



# SOUTHERN NEVADA WATER AUTHORITY

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June 13, 2012

Terry Fulp, Ph.D., Acting 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 2013**

Enclosed are Southern Nevada Water Authority's (Authority) 2013 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. Our Plans describe how we intend 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 2013 represents the 6<sup>th</sup> year in which the Authority will create ICS under the Guidelines.

As you know, the Guidelines require a Contractor to enter into a Delivery Agreement with the United States and a Forbearance Agreement with Lower Colorado River Basin Contract holders to create and take Tributary Conservation and Imported ICS. The Authority and Colorado River Commission (CRC) entered into a Delivery Agreement with the United States and a Forbearance Agreement with Lower Basin Contract holders on December 13, 2007. Exhibit A of the Forbearance Agreement describes the surface water rights on the Muddy and Virgin Rivers, pre-dating June 25, 1929, which the Authority plans to use to create Tributary Conservation ICS, and describes how the flows reaching Lake Mead will be calculated. Exhibit B of the Forbearance Agreement describes the groundwater rights from Coyote Spring Valley, which the Authority plans to use to create Imported ICS and how the imported water reaching Lake Mead will be calculated.

The enclosed Plans of Creation are consistent with the Guidelines, Forbearance Agreement, and Delivery Agreement. The Authority anticipates creating Tributary Conservation ICS and Imported ICS during Calendar Year 2013 as indicated below:

Calendar Year	Potential Volume, in acre-feet/year Cited in Plans of Creation		
	Virgin River	Muddy River	Coyote Spring Valley
2013	17,000	20,000	9,000

If you have any questions, please contact Jeff Johnson at 702-862-3748.

Sincerely,

Bruce C. Moore, Acting Director  
Surface Water Resources Department

BM:JJ:lmv

Enclosures (3)

- 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

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### SNWA MEMBER AGENCIES

# **Muddy River Intentionally Created Surplus (ICS) Tributary Conservation Plan of Creation Calendar Year 2013**

## ***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<sup>1</sup> 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. The Southern Nevada Water Authority (SNWA) and Colorado River Commission of Nevada (CRC) entered into a Forbearance Agreement with Lower Basin Contract holders on December 13, 2007. 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.

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

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<sup>1</sup> “Contractor” in the Guidelines “shall mean an entity holding an entitlement to Mainstream water under (a) the Consolidated Decree, (b) a water delivery contract with the United States through the Secretary, or (c) a reservation of water by the Secretary, whether the entitlement is obtained under (a), (b), or (c) before or after the adoption of the Guidelines.

- 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***

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, but that have experienced periods of non-use in the interim. 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 Springs Area in Nevada and flows into the Overton Arm of Lake Mead (Figure 1). Muddy River flows are relatively constant because the springs that form the river discharge water from the regional carbonate aquifer system of eastern Nevada. The average annual flow of the Muddy River at U.S. Geological Survey (USGS) gaging station 09419000 *Muddy River near Glendale, NV*, for water years 1950 to 2011 was 30,560 acre-feet per year (afy).

On the Muddy River, water rights were decreed in 1920 and the decree allocated the entire flow of the Muddy River. On the Lower Muddy River, the entire flow of the river is diverted by the Muddy Valley Irrigation Company (MVIC) for agricultural use. 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.

Retired agricultural water rights controlled by SNWA will be conveyed to Lake Mead along 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 or could have otherwise been diverted from the Muddy River and fully consumed by SNWA within Nevada.

Muddy 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 Muddy River further downstream or will remain in the mainstream of the Muddy River. The full rights controlled 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 2013. SNWA anticipates receiving Tributary Conservation ICS credit 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***

SNWA currently owns or controls the following Muddy River water rights:

1. *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 USGS gage *Muddy River near Glendale, NV* (Glendale gage) less the Upper Muddy River rights owned or controlled by SNWA that reach the gage (Figure 2).
  - a. Owned MVIC shares<sup>2</sup>
    - i. 1,009 preferred shares in the MVIC estimated to represent approximately 6,500 afy in 2013.
    - ii. 2,839 common shares in the MVIC estimated to represent approximately 2,000 afy in 2013.
    - iii. If additional shares are acquired, the water rights represented by the shares will be included in the year-end Certification Report.
    - iv. A portion of the shares purchased 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 2011 approximately 1,600 acre-feet (af) of purchased shares were leased back to the seller.

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<sup>2</sup> Muddy River water rights were decreed in 1920 by the Tenth (now Eighth) Judicial District Court. Water rights on the Lower Muddy River are divided into 2,432 preferred and 5,044 common shares of stock in the Muddy Valley Irrigation Company.

b. Leased MVIC shares<sup>3</sup>

The lease contracts for both preferred and common shares in MVIC are on a water year schedule, therefore the amount of leased shares may change at the beginning of Water Year 2013 (October 2012) depending on renewal of leases.

- i. Approximately 239 preferred shares are expected to be leased in the MVIC from January through September 2013. For planning purposes the lease of 239 preferred shares for CY 2013 are estimated to represent about 1,700 af.
  - ii. Approximately 560 common shares are expected to be leased in the MVIC from January through September 2013. For planning purposes the lease of 560 common shares for CY 2013 are estimated to represent about 400 af.
2. 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 (decreed Muddy River rights not represented by MVIC shares) in 2013 (Figure 3) being leased by SNWA.
  3. 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).
  4. Up to 1,040 afy pursuant to the Muddy River decree owned by SNWA (not represented by MVIC shares, commonly referred to as the Hidden Valley rights) (Figure 4).
  5. Up to 3,700 afy pursuant to Permits 73482, 73483, and 73695 held by the Moapa Band of Paiutes. These rights are being leased by SNWA from the Moapa Band of Paiutes (Figure 5).
  6. 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).
  7. Up to 3,000 afy pursuant to Certificates 7316 and 13851 held by MVIC and being leased by SNWA.

For Calendar Year 2013, SNWA anticipates creating up to 20,000 af of Tributary Conservation ICS from these pre-June 25, 1929, water rights.

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<sup>3</sup> SNWA has entered into lease agreements with individual share holders for terms ranging between 1 and 10 years.

## **Methodology**

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

Flows measured by USGS at the Glendale 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 Study (LCRAS), Nevada Division of Water Resource's (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 calculated above includes flows at the USGS gage *Muddy River at Lewis Avenue at Overton, NV* located just upstream of the WMA and unmeasured underflow.

### A. Proof of Fallowed Land:

To demonstrate the fallowing of land and the conservation of water, aerial photography will be flown, ground-truthed, 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 the 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, since it is 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 Forbearance Agreement, and Delivery 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 as required
  - 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. Similarly, 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:

Nevada State Engineer Order 1194 states... "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."

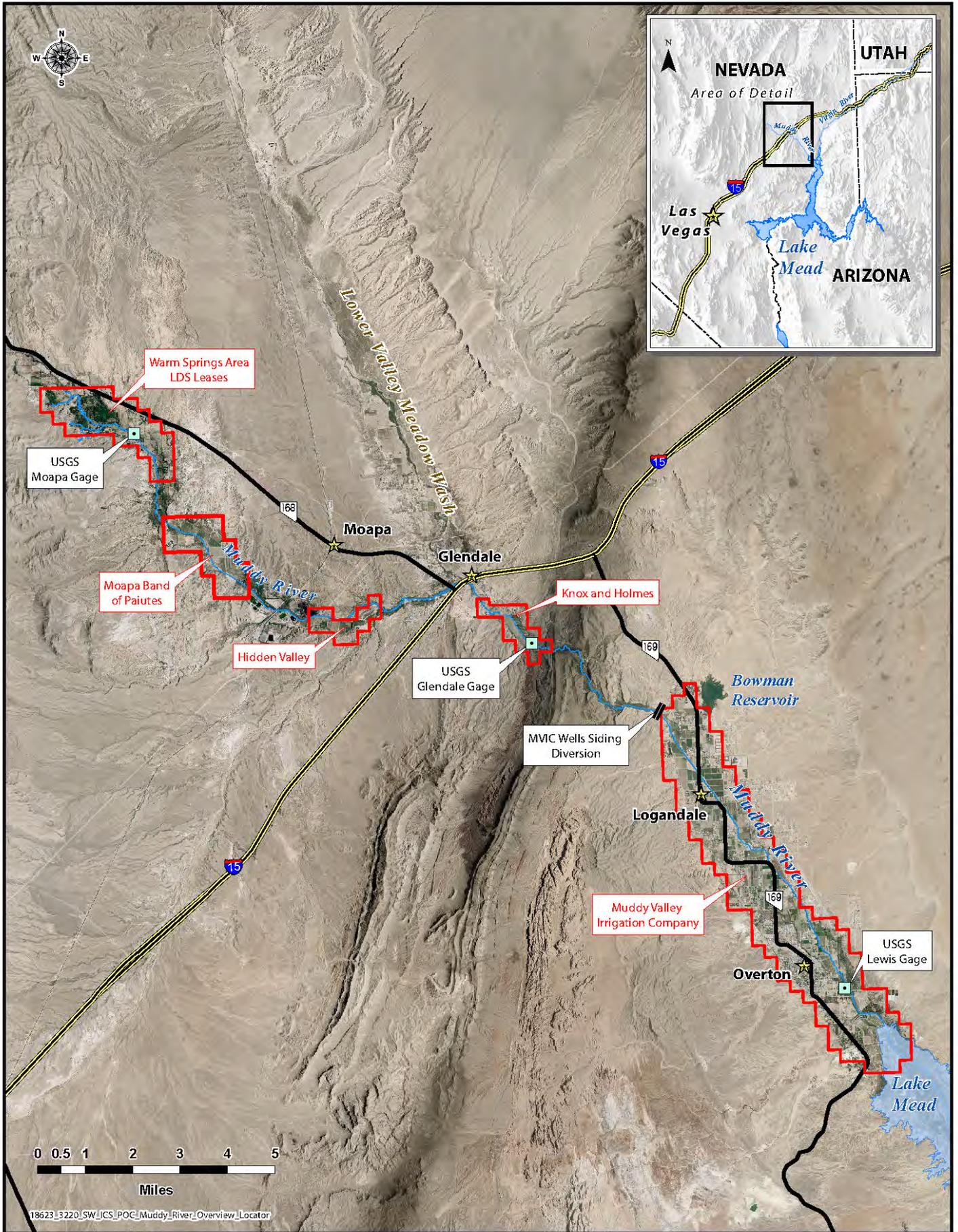
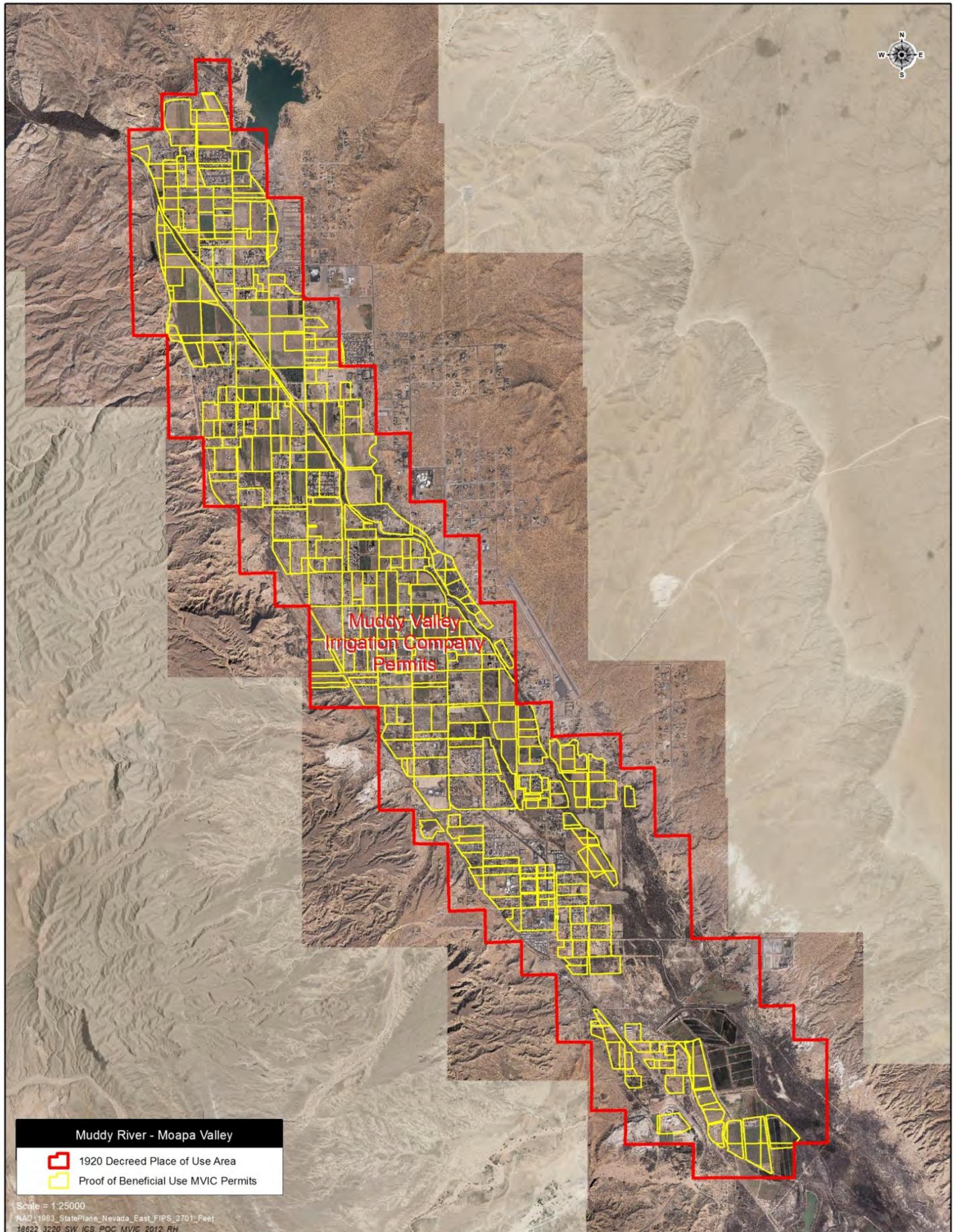


Figure 1 - Muddy River



**Figure 2 - MVIC Decreed POU and PBU. Aerial Photography February 2012**

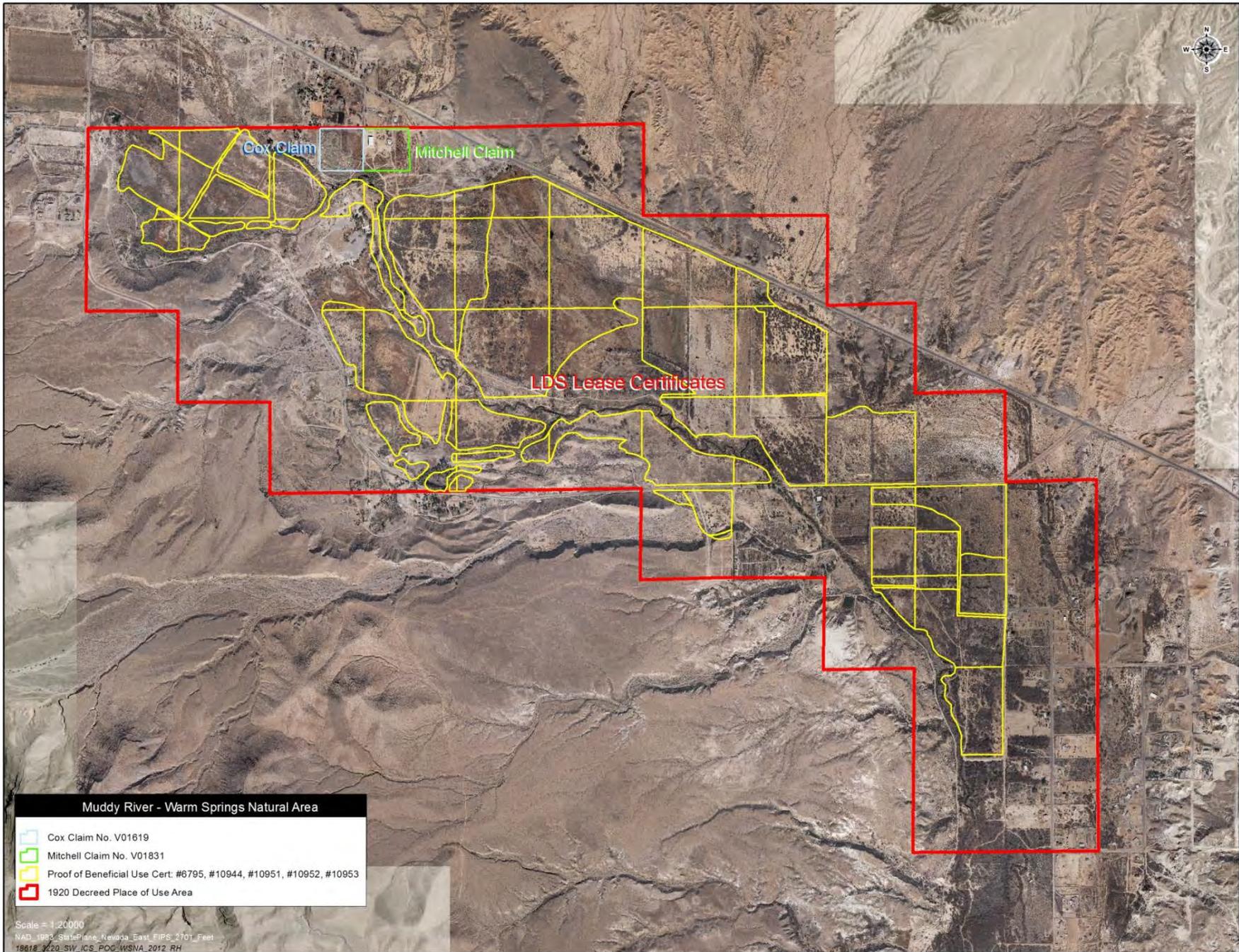


Figure 3 - LDS Water Rights POU and PBU and Cox and Mitchell POU Aerial Photography February 2012



Figure 4 - Hidden Valley Decreed Water Right POU. Aerial Photography February 2012



**Figure 5 - Moapa Band of Paiutes POU. Aerial Photography February 2012**

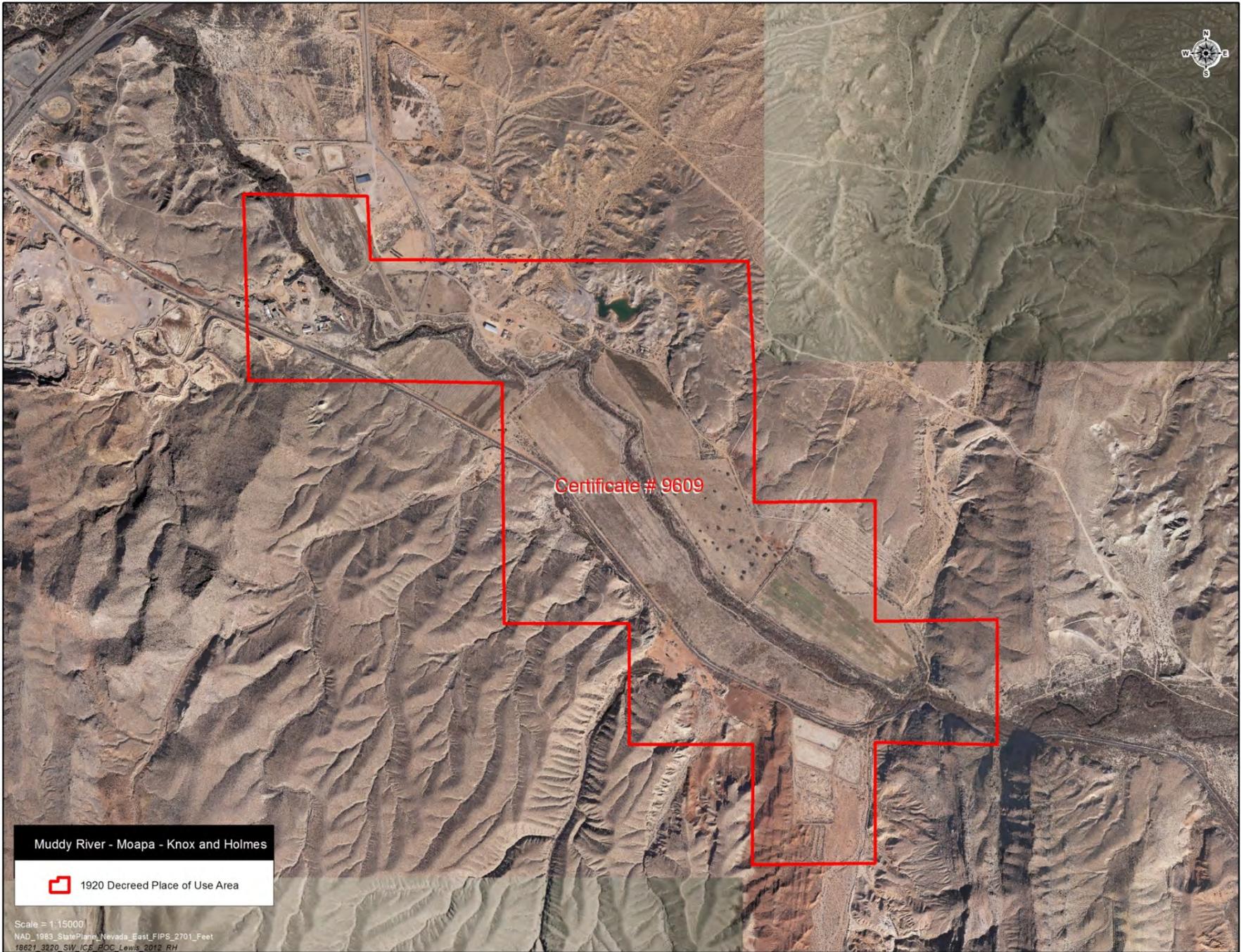


Figure 6 – Knox and Holmes Decreed Water Right POU. Aerial Photography February 2012

# Virgin River Intentionally Created Surplus (ICS) Tributary Conservation Plan of Creation Calendar Year 2013

## ***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<sup>1</sup> 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 (Pre-BCPA Water Rights).

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. The Southern Nevada Water Authority (SNWA) and Colorado River Commission of Nevada (CRC) entered into a Forbearance Agreement with Lower Basin Contract holders on December 13, 2007. 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

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<sup>1</sup> “Contractor” in the Guidelines “shall mean an entity holding an entitlement to Mainstream water under (a) the Consolidated Decree, (b) a water delivery contract with the United States through the Secretary, or (c) a reservation of water by the Secretary, whether the entitlement is obtained under (a), (b), or (c) before or after the adoption of the Guidelines.

- 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, but that have experienced periods of non-use in the interim. 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 Virgin River begins in southwestern Utah, flows through Arizona and Nevada, and terminates 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 1931 to 2011 was 175,900 acre-feet per year (afy).

Nevada state water rights that pre-date the Boulder Canyon Project Act (BCPA) 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).

Retired agricultural water rights acquired by SNWA will be conveyed to Lake Mead along 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 or could have otherwise been diverted from the Virgin River and fully consumed by the 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 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 2013. SNWA anticipates receiving Tributary Conservation ICS credit 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:

- Bunkerville Irrigation Company: Approximately 948 shares representing approximately 7,500 afy of surface water rights. 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.
- Mesquite Irrigation Company: Approximately 870 shares representing approximately 7,500 afy of surface water rights. 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.
- 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).

For Calendar Year 2013, SNWA anticipates creating up to 17,000 acre-feet (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 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 flown, ground-truthed, 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 in support of additional permits to NDWR 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 Forbearance Agreement, and Delivery 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. Similarly, 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.

Nevada State Engineer Order 1193:

“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.”

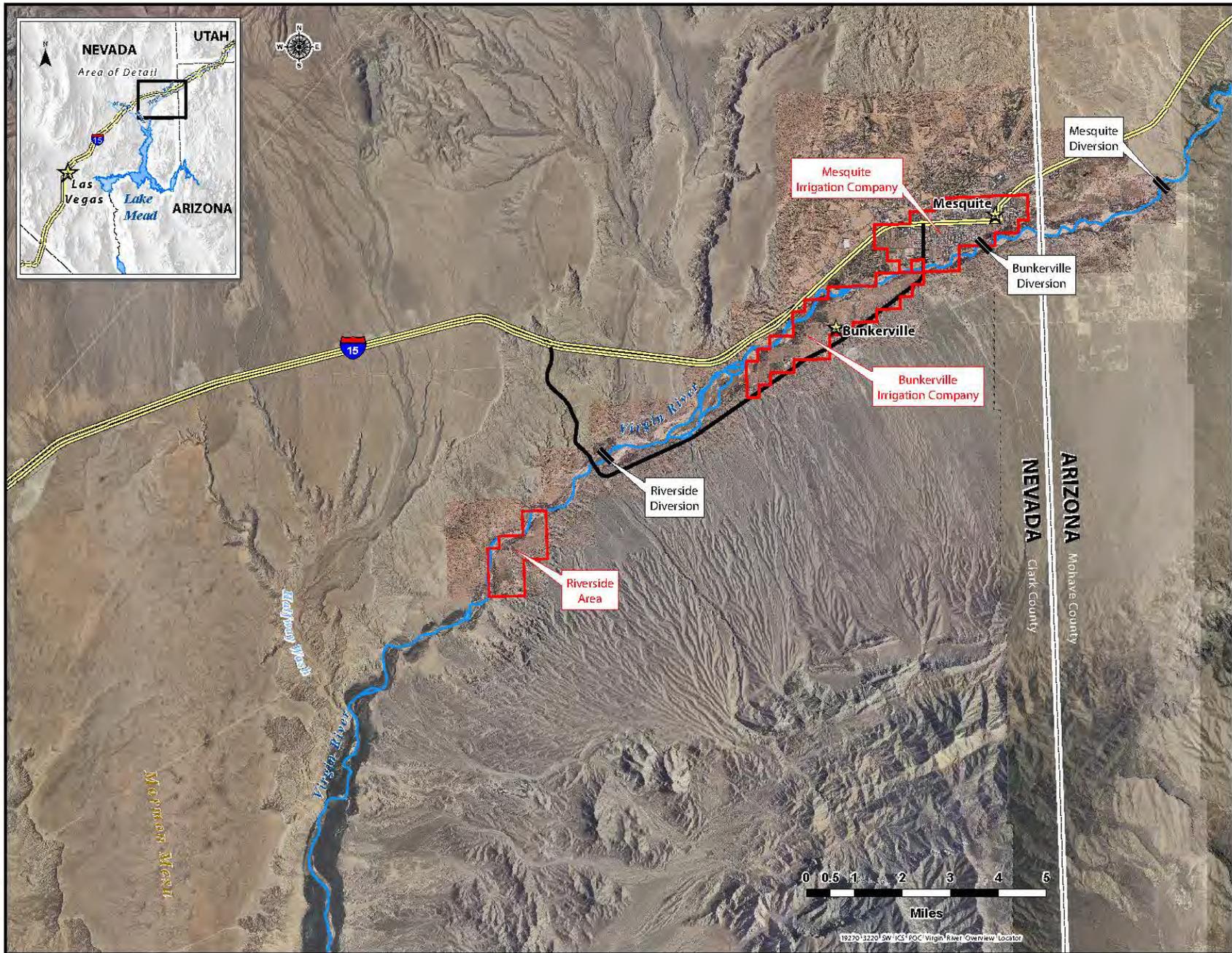


Figure 1 - Lower Virgin River showing Places of Use (red) for Pre-BCPA Water Rights

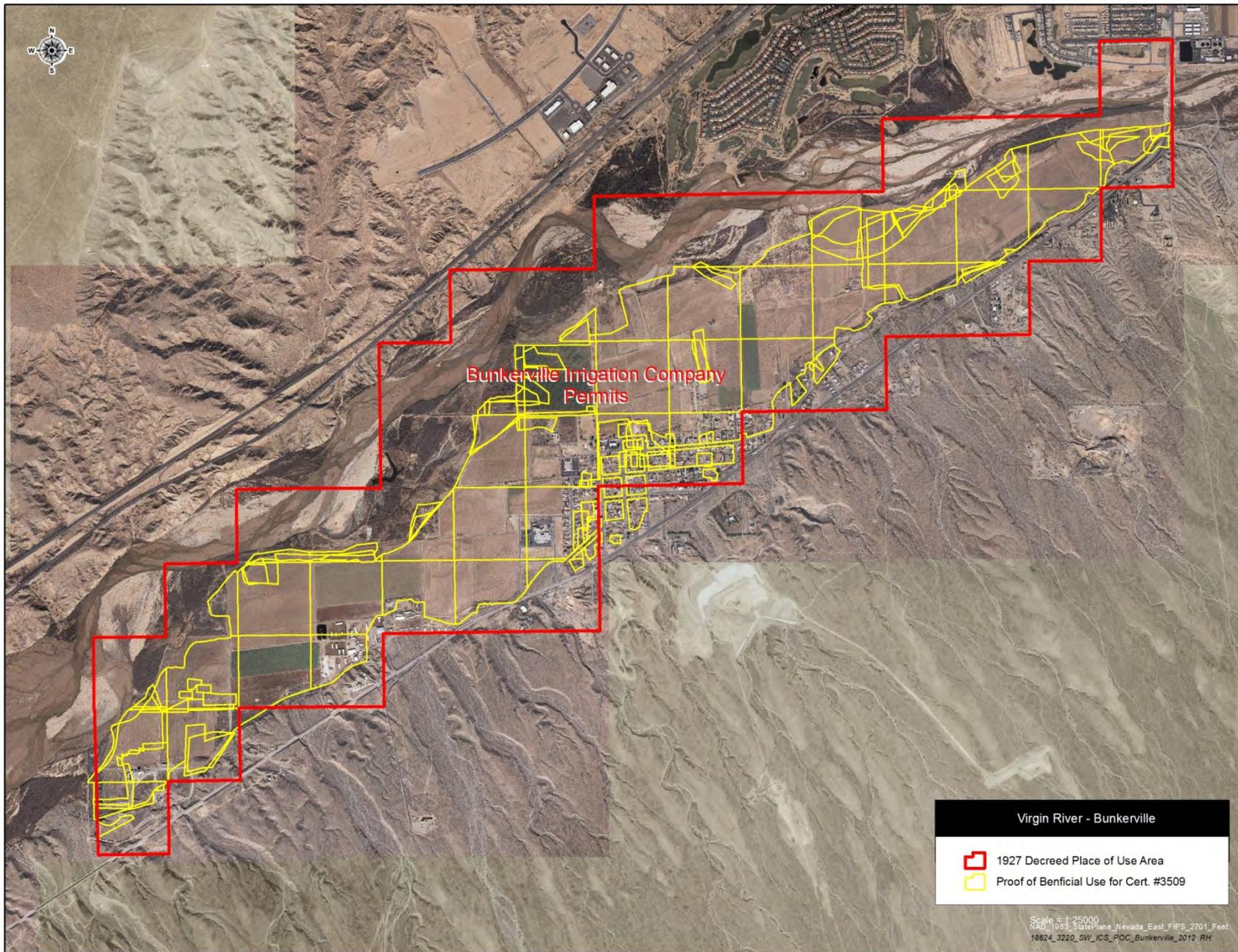


Figure 2 - Bunkerville Decreed Place of Use (red) and Proof of Beneficial Use (yellow). Aerial Photography February 2012

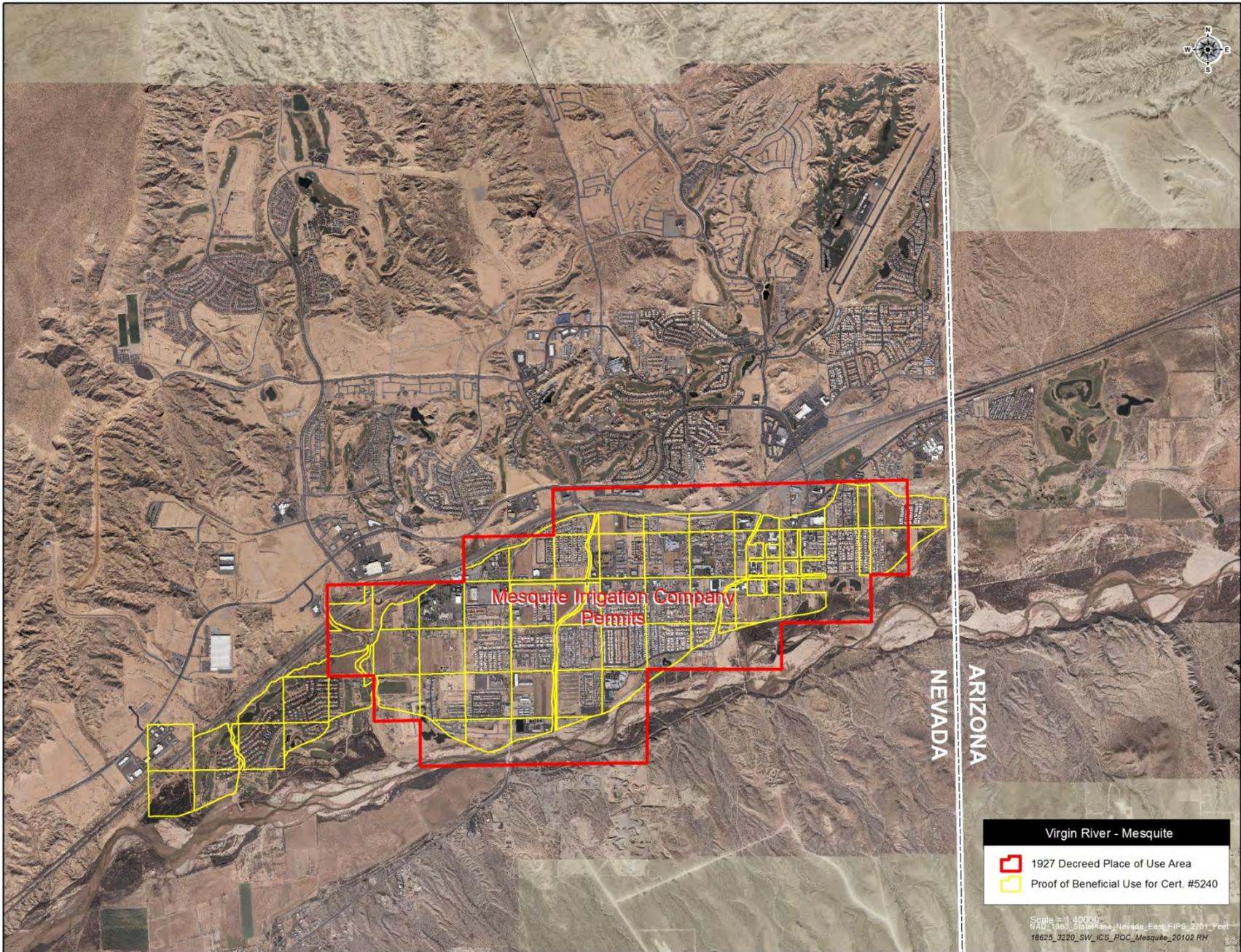


Figure 3 - Mesquite Decreed Place of Use (red) and Proof of Beneficial Use (yellow). Aerial Photography February 2012

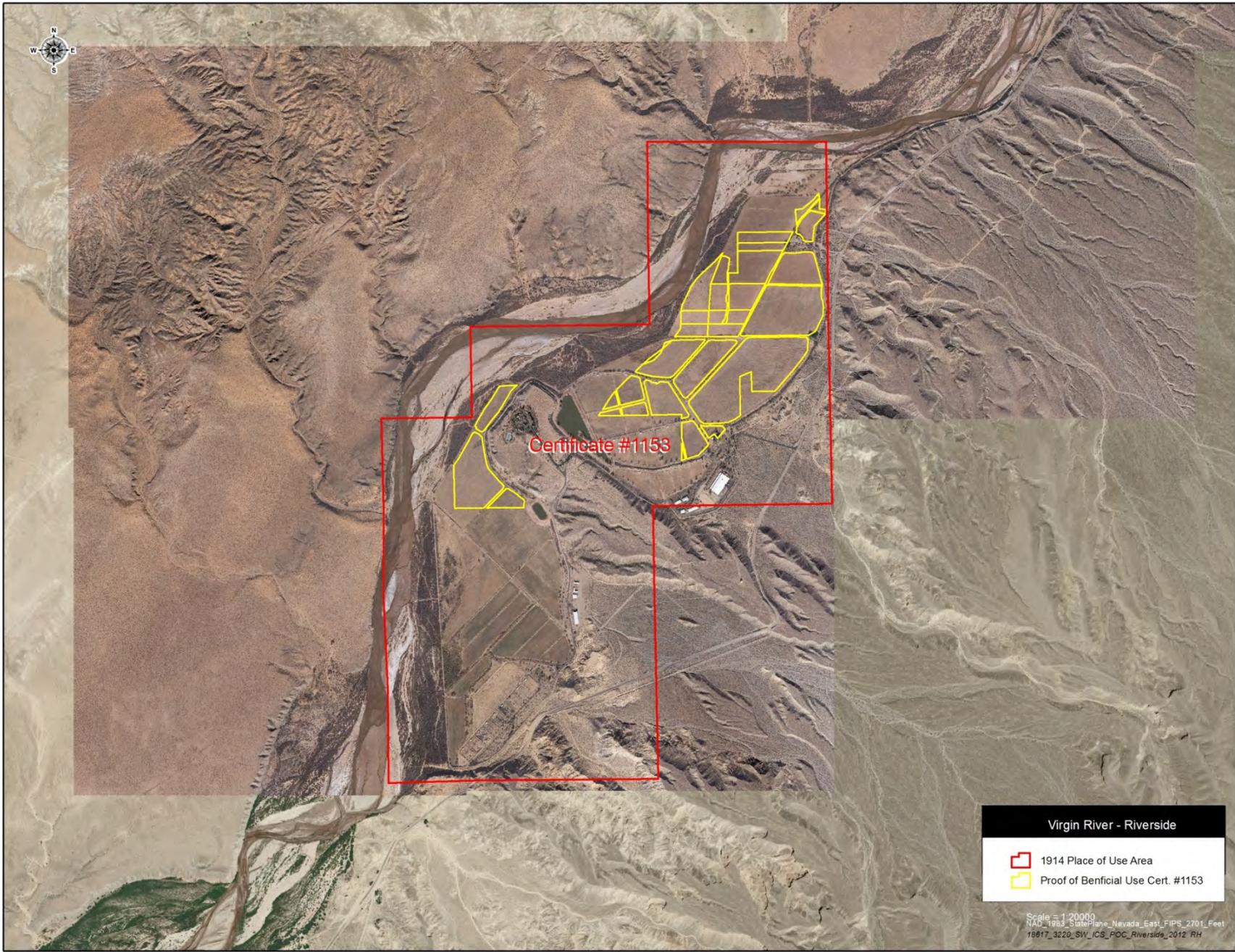


Figure 4 – Riverside Certificate 1153 Decreed Place of Use (red) and Proof of Beneficial Use (yellow). Aerial Photography February 2012

# **Coyote Spring Valley Intentionally Created Surplus (ICS) Imported ICS Plan of Creation Calendar Year 2013**

## ***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<sup>1</sup> 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. The Southern Nevada Water Authority (SNWA) and Colorado River Commission of Nevada (CRC) entered into a Forbearance Agreement with Lower Basin Contract holders on December 13, 2007. 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 calculated.

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

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<sup>1</sup> "Contractor" in the Guidelines "shall mean an entity holding an entitlement to mainstream water under (a) the Consolidated Decree, (b) a water delivery contract with the United States through the Secretary, or (c) a reservation of water by the Secretary, whether the entitlement is obtained under (a), (b), or (c) before or after the adoption of the Guidelines.

- 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 and Delivery 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 groundwater 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 2013. SNWA anticipates receiving Imported ICS credit for Coyote Spring Valley groundwater conveyed to Lake Mead into the foreseeable future. As operational changes occur and if additional water rights are permitted, the amount of water claimed 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 2013.

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. 49414, 49660 to 49662 and 49978 to 49987.
2. Water permitted for appropriation by the Nevada State Engineer pursuant to Application Nos. 54055 through 54059, inclusive.

3. 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 introduced into the Muddy River channel (downstream of the U.S. Geological Survey (USGS) Glendale gage) in Lower Moapa Valley will be metered and will be in addition to SNWA Muddy River Tributary Conservation ICS water already in the channel, as determined from Muddy River flows at the USGS Glendale gage. 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, demonstrating the amount of Imported ICS created and that the method of creation was consistent with this ICS Plan, the Forbearance Agreement, and Delivery 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 into 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.

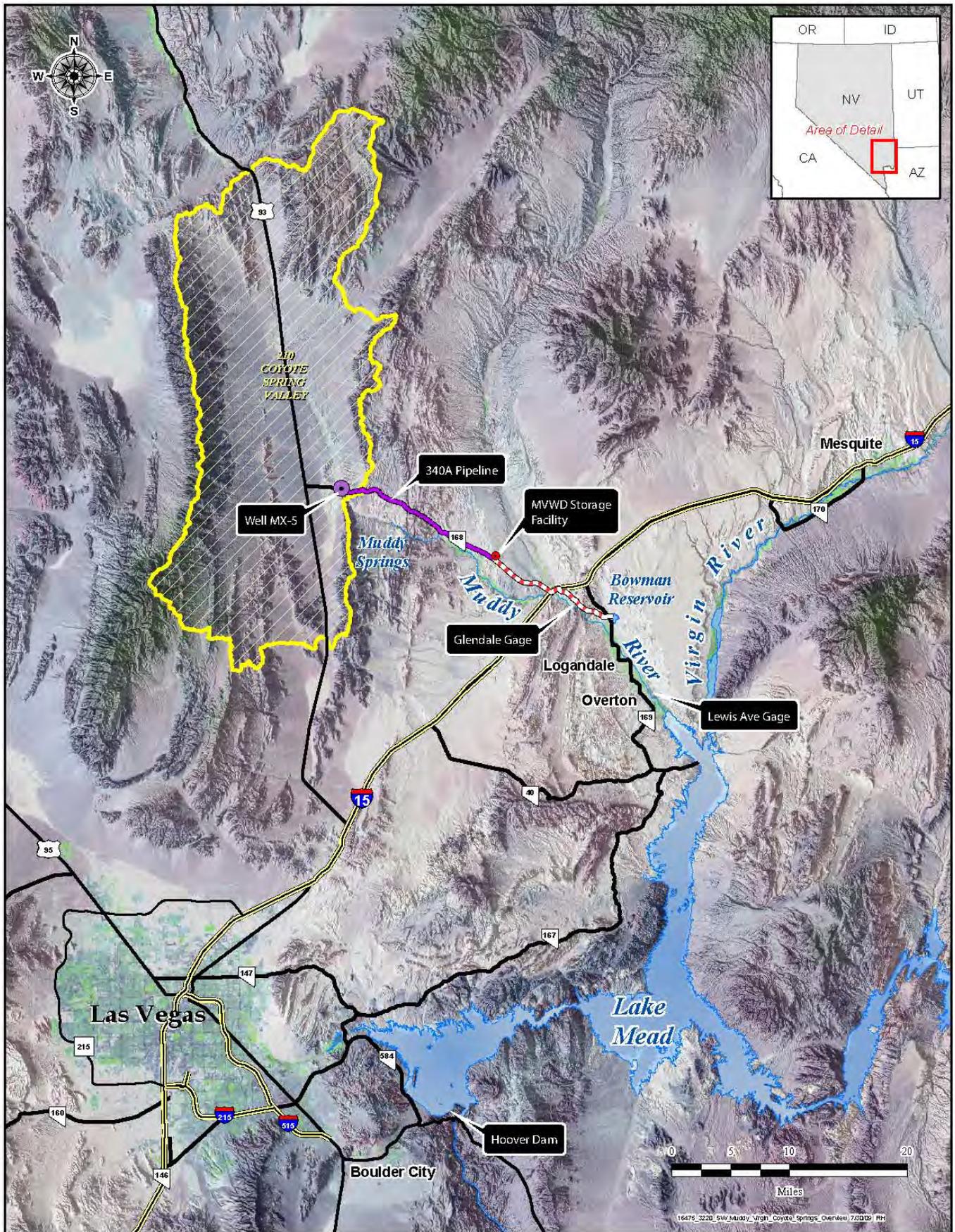


Figure 1 - Location Map of Coyote Spring Valley