

**CHAPTER 3:  
SUMMARY OF ADJUDICATION CLAIMS  
RELATED TO THE HOPI INDIAN  
RESERVATION**

## **CHAPTER 3: SUMMARY OF ADJUDICATION CLAIMS RELATED TO THE HOPI INDIAN RESERVATION**

This chapter summarizes water rights claims filed in the LCR Adjudication by the Hopi Tribe and the United States, on behalf of the Hopi Tribe. A summary of claims filed by the Hopi prior to 2015, the Hopi Third Amended SOC, as well as the Tribe’s Supplement to its Third Amended SOC (“Hopi Tribe Supplement”) is provided in **Sections 3.1** through **3.3**, respectively. A summary of claims filed by the United States prior to 2015 and the United States Third Amended SOC is provided in **Sections 3.4** and **3.5**, respectively. Comparison of the Hopi Third Amended SOC as supplemented and the United States Third Amended SOC is provided in **Section 3.6**. Copies of Hopi claims, United States claims, amendments, and other supporting documentation are provided in **Appendix C**. The Hopi claims are summarized in **Tables 3-1**, the United States claims are summarized in **Table 3-2**, and the Hopi and United States claims are compared in **Table 3-3**.

### **3.1 CLAIMS FILED BY THE HOPI TRIBE PRIOR TO 2015**

Sections 3.1.1 through 3.1.3 describe the pre-2015 SOC’s filed by the Hopi Tribe in 1985, 2004, and 2009. These claims were filed on behalf, and for the benefit, of its villages, clans and people, with a claimed priority date of time immemorial, senior to all other claimants Indian or non-Indian. These claims were founded upon the theories of: (1) the federal reserved water rights doctrine; (2) sovereign and historic guardian of its lands; and (3) owner of lands and waters under both Spanish and Mexican rule, under the Treaty of Guadalupe Hidalgo between the United States and Mexico.

#### **3.1.1 1985 Hopi Claim (Hopi Original SOC)**

On November 29, 1985, the Hopi Tribe filed its original water rights SOC (Hopi Original SOC), designated No. 39-91443, claiming 140,406 acre-feet per annum (AFA) of surface water and groundwater, plus additional water for one-time first fillings of proposed future impoundments “in, on or serving lands owned by the Hopi Tribe or allotted or assigned to its members, or that may hereafter be recognized as belonging to its members.” The claimed water uses are set forth



below and were based on past and present uses (as of 1985) as well as proposed future uses, as indicated below.

- Domestic, Commercial, Municipal and Industrial Use (DCMI):
  - 9,327 AFA (2,060 past/present + 7,267 future) based on population in 1984 and 2040 at 200 gallons per capita per day (gpcd)
- Irrigation:
  - 88,059 AFA (11,364 past/present + 76,695 future) from both surface water and groundwater
  - 9,545 AFA (186 past/present + 9,359 future) for evaporation from irrigation storage
- Livestock and water storage for stock (stockponds):
  - 1,799 AF (1,504 past/present + 295 future) from surface water and groundwater based on stocking rates
- Mining and related industry:
  - 31,445 AFA (2,325 past/present + 29,120 future) of groundwater for mining, slurry supply, and future power development
- Recreation:
  - 231 AFA (80 past/present + 151 future) for evaporation from recreational lakes
- Other future additional claimed amounts:
  - 91,330 AF for first time filling of the irrigation, recreation, and stock reservoirs

### **3.1.2 2004 Hopi Claim (First Amended SOC, as supplemented)**

On January 29, 2004, the Hopi filed amended SOC No. 39-91443 (Hopi First Amended SOC) for 137,835 AFA of surface water and groundwater, plus additional water for first time fillings of proposed irrigation storage reservoirs “in, on or serving lands owned by the Hopi Tribe or allotted or assigned to its members, or that may hereafter be recognized as belonging to its members.” Supplemental information was also provided to the Department in 2005 regarding allotted lands. The claimed water uses were based on past and present uses (as of 2005) as well as proposed future uses, as indicated below.

- DCMI:
  - 11,211 AFA (possibly groundwater)



- Irrigation:
  - 52,206 AFA (past/present use in five washes and minor tributaries)
  - 21,060 AFA (future irrigation from main stem of the Little Colorado River (LCR))
  - 2,842 AFA (evaporation from the future storage facilities)
- Livestock and water storage for stock (stockponds):
  - 8,871 AFA (7,961 past/present + 910 future)
- Ceremonial and Subsistence Irrigation:
  - 12,546 AFA (future, possibly groundwater)
- Mining and Related Industry:
  - 6,000 AFA (4,400 past/present + 1,600 future) mining and slurry process
- Energy Resources Development:
  - 19,000 AFA (future)
- Tourism:
  - 1,594 AFA (future, possibly groundwater)
- Recreation:
  - 139 AFA (continuous fill and evaporation)
- Other (off-Reservation ranches – 26 Bar, Aja, Clear Creek, Hart, and Drye):
  - 2,366 AFA irrigation and storage
- First time filling of proposed irrigation reservoirs:
  - 15,700 AF (Reservation)
- Storage and additional future use provided for by 1996 Navajo-Hopi Settlement Act:
  - 2,089 AF

### **3.1.3 2009 Hopi Claim (Second Amended SOC)**

On November 12, 2009 the Hopi Tribe filed amended SOC No. 39-91443 (Hopi Second Amended SOC) claiming 52,406 AFA of surface water and groundwater, plus additional water for one-time first fillings of proposed future irrigation storage reservoirs “in, on or serving lands owned by the Hopi Tribe or allotted or assigned to its members, or that may hereafter be recognized as belonging to its members.” The claimed water uses are set forth below and were based on past



and present (as of 2009) as well as proposed future uses, as indicated below. The Tribe's 2009 claim quantifies irrigation uses based on a single time period (1954-1955).

- DDMI:
  - 9,110 AFA (future)
- Irrigation:
  - 21,199 AFA (1954-1955 use in five washes and minor tributaries)
  - 192 AFA (evaporation from existing storage facilities)
- Livestock and water storage for stock (stockpounds):
  - 5,883 AFA (4,886 past/present + 997 future)
- Ceremonial and Subsistence Irrigation:
  - 4,977 AFA (future)
- Mining and Related Industry:
  - 1,736 AFA (1,236 past/present + 500 future) mining and slurry process
- Energy Resources Development:
  - 6,000 AFA (future)
- Tourism:
  - 522 AFA (future)
- Recreation:
  - 41 AFA (continuous fill and evaporation)
- Other (off-Reservation Hopi Ranches – 26 Bar, Aja, Clear Creek, Hart, and Drye):
  - 2,366 AFA Irrigation and storage
  - 380 AFA DDMI
- Storage and additional future use off-Reservation:
  - 2,089 AF
- First time filling of proposed irrigation reservoirs:
  - 333 AF (Reservation)



## 3.2 2015 HOPI CLAIM (Third Amended SOC)

On June 2, 2015, the Hopi Tribe filed amended SOC No. 39-91443 (Hopi Third Amended SOC) claiming 194,440 AFA plus additional water for first-time fills. On September 17, 2015, the Hopi Tribe filed a supplement to its Third Amended SOC (Hopi Tribe Supplement), which is discussed in **Section 3.3**. The Hopi Tribe Supplement increased the total amount of water claimed to 196,935 AFA. The Hopi Third Amended SOC provides information concerning the following:

- Legal Basis of Claim
- Priority Date
- Uses of Water
- Sources of Water
- Points of Diversion, Means of Diversion and Places of Use
- Quantities of Use (as supplemented)

### 3.2.1 Legal Basis of Claim

On behalf, and for the benefit, of the “Tribe, its villages, clans and people,” the Hopi claim the right to all groundwater and surface water “in, on, or serving lands owned by the Hopi Tribe, or allotted or assigned to its members, or that may hereafter be recognized as belonging to it or its members,” under the following theories:

- As a sovereign and historic guardian of its lands (pre-dating the United States);
- As the owner of lands and waters under both Spanish and Mexican rule, under Articles VIII and IX of the Treaty of Guadalupe Hidalgo between the United States and Mexico dated February 2, 1848 (9 Stat. 922); and
- Under the federal reserved water rights doctrine established in *Winters v. United States*, 207 U.S. 564 (1908); *Arizona v. California*, 373 U.S. 546 (1963); *Cappaert v. United States*, 426 U.S. 128 (1976); and as owner of natural resources under *United States v. Shoshone Tribe of Indians of Wind River Reservation*, 304 U.S. 111 (1938).



### 3.2.2 Priority Date

Based on historic occupancy and water use, the Hopi Tribe claims a water right with a time immemorial priority date, senior to that of any other claimant, Indian or non-Indian, to waters located on Hopi lands as well as water sources located outside the boundaries of the main reservation lands.

### 3.2.3 Uses of Water

The Hopi Tribe claims types of water uses on behalf of the Hopi Tribe in the following categories:

- DCMI
- Agriculture (Past and Present Irrigation; Livestock; Ceremonial and Subsistence Irrigation; and Water Storage)
- Present Mining Use
- Energy Resources Development
- Tourism
- Recreation
- Other Claims (Subsurface Mineral Rights; Aesthetic, Cultural and Ecological Flows; and Cultural, Religious and Ceremonial Uses)

The uses listed above are summarized in **Table 3-1** and further described in **Section 3.2.6** and **Chapter 4**. The Hopi Third Amended SOC does not update or include water right claims for lands outside of the Reservation although the Hopi reiterate their 2009 claims for off-Reservation uses at the Hopi Ranches.

### 3.2.4 Sources of Water

The Hopi Tribe claim a federal reserved water right to water from various surface water and groundwater sources within the Reservation, including water from springs, wells and impoundments. Surface water sources include five washes (Moenkopi, Dinnebito, Oraibi, Polacca and Jeddito), and minor tributaries that flow from north to south through the Reservation. Groundwater sources include aquifers located beneath the Reservation lands, some of which extend laterally beyond the Reservation boundaries. These water sources were discussed in



**Chapter 2** of this report. The Tribe also claims water rights from water sources located outside the boundaries of the Reservation, including water from the main stem of the LCR, the Colorado River, Lake Powell, and the Coconino Aquifer.

### **3.2.5 Points of Diversion, Means of Conveyance and Places of Use**

The Hopi Third Amended SOC does not identify any points of diversion, but instead cross-references locations of existing point sources (wells, springs and impoundments) listed in Appendices 4, 5 and 6 of the United States' Third Amended SOC. The locations of these point sources are depicted in Appendix 7 to the United States claim. The claim also does not specifically describe any means of conveyance.

The claim does indicate that the places of use are within the 1882 Executive Order Reservation and the 1934 Act Reservation (Moenkopi Island). Appendix 1 and Appendix 2 to the Hopi claim contain a series of maps depicting the locations of places of use within the Reservation.

### **3.2.6 Quantities of Use**

The Hopi Third Amended SOC claims the following quantities of use for the Hopi Reservation based on past and present and future uses, as indicated below. The Hopi Tribe Supplement (discussed in **Section 3.3**) increased the claimed quantities for three of the types of uses. The quantities from the Hopi Tribe Supplement are also indicated parenthetically in the description that follows.

- DCMI:
  - 9,348 AFA (future)
- Irrigation:
  - 102,303 AFA - 1,182 (supplement) + 101,121 (past/present use in five washes and minor tributaries and from groundwater as necessary)
  - 192 AFA (evaporation from existing storage facilities)
- Livestock and water storage for stock (stockponds):
  - 7,184 AFA – 1,301 (supplement) + 5,883 (4,883 past/present + 1,000 future)
- Ceremonial and Subsistence Irrigation:
  - 7,385 AFA (future)



- Mining and Related Industry:
  - 1,755 AFA (1,255 present/past + 500 future) from the N Aquifer
- Energy Resources Development:
  - 27,100 AFA (future for potential solar/thermal power plant and development of coal liquefaction/gasification and secondary products)
- Tourism:
  - 1,022 AFA (future for destination resort)
- Recreation:
  - 41 AFA (Continuous fill and evaporation for Keams Lake)
- Subsurface Mineral Rights:
  - 40,295 AFA (proportional share of groundwater sources associated with the Blue Springs complex and based on the Tribe’s land area in the LCR basin)
- Aesthetic, Cultural and Ecological Flows:
  - 310 AFA – 16 (supplement) + 294 (Pasture Canyon, White Ruin Canyon, Lower LCR instream flows)

### **3.3 HOPI TRIBE’S SUPPLEMENT TO ITS THIRD AMENDED SOC (2015)**

On September 17, 2015, the Hopi Tribe filed a supplement to its Third Amended SOC (“Hopi Tribe Supplement”). The Tribe’s updated water rights claim is for 196,935 AFA plus an additional 333 AF for irrigation storage. A copy of the Hopi Tribe Supplement is included in **Appendix C** of this report.

The Supplement increases the claimed amounts of water use in the Third Amended SOC in the following manner:

- Irrigation:
  - Included are an additional 311 acres of land requiring 1,182 AFA to irrigate. The revised total claimed amount is 102,303 AFA (101,121 + 1,182) for past and present uses.
- Livestock and water storage for stock (stockponds):



- Included are: A) an additional 396 claimed impoundments (as described in the United States Third Amended SOC) requiring 1,289 AF, and B) eight (8) previously unclaimed impoundments requiring 12 AFA of storage. Based on storage capacities, the revised total claimed amount is 7,184 AFA (4,883 + 1,289 + 12 for past/present use and 1,000 AFA for future use).
- Aesthetic, Cultural and Ecological Flows:
  - Included is an additional 16 AFA non-diversionary water right claim for instream flows in the lower LCR for White Ruin Canyon Wash. The revised total claimed amount is 310 AFA (294 + 16) for past/present uses.

Appendix 2 and Appendix 3 to the Hopi Tribe Supplement reference corrections to the locations of 91 impoundments previously included in the Hopi Third Amended SOC and eight previously unclaimed impoundments.

**Table 3-1** displays how the claims filed by the Hopi Tribe have changed over time.

### **3.4 CLAIMS FILED BY THE UNITED STATES ON BEHALF OF THE HOPI TRIBE PRIOR TO 2015**

Sections 3.4.1 through 3.4.4 describe the pre-2015 SOC's filed by the United States in 1985, 1994, 2004, and 2009. The 1985 and 1994 claims were filed for water uses located on all Indian lands within the LCR adjudication. The 1994 claim also separately described water uses for the Hopi Reservation, and was amended in 2004 and 2009.

#### **3.4.1 1985 United States Joint Claim**

On November 29, 1985,<sup>1</sup> the United States, in its own right and as trustee, submitted SOC No. 39-91441 on behalf of both the Hopi Tribe and the Navajo Nation, claiming a combined total of 546,872 AFA of water in the LCR watershed, plus 331,082 AF for the first-time filling of irrigation storage reservoirs and recreation lakes. The claimed priority date is time immemorial, and the basis of the claim is the federal reserved water rights doctrine.

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<sup>1</sup> On December 18, 1985, the Department received a revised copy of SOC No. 39-91441 to correct a typographical error.



The United States' original joint claim does not list the water rights for the Hopi and the Navajo separately, but it does divide the quantities claimed based upon past and present uses (as of 1985) as well as proposed future uses, as indicated below.<sup>2</sup>

- DDMI:
  - 57,696 AFA total (4,594 past/present + 53,102 future)
    - 57,365 AFA (4,296 present/past + 53,069 future) for municipal
    - 331 AFA (298 + 33) for domestic
- Irrigation:
  - 397,594 AFA total (36,049 past/present + 361,545 future)
    - 287,910 AFA (33,190 + 254,720) for irrigation from surface water, including the LCR
    - 109,684 AFA (2,859 + 106,825) for irrigation from groundwater, including LCR alluvium
- Evaporation from Irrigation Storage:
  - 31,522 AFA (1,155 past/present + 30,367 future) of surface water plus 330,000 AF for one-time filling (future)
- Livestock and water storage for stock (stockponds):
  - 4,651 AFA total (4,356 past/present + 295 future)
    - 754 AFA (635 past/present + 119 future) for stockwatering from groundwater
    - 3,897 AF (3,721 past/present + 176 future) for stockponds from surface water
- Mining:
  - 19,514 AFA (8,449 past/present + 11,065 future)
- Energy Resources Development:
  - 33,201 AFA (129 past/present + 33,072 future)

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<sup>2</sup> This information is found in a summary and report prepared by Stetson Engineers, Inc. dated September 20, 1985 and September 27, 1985 respectively, which were submitted with the claim. Attached to the Stetson report are four maps and 16 tables that provide additional information for each category of claim, including the points of diversion by reference to UTM coordinates and/or a map. The Department did not attempt to segregate the amounts claimed for the Hopi and the Navajo based on the points of diversion in the tables.



- Recreation:
  - 2,694 AF (2,316 past/present + 378 future)

### 3.4.2 1994 United States Revised Claim

On November 22, 1994, pursuant to court order, the United States, on its own behalf and as trustee for the Navajo Nation, the Hopi Tribe, the White Mountain Apache Tribe and the Zuni Pueblo, filed revised SOCs on behalf of Indian Lands in the Little Colorado River Basin, including SOC No. 39-91441 for the Hopi Tribe. The United States asserted tribal water rights based on federal law. The claimed water uses set forth in the filing for the Hopi Indian Reservation are set forth below, and were based on past and present as well as future uses, as indicated below.

- DCMI:
  - 6,160 AFA (1,793 past/present + 4,367 future municipal + 1,102 future commercial) based on present and future population in 2040 for communities, towns, villages, homesites and farmsteads.<sup>3</sup>
- Irrigation:
  - 75,747 AFA total (44,187 past/present + 31,560 future)
    - 58,717 AFA (42,937 past/present + 15,780 future) for irrigation from surface water, including the LCR;
    - 17,030 AFA (1,250 past/present + 15,780 future) of groundwater, including LCR alluvium
- Evaporation from Irrigation Storage:
  - 9,545 AF (186 past/present + 9,359 future) of surface water
- Livestock and water storage for stock (stockponds):
  - 4,777 AF (4,601 past/present + 176 future) from groundwater and surface runoff, including evaporation losses, based on average volume and a single annual fill of stockponds, lakes and reservoirs.
- Mining:

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<sup>3</sup> The claim indicates that 507 wells and springs had been inventoried on the Hopi Reservation for stock and domestic purposes. An additional 23 wells were identified for public water supply purposes.



- 19,514 AFA (8,449 past/present + 11,065 future) for Navajo and Hopi (combined) mining uses at the Peabody Coal mine on Black Mesa, including pipeline slurry, dust control, construction, potable purposes, evaporation from sedimentation ponds and related mining activities, together with future mining activities located throughout both reservations.
- Recreation:
  - 231 AF (80 past/present + 151 future) for camping, fishing and evaporation from recreational lakes.

### 3.4.3 2004 United States Claim (First Amended SOC)

On January 30, 2004 the United States filed amended SOC No. 39-91441 (United States First Amended SOC) on behalf of the Hopi Tribe. The claimed priority date is aboriginal, or time immemorial, based on the Hopi’s aboriginal presence on lands within the Hopi Reservation. The United States claims are based on the federal reserved rights doctrine under *Winters v. United States*, 207 U.S. 564 (1908), *Arizona v. California*, 373 U.S. 546 (1963), *Cappaert v. United States*, 426 U.S. 128 (1976) and *In re the General Adjudication of all Rights to Use Water in the Gila River System and Source*, 201 Ariz. 307, 35 P.3d 68 (2001). The United States claims “sufficient water to provide for the present and future water needs necessary to fulfill the purposes of the Hopi Reservation as a permanent home and abiding place for the Hopi people.” In its claim, the United States indicates that the federal government continues to investigate the Hopi water rights and that the claim may be supplemented or amended in the future.

The United States claims a federal reserved water right to water from various surface water and groundwater sources within reservation lands, including water from springs, wells and impoundments. Surface water sources include five washes (Moenkopi, Dinnebito, Oraibi, Polacca and Jeddito), and minor tributaries that flow from north to south through the reservation. Groundwater sources include the N Aquifer, which is discussed in **Chapter 2** of this report. The claimed water uses set forth in the filing are listed below, and were based on past and present (as of 2004) as well as future uses, as indicated below.

- DCMI:
  - 11,211 AFA present and future from the N Aquifer.
- Irrigation:



- 49,136 AFA for past/present irrigation from five washes that flow from north to south through the Hopi Reservation
- Livestock and water storage for stock (stockponds):
  - 8,044 AFA total for past/present use from 338 springs (2,206 AFA), 561 impoundments (4,499 AFA) and 206 wells (1,339 AFA)
- Mining:
  - 3,000 AFA for present and future use from the N Aquifer
- Other (off-Reservation uses):
  - 556 AFA for future heavy commercial use from the C Aquifer
  - 2,366 AFA for the Hopi Ranches and 2,089 AF storage

#### **3.4.4 2009 United States Claim (Second Amended SOC)**

On June 30, 2009 the United States filed amended SOC No. 39-91441 (United States Second Amended SOC) on behalf of the Hopi Tribe. The claimed priority date, the legal basis, the purpose of the claim, and the possibility that the claim would be supplemented or amended in the future is the same as that stated in the First Amended SOC filed in 2004. Also, the claimed water sources are the same as those indicated in the First Amended SOC.

The claimed water uses set forth in the filing are listed below, and were based on past and present (as of 2009), as well as future uses, as indicated below.

- DCMI:
  - 9,110 AFA from existing and future wells and springs, the N and C Aquifers as well as other minor aquifers
- Irrigation:
  - 21,199 AFA past/present irrigation from five washes that flow from north to south through the Hopi Reservation (Moenkopi, Dinnebito, Oraibi, Polacca and Jeddito)
- Livestock and water storage for stock (stockponds):
  - 4,400 AFA (3,403 AFA past/present from groundwater and surface runoff, + 997 AFA future from existing and future wells)
- Ceremonial and Subsistence Irrigation:
  - 4,977 AFA future from the N Aquifer



- Mining and Related Industry:
  - 7,736 AFA (1,236 past/present + 6,500 future) from the N Aquifer
- Other (off-Reservation uses):
  - 902 AFA (522 AFA future from the C Aquifer + 380 AFA future for the Hopi Industrial Park)
  - 1,556 AFA past/present for Hopi Ranches and 1,837 AF storage

### **3.5 2015 UNITED STATES CLAIM (Third Amended SOC)**

On June 2, 2015 the United States filed amended SOC No. 39-91441 (United States Third Amended SOC) on behalf of the Hopi Tribe claiming a combined total of 54,574 AFA of water in the LCR watershed. The United States indicates that the federal government continues to investigate the Hopi water rights and that the claim may be supplemented or amended in the future. The United States Third Amended SOC provides information concerning the following:

- Legal Basis of Claim
- Priority Date
- Uses of Water
- Sources of Water
- Points of Diversion, Means of Diversion and Places of Use
- Quantities of Use

This section summarizes the information presented in the United States Third Amended SOC in the same order as information presented in the Hopi Third Amended SOC (as supplemented) to assist in comparison of the claims.

#### **3.5.1 Legal Basis of Claim**

The United States claims are based on the federal reserved rights doctrine under *United States v. Ahtanum Irrigation District*, 236 F.2d 321 (9<sup>th</sup> Cir. 1956), *cert. denied*, 352 U.S. 988 (1957) (recognizing Indians’ right to use water based on their right of use and occupancy); *Winters v. United States*, 207 U.S. 564 (1908), *Arizona v. California*, 373 U.S. 546 (1963) and *In re the General Adjudication of all Rights to Use Water in the Gila River System and Source*, 201 Ariz.



307, 35 P.3d 68 (2001). The United States claims “sufficient water to provide for the present and future needs necessary to fulfill the purpose of the Hopi Reservation as a permanent home and abiding place for the Hopi people.”

### **3.5.2 Priority Date**

The United States claims a priority date of time immemorial for all claims on the 1882 Executive Order Reservation and Moenkopi Island. Although the United States Third Amended SOC acknowledges that the Special Master’s Priority Date Report dated April 24, 2013 recommends different priority dates for parts of the Reservation, the United States points out that objections by several parties to that report were argued to Judge Brain on January 17, 2014 and the matter is pending.

### **3.5.3 Uses of Water**

The United States claims types of water uses on behalf of the Hopi Tribe in the following categories:

- DCMI;
- Heavy Industrial/Mining Related Industry;
- Livestock;
- Stockpond storage capacity;
- Past and present irrigation;
- Riparian and wetlands habitat; and
- Future irrigation/subsistence and cultural purposes

The uses listed above are summarized in **Table 3-2** and further described in **Section 3.5.6** and **Chapter 4**.

### **3.5.4 Sources of Water**

The United States claims a federal reserved water right to water from various surface water and groundwater sources within reservation lands, including water from springs, wells and impoundments. Surface water sources include five washes (Moenkopi, Dinnebito, Oraibi, Polacca



and Jeddito), and minor tributaries that flow from north to south through the reservation. Groundwater sources include the N Aquifer, which is discussed in **Chapter 2** of this report.

### **3.5.5 Points of Diversion, Means of Diversion and Places of Use**

The United States' Third Amended SOC does not identify points of diversion, but references locations of point sources (wells, springs and impoundments) listed in Appendices 4, 5 and 6 to the amended claim. Appendix 7 to the amended claim contains a series of maps depicting locations of existing point sources within the Reservation. The United States' Third Amended SOC does not specifically describe means of conveyance.

The United States' Third Amended SOC references Appendix 1 to the claim, which identifies the places of use as the 1882 Executive Order Reservation and the 1934 Act Reservation (Moenkopi Island). Appendices 8-10 of the United States' claim additionally show certain locations of places of use within the Reservation.

### **3.5.6 Quantities of Use**

The United States Third Amended SOC claims the following quantities of use based on past and present uses (as of 2015), as well as future uses, as indicated below:

- DCMI:
  - 8,746 AFA future (based on present and future population in 2175)
- Irrigation:
  - 28,417 AFA past/present irrigation from five washes that flow from north to south through the Hopi Reservation and minor tributaries to the LCR
- Livestock and water storage for stock (stockponds):
  - 4,385 AFA (3,388 AFA past/present from surface water sources + 997 AFA future from existing and future wells)
- Ceremonial and Subsistence Irrigation:
  - 4,977 AFA future from the N Aquifer
- Mining:
  - 7,755 AFA (1,255 AFA past/present + 6,500 AFA future)
- Aesthetic, Cultural and Ecological Flows:



- 294 AFA past/present for riparian and wetland habitat (Pasture Canyon)

**Table 3-2** displays how the claims filed by the US on behalf of the Hopi Tribe have changed over time.

## **3.6 SUMMARY AND COMPARISON OF HOPI AND UNITED STATES 2015 CLAIMS**

This section compares the quantities of water included in the amended claims filed by the Hopi and United States, as summarized in **Sections 3.2.6** and **3.5.6**, respectively. There are significant differences between the claimed amounts, which are primarily due to different quantification approaches. The comparison is presented in **Table 3-3** of this report and is summarized below for each type of water use claimed. The claimed amounts are further described in **Chapter 4**.

### **3.6.1 DCMI**

The Hopi Tribe and the United States claim 9,348 and 8,746 AFA, respectively, for DCMI purposes based on a projected population of 52,016 in the year 2175. However, neither the Hopi nor United States claim a separate amount for past or present DCMI use, although they acknowledge that there have been past and present DCMI uses.<sup>4</sup> Instead, they each claimed multiple water uses from a group of existing springs and wells (and future wells as needed) to satisfy DCMI uses. The Hopi and the United States base their quantities of use on 160 and 150 gpcd water use rates, respectively.

### **3.6.2 Agricultural (Irrigation)**

The Hopi Tribe and the United States claim maximum diversions in the amounts of 102,303 and 28,417 AFA, respectively, to provide an adequate water supply for irrigation purposes. They both claim amounts from the five washes and tributaries on the 1882 Executive Order Reservation. The Hopi's claim is based on a composite of 26,922 acres of land that have been irrigated at any

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<sup>4</sup> ADWR requested information from the Hopi and the United States regarding past and present DCMI uses, but such information was not provided.



time historically to present. The United States' claim is based on a composite of 13,032 acres of land that have been irrigated at any time historically to present.

### **3.6.3 Evaporation from Irrigation Storage**

The Hopi claim 192 AFA for evaporation from irrigation storage. The United States does not claim an amount in this category.

### **3.6.4 Livestock and Water Storage for Stock (Stockponds)**

The Hopi Tribe and the United States claim the right to divert and store 6,184 and 3,388 AF, respectively, for past and present livestock use. The Hopi Tribe and the United States claim an additional 1,000 and 997 AFA, respectively, for future livestock use from existing and future wells and springs. The amounts claimed are based on an estimated Reservation maximum livestock carrying capacity of 44,486 animal units with a corresponding water consumption rate of 12 gpd per animal unit.

### **3.6.5 Ceremonial and Subsistence Irrigation**

The Hopi Tribe and the United States claim 7,385 and 4,977 AFA, respectively, for ceremonial (cultural) and subsistence purposes based on a projected population of 52,016 in the year 2175. The Hopi and the United States base their quantities of use on planned future irrigated coverage of 2,646 acres of land (for small family plots and gardens). Neither the Hopi nor United States claim a separate amount for past or present ceremonial and subsistence irrigation use although they acknowledge that such uses have taken place.<sup>5</sup>

### **3.6.6 Mining**

Both the Hopi and United States claim 1,255 AFA for past and present mining needs. According to the Hopi and United States, the claimed amount is based on coal mining activities associated with Peabody Coal Company's Black Mesa Mine Complex. The Hopi Tribe and the

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<sup>5</sup> ADWR requested additional information from both the Hopi Tribe and the United States regarding past and present ceremonial and subsistence irrigation uses, but it was not provided.



United States claim an additional 500 and 6,500 AFA, respectively, for future mining related activities.

### **3.6.7 Energy Resources Development**

The Hopi Tribe claims 27,100 AFA for future energy resource development. According to the Hopi, the claimed amount is based on power generation needs for a new mine and for future heavy industrial uses. The Hopi Tribe does not claim a separate amount for past or present energy resource development use. The United States does not claim an amount in this category.

### **3.6.8 Tourism**

The Hopi Tribe claims 1,022 AFA for a future destination resort and for expansion of the Hopi Tribal Cultural Center. The Hopi Tribe does not claim a separate amount for past or present tourism use. The United States does not claim an amount in this category.

### **3.6.9 Recreation**

The Hopi Tribe claims 41 AFA for past and present recreational use. The amount claimed is for the right to continuously fill Keams Lake to its maximum capacity. The United States does not claim an amount in this category.

### **3.6.10 Subsurface Mineral Rights**

The Hopi Tribe claims 40,295 AFA for its proportional share of the water in/and feeding the Blue Springs complex. According to the Hopi, the claimed amount is based on the Tribe's land area in the LCR Basin. The United States does not claim an amount in this category.

### **3.6.11 Aesthetic, Cultural and Ecological Flows (Riparian Habitat and Instream Flows)**

The Hopi Tribe and the United States claim 310 and 294 AFA, respectively, for past and present aesthetic, cultural and ecological flows. The non-diversionary amounts claimed are based on annual estimated evapotranspiration depletion rates from wetland habitats and riparian vegetation along Pasture Canyon and White Ruin Canyon wash and for instream flows in the lower Little Colorado River.



### 3.6.12 Total Quantities

At the bottom of **Table 3-3**, ADWR totals the past and present and future claimed quantities of use for the categories described above. The total amount claimed by the Hopi Tribe is 196,935 AFA. The total amount claimed by the United States, on behalf of the Tribe, is 54,574 AFA. The Tribe's total annual water rights claim is approximately three and a half times greater than the total presented by the United States on the Tribe's behalf due primarily to the Hopi's claim for irrigation uses.

