

**Required Information for Verification Procedure
for the 2020 State Line Delivery Pilot Reservoir Release
Final Report
December 2, 2021**

The following is a final update and summary of information provided by Aurora Water, Colorado Springs Utilities, and Pueblo Water (the Cities) as required by Sections 4.5.1.2 and 4.5.1.3 of the Protocol for Administration of the State Line Delivery Pilot Reservoir Release. This information details the ability of the Cities to take delivery of Homestake water that was released in the Pilot Release and verifies that the amount of water the Cities delivered to East Slope storage from Homestake Reservoir in 2021 did not exceed the amount previously proposed, and that Homestake Reservoir operations met the requirements of the Protocol for Administration of the State Line Delivery Pilot Reservoir Release (Protocol) provided by your office on August 26, 2020. Our proposed verification procedure dated November 20, 2020 and revised initial verification report of February 8, 2021 are included for reference.

Section 4.5.1 of the Protocol outlines requirements for reservoir accounting, fill status and diversion records and requires the Cities provide evidence that the water released from Homestake Reservoir would have been taken to the East Slope over the months prior to the 2021 fill season “But For” the operation of the Pilot Release.

Section 4.5.1.2 *Current and forecasted East Slope storage levels for the Cities demonstrating ability to take and use the water stored in Homestake Reservoir.*

East Slope Storage Available for Homestake Water
values in acre-feet

	Turquoise Reservoir - HS Account				
	Tunnel Inflows	Otero Pumping	Other Transfer	Evap	EOM Storage (30 KAF max)
May-20	5,081	1,118	0	313	30,000
Jun-20	176	0	-162	363	29,650
Jul-20	0	0	0	331	29,319
Aug-20	141	0	130	326	29,264
Sep-20	0	0	0	270	28,994
Oct-20	0	0	0	205	28,789
Nov-20	0	5,040	0	92	23,657
Dec-20	0	10,130	0	36	13,491
Jan-21	0	8,166	0	16	5,310
Feb-21	16,200	4,165	0	15	17,330
Mar-21	13,890	1,155	0	65	30,000
Apr-21	0	0	0	170	29,830
May-21	0	0	0	313	29,517
Jun-21	0	0	0	363	29,154
Jul-21	0	0	0	331	28,822
Aug-21	0	0	0	326	28,496

This table was provided in February 8 report and demonstrates the projected operations and volume of tunnel inflows that would have resulted in filling the Homestake account in Turquoise Reservoir prior to

the start of runoff had they not been limited by the terms of the Pilot Release, setting the parameters by which the Cities estimated their tunnel deliveries absent Reservoir Release in the response to Section 4.5.1.3. The following table shows actual Turquoise – Homestake operations with the reduced tunnel deliveries in February and March of 2021 and confirms that there was adequate space to store the 1,667 acre-feet of Pilot Release water on the East Slope after the tunnel deliveries.

Actual East Slope Storage Available for Homestake Water
values in acre-feet

	Turquoise Reservoir - HS Account				
	Tunnel Inflows	Otero Pumping	Other Transfer	Evap	EOM Storage (30 KAF max)
May-20	5,081	1,118	0	313	30,000
Jun-20	176	0	-162	363	29,650
Jul-20	0	0	0	331	29,319
Aug-20	141	0	130	326	29,264
Sep-20	0	0	0	270	28,994
Oct-20	0	0	0	205	28,789
Nov-20	0	5,040	0	92	23,657
Dec-20	0	10,130	0	36	13,491
Jan-21	0	8,166	0	16	5,310
Feb-21	16,513	4,165	0	21	17,637
Mar-21	11,229	1,636	0	86	27,143
Apr-21	0	0	0	170	26,973
May-21	0	2,678	0	190	24,105
Jun-21	0	298	1,000	259	24,549
Jul-21	0	0	0	245	24,303
Aug-21	0	0	0	291	24,012
Sep-21	0	0	0	229	23,783
Oct-21	0	0	0	162	23,621

Section 4.5.1.3 *Estimated tunnel deliveries (absent Reservoir Release), Reservoir Release amount, and net estimated tunnel deliveries.*

Table A
Expected Homestake Operations Absent Pilot Project
 values in acre-feet

	Homestake Res EOM Storage <i>(42.6 KAF max)</i>	West Slope DMP Pilot Release	Homestake Tunnel Deliveries
May-20	29,244	0	5,080
Jun-20	42,309	0	180
Jul-20	42,587	0	0
Aug-20	42,376	0	140
Sep-20	40,612	0	0
Oct-20	40,376	0	0
Nov-20	40,307	0	0
Dec-20	40,294	0	0
Jan-21	40,261	0	0
Feb-21	24,061	0	16,200
Mar-21	10,171	0	13,890
Apr-21	14,270	0	0
May-21	19,730	0	0
Jun-21	29,860	0	0
Jul-21	35,920	0	0
Aug-21	37,040	0	0
2021 Estimated Tunnel Delivery:			30,090

Table A was provided in the February 8 report and shows the forecasted tunnel operations for 2021 absent the Pilot Release. Because the tunnel delivery required to fill the Homestake Partners' Turquoise Reservoir account was estimated to be 30,090 AF, the Cities committed to limiting the tunnel deliveries to 28,423 AF in 2021.

Table B
Actual Homestake Operations with Pilot Project
values in acre-feet

	Homestake Res EOM Storage (42.6 KAF max)	West Slope DMP Pilot Release	Estimated Homestake Tunnel Deliveries	Actual Homestake Tunnel Deliveries
May-20	29,244	0	5,080	5,080
Jun-20	42,309	0	180	180
Jul-20	42,587	0	0	0
Aug-20	42,376	0	140	140
Sep-20	40,612	1,667	0	0
Oct-20	40,376	0	0	0
Nov-20	40,307	0	0	0
Dec-20	40,294	0	0	0
Jan-21	40,261	0	0	0
Feb-21	23,457	0	16,200	16,513
Mar-21	11,784	0	12,223	11,229
Apr-21	12,123	0	0	0
May-21	19,710	0	0	0
Jun-21	30,545	0	0	0
Jul-21	31,277	0	0	0
Aug-21	31,233	0	0	0
Sep-21	29,244	0	0	0
Oct-21	28,788	0	0	0
WY 2021 Tunnel Delivery:			28,423	27,742

Table B shows forecasted and actual tunnel operations as well as actual Homestake Reservoir storage. The actual tunnel delivery in 2021 was 27,742 AF, and no tunnel deliveries were made after the start of the fill season. These operational summaries demonstrate that no additional diversions were made this year as a result of the Pilot Release, in accordance with section 4.5.1.4 of the Protocol. Finally, review of the Homestake Project diversion records submitted to Division 5 will confirm that no additional water was stored in Homestake Reservoir in 2020 after the Pilot Release was made and will also confirm the statements made in this description per section 4.5.2.3 of the Protocol.

Note that Homestake Reservoir storage and releases are left off Table B for clarity, but that there was storage by the exchange decreed in 98CW270 in June and July 2021, and releases from the same exchange pool in August through October. In addition, Colorado Springs made releases from Homestake Reservoir as part of its Blue River substitution requirements per the Green Mountain Reservoir Administrative Protocol in September and October. Parties to the exchange decree took advantage of the releases in September and October to perform their own transit loss study on Homestake Creek. Those results are not available yet but will be an interesting comparison to the Pilot Release results.

The Cities had planned to refill Homestake Reservoir in 2021 per Paragraph 4.5.3.1 of the Protocol if hydrology allowed, but snowpack and available runoff were not sufficient for that to happen before Homestake Creek flows dropped too low to allow for continued storage in mid-July (a flow of 24 cfs at the Gold Park gage is required during the Homestake diversion season).

The Cities and the Front Range Water Council would like to express their appreciation to the State Engineer and the Division of Water Resources for conducting this study and working with us to coordinate and complete the Pilot Release. We feel that the study was a successful example of learning by doing, and the results of the study and the lessons learned in the process will be helpful to all of us as we contemplate making state line deliveries in the future.

**Proposed Verification Procedure
for State Line Delivery Pilot Reservoir Release
November 20, 2020**

The verification procedure will follow section 4.5 of the Protocol for Administration finalized by the Division of Water Resources on August 28, 2020. The following description details how the Cities currently plan to provide verification, but we will work with the State and Division 5 Engineers to ensure that all accounting and details provided are satisfactory to the Division of Water Resources.

Section 4.5.1 states *“The Cities will verify that the release represents an actual reduction in delivery volume to the East Slope by providing evidence that the water released would have been taken to the East Slope over the winter months prior to the 2021 fill season “But For” the operation of this pilot program.”* The Cities propose the following to verify that this requirement is met:

Section 4.5.1.1 The Cities provided a description of representative operations in the proposed Pilot Program description dated August 25, 2020 that was attached to the letter sent by the Front Range Water Council (FRWC) to Kevin Rein on August 27, 2020.

Section 4.5.1.2 The Cities propose to provide a table or description of East Slope storage levels that demonstrate the ability to take and use the water that was stored in Homestake Reservoir in 2020 before the Pilot Program release. This will be submitted prior to operating the Homestake Tunnel in early 2021, likely in January.

Section 4.5.1.3 The Cities propose to provide updated planned operations demonstrating Homestake Reservoir storage and tunnel deliveries with/without the Pilot Release. We propose to provide updates of the following tables prior to operating the tunnel (in January):

- Table 1. Expected Homestake Reservoir and tunnel operations absent the Pilot Program;
- Table 2. Expected Homestake Reservoir and tunnel operations with the Pilot Program. This table will show the maximum volume of water that will be delivered to the East Slope in preparation for the 2021 diversion season. Additionally, no direct flow diversions will take place in 2021.

Table 1
Expected Homestake Operations Absent Pilot Project
 values in acre-feet

	Homestake Res EOM Storage (42.6 KAF max)	West Slope DMP Pilot Release	Homestake Tunnel Deliveries
Jun-20	42,600	0	0
Jul-20	42,600	0	0
Aug-20	42,600	0	0
Sep-20	42,600	0	0
Oct-20	42,600	0	0
Nov-20	42,600	0	0
Dec-20	42,600	0	0
Jan-21	42,600	0	0
Feb-21	34,600	0	8,000
Mar-21	19,600	0	15,000
Apr-21	12,600	0	7,000
May-21	19,800	0	0
Jun-21	33,100	0	0
Jul-21	41,100	0	0
Aug-21	42,600	0	0
Totals		0	30,000

Table 2
Expected Homestake Operations with Pilot Project
 values in acre-feet

	Homestake Res EOM Storage (42.6 KAF max)	West Slope DMP Pilot Release	Homestake Tunnel Deliveries
Jun-20	42,600	0	0
Jul-20	42,600	0	0
Aug-20	42,600	0	0
Sep-20	40,800	1,800	0
Oct-20	40,800	0	0
Nov-20	40,800	0	0
Dec-20	40,800	0	0
Jan-21	40,800	0	0
Feb-21	32,800	0	8,000
Mar-21	17,800	0	15,000
Apr-21	12,600	0	5,200
May-21	19,800	0	0
Jun-21	33,100	0	0
Jul-21	41,100	0	0
Aug-21	42,600	0	0
Totals		1,800	28,200

Section 4.5.1.4 The Homestake Tunnel records will demonstrate that the Cities have not exceeded the net tunnel deliveries proposed in the response to Section 4.5.1.3 (i.e., have not made more space in Homestake Reservoir to be filled in 2021 than proposed). Should one or both Cities require additional water from the Homestake system for unforeseen reasons, or if there is an operational need to flow more water through the tunnel than was proposed, the Homestake Reservoir diversion record will demonstrate that the additional storage space created as a result of that need has not been refilled. The Cities currently expect to deliver water through the tunnel in February and March and plan to completely fill the allowable space in Homestake Reservoir in Water Year 2021, if hydrology permits. Additionally, we propose to provide:

- Table 3. Actual observed Homestake Reservoir operations with the Pilot Program after the diversion season is complete (in November). This will be an update of Table 2 with actual data.

Additionally, **Section 4.5.2.3** states *“The Cities will verify through accounting that the Reservoir Release resulted in no additional storage in the Homestake system during the 2020 fill season and that no direct flow deliveries will take place during the remainder of 2020 or 2021 fill seasons.”* The accounting for the 2021 diversion season will be provided in November 2021. We expect this to be in the form of the standard Homestake diversion records that are provided to Division 5 in addition to Table 3 described above.

**Required Information for Verification Procedure
for the 2020 State Line Delivery Pilot Reservoir Release
February 8, 2021**

The following is an update of information provided by Aurora Water, Colorado Springs Utilities, and Pueblo Water (the Cities) as required by Sections 4.5.1.2 and 4.5.1.3 of the Protocol for Administration of the State Line Delivery Pilot Reservoir Release. We are providing this information to coincide with the operation of the Homestake Tunnel, which started on February 1. This information details the ability of the Cities to take delivery of Homestake water and defines the amount of water the Cities propose to deliver to East Slope storage from Homestake Reservoir in 2021.

Section 4.5.1.2 *Current and forecasted East Slope storage levels for the Cities demonstrating ability to take and use the water stored in Homestake Reservoir.*

East Slope Storage Available for Homestake Water
values in acre-feet

	Turquoise Reservoir - HS Account				EOM Storage (30 KAF max)
	Tunnel Inflows	Otero Pumping	Other Transfer	Evap	
May-20	5,081	1,118	0	313	30,000
Jun-20	176	0	-162	363	29,650
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Aug-20	141	0	130	326	29,264
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Oct-20	0	0	0	205	28,789
Nov-20	0	5,040	0	92	23,657
Dec-20	0	10,130	0	36	13,491
Jan-21	0	8,166	0	16	5,310
<i>Feb-21</i>	<i>16,200</i>	<i>4,165</i>	<i>0</i>	<i>15</i>	<i>17,330</i>
<i>Mar-21</i>	<i>13,890</i>	<i>1,155</i>	<i>0</i>	<i>65</i>	<i>30,000</i>
<i>Apr-21</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>170</i>	<i>29,830</i>
<i>May-21</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>313</i>	<i>29,517</i>
<i>Jun-21</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>363</i>	<i>29,154</i>
<i>Jul-21</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>331</i>	<i>28,822</i>
<i>Aug-21</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>326</i>	<i>28,496</i>

This table shows actual (through January 2021) and forecasted operations of the Homestake Partners' account in Turquoise Reservoir. This account has a maximum storage of 30,000 AF and the table shows planned pumping and the estimated tunnel inflows that would result in filling this account prior to the start of runoff if the Pilot Release had not been made.

Section 4.5.1.3 *Estimated tunnel deliveries (absent Reservoir Release), Reservoir Release amount, and net estimated tunnel deliveries.*

Table A
Expected Homestake Operations Absent Pilot Project
values in acre-feet

	Homestake Res EOM Storage (42.6 KAF max)	West Slope DMP Pilot Release	Homestake Tunnel Deliveries
May-20	29,244	0	5,080
Jun-20	42,309	0	180
Jul-20	42,587	0	0
Aug-20	42,376	0	140
Sep-20	40,612	0	0
Oct-20	40,376	0	0
Nov-20	40,307	0	0
Dec-20	40,294	0	0
Jan-21	40,261	0	0
Feb-21	24,061	0	16,200
Mar-21	10,171	0	13,890
Apr-21	14,270	0	0
May-21	19,730	0	0
Jun-21	29,860	0	0
Jul-21	35,920	0	0
Aug-21	37,040	0	0

2021 Estimated Tunnel Delivery: 30,090

Table B
Expected Homestake Operations with Pilot Project
values in acre-feet

	Homestake Res EOM Storage (42.6 KAF max)	West Slope DMP Pilot Release	Homestake Tunnel Deliveries
May-20	29,244	0	5,080
Jun-20	42,309	0	180
Jul-20	42,587	0	0
Aug-20	42,376	0	140
Sep-20	40,612	1,667	0
Oct-20	40,376	0	0
Nov-20	40,307	0	0
Dec-20	40,294	0	0
Jan-21	40,261	0	0
Feb-21	24,061	0	16,200
Mar-21	11,838	0	12,223
Apr-21	15,930	0	0
May-21	21,390	0	0
Jun-21	31,520	0	0
Jul-21	37,590	0	0
Aug-21	38,710	0	0

2021 Expected Tunnel Delivery: 28,423

Tables A and B show estimated and expected tunnel operations and forecasted Homestake Reservoir yield during February and March using current yield forecasts. Because the tunnel delivery required to fill the Homestake Partners' Turquoise Reservoir account is estimated to be 30,090 AF, the Cities propose to limit the tunnel delivery to 28,423 AF in 2021. The Cities plan to refill Homestake Reservoir in 2021 per Paragraph 4.5.3.1 of the Protocol if hydrology allows; current forecasting predicts that a full refill will not happen in 2021.