so. The Court specifically noted that some irrigation districts sell or lease storage water rights for purposes unrelated to the original right. *Id.* 882. The thrust of the Court's comment is that curtailment cannot be utilized to make up storage water that is disposed of in that process. Consequently, in determining the amount of carryover storage to which the irrigation districts are entitled when curtailment is ordered, the amount of water sold or leased for purposes outside the licensed or adjudicated right must not be considered in calculating a shortage. The ground water users have no obligation to make up for water that will not be applied to its licensed or adjudicated purpose, e.g. the sale of water for flow augmentation. If the water is sold to another irrigator who has a priority over the ground water users and is applied to a beneficial purpose within the licensed or adjudicated right, the ground water users would be liable for remediation to one surface water holder or the other if the necessity for rental arose out of ground water depletions. Also, a different question as to the requirement of the ground water users to provide flow augmentation would be presented if the requirement for augmentation were to arise from a mandate without compensation to the surface water users. Were that the case the ground water users would be subject to a contribution for their depletion of the river.

10. According to the May 2, 2005, Order the initial determination of carryover storage was to be made at the beginning of the irrigation season to project if there would be a shortage to be addressed by replacement water. The approach utilized by the former Director was that early in the irrigation year a determination would be made as to the amount of carryover storage to which the various surface water districts were entitled. The ground water users were obliged to contract to provide replacement water during the irrigation season or face curtailment in the event of shortages. The amount of replacement water was due in the current

irrigation season. Thereafter there would be adjustments depending on whether too much or too little storage water had been provided through the contractual agreements made by the ground water users. If the amount provided was insufficient the obligation would be carried over to the next year. The process of year end accounting would continue until a time when there was fill of the reservoirs which would erase the debits and credits. Tr., Vol. II, pp. 353-355.

11. Curtailment or mitigation to provide sufficient carryover storage for one year is reasonable. The multiple functions of BOR and the desire of SWC for long term insurance against adverse weather conditions are legitimate and consistent with the language of CM Rule 42.01.g. which refers to dry **years.** Nonetheless, attempting to curtail or to require replacement water sufficient to insure storage for periods of years rather than the forthcoming year presents too many problems and too great a likelihood for the waste of water to be acceptable. Curtailing to hold water for longer than a year runs a serious risk of being classified as hording, warned against by the Supreme Court in *AFRD #2.*

The climate is sometimes generous and sometimes stingy with precipitation, neither of which under the current state of science is predictable for anything more than relatively short terms. Anticipating more than the next season of need is closer to faith than science. Ordering curtailment to meet storage needs beyond the next year is almost certain to require ground water pumpers to give up valuable property rights or incur substantial financial obligations when no need would develop enough times to warrant such action.

12. There is no precise amount of reasonable carryover storage, but the amount should be sufficient to assure that if the following year is a year of water shortage there will be sufficient water in storage in addition to whatever natural flow rights exist to fully meet crop needs. When the reservoir system was developed long term planning anticipated a system that would provide insurance against water shortage for a period of years. As indicated,

requiring curtailment to reach beyond the next irrigation season involves too many variables and too great a likelihood of irrigation water being lost to irrigation use to be acceptable within the standards implied in *AFRD #2.* However, the element of storage as insurance against severely dry weather conditions remains a legitimate objective. SWC members have invested in major facilities to deliver water to irrigators based on an expectation that the storage system would achieve its purpose of providing water when needed when weather conditions are unkind.

13. The amount of carryover to be provided by curtailment or replacement has fallen short in instances of meeting the standard of reasonable carryover. In 2007 Twin Falls Canal Company would have ended with a negative balance in its carryover except for its prophylactic action of renting 40,000 acre-feet of water at a cost close to $850,000. Considering the much greater dependence of other members of SWC on storage water, cutting the margin close threatens the ability to meet crop needs. It also shifts the risk from junior water users to senior users. A conclusion of this recommendation is that the use of the year 1995 to establish the minimum full supply of water underestimated the amount of water necessary to meet the needs of SWC members within their water rights. This had the collateral effect of underestimating the amount of carryover storage that is reasonable to meet future crop needs.

14. Conjunctive Management Rule 42.01.g. sets some guidelines for determining "a reasonable amount of carry-over storage to assure water supplies for future dry years. In determining a reasonable amount of carry-over storage water, the Director shall consider the average annual rate of fill of storage reservoirs and the average annual carry-over for prior comparable water conditions and the projected water supply for the system." The steps this appears to anticipate is to first determine the average annual rate of fill of the storage reservoirs. This establishes the standard for carryover. The next step is to examine current water

conditions against prior comparable water conditions and project the water supply for the system. If that projection falls below the average annual rate, it would follow that the shortage attributable to ground water depletion should be made up by curtailment or replacement water. If the projection indicates the amount of fill will exceed the average annual rate, there would be no right to curtailment, even if that average annual rate falls below fill of the system.

The average rate of fill should be determined over a sufficient number of years to encompass wet and dry years. It would seem that this calculation should begin with the year in which Palisades was first fully operational. That would encompass the entire reservoir system as it now exists and include years when the effect of ground water pumping was minimal.

CM Rule 42.01.g. envisions evaluating the system as a whole to determine rates of fill and storage. This should establish a basis for the determination of reasonable carryover for the system. Within that system each SWC member has a right to reasonable carryover storage which must be allocated. Depending on priorities, some spaceholders will suffer no material injury from ground water pumping because their senior storage rights will fill and meet their needs, whereas others may suffer material injury because of their lesser priority. As noted earlier, the right to secure reasonable carryover storage through curtailment does not extend to make up for water that is sold or leased "for uses unrelated to the original rights." *AFRD #2, p. 882.*

XVIII

THE RIGHT TO ORDER REPLACEMENT WATER INSTEAD OF CURTAILMENT

1. **A replacement water plan should go through the procedural steps for approval of a mitigation plan.** The former Director has approved replacement water plans, allowing the ground water users to avoid curtailment. Conjunctive Management Rule 40.01.a. provides that the Director, acting through the watermaster may:

> Regulate the diversion and use of water in accordance with the priorities of rights of the various surface or ground water users whose rights are included within the district, provided that regulation of junior priority ground water diversion and use where the material injury is delayed or long range may, by order of the Director, be phased-in over not more than a five-year (5) period to lessen the economic impact of immediate and complete curtailment.

The process of phased in curtailment extends to a mitigation plan approved by the Director pursuant to CM Rule 40.01.b.

CM Rule 43 sets forth the process for consideration of a mitigation plan which allows out of priority pumping and avoids curtailment. The Rule requires notice and hearing for consideration of a mitigation plan:

> "Upon receipt of a proposed mitigation plan the Director will provide notice, hold a hearing as determined necessary, and consider the plan under the procedural provisions of Section 42-222, Idaho Code, in the same manner as applications to transfer water rights."

The replacement water plan approved by the former Director in the May 5, 2005, Order and Supplemental Orders is in effect a mitigation plan. However, it does not appear that the procedural steps for approving a mitigation plan were followed. The initial Order was entered in an emergency situation in which there was a call for administration in times of stress on the water supply. It was anticipated that there would be a protocol for the presentation of objections, but litigation over the validity of the Conjunctive Management Rules apparently sidetracked development of that process. At this stage of the proceedings there will be ongoing administration, and the procedural steps for a mitigation plan should be developed. In the absence of a pre-approved mitigation plan, after the Director has made a determination of material injury which would warrant curtailment, a mitigation plan for replacement water or other forms of mitigation may be considered in accordance with the procedural steps of CM Rule 43. If no plan is approved and there is a finding of material injury, curtailment must follow.

2. Replacement water has not been provided in the season of need. When a determination is made that surface water users are suffering material injury from ground water pumping, they are entitled to curtailment or replacement water in the season of material injury. The theory underlying predicting material injury and allowing replacement water as mitigation

instead of requiring curtailment is that the replacement water will be provided in time and in place in stages comparable to what would occur if curtailment were ordered.

3. Replacement water in season may occur either by IGWA obtaining lease water before the beginning of irrigation season and transferring the right to the water to the SWC members or underwriting the affected SWC members in their acquisition of the water as needed with a year end accounting. Either protocol supplies the water in season. Whichever process is adopted, it should be in place at the beginning of the time irrigation water will be applied to the fields so the effect will be the same as would result from curtailment. Notice of the process should be given to the affected parties in advance so objections may be heard and the procedural steps of CM Rule 43 applied.

XIX

THE CONCEPTS OF A "TOTAL WATER SUPPLY' AND "FULL HEADGATE DELIVERY"

1. Two elements to the Surface Water Coalition water rights must be considered – natural flow and storage rights. SWC challenges the Director's use of a "total water supply" analysis, combining natural flow rights and storage rights to determine if there was injury and a need for curtailment. SWC maintains that the Director compounded the error by analyzing the question of injury by use of the "full headgate delivery" analysis to reach the conclusion that if the combination of natural flow and storage water provided a full headgate of water there was no injury. According to SWC natural flow rights and storage should be addressed separately. The natural flow right may suffer injury from junior out of priority diversion, and the storage right may also suffer injury by the out of priority diversion. SWC argues that requiring the senior right holder to use storage water to make up the shortage of natural flow amounts to self-mitigation that damages the storage right. SWC is correct in the position that each element of their rights must be analyzed. However, if the damage to the "total water supply" is properly recognized, the harshness identified by SWC is ameliorated.

2. All SWC members rely upon a combination of natural flow and storage water to meet their needs. That is their total water supply. There is an accounting process that takes place in the management of the water assigning portions to natural flow and storage. Water

comes and is used. It may be from natural flow, as all water would be if there were not reservoirs, or it may be storage. The source of the water is not significant to the crop. It is significant to accounting and allocating rights.

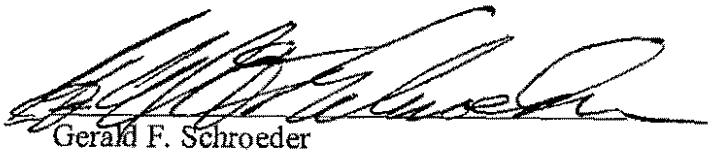
3. In analyzing a total water supply to determine if there is material injury each element of the water rights should be considered and proper recognition is given to the right to carryover storage – there may be material injury to the right of reasonable carryover storage if the provision of full headgate delivery exhausts what would otherwise be the reasonable carryover storage amount. The first step in deciding if there is material injury should be to determine how much a surface water user's natural flow right has been diminished by junior ground water pumping. Evidence indicates that there has been a long term trend of declining natural flow water, causing the members of SWC to begin the use of storage water earlier and to a greater extent. The diminution of natural flow results in a reduction of the storage water right by the amount of water withdrawn from storage to meet the need that could not be met by the natural flow right as a consequence of ground water pumping. All SWC members are entitled to reasonable carryover storage. If depletion of the storage right to make up the loss of natural flow reduces the amount of carryover storage below the level of reasonable carryover there is **material** injury and that amount must be made up through curtailment or replacement, or another form of mitigation.

4. If crop needs are met by the combined use of natural flow and storage water and there is sufficient water for reasonable carryover, there is no material injury. This assumes that crop needs are fully met. Curtailment, however, only extends to providing the amount of water necessary to replace ground water depletions to reasonable carryover storage.

CONCLUSION

This opinion constitutes the findings of fact and conclusions of law and recommendations resulting from the hearing on the Surface Water Coalition call and the objections that have been made by the parties to the Orders that have been entered in the aftermath of that call. The format is intended for the ease of tracking the issues discussed. The context of the sections should make it clear what determinations are findings of fact and which are conclusions of law.

Dated 29, April, 2008.



Gerald F. Schroeder
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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 24th day of April, 2008, the above and foregoing, was served by the method indicated below, and addressed to the following:

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