

Exhibit 9

Procedure for River Carriage (Conveyance) Losses

Exhibit A: Source of the Values of the River Carriage Losses

Exhibit B: Distribution of River Carriage Losses

Procedure for River Carriage (Conveyance) Losses

1. Background

As a result of the Final Settlement Stipulation, the parties agreed to changes to the river carriage loss provisions of Article V of the 1945 Decree, as modified in 1953. The parties have agreed that such losses can be removed from Article V and instead placed in this procedure.

The river carriage losses and methods described below shall be used by the NPDC in its operating procedures for the annual accounting of natural flow and storage water. The NPDC may consider and approve modifications to the following loss values and methods.

2. River Carriage (Conveyance) Losses

Unless and until the NPDC agrees otherwise, daily carriage losses in second-feet for various sections of the river shall be administered as shown in the following table:

<u>River Section</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>
Alcova to Glendo Reservoir	50	77	97	89	50
Guernsey Reservoir to Whalen	2	4	5	4	2
Whalen Div. to State Line	10	19	21	17	9
State Line to Minatare Gage	8	12	13	11	6
Minatare Gage to Bridgeport Gage	8	11	12	10	7
Bridgeport Gage to Lisco Gage	12	16	18	14	10
Lisco Gage to Lewellen Gage	12	16	18	15	10

Attached to this procedure is Exhibit A, which sets forth the source of the values of the above river carriage losses.

The above table does not contain computed losses for the section of river from Glendo Dam to the head of Guernsey Reservoir (area 680 acres) because this area is less than the submerged area of the original river bed (940 acres) in Glendo Reservoir and is, therefore, considered as off-set.

The above table does not contain computed losses for the section of river from Pathfinder Dam to the head of Alcova Reservoir (area 170 acres) because this area is less than the submerged area of the original river bed in Alcova Reservoir and is, therefore, considered as off-set.

Likewise, the area between Seminoe Dam and the head of Pathfinder Reservoir is less than the area of original river bed through Pathfinder Reservoir and is, therefore,

considered as off-set.

3. Distribution of Losses

In the Alcova Dam to Whalen Diversion Dam section of the river, the distribution of carriage loss will be based on the proportion of storage water and natural flow to total flow calculated at the upstream end of each section, unless the NPDC agrees otherwise.

In the Whalen Diversion Dam to State Line gage section of the river, the method to be used to distribute the carriage losses will be based on the proportions of natural flow and storage water to total flow at the ends of the section. The average proportion for the section will be determined by using the mean ratio for the ends of the section as described in Exhibit B. This method will be used unless the NPDC agrees otherwise.

In the State Line to Lewellen gage sections of the river, the method to be used to distribute the carriage losses will be based on the proportions of natural flow and storage water in the section to the total flow in the section as described in Exhibit B. Once natural flow and storage water are delivered to the State Line, Nebraska will have the responsibility for delivering the water to the Tri-State Canal and other contractors below the state line gage in accordance with the Modified Decree. The ratio of storage water in the section will be determined by dividing the amount of storage water at the upper end of the reach by either the sum of all the measured inflows to the reach or the sum of all the measured outflows from the reach, whichever is larger. The ratio of natural flow in the reach will be determined by subtracting the ratio of storage water in the reach from one. This method will be used unless the NPDC agrees otherwise.

SOURCE OF THE VALUES OF THE RIVER CARRIAGE LOSSES

In 1989, the States of Wyoming and Nebraska and the U.S. Bureau of Reclamation contracted with Bishop and Brogden, Inc. (BB)¹, to ascertain the conveyance losses. The BB report accounted for conveyance losses by estimating monthly evaporation and evapotranspiration losses for each section of the river. The accuracy of the evaporation loss estimates was acceptable to Nebraska, Wyoming and the U.S Bureau of Reclamation. However, there was no agreement among the parties on the validity of the estimates of the remaining conveyance losses. The dispute was settled by a compromise in which the parties agreed to accept the consultant's estimates of evaporation losses for each section of the river and a certain percentage of the consultant's estimated evapotranspiration losses. For the sections between Alcova Reservoir and Whalen Dam, the parties agreed to assess an additional 62.5 percent of the estimated evapotranspiration losses. Between Whalen Dam and the state line, 10 percent of the estimated evapotranspiration losses was added to the evaporation losses.

To fully resolve all differences, carriage loss values were also carried further downstream, between the Wyoming-Nebraska state-line and Lewellen. These monthly values result from river channel water surface estimates made from aerial photographs and from pan evaporation records for nearby National Weather Service stations plus a component for

¹Bishop-Brogden Associates, Inc. Determination of Present-Day Conveyance Losses. North Platte River, Alcova Reservoir to the Nebraska-Wyoming State Line. June 1990.

"additional losses". To represent field conditions, the pan evaporation was reduced 30 percent. Finally, each value was rounded to the nearest whole unit.

The conveyance losses assigned to each section are shown in Table 1.

Table I. Stipulated Carriage Losses Alcova Reservoir to Lewellen

	<u>May</u>		
	Evaporation Losses	Stipulated Additional Losses	Total Conveyance Loss
Alcova Reservoir to Glendo Reservoir	36	14	50
Guernsey Reservoir to Whalen Dam	2	0	2
Whalen Dam to State Line	6	4	10
State Line to Minature Gage	6	2	8
Minature Gage to Bridgeport Gage	6	2	8
Bridgeport Gage to Lisco Gage	10	2	12
Lisco Gage to Lewellen Gage	10	2	12

* Evaporation losses calculated by Bishop-Brogden for Alcova Reservoir to Tri-State Dam calculated by Nebraska Department of Water Resources from Tri-State Dam to Lewellen.

** "Additional losses" includes, among other losses, a consideration of evapotranspiration.

[Table I. (cont.)]

	<u>June</u>		
	Evaporation Losses	Stipulated Additional Losses	Total Conveyance Loss
Alcova Reservoir to Glendo Reservoir	46	31	77
Guernsey Reservoir to Whalen Dam	4	0	4
Whalen Dam to State Line	12	7	19
State Line to Minatare Gage	7	5	12
Minature Gage to Bridgeport Gage	7	4	11
Bridgeport Gage to Lisco Gage	12	4	16
Lisco Gage to Lewellen Gage	12	4	16

* Evaporation losses calculated by Bishop-Brogden for Alcova Reservoir to Tri-State Dam calculated by Nebraska Department of Water Resources from Tri-State Dam to Lewellan.

** "Additional losses" includes, among other losses, a consideration of evapotranspiration.

[Table I. (cont.)]

	<u>July</u>		
	Evaporation Losses	Stipulated Additional Losses	Total Conveyance Loss
Alcova Reservoir to Glendo Reservoir	51	46	97
Guernsey Reservoir to Whalen Dam	5	0	5
Whalen Dam to State Line	13	8	21
State Line to Minatare Gage	7	6	13
Minature Gage to Bridgeport Gage	8	4	12
Bridgeport Gage to Lisco Gage	13	4.7	18
Lisco Gage to Lewellen Gage	13	5	18

* Evaporation losses calculated by Bishop-Brogden for Alcova Reservoir to Tri-State Dam calculated by Nebraska Department of Water Resources from Tri-State Dam to Lewellan.

** "Additional losses" includes, among other losses, a consideration of evapotranspiration

[Table I. (cont.)]

	<u>August</u>		
	Evaporation Losses	Stipulated Additional Losses	Total Conveyance Loss
Alcova Reservoir to Glendo Reservoir	46	43	89
Guernsey Reservoir to Whalen Dam	4	0	4
Whalen Dam to State Line	10	7	17
State Line to Minatare Gage	6	4.6	11
Minature Gage to Bridgeport Gage	6	4	10
Bridgeport Gage to Lisco Gage	11	3	14
Lisco Gage to Lewellen Gage	11	4	15

* Evaporation losses calculated by Bishop-Brogden for Alcova Reservoir to Tri-State Dam calculated by Nebraska Department of Water Resources from Tri-State Dam to Lewellan.

** "Additional losses" includes, among other losses, a consideration of evapotranspiration

[Table I. (cont.)]

	<u>September</u>		
	Evaporation Losses	Stipulated Additional	Total Conveyance Loss
Alcova Reservoir to Glendo Reservoir	34	16	50
Guernsey Reservoir to Whalen Dam	2	0	2
Whalen Dam to State Line	6	3	9
State Line to Minatare Gage	4	2	6
Minature Gage to Bridgeport Gage	5	2	7
Bridgeport Gage to Lisco Gage	8	2	10
Lisco Gage to Lewellen Gage	8	2	10

* Evaporation losses calculated by Bishop-Brogden for Alcova Reservoir to Tri-State Dam calculated by Nebraska Department of Water Resources from Tr-State Dam to Lewellan.

** "Additional losses" includes, among other losses, a consideration of evapotranspiration

DISTRIBUTION OF RIVER CARRIAGE LOSSES

Whalen to State Line Section

The loss to storage between Whalen and the State line will be the previous day's ratio of storage water in the Whalen to State Line section times the daily conveyance loss for the section. A one day time lag is assumed from Whalen to the State Line. The ratio of storage in the Whalen to State Line section is computed as the average of the proportion of storage passing Whalen to total flow passing Whalen one day previous and the proportion of storage at the State Line to total flow at the State Line. This ratio in the section is used to determine the loss to storage between Whalen and the State Line the following day. Storage passing Whalen is the storage at Whalen minus the storage diversions into the canals which divert at Whalen Dam. Storage at the State Line is the storage passing Whalen minus the loss from Whalen to the State Line and minus all diversions of storage by contractors diverting below Whalen and above the State line.

Sections Downstream of the State Line

The ratio of storage water in the section will be determined by dividing the amount of storage water at the upper end of the reach by either the sum of all the measured inflows to the reach or the sum of the measured outflows from the reach, whichever is larger. The ratio of natural flow in the reach will be determine

by subtracting the ratio of storage water in the reach from one.

A one day lag time is required for the accounting for natural flow and storage in each reach below the State Line. In the Whalen to the Wyoming-Nebraska state-line section, the proportion of natural flow and storage passing the State Line gage will not be determined until two days after the flows have passed the gage. In order to permit water administration with no more than a one-day delay, Nebraska will use the amount of storage ordered to be delivered at the state line on a given day in its calculations. If after the final accounting for storage deliveries in the Whalen to the Wyoming-Nebraska state-line section, it is determined the amount of storage water at the State Line gage was less than was assumed to be present by more than 5%, the accounting for each section of the river below Minatare will be adjusted accordingly.