

July 9, 2004, Revised Draft – Navajo Nation Water Rights Settlement

Disclaimer. This document is a product of New Mexico Interstate Stream Commission staff only and is not a settlement document. It is expressly understood that the governing bodies or authorities of the proposed signatories have not approved the revised draft settlement agreement, including the revised draft partial final decree, revised draft settlement act and revised draft settlement contract. New Mexico Interstate Stream Commission staff also prepared the revised draft executive summary of the proposed settlement and the draft responses to public comments received on the December 5, 2003, discussion draft of the settlement.

MEMORANDUM

July 9, 2004

To: Philip Mutz, Upper Colorado River Commissioner for New Mexico
From: John Whipple, Staff Engineer, Interstate Stream Commission
Subject: Revised Upper Colorado River Basin Depletion Schedule for New Mexico

For Congress to approve the Settlement Contract between the United States and the Navajo Nation that is proposed as Appendix 3 to the San Juan River Basin in New Mexico Navajo Nation Water Rights Settlement Agreement, the Secretary of the Interior pursuant to Public Law 87-483 will need to make a determination that sufficient water is reasonably likely to be available under the apportionments made by the Upper Colorado River Basin Compact for the Navajo Nation's uses in New Mexico under the Navajo-Gallup Water Supply Project. New Mexico State Engineer Thomas Turney via letter to Rick Gold dated February 19, 2002, transmitted to the Bureau of Reclamation a schedule of anticipated depletions in the San Juan River Basin in New Mexico, dated February 2002, that indicated that sufficient water would be available through the year 2060 to service the existing and authorized uses in New Mexico and the Navajo-Gallup Water Supply Project. The New Mexico Interstate Stream Commission staff has prepared a revised depletion schedule that incorporates minor adjustments to the February 2002 schedule for Navajo Nation uses pursuant to the proposed San Juan River Basin in New Mexico Navajo Nation Water Rights Settlement Agreement. The revised depletion schedule indicates that under the Settlement Agreement, sufficient water would be available to service the Settlement

Contract. The revised depletion schedule is to be provided to the Bureau of Reclamation for the Secretary's consideration pursuant to subparagraph 5.1 of the Settlement Agreement, and would be subject to further minor adjustments as may be appropriate.

The depletion schedule shows anticipated average annual depletions over time for use for planning purposes only. The schedule is not a tabulation or determination of water rights and is not binding on any party with respect to how a party may use its water rights. The anticipated depletions are based on reasonable assumptions of use within the water rights for Navajo Nation and non-Navajo uses in the Basin. For example, it is anticipated that, on average, about 5 percent of the acreage within large irrigation projects such as the Navajo Indian Irrigation Project and the Hogback-Cudei Irrigation Project will be fallow. Similarly, it is anticipated that the non-Indian irrigators will not irrigate every water right acre each year and will not deplete water in excess of the historic irrigation use. To use the full water right acreage to determine average annual depletions would guarantee that some of New Mexico's Upper Basin apportionment would remain unused by New Mexico. In some instances, most notably in the Animas River valley, current irrigation use is significantly less than the historic irrigation use. With the exception of the Bureau of Reclamation's Hammond Irrigation Project, the non-Indian irrigation depletions shown in the depletion schedule are based on the historic peak of the amount of acreage irrigated in a year within the specified areas or projects, which peak generally occurred about 1965. No attempt is made in the depletion schedule to reflect transfers of water rights from irrigation to municipal and industrial uses from 1965 to the present or into the future because to do so would not change the total anticipated depletion in the Upper Basin in New Mexico, and no attempt is made to speculate as to how much water rights may be determined in the San Juan River Adjudication to be forfeited or abandoned for non-use. Also, while over 60 years of hydrologic data indicate that the San Juan-Chama Project over the long-term physically will be able to divert an average of about 107,500 acre-feet per

year, the Project during any given ten-year period may divert up to 135,000 acre-feet per year under the Project authorization in Public Law 87-483 depending upon availability of water. For these reasons, the total amount of water rights in the San Juan River Basin in New Mexico exceeds the total amount of anticipated average annual depletions shown in the depletion schedule, and the actual depletions in the Basin in 1990 and 2000 were less than the nominal current depletions shown in the schedule.

Pursuant to the proposal to source the reserved rights for Navajo Nation uses on the Navajo Indian Irrigation Project under New Mexico State Engineer File No. 2849 and to source the rights for Navajo Nation uses on the Navajo-Gallup Water Supply Project under State Engineer File Nos. 2849 and 3215, the Navajo Nation would share in shortages in the Navajo Reservoir water supply with the San Juan-Chama Project, the Jicarilla Apache Nation, the Hammond Irrigation Project and other contractors. Pursuant to the proposal to source the reserved rights for Navajo Nation uses on the Animas-La Plata Project under New Mexico State Engineer File No. 2883, the Navajo Nation would share in shortages in the Project water supply with the San Juan Water Commission and other Project contractors. Senior direct flow water rights in the San Juan River Basin, including irrigation rights for Navajo and non-Navajo ditches on the San Juan River and its tributaries, would retain their rights in a priority administration of the river system and not share shortages. However, pursuant to subparagraph 9.2 of the Settlement Agreement, the Navajo Nation would not call for a priority administration of the river system to supply the Hogback-Cudei and Fruitland-Cambridge irrigation projects; rather, when the available direct flow is insufficient to satisfy senior direct flow water rights in the Basin, the Nation would provide an alternate water supply for the two projects from the water delivery rights for the Navajo Indian Irrigation Project under the Settlement Contract. The anticipated depletion amounts for the Hogback-Cudei and Fruitland-Cambridge irrigation projects include depletions that would be accounted against the Navajo Indian Irrigation Project rights as a result of the alternate water source

provisions of subparagraph 9.2 of the Settlement Agreement. Although there are limits to the amount of water to be supplied under subparagraph 9.2 of the Settlement Agreement, the anticipated depletions for both Navajo and non-Navajo irrigation uses, and for other uses, on the San Juan River and on the Animas River do not include reductions for shortages that may still occur during times of administration of direct flow priorities.

The depletion schedules for the Upper Basin States have been developed only to project future uses to facilitate planning for future development of the water resources available to the Upper Basin States. The depletion schedules do not provide a definitive accounting of use under the Upper Colorado River Basin Compact apportionments. In the Hydrologic Determination approved by the Secretary of the Interior on February 2, 1989, the Bureau of Reclamation determined that the yield available to the Upper Basin States under the apportionment of water to the Upper Basin by Article III of the Colorado River Compact is at least 6.0 million acre-feet of water annually based on a minimum objective release of 8.23 million acre-feet per year from Glen Canyon Dam. The Upper Colorado River Commission disagrees with the assumption of a minimum release of 8.23 million acre-feet per year from Glen Canyon Dam, but the Commission does not object to the determination. The depletion schedule shows the State of New Mexico's share of 6.0 million acre-feet minimum yield available to the Upper Basin to be about 669,400 acre-feet of consumptive use annually. If in the future it is determined that the yield available to the Upper Basin States exceeds 6.0 million acre-feet of water annually and an additional allocation of water can be made available for use within the State of New Mexico's Upper Colorado River Basin Compact apportionment, then additional Navajo and non-Navajo uses can be projected or scheduled consistent with subparagraph 8.2 of the Settlement Agreement. On the other hand, if in the future it is determined that actual uses in New Mexico exceed its Upper Basin apportionment, the New Mexico State Engineer is vested with the authority to determine curtailments of junior water uses in

New Mexico as necessary to comply with the Colorado River and Upper Colorado River Basin compacts.

The depletion schedule does not reflect salvage by use. The apportionments made by the Upper Colorado River Basin Compact to the Upper Basin States are of the flow available to the Upper Basin at Lee Ferry under Article III of the Colorado River Compact. When a use of water is made in the Upper Basin, the depletion of the flow at Lee Ferry is less than the depletion of the flow at the place of use because a portion of the streamflow used would have been lost to evaporation or evapotranspiration had the water remained in the stream channels. The savings in river channel loss above Lee Ferry resulting from putting the water to use in the Upper Basin constitutes salvage by use. In particular, uses of water in intermittent tributary drainages, such as in the Chaco River drainage in New Mexico, do not result in an equivalent reduction in flow of the San Juan River. Further, uses of ground water from non-tributary aquifers, and uses of tributary ground water at locations that are far removed from perennial streams in the San Juan River Basin, do not deplete stream flow of the San Juan River by the amount of use. The Upper Colorado River Commission has not made determinations of salvage by use, and has not made determinations as to methodologies for accounting certain consumptive uses such as irrigation depletions or ground water uses. No such determinations have been considered because the Upper Basin States have not approached full development of the Upper Basin apportionment. Nevertheless, the effects of salvaged channel losses on man-made depletions of the flow at Lee Ferry by Upper Basin States were presented in the November 29, 1948, Final Report of the Engineering Advisory Committee to the Upper Colorado River Compact Commission, and Tipton and Kalmbach in 1965 prepared a report for the Upper Colorado River Commission on water supplies available for use by the Upper Division States that included the Department of the Interior's July 1965 projections of depletions at Lee Ferry that

were reduced for salvage estimated to be 4 percent of at-site depletions by projects in the Upper Basin. Only depletions of flow at Lee Ferry are chargeable against a state's Upper Basin apportionment.

Considering uncertainties in future uses and determinations, the revised depletion schedule is a reasonable projection of future development and use of the State of New Mexico's Upper Basin apportionment, and it indicates that sufficient water is reasonably likely to be available under the apportionment for the Navajo Nation's uses in New Mexico under the Settlement Contract.

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STATE OF NEW MEXICO SCHEDULE OF ANTICIPATED UPPER BASIN DEPLETIONS
(Units: 1000 acre-feet per year)

Year	1990	2000	2010	2020	2030	2040	2050	2060
CURRENT DEPLETIONS (1)								
Agricultural - Irrigation & Stock Use:								
Navajo Irrigation:								
Navajo Indian Irrigation Project (NIIP)	149.4	149.4	149.4	149.4	149.4	149.4	149.4	149.4
Fruitland-Cambridge Irrig. Project	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
Hogback-Cudei Irrigation Project	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
Chaco River drainage irrigation	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Crystal area irrigation	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Navajo Irrigation Subtotal	173.4	173.4	173.4	173.4	173.4	173.4	173.4	173.4
Non-Indian Irrigation:								
Above Navajo Dam (inc. Jicarilla)	1.3	1.3	1.3	1.3	1.7	1.7	1.7	1.7
Upper San Juan (exc. Hammond)	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
Hammond Irrigation Project	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
Animas River ditches	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7
La Plata River ditches	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Farmers Mutual Ditch	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
Jewett Valley Ditch	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Chaco River drainage irrigation	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Non-Indian Irrigation Subtotal	67.8	67.8	67.8	67.8	68.2	68.2	68.2	68.2
Stockpond Evaporation and Stock Use	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Agricultural - Irrigation & Stock Total	245.5	245.5	245.5	245.5	245.9	245.9	245.9	245.9
Municipal and Domestic Uses:								
Municipal and Industrial	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7
Scattered Rural Domestic (inc. Jicarilla)	1.0	1.0	1.0	1.0	1.1	1.1	1.2	1.2
Municipal and Domestic Total	10.7	10.7	10.7	10.7	10.8	10.8	10.9	10.9
Power and Industrial Uses:								
PNM - Navajo Reservoir contract (2)	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
BHP Billiton (3)	37.0	37.0	37.0	38.0	39.0	39.0	39.0	39.0
Bloomfield Industrial	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Power and Industrial Total	55.7	55.7	55.7	56.7	57.7	57.7	57.7	57.7
Export - San Juan-Chama Project	107.5	107.5	107.5	107.5	107.5	107.5	107.5	107.5
Reservoir Evaporation:								
Navajo Reservoir Evaporation (4)	28.3	28.3	27.0	26.5	26.5	26.5	26.5	26.5
Small Reservoir Evaporation	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Reservoir Evaporation Total	29.5	29.5	28.2	27.7	27.7	27.7	27.7	27.7
TOTAL CURRENT DEPLETIONS	448.9	448.9	447.6	448.1	449.6	449.6	449.7	449.7
ANTICIPATED DEPLETIONS								
Agricultural - Irrigation & Stock Uses:								
NIIP Completion (5)	0.0	0.0	65.0	100.0	107.1	107.1	107.1	107.1
Fruitland/Hogback Rehabilitation	0.0	0.0	0.0	7.2	7.2	7.2	7.2	7.2
Agricultural - Irrigation & Stock Total	0.0	0.0	65.0	107.2	114.3	114.3	114.3	114.3
Municipal and Domestic Uses:								
Animas-La Plata Project:								
San Juan Water Commission (6)	0.0	1.0	10.4	10.4	10.4	10.4	10.4	10.4
Navajo Nation	0.0	0.0	1.0	2.0	2.3	2.3	2.3	2.3
La Plata Conservancy District	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8
Ridges Basin Res. Evap. - NM share	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
Animas-La Plata Project Subtotal	0.0	1.0	11.4	13.3	13.6	13.6	13.6	13.6
Jicarilla Apache Nation	0.0	0.0	0.0	0.0	0.4	0.6	0.6	0.6
Municipal and Domestic Total	0.0	1.0	11.4	13.3	14.0	14.2	14.2	14.2
TOTAL ANTICIPATED DEPLETIONS	0.0	1.0	76.4	120.5	128.3	128.5	128.5	128.5

Year	1990	2000	2010	2020	2030	2040	2050	2060
POTENTIAL DEPLETIONS								
Municipal and Domestic Uses:								
Navajo-Gallup Water Supply Project:								
Navajo Nation	0.0	0.0	0.0	7.9	10.2	12.5	12.5	12.5
Jicarilla Apache Nation	0.0	0.0	0.0	0.8	1.0	1.2	1.2	1.2
Navajo-Gallup Project Subtotal	0.0	0.0	0.0	8.7	11.2	13.7	13.7	13.7
Navajo Nation	0.0	0.0	0.0	1.0	1.0	2.0	2.0	2.0
Municipal and Domestic Total	0.0	0.0	0.0	9.7	12.2	15.7	15.7	15.7
Power and Industrial Uses:								
Navajo-Gallup Project - NAPI (7)	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7
Small Navajo Res. Contracts	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Power and Industrial Total	0.0	0.0	0.1	0.8	0.8	0.8	0.8	0.8
Export - Navajo-Gallup Project:								
Navajo Nation in New Mexico (8)	0.0	0.0	0.0	4.0	5.8	7.6	7.6	7.6
City of Gallup (9)	0.0	0.0	0.0	4.7	6.1	7.5	7.5	7.5
Export Total	0.0	0.0	0.0	8.7	11.9	15.1	15.1	15.1
TOTAL POTENTIAL DEPLETIONS	0.0	0.0	0.1	19.2	24.9	31.6	31.6	31.6
TOTAL NEW MEXICO DEPLETIONS (10)	448.9	449.9	524.1	587.8	602.8	609.7	609.8	609.8
Evaporation - CRSP Storage Units (11)	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0
TOTAL DEPLETIONS	506.9	507.9	582.1	645.8	660.8	667.7	667.8	667.8
State Share of 6.0 MAF (12)	669.4	669.4	669.4	669.4	669.4	669.4	669.4	669.4
Remaining Available (12,13)	162.5	161.5	87.3	23.6	8.6	1.7	1.6	1.6
Percent of State Share Remaining	24.3%	24.1%	13.0%	3.5%	1.3%	0.3%	0.2%	0.2%

NOTES:

- (1) Does not reflect post-1965 transfers from irrigation to municipal and industrial uses. 800 acre-feet of current non-Indian depletions are supplied through short-term leases from the Jicarilla Apache Nation as of 2003.
- (2) Public Service Company of New Mexico (PNM) contract with the Secretary expires 2005; PNM subcontract with Jicarilla Apache Nation effective 2006-2027, with commitment to negotiate in 2022 for a subcontract extension.
- (3) Includes uses under New Mexico State Engineer File No. 2838 at the Four Corners Power Plant, the San Juan Generating Station, and related mines.
- (4) Up to a few hundred acre-feet of Navajo Reservoir evaporation may be allocated or charged to Arizona's Upper Basin apportionment depending on the extent to which reservoir storage is used to service the portion of the Navajo-Gallup Water Supply Project uses that are in Arizona.
- (5) Total Navajo Indian Irrigation Project (NIIP) depletion by 2030 is 256,500 acre-feet, assuming 5% average fallow acreage. This amount does not include the depletions on the Hogback-Cudei and Fruitland-Cambridge irrigation projects that would be accounted against the NIIP depletion right pursuant to the alternate water source provisions of subparagraph 9.2 of the Settlement Agreement.
- (6) San Juan Water Commission member entities in 2000 used 1,000 acre-feet from the Animas River under Animas La-Plata Project permits.
- (7) 700 acre-feet of water from the Navajo-Gallup Water Supply Project would be used by the Navajo Agricultural Products Industry for food processing. This is an agricultural/industrial use.
- (8) This depletion schedule includes uses in New Mexico only and excludes exports by the Navajo-Gallup Project for Navajo Nation uses in Arizona.
- (9) The exports by the Navajo-Gallup Project to the City of Gallup are anticipated to be supplied through a subcontract with the Jicarilla Apache Nation. To the extent that Gallup's actual demand is less than 7,500 acre-feet, the Jicarilla Apache Nation could use its water for irrigation or other uses.
- (10) This is a schedule of anticipated depletions for planning purposes only. It is not a tabulation or determination of water rights or actual uses.
- (11) "Evaporation - CRSP Storage Units" refers to the total and individual States' portions of evaporation from the major reservoirs constructed under the Colorado River Storage Project Act that are used principally to regulate compact deliveries at Lee Ferry. These include Flaming Gorge, Curecanti and Glen Canyon, but exclude Navajo which is used principally for storing water for use in New Mexico. 58,000 acre-feet is New Mexico's portion.
- (12) This depletion schedule does not attempt to interpret the Colorado River Compact, the Upper Colorado River Basin Compact, or any other element of the "Law of the River." This schedule should not be construed as an acceptance of any assumption that limits the Upper Colorado River Basin's depletion. In this schedule, for planning purposes only, the total Upper Colorado River Basin Allocation is 6.0 million acre-feet, of which 50,000 acre-feet is the Upper Basin allocation to Arizona. This estimate does not constitute an endorsement of the Bureau of Reclamation's 1988 Hydrologic Determination that was approved by the Secretary of the Interior on February 2, 1989. This estimate also does not include salvage by use.
- (13) Reserved.