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IN THE SUPERIOR COURT OF THE STATE OF ARIZONA
IN AND FOR THE COUNTY OF APACHE

IN RE THE GENERAL ADJUDICATION OF ALL RIGHTS TO USE WATER IN THE LITTLE COLORADO RIVER SYSTEM AND SOURCE	Contested Case Nos. CV 6417-33-6735 CV6417-33-6893 **ARIZONA DEPARTMENT OF WATER RESOURCES' NOTICE OF FILING REPORT** Special Master Sherri Zendri

CONTESTED CASE NAME: *In re Jack G. and V. Scott Peterson* and *In re Kenneth L. and Joy Abrams*

DESCRIPTIVE SUMMARY: The Arizona Department of Water Resources' ("ADWR") provides notice of filing its Report in response to the questions asked in the minute entry filed on October 16, 2025 in these contested cases.

NUMBER OF PAGES: Four and thirteen-page attachment

DATE OF FILING: January 14, 2026

On September 9, 2025 ADWR filed its Notice of Filing Report & Recommendation Regarding the Penman-Monteith Methodology ("First Report Re P-M"). As a result, the parties and Court had follow-up questions which were included in the Court's Minute Entry filed on October 16, 2025 for a status conference held on October 7, 2025:

1) Does ADWR intend to use OpenET in future hydrographic survey reports to quantify claimed irrigation rights?
2) There are multiple OpenET models available, which specific model is ADWR recommending and why?
3) OpenET still relies on P-M, so if the Arizona climate data is insufficient for P-M how would it be appropriate for OpenET?
4) The satellite imagery used for OpenET is not collected daily. How can small farms or multiple cuttings of crops account for potential data gaps?
5) OpenET pixel size provides data with a spatial resolution just under a quarter of an acre. For small fields could this be an issue?
6) OpenET data is generally only available from 2016 to the present, so how is historic data captured? If different models are using different sets data, how are the differences resolved?
7) How are other states using OpenET to address the questions posed above?

ADWR provides its responses in the attached Report (Attachment A).

ADWR also includes the following context not provided in its First Report Re P-M in the above-captioned contested cases.

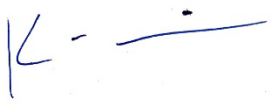
First, as noted in ADWR's First Report Re P-M, ADWR's position is that, where sufficient data is available, P-M is an acceptable and reasonable method to quantify irrigation uses.[1] However, should the Court order ADWR to draft an amended WFR in these

[1] *See* Arizona Department of Water Resources' Notice of Filing Report & Recommendation Regarding the Penman-Monteith Methodology, *In re Jack G. and V. Scott Peterson* and *In*

or any other contested case, ADWR will use the same irrigation quantification methodology as was used at the time of publication of the original WFR.[2] Furthermore, the quantity within a stipulated abstract has varied from the quantity(ies) listed in the HSR and the methodology used to arrive at a quantity is not typically discussed in the contested case associated with the abstract.[3] Thus, while ADWR maintains that OpenET is the most reasonable irrigation quantification methodology for the purpose of preparing future HSRs, it is not recommending that claimants settling with objecting parties must use OpenET now or in the future when settling the quantity listed in a proposed abstract of water right.

DATED this 14th day of January 2026.

ARIZONA DEPARTMENT OF WATER RESOURCES



Karen J. Nielsen, Deputy Counsel

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re Kenneth L. and Joy Abrams, Contested Case Nos. CV6417-33-6735 and 6417-33-6893, Sep. 9, 2025, Attachment A at 2. ADWR's Surface Water Section also accepts P-M as a reasonable quantification methodology, where sufficient data is available and the data is calculated correctly, on Applications for Permits to Appropriate Public Water of the State of Arizona or to Construct a Reservoir. ADWR communicated this to counsel representing the Petersons in a virtual meeting held on Thursday, November 20, 2025.

[2] *See, e.g.* Arizona Department of Water Resources' Notice of Filing Revised WFR, Draft Abstracts, and Report, *In re Vincent F. and Elaine N. Acri*, Contested Case No. CV6417-33-6757, Jan. 8, 2025; Arizona Department of Water Resources' Notice of Filing Amended WFR, *In re State Land Department – Paul L. Sale Investment Co.*, Contested Case No. W1-11-2805, Apr. 7, 2021; Arizona Department of Water Resources' Notice of Filing Amended Watershed File Reports, *In re ASARCO-Irrigation*, Contested Case No. W1-11-002801, Mar. 19, 2021; Arizona Department of Water Resources' Notice of Filing Amended Watershed File Report, *In re W.H. Claridge*, Contested Case No. W1-11-3394, Nov. 2, 2020; and Arizona Department of Water Resources' Notice of Filing Amended Watershed File Reports, *In re Magma Copper-Mining; In re Magma Copper-Irrigation*, Contested Case Nos. W1-11-2428 & 2503, Sep. 18, 2020.

[3] *See* Attachment B, Table Comparing Irrigation Proposed Water Right ("PWR") Quantities in Abstract vs. Max Observed in HSR as derived from those abstracts found in ADWR's Decreed & Proposed Water Rights Abstract Library as of December 29, 2025.

ORIGINAL of the foregoing sent by
first-class mail on January 14, 2026, to:

Clerk of Apache County Superior Court
70 West Third South
St. Johns, Arizona 85936

COPY of the foregoing sent by
Electronic mail on January 14, 2026, to:

Special Master Sherri Zendri
water@jbazmc.maricopa.gov

COPIES of the foregoing sent by
first-class mail on January 14, 2026, to
all parties on the court-approved mailing list
for Contested Case Nos.
CV6417-33-6735 & CV6417-33-6893.

Lizette Fuentes

ATTACHMENT A

CV6417-33-6735 & CV6417-33-6893

In re Jack G. and V. Scott Peterson & Kenneth L. and Joy Abrams
Report & Recommendation Regarding the Penman-Monteith Methodology

Introduction

The Arizona Department of Water Resources (ADWR) prepared this report pursuant to the Court's Minute Entry order filed on October 16th, 2025. The Court requested:

> "ADWR provide additional explanation and clarity to the Special Master on the following questions..." [1]

The following report answers the questions posed by the Special Master to provide additional explanation and clarity regarding the use of the Penman Montieth and OpenET methodologies in relation to Hydrographic Survey Report (HSR) investigations.

Does ADWR intend to use OpenET in future hydrographic survey reports to quantify irrigation rights?

ADWR intends to quantify irrigation uses in future HSRs using OpenET.

ADWR recommends using OpenET for future HSRs because it serves as a single data repository for evapotranspiration (ET) rates across the state of Arizona and is significantly more efficient than the Penman Monteith methodology. As explained in ADWR's previous report on Penman Monteith, OpenET saves each HSR investigator approximately 90 minutes when identifying quantities of water use for each claimed irrigation right. Over a watershed with 2,359 Irrigation claims, this amounts to over 3,500 hours saved. OpenET pre-calculates ET rates, which provides multiple benefits to ADWR and water users.

1. Pre-calculated ET rates allow the public to access the data for specific fields using the public-facing Application Programming Interface (API) or website in a quick, easy and consistent manner. This would not be possible for unsophisticated water users should ADWR use the Penman Monteith methodology.
2. Pre-calculated ET rates make quantifying irrigation rights more efficient for ADWR HSR investigators. Using the same API as the public, ADWR queries ET rates by uploading polygon shapefiles of the field of interest. OpenET then calculates actual Evapotranspiration (ETa) for each field of interest. ETa rates are crop independent,

[1] Minute Entry filed on October 16, 2025, Contested Case No. CV6417-33-6735, *In re Jack G. and V. Scott Peterson.*

reducing ADWR's needs for field visits and claimant contact, both which would add hours to investigation processes and be necessary should ADWR be required to use the Penman Monteith method.

There are multiple OpenET models available, which specific model is ADWR recommending and why?

ADWR recommends using OpenET's Ensemble model. This model is an average (with outliers removed) of six models. OpenET recommends this model to be used as it has the least variability and is most accurate across multiple areas.

> "For many applications, it has been shown previously that when estimates from an ensemble of models are combined, they yield estimates that are, on average, equally or more accurate than any individual model (Thompson, 1977; Branzei et al., 2001; Kirtman et al., 2014; Arsenault et al., 2015).... The use of a single ET value calculated from the ensemble of models can reduce barriers to use and adoption of remotely-sensed ET for a wide range of water management applications…. Based on the OpenET team's experience, and results of the intercomparison and accuracy assessment to date, the ensemble average value appears to provide the most reliable and stable estimate of ET for expansive regions with well-watered crops, and for many natural land cover types." [2]

OpenET still relies on P-M, so if the Arizona climate data is insufficient for P-M how would it be appropriate for OpenET?

OpenET does rely on Penman Monteith to calculate reference ET [3](ETo). OpenET uses a variety of sources (model dependent) to acquire the necessary reference ET. *See* Table 2: Primary Model Inputs in "OpenET: Filling a Critical Data Gap in Water Management for the Western United States" by Forest Melton et al., 2021.[4]

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[2] OpenET, *Methodologies: Calculate the OpenET Ensemble Value.* https://et-data.org/methodologies/

[3] "Reference evapotranspiration represents the evaporation from a standardized reference crop." Richard G. Allen et al., *Crop Evapotranspiration: Guidelines for Computing Crop Water Requirements,* FOA Irrigation Drainage Paper 56 (Rome: Food and Agriculture Organization of the United Nations, 1998), https://www.fao.org/4/x0490e/x0490e00.htm#Contents.

[4] Forrest, S. Melton et al., November 2, 2021. *OpenET: Filling a Critical Data Gap in Water Management for the Western United States*. Journal of the American Water Resources Association. https://doi.org/10.1111/1752-1688.12956

While local direct measurements of climatological data is best practice, direct measurements of climatological data in Arizona are sparse in certain regions (*see* Figure 1). Agencies, such as GridMET[5] and North American Land Data Assimilation System[6] (NLDAS), use direct measurements of climatological data and interpolate climate variables over areas without direct measurements to produce gridded climate data. This interpolation provides estimates of necessary climate data where direct measurements are unavailable, to calculate reference ET using the Penman Monteith formula.

[5] Abatzoglou, J. T. December 21, 2013, *Development of gridded surface meteorological data for ecological applications and modelling*. International Journal of Climatology, 33: 121–131. https://doi.org/10.1002/joc.3413

[6] Mitchell, K.E. et al., April 9, 2004. *The multi-institutional North American Land Data Assimilation System (NLDAS): Utilizing multiple GCIP products and partners in a continental distributed hydrological modeling system.* Journal of Geophysical Research: Atmospheres. https://doi.org/10.1029/2003JD003823

Xia, Y. et al., February 3, 2012. *Continental-scale water and energy flux analysis and validation for the North American Land Data Assimilation System project phase 2 (NLDAS-2): 1. Intercomparison and application of model products.* Journal of Geophysical Research: Atmospheres. https://doi.org/10.1029/2011JD016048

Zhang, B. et al., January 15, 2020. *Evaluation and comparison of multiple evapotranspiration data models over the contiguous United States: Implications for the next phase of NLDAS (NLDAS-Testbed) development.* Agricultural and Forest Meteorology 280: 107810. https://doi.org/10.1016/j.agrformet.2019.107810

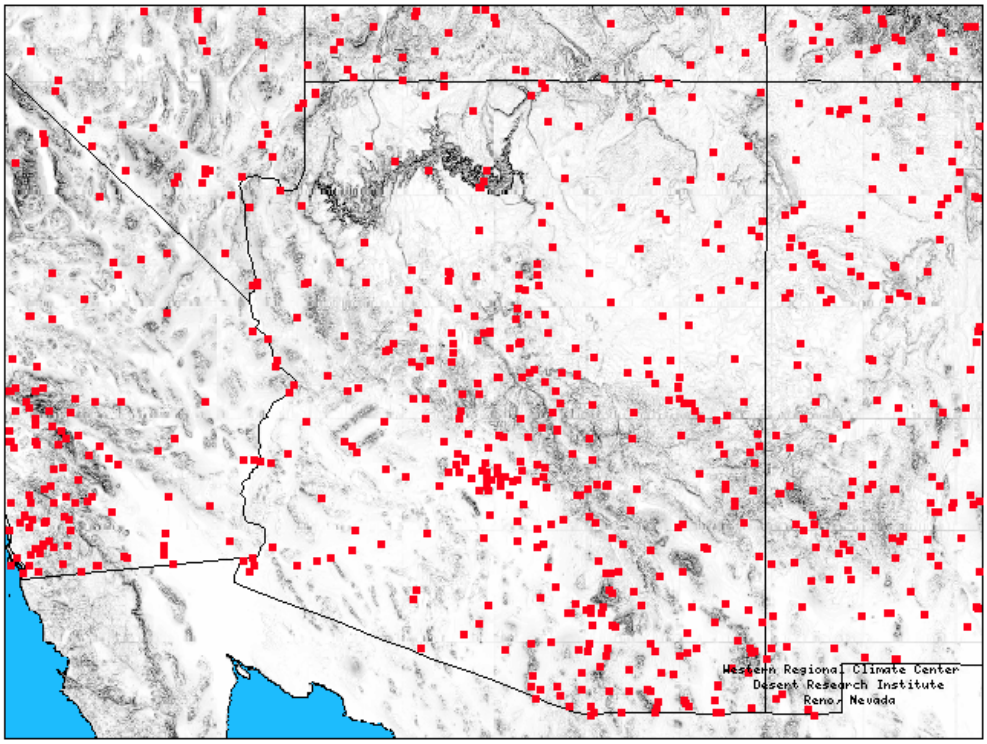

Figure 1: Depiction of available climate data provided by Western Regional Climate Center (WRCC) – Desert Research Institute.[7]

Although climate data from direct measurements can be interpolated to provide estimates in areas of data gaps, the P-M method still only calculates reference ET. Reference ET must be multiplied by a crop coefficient to calculate the ET rate of a given crop. Due to limited information provided by the claimant to ADWR regarding irrigation uses, crop type is often unknown. This lack of information requires ADWR to either perform extensive claimant contact and/or field visits to verify crop type to quantify irrigation uses using P-M. Due to these data limitations and the current HSR publication schedule, it is more cost and time efficient, as well as necessary, to utilize OpenET methodologies instead of P-M.

The satellite imagery used for OpenET is not collected daily. How can small farms or multiple cuttings of crops account for potential data gaps?

OpenET satellite data, acquired via Landsat 8/9, has an 8-day temporal resolution. Each Landsat Satellite individually captures an image of the area of interest approximately once every 16 days. However, Landsat 8 and 9 are spaced apart so they capture an image of the

[7] Western Regional Climate Center, 2025. *Cooperative Climatological Data Summaries.* Accessed on December 18, 2025. https://wrcc.dri.edu/summary/Climsmaz.html

area of interest once every 8 days between both satellites.[8] OpenET describes in their methodology that ET rates are linearly interpolated on a daily timestep between satellite passes.[9]

OpenET currently has timescales of daily, monthly, seasonally and yearly. The daily timescale data should be sufficient to provide consistent ET coverage without data gaps. In the event of multiple cuttings, ET would be captured once prior to the cutting and another after the cutting. The daily ET will be linearly interpolated between capture dates. OpenET is also crop independent as it quantifies Actual Evapotranspiration; therefore, differences in crop type will not affect methodological approaches to quantify ET.

OpenET pixel size provides data with a spatial resolution just under a quarter of an acre. For small fields could this be an issue?

OpenET has limitations of use, such as small irrigation fields under 0.22 acres. For those irrigation uses too small to quantify with OpenET, ADWR suggests using a "Water Use" constant approach to quantify those uses.

$$Quantity = Acres * Water\ Use\ Constant$$

OpenET data is generally only available from 2016 to the present, so how is historic data captured? If different models are using different sets data, how are the differences resolved?

OpenET announced on February 3, 2025, that historical ET data going back to 1999 is now available in their data repository. This data is only accessible via the OpenET API, Google Earth Engine, or FARMS beta.[10] OpenET's public facing website has an ET explorer app that contains ET data for the past 5 years to present.[11] Although each model uses slightly different input datasets, the differences between models are resolved via the Ensemble model, which represents an average of all the input models. Currently, any historical data prior to 1999 is unavailable.

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[8] Earth Resources Observation and Science (EROS) Center. 2020. *Landast 8-9 Operational Land Imager / Thermal Infrared Sensor Level-1, Collection 2 [dataset]*. U.S. Geological Survey. https://doi.org/10.5066/P975CC9B

[9] OpenET, *Methodologies: Calculate the OpenET Ensemble Value.* https://et-data.org/methodologies/

[10] OpenET, February 3, 2025. *OpenET News: New CEO and Board Members, Conference Presentations and Updates, Data Release.* *https://mailchi.mp/openet-data/2025_q1?e=aff38a11dc*

[11] OpenET Data Explorer. Accessed on 11/7/2025. https://explore.etdata.org/#5/39.665/-110.396

ADWR reviews historical data such as aerial imagery, historical documentation and historical surveys to verify water use characteristics like acreage, field shape, irrigation application systems, and non-use prior to assigning a quantity to an irrigation use within a WFR.

How are other states using OpenET to address the questions posed above?

California, Sacramento-San Joaquin Delta[12], [13]

The Delta Alternative Compliance Plan, launched in 2023, aimed to address the complicated and expensive water measurement systems created from Senate Bill 88 and create an opportunity to automate a reporting system. This plan enabled farmers of the region to leverage OpenET to automatically quantify and report water use to the California State Water Resources Control Board. OpenET was selected as the preferred methodology as it provides less expensive and more consistent, and reliable data for near-real-time measurements of crop consumptive use at the field level.

Oregon, Harney County[14], [15]

Harney Basin, located in eastern Oregon, experienced groundwater level declines which caused the Oregon Water Resources Department to close the area to new water permits. A community-based water planning effort selected OpenET to develop approaches to decrease groundwater usage while sustaining the economy. OpenET provides more reliable and complete water use measurements and reports an accounting for past, current and future water use. While water use measurement data in the Harney Basin is limited to a few locations, OpenET permits water managers to acquire basin-wide water-use measurement which can only be obtained feasibly by remotely-sensed approaches.

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[12] The Delta Alternative Compliance Plane (DACP). Accessed on 11/7/2025. https://www.deltaacp.com/about#AboutIntro

[13] OpenET. *OpenET Use Cases.* Accessed on 11/7/2025. https://etdata.org/openet-use-cases/

[14] Harney County Watershed Council. *Community-Based Water Planning.* Accessed on 11/7/2025. https://hcwatershedcouncil.com/community-based-water-planning/

[15] Thomas J. Ott et al., September 1, 2024. *Toward field-scale groundwater pumping and improved groundwater management using remote sensing and climate data.* Agricultural Water Management 302: 109000. https://doi.org/10.1016/j.agwat.2024.109000

Nevada, Diamond Valley[16] [17]

Diamond Valley, Nevada produces over 100,000 tons of alfalfa from 26,000 acres irrigated with groundwater. This region experienced continually declining groundwater levels prompting the Nevada State Engineer's Office to designate the valley as a critical management area. Farmers of the region are utilizing OpenET to access historical and near-real-time measurements of consumptive use data so that water budgets and required pumping reductions can be better understood. OpenET also allows farmers to demonstrate how changes in irrigation practices have helped contribute to their water reduction goals.

Upper Colorado River Management Committee, Utah, Colorado, Wyoming, New Mexico[18]

In September of 2022, the Upper Colorado River Management Committee (UCRC) adopted a new method for measuring and reporting consumptive water use: OpenET. Previously, the Upper Division States and the Bureau of Reclamation used different methods, including Penman-Monteith, to estimate water use producing incompatible results. The OpenET platform serves as an efficient and easy-to-use tool for landowners who wish to better understand their water use and makes access to data more accessible and transparent.

> "OpenET is at the forefront of a new technology that can provide an efficient, cost-effective, and timely way to measure consumptive water use on multiple scales, from the field to the basin. We look forward to continuing our work with Reclamation and the OpenET team to investigate ways to further develop this tool and to continue to advance the state of the science in the Colorado River Basin." — Sara Larsen, Deputy Director and Chief Engineer, Upper Colorado River Commission

Use Case Summary

The use cases described above do not directly answer the questions posed by the Special Master; however, they do touch on similar key objectives. All the use cases described above detail how OpenET was selected as their preferred methodology due to it providing a consistent way to measure ET at a low cost. These use cases also outline how

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[16] OpenET. *OpenET Use Cases.* Accessed on 11/7/2025. https://etdata.org/openet-use-cases/

[17] Thomas J. Ott et al., September 1, 2024. *Toward field-scale groundwater pumping and improved groundwater management using remote sensing and climate data.* Agricultural Water Management 302: 109000.

[18] Upper Colorado River Commission, September 27, 2022. *Reclamation move to satellite-based ET for consistent consumptive water use measurements. https://bit.ly/4jNuTW4*

OpenET is preferable due to it providing free and easy to access ET rates for the public to better understand their water usage. Use cases in California, Oregon, and Nevada also describe how OpenET provides the user near-real-time data to better understand active water usage to plan accordingly for their water budgets. The Nevada and Oregon use cases describe using OpenET for quantifying not only current water usage but historical water usage to better understand water use trends throughout time, allowing the user to make projections about future water uses. The Oregon use case describes how direct measurements of climate data are not readily available across their basin, leading to data gaps in ET. OpenET addresses these gaps via remote sensing techniques to provide ET values on a basin wide scale. The UCRC use case also describes how large watershed size investigations of consumptive use can only feasibly be accomplished by remote sensing techniques such as OpenET. None of the use cases summarized in this report describe challenges with small irrigation fields less than 0.22 acres as OpenET's spatial resolution is not fine enough to capture these small-scale water uses. There has been little reporting in the scientific community on how water managers are addressing these smaller scale irrigation uses, likely due to OpenET's spatial resolution limitations.

ATTACHMENT B

ATTACHMENT B

TABLE COMPARING IRRIGATION PROPOSED WATER RIGHTS ("PWR") QUANTITIES IN ABSTRACT VS. MAX OBSERVED IN HSR

PWR	Quantity in Abstract	Quantification in HSR of Max Observed	Notes
033-56-ACAA-001-IROO1	208	408.6	abstracted for "deficit irrigation" amount noted in HSR
111-19-DDC-001-IR001	23.5	21.1	max potential abstracted
111-24-CBB-004-IR001	263.9	263.9	
111-24-CBB-005-IR001	35	9.4	max potential for less acreage abstracted
111-24-CBC-007-IR001A	140.4	837.2	
111-24-CBC-007-IR001B	216		PWR not noted in HSR
112-17-BDA-007-IR90-A	124.2		noted as discontinued in HSR
112-17-BDA-007-IR90-B	62.1		PWR not noted in HSR
113-12-BA-012-IR001	292.9	209.2	max potential abstracted
113-12-BA-013-IR001	45.9	43.4	max potential abstracted
113-12-BA-013-IR002	27.4	25.9	max potential abstracted
113-12-BD-002-IR001	292.3	276.5	max potential abstracted
113-12-BD-002-IR002	388.2	367.7	max potential abstracted
113-12-BD-002-IR003	136.8	132	max potential abstracted
113-12-CAA-001-IR001A	325.38	792.4	
113-12-CAA-001-IR001B	140.72		PWR not noted in HSR
113-12-CAA-001-IR002	285.44	215.6	
113-12-DBC-009-IR090A	140.11		noted as discontinued in HSR
113-12-DBC-009-IR090B	165.67		noted as discontinued in HSR
113-12-DBC-014-IR001	77.5	153	This proposed water right is a consolidation of potential water rights 113-12-DBC-014- IR001 (9.2 acres) and 113-12-DBC-014-IR002 (3.3 acres).
114-01-CCD-012-IR001-A	220	75.5	
114-01-CCD-012-IR001-B	207		

ATTACHMENT B

TABLE COMPARING IRRIGATION PROPOSED WATER RIGHTS ("PWR") QUANTITIES IN ABSTRACT VS. MAX OBSERVED IN HSR

PWR	Quantity in Abstract	Quantification in HSR of Max Observed	Notes
114-04-BAB-007-I R001	2468.4	410.6	The notice of appropriation and old rights include historic water uses described as IR00l, IR002, IR003, IR004, IR00S, IR006, and IR090 by ADWR in this WFR. Therefore, this abstract of water right includes water uses collectively described in PWRs IR00l, IR002, IR003, IR004, IR00S, IR006, and IR090. These parcels are part of one contiguous property. IR090 was noted as discontinued in HSR.
114-04-BDD-001-IR001	1388.35	182.3	
114-04-BDD-001-IR003	31.4	4.8	
114-04-BDD-029-IR001	699	475.2	
114-04-CAA-001-IR002	14	3.6	deficit irrigation noted in HSR
114-04-CAA-001-IR01	165	122.7	max potential abstracted
114-04-CAA-002-IR001	493.6	232.9	
114-04-CAD-001-IR001	11.1	14.9	
111-24-CBB-003-IR001	21.6	376.5	Although a small parcel within the original McDowell & Craig Manufacturing Co. irrigated area, Echoing Hope Ranch's land appears to include portions of IR001, IR002 and IR005.
115-04-ADA-001-IR001 and IR002	39.1	28.1 (IR001) and 7.6 (IR002)	Deficit irrigation noted for IR002; max potential abstracted
115-04-ADA-002-IR001	39.2	30.2	max potential abstracted
115-04-ADA-002-IR002	29.6	17.2	max potential abstracted
115-04-ADA-002-IR003	10.4	10.9	max potential abstracted
115-04-ADB-001-IR001	46.2	20.5	max potential abstracted
115-04-ADB-002-IR001	52.59	11.5	
115-04-ADB-007-IR001	14	20.2	
115-04-ADC-004-IR001-A	15.91	13.6	calculated max observed as 56% of 24.2
115-04-ADC-004-IR001-B	12.36	10.6	calculated max observed as 44% of 24.2
115-05-AB-001-IR001	25.01	25	
115-05-AB-003-IR001-A	4.76	7.719	calculated max observed as 16.6% of 46.5

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TABLE COMPARING IRRIGATION PROPOSED WATER RIGHTS ("PWR") QUANTITIES IN ABSTRACT VS. MAX OBSERVED IN HSR

PWR	Quantity in Abstract	Quantification in HSR of Max Observed	Notes
115-05-AB-003-IR001-B	6.16	10.03935	calculated max observed as 21.59% of 46.5
115-05-AB-003-IR001-C	5.73	9.29535	calculated max observed as 19.99% of 46.5
115-05-AB-003-IR001-D	5.67	9.1977	calculated max observed as 19.78% of 46.5
115-05-AB-003-IR001-E	5.31	8.6118	calculated max observed as 18.52% of 46.5
115-05-AB-003-IR001-F	1.04	1.6833	calculated max observed as 3.62% of 46.5
115-05-AB-004-IR001A	4.03 , 9.39	21.797	two fields, calculated as 35.5% of 61.4
115-05-AB-004-IR001B	24.4	39.603	calculated as 64.5% of 61.4
115-05-AC-003-IR001	70	77.6	
115-05-AC-003-IR002	30	37.6	
115-05-AC-003-IR003	50	190.2	
115-05-AC-004-IR001	50	163.8	
115-05-DA-001-IR001	150	149.6	Combines PWRs IR001, IR002 & IR003
115-05-DB-001-IR001	50.32 , 8.88	38.4	two fields
115-05-DB-001-IR002	23.6 , 10.4	32.2	two fields
115-05-DB-001-IR003	61.8	40.5	