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DOCUMENTS RELATED TO THE CREATION, DELIVERY, AND ACCOUNTING OF SNWA'S INTENTIONALLY CREATED SURPLUS

1. SNWA's Tributary Conservation ICS and Imported ICS Plans of Creation for Calendar Year 2015 dated June 30, 2014.
2. Reclamation's letter to SNWA dated September 25, 2014, approving SNWA's ICS Plans of Creation for Tributary Conservation ICS and Imported ICS for Calendar Year 2015.
3. SNWA's Amended Tributary Conservation ICS Plans of Creation for Calendar Year 2015 dated June 17, 2015.
4. Reclamation's letter to SNWA dated September 10, 2015, approving SNWA's Amended ICS Plans of Creation for Tributary Conservation ICS Calendar Year 2015.
5. SNWA's letter to Reclamation dated October 27, 2015, requesting delivery of ICS in Calendar Year 2015.
6. Reclamation's letter to SNWA dated December 9, 2015, approving SNWA's request for ICS delivery in Calendar Year 2015.



SOUTHERN NEVADA WATER AUTHORITY

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June 30, 2014

Terry Fulp, Ph.D., Regional Director
Bureau of Reclamation
Lower Colorado Regional Office
P.O. Box 61470
Boulder City, Nevada 89006

Dear Dr. Fulp:

SUBJECT: SOUTHERN NEVADA WATER AUTHORITY PLANS OF CREATION FOR MUDDY AND VIRGIN RIVER TRIBUTARY CONSERVATION AND COYOTE SPRING VALLEY IMPORTED INTENTIONALLY CREATED SURPLUS CALENDAR YEAR 2015

Enclosed are the Southern Nevada Water Authority (SNWA) 2015 Plans of Creation (Plans) for Tributary Conservation Intentionally Created Surplus (ICS) for the Muddy and Virgin Rivers in Nevada, and Imported ICS from Coyote Spring Valley. These Plans describe how SNWA intends to meet all the requirements as outlined in Section 3 of the Colorado River Interim Guidelines Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead (Guidelines). Calendar Year 2015 represents the 8th year in which SNWA will create ICS under the Guidelines.

SNWA anticipates creating Tributary Conservation ICS and Imported ICS during Calendar Year 2015 as indicated below:

Table with 4 columns: Calendar Year, Virgin River, Muddy River, Coyote Spring Valley. Row 1: 2015, 17,000, 20,000, 9,000.

If you have any questions, please contact me at (702) 822-3378 or Jeff Johnson at (702) 862-3748.

Sincerely,

Handwritten signature of Colby N. Pellegrino

Colby N. Pellegrino
Colorado River Program Manager

CNP:JJ:lmv

Enclosures (3)

- c: Jayne Harkins, Executive Director, Colorado River Commission of Nevada
Steve Hvinden, Office Director, Lower Colorado River Regional Office, Bureau of Reclamation w/enclosures
Paul Matuska, Manager, Water Conservation and Accounting Group, Lower Colorado River Regional Office, Bureau of Reclamation w/enclosures

SNWA MEMBER AGENCIES

Muddy River Intentionally Created Surplus (ICS) Tributary Conservation Plan of Creation Calendar Year 2015

Introduction

The Secretary of Interior (Secretary) issued a Record of Decision for *Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead* (Guidelines) on December 13, 2007, which established criteria for the development and delivery of Intentionally Created Surplus (ICS). One type of ICS is Tributary Conservation, which allows a Contractor, as defined in the Guidelines, to increase tributary flows into the mainstream of the Colorado River within its state for ICS credits. The conservation of tributary flows into the mainstream of the Colorado River is limited to water rights that have been used for a significant period of years and were perfected prior to June 25, 1929, the effective date of the Boulder Canyon Project Act.

To generate ICS, the Guidelines require a Contract holder to enter into a Delivery Agreement with the United States of America and a Forbearance Agreement with Lower Basin Contract holders. On December 13, 2007, the Southern Nevada Water Authority (SNWA) and Colorado River Commission of Nevada (CRC) entered into a Forbearance Agreement with Lower Basin Contract holders. Exhibit A of the Forbearance Agreement describes the surface water rights on the Muddy and Virgin Rivers, pre-dating June 25, 1929, which SNWA plans to use to create Tributary Conservation ICS, and how the Muddy River flows reaching Lake Mead will be calculated.

The SNWA and CRC entered into a Delivery Agreement with the United States of America on December 13, 2007. Exhibit A from the Forbearance Agreement is attached to the Delivery Agreement.

The Guidelines, Forbearance Agreement, and Delivery Agreement require a plan for the creation of ICS (ICS Plan) be submitted to the Secretary of Interior demonstrating how all requirements of the Guidelines will be met. Section G.3.B.1 of the Guidelines outline that an ICS Plan will consist of, at a minimum, the following information:

- a. Project Description including what extraordinary measures will be taken to conserve or import the water
- b. Term of Activity
- c. Estimate of the amount of water that will be conserved
- d. Proposed methodology for verification of the amount of water conserved
- e. Documentation regarding any state or federal permits or other regulatory approvals that have already been obtained by the Contractor or that need to be obtained prior to the creation of ICS

The following sections document each of these requirements. It is important to note that the majority of the information presented below is reiterated from Exhibit A of the Forbearance Agreement.

Project Description

Muddy River water rights that will be utilized to create Tributary Conservation pursuant to this ICS Plan and Exhibit A of the Forbearance Agreement are decreed Nevada state water rights with an established history of use prior to 1927. Per Exhibit A of the Forbearance Agreement, SNWA is specifically allowed to utilize any and all pre-June 25, 1929, Muddy River water rights to create Tributary Conservation ICS regardless of those water rights history of use after 1928.

The Muddy River originates from regional springs in the Muddy River Springs Area in Nevada and flows into the Overton Arm of Lake Mead (Figure 1). The Muddy River Springs that form the Muddy River headwaters are regional springs with relatively consistent flows, consequently the Muddy River flows are also consistent. The average annual flow of the Muddy River at U.S. Geological Survey (USGS) gaging station *09419000 Muddy River near Glendale, NV*, (Glendale Gage) for water years 1950 to 2013 was 30,480 acre-feet per year (afy).

Muddy River water rights were decreed in 1920 and the decree allocated the entire flow of the river. On the lower Muddy River, the entire flow of the river is diverted for agricultural use by the Muddy Valley Irrigation Company (MVIC). SNWA owns and is leasing shares in MVIC. In addition, SNWA leases and owns decreed Muddy River water rights on the upper reach of the Muddy River, which are not represented by MVIC shares. For the purposes of this plan the point that separates the upper and lower Muddy River is the Glendale Gage.

Muddy River water rights and MVIC shares controlled by SNWA will be conveyed to Lake Mead's Overton Arm. This water constitutes pre-June 25, 1929 water rights and represents the full right that is and has been historically used for agricultural or could have otherwise been diverted from the Muddy River and fully consumed by SNWA within Nevada.

Tributary ICS Muddy River water conveyed to Lake Mead will pass through the historic points of diversion and either flow through the irrigation company ditches and return to the mainstream of the Muddy River further downstream or will remain in the mainstream of the Muddy River.

Term of Activity

The term of activity for this ICS Plan is Calendar Year 2015. SNWA anticipates receiving Tributary Conservation ICS credits for Muddy River water into the foreseeable future. As more water rights are acquired and more land is fallowed, the amount of water claimed as Tributary Conservation ICS is anticipated to increase. Subsequent ICS Plans will be updated to reflect the acquired pre-June 25, 1929 water rights.

Estimate of Water Conserved

For Calendar Year 2015, SNWA anticipates creating up to 20,000 af of Muddy River Tributary Conservation ICS from SNWA controlled water rights described below.

Upper Muddy River Water Rights

- 1) Up to 2,001 afy leased from the Church of Latter Day Saints (LDS Lease) pursuant to Certificate Nos. 6795, 10944, 10951, 10952, and 10953 in 2015 (Figure 3) being leased by SNWA.
- 2) Muddy River decree proofs V01619 and V01631, also referred to as the Cox and Mitchell Rights, for a total of 111 afy that SNWA acquired with the purchase of the Warm Springs Natural Area (Figure 3).
- 3) Up to 1,040 afy pursuant to the Muddy River decree owned by SNWA (commonly referred to as the Hidden Valley rights) (Figure 4).
- 4) Up to 3,700 afy pursuant to Permits 73482, 73483, and 73695 held in a long-term lease by the Moapa Band of Paiutes and subleased by SNWA from the Moapa Band of Paiutes (Figure 5).
- 5) Up to 811 afy of decreed Muddy River water under Certificate 9609 which was acquired by SNWA (referred to as the Knox and Holmes right in this document) (Figure 6).
- 6) Up to 3,000 afy pursuant to Certificates 7316 and 13851 held by MVIC and being leased by SNWA.

Lower Muddy River Water Rights (MVIC Shares)

The volume of water represented by MVIC shares is quantified based on a percentage of the total flows (divided by total shares) in the Muddy River at the Glendale gage less the Upper Muddy River rights owned or controlled by SNWA that reach the gage (Figure 2).

1) SNWA Owned MVIC Shares

- a) 1,009 preferred shares in the MVIC estimated to represent approximately 7,000 afy in 2015.
- b) 2,839 common shares in the MVIC estimated to represent approximately 2,000 afy in 2015.
- c) If additional shares are acquired, the water rights represented by the shares will be included in the year-end Certification Report.

A portion of the shares owned by SNWA have a provision for the seller to lease the shares back from SNWA for agricultural use. The amount of water being leased-back by sellers varies by year and is not known until just before the beginning of the water year when sellers must notify SNWA of their intention to lease the water back for agricultural use. As an example, in CY 2013 approximately 1,400 af of purchased shares were leased back to the seller.

2) SNWA Leased MVIC Shares

- a) The lease contracts for both preferred and common shares in MVIC are based on water years (October 1 to September 30) and can be subject to change.
- a) Approximately 200 preferred shares are expected to be leased in the MVIC from January through September 2015. For planning purposes the lease of 200 preferred shares for CY 2015 are estimated to represent about 1,300 af.
- b) Approximately 400 common shares are expected to be leased in the MVIC from January through September 2015. For planning purposes the lease of 400 common shares for CY 2015 are estimated to represent about 200 af.

Methodology

Muddy River Flows reaching Lake Mead will be calculated as follows:

- Flows measured by USGS at the Glendale, NV gage
 - (minus) consumptive uses by agriculture below the Glendale gage
 - (minus) direct uses by industry below the Glendale gage
 - (minus) channel evapotranspiration below Glendale gage to Lake Mead
 - (minus) evapotranspiration from the managed acreage on the Overton Wildlife Management Area (WMA)
-

= Total Flow to Lake Mead (Elevation 1,220 AMSL)

- To calculate the consumptive uses of crops and phreatophytes in the Lower Muddy River, a combination of data from the Lower Colorado River Accounting System (LCRAS), Nevada Division of Water Resources' (NDWR) *Evapotranspiration and Net Irrigation Requirements for Nevada* report, and locally measured reference ET data will be used.
- If the total amount of water represented by the rights controlled by SNWA described in this ICS Plan and documented in the Certification Report (described below) is found to be equal to or less than the amount of water calculated to reach Lake Mead, then SNWA shall be credited with the full amount of water rights described in the ICS Plan.
- If the total amount of water rights described in this ICS Plan and documented in the Certification Report is more than the amount calculated to reach Lake Mead, SNWA shall be credited with only the amount calculated to reach Lake Mead.
- The total Muddy River flow reaching Lake Mead, as described above, includes flows at the USGS gage 09419507 *Muddy River at Lewis Avenue at Overton, NV* located just upstream of the OWMA and calculated underflow.

A. Proof of Fallowed Land:

To demonstrate the fallowing of land and the conservation of water, aerial photography will be acquired, verified, and analyzed during the calendar year. A Geographic Information System (GIS) will be used to compare the current irrigated acreage with acreage defined by the water rights as approved by NDWR and the Muddy River decree. On the attached maps, the original Place of Use (POU) is shown as a red polygon. If a subsequent Proof of Beneficial Use (PBU) map was submitted to NDWR, the PBU boundaries are included as yellow polygons for reference. PBU maps were not filed for all decreed rights, because they are not required for vested rights; implying beneficial use was initiated prior to the establishment of Nevada Water Law in 1905.

B. Certification Report

- i. In compliance with Section G.3.D of the Guidelines, a Certification Report will be submitted for the Secretary's review and verification, demonstrating the amount of ICS created and that the method of creation was consistent with this ICS Plan, the Delivery Agreement and Forbearance Agreement. The Certification Report will be submitted to the Secretary in the year following the creation of the ICS.
- ii. The Certification Report, at a minimum, will include:
 - Proof of acreage fallowed using aerial photography and GIS
 - Calculations of the amount of pre-June 25, 1929, water rights reaching Lake Mead, including gage records of Muddy River flows
 - Documentation and calculations of the amount of SNWA owned and controlled pre-June 25, 1929, water rights reaching Lake Mead
 - Letter from the NDWR verifying the quantity of water conveyed through the Muddy River system to the Colorado River mainstream for the purpose of creating ICS

Regulatory Approvals

Tributary Conservation ICS on the Muddy River was evaluated in the Environmental Impact Statement and Record of Decision (dated December 13, 2007) for the Guidelines. Compliance for Muddy River Tributary Conservation ICS was also obtained under Section 7 of the Endangered Species Act through formal consultation with the U.S. Fish and Wildlife Service. The Final Biological Opinion for the Guidelines was issued December 12, 2007.

Nevada Revised Statute 533.030 declares that surface and groundwater rights conveyed to Lake Mead for the purpose of creating Intentionally Created Surplus are a beneficial use.

The NDWR issued State Engineer Order 1194 on July 15, 2008, regarding Tributary Conservation ICS on the Muddy River. The Order outlines the Nevada water rights on the Muddy River and the following process for verification of Muddy River rights being conveyed to the Colorado River mainstream:

“An entity with an ICS Delivery Contract, which uses water rights adjudicated under the Muddy River Decree for the creation of ICS, shall file an annual report with the State Engineer's Office. The annual report shall give a full accounting of adjudicated water rights on the Muddy River or its tributaries owned or controlled by the entity with an ICS Delivery Contract, which have been conveyed through the Muddy River system to the Colorado River mainstream for the creation of ICS. After review of the annual report, the State Engineer shall issue a letter verifying the quantity of water conveyed through the Muddy River system to the Colorado River mainstream for the purpose of creating ICS.”

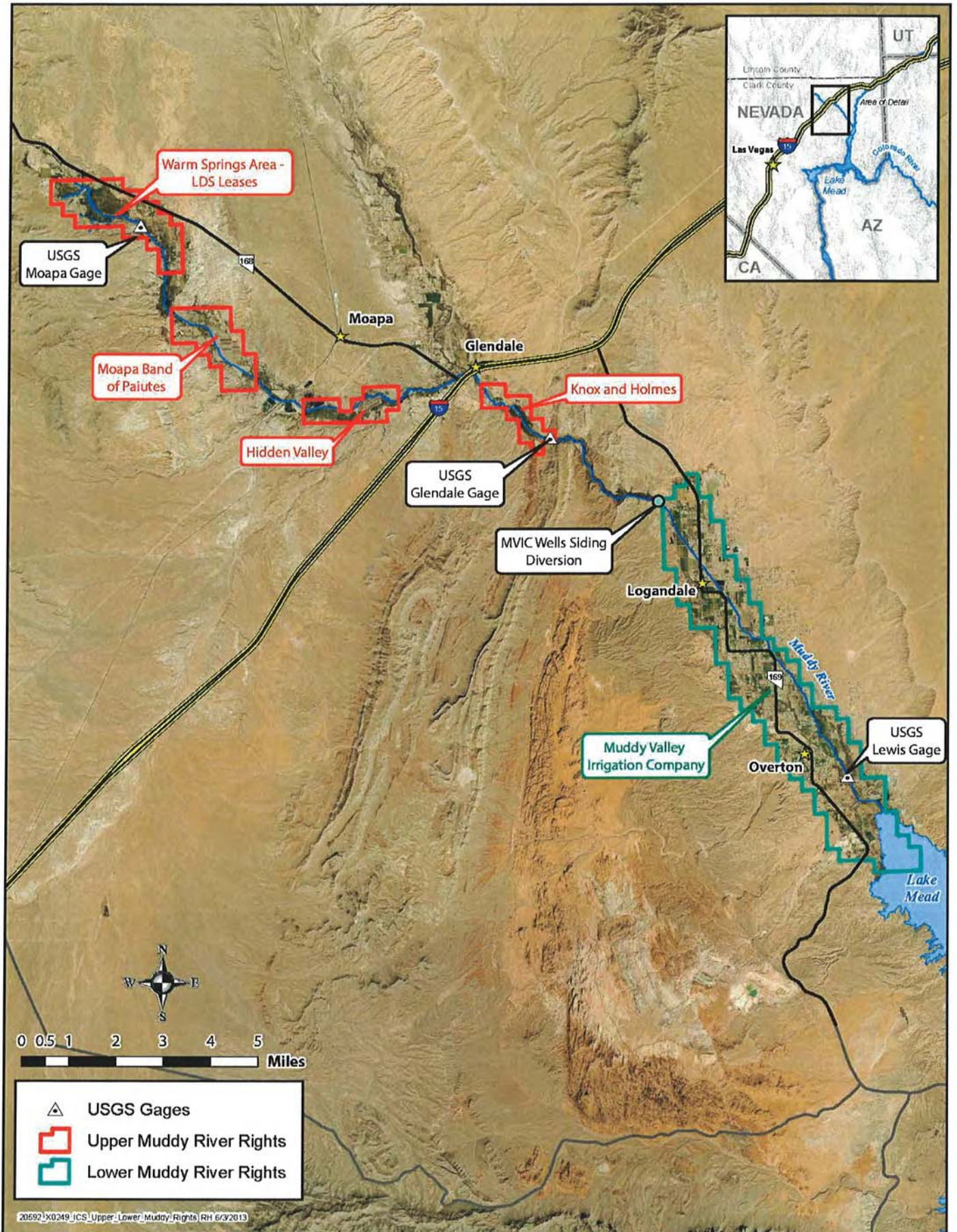


Figure 1 - Muddy River

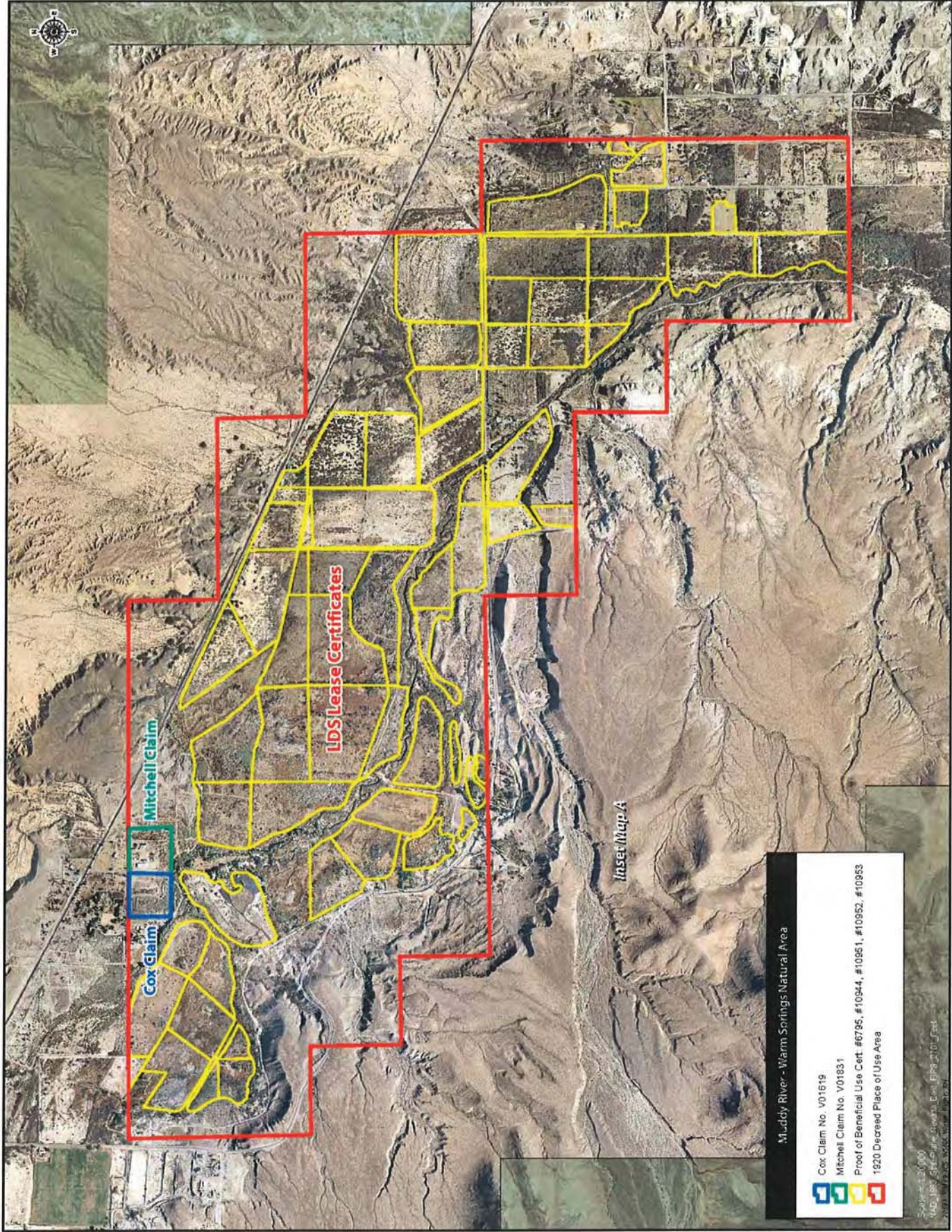


Figure 2 - LDS Water Rights POU and PBU and Cox and Mitchell POU. Aerial Photography December 2013

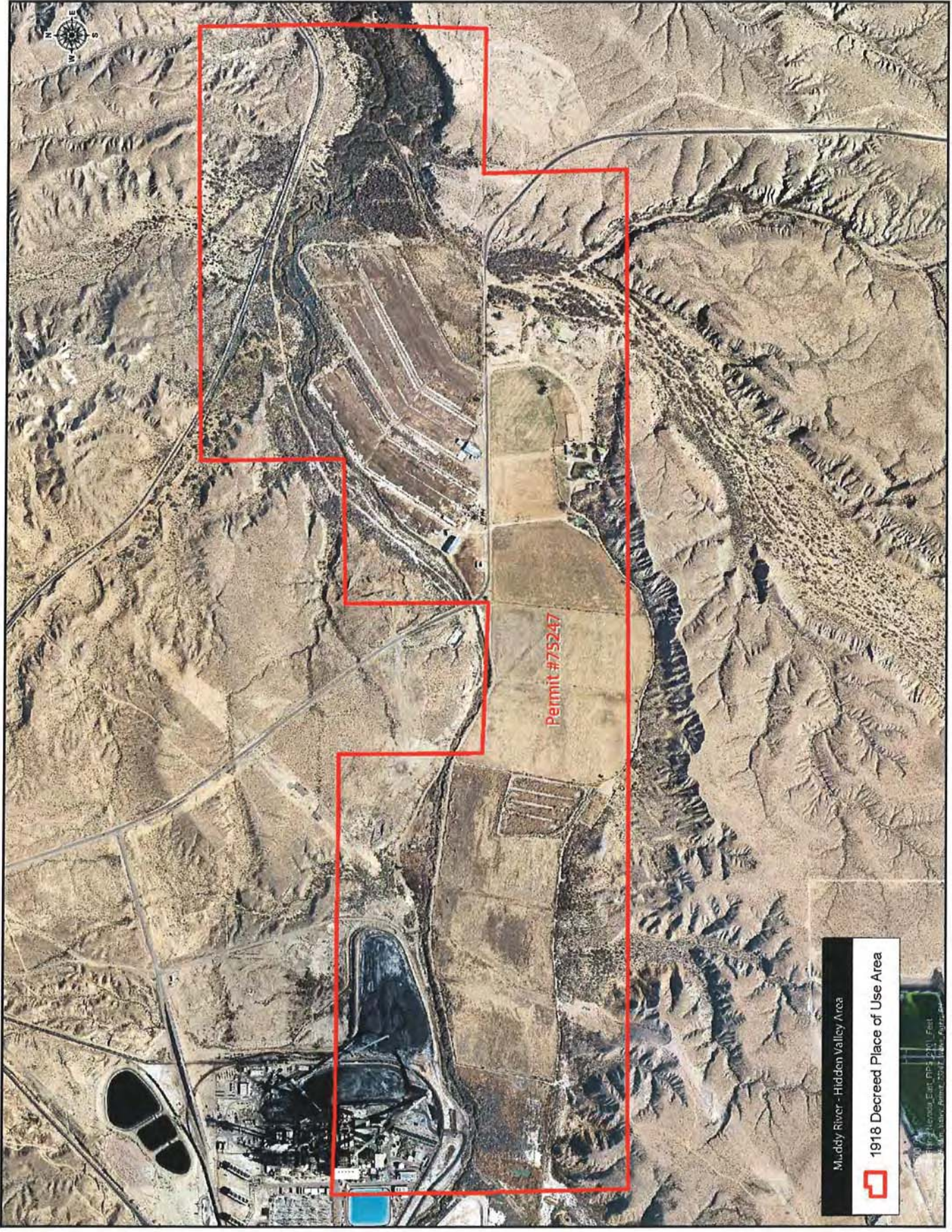


Figure 3 - Hidden Valley Decreed Water Right POU. Aerial Photography December 2013

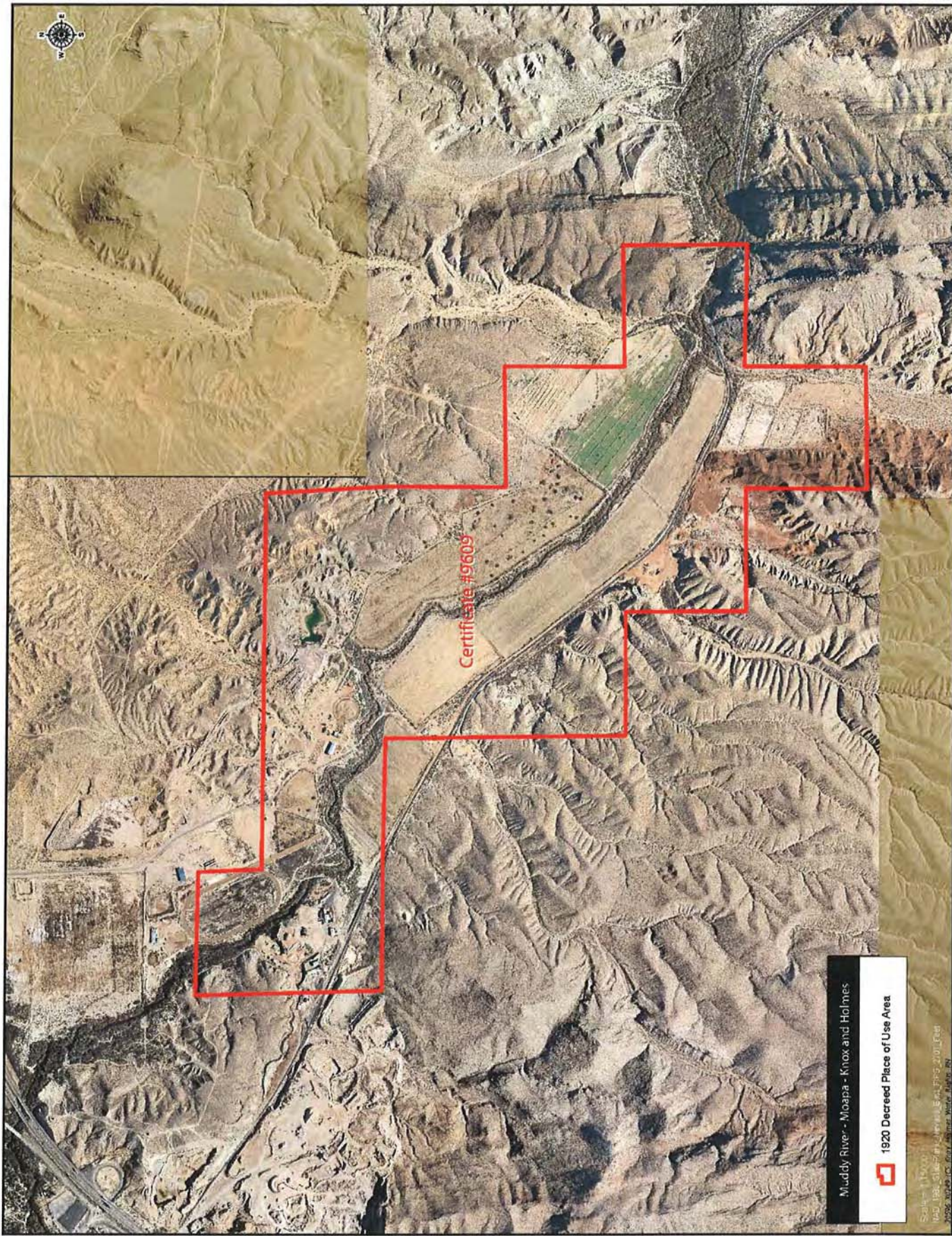


Figure 5 – Knox and Holmes Decreed Water Right POU. Aerial Photography December 2013

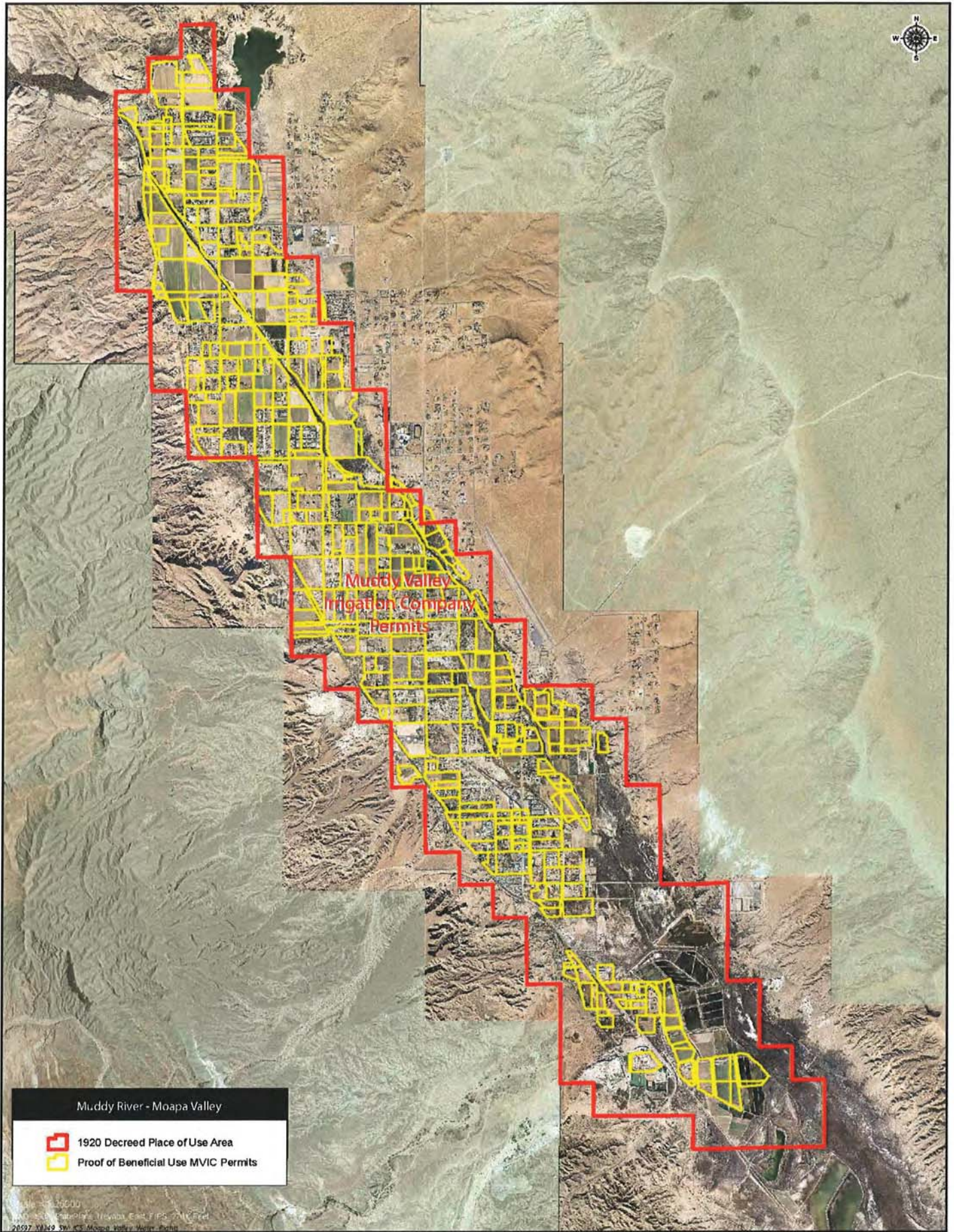


Figure 6 - MVIC Decreed POU and PBU. Aerial Photography December 2013

Virgin River Intentionally Created Surplus (ICS) Tributary Conservation Plan of Creation Calendar Year 2015

Introduction

The Secretary of Interior (Secretary) issued a Record of Decision for *Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead* (Guidelines) on December 13, 2007, which established criteria for the development and delivery of Intentionally Created Surplus (ICS). One type of ICS is Tributary Conservation, which allows a Contractor, as defined in the guidelines, to increase tributary flows into the mainstream of the Colorado River within its state for ICS credits. The conservation of tributary flows into the mainstream of the Colorado River is limited to water rights that have been used for a significant period of years and were perfected prior to June 25, 1929, the effective date of the Boulder Canyon Project Act.

To generate ICS, the Guidelines require a Contract holder to enter into a Delivery Agreement with the United States of America and a Forbearance Agreement with Lower Basin Contract holders. On December 13, 2007, the Southern Nevada Water Authority (SNWA) and Colorado River Commission of Nevada (CRC) entered into a Forbearance Agreement with Lower Basin Contract holders. Exhibit A of the Forbearance Agreement describes the surface water rights on the Muddy and Virgin Rivers, pre-dating June 25, 1929, which SNWA plans to use to create Tributary Conservation ICS, and how the Virgin River flows reaching Lake Mead will be calculated.

The SNWA and CRC entered into a Delivery Agreement with the United States of America on December 13, 2007. Exhibit A from the Forbearance Agreement is attached to the Delivery Agreement.

The Guidelines, Forbearance Agreement, and Delivery Agreement require a plan for the creation of ICS (ICS Plan) be submitted to the Secretary of Interior demonstrating how all requirements of the Guidelines will be met. Section G.3.B.1 of the Guidelines outline that an ICS Plan will consist of, at a minimum, the following information:

- a. Project Description including what extraordinary measures will be taken to conserve or import the water
- b. Term of Activity
- c. Estimate of the amount of water that will be conserved
- d. Proposed methodology for verification of the amount of water conserved
- e. Documentation regarding any state or federal permits or other regulatory approvals that have already been obtained by the Contractor or that need to be obtained prior to the creation of ICS

The following sections document each of these requirements. It is important to note that the majority of the information presented below is reiterated from Exhibit A of the Forbearance Agreement and Delivery Agreement.

Project Description

Virgin River water rights that will be utilized to create Tributary Conservation pursuant to this ICS Plan and Exhibit A of the Forbearance Agreement are decreed and permitted Nevada state water rights with an established history of use prior to 1927. Per Exhibit A of the Forbearance Agreement, SNWA is specifically allowed to utilize any and all pre-June 25, 1929, Virgin River water rights to create Tributary Conservation ICS regardless of those water rights history of use after 1928.

The headwaters of the Virgin River are in southwestern Utah, and the river flows through Arizona and Nevada, before terminating in Lake Mead (Figure 1). The average annual flow of the Virgin River entering Nevada at U.S. Geological Survey gaging station *09415000 Virgin River at Littlefield, AZ* for water years 1930 to 2013 was 175,500 acre-feet per year (afy).

Nevada state water rights that pre-date the Boulder Canyon Project Act on the Virgin River are comprised of pre-1905 priority surface water rights decreed by the Nevada Supreme Court in 1927 for 17,785 afy to the Bunkerville and Mesquite Irrigation Companies, and additional permitted and certificated rights authorized by the Nevada Division of Water Resources (NDWR).

Agricultural water rights acquired by SNWA will be conveyed to Lake Mead's Overton Arm. The pre-June 25, 1929 water rights conveyed to Lake Mead represent the full right that is and has been historically used for agricultural purposes or could have otherwise been diverted from the Virgin River and fully consumed by SNWA in Nevada.

Virgin River rights conveyed to Lake Mead will pass through their historic points of diversion and either flow through the irrigation company ditches and return to the mainstream of the Virgin River further downstream or will remain in the mainstream of the Virgin River. The full rights controlled and documented by SNWA to flow to Lake Mead will be accounted for as Tributary Conservation ICS.

Term of Activity

The term of activity for this ICS Plan is Calendar Year 2015. SNWA anticipates receiving Tributary Conservation ICS credits for Virgin River water into the foreseeable future. As more water rights are acquired and more land is fallowed, the amount of water claimed as Tributary Conservation ICS is anticipated to increase. Subsequent ICS Plans will be updated to reflect the acquired pre-June 25, 1929 water rights.

Estimate of Water Conserved

SNWA currently owns or controls the following Virgin River rights:

- 1) Bunkerville Irrigation Company:
 - a) 948 shares representing approximately 7,500 afy of surface water rights.
 - b) These shares are owned and leased by SNWA. The lease contracts are based on water years (October 1 to September 30) and can be subject to change.
- 2) Mesquite Irrigation Company:
 - a) 873 shares representing approximately 7,500 afy of surface water rights.
 - b) These shares are owned and leased by SNWA. The lease contracts are based on water years (October 1 to September 30) and can be subject to change.
- 3) A portion of Certificate 1153 with a priority date of 1914 for 601.97 afy designated to irrigate a portion of 177.044 acres of land (Figure 2).

If additional shares or water rights are acquired, they will be included in the year-end Certification Report. For Calendar Year 2015, SNWA anticipates creating up to 17,000 af of Tributary Conservation ICS with the above rights which pre-date June 25, 1929.

Methodology

Because the acreage represented by the water rights SNWA controls is a small percentage (< 15%) of the total annual flow of the Virgin River, Tributary Conservation ICS on the Virgin River can be calculated based on the reduction in agricultural acreage as follows:

Virgin River Calculation:

$$\begin{array}{l} \text{Decrease in total agricultural acreage permitted by the Nevada Division of} \\ \text{Water Resources calculated using remote sensing \& GIS} \\ \times \text{ The duty per acre specified by the water right} \\ \hline = \text{Flows to Lake Mead (Elevation 1,220 AMSL)} \end{array}$$

A. Proof of Fallowed Land

To demonstrate the fallowing of land and the conservation of water, aerial photography will be acquired, verified, and analyzed periodically during the calendar year. A Geographic Information System (GIS) will be used to compare the current irrigated acreage with acreage defined by the water rights as approved by the Nevada Division of Water Resources. On the attached maps, the original Place of Use (POU) is shown as a red polygon. Subsequent Proof of Beneficial Use (PBU) maps were submitted to NDWR in support of additional permits and are included as yellow polygons on the maps for reference.

B. Certification Report

- i. In compliance with Section G.3.D of the Guidelines, a Certification Report will be submitted for the Secretary's review and verification, demonstrating the amount of ICS created and that the method of creation was consistent with this ICS Plan, the Delivery Agreement and Forbearance Agreement. The Certification Report will be submitted to the Secretary in the year following the creation of the ICS.
- ii. The Certification Report, at a minimum, will include:
 - Proof of acreage fallowed using aerial photography and GIS
 - Documentation and calculations of the amount of the pre-June 25, 1929, water rights reaching Lake Mead owned or controlled by SNWA
 - Letter from the NDWR verifying the quantity of water conveyed through the Virgin River to the Colorado River mainstream for the purpose of creating ICS

Regulatory Approvals

Tributary Conservation ICS on the Virgin River was evaluated in the Environmental Impact Statement and Record of Decision (dated December 13, 2007) for the Guidelines. Compliance for Virgin River Tributary Conservation ICS was also obtained under Section 7 of the Endangered Species Act through formal consultation with the U.S. Fish and Wildlife Service. The Final Biological Opinion for the Guidelines was issued December 12, 2007.

Nevada Revised Statute 533.030 declares that surface and groundwater rights conveyed to Lake Mead for the purpose of creating Intentionally Created Surplus are a beneficial use.

The NDWR issued State Engineer Order 1193 on July 15, 2008, regarding Tributary Conservation ICS on the Virgin River. The Order outlines the Nevada water rights on the Virgin River and the following process for verification of Virgin River rights being conveyed to the Colorado River mainstream.

“An entity with an ICS Delivery Contract, which uses water rights adjudicated under the Virgin River Decree or water rights on the Virgin River issued by the State Engineer with a priority date prior to June 25, 1929 for the creation of ICS, shall file an annual report with the State Engineer's Office. The annual report shall give a full accounting of water rights on the Virgin River owned or controlled by the entity with an ICS Delivery Contract, which have been conveyed through the Virgin River system to the Colorado River mainstream for the creation of ICS. After review of the annual report, the State Engineer shall issue a letter verifying the quantity of water conveyed through the Virgin River system to the Colorado River mainstream for the purpose of creating ICS.”

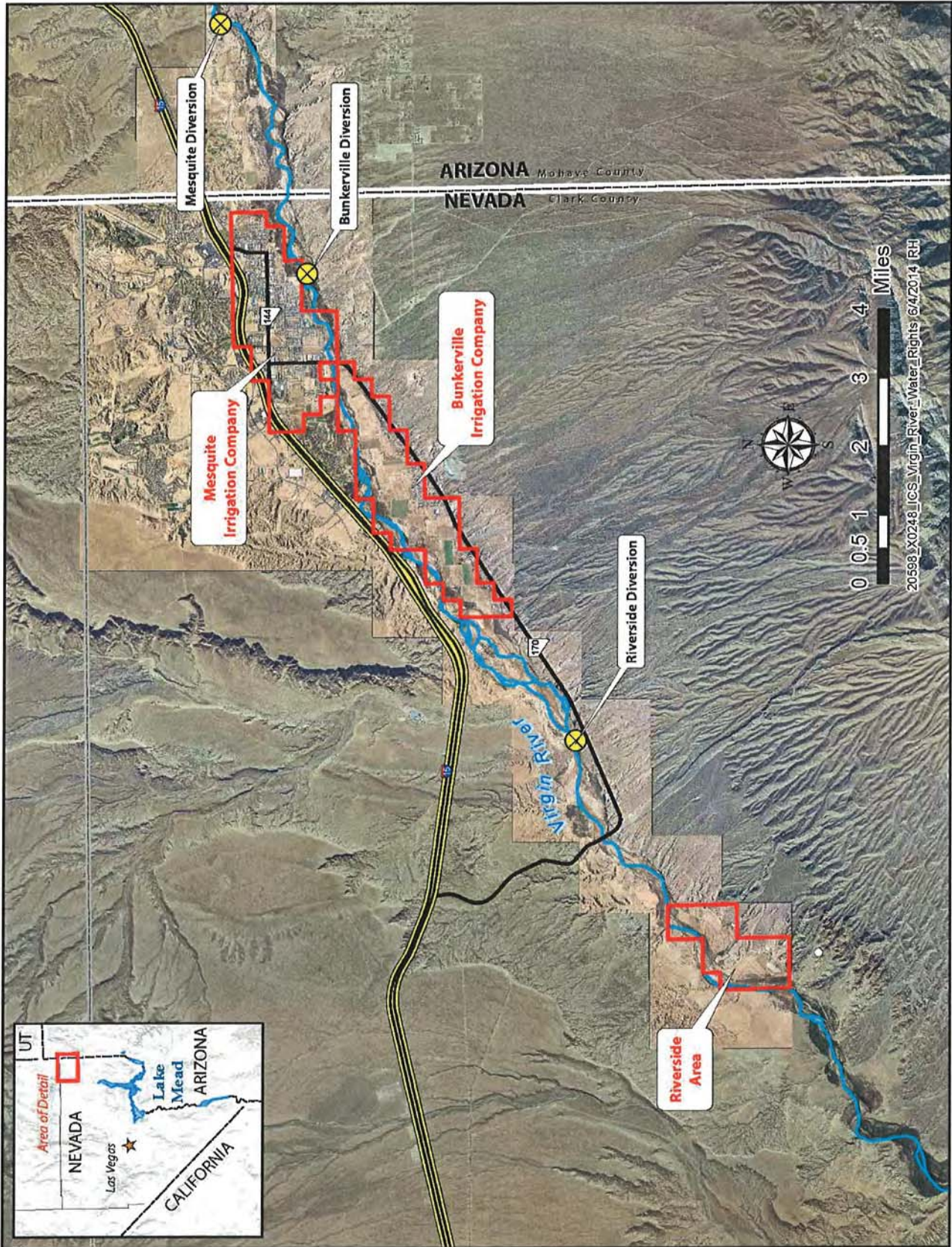


Figure 1 - Lower Virgin River showing Places of Use (red) for Pre-BCPA Water Rights

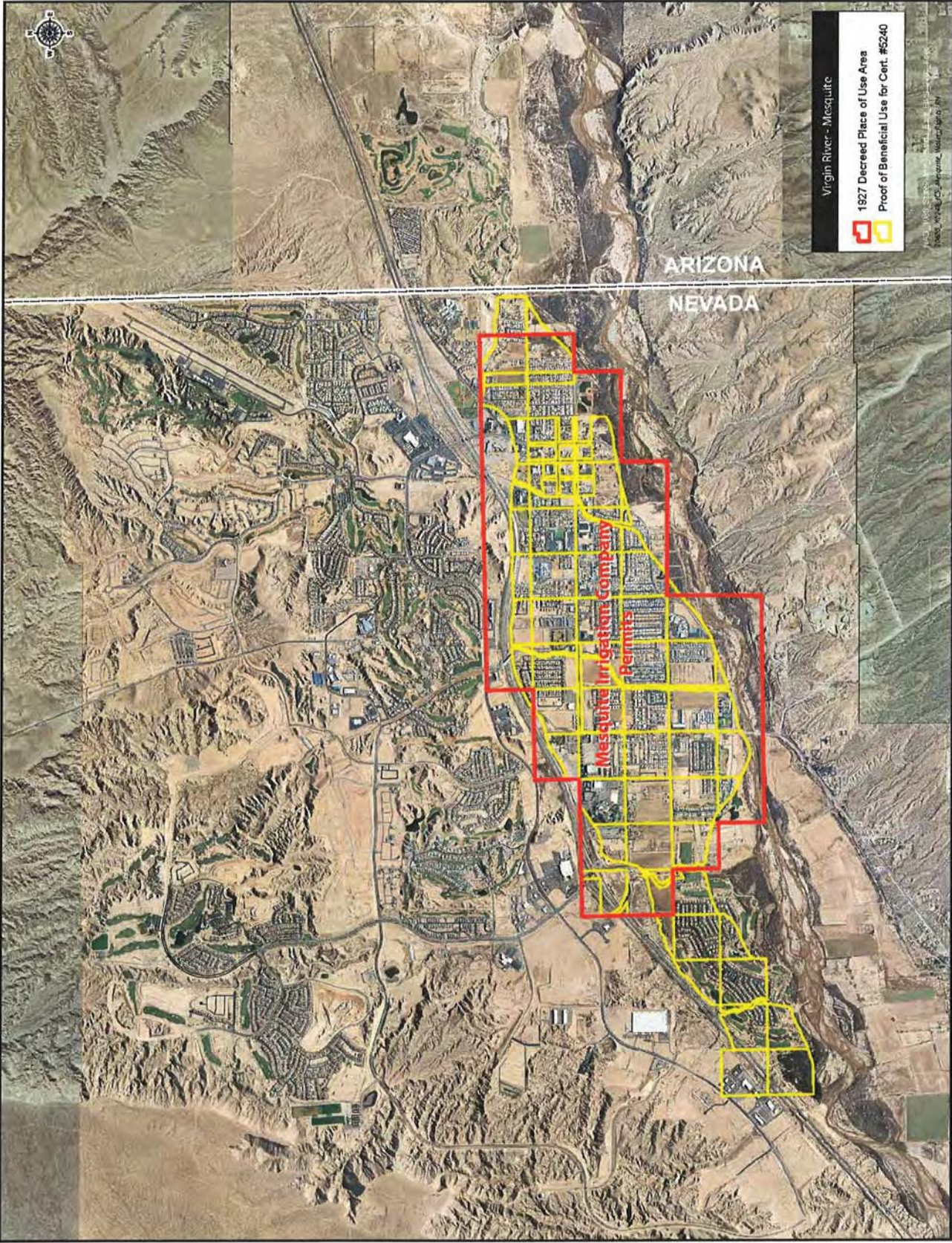


Figure 3 - Mesquite Decreed Place of Use (red) and Proof of Beneficial Use (yellow). Aerial Photography December 2013

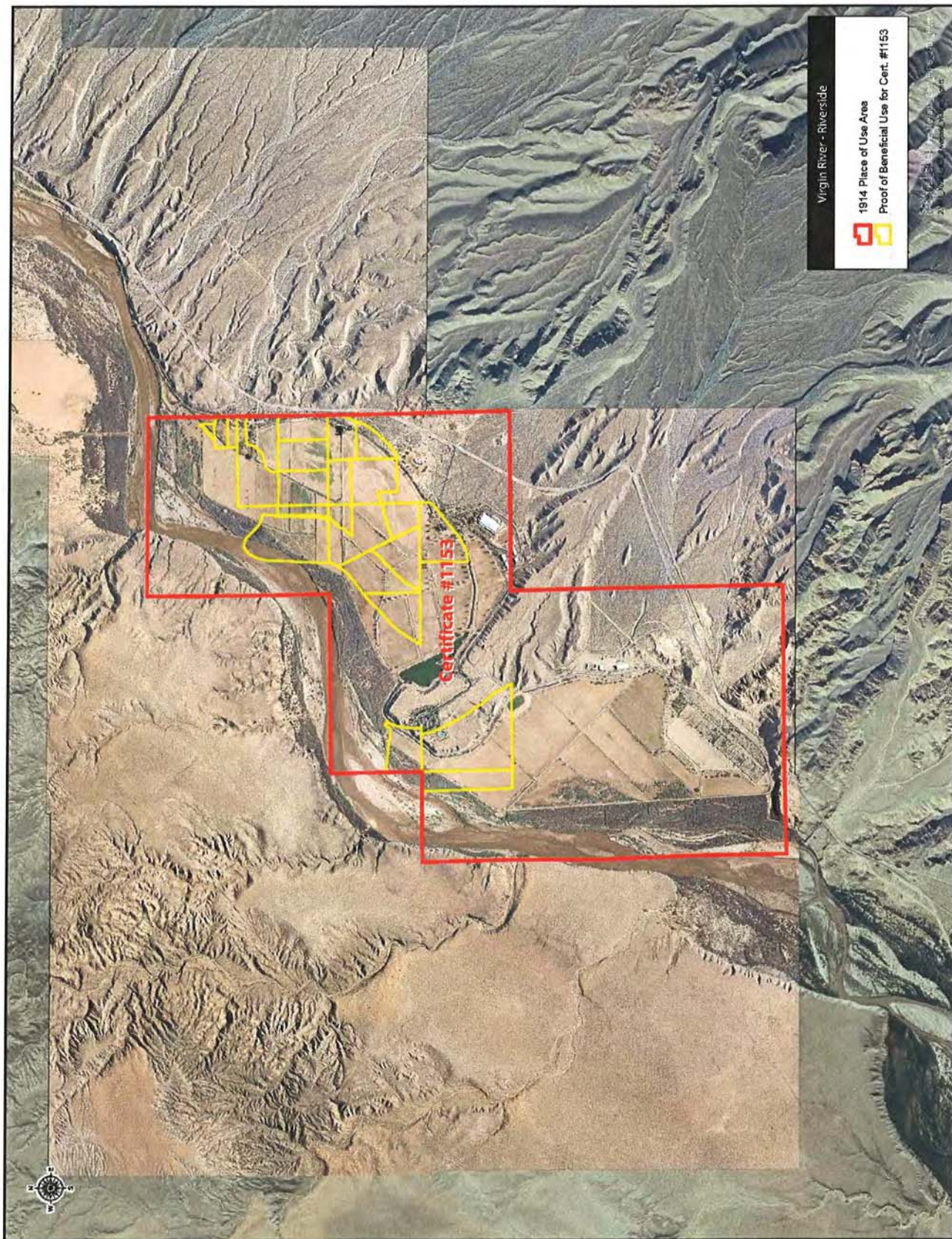


Figure 4 – Riverside Certificate 1153 Decreed Place of Use (red) and Proof of Beneficial Use (yellow). Aerial Photography December 2013

Coyote Spring Valley Intentionally Created Surplus (ICS) Imported ICS Plan of Creation Calendar Year 2015

Introduction

The Secretary of Interior (Secretary) issued a Record of Decision for *Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead* (Guidelines) on December 13, 2007, which established criteria for the development and delivery of Intentionally Created Surplus (ICS). One type of ICS is Imported ICS, which allows a Contractor, as defined in the Guidelines, to introduce non-Colorado River System water from the Contractor's state into the mainstream of the Colorado River for ICS credits.

To generate ICS, the Guidelines require a Contract holder to enter into a Delivery Agreement with the United States of America and a Forbearance Agreement with Lower Basin Contract holders. On December 13, 2007, the Southern Nevada Water Authority (SNWA) and Colorado River Commission of Nevada (CRC) entered into a Forbearance Agreement with Lower Basin Contract holders. Exhibit B of the Forbearance Agreement describes the State of Nevada groundwater rights in Coyote Spring Valley, which SNWA plans to use to create Imported ICS, and how the Coyote Spring Valley groundwater conveyed to Lake Mead will be determined.

The SNWA and CRC entered into a Delivery Agreement with the United States of America on December 13, 2007. Exhibit B from the Forbearance Agreement is attached to the Delivery Agreement.

The Guidelines, Forbearance Agreement, and Delivery Agreement require a plan for the creation of ICS (ICS Plan) be submitted to the Secretary of Interior demonstrating how all requirements of the Guidelines will be met. Section G.3.B.1 of the Guidelines outline that an ICS Plan will consist of, at a minimum, the following information:

- a. Project Description including what extraordinary measures will be taken to conserve or import the water
- b. Term of Activity
- c. Estimate of the amount of water that will be imported
- d. Proposed methodology for verification of the amount of water imported
- e. Documentation regarding any state or federal permits or other regulatory approvals that have already been obtained by the Contractor or that need to be obtained prior to the creation of ICS

The following sections document each of these requirements. It is important to note that the majority of the information presented below is reiterated from Exhibit B of the Forbearance Agreement.

Project Description

Coyote Spring Valley groundwater rights that will be utilized to create Imported ICS pursuant to this ICS Plan and Exhibit B of the Forbearance Agreement are groundwater rights permitted by the Nevada Division of Water Resources.

Coyote Spring Valley is located approximately 50 miles north of the Las Vegas Valley and lies within Clark and Lincoln counties. SNWA will convey permitted groundwater rights and possibly additional water rights granted by the Nevada Division of Water Resources through the SNWA Coyote Spring transmission system (Figure 1). The groundwater will then be conveyed through the Moapa Valley Water District's (MVWD) municipal supply system and discharged to the Muddy Valley Irrigation Company's irrigation system and the Muddy River. The water will then be allowed to flow down the Muddy River to Lake Mead. The metered groundwater rights that flow to Lake Mead will be accounted for as Imported ICS.

Term of Activity

The term of activity for this ICS Plan is Calendar Year 2015. SNWA may create Imported ICS credits from Coyote Spring Valley groundwater conveyed to Lake Mead during the next several years. As Colorado River conditions, SNWA water demands, and operational strategies change, the amount of groundwater pumped from Coyote Spring Valley and conveyed to Lake Mead as Imported ICS may change. Subsequent ICS Plans will be updated to reflect any changes.

Estimate of Water Imported

Based on current operational limitations and water rights, SNWA is planning to convey up to 9,000 acre-feet (af) of Coyote Spring Valley groundwater rights to Lake Mead in Calendar Year 2015.

As outlined in Exhibit B of the Forbearance Agreement, the maximum amount of Imported ICS that may be created by SNWA from Nevada state water rights in one year is limited to 15,000 af from the following:

1. 9,000 acre-feet per year pursuant to Permit Nos. 77291 through 77306
2. Any effluent generated by the direct use of water rights specified in paragraphs 1 and 2 above by the MVWD or other municipal agency outside of the Las Vegas Valley and treated and discharged to Lake Mead in accordance with all applicable state and federal laws.

Methodology

Coyote Spring Valley groundwater is pumped and conveyed to the Muddy River channel downstream of the U.S. Geological Survey (USGS) 09419000 *Muddy River near Glendale, NV* gage in Lower Moapa Valley. The groundwater will be metered and will be in addition to SNWA's Muddy River Tributary Conservation ICS water already in the channel. Consumptive use by evapotranspiration in the Muddy River channel and Overton Wildlife Management Area will be accounted for in the Muddy River Tributary Conservation ICS - Certification Report.

In compliance with Section G.3.D of the Guidelines, a Certification Report will be submitted for the Secretary's review and verification, documenting the amount of Imported ICS created and demonstrating that the method of creation was consistent with this ICS Plan, the Delivery Agreement and Forbearance Agreement. The Certification Report will be submitted to the Secretary in the year following the creation of the ICS. The Certification Report, at a minimum, will include:

- Documentation of metered discharge to the Muddy River
- Summary of Tributary Conservation ICS on the Muddy River, accounting for evapotranspiration in the Muddy River channel and the Overton Wildlife Management Area
- Letter from the Nevada Division of Water Resources verifying the quantity of water conveyed from Coyote Spring Valley and discharged into the lower Muddy River system and to the Colorado River mainstream for the purpose of creating ICS

Regulatory Approvals

The Coyote Spring Well and Moapa Transmission System Project were evaluated under the National Environmental Policy Act in the Environmental Assessment and Finding of No Significant Impact/Decision Record dated June 22, 2007. In addition, compliance under Section 7 of the Endangered Species Act was obtained through formal consultation with the U.S. Fish and Wildlife Service. The Final Biological Opinion for the Coyote Spring Well and Moapa Transmission System Project was issued May 9, 2007. SNWA has obtained a National Pollutant Discharge Elimination System (NPDES) permit for discharge of Coyote Spring Valley groundwater into the Muddy River from the Nevada Division of Environmental Protection.

Nevada Revised Statute 533.030 declares that surface and groundwater rights conveyed to Lake Mead for the purpose of creating Intentionally Created Surplus are a beneficial use of Nevada water resources.

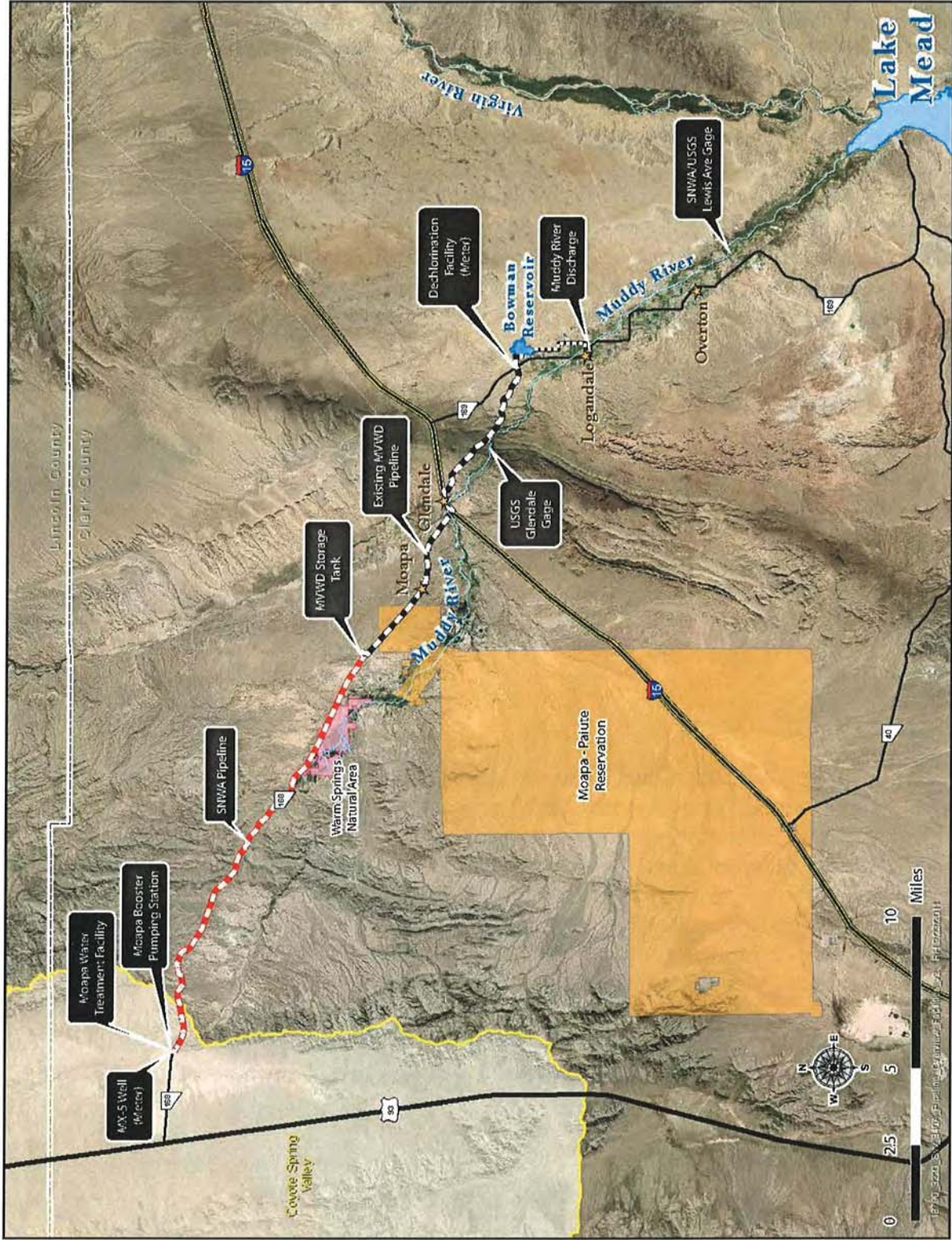


Figure 1 – Coyote Spring Valley to Lake Mead, Groundwater Transmission System



United States Department of the Interior

BUREAU OF RECLAMATION
Lower Colorado Regional Office
P.O. Box 61470
Boulder City, NV 89006-1470

SEP 25 2014

IN REPLY REFER TO:
LC-4220
WTR-4.03

CERTIFIED - RETURN RECEIPT REQUESTED

Ms. Colby N. Pellegrino
Colorado River Program Manager
Southern Nevada Water Authority
P.O. Box 99956
Las Vegas, NV 89193-9956

Subject: Approval of the Southern Nevada Water Authority's (SNWA) 2015 Plans for the Creation of Muddy River and Virgin River Tributary Conservation Intentionally Created Surplus (ICS) and Coyote Spring Valley Imported ICS

Dear Ms. Pellegrino:

SNWA submitted its 2015 Plans for the Creation of Tributary Conservation ICS and Imported ICS (ICS Plans) by letter dated June 30, 2014. SNWA's ICS Plans describe three separate projects from which SNWA intends to create ICS, including the Muddy River and Virgin River Tributary Conservation ICS projects and the Coyote Spring Valley Imported ICS project. From the yields of these projects, SNWA plans to create up to 46,000 acre-feet (af) of ICS during calendar year 2015.

The Bureau of Reclamation has reviewed SNWA's ICS Plans and confirms that they contain all necessary information required by Section 3.B of the Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead (Interim Guidelines). In accordance with Section 7.B.5 of the Interim Guidelines, Reclamation has consulted with the Basin States regarding SNWA's ICS Plans.

Based upon Reclamation's review of SNWA's ICS Plans and the completion of the consultation process, I approve SNWA's 2015 ICS Plans for the creation of up to 46,000 af of ICS as provided in the table below.

Muddy River Tributary Conservation ICS	up to 20,000 af
Virgin River Tributary Conservation ICS	up to 17,000 af
Coyote Spring Valley Imported ICS	up to 9,000 af
Total ICS for Calendar Year 2015	Not to exceed 46,000 af

Section 3.B.1 of the Interim Guidelines provides that, subject to approval by Reclamation, a contractor may modify its approved ICS plan during the year of creation. Section 3.D.1 of the Interim Guidelines requires a contractor to submit a Certification Report to the Regional Director demonstrating the amount of ICS created and that the method of creation was consistent with the approved ICS plan, a Forbearance Agreement, and a Delivery Agreement.

If you have questions, please contact Mr. Paul Matuska, Water Accounting and Verification Group Manager, at 702-293-8164 or pmatuska@usbr.gov.

Sincerely,



Terrance J. Fulp, Ph.D.
Regional Director

cc: Ms. Tanya M. Trujillo
Executive Director
Colorado River Board of California
770 Fairmont Avenue, Suite 100
Glendale, CA 91203-1035

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Director
Utah Division of Water Resources
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Scott A. Verhines, P.E.
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Tina Anderholt-Shields, P.E.
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Imperial Irrigation District
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Imperial, CA 92251-0937



SOUTHERN NEVADA WATER AUTHORITY

1001 South Valley View Boulevard • Las Vegas, NV 89153
(702) 258-3939 • snwa.com



June 17, 2015

Terry Fulp, Ph.D., Regional Director
Bureau of Reclamation
Lower Colorado Regional Office
P.O. Box 61470
Boulder City, Nevada 89006

Dear Dr. Fulp:

SUBJECT: AMENDED: SOUTHERN NEVADA WATER AUTHORITY PLANS OF CREATION FOR MUDDY AND VIRGIN RIVER TRIBUTARY CONSERVATION INTENTIONALLY CREATED SURPLUS AND SYSTEM CONSERVATION CALENDAR YEAR 2015

The Southern Nevada Water Authority (SNWA) submitted 2015 Plans of Creation for the Muddy and Virgin Rivers to the U.S. Bureau of Reclamation (Reclamation) on June 30, 2014, and Reclamation approved the Plans on September 25, 2014. SNWA is amending the original approved Plans to include System Conservation based on the System Conservation Implementation Agreement between the U.S. Bureau of Reclamation and SNWA entered into on June 4, 2015.

Enclosed for Reclamation's approval are the Amended 2015 Plans of Creation for Tributary Conservation Intentionally Created Surplus (ICS) and System Conservation for the Muddy and Virgin Rivers in Nevada. SNWA now anticipates creating Tributary Conservation ICS and System Conservation ICS during Calendar Year 2015 as indicated:

Calendar Year	Planned ICS Volume, in acre-feet/year Cited in Plans of Creation		
	Virgin River	Muddy River	System Conservation
2015	17,000	20,000	7,500

If you have any questions, please contact me at (702) 822-3378 or Jeff Johnson at (702) 862-3748.

Sincerely,

Colby N. Pellegrino
Colorado River Program Manager

CNP:JJ:lmv

Enclosures (2)

- c: Jayne Harkins, Director, Colorado River Commission of Nevada
- Steve Hvinden, Office Director, Lower Colorado River Regional Office, Bureau of Reclamation w/enclosures
- Paul Matuska, Manager, Water Conservation and Accounting Group, Lower Colorado River Regional Office, Bureau of Reclamation w/enclosures
- Jeff Johnson, Manager, Southern Nevada Water Authority, Water Management and Planning Division

SNWA MEMBER AGENCIES

Big Bend Water District • Boulder City • Clark County Water Reclamation District • City of Henderson • City of Las Vegas • City of North Las Vegas • Las Vegas Valley Water District

Amended Muddy River Intentionally Created Surplus Tributary Conservation and System Conservation Plan of Creation Calendar Year 2015

Introduction

Intentionally Created Surplus (ICS)

The Secretary of Interior (Secretary) issued a Record of Decision for *Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead* (Guidelines) on December 13, 2007, which established criteria for the development and delivery of Intentionally Created Surplus (ICS). One type of ICS is Tributary Conservation, which allows a Contractor, as defined in the Guidelines, to increase tributary flows into the mainstream of the Colorado River within its state for ICS credits. The conservation of tributary flows into the mainstream of the Colorado River is limited to water rights that have been used for a significant period of years and were perfected prior to June 25, 1929, the effective date of the Boulder Canyon Project Act.

To generate ICS, the Guidelines require a Contract holder to enter into a Delivery Agreement with the United States of America and a Forbearance Agreement with Lower Basin Contract holders. On December 13, 2007, the Southern Nevada Water Authority (SNWA) and Colorado River Commission of Nevada (CRC) entered into a Forbearance Agreement with Lower Basin Contract holders. Exhibit A of the Forbearance Agreement describes the surface water rights on the Muddy and Virgin Rivers, pre-dating June 25, 1929, which SNWA plans to use to create Tributary Conservation ICS, and how the Muddy River flows reaching Lake Mead will be calculated.

The SNWA and CRC entered into a Delivery Agreement with the United States of America on December 13, 2007. Exhibit A from the Forbearance Agreement is attached to the Delivery Agreement.

The Guidelines, Forbearance Agreement, and Delivery Agreement require a plan for the creation of ICS (ICS Plan) be submitted to the Secretary of Interior demonstrating how all requirements of the Guidelines will be met. Section G.3.B.1 of the Guidelines outline that an ICS Plan will consist of, at a minimum, the following information:

- a. Project Description including what extraordinary measures will be taken to conserve or import the water
- b. Term of Activity
- c. Estimate of the amount of water that will be conserved

- d. Proposed methodology for verification of the amount of water conserved
- e. Documentation regarding any state or federal permits or other regulatory approvals that have already been obtained by the Contractor or that need to be obtained prior to the creation of ICS

The following sections document each of these requirements. It is important to note that the majority of the information presented below is reiterated from Exhibit A of the Forbearance Agreement.

Pilot System Conservation Program Participation (Pilot Program)

On July 30, 2014, the U.S. Bureau of Reclamation and four municipal entities, the Central Arizona Water Conservation District, The Metropolitan Water District of Southern California, Denver Water, and SNWA entered into an agreement for a Pilot Program for funding the creation of Colorado River System water through voluntary water conservation and reductions in use.

The Pilot Program funds projects that keep water in Lakes Powell and Mead through temporary, voluntary, and compensated conservation mechanisms. SNWA submitted a Pilot Program proposal to dedicate to the Colorado River System a portion of Muddy and Virgin River water it owns or otherwise controls to the Colorado River System in Calendar years 2015 and 2016, in lieu of creating Tributary Conservation ICS Credits. The proposal was selected for funding and SNWA entered into a System Conservation Implementation Agreement with the Bureau of Reclamation on June 4, 2015, to conserve a total of 15,000 acre-feet of Colorado River water in calendar years 2015 and 2016. For each Calendar Year 2015 and 2016, SNWA will dedicate 7,500 af of its Muddy and Virgin River water to the Colorado River System, in lieu of creating Tributary Conservation ICS credits. The full duration of SNWA's Pilot Program is two calendar years, 2015 and 2016.

SNWA will use the approved methods consistent with the ICS program documented in Exhibit A of the Forbearance Agreement and described below to document the volume of conserved Virgin River water to be dedicated as Pilot Program water that will remain in the Colorado River System.

Project Description

Muddy River water rights that will be utilized to create Tributary Conservation pursuant to this ICS Plan and Exhibit A of the Forbearance Agreement are decreed Nevada state water rights with an established history of use prior to 1927. Per Exhibit A of the Forbearance Agreement, SNWA is specifically allowed to utilize any and all pre-June 25, 1929, Muddy River water rights to create Tributary Conservation ICS regardless of those water rights history of use after 1928.

The Muddy River originates from regional springs in the Muddy River Springs Area in Nevada and flows into the Overton Arm of Lake Mead (Figure 1). The Muddy River Springs that form the Muddy River headwaters are regional springs with relatively consistent flows, consequently the Muddy River flows are also consistent. The average annual flow of the Muddy River at

U.S. Geological Survey (USGS) gaging station *09419000 Muddy River near Glendale, NV*, (Glendale Gage) for water years 1950 to 2013 was 30,480 acre-feet per year (afy).

Muddy River water rights were decreed in 1920 and the decree allocated the entire flow of the river. On the lower Muddy River, the entire flow of the river is diverted for agricultural use by the Muddy Valley Irrigation Company (MVIC). SNWA owns and is leasing shares in MVIC. In addition, SNWA leases and owns decreed Muddy River water rights on the upper reach of the Muddy River, which are not represented by MVIC shares. For the purposes of this plan the point that separates the upper and lower Muddy River is the Glendale Gage.

Muddy River water rights and MVIC shares controlled by SNWA will be conveyed to Lake Mead's Overton Arm. This water constitutes pre-June 25, 1929 water rights and represents the full right that is and has been historically used for agricultural or could have otherwise been diverted from the Muddy River and fully consumed by SNWA within Nevada.

Tributary ICS Muddy River water conveyed to Lake Mead will pass through the historic points of diversion and either flow through the irrigation company ditches and return to the mainstream of the Muddy River further downstream or will remain in the mainstream of the Muddy River.

Term of Activity

The term of activity for this ICS Plan is Calendar Year 2015. SNWA anticipates receiving Tributary Conservation ICS credits for Muddy River water into the foreseeable future. As more water rights are acquired and more land is fallowed, the amount of water claimed as Tributary Conservation ICS is anticipated to increase. Subsequent ICS Plans will be updated to reflect the acquired pre-June 25, 1929 water rights.

Estimate of Water Conserved

For Calendar Year 2015, SNWA anticipates creating up to 20,000 af of Muddy River Tributary Conservation ICS from SNWA controlled water rights described below.

Upper Muddy River Water Rights

- 1) Up to 2,001 afy leased from the Church of Latter Day Saints (LDS Lease) pursuant to Certificate Nos. 6795, 10944, 10951, 10952, and 10953 in 2015 (Figure 3) being leased by SNWA.
- 2) Muddy River decree proofs V01619 and V01631, also referred to as the Cox and Mitchell Rights, for a total of 111 afy that SNWA acquired with the purchase of the Warm Springs Natural Area (Figure 3).
- 3) Up to 1,040 afy pursuant to the Muddy River decree owned by SNWA (commonly referred to as the Hidden Valley rights) (Figure 4).
- 4) Up to 3,700 afy pursuant to Permits 73482, 73483, and 73695 held in a long-term lease by the Moapa Band of Paiutes and subleased by SNWA from the Moapa Band of Paiutes (Figure 5).
- 5) Up to 811 afy of decreed Muddy River water under Certificate 9609 which was acquired by SNWA (referred to as the Knox and Holmes right in this document) (Figure 6).
- 6) Up to 3,000 afy pursuant to Certificates 7316 and 13851 held by MVIC and being leased by SNWA.

Lower Muddy River Water Rights (MVIC Shares)

The volume of water represented by MVIC shares is quantified based on a percentage of the total flows (divided by total shares) in the Muddy River at the Glendale gage less the Upper Muddy River rights owned or controlled by SNWA that reach the gage (Figure 2).

1) SNWA Owned MVIC Shares

- a) 1,009 preferred shares in the MVIC estimated to represent approximately 7,000 afy in 2015.
- b) 2,839 common shares in the MVIC estimated to represent approximately 2,000 afy in 2015.
- c) If additional shares are acquired, the water rights represented by the shares will be included in the year-end Certification Report.

A portion of the shares owned by SNWA have a provision for the seller to lease the shares back from SNWA for agricultural use. The amount of water being leased-back by sellers varies by year and is not known until just before the beginning of the water year when sellers must notify SNWA of their intention to lease the water back for agricultural use. As an example, in CY 2013 approximately 1,400 af of purchased shares were leased back to the seller.

2) SNWA Leased MVIC Shares

- a) The lease contracts for both preferred and common shares in MVIC are based on water years (October 1 to September 30) and can be subject to change.
- a) Approximately 200 preferred shares are expected to be leased in the MVIC from January through September 2015. For planning purposes the lease of 200 preferred shares for CY 2015 are estimated to represent about 1,300 af.
- b) Approximately 400 common shares are expected to be leased in the MVIC from January through September 2015. For planning purposes the lease of 400 common shares for CY 2015 are estimated to represent about 200 af.

Pursuant to the System Conservation Agreement between SNWA and the Bureau of Reclamation, SNWA will dedicate 7,500 af of its Muddy and Virgin River water to the Colorado River System for Calendar Years 2015 and 2016, in lieu of creating Tributary Conservation ICS credits.

Methodology

Muddy River Flows reaching Lake Mead will be calculated as follows:

- Flows measured by USGS at the Glendale, NV gage
 - (minus) consumptive uses by agriculture below the Glendale gage
 - (minus) direct uses by industry below the Glendale gage
 - (minus) channel evapotranspiration below Glendale gage to Lake Mead
 - (minus) evapotranspiration from the managed acreage on the Overton Wildlife Management Area (WMA)
-

= Total Flow to Lake Mead (Elevation 1,220 AMSL)

- To calculate the consumptive uses of crops and phreatophytes in the Lower Muddy River, a combination of data from the Lower Colorado River Accounting System (LCRAS), Nevada Division of Water Resources' (NDWR) *Evapotranspiration and Net Irrigation Requirements for Nevada* report, and locally measured reference ET data will be used.
- If the total amount of water represented by the rights controlled by SNWA described in this ICS Plan and documented in the Certification Report (described below) is found to be equal to or less than the amount of water calculated to reach Lake Mead, then SNWA shall be credited with the full amount of water rights described in the ICS Plan.
- If the total amount of water rights described in this ICS Plan and documented in the Certification Report is more than the amount calculated to reach Lake Mead, SNWA shall be credited with only the amount calculated to reach Lake Mead.
- The total Muddy River flow reaching Lake Mead, as described above, includes flows at the USGS gage *09419507 Muddy River at Lewis Avenue at Overton, NV* located just upstream of the OWMA and calculated underflow.

A. Proof of Fallowed Land:

To demonstrate the fallowing of land and the conservation of water, aerial photography will be acquired, verified, and analyzed during the calendar year. A Geographic Information System (GIS) will be used to compare the current irrigated acreage with acreage defined by the water rights as approved by NDWR and the Muddy River decree. On the attached maps, the original Place of Use (POU) is shown as a red polygon. If a subsequent Proof of Beneficial Use (PBU) map was submitted to NDWR, the PBU boundaries are included as yellow polygons for reference. PBU maps were not filed for all decreed rights, because they are not required for vested rights; implying beneficial use was initiated prior to the establishment of Nevada Water Law in 1905.

B. Certification Report

- i. In compliance with Section G.3.D of the Guidelines, a Certification Report will be submitted for the Secretary's review and verification, demonstrating the amount of ICS created and that the method of creation was consistent with this ICS Plan, the Delivery Agreement and Forbearance Agreement. The Certification Report will be submitted to the Secretary in the year following the creation of the ICS.
- ii. The Certification Report, at a minimum, will include:
 - Proof of acreage fallowed using aerial photography and GIS
 - Calculations of the amount of pre-June 25, 1929, water rights reaching Lake Mead, including gage records of Muddy River flows
 - Documentation and calculations of the amount of SNWA owned and controlled pre-June 25, 1929, water rights reaching Lake Mead
 - Letter from the NDWR verifying the quantity of water conveyed through the Muddy River system to the Colorado River mainstream for the purpose of creating ICS

Regulatory Approvals

Tributary Conservation ICS on the Muddy River was evaluated in the Environmental Impact Statement and Record of Decision (dated December 13, 2007) for the Guidelines. Compliance for Muddy River Tributary Conservation ICS was also obtained under Section 7 of the Endangered Species Act through formal consultation with the U.S. Fish and Wildlife Service. The Final Biological Opinion for the Guidelines was issued December 12, 2007.

Nevada Revised Statute 533.030 declares that surface and groundwater rights conveyed to Lake Mead for the purpose of creating Intentionally Created Surplus are a beneficial use.

The NDWR issued State Engineer Order 1194 on July 15, 2008, regarding Tributary Conservation ICS on the Muddy River. The Order outlines the Nevada water rights on the Muddy River and the following process for verification of Muddy River rights being conveyed to the Colorado River mainstream:

“An entity with an ICS Delivery Contract, which uses water rights adjudicated under the Muddy River Decree for the creation of ICS, shall file an annual report with the State Engineer's Office. The annual report shall give a full accounting of adjudicated water rights on the Muddy River or its tributaries owned or controlled by the entity with an ICS Delivery Contract, which have been conveyed through the Muddy River system to the Colorado River mainstream for the creation of ICS. After review of the annual report, the State Engineer shall issue a letter verifying the quantity of water conveyed through the Muddy River system to the Colorado River mainstream for the purpose of creating ICS.”

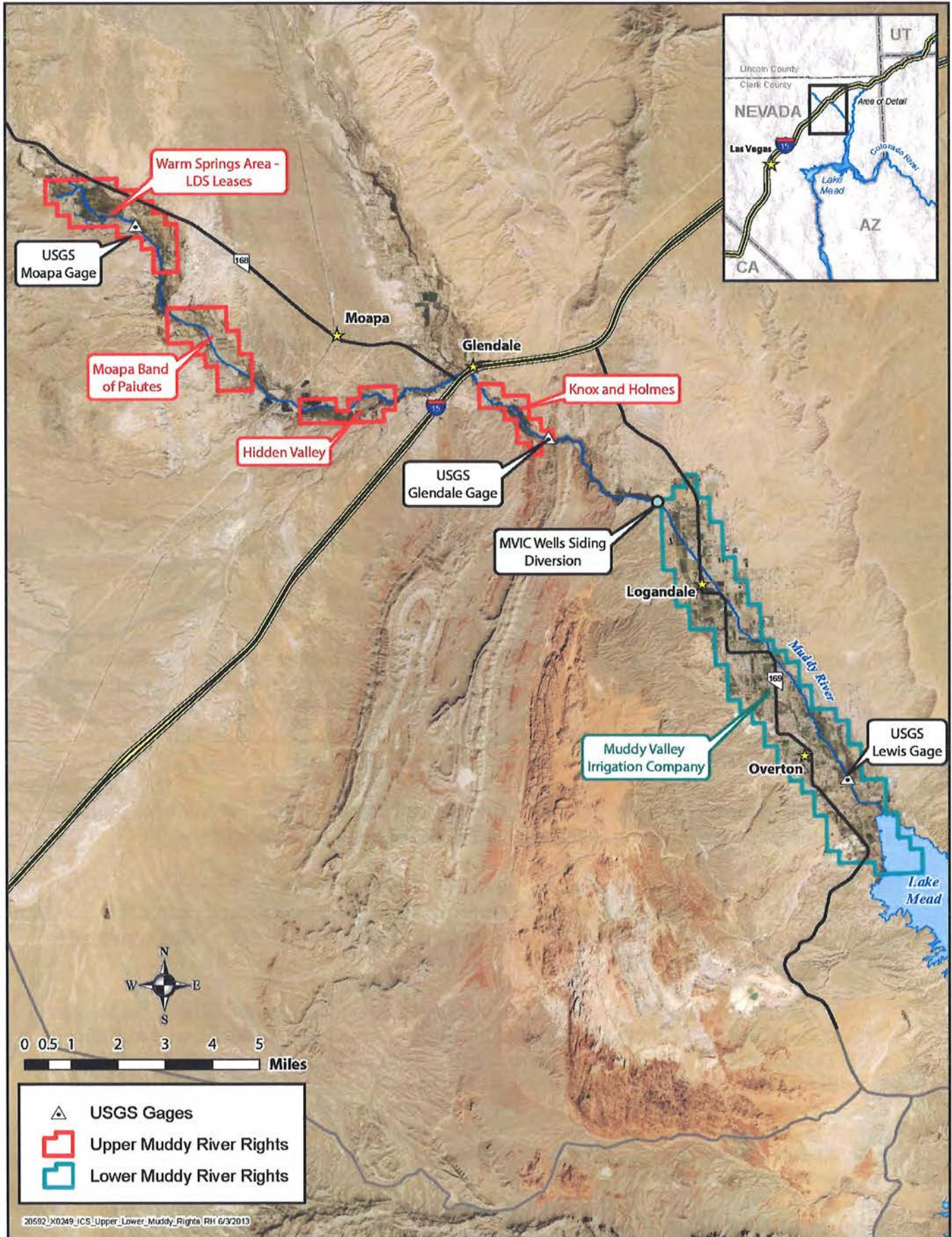


Figure 1 - Muddy River
SNWA

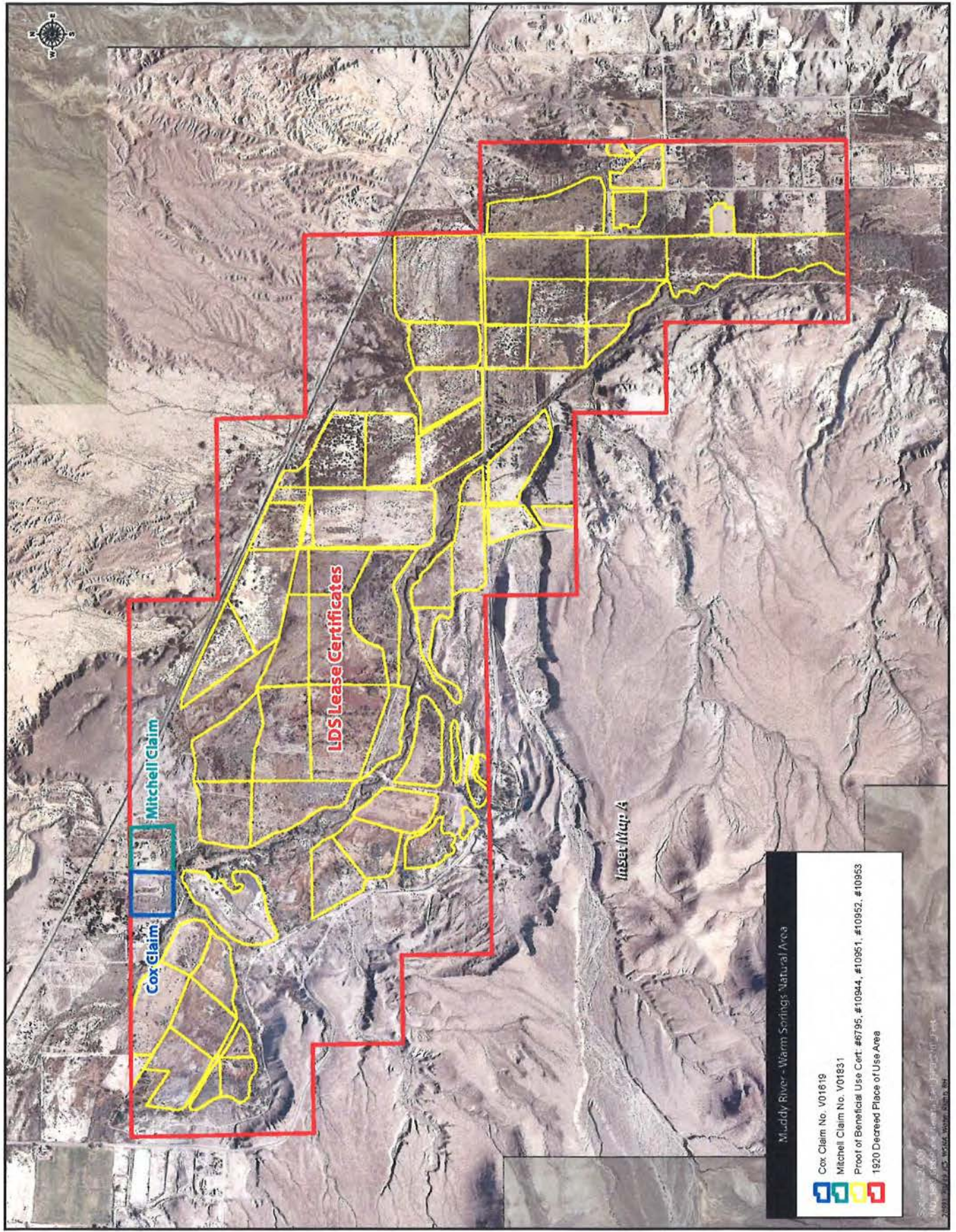


Figure 2 - LDS Water Rights POU and PBU and Cox and Mitchell POU. Aerial Photography December 2013

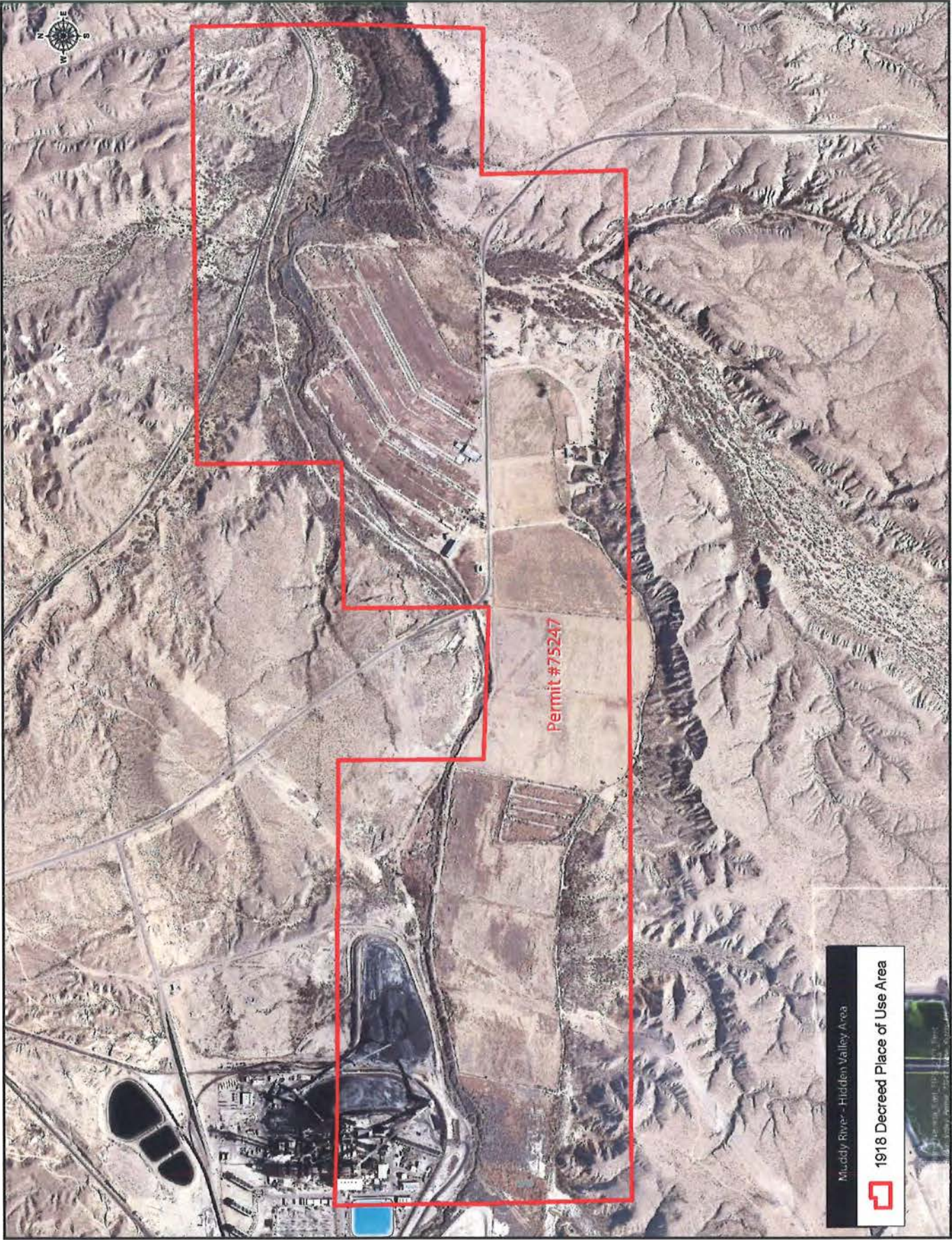


Figure 3 - Hidden Valley Decreed Water Right POU. Aerial Photography December 2013

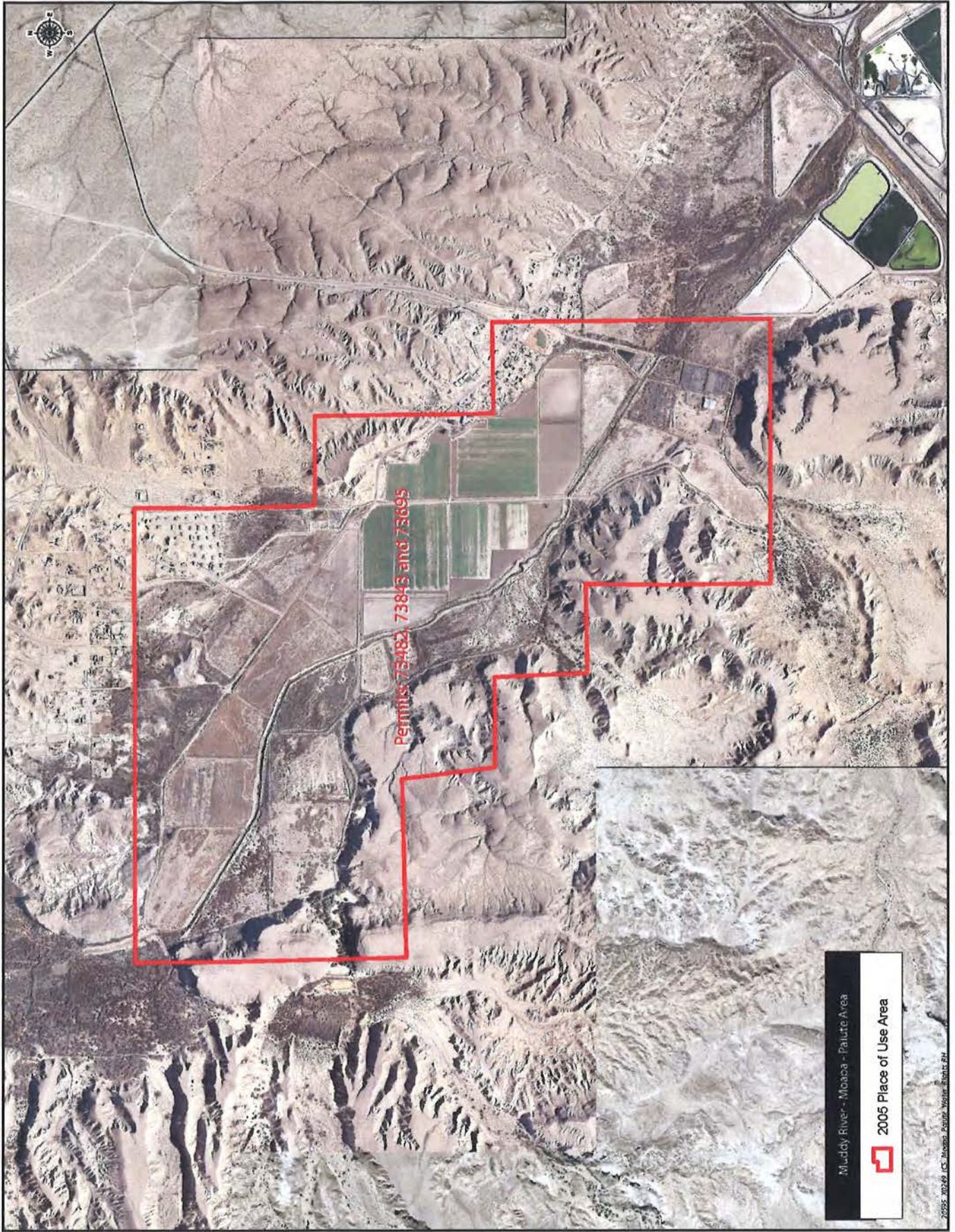


Figure 4 - Moapa Band of Paiutes POU. Aerial Photography December 2013

SNWA

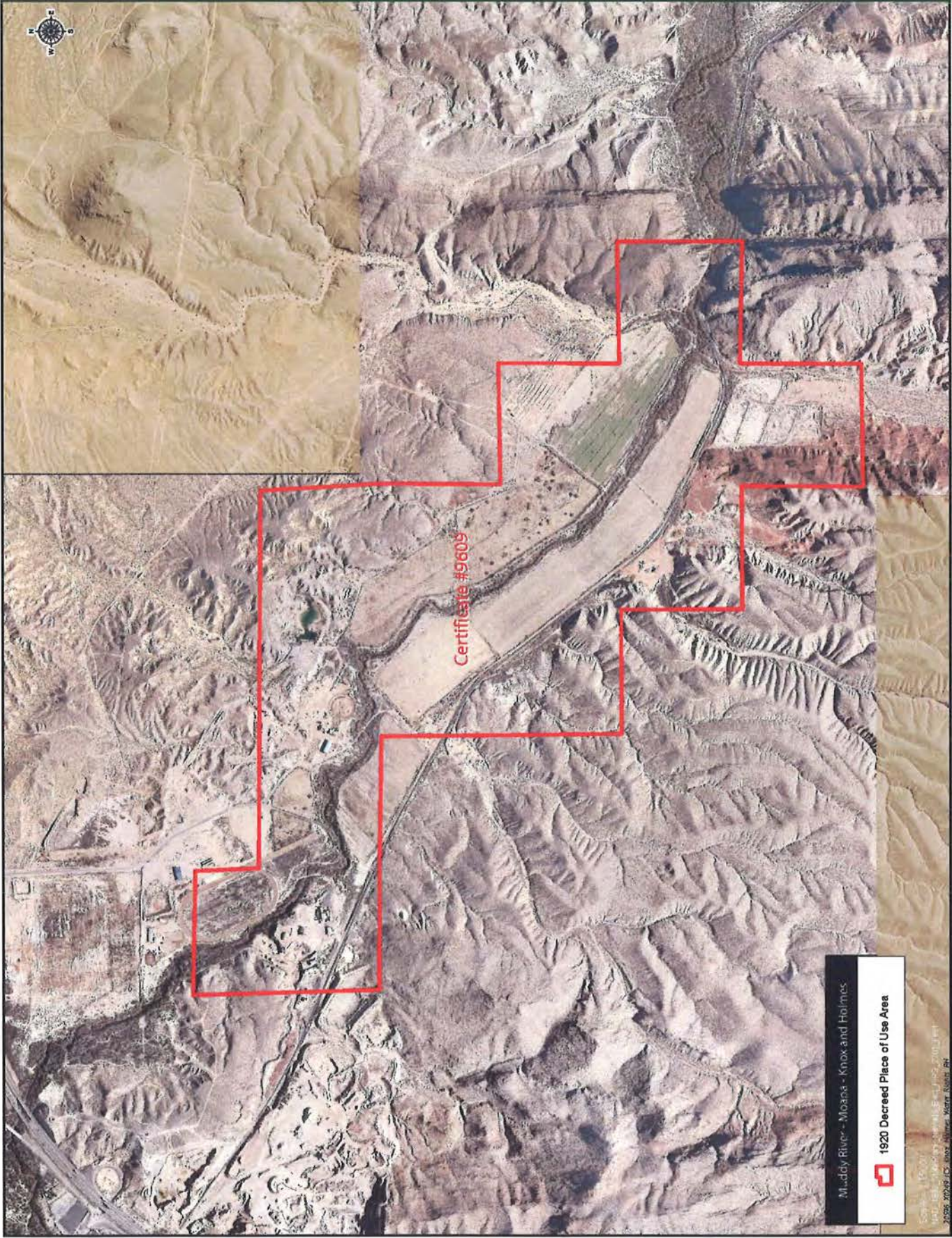


Figure 5 – Knox and Holmes Decreed Water Right POU. Aerial Photography December 2013

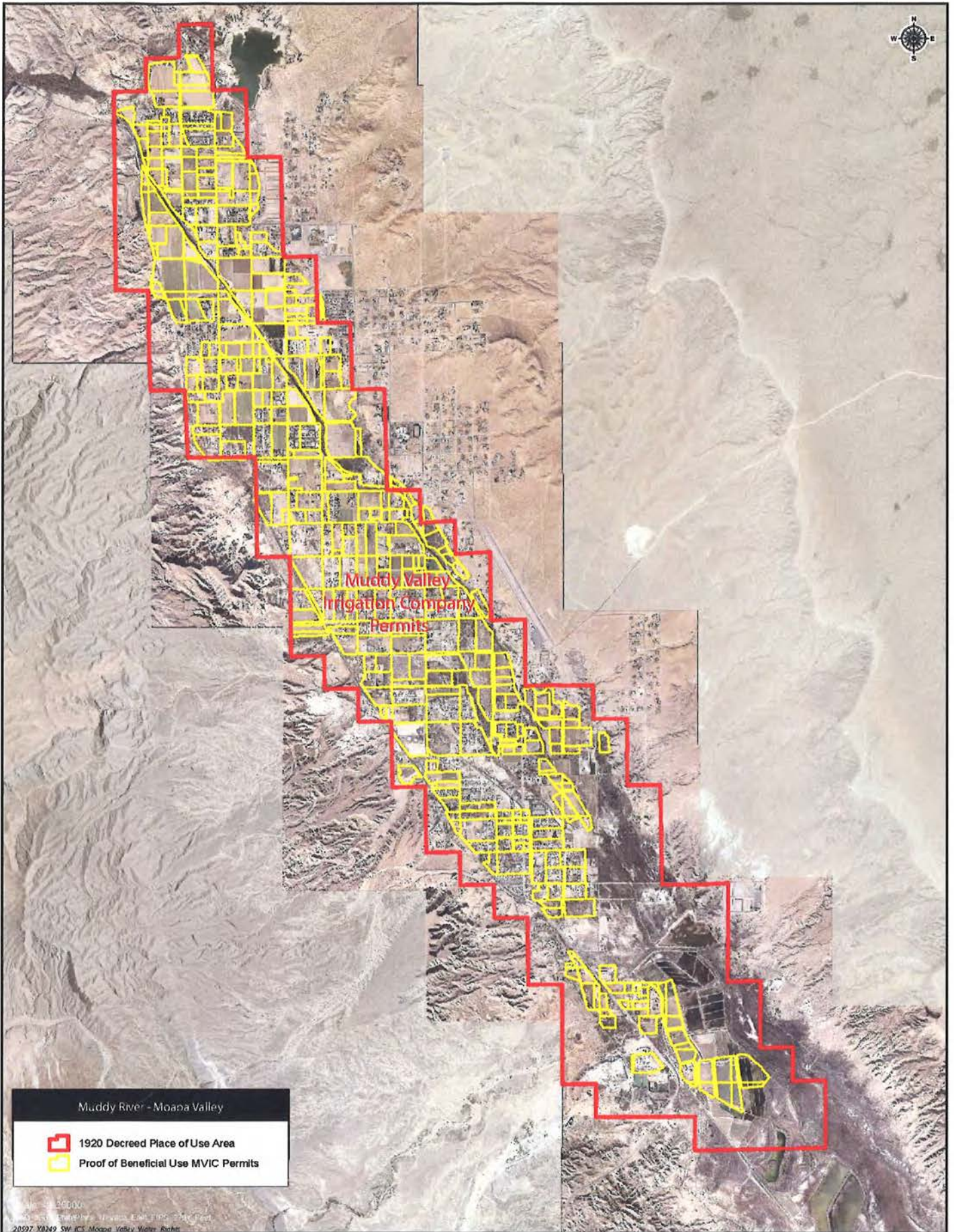


Figure 6 - MVIC Decreed POU and PBU. Aerial Photography December 2013

Amended Virgin River Intentionally Created Surplus Tributary Conservation and System Conservation Plan of Creation Calendar Year 2015

Introduction

Intentionally Created Surplus (ICS)

The Secretary of Interior (Secretary) issued a Record of Decision for *Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead* (Guidelines) on December 13, 2007, which established criteria for the development and delivery of Intentionally Created Surplus (ICS). One type of ICS is Tributary Conservation, which allows a Contractor, as defined in the guidelines, to increase tributary flows into the mainstream of the Colorado River within its state for ICS credits. The conservation of tributary flows into the mainstream of the Colorado River is limited to water rights that have been used for a significant period of years and were perfected prior to June 25, 1929, the effective date of the Boulder Canyon Project Act.

To generate ICS, the Guidelines require a Contract holder to enter into a Delivery Agreement with the United States of America and a Forbearance Agreement with Lower Basin Contract holders. On December 13, 2007, the Southern Nevada Water Authority (SNWA) and Colorado River Commission of Nevada (CRC) entered into a Forbearance Agreement with Lower Basin Contract holders. Exhibit A of the Forbearance Agreement describes the surface water rights on the Muddy and Virgin Rivers, pre-dating June 25, 1929, which SNWA plans to use to create Tributary Conservation ICS, and how the Virgin River flows reaching Lake Mead will be calculated.

The SNWA and CRC entered into a Delivery Agreement with the United States of America on December 13, 2007. Exhibit A from the Forbearance Agreement is attached to the Delivery Agreement.

The Guidelines, Forbearance Agreement, and Delivery Agreement require a plan for the creation of ICS (ICS Plan) be submitted to the Secretary of Interior demonstrating how all requirements of the Guidelines will be met. Section G.3.B.1 of the Guidelines outline that an ICS Plan will consist of, at a minimum, the following information:

- a. Project Description including what extraordinary measures will be taken to conserve or import the water
- b. Term of Activity
- c. Estimate of the amount of water that will be conserved

- d. Proposed methodology for verification of the amount of water conserved
- e. Documentation regarding any state or federal permits or other regulatory approvals that have already been obtained by the Contractor or that need to be obtained prior to the creation of ICS

The following sections document each of these requirements. It is important to note that the majority of the information presented below is reiterated from Exhibit A of the Forbearance Agreement and Delivery Agreement.

Pilot System Conservation Program Participation (Pilot Program)

On July 30, 2014, the U.S. Bureau of Reclamation and four municipal entities, the Central Arizona Water Conservation District, The Metropolitan Water District of Southern California, Denver Water, and SNWA entered into an agreement for a Pilot Program for funding the creation of Colorado River System water through voluntary water conservation and reductions in use.

The Pilot Program funds projects that keep water in Lakes Powell and Mead through temporary, voluntary, and compensated conservation mechanisms. SNWA submitted a Pilot Program proposal to dedicate to the Colorado River System a portion of Muddy and Virgin River water it owns or otherwise controls to the Colorado River System in Calendar years 2015 and 2016, in lieu of creating Tributary Conservation ICS Credits. The proposal was selected for funding and SNWA entered into a System Conservation Implementation Agreement with the Bureau of Reclamation on June 4, 2015, to conserve a total of 15,000 acre-feet of Colorado River water in calendar years 2015 and 2016. For each Calendar Year 2015 and 2016, SNWA will dedicate 7,500 af of its Muddy and Virgin River water to the Colorado River System, in lieu of creating Tributary Conservation ICS credits. The full duration of SNWA's Pilot Program is two calendar years, 2015 and 2016.

SNWA will use the approved methods consistent with the ICS program documented in Exhibit A of the Forbearance Agreement and described below to document the volume of conserved Virgin River water to be dedicated as Pilot Program water that will remain in the Colorado River System.

Project Description

Virgin River water rights that will be utilized to create Tributary Conservation pursuant to this ICS Plan and Exhibit A of the Forbearance Agreement are decreed and permitted Nevada state water rights with an established history of use prior to 1927. Per Exhibit A of the Forbearance Agreement, SNWA is specifically allowed to utilize any and all pre-June 25, 1929, Virgin River water rights to create Tributary Conservation ICS regardless of those water rights history of use after 1928.

The headwaters of the Virgin River are in southwestern Utah, and the river flows through Arizona and Nevada, before terminating in Lake Mead (Figure 1). The average annual flow of

the Virgin River entering Nevada at U.S. Geological Survey gaging station *09415000 Virgin River at Littlefield, AZ* for water years 1930 to 2013 was 175,500 acre-feet per year (afy).

Nevada state water rights that pre-date the Boulder Canyon Project Act on the Virgin River are comprised of pre-1905 priority surface water rights decreed by the Nevada Supreme Court in 1927 for 17,785 afy to the Bunkerville and Mesquite Irrigation Companies, and additional permitted and certificated rights authorized by the Nevada Division of Water Resources (NDWR).

Agricultural water rights acquired by SNWA will be conveyed to Lake Mead's Overton Arm. The pre-June 25, 1929 water rights conveyed to Lake Mead represent the full right that is and has been historically used for agricultural purposes or could have otherwise been diverted from the Virgin River and fully consumed by SNWA in Nevada.

Virgin River rights conveyed to Lake Mead will pass through their historic points of diversion and either flow through the irrigation company ditches and return to the mainstream of the Virgin River further downstream or will remain in the mainstream of the Virgin River. The full rights controlled and documented by SNWA to flow to Lake Mead will be accounted for as Tributary Conservation ICS.

Term of Activity

The term of activity for this ICS Plan is Calendar Year 2015. SNWA anticipates receiving Tributary Conservation ICS credits for Virgin River water into the foreseeable future. As more water rights are acquired and more land is fallowed, the amount of water claimed as Tributary Conservation ICS is anticipated to increase. Subsequent ICS Plans will be updated to reflect the acquired pre-June 25, 1929 water rights.

Estimate of Water Conserved

SNWA currently owns or controls the following Virgin River rights:

- 1) Bunkerville Irrigation Company:
 - a) 948 shares representing approximately 7,500 afy of surface water rights.
 - b) These shares are owned and leased by SNWA. The lease contracts are based on water years (October 1 to September 30) and can be subject to change.
- 2) Mesquite Irrigation Company:
 - a) 873 shares representing approximately 7,500 afy of surface water rights.
 - b) These shares are owned and leased by SNWA. The lease contracts are based on water years (October 1 to September 30) and can be subject to change.
- 3) A portion of Certificate 1153 with a priority date of 1914 for 601.97 afy designated to irrigate a portion of 177.044 acres of land (Figure 2).

If additional shares or water rights are acquired, they will be included in the year-end Certification Report.

For Calendar Year 2015, SNWA anticipates creating up to 17,000 af of Tributary Conservation ICS with the above rights which pre-date June 25, 1929.

Pursuant to the System Conservation Agreement between SNWA and the Bureau of Reclamation, SNWA will dedicate 7,500 af of its Muddy and Virgin River water to the Colorado River System for Calendar Years 2015 and 2016, in lieu of creating Tributary Conservation ICS credits.

Methodology

Because the acreage represented by the water rights SNWA controls is a small percentage (< 15%) of the total annual flow of the Virgin River, Tributary Conservation ICS on the Virgin River can be calculated based on the reduction in agricultural acreage as follows:

Virgin River Calculation:

$$\begin{array}{l} \text{Decrease in total agricultural acreage permitted by the Nevada Division of} \\ \text{Water Resources calculated using remote sensing \& GIS} \\ \times \text{ The duty per acre specified by the water right} \\ \hline = \text{Flows to Lake Mead (Elevation 1,220 AMSL)} \end{array}$$

A. Proof of Fallowed Land

To demonstrate the fallowing of land and the conservation of water, aerial photography will be acquired, verified, and analyzed periodically during the calendar year. A Geographic Information System (GIS) will be used to compare the current irrigated acreage with acreage defined by the water rights as approved by the Nevada Division of Water Resources. On the attached maps, the original Place of Use (POU) is shown as a red polygon. Subsequent Proof of Beneficial Use (PBU) maps were submitted to NDWR in support of additional permits and are included as yellow polygons on the maps for reference.

B. Certification Report

- i. In compliance with Section G.3.D of the Guidelines, a Certification Report will be submitted for the Secretary's review and verification, demonstrating the amount of ICS created and that the method of creation was consistent with this ICS Plan, the Delivery Agreement and Forbearance Agreement. The Certification Report will be submitted to the Secretary in the year following the creation of the ICS.

- ii. The Certification Report, at a minimum, will include:
- Proof of acreage fallowed using aerial photography and GIS
 - Documentation and calculations of the amount of the pre-June 25, 1929, water rights reaching Lake Mead owned or controlled by SNWA
 - Letter from the NDWR verifying the quantity of water conveyed through the Virgin River to the Colorado River mainstream for the purpose of creating ICS

Regulatory Approvals

Tributary Conservation ICS on the Virgin River was evaluated in the Environmental Impact Statement and Record of Decision (dated December 13, 2007) for the Guidelines. Compliance for Virgin River Tributary Conservation ICS was also obtained under Section 7 of the Endangered Species Act through formal consultation with the U.S. Fish and Wildlife Service. The Final Biological Opinion for the Guidelines was issued December 12, 2007.

Nevada Revised Statute 533.030 declares that surface and groundwater rights conveyed to Lake Mead for the purpose of creating Intentionally Created Surplus are a beneficial use.

The NDWR issued State Engineer Order 1193 on July 15, 2008, regarding Tributary Conservation ICS on the Virgin River. The Order outlines the Nevada water rights on the Virgin River and the following process for verification of Virgin River rights being conveyed to the Colorado River mainstream.

“An entity with an ICS Delivery Contract, which uses water rights adjudicated under the Virgin River Decree or water rights on the Virgin River issued by the State Engineer with a priority date prior to June 25, 1929 for the creation of ICS, shall file an annual report with the State Engineer's Office. The annual report shall give a full accounting of water rights on the Virgin River owned or controlled by the entity with an ICS Delivery Contract, which have been conveyed through the Virgin River system to the Colorado River mainstream for the creation of ICS. After review of the annual report, the State Engineer shall issue a letter verifying the quantity of water conveyed through the Virgin River system to the Colorado River mainstream for the purpose of creating ICS.”

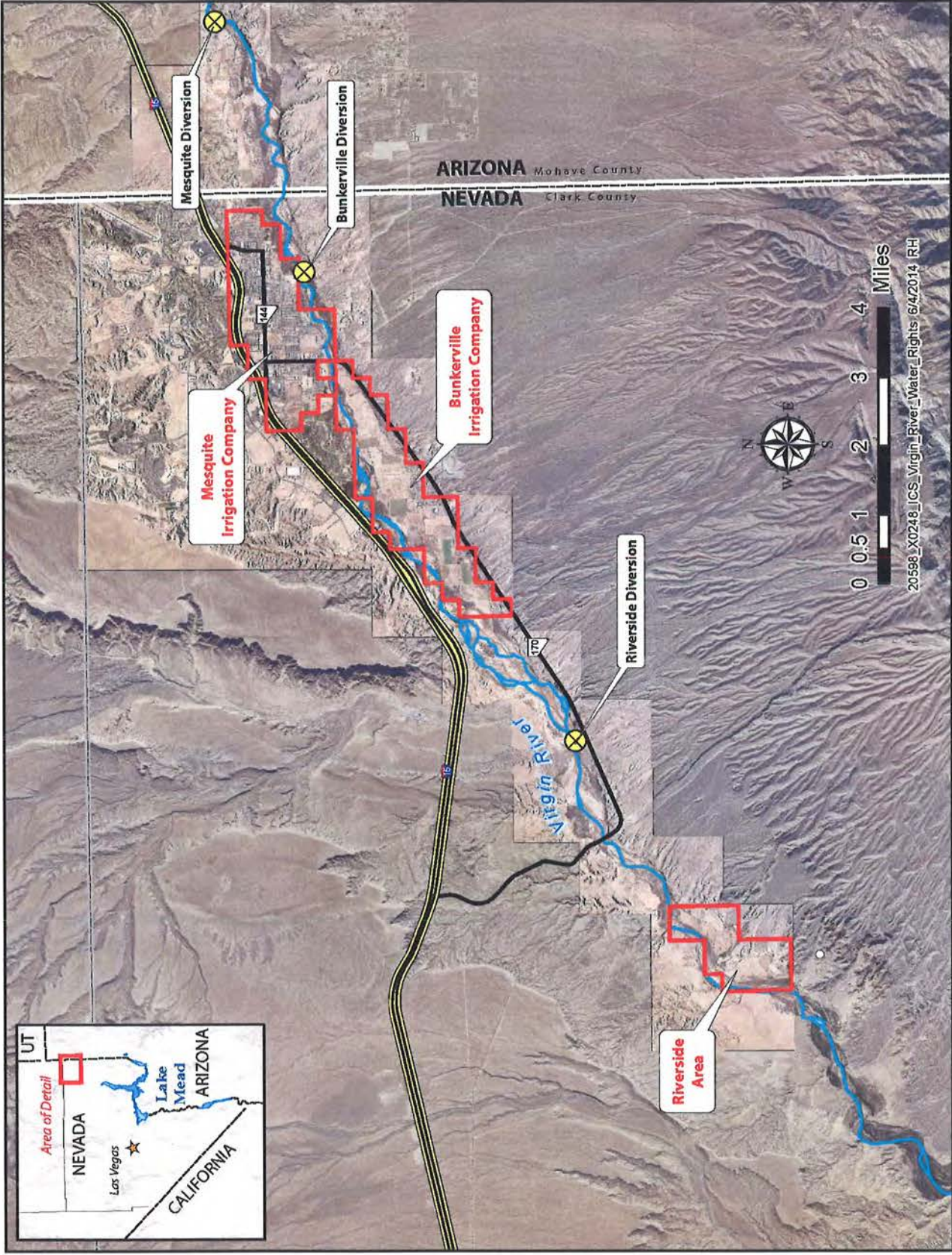


Figure 1 - Lower Virgin River showing Places of Use (red) for Pre-BCPA Water Rights

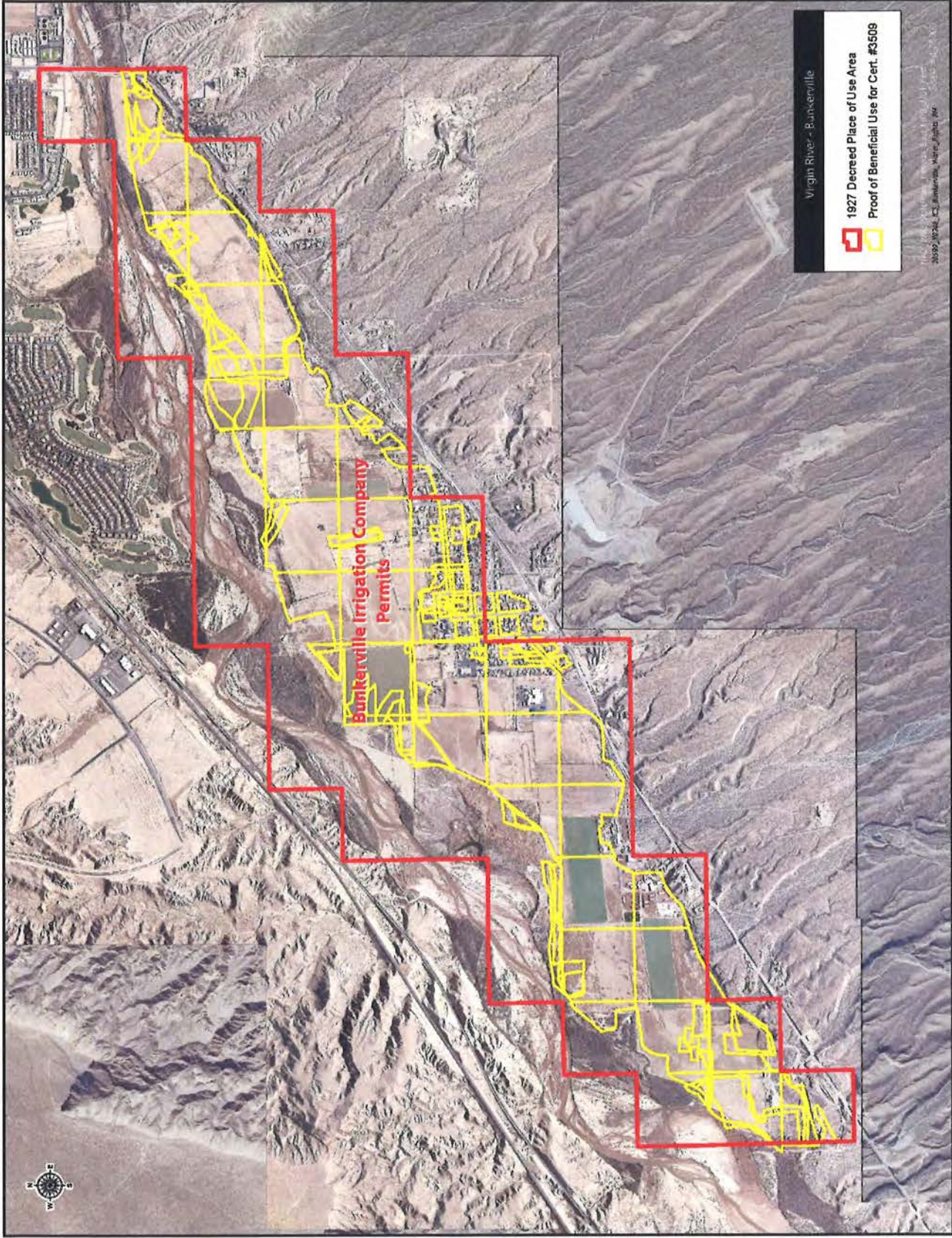


Figure 2 - Bunkerville Decreed Place of Use (red) and Proof of Beneficial Use (yellow). Aerial Photography December 2013

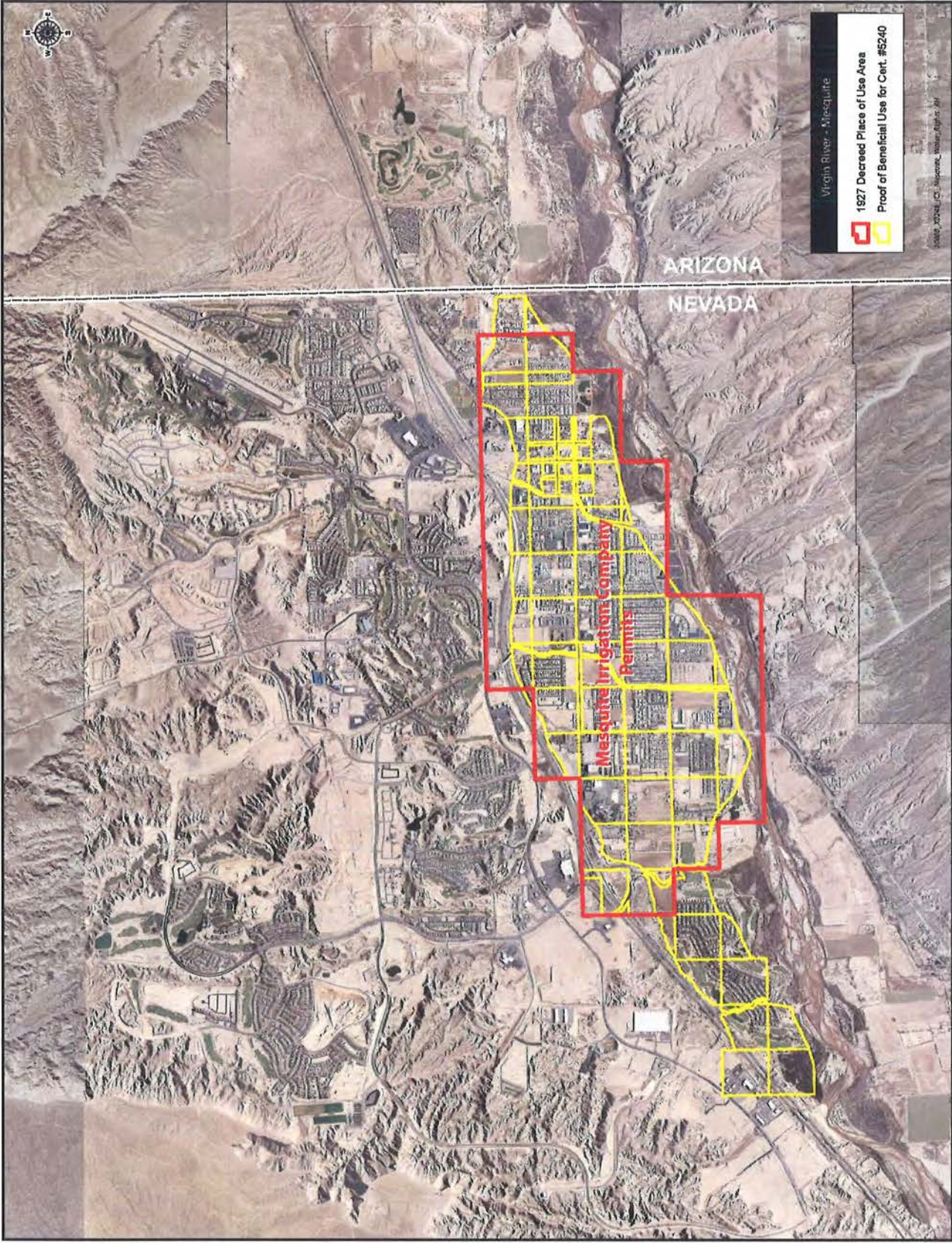


Figure 3 - Mesquite Decreed Place of Use (red) and Proof of Beneficial Use (yellow). Aerial Photography December 2013

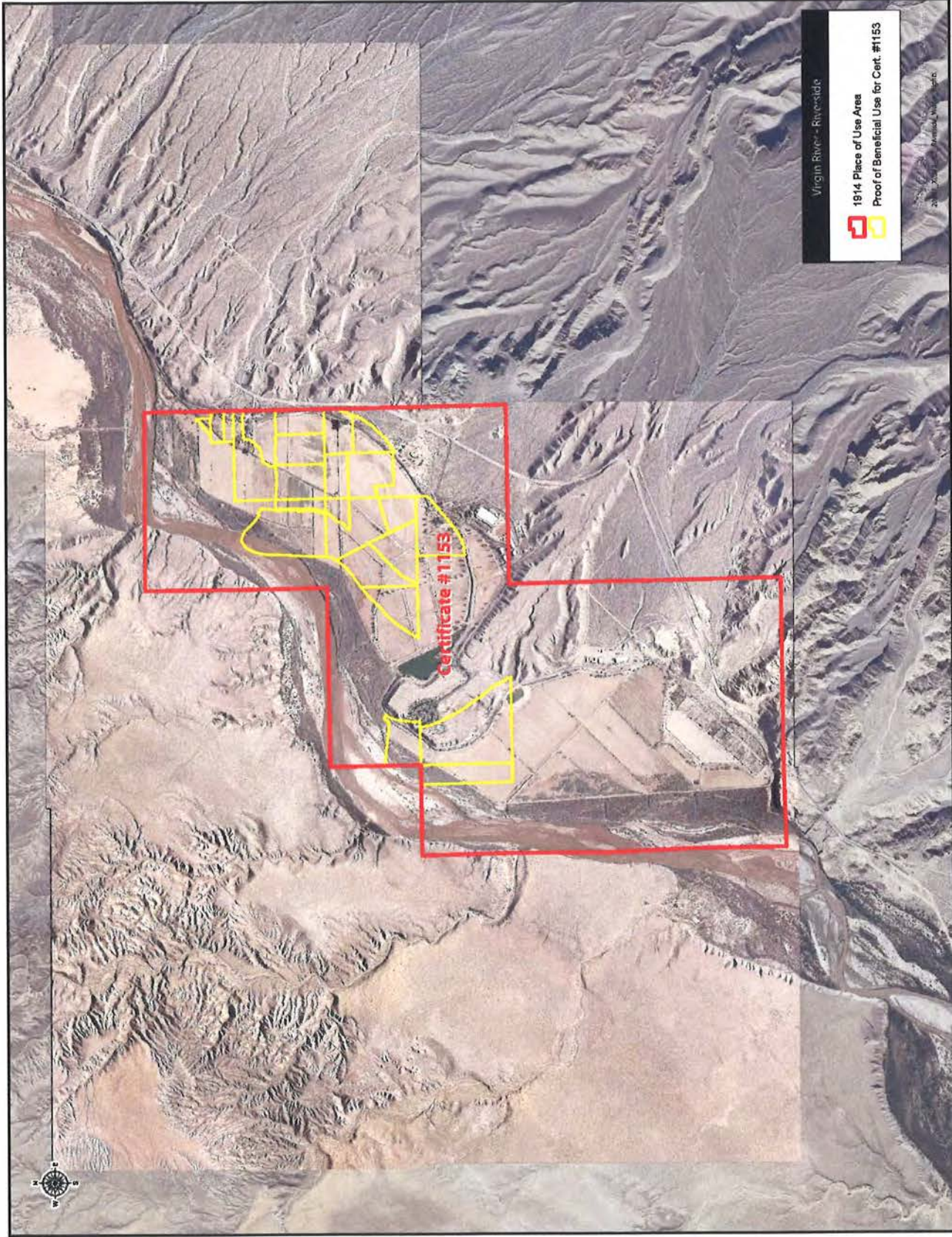


Figure 4 – Riverside Certificate 1153 Decreed Place of Use (red) and Proof of Beneficial Use (yellow). Aerial Photography December 2013



United States Department of the Interior

BUREAU OF RECLAMATION
Lower Colorado Regional Office
P.O. Box 61470
Boulder City, NV 89006-1470

SEP 10 2015

IN REPLY REFER TO:

LC-4220
WTR-4.03

CERTIFIED – RETURN RECEIPT REQUESTED

Mr. John Entsminger
General Manager
Southern Nevada Water Authority
1001 South Valley View Boulevard, MS 480
Las Vegas, NV 89153

Subject: Approval of the Southern Nevada Water Authority's (SNWA) Amended 2015 Plans of Creation for Muddy River and Virgin River Tributary Conservation Intentionally Created Surplus (ICS) and System Conservation Water

Dear Mr. Entsminger:

The Bureau of Reclamation has received SNWA's Amended 2015 Plans of Creation for Muddy and Virgin River Tributary Conservation ICS and System Conservation Water (Amended ICS Plans), submitted by letter dated June 17, 2015. SNWA's Amended ICS Plans describe the Muddy River and Virgin River Tributary Conservation projects through which SNWA intends to conserve up to 37,000 acre-feet (AF) of Colorado River System water during calendar year 2015 for purposes of creating ICS under the Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead (Interim Guidelines), and System Conservation Water under the System Conservation Implementation Agreement (SCIA) between Reclamation and SNWA dated June 4, 2015. As noted in the Amended ICS Plans, SNWA will dedicate 7,500 AF of conservation from its Tributary Conservation projects in calendar year 2015 as System Conservation Water in lieu of creating Tributary Conservation ICS credits.

Reclamation has reviewed SNWA's Amended ICS Plans and confirms that they contain all necessary information required by Section 3.B of the Interim Guidelines and Section 4.4 of the SCIA. In accordance with Section 7.B.5 of the Interim Guidelines, and Section 4.6 of the SCIA, Reclamation has consulted with the Basin States regarding SNWA's Amended ICS Plans.

Based upon Reclamation's review of SNWA's Amended ICS Plans and the completion of the consultation process, I approve SNWA's Amended ICS Plans for the creation of up to 29,500 AF of ICS and 7,500 AF of System Conservation Water as provided in the table on the following page.

Muddy River Tributary Conservation ICS	up to 20,000 AF
Virgin River Tributary Conservation ICS	up to 17,000 AF
Tributary Conservation Dedicated as System Conservation Water	(7,500 AF)
Total Tributary Conservation ICS for Calendar Year 2015	Not to exceed 29,500 AF

Nothing in this approval changes the amount of Imported ICS SNWA is approved to create in 2015 per Reclamation's letter dated September 25, 2014, approving SNWA's 2015 Coyote Spring Valley Imported ICS Plan of Creation.

In accordance with Section 3.D.1 of the Interim Guidelines and Sections 4.2 and 4.5 of the SCIA, SNWA is required to submit a Certification Report to the Regional Director demonstrating the amount of ICS and System Conservation Water created and that the method of creation was consistent with SNWA's approved plans, a Forbearance Agreement, and a Delivery Agreement.

If you have questions, please contact Mr. Paul Matuska, Water Accounting and Verification Group Manager, at 702-293-8164 or pmatuska@usbr.gov.

Sincerely,



Terrance J. Fulp, Ph.D.
Regional Director

cc: Ms. Tanya M. Trujillo
Executive Director
Colorado River Board of California
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Continued on next page.

cc: Continued from previous page.

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Colorado River Program Manager
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1001 South Valley View Blvd., MS 520
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SOUTHERN NEVADA WATER AUTHORITY

1001 South Valley View Boulevard • Las Vegas, NV 89153
(702) 258-3939 • snwa.com

October 27, 2015

Terrance J. Fulp, Ph.D.
Regional Director
U.S. Department of the Interior
Bureau of Reclamation
Lower Colorado Regional Office
P.O. Box 61470
Boulder City, Nevada 89006

**SUBJECT: REQUEST FOR DELIVERY OF INTENTIONALLY CREATED SURPLUS
CALENDAR YEAR 2015**

Dear Dr. Fulp:

In accordance with part VIII of the Delivery Agreement (Contract No. 07-XX-30-W0520) among the United States of America, the Southern Nevada Water Authority (SNWA), and the Colorado River Commission of Nevada dated December 13, 2007, SNWA requests delivery of 75,000 acre-feet of Extraordinary Conservation (EC) Intentionally Created Surplus (ICS) Colorado River water in 2015 from SNWA's EC ICS account¹. This delivery is requested in accordance with the conditions of section 3.C of the 2007 Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead. This delivery request is also in accordance with the Lower Colorado River Basin Intentionally Created Surplus Forbearance Agreement dated December 13, 2007.

At this time, we estimate that approximately 220,000 acre-feet of water will be consumptively used in Nevada including the 75,000 acre-feet of ICS water requested herein. This will leave approximately 155,000 acre-feet of unused basic apportionment for Nevada in 2015. The difference between Nevada's final unused basic apportionment and interstate storage with MWD (approximately 5,000 acre-feet) will be left in Lake Mead as a portion of SNWA's contributions under the 2014 Memorandum of Understanding for Pilot Drought Response Actions.

If you have additional questions, please contact Colby Pellegrino at (702) 822-3378.

Sincerely,

John J. Entsminger
General Manager

cc: Jayne Harkins, Executive Director – Colorado River Commission of Nevada
Colby Pellegrino, Colorado River Program Manager – Southern Nevada Water Authority

¹ The Colorado River Accounting and Water Use Report: Arizona, California, and Nevada, Calendar Year 2014 shows SNWA has a balance of 133,880 acre-feet of EC ICS.



United States Department of the Interior

BUREAU OF RECLAMATION
Lower Colorado Regional Office
P.O. Box 61470
Boulder City, NV 89006-1470

IN REPLY REFER TO:
LC-4220
WTR-4.03

DEC 09 2015

CERTIFIED – RETURN RECEIPT REQUESTED

Mr. John J. Entsminger
General Manager
Southern Nevada Water Authority
1001 South Valley View Boulevard, MS 480
Las Vegas, NV 89153

Subject: Approval of the Southern Nevada Water Authority's (SNWA) Request for Delivery of Intentionally Created Surplus (ICS) – Calendar Year 2015

Dear Mr. Entsminger:

The Bureau of Reclamation has received your letter dated October 27, 2015, in which SNWA requests delivery of 75,000 acre-feet (AF) of Extraordinary Conservation (EC) ICS from SNWA's EC ICS account.

The 2007 Record of Decision for *Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead* (2007 Interim Guidelines) establishes the requirements for the creation, delivery, and accounting for ICS. Reclamation has reviewed your request for ICS delivery and has determined that such request is in accordance with Section 3.C of the 2007 Interim Guidelines and Section VIII of the Delivery Agreement among the United States of America, SNWA and the Colorado River Commission of Nevada (Contract No. 07-XX-30-W0520). Therefore, I approve SNWA to take delivery of 75,000 AF of EC ICS in calendar year 2015.

If you have questions, please contact Mr. Paul J. Matuska, Water Accounting and Verification Group Manager, at 702-293-8164 or pmatuska@usbr.gov.

Sincerely,

Terrance J. Fulp, Ph.D.
Regional Director

cc: See next page.

cc: Ms. Tanya M. Trujillo
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