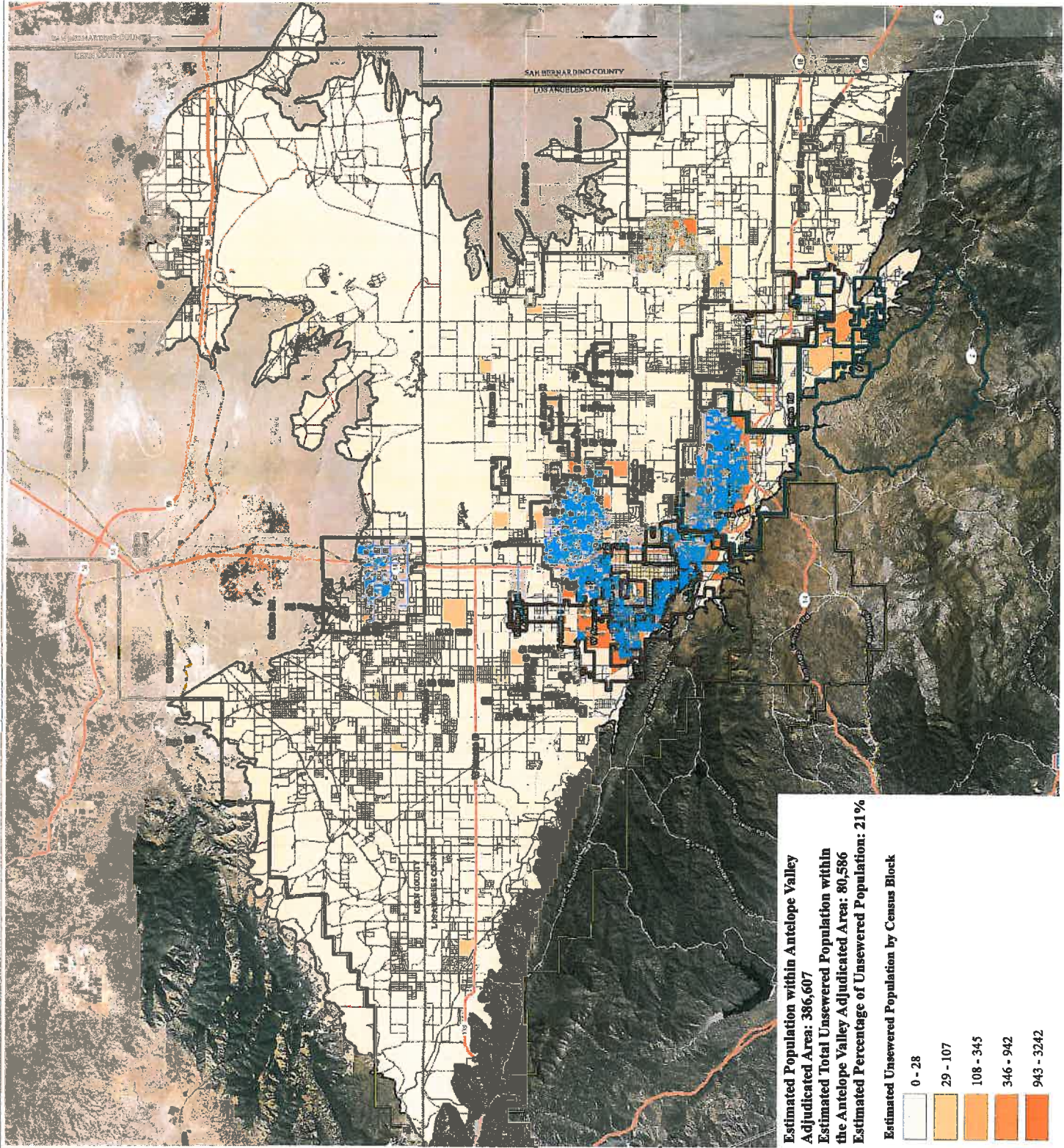
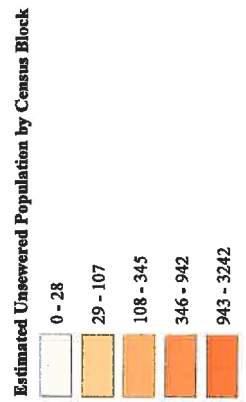


# EXHIBIT 25



**Estimated Population within Antelope Valley Adjudicated Area: 386,607**  
**Estimated Total Unsewered Population within the Antelope Valley Adjudicated Area: 80,586**  
**Estimated Percentage of Unsewered Population: 21%**



- Sewer**
- Los Angeles County Water Works District #40
  - Antelope Valley - East Kern Water Agency
  - Littlerock Creek Irrigation District
  - Palmdale Water District
  - Quartz Hill Water District
  - Rosamond CSD
  - Antelope Valley Adjudicated Area

Sewers for Los Angeles County per Los Angeles County Department of Public Works (<http://publicworks.lacounty.gov/depow/2013/15/107/los-angeles-county-water-works/>), downloaded December 2013.  
 Los Angeles County Water Works District #40 boundary per Los Angeles County Department of Public Works (<http://www.lacounty.gov/depow/2013/15/107/los-angeles-county-water-works/>), downloaded December 2013.  
 Los Angeles County Water Works East Kern boundary per Los Angeles County Department of Public Works (<http://www.lacounty.gov/depow/2013/15/107/los-angeles-county-water-works/>), downloaded December 2013.  
 Rosamond CSD boundary per Rosamond CSD, acquired December 2013.  
 All other District boundaries per U.S. Bureau of Reclamation, WPOIS Service Center in Palmdale, CA (<http://www.wpois.com/>), downloaded from State of California Geoportal (<http://portal.ca.gov/>), downloaded from Antelope Valley Adjudicated Boundary based on Superior Court of California Order, Acquisition 0777 ([http://www.courtinfo.ca.gov/court/court\\_records/court\\_records.htm#order0777](http://www.courtinfo.ca.gov/court/court_records/court_records.htm#order0777)).  
 Aerial Photograph for Kern and Los Angeles Counties per USDA-FSA Aerial Photography Field Office, Kern County flown June, 2012 and Los Angeles County flown April, 2012. Aerial Photograph for San Bernardino County per USDA-FSA Aerial Photography Field Office, San Bernardino County flown May, 2010, and east of Kern County per USDA-FSA Aerial Photography Field Office, Kern County flown April, 2012.  
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**PLATE A**  
 Antelope Valley -  
 East Kern Water Agency  
 Approximate Sewered and Unsewered Areas  
 within the  
 Antelope Valley Adjudicated Area  
 Wagner • Bonsignore  
 CONSULTING ENGINEERS

**TABLE A**  
**Determination of On-Site Disposal**

<b>Summary Expert Report<sup>1</sup></b> (all values in acre-feet)		
<i>a</i>	Main M&I Purveyors	86,829 (2009)
<i>b</i>	Mutual and Private Water Companies (5% of Main Purveyors) ( <i>a</i> *5%)	4,341 (2009)
<i>c</i>	Rural Residential (8% of Main Purveyors) ( <i>a</i> *8%)	6,946 (2009)
<i>d</i>	Total M&I ( <i>a</i> + <i>b</i> + <i>c</i> )	98,116 (2009)
<i>e</i>	Unsewered Main M&I <sup>2</sup> ( <i>a</i> *30%)	26,049
<i>f</i>	Mutual and Private Water Companies (5% of Main Purveyors) ( <i>a</i> *5%)	4,341
<i>g</i>	Rural Residential (8% of Main Purveyors) ( <i>a</i> *8%)	6,946
<i>h</i>	Total Unsewered Water Use ( <i>e</i> + <i>f</i> + <i>g</i> )	37,336
<i>i</i>	Unsewered Indoor Water Use ( <i>h</i> *45%)	16,801 Represents 17.1% of Total M&I for 2009

<b>WBE Analysis #1</b>		
<i>j</i>	Estimated Unsewered Population <sup>3</sup>	80,586
<i>k</i>	Residential Indoor Disposal (gpcd) <sup>4</sup>	61
<i>l</i>	Estimated Unsewered Disposal (gpd) ( <i>j</i> * <i>k</i> )	4,915,746
<i>m</i>	Estimated Unsewered Disposal (afy) ( <i>l</i> *365/325851.4)	5,506 Represents 5.6% of Total M&I for 2009

<b>WBE Analysis #2</b>		
<i>n</i>	Population in the Antelope Valley Area of Adjudication (AVAA) <sup>5</sup>	386,607
<i>o</i>	Population in City of Palmdale Sewer Master Plan Study Area <sup>6</sup>	151,090
<i>p</i>	Population of Mutual and Private Water Companies <sup>7</sup>	12,000
<i>q</i>	Estimated Population of Rural Residential <sup>8</sup>	21,700
<i>r</i>	Urban Area Population, excluding City of Palmdale Study Area ( <i>n</i> - <i>o</i> - <i>p</i> - <i>q</i> )	201,817
<i>s</i>	Urban Area Percent Unsewered <sup>2</sup>	30%
<i>t</i>	Urban Area Unsewered Population, excluding City of Palmdale Study Area ( <i>r</i> * <i>s</i> )	60,545
<i>u</i>	Population on septic systems within City of Palmdale Study Area <sup>9</sup>	8,370
<i>v</i>	Urban Unsewered Population in AVAA ( <i>t</i> + <i>u</i> )	68,915
<i>w</i>	Percent Urban Unsewered Population in AVAA ( <i>v</i> / <i>n</i> )	17.8%
<i>x</i>	Main M&I Purveyors Water Requirement, 2009 <sup>10</sup>	86,829
<i>y</i>	Main M&I Residential Water Use ( <i>x</i> *80%) <sup>11</sup>	69,463
<i>z</i>	Main M&I Residential Indoor Water Use ( <i>y</i> *30%) <sup>12</sup>	20,839
<i>aa</i>	Main M&I Residential Indoor Unsewered Water Use ( <i>w</i> * <i>z</i> )	3,709
<i>ab</i>	Percent of Mutual and Private Water Companies and Rural Residential of Total Population ( <i>p</i> + <i>q</i> )/ <i>n</i> )	8.7%
<i>ac</i>	Mutual and Private Water Companies and Rural Residential Indoor Water Use ( <i>z</i> * <i>ab</i> )	1,813
<i>ad</i>	Total Unsewered Indoor Water Use in AVAA ( <i>aa</i> + <i>ac</i> )	5,522 Represents 5.6% of Total M&I for 2009

**Summary Expert Report Assumptions**

- Mutual and Private Water Companies (MPWC) assumed to be 5% of Main M&I Purveyors. To arrive at this assumption, MPWC water use per capita was calculated from available data, then applied to population for the four available years when data was available to calculate total water requirement. 5% represents the ratio of MPWC total water requirement to the main M&I purveyors total water requirement for these four years. This percentage was assumed to be constant and carried throughout the rest of the years in the Summary Expert Report analysis.
- Rural Residential assumed to be 8% of Main M&I Purveyors. To arrive at this assumption, Rural Residential was estimated to be 8,254 afy in 2006, which equates to 8% of the main M&I purveyors requirements in the same year. This percentage was assumed to be constant and carried throughout the rest of the years in the Summary Expert Report analysis.
- MPWC and Rural Residential are a percentage of Total M&I, which includes industrial uses. Therefore, the calculation for MPWC and Rural Residential assumes that some portion of MPWC and Rural Residential water is used for industrial uses.
- 70% sewer, 30% unsewered in urban areas.
- 100% of Mutual and Private Water Companies, and Rural Residential are unsewered.
- 45% of total municipal water used indoors.
- 100% of water disposed on-site produces return flow.

**Sources**

- <sup>1</sup> Summary Expert Report, Phase 3 - Basin Yield and Overdraft, Antelope Valley Area of Adjudication, prepared by Beeby et al, July 2010.
- <sup>2</sup> Summary Expert Report, Phase 3 - Basin Yield and Overdraft, Antelope Valley Area of Adjudication, prepared by Beeby et al, July 2010; Appendix D, page D-22 states 70% sewer and 30% unsewered in urban areas.
- <sup>3</sup> Estimated unsewered population calculated using 2010 U.S. Census Bureau data, sewer data from Los Angeles County, City of Lancaster, and Rosamond CSD, and Parcels from Los Angeles and Kern Counties. All parcels within 100 feet of a sewer were classified as sewer, and a boundary was created from the outer extents of the sewer parcels. All parcels outside of the sewer boundary were classified as unsewered (see PLATE A). Estimated unsewered population for 2010 is 80,586.
- <sup>4</sup> City of Palmdale Sewer Master Plan Final Report, prepared by RMC, September 2009; calculated from modeled residential flow for 2006 from Table 4-1: Summary of Modeled System-Wide Average Dry Weather Flows and population from Table 2-3: Population and Housing Estimates.
- <sup>5</sup> 2010 U.S. Census Bureau GIS data clipped to Antelope Valley Area of Adjudication (AVAA) boundary.
- <sup>6</sup> City of Palmdale Sewer Master Plan Final Report, prepared by RMC, September 2009; Table 2-3: Population and Housing Estimates.
- <sup>7</sup> Summary Expert Report, Phase 3 - Basin Yield and Overdraft, Antelope Valley Area of Adjudication, prepared by Beeby et al, July 2010; page IV-6.
- <sup>8</sup> Summary Expert Report, Phase 3 - Basin Yield and Overdraft, Antelope Valley Area of Adjudication, prepared by Beeby et al, July 2010; page IV-6, states rural residential to be 7,000 parcels. Persons per household within AVAA calculated to be 3.1 from 2010 U.S. Census Bureau data and applied to 7,000 parcels, resulting in an estimated rural residential population of 21,700.
- <sup>9</sup> City of Palmdale Sewer Master Plan Final Report, prepared by RMC, September 2009; Executive Summary, page ES-2, assumes 2,700 parcels on septic systems. Persons per household within AVAA calculated to be 3.1 from 2010 U.S. Census Bureau data, and applied to 2,700 parcels, resulting in a population of 8,370 on septic systems within the City of Palmdale Study Area.
- <sup>10</sup> Summary Expert Report, Phase 3 - Basin Yield and Overdraft, Antelope Valley Area of Adjudication, prepared by Beeby et al, July 2010; Appendix D, Table D.3-3 Historical M&I Water Requirements.
- <sup>11</sup> 2010 Integrated Regional Urban Water Management Plan for the Antelope Valley, Los Angeles County, Department of Public Works, Waterworks District No. 40 and Quartz Hill Water District, June 2011, submitted to the Department of Water Resources (<http://water.ca.gov/urbanwatermanagement/UWMP2010.cfm>), downloaded January 6, 2014; LA Water Works #40 residential water use calculated from Table 4-1: District No. 40 Historic and Current Water Use is 76% of total water use. Residential water use assumed to be 80% for this analysis.
- <sup>12</sup> Ariki Testimony; 70% of residential water is used outdoors.

**TABLE B**  
**Determination of Outdoor Disposal**

Summary Expert Report <sup>1</sup>		
(all values in acre-feet)		
<i>a</i> Main M&I Purveyors	86,829	(2009)
<i>b</i> Mutual and Private Water Companies (5% of Main Purveyors) ( <i>a</i> *5%)	4,341	(2009)
<i>c</i> Rural Residential (8% of Main Purveyors) ( <i>a</i> *8%)	6,946	(2009)
<i>d</i> Total M&I ( <i>a</i> + <i>b</i> + <i>c</i> )	98,116	(2009)
<i>e</i> Outdoor Water Use ( <i>d</i> *55%)	53,964	
<i>f</i> Irrigation Return Flow ( <i>e</i> *20%)	10,793	Represents 11% of Total M&I for 2009

WBE Analysis		
<i>g</i> Main M&I Purveyors Residential Water Use ( <i>af</i> ) <sup>2</sup> ( <i>a</i> *80%)	69,463	
<i>h</i> Total Residential Water Use ( <i>af</i> ) ( <i>g</i> + <i>b</i> + <i>c</i> )	80,750	
<i>i</i> MPWC & Rural Residential Indoor Water Use ( <i>af</i> ) <sup>3</sup>	1,813	
<i>j</i> Residential Outdoor Water Use ( <i>af</i> ) <sup>4</sup> ( <i>g</i> *70%)+(b+c)-i)	58,098	
<i>k</i> Population in the Antelope Valley Area of Adjudication (AVAA) <sup>5</sup>	386,607	
<i>l</i> Residential Outdoor Water Use per Capita ( <i>af</i> / <i>y</i> /capita) ( <i>j</i> / <i>k</i> )	0.15028	
<i>m</i> Residential Outdoor Water Use per Capita (gpcd) ( <i>l</i> /365*325851.4)	134.16	
<i>n</i> Household Outdoor Water Use (gpd) <sup>6,7</sup> ( <i>m</i> *3.1 capita per household)	415.9	
<i>o</i> Household Outdoor Water Use ( <i>af</i> ) <sup>6,7</sup> ( <i>n</i> *365/325851.4)	0.46587	
<i>p</i> Household Outdoor Water Use (acres) <sup>8</sup> ( <i>o</i> /73")	0.07658	
<i>q</i> Household Outdoor Water Use (sqft) <sup>8</sup> ( <i>p</i> *43560)	3,336	

2012 Turfgrass ET <sub>AW</sub> Distribution Analysis Based on Palmdale CIMIS Station <sup>9</sup>												
Household Outside Water Use <sup>6</sup>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<i>r</i> Monthly Demand <sup>9</sup>	3.0%	3.1%	5.3%	8.2%	12.1%	14.5%	16.2%	14.4%	10.1%	6.9%	4.6%	1.7%
<i>s</i> Demand for 3336 sqft, (gpd) <sup>9,10</sup>	130.5	145.7	230.7	370.1	528.1	652.7	704.7	628.1	454.6	299.3	207.9	74.0
<i>t</i> Outdoor Water Available (gpd) <sup>7</sup> ( <i>n</i> *365)/days in month)* <i>t</i>	146.53	163.54	258.96	415.43	592.77	732.57	790.93	705.03	510.31	335.98	233.38	83.03
<i>u</i> Remaining (gpd) ( <i>t</i> - <i>s</i> )	15.98	17.84	28.25	45.31	64.66	79.91	86.27	76.90	55.66	36.65	25.46	9.06

2012 Turfgrass ET <sub>AW</sub> Distribution Analysis Based on Palmdale CIMIS Station <sup>9</sup> and Dry Oasis Effect <sup>11</sup>												
Household Outside Water Use <sup>6</sup>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<i>v</i> Monthly Demand <sup>9</sup>	3.0%	3.1%	5.3%	8.2%	12.1%	14.5%	16.2%	14.4%	10.1%	6.9%	4.6%	1.7%
<i>w</i> Demand for 3336 sqft, (gpd) <sup>9,10,11</sup>	376.7	375.6	702.2	1144.1	1650.3	2039.6	2202.1	1960.7	1417.7	928.9	642.0	196.2
<i>x</i> Outdoor Water Available (gpd) <sup>7</sup> ( <i>n</i> *365)/days in month)* <i>v</i>	146.53	163.54	258.96	415.43	592.77	732.57	790.93	705.03	510.31	335.98	233.38	83.03
<i>y</i> Remaining (gpd) ( <i>x</i> - <i>w</i> )	-230.16	-212.08	-443.25	-728.71	-1,057.57	-1,307.00	-1,411.12	-1,255.67	-907.35	-592.90	-408.58	-113.20

2012 Turfgrass ET <sub>AW</sub> Distribution Analysis Based on Palmdale CIMIS Station <sup>9</sup> and Wet Oasis Effect <sup>11</sup>												
Household Outside Water Use <sup>6</sup>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<i>z</i> Monthly Demand <sup>9</sup>	3.0%	3.1%	5.3%	8.2%	12.1%	14.5%	16.2%	14.4%	10.1%	6.9%	4.6%	1.7%
<i>aa</i> Demand for 3336 sqft, (gpd) <sup>9,10,11</sup>	210.9	210.3	393.2	640.7	924.2	1142.2	1233.2	1098.0	793.9	520.2	359.5	109.9
<i>ab</i> Outdoor Water Available (gpd) <sup>7</sup> ( <i>n</i> *365)/days in month)* <i>z</i>	146.53	163.54	258.96	415.43	592.77	732.57	790.93	705.03	510.31	335.98	233.38	83.03
<i>ac</i> Remaining (gpd) ( <i>ab</i> - <i>aa</i> )	-64.42	-46.81	-134.28	-225.29	-331.42	-409.59	-442.22	-392.96	-283.58	-184.19	-126.12	-26.86

**Summary Expert Report Assumptions**

- Mutual and Private Water Companies (MPWC) assumed to be 5% of Main M&I Purveyors. To arrive at this assumption, MPWC water use per capita was calculated from available data, then applied to population for the four available years when data was available to calculate total water requirement. 5% represents the ratio of MPWC total water requirement to the main M&I purveyors total water requirement for these four years. This percentage was assumed to be constant and carried throughout the rest of the years in the Summary Expert Report analysis.
- Rural Residential assumed to be 8% of Main M&I Purveyors. To arrive at this assumption, Rural Residential was estimated to be 8,254 afy in 2006, which equates to 8% of the main M&I purveyors requirements in the same year. This percentage was assumed to be constant and carried throughout the rest of the years in the Summary Expert Report analysis.
- MPWC and Rural Residential are a percentage of Total M&I, which includes industrial uses. Therefore, the calculation for MPWC and Rural Residential assumes that some portion of MPWC and Rural Residential water is used for industrial uses.
- Outdoor water use assumed to be 55%.
- Return flow from irrigation assumed to be 20%.

**Sources**

- <sup>1</sup> Summary Expert Report, Phase 3 - Basin Yield and Overdraft, Antelope Valley Area of Adjudication, prepared by Beeby et al, July 2010.
- <sup>2</sup> 2010 Integrated Regional Urban Water Management Plan for the Antelope Valley, Los Angeles County, Department of Public Works, Waterworks District No. 40 and Quartz Hill Water District, June 2011, submitted to the Department of Water Resources (<http://water.ca.gov/urbanwatermanagement/UWMP2010.cfm>), downloaded January 6, 2014; LA Water Works #40 residential water use calculated from Table 4-1: District No. 40 Historic and Current Water Use is 76% of total water use. Residential water use assumed to be 80% for this analysis.
- <sup>3</sup> Based on ratio of Mutual and Private Water Companies and Rural Residential population to total population, calculated to be 8.7% of total population. See TABLE A, WBE Analysis #2 for calculation.
- <sup>4</sup> Arika Testimony; 70% of residential water is used outdoors.
- <sup>5</sup> 2010 U.S. Census Bureau GIS data clipped to Antelope Valley Area of Adjudication (AVAA) boundary.
- <sup>6</sup> Persons per household within AVAA calculated to be 3.1 from 2010 U.S. Census Bureau data.
- <sup>7</sup> Represents a theoretical maximum for irrigation use. Does not account for any other outdoor use; for example, swimming pools, evaporative coolers, and other outdoor uses. Overstates the amount of water available for irrigation.
- <sup>8</sup> Assumes 73" of evapotranspiration based on ET<sub>AW</sub> for 2012 at Palmdale CIMIS Station.
- <sup>9</sup> ET<sub>AW</sub> results found using DWR's CUP+ Program based on: 2005 through 2012 daily climate data measured at the Palmdale CIMIS Station supplemented by, Victorville CIMIS Station, crop development data from FAO Irrigation and Drainage Paper No. 56, R. Allen et al, 1998, and soil properties found using USDA Natural Resources Conservation Service Web Soil Survey program.
- <sup>10</sup> Irrigation efficiency of 80% was estimated based on Solid Set or Permanent Sprinkler Irrigation as described in "Irrigation Systems and Water Application Efficiencies" by Kenneth H. Solomon, CA State University, Fresno.
- <sup>11</sup> FAO Irrigation and Drainage Paper No. 56, R. Allen et al, 1998.