



**Los Angeles
Department of Water and Power
Annual Owens Valley Report
May 2010**



- ◆ **Annual Owens Valley Operations Plan for the 2010-11 Runoff Year**
- ◆ **Conditions in the Owens Valley**
- ◆ **Enhancement and Mitigation Project Status**
- ◆ **1991 Environmental Impact Report**
- ◆ **Mitigation Measure Status**
- ◆ **Status of Other Studies, Projects, and Activities**

LOS ANGELES DEPARTMENT OF WATER AND POWER ANNUAL OWENS VALLEY REPORT

**Annual Owens Valley Operations Plan for Runoff Year 2010-11
Conditions in the Owens Valley
Enhancement and Mitigation Project Status
Status of 1991 Environmental Impact Report
Mitigation Measure Status
Status of Other Studies, Projects, and Activities**

FINAL

Prepared by

**Los Angeles Department of Water and Power
Water Operations Division
Aqueduct Section**

May 2010

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A. The Bishop Cone Audit for the 2009-2010 Runoff Year

EXECUTIVE SUMMARY

This report includes Los Angeles Department of Water and Power's (LADWP's) proposed Owens Valley operations plan for the 2010-11 runoff year, an update on Owens Valley conditions, the current status of LADWP's environmental and mitigation projects, and other studies, projects, and activities.

Owens Valley Annual Operations Plan Summary

For the period of April 1, 2010 to March 31, 2011 the forecast Eastern Sierra runoff to the Owens Valley is 392, 400 acre-feet, or 95% of normal. LADWP groundwater pumping in the Owens Valley is governed by the ON/OFF provisions of the *1991 Agreement between the County of Inyo and the City of Los Angeles (City) and its Department of Water and Power on a Long Term Groundwater Management Plan for Owens Valley and Inyo County* (Water Agreement). According to the well ON/OFF provisions of the Water Agreement, approximately 163,793 acre-feet of water is available for groundwater pumping from Owens Valley wellfields. In addition to the ON/OFF provisions of the Water Agreement, LADWP considers Owens Valley conditions and projected runoff when determining its planned pumping for the upcoming year. LADWP's planned pumping for the 2010-11 runoff year is 86,000 acre-feet.

Owens Valley Conditions

Forecast runoff from the Eastern Sierra mountains during the 2010-11 runoff year is slightly below normal. The overall Eastern Sierra snow pack in the areas managed by LADWP was 94% of normal as of April 1, 2010. Precipitation on the Owens Valley floor during the 2009-10 runoff year averaged 6.57 inches and was higher than the long-term average of 5.97 inches. Despite last year's below normal runoff, the overall vegetation cover in the Owens Valley remained comparable to the mid-1980's baseline conditions. Similarly, groundwater levels in Owens Valley wellfields generally remained stable due to modest pumping by LADWP over the last three years in conformance with the Agreement between the County of Inyo and the City of Los Angeles Department of Water and Power Regarding an Interim Management Plan for Groundwater Pumping in the Owens Valley (IMP).

During 2009-10 runoff year, the Lower Owens River was in full operational status with minimum average flows of 40 cfs or greater as measured at all gauging stations. The total water use by the Lower Owens River, the Delta, and the Blackrock Waterfowl Habitat was approximately 15,700 acre-feet for the year. The releases at the Los Angeles Aqueduct (LAA) intake were augmented by additional releases at selected LAA spillgates to maintain an average continuous flow of at least 40 cfs in the river channel.

Construction for the Owens Lake Dust Mitigation Program continued during 2009-10 runoff year. Because of additional areas being included in the dust control program's management boundaries, water demands continued to increase with the total water

consumed by the program during the 2009-10 runoff year at 66,940 acre-feet and projected to climb to 95,000 acre-feet during the 2010-11 runoff year.

Enhancement/Mitigation Project Status

The enhancement/mitigation projects discussed in Section 4 of this report are environmental projects implemented prior to the “1991 Environmental Impact Report on Water From the Owens Valley to Supply the Second Los Angeles Aqueduct” (1991 EIR). Some of these projects were identified in the 1991 EIR as mitigations for impacts due to LADWP’s water gathering activities. There are 26 projects identified as enhancement/mitigation measures; 24 of these have been completed or are being implemented, and two are in the final planning stages.

Mitigation Project Status

There are 42 mitigation projects identified for thirteen impacts in the 1991 EIR, with 29 of these projects completed or fully implemented. Ten of the mitigation projects are currently partially implemented, as they are in the process of being constructed or are being revegetated. Three projects are in the planning phase.

Other Status

The status of the Mitigation Monitoring and Reporting Programs for the Laws Irrigation Project, Well 415 in Big Pine, and the Lower Owens River Project (LORP) have been updated. A copy of the “Mitigation Monitoring and Reporting Program for the Final Ad Hoc Yellow-billed Cuckoo Habitat Enhancement Plan” is included in Section 6 of this report. Implementation status of the Water Agreement and 1997 MOU provisions have also been updated.

Green Book Revision Cooperative Study

Inyo County and LADWP continue to jointly work toward the completion of the Green Book revisions. Status updates of the Green Book revision effort are given at Technical Group and Standing Committee meetings.

1. INTRODUCTION

1. INTRODUCTION

This document is intended to satisfy LADWP's annual reporting obligations pursuant to the Water Agreement between the County of Inyo and the City of Los Angeles; the 1991 EIR; the Laws Type E transfer; the 1997 MOU between LADWP, Inyo County, the California Department of Fish and Game, the California State Lands Commission, the Sierra Club, and the Owens Valley Committee (MOU); and the August 2004 Amended Stipulation and Order in Case No. S1CVCV01-29768 (Stip/Order).

1.1 Water Agreement

The Water Agreement requires periodic evaluations of enhancement/mitigation projects to be made by the Inyo County/LADWP Technical Group. As required by the Water Agreement, all existing enhancement/mitigation projects will continue unless the Inyo County Board of Supervisors and LADWP agree to modify or discontinue a project. Section 4 of this report provides an update on LADWP enhancement/mitigation project status.

1.2 Annual Operations Plan Obligations of Agreement

The Water Agreement provides that "By April 20th of each year, the Department shall prepare and submit to the Inyo County Technical Group a proposed operations plan and pumping program for the twelve (12) month period beginning on April 1st. (In the event of two consecutive dry years when actual and forecast Owens Valley runoff for the April to September period is below normal and averages less than 75 percent of normal, the Department shall prepare a proposed plan for the six (6) month period beginning on April 1st and October 1st, and submit such plans by April 20th and October 20th.) The proposed plan and pumping program and any subsequent modifications to it shall be consistent with these goals and principles.

1. A proposed plan shall include, but is not limited to, the following:
 - Owens Valley Runoff estimate (annual)
 - Projected groundwater production by well field (monthly)
 - Projected total aqueduct reservoir storage levels (monthly)
 - Projected aqueduct deliveries to Los Angeles (monthly)
 - Projected water uses in the Owens Valley (monthly)
 - Water balance projections at each monitoring site
2. The County through its Technical Group representatives shall review the Department's proposed plan of operations and provide comments to the Department within ten (10) days of receipt of the plan.
3. The Department shall meet with the County's Technical Group representatives within ten (10) days of the receipt of the County's comments, and attempt to resolve concerns of the County relating to the proposed pumping program.

4. The Department shall determine appropriate revisions to the plan, provide the revised plan to the County within ten (10) days after the meeting, and implement the plan.
5. The April 1st pumping program may be modified by the Department during the period covered by the plan to meet changing conditions. The Department shall notify the County's Technical Group representatives in advance of any planned significant modifications. The County shall have the opportunity to comment on any such modifications.
6. Information and records pertaining to the Department's operations and runoff conditions shall be reported to the County's Technical Group representatives throughout the year."

Section 2 of this report is LADWP's revised Operations Plan for Runoff Year 2010-11.

1.3 1997 Owens Valley MOU

In accordance with the MOU, LADWP and Inyo County are required to prepare an annual report describing environmental conditions in the Owens Valley and the associated studies, projects, and activities conducted under the Water Agreement and the MOU. Sections 3 through 6 of this report are intended to fulfill that requirement.

1.4 1991 Owens Valley EIR Monitoring Program

The 1991 EIR requires that LADWP submit an annual report to the Los Angeles Board of Water and Power Commissioners containing a description of each mitigation effort, its goals, strategies, and actions; its status (completed activities, ongoing activities); the overall effectiveness of each mitigation effort; and status of each mitigation plan for the following year. Section 5 of this report provides the required information.

Mitigation plans for each of the mitigation measures are developed by the Technical Group as set forth in Section I.C.2 of the Green Book, the technical appendix to the Water Agreement. The Green Book states: "as part of each mitigation plan, the Technical Group shall develop a reporting and monitoring program. At least once per year, the Technical Group shall report, in writing to the Standing Committee, on the effectiveness of the mitigation plan in achieving its goal." Section 5 of this report is intended to complete that annual obligation.

1.5 2004 Amended Stipulation and Order

The Stip/Order, Section 11, requires that on or about May 1 of each year LADWP shall complete and release an annual report that is in conformance with Section III.H of the 1997 MOU. This report is intended to fulfill that requirement.

**2. OWENS VALLEY OPERATIONS PLAN FOR
RUNOFF YEAR 2010-11**

2. ANNUAL OWENS VALLEY OPERATIONS PLAN FOR RUNOFF YEAR 2009-10

This year's pumping program is consistent with the management strategy of the Water Agreement between the County of Inyo and the City of Los Angeles dated October 18, 1991. As stated in the Water Agreement:

"The overall goal of managing the water resources within Inyo County is to avoid certain described decreases and changes in vegetation and to cause no significant effect on the environment which cannot be acceptably mitigated while providing a reliable supply of water for export to Los Angeles and for use in Inyo County."

The dual goals of the Water Agreement: environmental protections and a reliable water supply, have been the basis of LADWP's operation plans since the Water Agreement was established. Pumping programs developed during the preceding three years have been completed under the terms of the Interim Management Plan (IMP). Water resources were managed between the 2007-08 and 2009-10 runoff years with the goal of holding groundwater surface elevations at 2007 levels to facilitate a joint ICWD/LADWP Green Book revision effort. The IMP expired on March 31, 2010 and the provisions of the Water Agreement govern this year's Annual Owens Valley Operations Plan. Although runoff for the previous three years has been lower than normal, groundwater levels throughout the valley remain high, in part due to the extremely conservative pumping management during the IMP. This year, pumping in the Owens Valley will be managed in conformance with the dual goals of the Water Agreement.

2.1. Eastern Sierra Runoff Forecast

The Eastern Sierra Runoff Forecast for the 2010-11 runoff year (Table 1) is based on snow surveys of key Eastern Sierra watersheds in Inyo and Mono counties that contribute the vast majority of runoff water into the Owens Valley. The Eastern Sierra Runoff Forecast is used for planning aqueduct operations. The forecast Eastern Sierra runoff for 2010-11 is 392,400 acre-feet, or 95% of the 1956-2005 long-term average runoff value of 411,975 acre-feet. For the period of April 1 through September 30, 2010, Eastern Sierra runoff is forecast to be 288,800 acre-feet, or 95% of the long-term average runoff of 304,059 acre-feet.

LADWP's groundwater models also add runoff measured from the White Mountains in the Laws area to the Eastern Sierra measured runoff values. This addition provides a more complete representation of recharge into the Owens Valley groundwater system. When considering the addition of runoff contribution in the Laws area, the long-term average Owens Valley runoff used in groundwater modeling is 415,725 acre-feet, based on the 1956-2005, fifty-year average.

Because LADWP does not forecast runoff from the White Mountains, the Eastern Sierra Runoff Forecast is used for preparing its annual pumping plans. The slightly lower runoff value results in somewhat more conservative pumping plans because a lower estimate of recharge is used in groundwater modeling for the upcoming year, while the long-term average is held at the higher value of 415,725 acre-feet (i.e. groundwater levels will likely be higher than predicted by the models).

Figure 1 summarizes Owens Valley runoff and groundwater pumping by LADWP since the 1971 runoff year.

Table 1. Owens Valley Runoff Forecast for 2009-10 Runoff Year

**2010 EASTERN SIERRA
RUNOFF FORECAST
April 1, 2010**

APRIL THROUGH SEPTEMBER RUNOFF

	MOST PROBABLE VALUE		REASONABLE MAXIMUM	REASONABLE MINIMUM	LONG-TERM MEAN (1956 - 2005)
	(Acre-feet)	(% of Avg.)	(% of Avg.)	(% of Avg.)	(Acre-feet)
MONO BASIN:	102,800	99%	111%	87%	103,890
OWENS VALLEY:	288,800	95%	108%	82%	304,059

APRIL THROUGH MARCH RUNOFF

	MOST PROBABLE VALUE		REASONABLE MAXIMUM	REASONABLE MINIMUM	LONG-TERM MEAN (1956 - 2005)
	(Acre-feet)	(% of Avg.)	(% of Avg.)	(% of Avg.)	(Acre-feet)
MONO BASIN:	119,200	97%	111%	84%	122,383
OWENS VALLEY:	392,400	95%	108%	83%	411,975

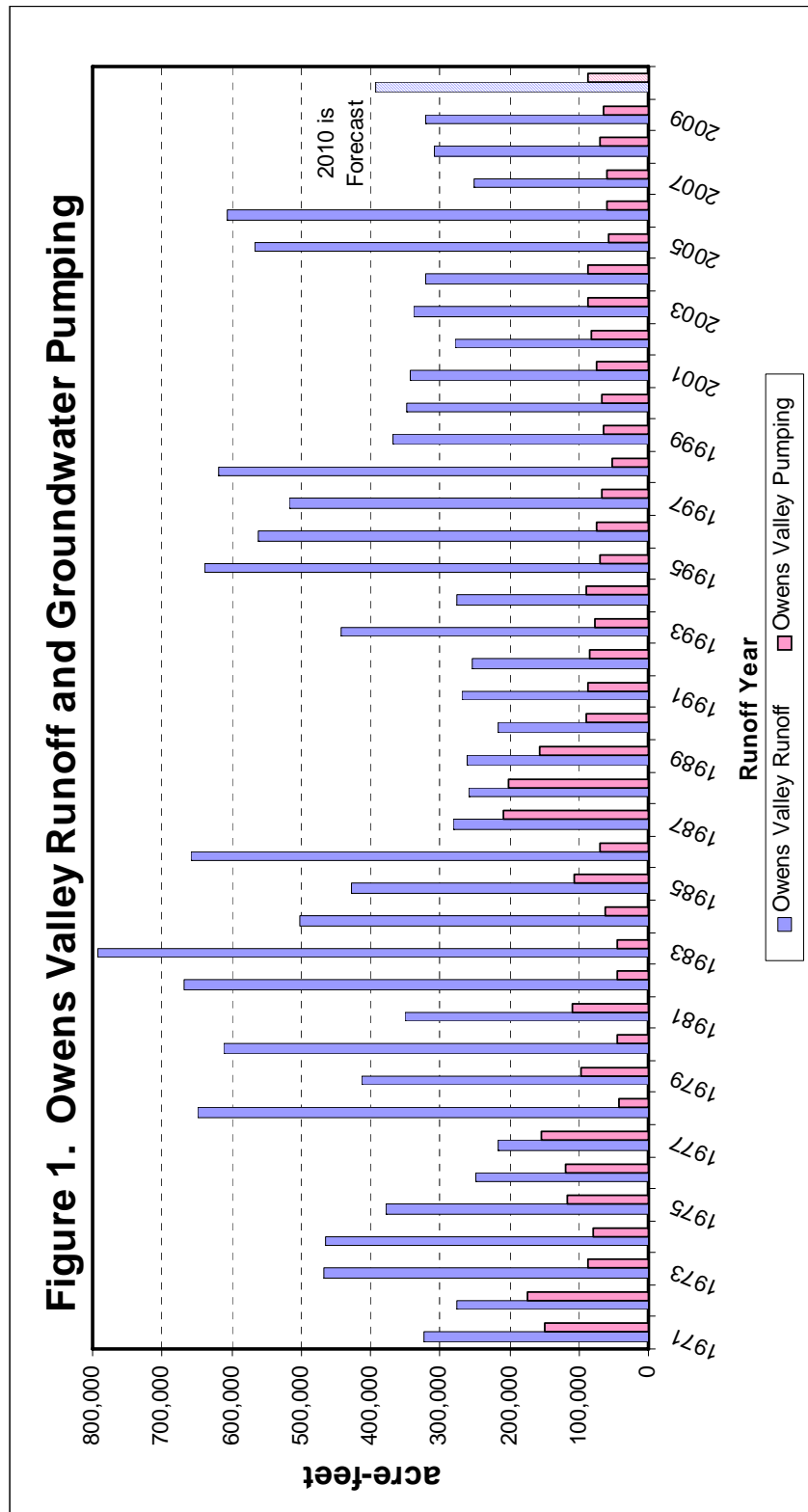
Note- Eastern Sierra runoff does not include runoff from Laws Area

MOST PROBABLE - That runoff which is expected if median precipitation occurs after the forecast date.

REASONABLE MAXIMUM - That runoff which is expected to occur if precipitation subsequent to the forecast is equal to the amount which is exceeded on the average once in 10 years.

REASONABLE MINIMUM - That runoff which is expected to occur if precipitation subsequent to the forecast is equal to the amount which is exceeded on the average 9 out of 10 years.

Figure 1. Owens Valley Runoff and Groundwater Pumping



2.2. Owens Valley Groundwater Production

LADWP has prepared its 2010-11 Annual Owens Valley Operations Plan based on the goals and principles of the Water Agreement. The 2010-11 Annual Operations Plan is designed to avoid adverse impacts to the environment while providing a reliable supply of water for in valley uses and export to Los Angeles for municipal use.

Under the terms of the Water Agreement, the acceptable amount of groundwater pumping from each Owens Valley wellfield is based on the ON/OFF status of monitoring sites located within each wellfield and the capacity of the wells linked to those sites. The Water Agreement or Technical Group has designated certain town supply wells, irrigation supply wells, fish hatchery supply wells, enhancement/mitigation (E/M) project supply wells, and other wells determined not to significantly impact areas with groundwater dependent vegetation as exempt from the ON/OFF provisions of the Water Agreement. These exempt wells may be pumped for their intended purpose. Table 2 lists the ON/OFF status of the monitoring sites within the Owens Valley as of April 2010.

Table 3 provides a breakdown of available pumping capacity and planned annual groundwater pumping for the 2010-11 runoff year by wellfield. Table 3 also shows the monitoring sites in ON status as of April 2010, the wells associated with the ON status monitoring sites, and the exempt wells in each wellfield. Approximately 163,793 acre-feet of water is available for groundwater pumping from Owens Valley wellfields under the terms of the Water Agreement during the 2010-11 runoff year. LADWP's planned pumping for the 2010-11 runoff year is 86,000 acre-feet. In part, because the previous three runoff years provided less than normal runoff, LADWP's planned pumping will only be about half of the amount permitted under the Water Agreement to ensure the environmental protections of the Water Agreement are maintained. This conservative approach should provide a more consistent supply of water to Los Angeles if the Eastern Sierra continues to receive less than normal snow pack in following years. Moreover, the relatively modest pumping planned by LADWP for this runoff year should provide an atmosphere conducive to continuing the joint ICWD/LADWP Green Book revision effort.

Figure 2 compares the amount of Owens Valley groundwater pumping allowed under the provisions of Water Agreement and the actual groundwater pumping by LADWP for each runoff year since 1992 (the Water Agreement was signed in October 1991).

In addition to complying with the ON/OFF provisions and the environmental protection goals of the Water Agreement, LADWP's 2010-11 pumping program complies with the groundwater mining provisions of the Green Book. Table 4 shows the latest update of the mining calculations based on the procedures described in Section IV.C of the Green Book. As shown in this table, none of the wellfields in the Owens Valley will be in deficit by the end of the first half of the 2010-11 runoff year.

Table 5 is a list of Owens Valley wells exempted under the Water Agreement or by approval of the Technical Group from linkage to vegetation monitoring sites and the ON/OFF provisions. The table includes a list of wells by well number, the wellfield where the exempt well is located, and the reason the well is exempt.

Table 6 details planned groundwater pumping for the 2010-11 runoff year on a month-to-month basis for each wellfield. Pumping for town water systems, fish hatcheries, and E/M projects is included in the pumping distribution. The total Owens Valley groundwater production for 2010-11 runoff year is consistent with the provisions of the Water Agreement. Pumping for the Reinhackle Spring Operational Test in the Bairs-Georges Wellfield is included in the 2010-11 operations plan. No other well testing is included in this years planned pumping total and, if performed, will be in addition to the planned pumping for 2010-11. Planned pumping may be increased to provide freeze protection for the Los Angeles Aqueduct (LAA).

The following is a discussion of the planned pumping program by wellfield. Figures 3, 4, and 6 through 10 locate LADWP's Owens Valley pumping wells by wellfield. These figures show the location of production wells, monitoring wells, and vegetation monitoring sites in each area.

Table 2. Soil/Vegetation Water Balance Calculations for April 2010 According to Section III of the Greenbook

Site	Oct 2008 Soil AWC (cm)	50% Annual Precip. (cm)	Proj. soil AWC (cm)	Oct. 2008 Veg. Water Req./ Water Req. for Well Turn-On (cm)	Oct 2008 Status	April 2009 soil AWC (cm)	April 2009 Status	Soil AWC Req. for Well Turn On (cm)
L1	5.5	7.9	13.4	9.3 / NA	ON	12.2	ON	NA
L2	31.1	7.9	39.0	12.0 / NA	ON	33.1	ON	NA
L3	7.7	-	7.7	20.6 / 18.5	OFF	18.9	ON	NA
BP1	5.6	NA	5.6	22.9 / 22.9H	OFF	10.8	OFF	22.9H, OFF 10-97
BP2	2.0	NA	2.0	13.7 / 28.4	OFF	8.3	OFF	28.4, OFF 7-98
BP3	11.6	7.6	19.2	9.3 / NA	ON	15.8	ON	NA
BP4	54.9	8.2	63.1	19.8 / NA	ON	61.9	ON	NA
TA3	4.8	NA	4.8	14.4 / 25.9	OFF	12.6	OFF	25.9, OFF 7-98
TA4	15.7	NA	15.7	35.7 / 23.2	OFF	21.8	OFF	23.2, OFF 10-98
TA5	20.5	8.2	28.7	11.9 / NA	ON	26.1	ON	NA
TA6	8.7	NA	8.7	36.7 / 26.8H	OFF	18.8	OFF	26.8H, OFF 7-96
TS1	1.2	NA	1.2	9.5 / 20.4H	OFF	6.7	OFF	20.4H, OFF 10-96
TS2	6.2	NA	6.2	17.0 / 19.5	OFF	12.1	OFF	19.5, OFF 7-98
TS3	20.6	7.3	27.9	27.3 / NA	ON	31.5	ON	NA
TS4	23.4	NA	23.4	38.6 / 47.9	OFF	43.2	OFF	47.9, OFF 10-03
IO1	20.7	NA	20.7	50.2 / 42.2	OFF	30.3	OFF	42.2, OFF 10-98
IO2	4.0	NA	4.0	11.0 / 14.8	OFF	6.2	OFF	14.8, OFF 10-05
SS1	34.3	NA	34.3	20.7 / 39.3	OFF	41.8	ON	NA
SS2	3.3	NA	3.3	6.1 / 13.4	OFF	6.0	OFF	13.4, OFF 7-03
SS3	31.9	NA	31.9	18.2 / 37.7	OFF	46.9	ON	NA
SS4	2.7	NA	2.7	18.3 / 15.9	OFF	6.6	OFF	15.9, OFF 7-05
BG2	28.8	6.5	35.3	12.0 / NA	ON	30.7	ON	NA

H - These values of soil water required for well turn-on were derived using calculations based on percent cover that were routinely performed in the past. The values have not been updated to conform to the Greenbook equations in section III.D.2, p. 57-59.

**Table 3. Available Pumping Capacity According to Monitoring Sites with
ON Status and Planned Pumping for Runoff Year 2010-11**

Wellfield	Monitoring Site	Associated Production Wells	Available Capacity (AF)	Planned Pumping (AF)
Laws	L1	247, 248, 249, 398	12,670	
	L2	236**, 239, 243, 244	10,492	
	L3	240, 241, 399, 376, 377	9,195	
	L5*	245, 387, 388	9,412	
	Exempt	236**, 354, 365, 413	3,337	
	Wellfield Pumpage		45,106	7,600
Bishop	All wells	140, 371, 406, 407, 408, 410, 411, 412	12,000	
	Wellfield Pumpage		12,000	11,600
Big Pine	BP3	222, 223, 231, 232	4,851	
	BP4	331	7,530	
	Exempt	218, 219, 330, 332, 341, 352, 415	28,750	
	Wellfield Pumpage		41,131	28,560
Taboose Aberdeen	TA5	349	10,570	
	Exempt	118, 349	1,810	
	Wellfield Pumpage		12,380	9,450
Thibaut Sawmill	TS3	103, 104, 382EM	2,968	
	Exempt	351, 356	13,320	
	Wellfield Pumpage		16,288	13,320
Indep. - Oak	Exempt	59, 60, 61, 65, 357, 383EM, 384EM, 401	13,973	
	Wellfield Pumpage		13,973	6,760
Symmes Shepherd	SS1	69, 392, 393	7,964	
	SS3	92, 396	6,226	
	Exempt	402EM	1,350	
	Wellfield Pumpage		15,540	6,000
Bairs Georges	BG2	76, 343, 348, 403	4,770	
	Exempt	343	615	
	Wellfield Pumpage		4,770	1,300
Lone Pine	Exempt	344, 346, 390	1,410	
	Other	416***	1,195	
	Wellfield Pumpage		2,605	1,410
Owens Valley Total			163,793	86,000

* Monitoring site has yet to be located.

** Well W236 is exempted for irrigation water use.

*** Assuming possible six month pumping in 2010-11

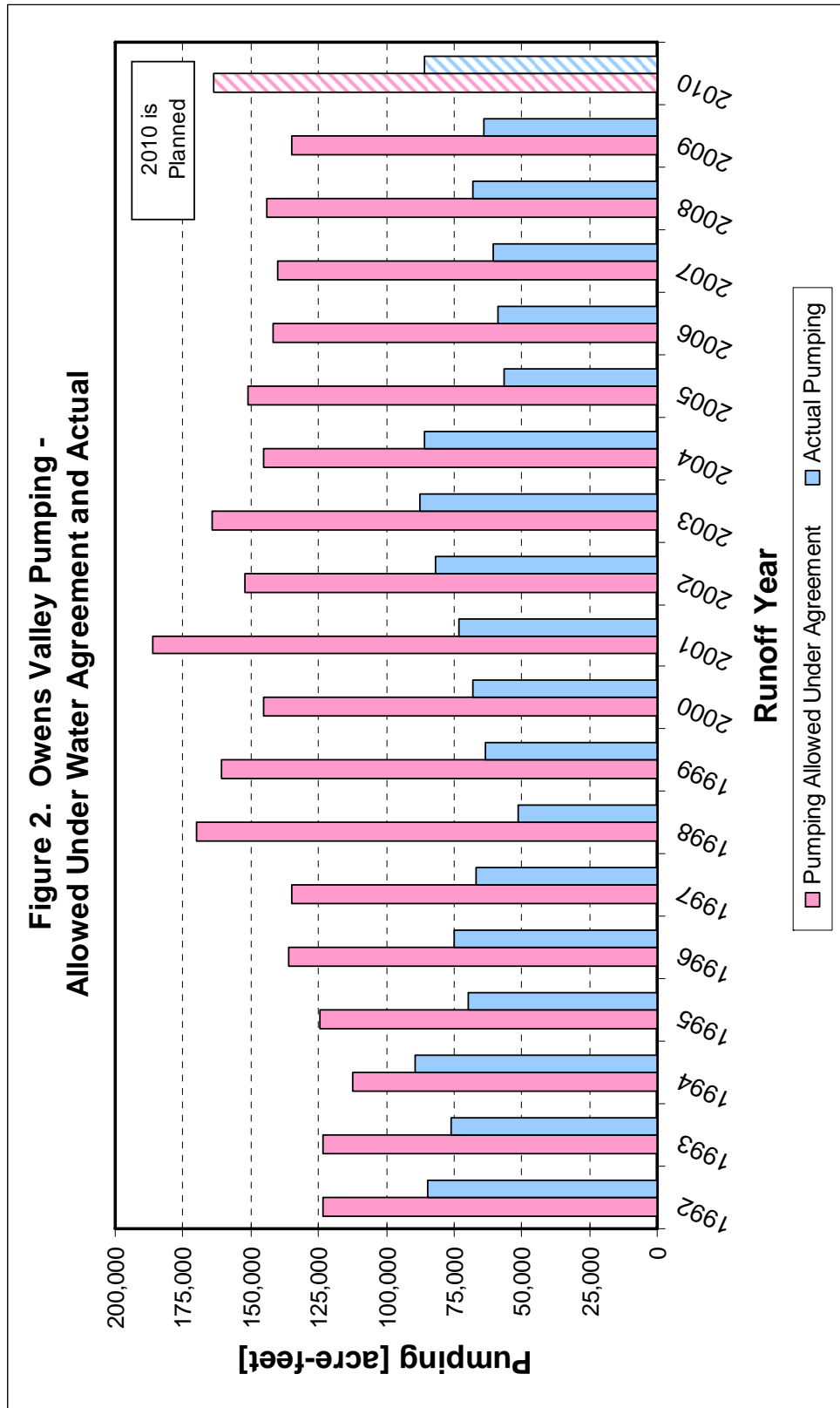


Figure 2. Owens Valley Pumping

Table 4. Summary of Recharge and Pumping for Water Year 1991 – 2009 and Estimated Pumping Limit for Apr-Sep 2010(acre-feet)

Table 4 - Summary of Recharge and Pumping for Water Year 1991 - 2009 and Estimated Pumping Limit for Apr-Sep 2010 in acre-feet

Water Year	OWENS VALLEY Runoff Percent	LAWS		BISHOP		BIG PINE		TABOOSE-THIBAUT		IND-SYM-BAIRS		LONE PINE		OWENS VALLEY	
		Recharge	Pumping	Recharge	Pumping	Recharge	Pumping	Recharge	Pumping	Recharge	Pumping	Recharge	Pumping	Recharge	Pumping
1991	59%	11,132	13,691	34,868	11,519	18,729	21,168	21,087	29,136	25,846	10,390	10,408	1,303	122,070	87,207
1992	58%	10,877	8,907	34,915	11,326	18,596	24,345	20,829	23,761	25,543	14,154	10,533	1,626	121,293	84,119
1993	99%	19,778	7,541	44,445	8,404	27,580	22,627	35,068	19,424	40,061	11,689	15,509	1,519	182,441	71,204
1994	60%	12,026	21,206	35,793	10,193	19,430	24,962	21,977	23,557	28,106	14,878	11,554	1,281	128,885	96,077
1995	137%	28,115	7,053	55,397	4,799	38,758	21,970	46,375	17,121	55,103	12,631	22,296	1,037	246,044	64,611
1996	123%	12,588	11,535	50,754	9,153	33,228	24,331	42,097	19,906	51,113	12,382	19,757	1,106	209,537	78,413
1997	125%	15,237	8,349	49,949	9,606	33,474	24,002	42,837	21,774	52,100	9,461	19,962	1,128	213,559	74,320
1998	139%	28,195	470	55,309	7,159	40,065	23,729	46,845	16,496	55,605	7,946	20,341	1,365	246,361	57,165
1999	95%	18,546	1,697	42,388	8,672	28,013	21,832	32,426	16,700	41,090	8,424	15,481	2,141	177,944	59,466
2000	80%	11,102	3,974	39,539	10,804	23,213	20,212	27,567	23,143	37,015	8,497	14,344	1,036	152,780	67,666
2001	77%	12,259	2,295	38,772	10,176	22,695	26,785	27,960	17,247	33,469	8,685	13,520	1,942	148,674	67,130
2002	63%	11,184	3,480	35,514	10,839	19,715	26,885	22,495	25,288	28,820	10,599	12,103	1,345	129,831	78,436
2003	75%	11,454	5,786	38,486	11,407	21,883	25,885	26,166	27,387	32,455	14,294	13,088	1,179	143,532	85,938
2004	71%	11,138	7,412	37,149	11,777	21,126	26,149	25,044	25,159	29,771	15,750	11,357	1,119	135,586	87,366
2005	120%	18,389	3,841	47,471	7,093	32,686	19,423	40,500	18,674	46,441	18,585	17,191	1,128	202,678	68,744
2006	138%	35,336	3,013	54,337	5,667	39,650	20,686	47,757	15,707	53,873	9,944	19,956	1,119	250,911	56,136
2007	64%	10,947	7,840	34,470	10,516	19,757	20,525	25,804	14,578	27,624	10,674	10,454	1,100	129,057	65,233
2008	68%	10,855	7,939	35,850	10,228	20,432	20,243	28,613	18,542	27,759	9,219	11,563	858	135,073	67,029
2009	74%	10,216	6,233	33,882	12,123	20,845	22,891	29,696	14,751	28,103	8,738	11,139	775	133,882	65,511
2010 (a)	89%	12,540	123	41,153	2,177	25,860	11,404	31,904	6,713	34,358	486	13,282	317	159,097	21,220
(b) TOTAL		311,915	132,385	840,439	183,638	525,739	450,054	643,049	395,064	754,254	217,426	293,839	24,424	3,369,235	1,402,991
Estimated Apr-Sep 2010 Pumping Limit			179,530		656,801		75,685		247,985		536,828		269,415		1,966,244

(a) Estimated Recharge for the 2010 Water Year; Approximate Pumping for First Half of Water year 2010 (Oct-Mar).

(b) Estimated 20 Year Total for Recharge; actual 19.5 Year Total for Pumping.

Table 5. Exempt Wells in Owens Valley

Table 5. List of Exempt Wells in Owens Valley

WELL NUMBER	WELL FIELD	REASON
354 ¹	Laws	Town Supply
413 ²	Laws	Town Supply and Laws Museum E/M Project Irrigation Well
236	Laws	Irrigation Water (to supplement irrigation water supply from Well 365 when necessary)
247	Laws	Supply McNally Pasture E/M Project
376	Laws	Irrigation Supply for re-vegetation project
377	Laws	Supply Laws/Poleta Pasture E/M Project
399	Laws	Irrigation Supply for re-vegetation project
365	Laws	Water for irrigation in Laws Wellfield
245	Laws	Water for irrigation in Laws Wellfield
387	Laws	Water for irrigation in Laws Wellfield
388	Laws	Water for irrigation in Laws Wellfield
341 ¹	Big Pine	Town Supply
352 ²	Big Pine	Town Supply
415 ^{2 3}	Big Pine	Town Supply
330	Big Pine	Fish Springs Hatchery
332	Big Pine	Fish Springs Hatchery
409	Big Pine	Fish Springs Hatchery
218	Big Pine	No Impact to groundwater-dependent vegetation
219	Big Pine	No Impact to groundwater-dependent vegetation
118	Taboose-Aberdeen	No Impact to groundwater-dependent vegetation
349	Taboose-Aberdeen	Water to supply a pond which is a mitigation project
351	Thibaut-Sawmill	Blackrock Hatchery
356	Thibaut-Sawmill	Blackrock Hatchery
357 ¹	Independence-Oak	Town Supply
384 ²	Independence-Oak	Town Supply
401	Independence-Oak	Water for irrigation in Independence-Oak Wellfield
59	Independence-Oak	Water for irrigation in Independence-Oak Wellfield
60	Independence-Oak	Water for irrigation in Independence-Oak Wellfield
65	Independence-Oak	Water for irrigation in Independence-Oak Wellfield
383E/M	Independence-Oak	Water for irrigation in Independence-Oak Wellfield
384E/M	Independence-Oak	Water for irrigation in Independence-Oak Wellfield
61	Independence-Oak	Water for irrigation in Independence-Oak Wellfield
402E/M	Symmes-Shepherd	Water for E/M Project in Symmes-Shepherd Wellfield
343	Bairs-Georges	Irrigation Water in Bairs-Georges Wellfield in below average runoff years
344 ¹	Lone Pine	Town Supply
346 ²	Lone Pine	Town Supply
390E/M	Lone Pine	Water for E/M Project in Lone Pine Wellfield

Note 1: Primary town supply well

Note 2: Backup town supply well

Note 3: Usage for the Big Pine Ditch system to be consistent with evaluation and approval of such use by the Technical Group

Table 6. Planned Monthly Wellfield Pumping for 2010-11 Runoff Year (acre-feet)

Table 6 - Planned Monthly Wellfield Pumping for 2010-11 Runoff Year in acre-feet

Month	Laws	Bishop	Big Pine	Taboose- Aberdeen	Thibaut- Sawmill	Indep.- Oak	Symmes- Shepherd	Bairs- George	Lone Pine	TOTAL
April	1,000	1,600	2,380	1,000	1,110	1,000	720	200	180	9,190
May	1,200	1,600	2,380	1,000	1,110	1,050	720	400	180	9,640
June	1,200	1,600	2,380	1,000	1,110	1,050	720	400	190	9,650
July	1,200	1,600	2,380	1,000	1,110	1,050	720	200	190	9,450
August	1,200	1,600	2,380	1,000	1,110	1,050	720	0	190	9,250
September	1,200	1,600	2,380	1,000	1,110	1,050	720	100	180	9,340
October	100	400	2,380	1,000	1,110	260	520	0	50	5,820
November	100	300	2,380	1,000	1,110	50	520	0	50	5,510
December	100	300	2,380	1,000	1,110	50	520	0	50	5,510
January	100	300	2,380	150	1,110	50	120	0	50	4,260
February	100	300	2,380	150	1,110	50	0	0	50	4,140
March	100	400	2,380	150	1,110	50	0	0	50	4,240
Total	7,600	11,600	28,560	9,450	13,320	6,760	6,000	1,300	1,410	86,000

Laws Wellfield (Figure 3)

Monitoring sites L1, L2, and L3 are in ON status. Production wells controlled by these monitoring sites have an available production capacity of 32,357 acre-feet. Wells linked to monitoring site L5 have a capacity of 9,412 acre-feet. The Technical Group has yet to locate a permanent vegetation monitoring site for L5. Green Book designated exempt wells within the Laws Wellfield have a capacity of 3,337 acre-feet. The sum total of available pumping capacity in the Laws Wellfield is 45,106 acre-feet. Well 365 has had a reduction in production capacity and is planned to be replaced. Well 236, associated with monitoring site L2 is sometimes used along with Well 365 as an exempt irrigation water well.

Minimum pumping this year in the Laws Wellfield is determined to be 7,600 acre-feet in order to supply Owens Valley demands including the town water system, E/M projects, and irrigated lands in this wellfield. Should Well 377 remain in ON status, pumping to supply stockwater may be reduced by almost 100 acre-feet per month over the winter months. No water is planned to be exported from the Laws Wellfield in the 2010-11 runoff year. Planned pumping in the Laws Wellfield for the 2010-11 runoff year will be the minimum pumping of 7,600 acre-feet. The predicted average change in depth to water in the Laws Wellfield between April 2010 and April 2011 is -1.9 feet.

Bishop Wellfield (Figure 4)

Pumping in the Bishop Wellfield is governed by the provisions of the Hillside Decree, limiting LADWP's annual groundwater extractions (pumping and flowing wells) from the Bishop Cone to an amount commensurate with the total water used on City-owned lands on the Bishop Cone (including conveyance losses). Currently, total water used on City-owned lands within the Bishop Cone area is approximately 25,000 acre-feet per year. The current total available pumping capacity in the Bishop Wellfield is approximately 12,000 acre-feet (not including flowing wells). The planned groundwater pumping from the Bishop Wellfield is 11,600 acre-feet for the 2010-11 runoff year.

Figure 5 shows water use on City-owned land on Bishop Cone in comparison to the groundwater extractions (flowing and pumping wells) for runoff years 1996 to present. The current annual water use on the City-owned land within the Bishop Cone area is approximately 25,000 acre-feet and the groundwater extraction capacity is currently about 17,000 acre-feet (including flowing wells). As a result, there is about a 8,000 acre-feet deficit between pumping allowed under the Hillside Decree and planned pumping for the 2010-11 runoff year on the Bishop Cone.

The above calculated water use does not include the amount of conveyance losses on Bishop Cone which is a credited use. When completed, an evaluation of conveyance losses within Bishop Cone will be included in future Bishop Cone audits.

Figure 3. Laws Wellfield

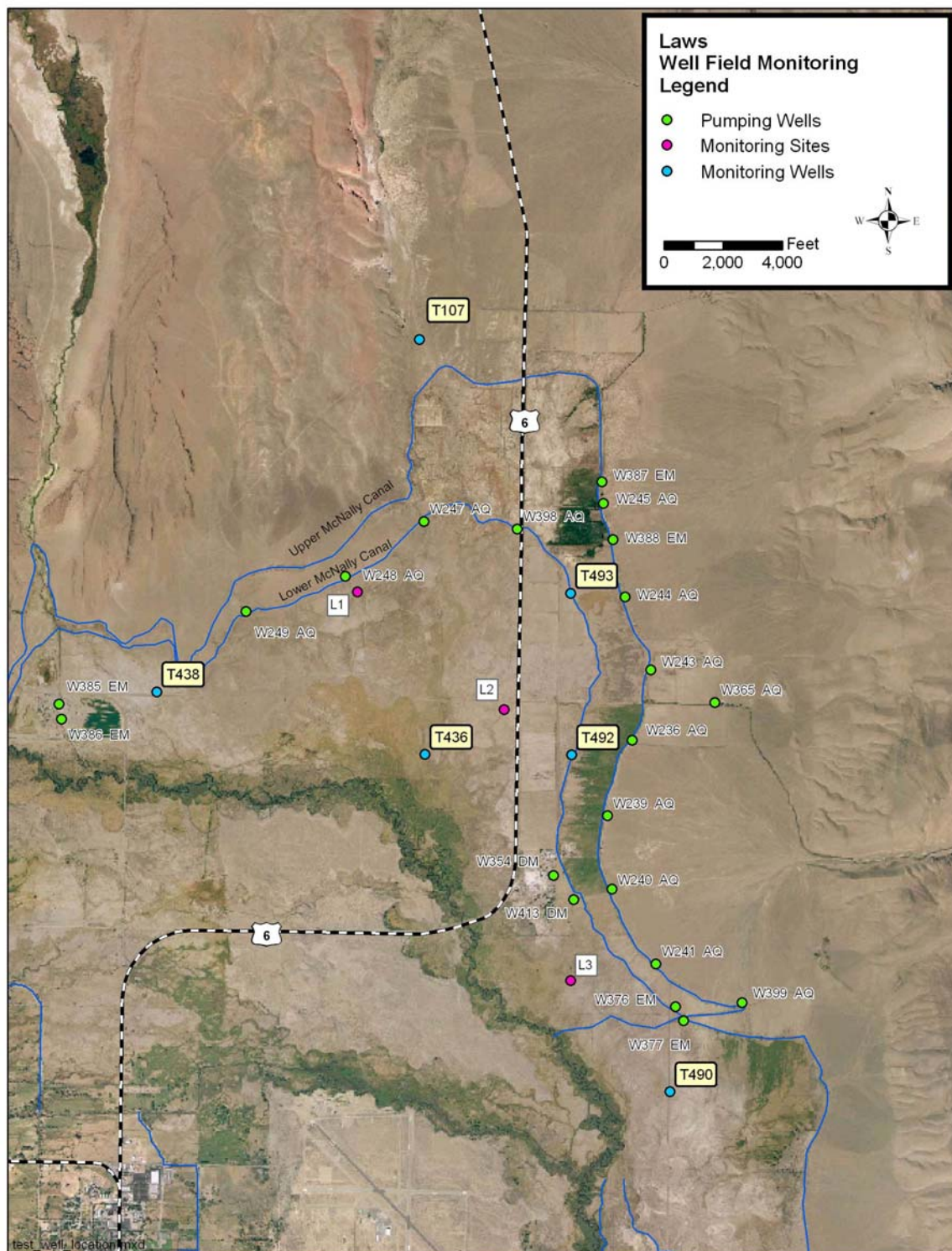
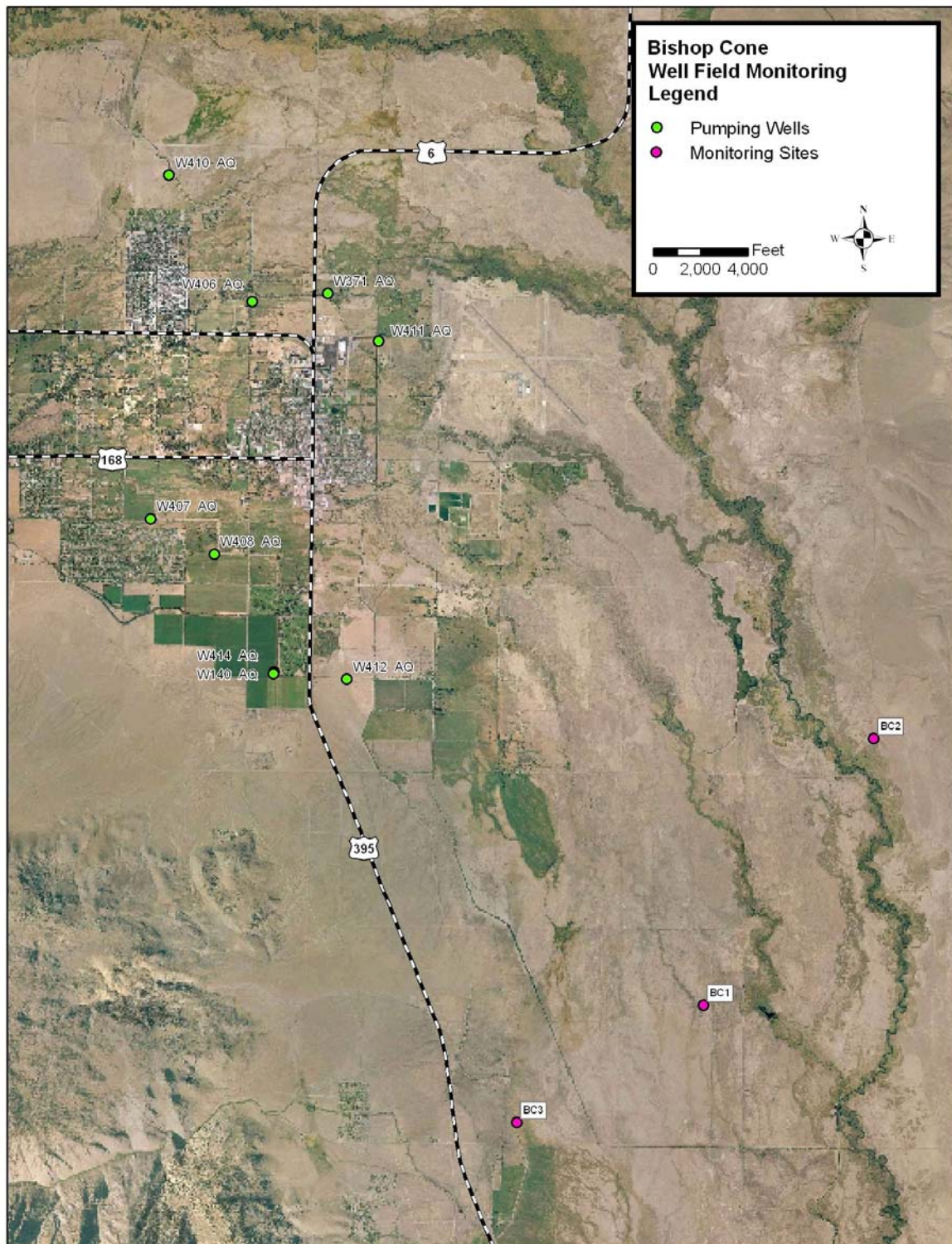
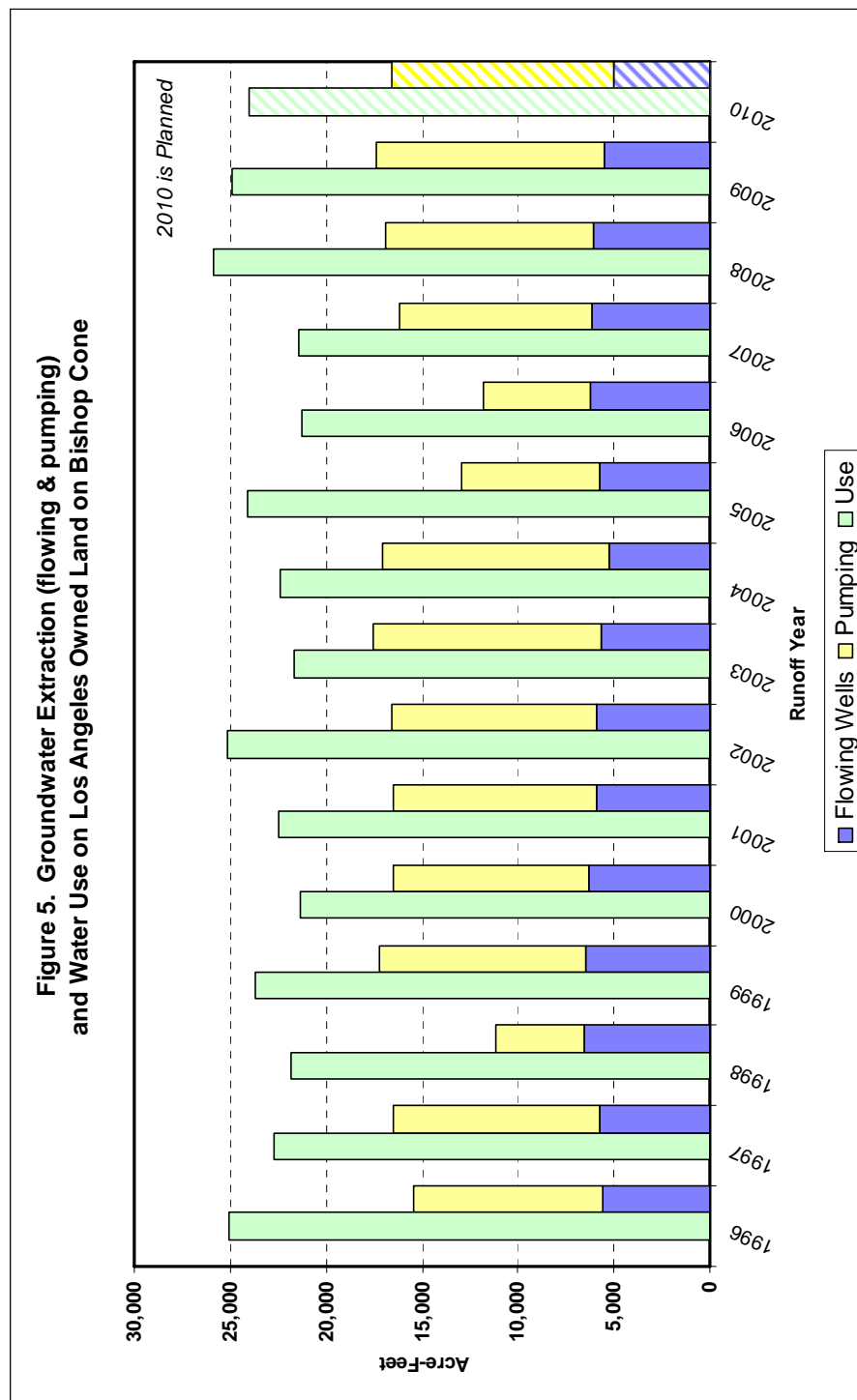


Figure 4. Bishop Cone Wellfield





* According to the Hillside Decree, total groundwater extraction can not be more than water use on City-owned land on the Bishop Cone.

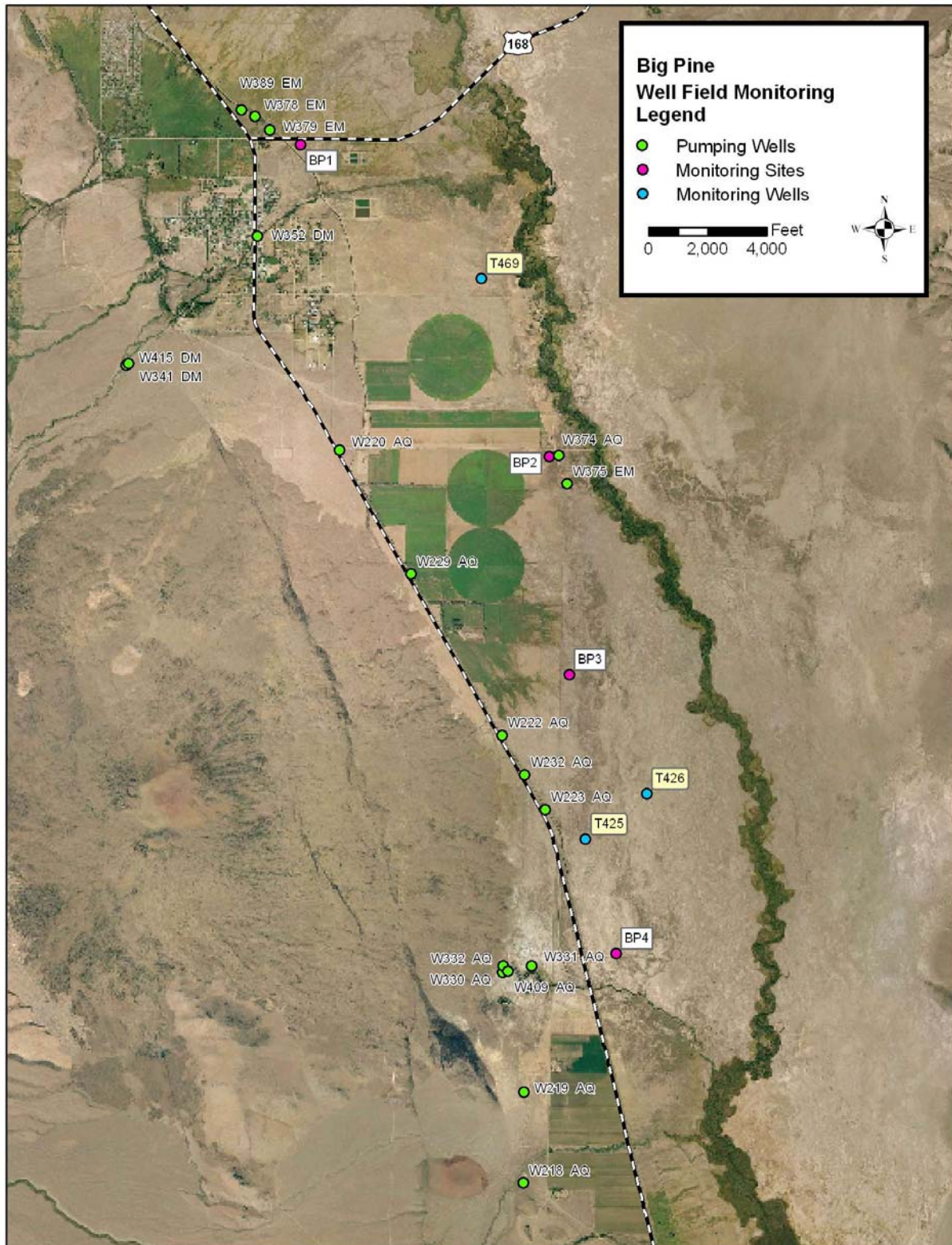
Figure 5. Groundwater Extraction and Water Use

Big Pine Wellfield (Figure 6)

Monitoring sites BP3 and BP4 are in ON status. Production wells controlled by BP3 have an available production capacity of 4,851 acre-feet. Production Well 331, managed in conjunction with monitoring site BP4, has a production capacity of 7,530 acre-feet. Exempt wells Well 218, Well 219, town supply wells, and Fish Springs Fish Hatchery wells in the Big Pine Wellfield have a combined capacity of 28,750 acre-feet. The total available capacity in the Big Pine Wellfield is 41,131 acre-feet.

Groundwater pumping in the Big Pine Wellfield required for the hatchery and town supply will be about 23,000 acre-feet in the 2010-11 runoff year. Approximately 5,560 acre-feet of groundwater pumping is planned from wells Well 218 and Well 219. The total planned pumping in the Big Pine Wellfield is approximately 28,560 acre-feet during the 2010-11 runoff year. The predicted change in depth to water in the Big Pine Wellfield between April 2010 and April 2011 is -0.9 feet.

Figure 6. Big Pine Wellfield



Taboose-Aberdeen Wellfield (Figure 7)

Monitoring site TA5 is in ON status. Production Well 349 is controlled by this monitoring site and has an available pumping capacity of approximately 10,570 acre-feet. Exempt Well 118 in the Taboose-Aberdeen Wellfield has a capacity of 1,810 acre-feet. The total available groundwater pumping capacity in the Taboose-Aberdeen Wellfield is 12,380 acre-feet.

Total groundwater pumping in the Taboose-Aberdeen Wellfield for the 2010-11 runoff year is planned to be approximately 9,450 acre-feet. About 7650 acre-feet of groundwater is expected to be pumped by Well 349 between April and December 2010 and about 1800 acre-feet is planned for pumping by Well 118 over the runoff year. The predicted change in depth to water in the Taboose-Aberdeen Wellfield between April 2010 and April 2011 is -1.0 foot.

Thibaut-Sawmill Wellfield (Figure 8)

Monitoring site TS3 is in ON status. Production wells controlled by this monitoring site have an available pumping capacity of 2,968 acre-feet. Exempt Blackrock Fish Hatchery supply Well 351 and Well 356 have capacities of 13,320 acre-feet and 8,110 acre-feet respectively. Blackrock Fish Hatchery demand is expected to be 13,320 acre-feet over the year. The total available pumping capacity in the Thibaut-Sawmill Wellfield for the 2010-11 runoff year is about 16,288 acre-feet.

The only pumping planned in the Thibaut-Sawmill Wellfield during the 2010-11 runoff year is for Blackrock Fish Hatchery supply. Total planned pumping in the Thibaut-Sawmill Wellfield for the 2010-11 runoff year is about 13,320 acre-feet, subject to hatchery demands. The predicted change in depth to water in the Thibaut-Sawmill Wellfield between April 2010 and April 2011 is +0.2 feet.

Independence-Oak Wellfield (Figure 8)

As of April 2010, all vegetation monitoring sites in the Independence-Oak Wellfield are in OFF status and no pumping is anticipated from the wells linked to these monitoring sites during the 2010-11 runoff year. Total available pumping capacity in the Independence-Oak Wellfield from exempt wells is 13,973 acre-feet. Pumping from this wellfield will be limited to exempt wells for E/M projects and the town water system supply. The total anticipated pumping in the Independence-Oak Wellfield for the 2010-11 runoff year is 6,760 acre-feet. The predicted change in depth to water in the Independence-Oak Wellfield between April 2010 and April 2011 is -0.2 feet.

Figure 7. Taboose-Aberdeen Wellfield

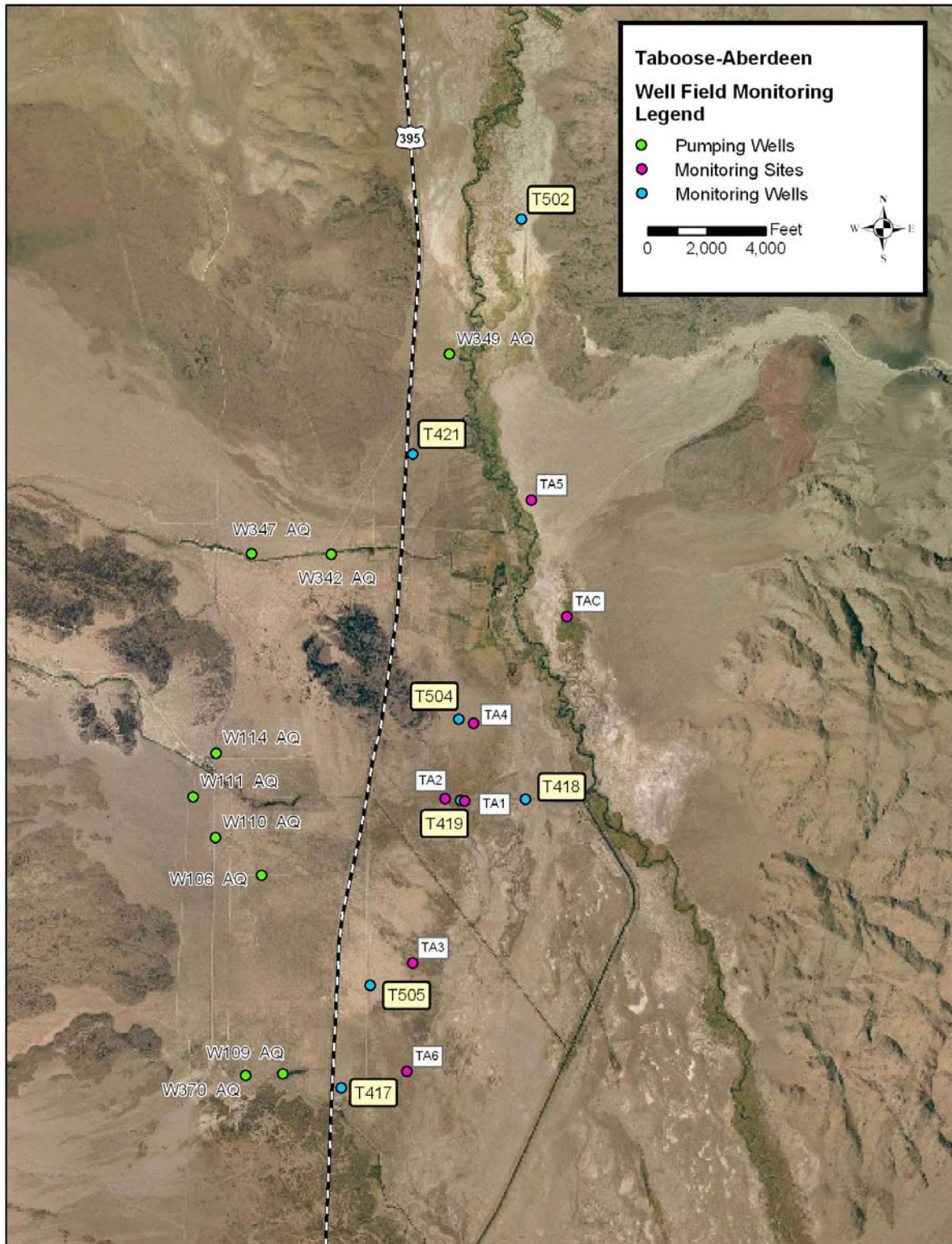
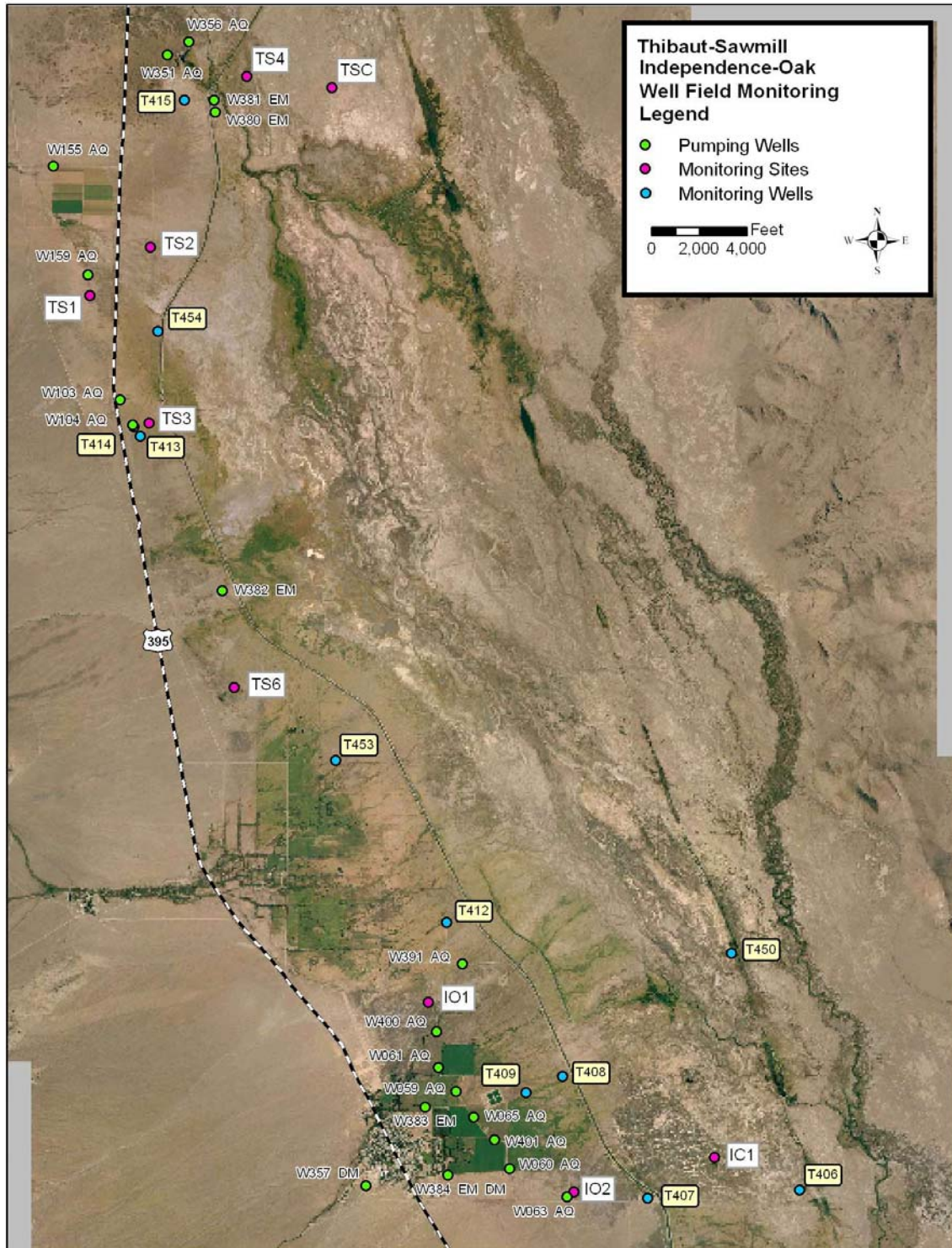


Figure 8. Thibaut-Sawmill and Independence-Oak Wellfields



Symmes-Shepherd Wellfield (Figure 9)

Monitoring sites SS1 and SS3 are in ON status. The wells managed under these monitoring sites, have a combined annual capacity of about 14,190 acre-feet. Exempt Well 402 has a capacity of about 1,350 acre-feet. Total available capacity in the Symmes-Shepherd Wellfield for the 2010-11 runoff year is approximately 15,540 acre-feet. The total planned pumping in the Symmes-Shepherd Wellfield for the 2010-11 runoff year is 6,000 acre-feet. Planned groundwater pumping is from Well 92, Well 396, and Well 402. The predicted change in depth to water in the Symmes-Shepherd Wellfield between April 2010 and April 2011 is -1.0 foot.

Bairs-Georges Wellfield (Figure 9)

Vegetation monitoring site BG2 is in ON status. The wells managed under this site have a combined annual capacity of 4,770 acre-feet. Exempt Well 343 has a capacity of 615 acre-feet (based upon a six month exemption period). The total available capacity in the Bairs-Georges Wellfield based on the ON/OFF status for the 2010-11 runoff year is 4,770 acre-feet. Pumping in the Bairs-Georges Wellfield is planned to be 1300 acre-feet. Planned pumping will consist of an operational pumping test, designed to gain a better understanding of the relationship between Bairs-Georges groundwater pumping and Reinhackle Spring, and supplemental irrigation water from Well 343. The predicted change in depth to water in the Bairs-Georges Wellfield between April 2010 and April 2011 is -0.6 feet.

Lone Pine Wellfield (Figure 10)

LADWP is currently operating three wells in the Lone Pine Wellfield, the Lone Pine town supply Well 344 and Well 346, and E/M project supply Well 390. These three wells have an annual capacity of approximately 1,410 acre-feet.

Well 416 is a production well in the Lone Pine Wellfield drilled in 2002. Hydrologic testing was conducted on Well 416 during the 2009-10 runoff year. Additional testing may be performed during the 2010-11 runoff year, subject to the results of the 2009-10 testing. Moreover, the Green Book provides for operation of a new well at full capacity for up to six months while monitoring nearby water levels and vegetation. Data collected during the initial operation is to then be utilized to develop a long-term operation plan for this production well. Groundwater pumping for additional testing or initial well operation is not included in the planned pumping amounts for the 2010-11 runoff year for the Lone Pine Wellfield and any water produced by Well 416 will be in addition to planned pumping.

The E/M Well 390 has degraded in recent years and must be replaced. As an interim measure, a 0.5 cfs capacity pump has been installed in the well casing for irrigation supply. LADWP is currently making plans to replace this well.

The planned groundwater pumping from the Lone Pine Wellfield is 1,410 acre-feet for the 2010-11 runoff year.

Figure 9. Bairs-Georges and Symmes-Sheperds Wellfields

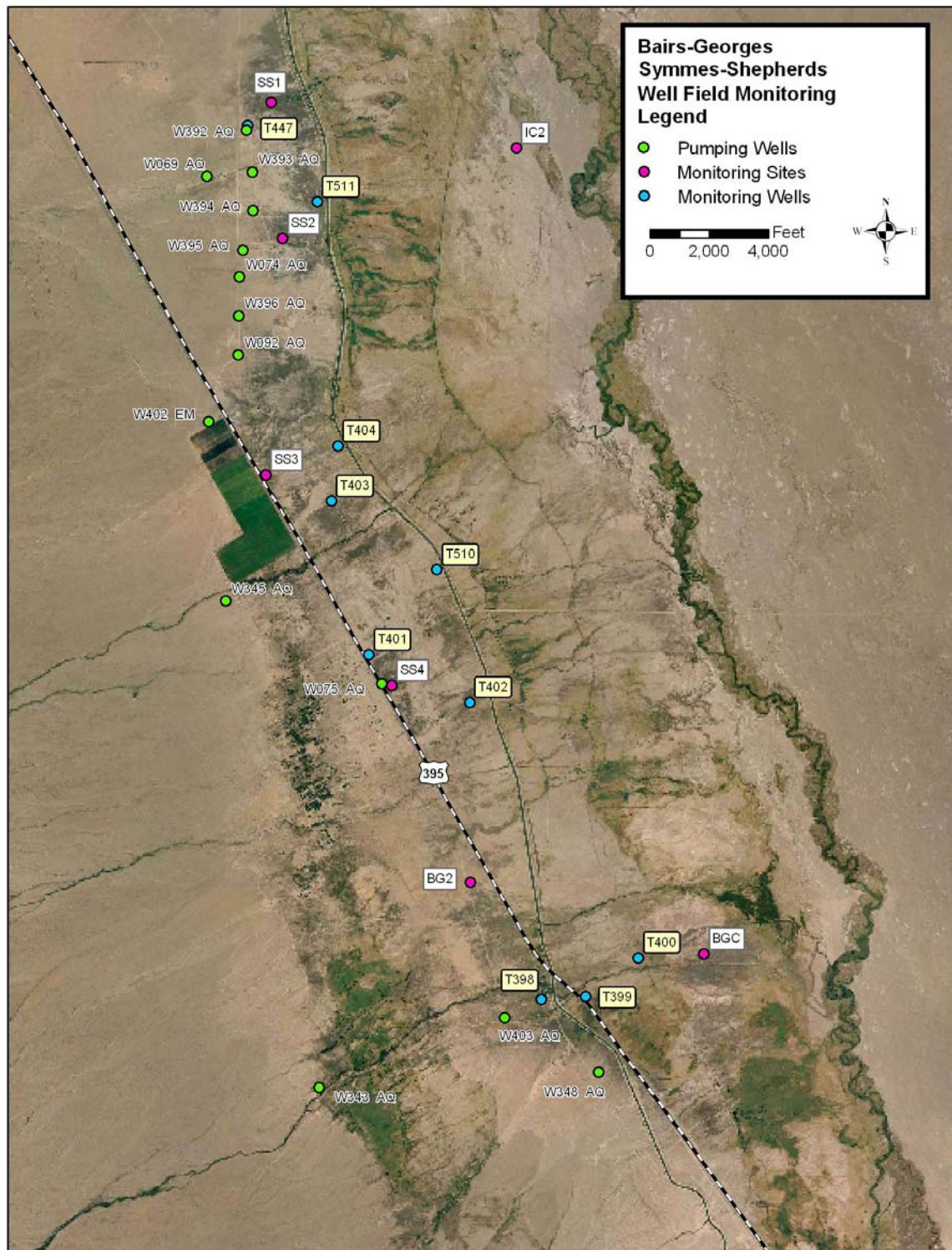
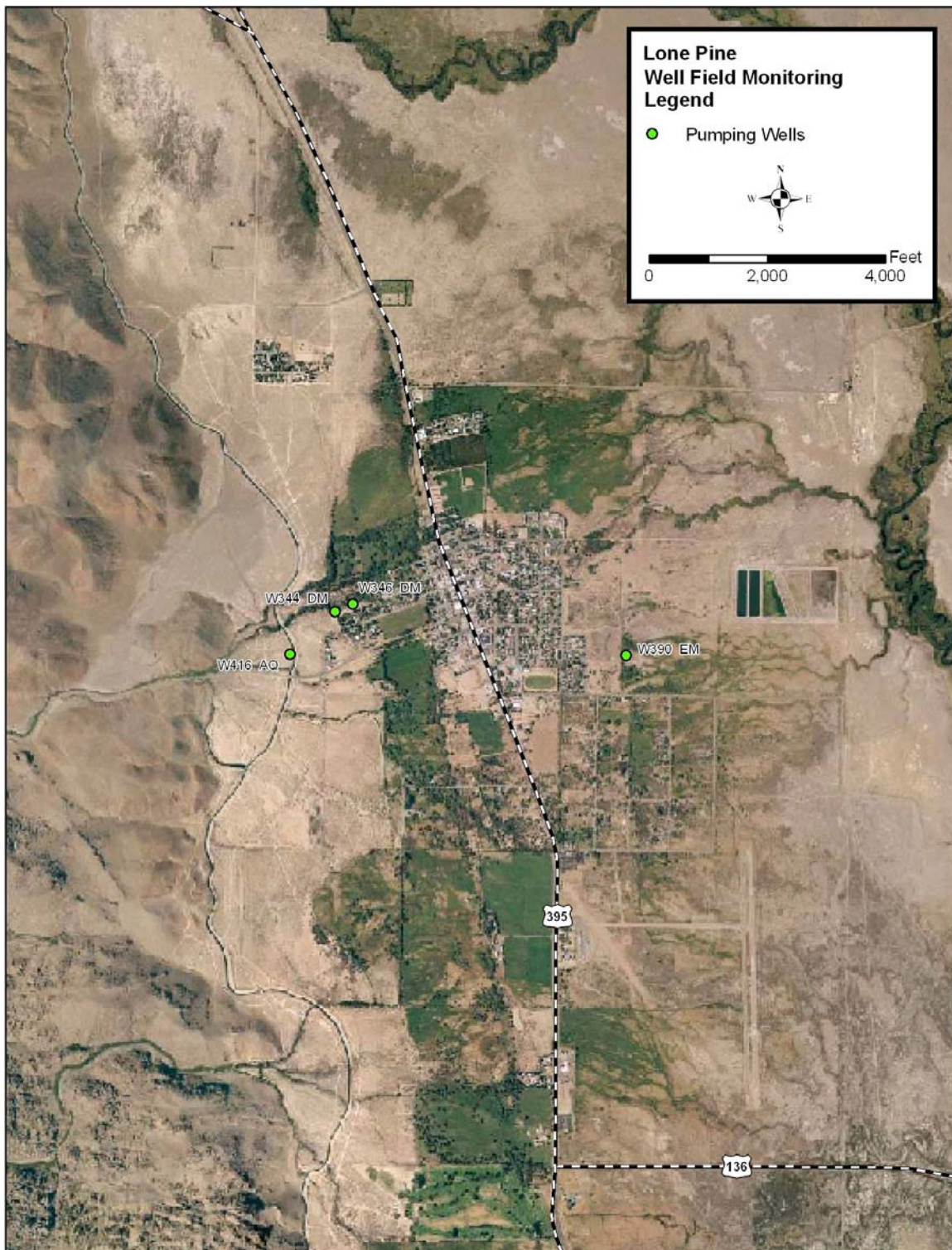


Figure 10. Lone Pine Wellfield



2.3. Owens Valley Uses (Including Enhancement/Mitigation Projects)

Table 7 shows the historic (1981-82) uses and the planned monthly Owens Valley uses for 2009-10. The in-valley uses shown on Table 7 consist of irrigation, stock water, operations, recreation and wildlife projects, E/M supply, LORP project usage, and Owens Lake. As shown in Table 7 and Figure 11, LADWP plans to provide approximately 198,200 acre-feet for in-valley uses this runoff year (202,100 acre-feet if water supplies to Indian lands is taken into account).

The primary consumptive use of water in the Owens Valley is the Owens Lake Dust Mitigation Program. Water use in the 2009-10 runoff year was 66,940 acre feet. Water use in 2010-11 is projected to be 95,000 acre-feet.

The water for the McNally Ponds E/M project is supplied via the McNally Canals in above normal runoff years when Owens River water is available or by well water when the Canals are not operated. The McNally Canals will not be operated this year. The site controlling the supply wells to the McNally Ponds project is in ON status. The McNally Ponds will be supplied with groundwater this year.

The Water Agreement provides that “... *enhancement/mitigation projects shall continue to be supplied by enhancement/mitigation wells as necessary.*” Due to the monitoring sites controlling some of the production wells supplying E/M projects being in OFF status, the amount of water supplied to E/M projects has exceeded the amount of water provided by E/M project supply wells. Table 8 shows the planned water supply to E/M projects and the forecast imbalance between the E/M projects water use and the E/M project supply well pumping by the end of 2010-11 runoff year.

The planned E/M water use is expected to result in a shortfall of E/M pumping totaling approximately 2,700 acre-feet during the 2010-11 runoff year and a cumulative shortfall of approximately 175,876 acre-feet by the end of 2010-11 runoff year. Typically, E/M shortfalls are made up by pumping LAA supply wells and/or by providing surface water from the LAA.

Releases to the LORP from the intake facility commenced on December 6, 2006. An average flow of over 40 cfs is now maintained throughout the entire 62-mile stretch of the Lower Owens River, south of the intake structure. When needed, the releases at the LAA Intake are augmented through additional releases at the Independence, Blackrock, Georges, Locust, and Alabama spillgates to maintain a continuous flow of at least 40 cfs in the river channel. Table 7 shows estimated water use by the Lower Owens River on a monthly basis. Consumptive use of approximately 20,700 acre-feet of water by the Lower Owens River, Delta, Off-River Lakes and Ponds, and the Blackrock Waterfowl Habitat Area is expected during the 2010-11 runoff year (15,700 acre-feet if the Off-River Lakes and Ponds is not considered).

Table 7. Historic (1981-82) and Projected (2010-11) Water Uses on City-Owned Land in Owens Valley (acre-feet)

Table 7. Historic (1981-82) and Projected (2010-11) Water Supplies by the City within the Owens Valley (acre-feet)													
Use	April		May		June		July		August		September		TOTAL
	1981	2010	1981	2010	1981	2010	1981	2010	1981	2010	1981	2010	Apr-Sep 1981 2010
Irrigation	3,980	5,800	7,958	10,400	10,373	10,000	9,476	10,900	8,295	10,900	6,321	6,700	46,403 54,700
Stockwater	1,141	1,000	1,319	1,000	1,244	1,000	1,245	1,050	1,219	1,050	1,319	900	7,487 6,000
E / M	0	1,100	0	1,600	0	1,300	0	2,100	0	2,100	0	1,700	0 9,900
LORP	0	630	0	2,140	0	2,800	0	3,410	0	2,490	0	2,160	0 13,630
Owens Lake	0	13,200	0	13,200	0	12,700	0	3,000	0	8,600	0	12,700	0 63,400
Rec. & Wildlife	379	600	804	1,100	1,160	1,200	1,455	1,600	1,381	1,300	1,406	1,100	6,585 6,900
Total	5,500	22,330	10,081	29,440	12,777	29,000	12,176	22,060	10,895	26,440	9,046	25,260	60,475 154,530
Use	October		November		December		January		February		March		TOTAL
	1981	2010	1981	2010	1981	2010	1982	2011	1982	2011	1982	2011	Oct-Mar 81-82 10-11
Irrigation	263	200	0	0	0	0	0	0	0	0	14	100	277 300
Stockwater	1,065	900	1,045	900	1,050	900	1,007	900	1,010	900	1,098	900	6,275 5,400
E / M	0	300	0	100	0	100	0	100	0	100	0	100	0 800
LORP	0	790	0	270	0	360	0	130	0	220	0	300	0 2,070
Owens Lake	0	10,800	0	3,900	0	2,000	0	2,000	0	3,900	0	9,000	0 31,600
Rec. & Wildlife	781	1,040	713	630	565	560	478	450	342	320	447	500	3,326 3,500
Total	2,109	14,030	1,758	5,800	1,615	3,920	1,485	3,580	1,352	5,440	1,559	10,900	9,878 43,670
													70,353 198,200

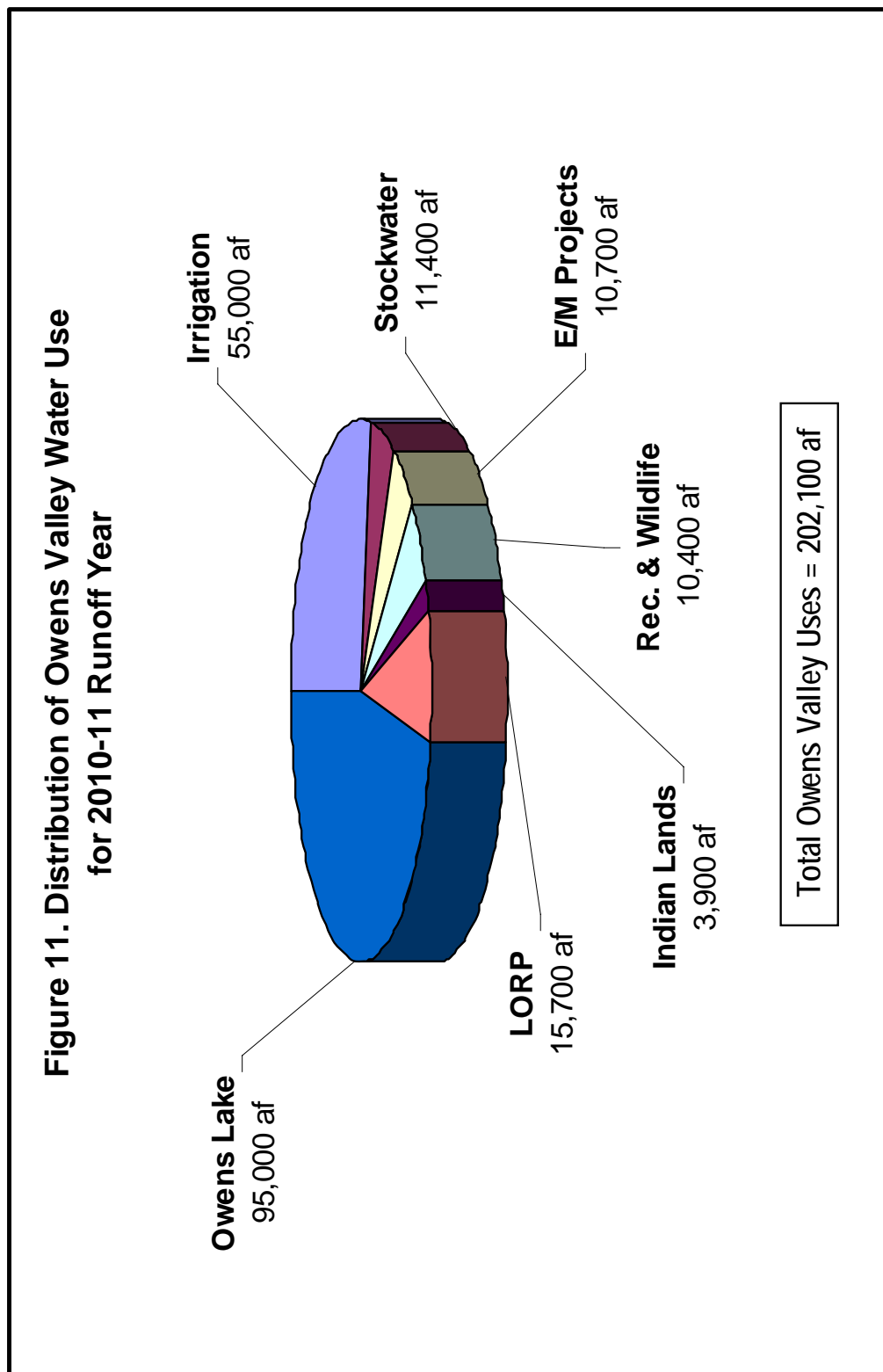


Figure 11. Distribution of Owens Valley Water Use for 2010-11 Runoff Year

Table 8. Owens Valley Groundwater Pumping for E/M Use

Table 8. Owens Valley Groundwater Pumping for E/M Water Use (1984-85 through 2010-11 Runoff Year)
(ACRE-FEET)

Runoff Year	Owens Valley Runoff (1)	Total Pumping	Non-E/M Pumping	E/M Pumping	E/M Water Uses	E/M Pumping & Use Imbalance	Cumulative E/M Pumping & Use Imbalance
1984-85	121	61,981	61,981	0	0		0
1985-86	103	107,718	107,718	0	109		0
1986-87	158	69,887	69,887	0	12,696	(4)	0
1987-88	68	209,394	179,884	29,510	29,360		0
1988-89	62	200,443	171,012	29,431	30,872		0
1989-90	63	155,972	133,409	22,563	23,330		0
1990-91	52	88,904	70,817	18,087	17,949		0
1991-92	64	87,310	71,520	15,790	20,517	-4,727	-4,727
1992-93	61	84,453	70,688	13,765	18,357	-4,592	-9,319
1993-94	106	76,329	67,338	8,991	19,310	-10,319	-19,638
1994-95	66	89,219	78,209	11,010	20,812	-9,802	-29,440
1995-96	153	69,752	57,180	12,572	22,914	-10,342	-39,782
1996-97	135	74,904	57,981	16,923	23,949	-7,026	-46,808
1997-98	124	66,914	52,760	14,154	21,500	-7,346	-54,154
1998-99	149	51,574	47,353	4,221	19,672	(4)	-54,154
1999-00	89	63,675	59,342	4,333	24,450	-20,117	-74,271
2000-01	84	67,795	61,456	6,339	20,611	-14,272	-88,543
2001-02	83	73,349	70,055	3,294	21,815	-18,521	-107,064
2002-03	66	81,979	76,059	5,920	21,394	-15,474	-122,538
2003-04	81	87,732	80,734	6,998	21,116	-14,118	-136,656
2004-05	77	85,820	78,110	7,710	18,327	-10,617	-147,273
2005-06	136	56,766	51,695	5,071	19,356	-14,285	-161,558
2006-07	146	58,621	53,925	4,696	17,357	(4)	-161,558
2007-08	61	60,338	53,413	6,925	11,312	-4,387	-165,945
2008-09	74	68,971	60,231	7,918	10,646	-2,728	-168,673
2009-10 (2)	77	65,425	57,946	6,192	10,695	-4,503	-173,176
2010-11 (3)	94	86,000	78,000	8,000	10,700	-2,700	-175,876

(1) Based on 1956-2005 average: 415,725 acre-feet

(2) estimated

(3) forecast or planned

(4) surface water was available

2.4. Aqueduct Operations

Table 9 shows planned Los Angeles Aqueduct first-of-month reservoir storage levels and planned monthly LAA deliveries to Los Angeles. Based on this plan, a total of 241,645 acre-feet will be exported from the Eastern Sierra to the City in the 2009-10 runoff year. This is less than two-thirds of the long-term average export of water from the Eastern Sierra to the City between 1970 and 1991 (the Water Agreement was signed in October 1991).

2.5. Water Exports to Los Angeles

Figure 12 provides a record of water supply exported from the Eastern Sierra, averaging approximately 357,000 acre-feet per year from 1970 to present. Figure 13 shows the LAA contribution to the City water supply relative to other sources and the total annual supply from 1970 to present. During the 2009-10 runoff year, approximately one-fourth of the water supply for the City of Los Angeles was provided by exports from the Eastern Sierra (Owens Valley and Mono Basin). Figure 13 also shows the forecast water supply mix for the City for the 2010-11 runoff year. It is estimated that purchased water from Metropolitan Water District of Southern California (primarily water imported from the San Francisco Bay Delta) will provide 44% of the Los Angeles municipal supply, imported water from the Eastern Sierra will provide approximately 44% of the supply, groundwater pumped from San Fernando Valley will provide 11% of the supply, and recycled water will supply about 2% City's water supply. Reduced exports from the Eastern Sierra are the result of less groundwater pumping, mandated reductions of Mono Basin exports, and increased water demands within the Owens Valley for the Owens Lake Dust Mitigation Program, the LORP, and numerous E/M projects.

Table 9. Planned Los Angeles Aqueduct Operations for 2010-11 Runoff Year

Month	Owens Valley-Bouquet Reservoir Storage 1st of month Storage	Aqueduct Delivery to Los Angeles
	(acre-feet)	(acre-feet)
April	184,900	19,517
May	177,076	30,744
June	166,787	32,727
July	164,227	33,818
August	158,688	26,132
September	141,864	20,826
October	123,178	13,835
November	117,614	13,388
December	126,004	15,372
January	137,598	7,686
February	157,353	14,380
March	166,384	13,220
<i>TOTAL</i>		<i>241,645</i>

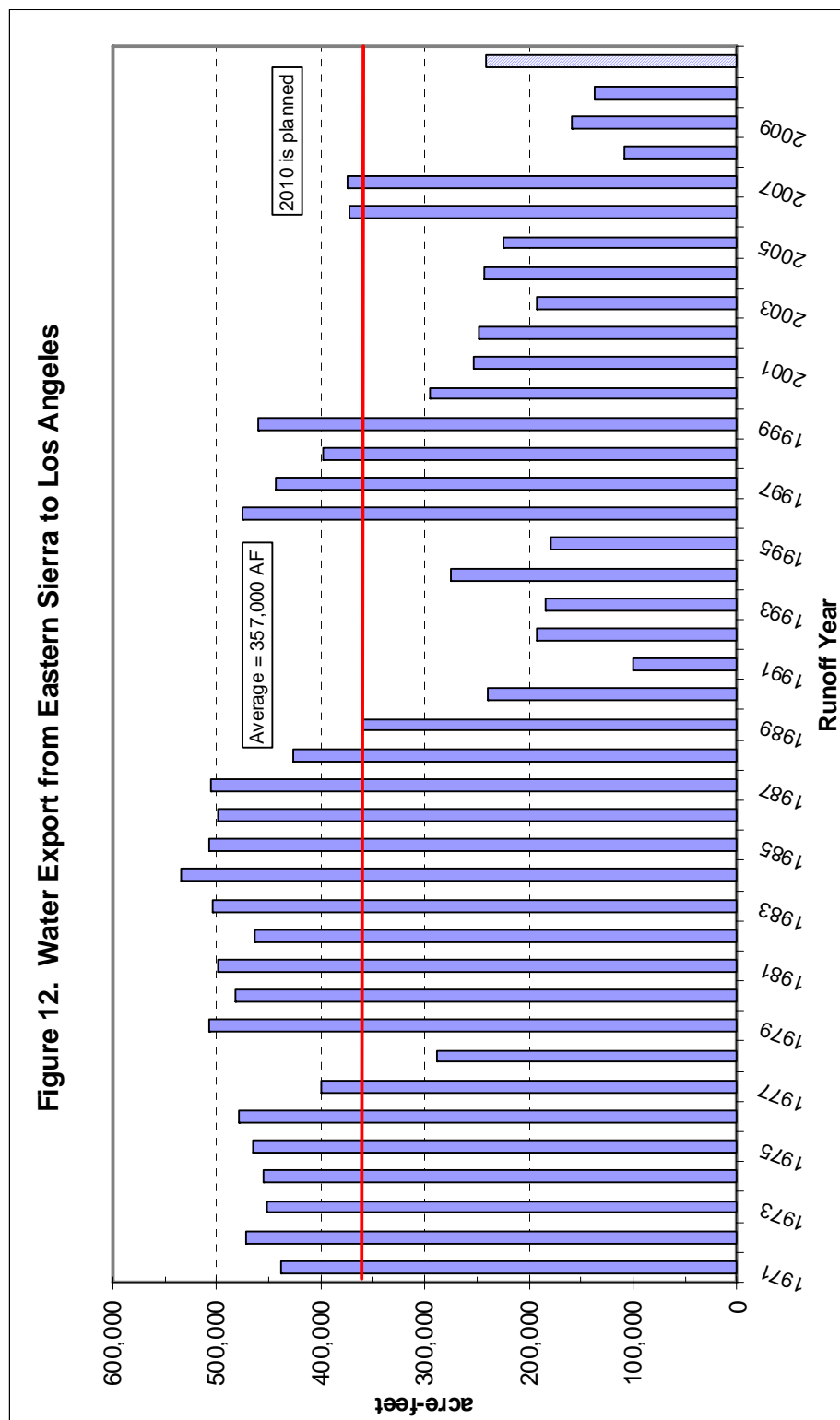


Figure 12. Water Export From the Eastern Sierra to Los Angeles

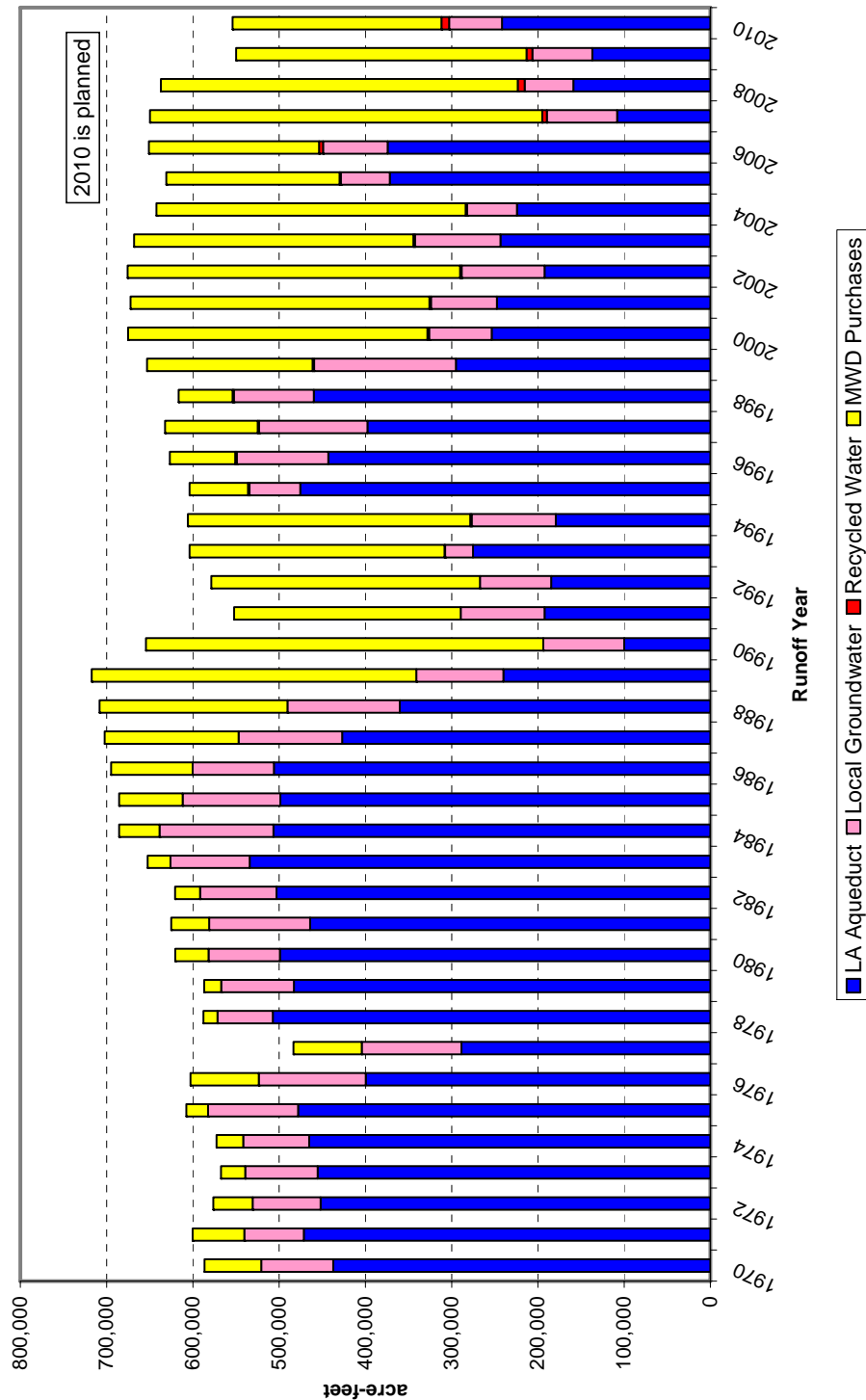


Figure 13. Sources of Water for the City of Los Angeles

3. OWENS VALLEY CONDITIONS

3. CONDITIONS IN THE OWENS VALLEY

The 2009-10 runoff year was the third consecutive below-normal year for Eastern Sierra Nevada snowpack runoff contributions to the Owens Valley. As of April 1, 2010, the Eastern Sierra overall snowpack was measured to be 94% of normal and Owens Valley floor precipitation over the 2009-10 year was slightly higher than average (Table 12). The Owens Valley runoff forecast for the 2010-11 runoff year is 392,400 acre-feet or approximately 95% of normal. Overall, vegetation cover in the Owens Valley is comparable to mid-1980's baseline conditions and vegetation transects have provided confirmation that vegetation cover has generally increased over the last few years despite a statewide drought (see Section 3.5). A graphical summary of Owens Valley conditions is provided in Figure 14.

3.1. Well ON/OFF Status

The Water Agreement includes the vegetation protection provisions of linking pumping wells to specific monitoring sites. If the available soil moisture measured at a vegetation monitoring site is not sufficient to meet the estimated demands of the vegetation associated with that monitoring site, the wells linked to that site are designated as being in the OFF status and may not be operated. The wells linked to a monitoring site may be operated if the available soil water is determined to be sufficient to have met the estimated water requirements of the vegetation at the time that the associated wells were designated as being in the OFF status. The Green Book includes the complete well ON/OFF procedures. Table 10 provides a listing of Owens Valley monitoring site ON/OFF status as of April 2010, the monitoring wells associated with each monitoring site, and the linked pumping wells.

Some pumping wells are designated as being exempt from linkage to monitoring sites and the ON/OFF provisions of the Water Agreement because these wells are in areas that can not cause significant adverse impacts to the vegetation or because these wells have been determined by Inyo County and LADWP to be a necessary source of water. A list of exempt wells and the reason for exemption is included in Table 5.

3.2. Groundwater Level Hydrographs

LADWP hydrographers monitor groundwater levels in over 700 monitoring wells throughout the Owens Valley. Groundwater levels are considered when evaluating the overall condition of the basin and are utilized for calibrating groundwater models. Hydrographs are used to observe the changes in groundwater levels over time. Figures 15a through 15g illustrate hydrographs of selected monitoring wells in Owens Valley wellfields. As shown in Figures 15a-15g, groundwater levels are generally high throughout the valley and have increased in most areas despite three years of below-normal runoff in the Eastern Sierra. Increasing groundwater levels within the valley, during a period of statewide drought, are the result of extremely conservative pumping during the 2007-08 to 2009-10 runoff years.

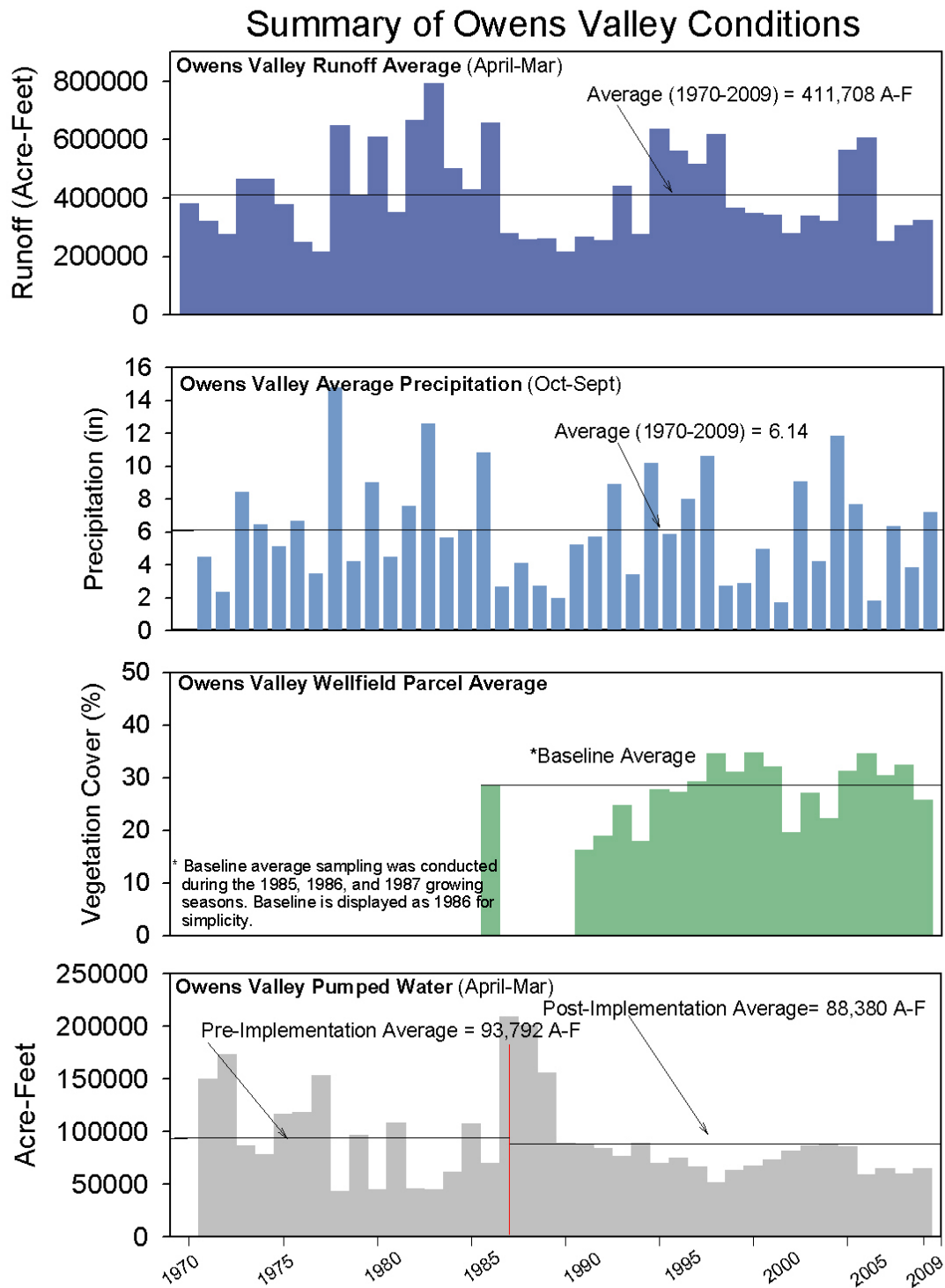


FIGURE 14. Summary of Owens Valley Conditions

Table 10. Owens Valley Monitoring Site Status (ON/OFF) as of April 2010

Wellfield	Monitoring Site	Monitoring Well	Pumping Wells	E/M Wells	ON/OFF Status
Laws	L1	795T	247, 248, 249, 398		ON
	L2	USGS 1	236*, 239, 243, 244		ON
	L3		240, 241, 242	376, 377	ON
	L4a, L4b			385, 386	na
	L5**		245	387, 388	na
	Exempt		236*, 354, 365, 413		Exempt
Bishop	All wells		140, 411, 410, 371		na
			406, 407, 408, 412		na
Big Pine	BP1	798T	210, 352	378, 379, 389	OFF
	BP2	799T	220, 229, 374	375	OFF
	BP3	567T	222, 223, 231, 232		ON
	BP4	800T	331		ON
	Exempt		218, 219, 330, 332, 341, 352, 415		Exempt
Taboose-Aberdeen	TA3	505T	106, 110, 111, 114		OFF
	TA4	586T	342, 347		OFF
	TA5	801T	349		ON
	TA6	803T	109, 370		OFF
	Exempt		118		Exempt
Thibaut-Sawmill	TS1	807T	159		OFF
	TS2	T806	155		OFF
	TS3	454T	103, 104	382	ON
	TS4	804T		380, 381	OFF
	Exempt		351, 356		Exempt
Independence-Oak	IO1	809T	391, 400		OFF
	IO2	548T	63		OFF
	Exempt		59, 60, 61, 65, 401, 357, 384*	383, 384	Exempt
Symmes-Shepherd	SS1	USGS 9G	69, 392, 393		ON
	SS2	646T	74, 394, 395		OFF
	SS3	561T	92, 396		ON
	SS4	811T	75, 345		OFF
	Exempt			402	Exempt
Bairs-Georges	BG2	812T	76, 343*, 348, 403		ON
	Exempt		343*		na
Lone Pine	Exempt		344, 346	390	Exempt
	Other		416		na

*dual use

** Monitoring site has not yet been located.

FIGURE 15a. Depth-To-Water Hydrographs for Selected Monitoring Wells

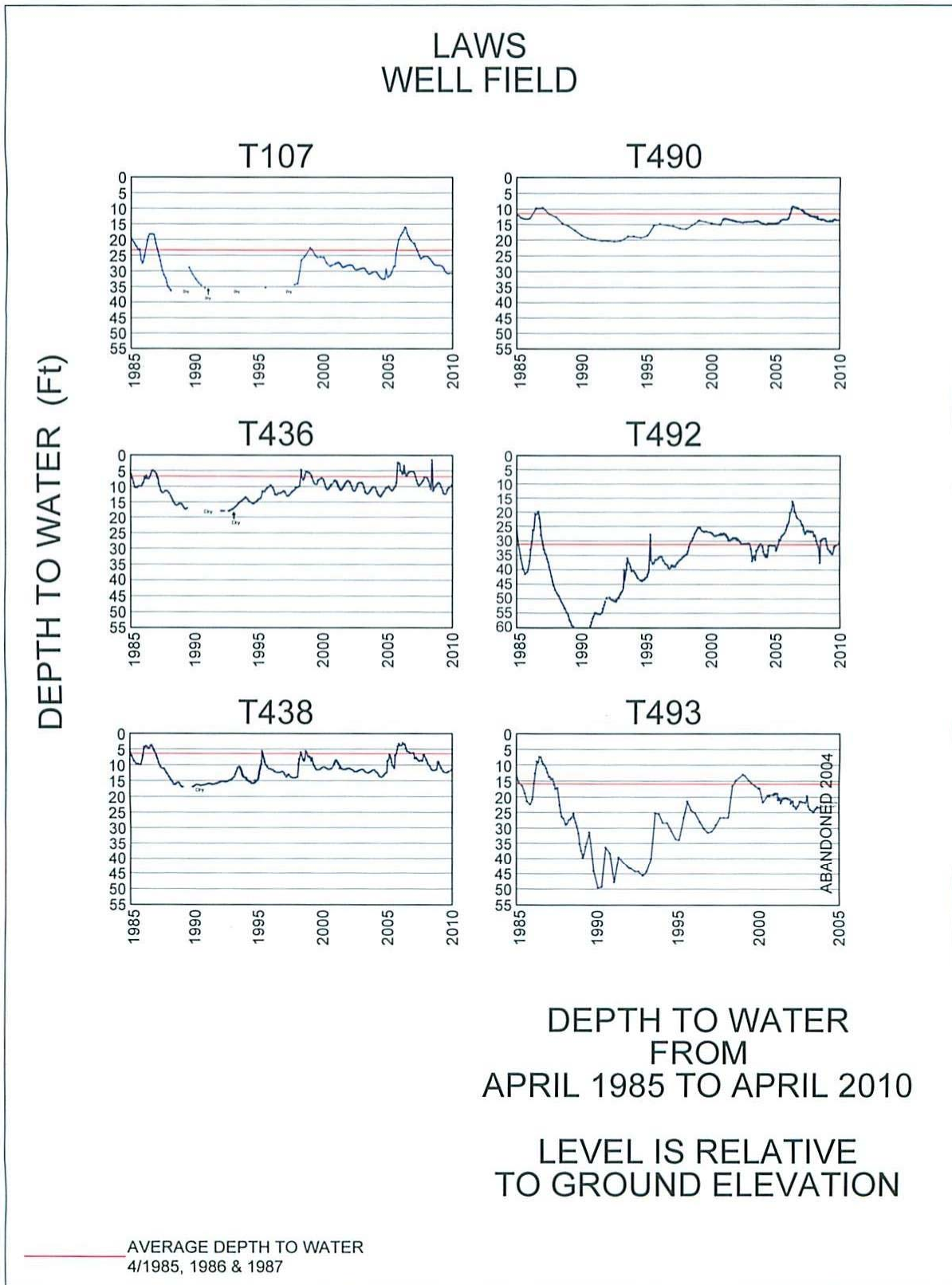


FIGURE 15b. Depth-To-Water Hydrographs for Selected Monitoring Wells

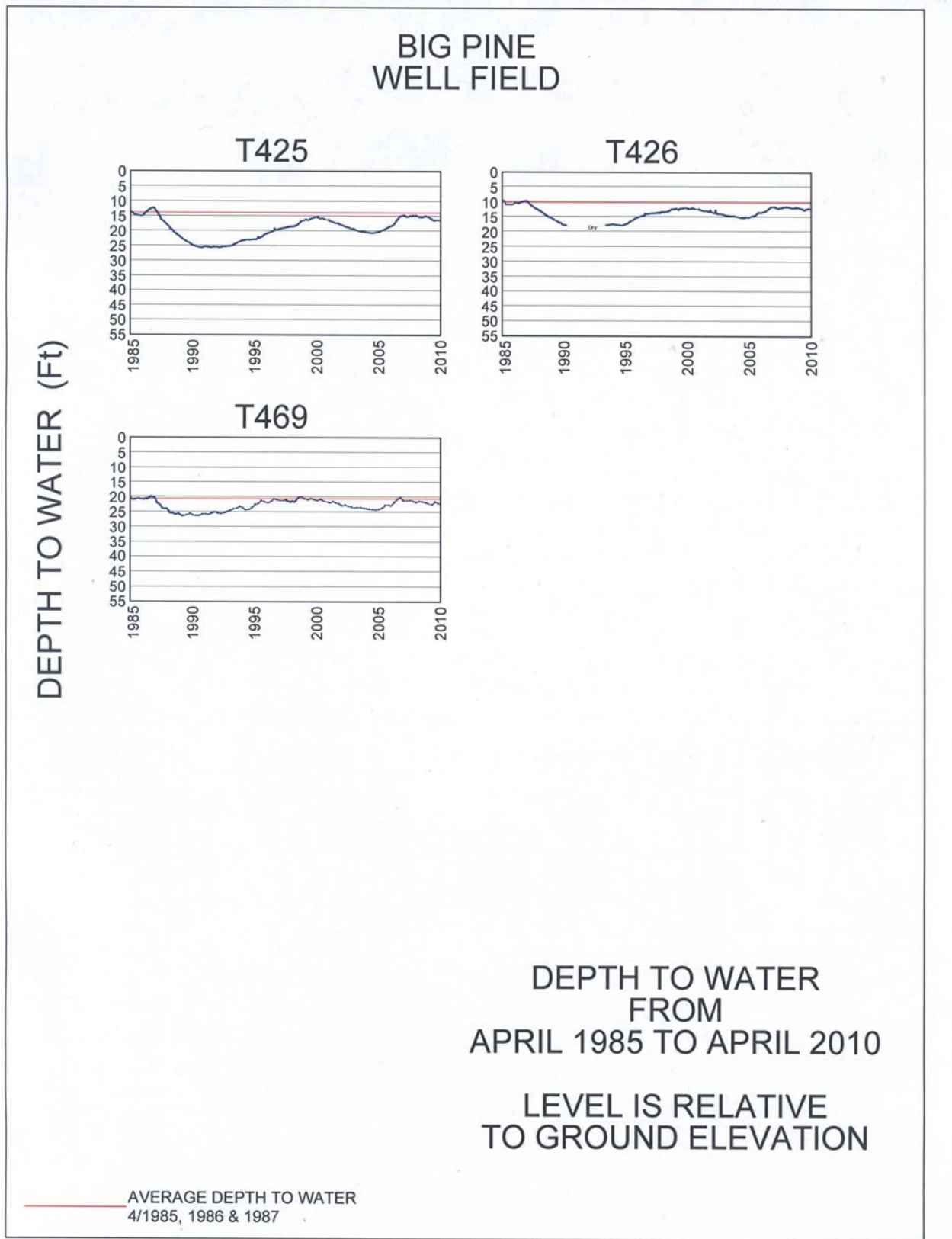


FIGURE 15c. Depth-To-Water Hydrographs for Selected Monitoring Wells

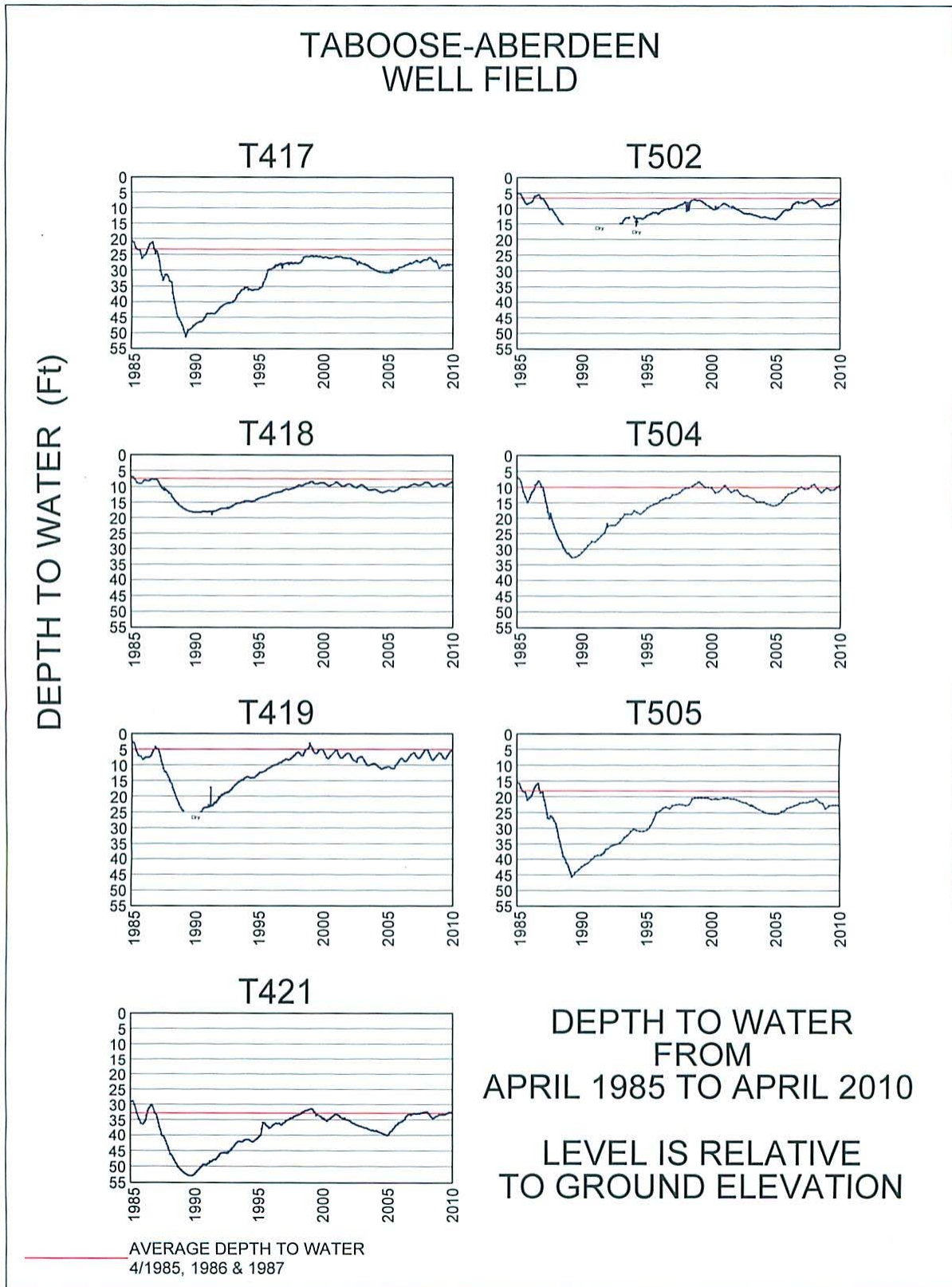


FIGURE 15d. Depth-To-Water Hydrographs for Selected Monitoring Wells

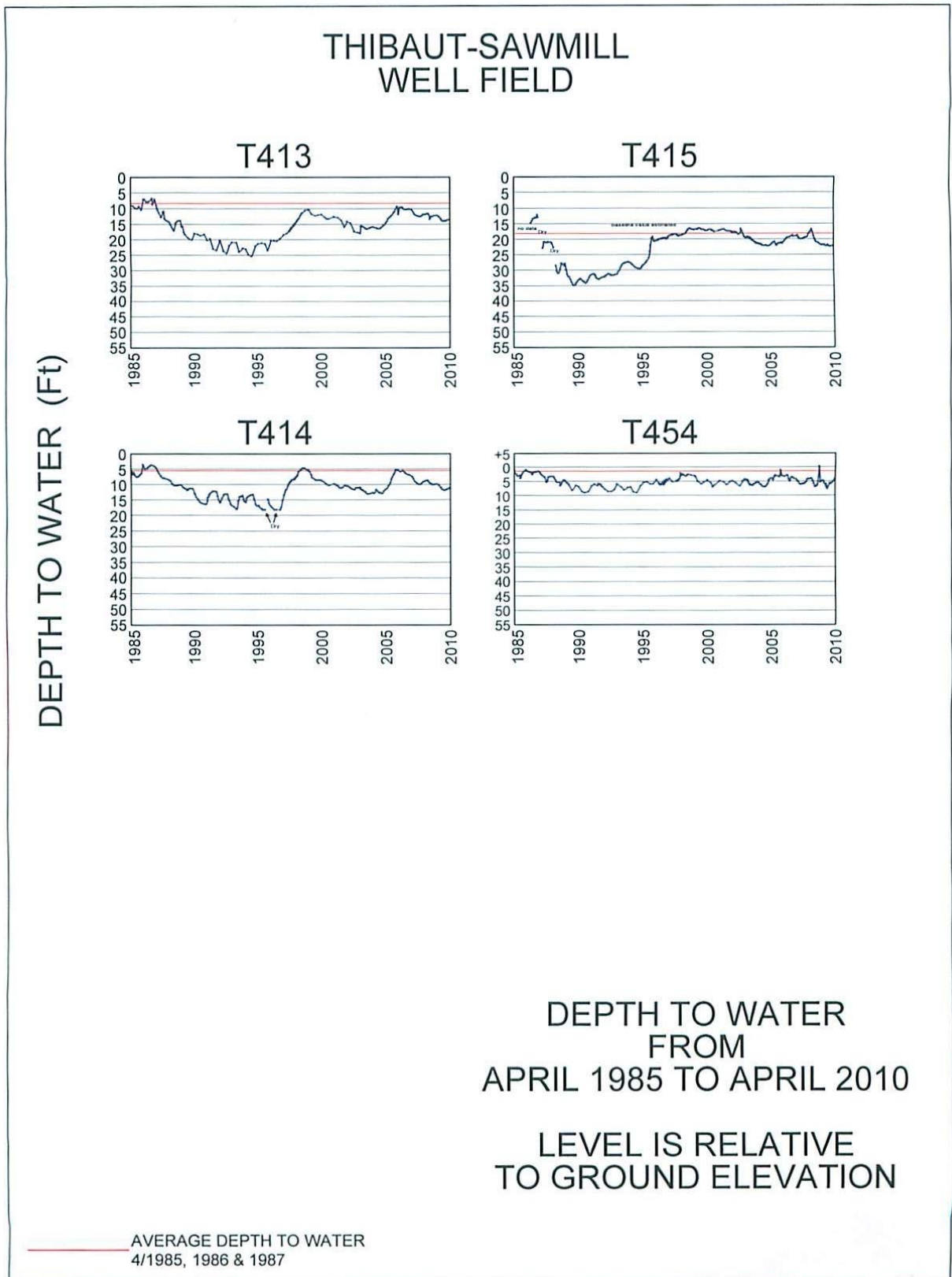


FIGURE 15e. Depth-To-Water Hydrographs for Selected Monitoring Wells

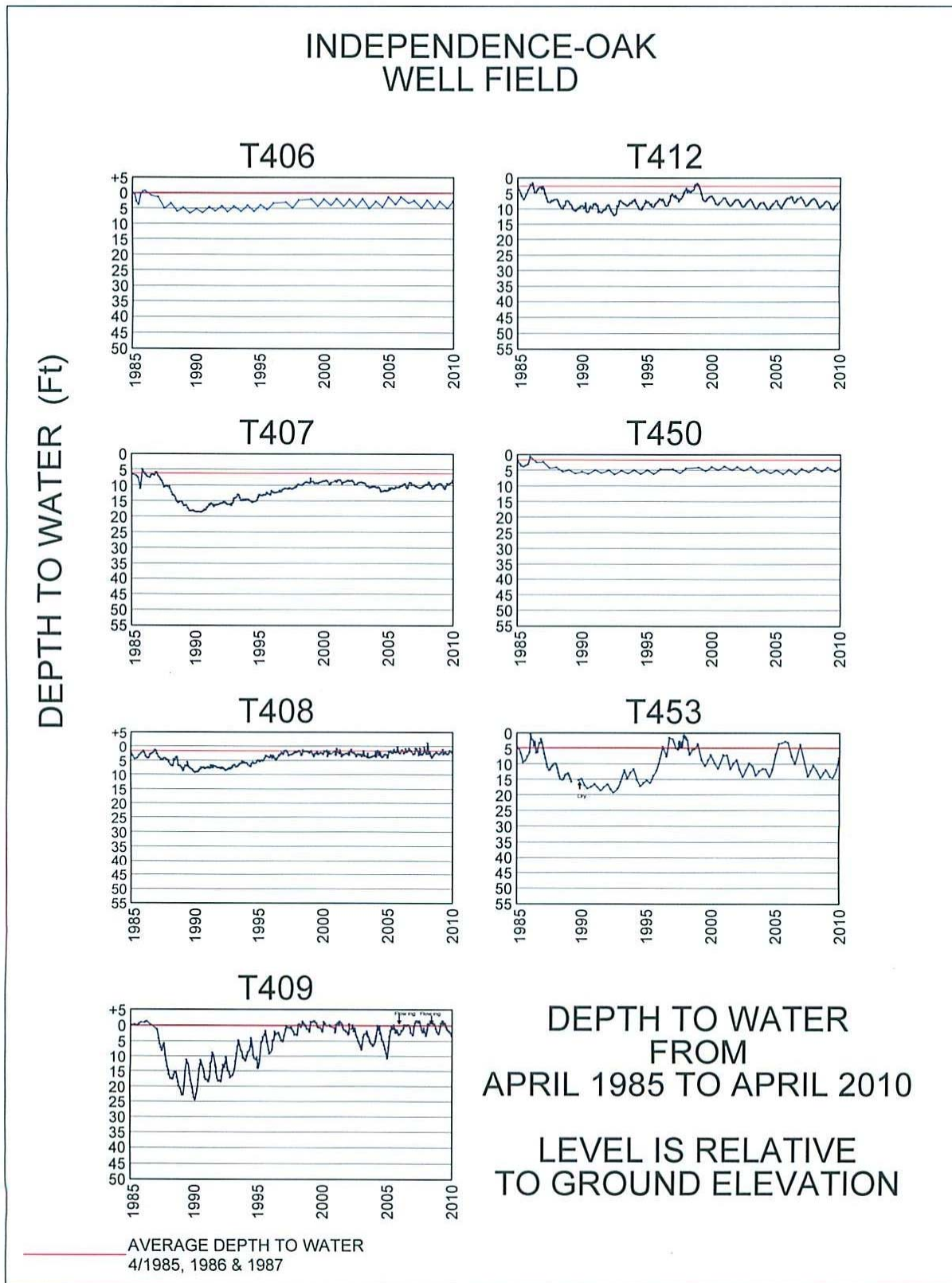


FIGURE 15f. Depth-To-Water Hydrographs for Selected Monitoring Wells

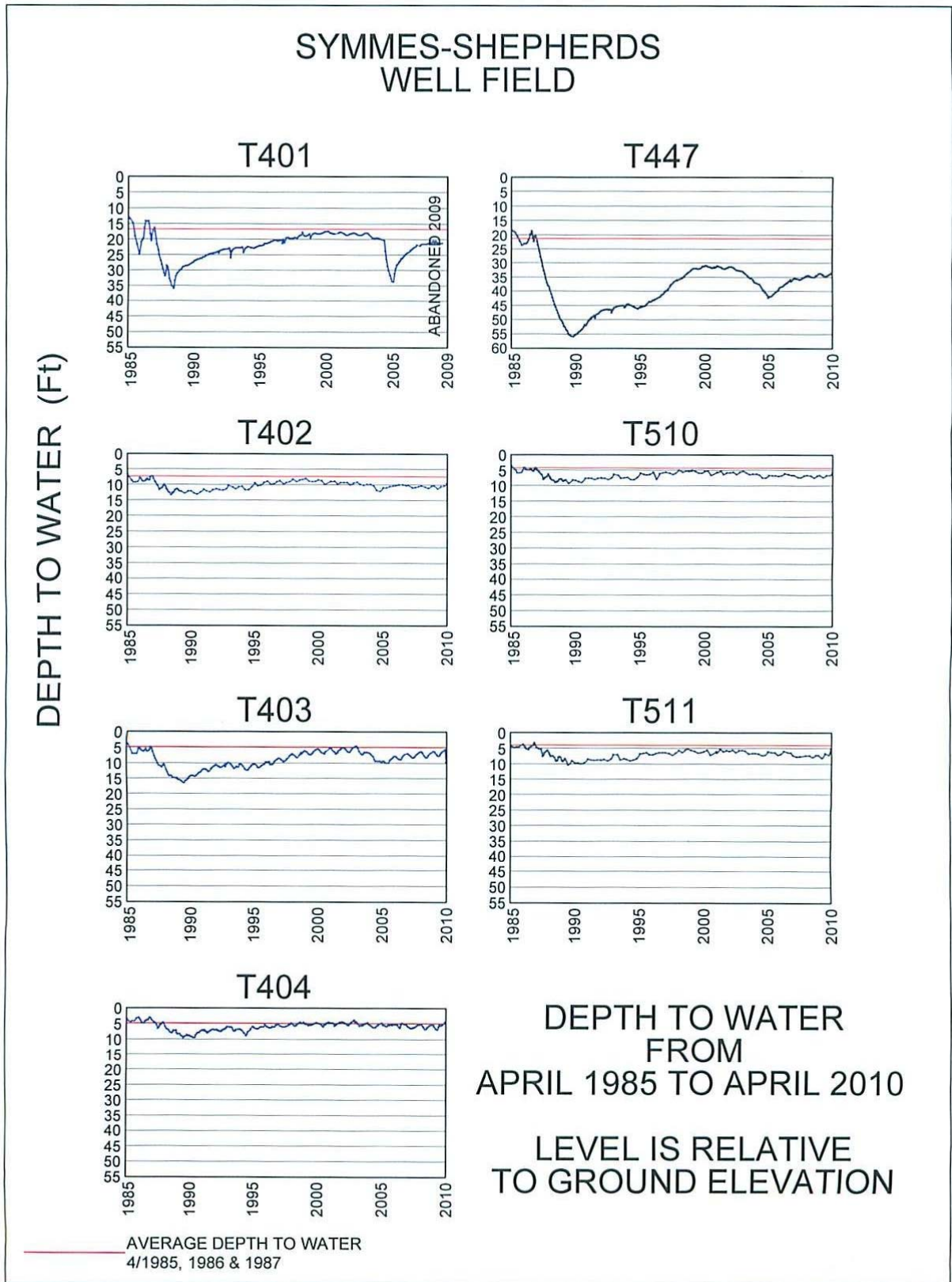
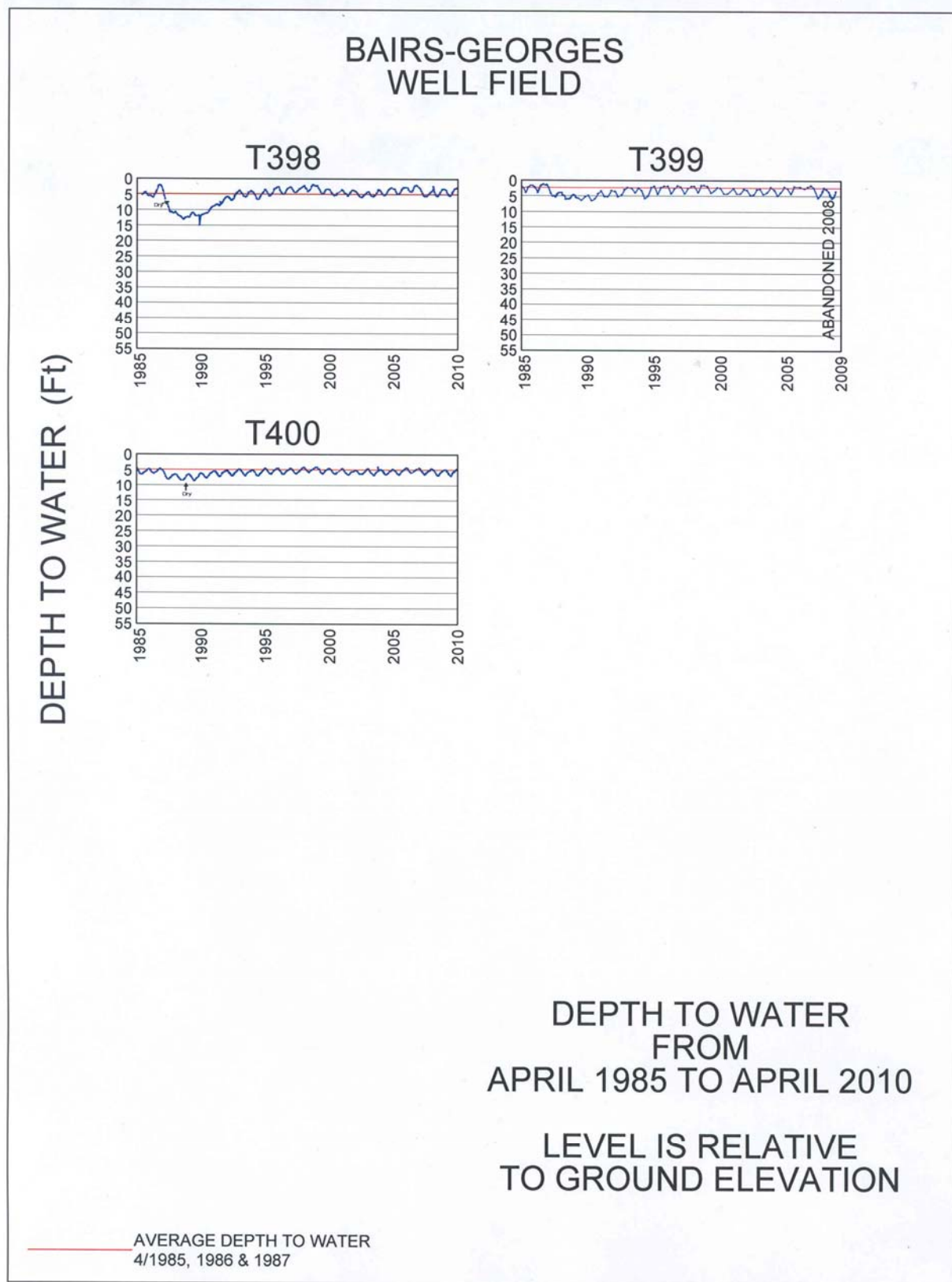


Figure 15g. Depth-To-Water Hydrographs for Selected Monitoring Wells



3.3. Precipitation Record and Runoff Forecast

The 2010-11 runoff year is forecast to be slightly below normal. The snowpack as of April 1 was 97% of normal in the Mammoth Lakes area, 91% of normal in the Rock Creek area, 83% of normal in the Big Pine area, and 109% of normal in the Cottonwood Lakes area. The Eastern Sierra overall snowpack, weighted by contribution to Owens River runoff, was calculated to be 94% of normal snowpack as of April 1, 2010 (Table 11).

Precipitation on the Owens Valley floor during the 2009-10 runoff year was about double the precipitation of the previous year. Average precipitation on the valley floor for the 2009-10 year was 6.57 inches, up from 3.25 inches in 2008-09, and higher than the fifty year average of 5.97 inches. Precipitation totals by area ranged from 4.15 inches in Lone Pine (1.86 inches in 2008-09) to a high of 9.19 inches at the Cottonwood rain gauge (4.39 inches in 2008-09). Table 12 details monthly annual precipitation totals for the 2009-10 runoff year, and long term averages, throughout the Owens Valley.

The Eastern Sierra runoff forecast for the 2010-11 runoff year is 392,400 acre-feet or 95% of normal (Table 1). Figure 16 compares the forecast runoff for the 2010-11 year to previous runoff years.

Table 11. Eastern Sierra Snow Survey Results

EASTERN SIERRA SNOW SURVEY RESULTS			
April 1, 2010			
MAMMOTH LAKES AREA (Contributes 27% of Owens River runoff)			
Course	Water Content	April 1 Normal	Percent of Normal
Mammoth Pass	39.6	43.6	91%
Mammoth Lakes	22.8	21.1	108%
Minarets 2	29.4	30.2	98%
Mammoth Lakes Area Average:	30.6	31.6	97%
ROCK CREEK AREA (Contributes 16% of Owens River runoff)			
Course	Water Content	April 1 Normal	Percent of Normal
Rock Creek 1	7.8	7.3	107%
Rock Creek 2	9.8	10.6	93%
Rock Creek 3	12.4	15.0	82%
Rock Creek Area Average:	10.0	11.0	91%
BIG PINE AREA (Contributes 32% of Owens River runoff)			
Course	Water Content	April 1 Normal	Percent of Normal
Big Pine Creek 1	18.6	22.1	84%
Big Pine Creek 2	10.3	14.2	72%
Big Pine Creek 3	16.5	18.5	89%
Big Pine Creek Area Average:	15.1	18.3	83%
COTTONWOOD AREA (Contributes 25% of Owens River runoff)			
Course	Water Content	April 1 Normal	Percent of Normal
Cottonwood Lakes 1	13.9	13.0	107%
Cottonwood Lakes 2	17.0	14.5	117%
Trailhead*	13.7	13.6	101%
Cottonwood Area Average:	14.9	13.7	109%
EASTERN SIERRA OVERALL SNOW PACK (Weighted by contribution to Owens River runoff)			
Average of all Snow Courses	Water Content	April 1 Normal	Percent of Normal
	18.4	19.6	94%

Table 12. Owens Valley Precipitation During Runoff Year 2009-2010 (inches)

Month	Bishop	Big Pine	Tinemaha Reservoir	LAA Intake	Independ. Yard	Alabama Gates	Lone Pine	Cottonwood	S. Haiwee	Average Owens Valley
April, 2009	0.01	0.00	0.02	0.02	0.01	0.00	0.00	0.06	0.00	0.01
May	0.02	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.03
June	0.61	0.18	0.32	0.33	0.32	0.33	0.27	0.58	0.39	0.37
July	0.21	0.25	0.05	0.18	0.02	0.00	0.00	0.05	0.32	0.12
August	0.02	0.10	0.01	0.04	0.05	0.00	0.00	0.01	0.00	0.03
September	0.01	0.00	0.00	0.00	0.02	0.00	0.02	0.04	0.00	0.01
October	1.63	3.05	2.65	2.16	1.38	0.83	0.51	1.44	0.23	1.54
November	0.00	0.12	0.00	0.00	0.13	0.00	0.12	0.00	0.00	0.04
December	0.96	2.05	1.82	1.95	1.55	0.61	0.80	2.35	1.44	1.50
January, 2010	1.29	1.23	1.64	1.28	1.22	2.04	1.74	3.57	4.00	2.00
February	0.39	0.39	1.04	1.00	0.86	0.38	0.69	1.09	1.93	0.86
March	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
2009-10 Total	5.15	7.82	7.79	6.96	5.56	4.19	4.15	9.19	8.31	6.57
Average*	6.50	6.74	6.77	6.05	5.50	4.05	4.02	6.89	7.20	5.97

* Average for 1956 to 2005

Owens Valley Runoff: Percent of Normal

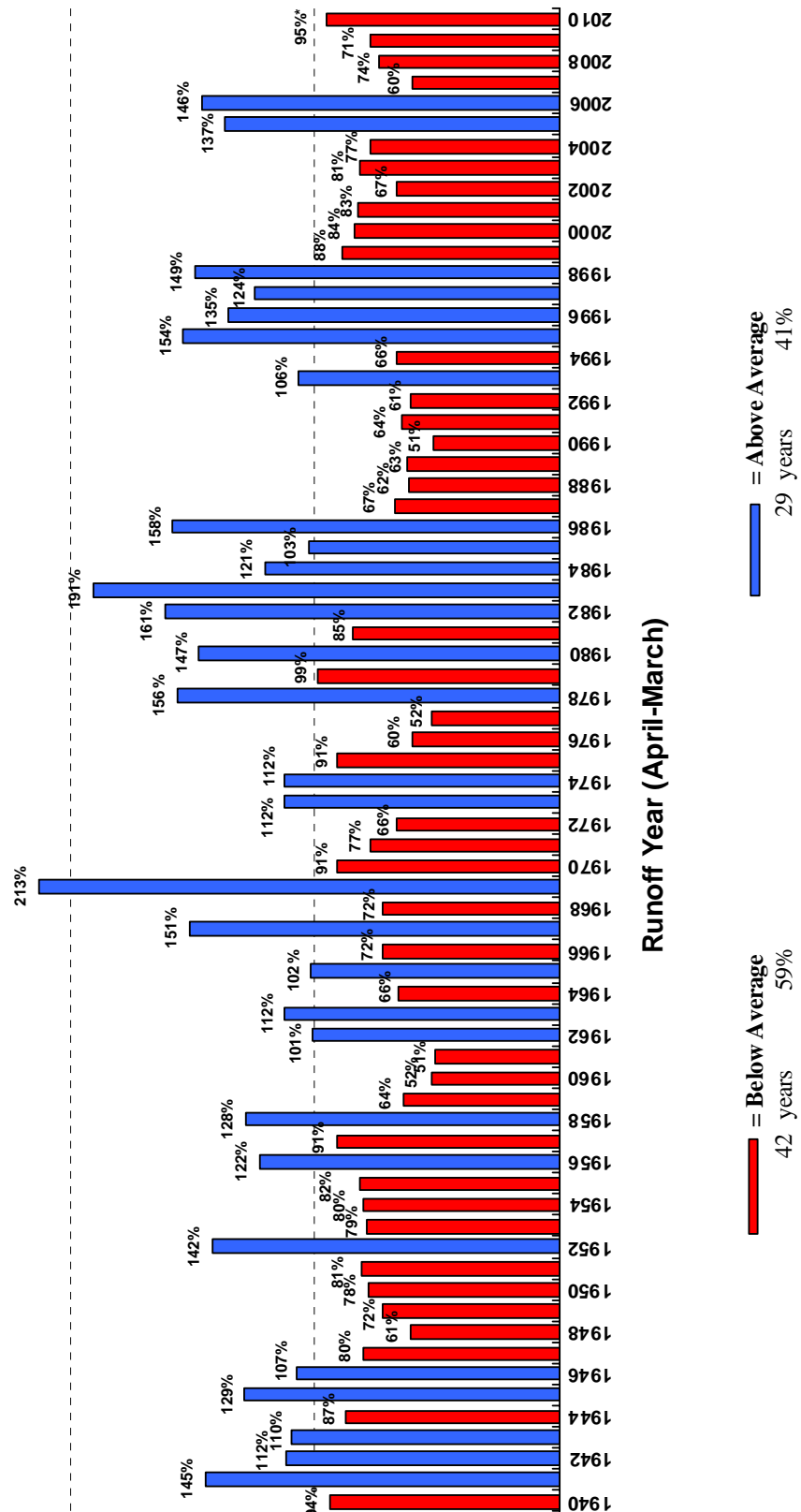


Figure 16. Owens Valley Runoff – Percent of Normal

3.4. Owens Valley Water Supply and Use

Table 13 provides an overview of the Owens Valley water supply, in-valley uses and losses, and LAA export for the post Water Agreement period (1992-93 through 2009-10 runoff years) as compared to the pre-project average (pre Second Los Angeles Aqueduct) and projected water supply and uses (based on the Water Agreement, 1991 EIR, and 1997 MOU). Actual water uses in the Owens Valley are generally consistent with the projected values under the 1991 EIR and 1997 MOU with the notable exception of significant diversions to the Owens Lake Dust Control Program. While the average Owens Valley water supply (surface water flow, flowing wells, and pumped groundwater) has remained essentially the same over time, exports are considerably less than anticipated under the 1991 EIR and 1997 MOU. The fundamental reasons for this reduction in the municipal water supply are increased uses within Owens Valley for dust abatement, mandated decreases in water exported from the Mono Basin, and less groundwater pumping than anticipated under the Water Agreement.

Current Owens Valley water uses are compared to pre Water Agreement uses as well as those uses projected under the Water Agreement and 1997 MOU in Figure 17. The components of LADWP's water exports from the Eastern Sierra is compared to pre Water Agreement exports as well as those projected under the Water Agreement and 1997 MOU in Figure 18.

Table 14 provides a breakdown of Owens Valley water uses from 1985 to the present, and planned water uses for the 2010-11 runoff year. While much of Table 14 is self explanatory, the following items bear additional explanation: E/M water supply is the water supplied to E/M projects specified in the 1991 EIR, LORP is water supplied to the Lower Owens River Project, Owens Lake Release tracks water supplied to the Owens Lake Dust Mitigation Program, and Operations is water used for operational reasons. Table 15 lists a breakdown of water supplied to E/M projects during the 2009-10 runoff year.

Table 13. Owens Valley Water Supply and Uses

(Amounts in Thousands of Acre-Feet/Year)				
	Pre-Project	Projected per MOU/ Agreement	Actual Data for Runoff Year 2009-2010	Actual Post Water Agreement Averages (1992-2010)
Owens Valley Water Supply				
Runoff (Owens Valley & Round Valley)	319 ⁽¹⁾	310	233	299
Flowing Wells	44	15	32	33
Pumped Groundwater	10	110 ⁽²⁾	65	71
Total	364	435	330	403
In-Valley Uses & Losses				
<u>City Water Used in O.V.</u>				
Irrigated Lands ⁽³⁾	62	46	53	48
Stockwater, Wildlife, and Rec. Uses ⁽⁴⁾	20	23	22	23
Post 1985 E/M Projects ⁽⁵⁾	0	12	11	10
Lower Owens River ⁽⁶⁾	0	36 ⁽⁷⁾	16	22 ⁽⁸⁾
Additional Mitigation (1,600 af from MOU)	0	2	0	0
Owens Lake	0	0	67	65 ⁽⁸⁾
Sub-Total	82	123	169	168
<u>Other O.V. Uses and Losses ⁽⁹⁾</u>	<u>134</u>	<u>122</u>	<u>140</u>	<u>89</u>
Total	216	245	309	257
Components of Aqueduct Export				
Owens Valley Contribution to Export	103	210	21	146
Long Valley Contribution to Export	149	149	115	139
Mono Basin Contribution to Export ⁽¹⁰⁾	95	30	16	16 ⁽⁸⁾
Total	347	389	152	301
1. Average runoff for period 1935 to 1988 (Runoff Year) 2. Assumed based on 1991 O.V. Groundwater Pumping EIR 3. Does not include areas receiving water supplies non-tributary to the Owens River/Aqueduct (approx. 7,000 AFY). 4. Includes projects such as the Tule Elk Field, Farmers Ponds implemented after 1970 and before 1985 when E/M projects commenced. Also includes the LORP Off-River Lakes and Ponds uses. 5. Except Lower Owens River Rewatering E/M Project 6. Includes river losses, and releases to the Blackrock Waterfowl Habitat Area and the Delta 7. Assumes: 6,500 AF year-round flow to delta, 3,000 AF to Blackrock, and 26,500 AF for other losses. 8. Represents recent history. 9. Includes uses on private lands, conveyance losses, recharge, evaporation, and operation releases. 10. 1993 Court decision allows approximately 30,000 AFY when lake reaches elevation 6392. Prior to Court decision Mono Basin export averaged 95,000/yr.				

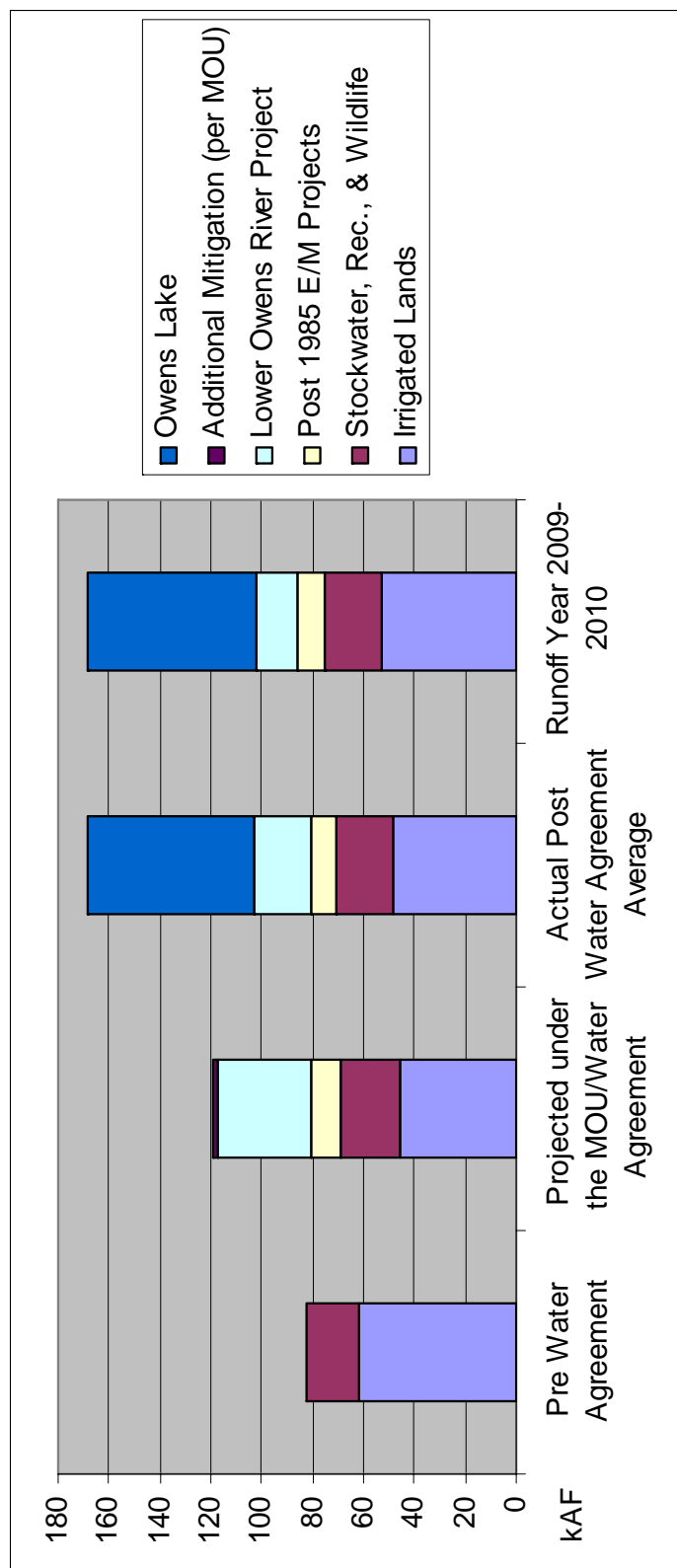


Figure 17. Owens Valley Water Supply and Uses

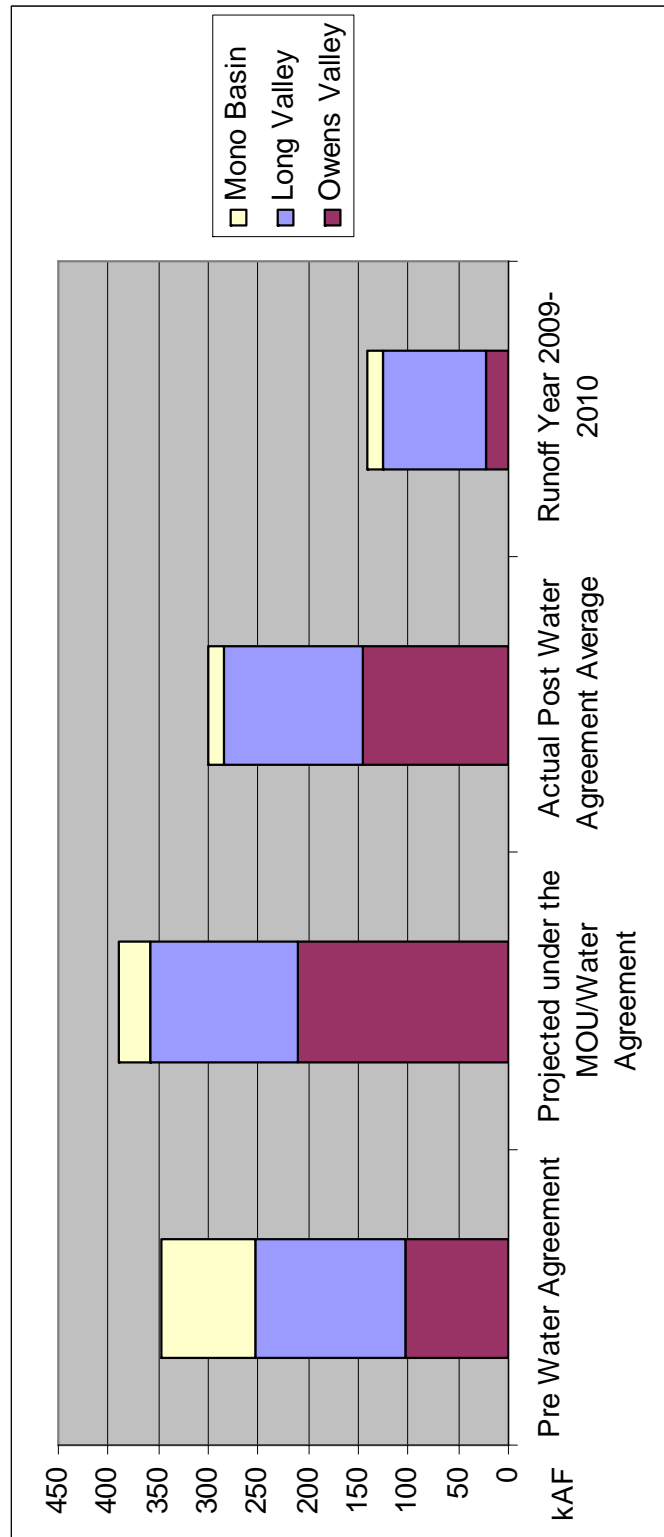


Figure 18. Components of the Eastern Sierra Water Exports

Table 14. Owens Valley Water Uses for 1985-86 through 2009-10 and Planned 2010-11 Runoff Year (acre-feet)

Table 14. Owens Valley Water Uses for 1985-86 through 2009-10 and Planned 2010-11 Runoff Year (acre-feet)

(1) Runoff Year	(2) Owens Valley Runoff %	(3) Owens Valley Pumping (1000 af)	(4) Irrigation	(5) Stock Water	(6) E/M	(7) Rec. & Wildlife	(8) Indian Land Uses	(9) LORP	(10) Owens Lake Release	(11) In-Valley Uses (sum of 4+5+6+7+8+9+10)	Groundwater Recharge			(13) Operations	(14) All Uses (sum of 11+12+13)
											(12a) Big Pine & Independence Spreading	(12b) Laws Spreading			
1985-86	103	108	47,390	15,394	109	9,205	4,248	4,191		8,0537	4,822	4,068		13,712	103,139
1986-87	158	70	47,884	15,125	1,610	9,735	3,873	12,551		90,778	67,251	20,429		72,387	250,845
1987-88	68	209	48,679	15,443	13,818	6,420	3,902	15,542		103,804	0	0		7,499	111,303
1988-89	62	200	46,463	14,381	17,102	8,429	5,299	13,856		105,530	0	0		6,705	112,235
1989-90	63	156	48,232	13,922	15,261	8,669	5,460	8,069		99,613	0	0		8,935	108,548
1990-91	52	89	46,424	14,360	9,242	9,983	5,445	8,657		94,111	0	0		5,312	99,423
1991-92	64	87	42,112	14,662	8,301	9,143	5,938	10,251		90,407	0	0		9,923	100,330
1992-93	61	84	37,131	17,828	9,088	7,725	5,211	9,269		86,252	0	0		12,179	98,431
1993-94	105	76	47,798	17,230	13,443	8,676	5,270	5,867		98,284	14,512	10,640		12,433	135,869
1994-95	66	89	37,790	17,178	9,132	8,116	5,641	11,680		89,537	0	56		12,102	101,695
1995-96	153	70	57,748	20,919	11,162	12,479	5,170	11,752		119,230	30,126	21,148		13,561	184,065
1996-97	135	75	46,171	19,757	10,989	9,438	5,540	12,960		104,855	4,606	0		21,125	130,586
1997-98	124	67	47,114	16,422	8,114	8,022	5,548	13,494		98,714	4,113	4,106		13,874	120,807
1998-99	149	52	45,445	13,654	9,075	8,691	4,589	10,597		92,051	24,970	31,077		23,016	171,114
1999-00	89	64	49,529	14,461	8,836	7,470	4,232	15,616		100,144	0	0		11,263	111,407
2000-01	84	68	49,327	13,442	7,989	7,263	5,792	12,793		96,606	0	790		12,517	109,913
2001-02	83	73	43,296	12,759	9,401	7,487	4,931	12,414		90,288	0	230		12,973	103,491
2002-03	66	82	43,929	12,291	11,442	7,377	4,922	9,952	22,983	112,896	0	0		8,431	121,327
2003-04	81	88	45,974	11,620	10,926	6,853	5,293	10,190	27,049	117,905	0	0		8,787	126,692
2004-05	77	86	50,311	11,546	9,915	6,866	4,739	9,003	28,981	121,361	243	695		9,536	131,835
2005-06	136	57	53,832	11,355	11,587	7,807	3,281	7,769	31,643	127,274	16,212	24,187		14,814	182,487
2006-07	146	59	50,968	12,041	11,551	7,849	3,315	11,700	42,542	139,966	29,457	16,855		38,937	225,215
2007-08	61	60	47,699	12,161	11,565	10,122	2,931	22,501	66,580	173,559	0	0		5,631	179,190
2008-09	74	69	56,130	11,435	10,646	8,479	3,527	20,957	61,326	172,500	1,342	0		7,651	181,493
2009-10	77	65	52,933	11,450	10,695	10,398	4,142	15,708	66,940	172,266	0	0		8,453	180,719
2010-11	94	86	55,000	11,400	10,700	10,400	3,900	15,700	95,000	202,100	0	0		9,000	211,100
AVG.	93	88	47,612	14,433	10,040	8,508	4,730	11,894	43,506	111,139	7,906	5,371		14,870	139,286

NOTES: PUMPING 1987 TO PRESENT INCLUDES E/M PUMPING

VALUES FOR 2010-11 ARE FORECASTED OR PLANNED VALUES

E/M EXCLUDES RELEASES TO THE LORP

LORP IS RECORD OF THE REWATERING E/M (1985-2006) AND THE MITIGATION PROJECTS (STARTED IN DECEMBER 2006)

LORP RECORD INCLUDES RIVERINE LOSS, RELEASES TO BLACKROCK WATERFOWL, AND RELEASES TO DELTA

Table 15. Water Supplied to Enhancement/Mitigation Projects During 2009-10

Project	Water Supplied (acre-feet)
McNally Canals Conveyance Losses	782
McNally/Laws/Poleta Native Pasture Lands	1,764
McNally Ponds	0
Laws Historical Museum	131
Klondike Lake	1,169
Lower Owens River Rewatering	0
Independence Pasture Lands	1,962
Independence Springfield	1,530
Independence Ditch System	446
Independence Woodlot	220
Shepherd Creek Alfalfa Lands	1,166
Lone Pine Park/Richards Field	1,037
Lone Pine Woodlot	58
Lone Pine Van Norman Field	147
Lone Pine Regreening	283
Total E/M Uses	10,695

3.5. Owens Valley Vegetation Conditions

Vegetation conditions within the Owens Valley are monitored using vegetation transects as well as other methods. The Green Book describes the methodology and purposes of vegetation transects. As stated in the Green Book: “Vegetation transects are included within the Green Book to serve two purposes: 1) to estimate transpiration from a monitoring site, and 2) for use in determining whether vegetation has decreased or changed significantly from the previous cover.” The reference for comparison of vegetation changes in order to determine significance are the 1984-87 vegetation inventory data.

The Green Book requires the 1984-87 vegetation inventory to be used as a baseline when determining whether vegetation cover and/or species composition has changed. The 1984-1987 inventory transects were chosen using aerial photos to aid in determining transect locations. Transects were located visually by choosing lines that appeared to cover the representative units of vegetation within the parcel being measured. Transects were generally run toward the center of the parcels in order to avoid transitional areas at parcel edges. A minimum of five transects were run on each parcel. If the vegetation cover was particularly heterogeneous, a qualitative method was employed in selecting additional transects. The transect data were checked visually and additional transects were run to lessen the degree of variability as necessary.

The Green Book advises that future transects should be performed in a similar manner as the initial inventory to determine whether vegetation has changed, but allows the technique to be modified to permit statistical comparison by randomly selected transects. In any case, the Green Book requires statistical analysis to be used to determine the statistical significance of vegetation changes from the 1984-87 inventory maps.

In 1991, ICWD began running transects annually within parcels located inside and outside wellfields. Some parcels are evaluated each year, while others are not evaluated annually. Percent cover of perennial species is calculated and compared to data collected within parcels during the period of baseline inventory.

Figure 19 provides ICWD vegetation transect data presented in a series of graphs documenting Owens Valley vegetation conditions. Inyo County randomly measures vegetation from specifically within each wellfield and Owens Valley-wide. While the data presented in Figure 19 is helpful in distinguishing that vegetation cover has greatly improved since the early 1990s and continues to generally do well, year to year comparison of vegetation cover is less reliable due to the random vegetation transect methods employed.

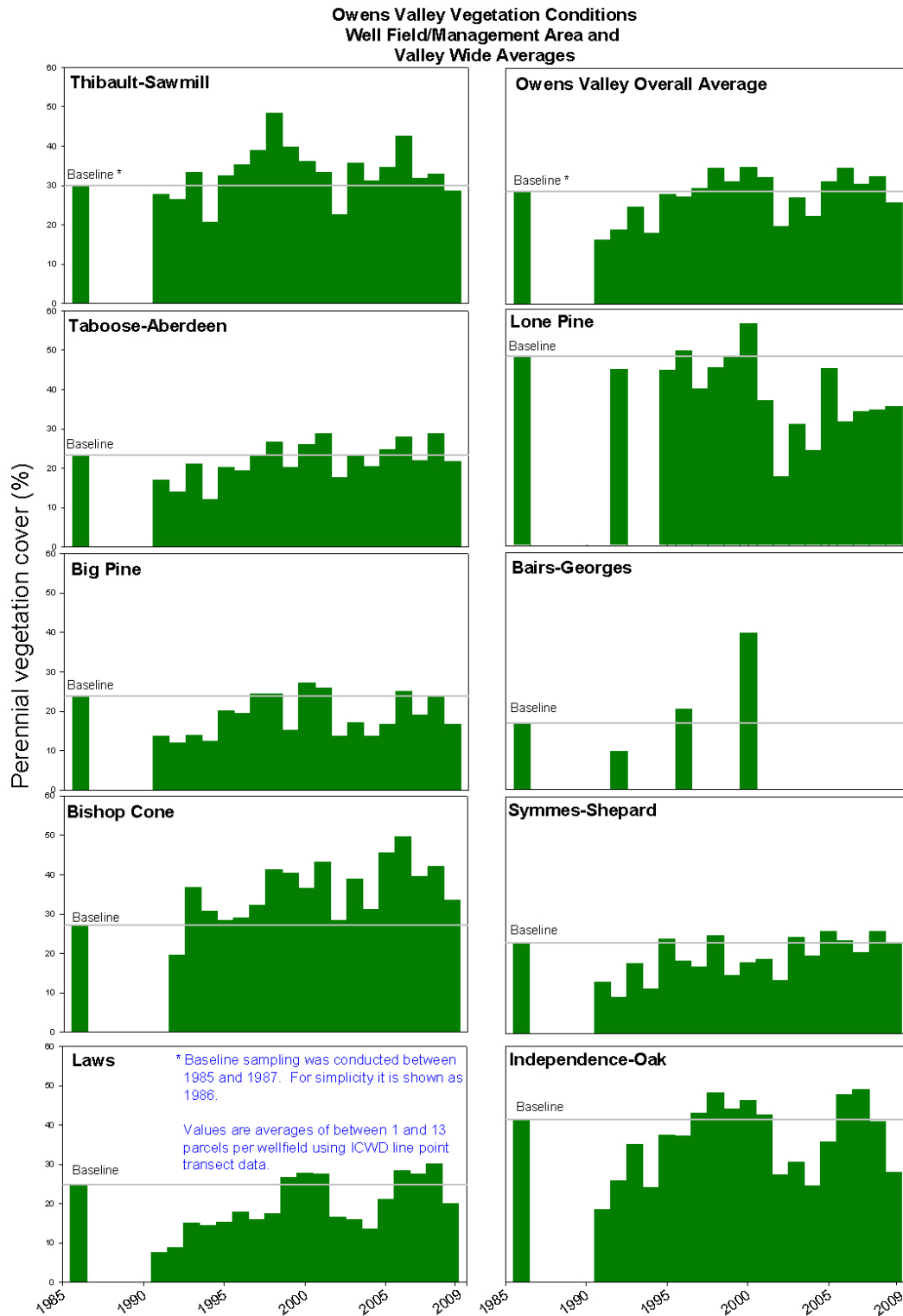


Figure 19 – Owens Valley Vegetation Condition

3.6. Bishop Cone Audit

LADWP's groundwater pumping on the Bishop Cone is governed by the provisions of the Stipulation and Order filed on August 26, 1940, in Inyo County Superior Court in the case of Hillside Water Company, a corporation, et al. vs. The City of Los Angeles, a Municipal Corporation, et al., (Hillside Decree) as well as the Water Agreement. Annual groundwater extractions from the Bishop Cone are limited to an amount not greater than the total amount of water used on Los Angeles-owned lands on the Bishop Cone during that year. Annual groundwater extractions by LADWP on the Bishop Cone are the sum of all groundwater pumped plus the amount of artesian water that has flowed from wells on the Bishop Cone during the year. Water used on City-owned lands on the Bishop Cone, are the quantity of water supplied to such lands, including conveyance losses, less any return flow to the aqueduct system.

The ICWD performs an annual audit of LADWP water uses and groundwater extractions by LADWP on the Bishop Cone. Appendix A is a draft copy of the most recent audit dated September 9, 2009. As shown in Figure 5, LADWP has historically pumped much less than allowed under the terms of the Hillside Decree. In the 2009-10 runoff year LADWP pumped about 11,800 acre-feet, less than half of what it could pump under terms of the Hillside decree.

3.7. Reinhackle Spring Monitoring

As required by the 1991 Owens Valley EIR, Owens Valley groundwater pumping is managed to avoid reductions in spring flows that would cause significant decreases or changes in spring-associated vegetation. Additionally, groundwater pumping from wells that may affect flow from Reinhackle Spring are managed so that flows from the spring are not significantly reduced compared to flows under prevailing natural conditions. Table 16 shows daily flow values for Reinhackle Spring. Over the 2009-10 runoff year, Reinhackle Spring had an average daily flow of about 1.83 cfs.

Analysis of Reinhackle Spring was included in a 2004 cooperative study by LADWP and ICWD on the Owens Valley groundwater geochemistry. During the study, water samples from Reinhackle Spring were chemically analyzed and compared to water samples from the LAA, pumping wells, samples from the deep aquifer, and samples from shallow wells. The study concluded that the water flowing from Reinhackle Spring is similar in composition to aqueduct water and not similar to the deep aquifer samples or up-gradient shallow aquifer wells. An operational pumping test was started in 2005 to evaluate the effect of pumping in the area on spring flow. The test was stopped because the monitoring site linked to test wells, BG2, changed to OFF status. As of April 2010, BG2 is in ON status and the resumption of Reinhackle Spring testing is planned.

Table 16. Reinhackle Spring Flow in cfs During 2009-10 Runoff Year

daymo	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Annual
1	1.64	1.61	1.71	1.79	1.84	1.88	2.07	2.17	2.07	1.84	1.79	1.79	
2	1.65	1.61	1.72	1.82	1.85	1.82	2.07	2.17	2.07	1.84	1.79	1.67	
3	1.65	1.65	1.75	1.82	1.88	1.74	2.07	2.17	2.07	1.84	1.79	1.57	
4	1.65	1.65	1.74	1.84	1.85	1.78	2.07	2.17	2.07	1.84	1.79	1.61	
5	1.65	1.65	1.74	1.82	1.80	1.79	2.07	2.17	2.07	1.84	1.78	1.61	
6	1.67	1.66	1.74	1.84	1.82	1.79	2.07	2.17	2.07	1.83	1.74	1.61	
7	1.65	1.67	1.74	1.84	1.84	1.79	2.07	2.17	2.07	1.84	1.74	1.61	
8	1.65	1.66	1.74	1.86	1.84	1.79	2.07	2.17	1.99	1.80	1.76	1.61	
9	1.66	1.67	1.67	1.86	1.86	1.79	2.07	2.17	1.93	1.79	1.79	1.61	
10	1.70	1.67	1.62	1.86	1.87	1.82	2.07	2.17	1.93	1.79	1.70	1.63	
11	1.70	1.67	1.63	1.84	1.88	1.84	2.07	2.17	1.93	1.79	1.72	1.65	
12	1.70	1.63	1.65	1.84	1.88	1.84	2.09	2.17	1.93	1.79	1.73	1.68	
13	1.69	1.62	1.65	1.84	1.88	1.88	2.12	2.17	1.91	1.79	1.74	1.70	
14	1.65	1.61	1.65	1.85	1.88	1.88	2.13	2.17	1.88	1.79	1.74	1.70	
15	1.65	1.61	1.65	1.86	1.88	1.88	2.12	2.16	1.88	1.79	1.76	1.70	
16	1.63	1.63	1.65	1.85	1.88	1.90	2.12	2.14	1.88	1.79	1.78	1.70	
17	1.61	1.64	1.66	1.86	1.88	1.93	2.12	2.14	1.88	1.79	1.79	1.70	
18	1.61	1.64	1.68	1.88	1.88	1.93	2.12	2.12	1.88	1.79	1.79	1.70	
19	1.61	1.64	1.67	1.88	1.88	1.94	2.12	2.12	1.88	1.79	1.79	1.70	
20	1.61	1.65	1.68	1.88	1.88	1.98	2.12	2.13	1.88	1.79	1.79	1.70	
21	1.61	1.65	1.70	1.82	1.88	1.98	2.12	2.12	1.88	1.80	1.79	1.70	
22	1.61	1.65	1.70	1.75	1.88	1.98	2.12	2.12	1.88	1.79	1.79	1.71	
23	1.61	1.65	1.70	1.76	1.88	1.98	2.12	2.12	1.88	1.79	1.79	1.70	
24	1.61	1.65	1.70	1.78	1.88	2.02	2.13	2.12	1.88	1.79	1.79	1.73	
25	1.61	1.65	1.70	1.78	1.88	2.03	2.13	2.12	1.88	1.79	1.79	1.71	
26	1.61	1.65	1.74	1.79	1.88	2.03	2.17	2.11	1.88	1.79	1.79	1.74	
27	1.61	1.67	1.74	1.79	1.88	2.03	2.17	2.11	1.87	1.79	1.79	1.74	
28	1.61	1.70	1.77	1.79	1.88	2.03	2.17	2.09	1.85	1.79	1.59	1.74	
29	1.61	1.70	1.79	1.79	1.88	2.05	2.17	2.08	1.85	1.79		1.77	
30	1.43	1.70	1.67	1.81	1.88	1.83	2.17	1.86	1.84	1.79		1.79	
31		1.45		1.67	1.92		2.21		2.01	1.91		1.89	
TOTAL AF	97	101	101	112	115	113	130	127	119	111	98	104	1,328
AVG CFS	1.63	1.64	1.70	1.82	1.87	1.90	2.11	2.13	1.93	1.81	1.77	1.69	1.83
Max Daily	1.70	1.70	1.79	1.88	1.92	2.05	2.21	2.17	2.07	1.91	1.79	1.79	2.21
Min Daily	1.43	1.45	1.62	1.67	1.80	1.74	2.07	1.86	1.84	1.79	1.59	1.57	1.43

3.8. Water Spreading in the Owens Valley

The Eastern Sierra snowpack for 2009-10 was about 72% of normal. In years with lower than normal snowmelt, runoff during the spring and summer months does not exceed the capacity of the LAA system and typically water is not spread. There was no operational need to spread water in Laws, Big Pine, or the Independence area wellfields. The IMP did not require water spreading. No water spreading was conducted during the 2009-10 runoff year. No water spreading is anticipated in the 2010-11 runoff year.

3.9. Owens Lake Dust Mitigation

In accordance with the Great Basin Unified Air Pollution Control District's (GBUAPCD) 2003 Owens Valley PM₁₀ Planning Area Demonstration of Attainment State Implementation Plan, LADWP has mitigated dust emissions from approximately 29.8 square miles of the Owens Lakebed. Shallow flooding, managed vegetation, and gravel dust control measures have been used to mitigate dust emissions from the lakebed. By April 2010, LADWP brought an additional 9.2 square miles of shallow flooding and 0.5 square miles of modified shallow flooding (a version of shallow flooding with less construction-related impacts) on line in compliance with a 2006 settlement agreement between LADWP and GBUAPCD bringing the total area mitigated to 39.5 square miles. Release of water from the LAA to the Owens Lake started in November 2001. A total of 7,700 acre-feet of LAA water was used for dust mitigation during 2001-02 runoff year. Releases to the Owens Lake have increased steadily since that time. A total of 66,940 acre-feet of water was released in the 2009-10 runoff year. Figure 20 shows annual water released from the LAA and/or LORP Pumpback Station to the Owens Lake for dust mitigation activities. The water usage for dust mitigation at Owens Lake is expected to increase to approximately 95,000 acre-feet in runoff year 2010-11.

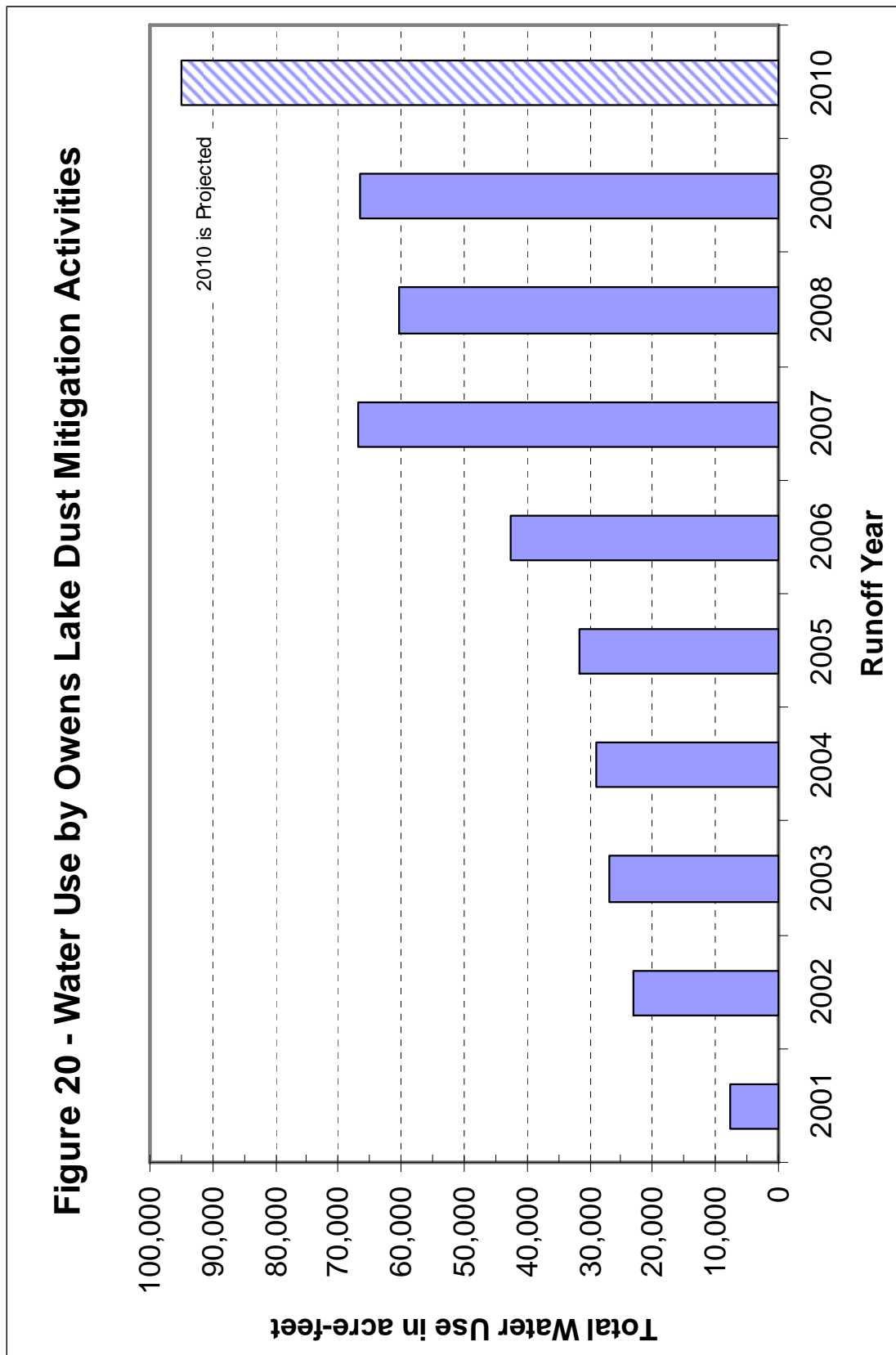


Figure 20. Water Use by Owens Lake Dust Mitigation Activities

4. ENHANCEMENT/MITIGATION PROJECT STATUS

4. ENHANCEMENT/MITIGATION PROJECT STATUS

Table 17 provides the current status of Owens Valley Enhancement/Mitigation Projects.

TABLE 17
E/M Project Status

Project/Item Description	Project Status, Strategies/ Actions/ Plans and overall effectiveness of Mitigation effort and Plan in reaching its goal	1991 Owens Valley EIR Impact No.
Independence Springfield (283 acres)	The Independence Springfield has achieved its goal over approximately 280 acres. Another 40 acres needs to be planted and is planned for initiation in the 2010-2011 runoff year.	10-11
Independence Woodlot (21 acres)	The Woodlot has achieved its goals. California Department of Forestry helps with harvesting and cleanup and the Lone Pine Future Farmers of America irrigates the woodlot and distributes the wood according to the operations plan and management guidelines that were developed by the Technical Group.	10-11
Independence East Side Regreening Project (30 acres)	Discussions have taken place regarding possible modifications to this project. Mitigation plans were submitted to ICWD for this project on August 13, 2004. CEQA was filed for the Independence East Side Regreening Project and Town Water System September 23, 2004 with a public comment period from September 23 to October 29, 2004. Responses to comments were completed. The Board of Water and Power Commissioners approved a Mitigated Negative Declaration for the project in May 2005. Inyo County requested that three modifications to the project be made: 1) The project well to be located approximately 100 yards to the east of the originally proposed location. 2) That sprinkler irrigation be considered in place of flood irrigation. 3) That a portion of the project area include stables and/or corrals. An amendment to the project scoping document that incorporates these changes was approved by Standing Committee on April 23, 2009. Inyo County has agreed to complete any additional CEQA requirements for these changes. LADWP is currently preparing the specification for well drilling services and has included funding for drilling and equipping a well for the project in its 2010-11 and 2011-12 fiscal year budgets.	10-11

Project/Item Description	Project Status, Strategies/ Actions/ Plans and overall effectiveness of Mitigation effort and Plan in reaching its goal	1991 Owens Valley EIR Impact No.
Big Pine Northeast Regreening (30 acres)	Mitigation Plans for the Big Pine Northeast Regreening were transmitted to the County in 2004. Comments were received from the County in 2005. The County identified a portion of the project area for land release and sale. In addition, a portion of the Big Pine Ditch system runs through the project area. This reduced the original project area by less than an acre. A letter was sent to Inyo County in February 2008 asking for concurrence on the acreage change but a response has not been received. An archaeological survey of the site was completed as required by the CEQA process. Cultural resources were identified during the survey. These resources will be avoided during implementation. An amended mitigation plan will need to be submitted for Technical Group approval and CEQA will need to be completed for the project. Issues with the 1988 Scope of Work make the project unfeasible as originally scoped. In order to facilitate implementation of the project LADWP identified the following changes: 1) Change the water supply identified for the project to be the Big Pine town supply system or exempt Well 375 as a project supply well or from a well to be located on site, 2) Change irrigation method from flood irrigation to the option of flood or sprinkler irrigation, 3) Move the project area closer to US Highway 395, and 4) Change the lessee identified for the project to an unspecified lessee. These changes were discussed publicly at the September 9, 2009 Inyo County Water Commission meeting, the November 5, 2009 Inyo/LA Standing Committee meeting, and the April 15, 2010 Technical Group Meeting. ICWD is currently reviewing the proposed changes.	10-11
Shepherd Creek Alfalfa Field (198 acres)	The Shepherd Creek project is 100% complete and has achieved its goals.	10-11
Shepherd Creek Potential (60 acres)	The Shepherd Creek Potential Project was evaluated and natural increases in the density of native cover have occurred that are comparable to baseline conditions in adjacent undisturbed parcels. Therefore, the goals for this potential project, as stated in the EIR, have been met.	10-11
Lower Owens River Rewatering Project (18,000 AFY)	This project was to provide a continuous flow of water in a 62-mile, previously dry (1913-1986) portion of the river channel and maintain five small lakes creating a warm water fishery and wildlife habitat in the southern Owens Valley. Inyo County and LADWP decided to reduce the water supply to the Project in 1991 because of a lack of E/M well supply. The portion of the river between Blackrock Spillgate and Independence was dry until the Lower Owens River Project was implemented in December 2006.	10-14
Independence Pasture Lands and Native Pasture Lands (610 acres)	Currently, approximately 520 acres are incorporated into the project. The EIR noted the acreage for this project as 610 acres. The project was evaluated in 2008 to determine if additional acreage should be irrigated. Figure 12-2 for the project (1991 EIR) was scanned and rubber sheeted onto a quad sheet for acreage calculations in GIS. The Independence pasturelands acreage in this image was actually 522 acres. Therefore, LADWP has implemented the acreage designated in the figure presented in the 1991 EIR.	10-16
Van Norman Fields (171 acres)	This project is complete and the goals for this project are being met. A portion of the project cannot be irrigated because of the area's topography. This area was evaluated jointly by LADWP and Inyo County and a decision was made that this high area could not be modified to increase irrigation efficiency and that the project goals were being fulfilled.	10-16

Project/Item Description	Project Status, Strategies/ Actions/ Plans and overall effectiveness of Mitigation effort and Plan in reaching its goal	1991 Owens Valley EIR Impact No.
Richards Fields (160 acres)	This project is complete and the goals for this project are being met.	10-16
Lone Pine Woodlot (12 acres)	The Woodlot has achieved its goals. California Department of Forestry helps with harvesting and cleanup and the Lone Pine Future Farmers of America irrigates the woodlot and distributes the wood according to the operations plan and management guidelines that were developed by the Technical Group.	10-16
Lone Pine East Side Regreening (11 acres)	This project is complete and the goals for this project are being met.	10-16
Lone Pine West Side Regreening (7 acres)	This project is complete and the goals for this project are being met.	10-16
Laws/Poleta Native Pasture (216 acres)	This project is complete and the goals for this project are being met.	10-18
Laws Historical Museum Pasturelands (21+15 acres)	This project is complete and the goals for this project are being met.	10-18
McNally Ponds and Native Pasturelands (348 acres)	The Standing Committee decided in 1991 to eliminate the water commitment to the McNally Ponds Project because of dry conditions. In most normal and below normal runoff years since that time, the Standing Committee had eliminated water releases to this project. Because of abundant runoff in 2006-2007 the project received its full allotment of water for that year. In 2009-10 the project did not receive water because the Interim Management Plan did not allow the associated supply wells to be pumped.	10-18
Klondike Lake Aquatic Habitat (160 ac)	The Klondike Lake Project is being implemented. The estimated water usage was reduced from 2,200 AF to 1,700 AF with 1,500 AF for conveyance and lake level maintenance, and up to 200 AF for waterfowl habitat south of the lake. A new diversion was installed and implementation of releases for waterfowl habitat south of the lake began in May 2005. Delivery of 200 AF to the south has been more difficult than originally thought. Additional modifications conducted in 2007 included cleaning out accumulated sand in front of the headgate prior to opening the diversion to reduce the amount of sand in the pipe. Crews also removed some vegetation at the pipe outflow area to facilitate flow. Delivery of the 200 AF was still not possible. A total of 80 AF of water was released in 2009. Other options for this project are being considered.	11-1
Millpond Recreation Area (18 acres irrigated, pond, pay portion of power bill).	This project is being implemented.	n/a
Independence Ditch	Complete.	n/a
Independence Roadside Rest Area (0.5 acres)	Complete.	n/a
Eastern California Museum	Complete.	n/a
Manzanar Tree Pruning	Complete.	n/a
Lone Pine North Clean-Up	Complete.	n/a

Project/Item Description	Project Status, Strategies/ Actions/ Plans and overall effectiveness of Mitigation effort and Plan in reaching its goal	1991 Owens Valley EIR Impact No.
Lone Pine Sports Complex	Complete.	n/a
Lone Pine Riparian Park (320 acres)	Complete.	n/a
Tree Planting Along Public Roads	Complete.	n/a

**5. 1991 OWENS VALLEY ENVIRONMENTAL IMPACT REPORT
(1991 Owens Valley EIR) MITIGATION MEASURE STATUS**

5. 1991 OWENS VALLEY ENVIRONMENTAL IMPACT REPORT
(1991 Owens Valley EIR) MITIGATION MEASURE STATUS

Table 18 provides status of mitigations required by the 1991 EIR.

TABLE 18
1991 Owens Valley EIR Mitigation Measures

9 - WATER RESOURCES

Steward Ranch

1991 Owens Valley EIR Impact No. 9-14

Impacts: LADWP pumping between 1970 and 1990 in the Big Pine area contributed to lowered water levels in the wells of Steward Ranch and resulted in an adverse economic effect. It is expected that LADWP will continue to pump from this area in the future. The proposed mitigation measure would reduce this impact to less-than significant.

Project Description/
Mitigation Measure: Because groundwater pumping in the Big Pine well field was contributing to a lowering of groundwater levels at Steward Ranch, one of two wells became inoperable. LADWP reached agreement with the ranch owners to permanently mitigate the lowered groundwater levels that have existed since 1972:

Mitigation Goals/
Strategies/Actions: To compensate the ranch owners for lowered groundwater levels on the ranch.

Project Status/
Effectiveness: The mitigation efforts are complete. LADWP continues to compensate the ranch owners for added power costs of pumping water from a greater depth.

Mitigation Plan
Required/Status: No.

10 - VEGETATION

Salt Cedar Eradication Control Program

1991 Owens Valley EIR Impact No. 10-6

Impacts: Between 1970 and 1990, LADWP continued to spread surplus water in wet years in the spreading areas created by the dikes east of Independence between the aqueduct and the river. This activity increased soil moisture and water tables, but also fostered conditions favorable to the spread of salt cedar, which was established prior to 1970.

Project Description/
Mitigation Measure: A salt-cedar eradication and control program has been implemented as described in Chapter 5 of the 1991 Owens Valley EIR.

Mitigation Goals/
Strategies/Actions: To control salt cedar in the Owens Valley.

Project Status/
Effectiveness: The control efforts are continuing with payments from LADWP to ICWD and with outside funding. Control of Owens River salt cedar populations from Tinemaha Reservoir into the Delta has occurred along the main channel of the Owens River. Control efforts are continuing.

Mitigation Plan
Required/Status: No.

**Independence Springfield (297 acres), Independence Woodlot (20 acres),
Revegetation project East of Independence (part of Independence Springfield, 40 acres)**

1991 Owens Valley EIR Impact No. 10-11

Impacts: Fluctuations in water tables due to groundwater pumping have caused approximately 655 acres of groundwater dependent vegetation to die-off. Loss of vegetation cover has occurred on these lands.

Project Description/
Mitigation Measure: As part of the Independence Springfield and Woodlot enhancement/mitigation projects, approximately 317 acres of barren or near-barren ground have been revegetated with either native pasture or alfalfa. This area was affected by groundwater pumping and surface diversions of water.

Mitigation Goals/
Strategies/Actions: Woodlot - To supply fuel wood to needy individuals and to mitigate blowing dust. Independence Springfield - To establish native perennial vegetation where none existed, reduce blowing dust and enhance grazing.

Project Status/
Effectiveness: Independence Woodlot has achieved its goals. California Department of Forestry helps with harvesting and cleanup and the Lone Pine Future Farmers of America irrigates the woodlot and

distributes the wood according to the operations plan and the management guidelines that were developed by the Technical Group. Independence Springfield has achieved its goal over approximately 280 acres. Additional acres need to be planted and is planned for initiation in 2010-2011 runoff year.

Mitigation Plan
Required/Status: No.

Independence East Side Regreening Project (30 acres),
Big Pine Northeast Regreening (30 acres)

1991 Owens Valley EIR Impact No. 10-11

Impacts: Continued from above.

Project Description/
Mitigation Measure: In the near future, two enhancement/mitigation projects will be initiated to mitigate areas affected by groundwater pumping adjacent to the towns of Independence (east side regreening project) and Big Pine (northeast regreening project). Each project was originally planned to be approximately 30 acres of irrigated pasture.

Mitigation Goals
Strategies/Actions: To enhance the aesthetics of the areas that lie adjacent to Independence and Big Pine.

Project Status/
Effectiveness: Mitigation plans were submitted to ICWD for these projects on August 13, 2004:
Independence East Side Regreening Project and Town Water System - CEQA was filed on September 23, 2004 with a public comment period from September 23 to October 29, 2004. Responses to comments are complete. The Board of Water and Power Commissioners approved the Mitigated Negative Declaration in May 2005. Inyo County requested that three items in the project be modified: 1) The project well to be located approximately 100 yards to the east of the location designated in the Mitigated Negative Declaration. 2) That the method of irrigation be changed from flood irrigation to sprinkler irrigation. 3) That a portion of the total acreage be considered for corrals and stables. An amendment to the project scoping document that incorporates these changes was approved by the Standing Committee on April 23, 2009. LADWP is currently preparing the specification for well drilling services and has included funding for

drilling and equipping a well for the project in its 2010-11 and 2011-12 fiscal year budgets.

Big Pine Regreening – Mitigation Plans were transmitted to the County in 2004. Comments were received from the County in 2005. The County identified a portion of the project area for land release and sale. In addition, a portion of the Big Pine Ditch system runs through the project area. This reduced the original project area by less than an acre. A letter was sent to Inyo County in February 2008 asking for concurrence on the acreage change but a response has not been received. An archaeological survey of the site was completed as required by the CEQA process. Cultural resources were identified during the survey. These resources will be avoided during implementation. LADWP also identified issues making the project unfeasible as originally scoped. In order to facilitate implementation of the project LADWP recommended the following changes: 1) Change the water source for the project to be the Big Pine town supply system or exempt Well 375 as a project supply well or from a well to be drilled on site, 2) Change irrigation method from flood irrigation to the option of flood or sprinkler irrigation, 3) Move the project area closer to U.S. Highway 395, 4) Change the lessee identified for the project to an unspecified lessee. These changes were discussed publicly at the September 9, 2009 Inyo County Water Commission meeting and the November 5, 2009 Inyo/LA Standing Committee meeting. The ICWD is currently reviewing the proposed changes.

Mitigation Plan
Required/Status: In progress.

Shepherd Creek Alfalfa Field (198 acres), Shepherds Creek Potential (60 acres).

1991 Owens Valley EIR Impact No. 10-11

Impacts: Continued from above.

Project Description/
Mitigation Measure:

Under the Shepherd Creek enhancement/mitigation project, approximately 198 acres of poorly vegetated land has been converted to alfalfa. This area was affected by groundwater pumping and abandonment of irrigation. In addition, an area of approximately 60 acres to the east of the existing project area on the opposite side of U.S. Highway 395 is poorly vegetated. If the density of the native cover in this area does not naturally increase, the existing enhancement/mitigation project may be expanded to include this additional area.

Mitigation Goals
Strategies/Actions:

Shepherd Creek Project - To revegetate abandoned farm land with alfalfa to mitigate blowing dust.
Shepherd Creek Potential Project - To naturally increase the density of native cover or expand the existing project into this area.

Project Status/
Effectiveness:

The Shepherd Creek Project is 100% complete and has achieved its goals.
The Shepherd Creek Potential Project was evaluated and natural increases in the density of native cover have occurred making the site comparable to baseline conditions in adjacent undisturbed parcels. Therefore, the goals for this potential project, as stated in the EIR, have been met.

Mitigation Plan
Required/Status:

No.

Taboose/Hines Springs/Blackrock Areas Revegetation Project (80 acres)
(The 80 acres is comprised of Tinemaha 54, Hines Spring S and Blackrock 16E)

1991 Owens Valley EIR Impact No. 10-11

Impacts: Continued from above.

Project Description/
Mitigation Measure:

Approximately 80 acres of land that lost a significant amount of its native vegetation cover as a result of increased groundwater pumping will be revegetated. The techniques that will be employed to revegetate these lands will be determined through studies that will be conducted by LADWP and Inyo County. These lands will not be permanently irrigated, but will be revegetated with native Owens Valley vegetation not requiring irrigation except perhaps during its initial establishment. Depending on the amount of rainfall and runoff, successful revegetation of these lands could take a decade or longer. The goal will be to restore as full a native vegetation cover as is feasible, but at a minimum, vegetation cover sufficient to avoid blowing dust will be achieved in that area.

Mitigation Goals/
Strategies/Actions:

Tinemaha 54 - To restore vegetation to the conditions that existed prior to the impact. Hines Spring S - Dependent on the Hines Spring mitigation project presented below.
Blackrock 16E - To rehabilitate the site to alkali meadow conditions.

Project Status/
Effectiveness:

Tinemaha 54 - The 0.3-acre area has been fenced, planted with 108 grass plants and drip irrigated between 1999 and 2004 to get the plants established. Hines Spring S will not be implemented until Hines Spring mitigation is implemented. Blackrock 16E - The area has been fenced and weeds have been treated by controlled burn. Cover of native species has increased from 5% in 1999 to 12% in 2002. Weed cover decreased from 9% in 1999 to less than 1% in 2002. Permanent transects were run in 2005 and perennial cover had decreased since 2002 and weed cover had increased. A seed farm was established and will aid in the implementation of all revegetation projects in the Owens Valley. In addition, a green house was purchased and LADWP has began growing plants for the seed farm and revegetation sites.

Mitigation Plan
Required/Status: Yes – complete.

Five Bridges Area Revegetation Project (300 acres)

1991 Owens Valley EIR Impact No. 10-12

Impacts: Vegetation in an area of approximately 300 acres near Five Bridges Road north of Bishop was significantly adversely affected during 1988 because of the operation of the two wells, to supply water to enhancement/mitigation projects.

Project Description/
Mitigation Measure: Water has been spread over the affected area since 1988. By the summer of 1990, revegetation of native species had begun on approximately 80% of the affected area. LADWP and Inyo County are developing a plan to revegetate the entire affected area with riparian and meadow vegetation. This plan will be implemented when it has been completed.

Mitigation Goals
Strategies/Actions: To restore the vegetation community complex with similar species composition and cover that exists at local similar sites. The goal will be attained when alkali meadows attain live cover of 60% composed of four perennial species and riparian areas attain live cover of 90% composed of four perennial species.

Project Status/
Effectiveness: Riparian areas have been fenced, water releases are conducted three times during the growing season, several controlled burns have been conducted, and the area is treated annually for weed problems. Monitoring was conducted throughout the growing season. In 2009, water releases were conducted three times during the growing season. At transect L4 in 2009 perennial cover was 47% composed of five native species. Perennial cover at transect L5 in 2009 was 43% and composed of seven native species. A grazing management plan has been developed for the area.

Mitigation Plan
Required/Status: Yes – complete.

Symmes-Shepherd Well field Area Revegetation Project (60 acres)

(The area is comprised of Independence 105, Independence 131 and Independence 123)

1991 Owens Valley EIR Impact No. 10-13

Impacts: Increased groundwater pumping has significantly adversely affected approximately 60 acres of vegetation in the Symmes-Shepherd well field area.

Project Description/
Mitigation Measure:

A revegetation program will be implemented for these affected areas utilizing native vegetation of the type that has died. Water may be spread as necessary in these areas to accomplish the revegetation.

Mitigation Goals
Strategies/Actions:

To revegetate the parcels with species mapped in the surrounding areas.

Project Status/
Effectiveness:

While 60 acres was identified in the EIR, 115 acres were fenced for these three projects.

IND105 (14 acres) - The area has been fenced and native vegetation cover has increased naturally. Transects were run by ICWD in 2006 and native perennial cover had increased to 25%. The site has attained the cover and composition goals delineated in the revegetation plan.

IND131 (73 acres) - The area has been fenced. Revegetation trials have been completed by two consulting firms. In areas not disturbed by the revegetation trials, vegetation cover is starting to increase naturally. Transects were run in 2006. Perennial cover was 8% composed of eight native perennial species. The goal for the site is to attain 17% perennial cover composed of four native perennial species.

IND123 (28 acres) - The area has been fenced and native perennial vegetation cover has increased naturally. Transects were run in 2006. The site has attained the goals delineated in the revegetation plan of 17% perennial cover composed of four native perennial species.

A seed farm has been initiated for seed harvest. The seed farm will aid in the implementation of all revegetation projects in the Owens Valley. In addition, a green house was purchased and LADWP has begun growing plants for the seed farm and revegetation sites.

Mitigation Plan
Required/Status:

Yes – complete.

Fish Springs Hatchery, Blackrock Spring Hatchery

1991 Owens Valley EIR Impact No. 10-14

Impacts: Increased groundwater pumping has reduced or eliminated flows from Fish Springs, Big and Little Seely Springs, Hines Spring, Big and Little Blackrock Springs, and Reinhackle Spring. This has caused significant adverse impacts to vegetation at several of these spring areas.

Project Description/
Mitigation Measure: No on-site mitigation will be implemented at Fish Springs and Big Blackrock Springs; however, the CDFG fish hatcheries at these locations serve as mitigation of a compensatory nature by producing fish that are stocked throughout Inyo County. The Lower Owens River Project provides compensatory mitigation.

Mitigation Goals/
Strategies/Actions: To allow CDFG to continue fish hatchery operations at Big Blackrock and Fish Springs.

Project Status/
Effectiveness: Hatchery operations are continuing. The Lower Owens River Project has been implemented.

Mitigation Plan
Required/Status: No.

Big and Little Seely Springs (1 acre pond adjacent to well W349)

1991 Owens Valley EIR Impact No. 10-14

Impacts: See description above.

Project Description/
Mitigation Measure: In the area of Big and Little Seely Springs, LADWP Well 349 discharges water into a pond approximately one acre in size. This pond provides a temporary resting place for waterfowl and shorebirds when the pump is operating or Big Seely Spring is flowing. This water passes through the pond to the Owens River. Riparian vegetation has become established around this pond.

Mitigation Goals/
Strategies/Actions: To manage groundwater pumping in accordance with the goals of the Water Agreement, replace the previous water resource with surface water and/or groundwater, and allow the affected area to naturally revegetate.

Project Status/
Effectiveness: Project implementation is complete and the project functions as described.

Mitigation Plan
Required/Status: No.

Hines Spring (1 to 2 acres)

1991 Owens Valley EIR Impact No. 10-14

Impacts: See description above.

Project Description/
Mitigation Measure: The Hines Spring vent and its surroundings will receive on-site mitigation. Water will be supplied to the area from an existing, but unused, LADWP well at the site. As a result, approximately one to two acres will either have ponded water or riparian vegetation. Hines Spring will serve as a research project on how to re-establish a damaged aquatic habitat and surrounding marshland. Riparian trees and a selection of riparian herbaceous species will be planted on the banks. The area will be fenced.

Mitigation Goals/
Strategies/Actions: To provide water from an existing, but unused, LADWP well to create 1-2 acres of ponded water or riparian vegetation at Hines Springs

Project Status/
Effectiveness: This project was also identified in the 1997 MOU and the subject of a 2004 and 2010 Stipulation and Order. Consultants developed draft plans for this project. The Parties to the MOU decided to enter into an ad hoc process to analyze the project at Hines Springs and other potential project areas. Plans have been completed and agreed to by the Parties. CEQA has been initiated.. When the CEQA process is complete, the documents will be presented to the Board of Water and Power Commissioners for approval. If approved, implementation of the projects will follow.

Mitigation Plan
Required/Status: Yes – in progress.

Reinhackle Spring, Little Blackrock Springs

1991 Owens Valley EIR Impact No. 10-14

Impacts: See description above.

Project Description/
Mitigation Measure:

LADWP will continue to supply water from Division Creek to the site of the former pond at Little Blackrock Springs. The marsh vegetation at this site will thus be maintained. When it was determined in the late 1980s that groundwater pumping was affecting the flow from Reinhackle Spring, pumping from certain wells in the area was discontinued and the spring flow increased. No significant adverse impacts on vegetation in this area have resulted from the reduced flow. At Reinhackle Spring, groundwater pumping from wells that affect the spring flow will be managed so that flows from the spring will not be significantly reduced compared to flows under prevailing natural conditions. In addition, all of the provisions for protecting springs, described in impact 10-15 (see below) and contained in the Water Agreement and the Green Book, will be applied equally to Reinhackle Spring.

Mitigation Goals/
Strategies/Actions:

Little Blackrock Spring - To maintain marsh vegetation through the use of the Division Creek Diversion. Reinhackle Spring - Groundwater pumping will be managed so that flows from the spring will not be significantly reduced compared to flows under prevailing natural conditions.

Project Status/
Effectiveness:

Little Blackrock Spring - This project is complete and the project functions as described.
Reinhackle Spring - Spring flows are being monitored. A geochemistry study that included Reinhackle Spring was initiated in February 2003 and completed in December 2004. The study was conducted cooperatively by LADWP, MWH and ICWD. This study concluded that the water flowing from Reinhackle Spring is similar in origin to the aqueduct and dissimilar to the deep aquifer samples and up gradient shallow aquifer wells. The final phase of spring flow response to pumping test is planned to be conducted in the 2010-11 runoff year.

Mitigation Plan
Required/Status: No.

LORP Project (60 miles, perhaps more than 1,000 acres)

1991 Owens Valley EIR Impact No. 10-14

Impacts: See description above.

Project Description/
Mitigation Measure:

Although not all springs and associated riparian and meadow vegetation will receive on-site mitigation, the Lower Owens River Project will provide mitigation of a compensatory nature. This project will rewater 60+ miles of the river channel allowing for restoration of riparian vegetation along the river. This project also will result in the creation of several new ponds along the river and will provide the continuation of existing lakes associated with the project. The project will restore large areas of wetland and meadow vegetation, perhaps exceeding 1,000 acres adjacent to the river and its delta. In comparison, the area of riparian and meadow vegetation that has been lost and will not be restored because of the elimination of spring flow due to groundwater pumping is estimated to be less than 100 acres.

Mitigation Goals/
Strategies/Actions:

To rewater the Lower Owens River below the Los Angeles Aqueduct intake and the enhancement of several environmental features along or near the river including the Delta, the Blackrock Waterfowl area and Off-River Lakes and Ponds. The goal of the LORP is the establishment of a healthy, functioning ecosystem for the benefit of biodiversity and Threatened and Endangered Species, while providing for the continuation of sustainable uses including recreation, livestock grazing, agriculture and other activities.

Project Status/
Effectiveness:

Flows were initiated in the Lower Owens River Project in December 2006. Phase 1 flows were met and exceeded. Project baseflows were achieved in February 2007. The specified seasonal habitat flow was initiated on May 23, 2009 and completed on schedule. Specified flows were released to the Delta in 2009. The Blackrock Waterfowl Area achieved the 2009 specified acreage through water releases. Off-River Lakes and Ponds have been managed as specified for 2009. Training, monitoring, and reporting are being conducted as specified in the various permits.

Mitigation Plan
Required/Status:

Yes – complete.

Lower Owens River Rewatering Project (18,000 ACFT/YR)

1991 Owens Valley EIR Impact No. 10-14

Impacts: See description above.

Project Description/
Mitigation Measure:

This project provides up to 18,000 acre-feet (AF) per year of continuous flow of water in a 50-mile, previously dry (1913-1986) portion of the river channel creating a warm water fishery and wildlife habitat in the southern Owens Valley. The project also supplies water to five small lakes along the river route providing improved waterfowl habitat in the region.

Mitigation Goals
Strategies/Actions:

The goal of the E/M project was to create a warm watery fishery and wildlife habitat in the southern Owens Valley. In addition, five small lakes were provided water for waterfowl habitat.

Project Status/
Effectiveness:

This project has been overlaid by the LORP Project described above.

Mitigation Plan
Required/Status:

No.

Springs Vegetation (general)

1991 Owens Valley EIR Impact No. 10-14

Impacts: See description above.

Project Description/
Mitigation Measure:

In addition, vegetation dependent on a supply of water from a spring (primarily management type D) will be maintained in order to avoid a significant change or decrease as provided in the Water Agreement and the Green Book.

Mitigation Goals
Strategies/Actions:

Per description.

Project Status/
Effectiveness:

On-going.

Mitigation Plan
Required/Status:

No.

Springs and Seeps

1991 Owens Valley EIR Impact No. 10-15

Impacts: Under the provisions of the Water Agreement and the Green Book, spring flows and vegetation dependent upon such flows will be carefully monitored by the Technical Group.

Project Description/
Mitigation Measure: The Green Book contains procedures for determining the effects of groundwater pumping and surface water management practices on spring flow. Groundwater pumping from existing and new wells will be managed to avoid reductions in spring flows that would cause significant decreases or changes in spring associated vegetation. If despite such management, significant decreases in spring flows occur that could cause significant decreases or changes in vegetation dependent upon such flows, management of groundwater pumping from wells affecting flow from the spring will be modified so that adequate spring flow resumes to supply the vegetation. Also, the Technical Group would determine an appropriate course of action that might include: (a) temporarily supplying surface water or groundwater of a quality that would restore and sustain the vegetation until adequate spring flow resumes; and/or (b) revegetating the affected area if necessary.

Mitigation Goals/
Strategies/Actions: Per description.

Project Status/
Effectiveness: On-going.

Mitigation Plan
Required/Status: No.

Independence Pasture Lands and Native Pasture Lands (610 acres), Van Norman Fields (171 acres), Richards Fields (160 acres), Lone Pine Woodlot (12 acres)

1991 Owens Valley EIR Impact No. 10-16

Impacts: Approximately 1,080 acres of formerly irrigated lands had not successfully revegetated following the abandonment of agriculture. This was a significant adverse impact because these lands had a loss of vegetation and were the source of blowing dust.

Project Description/
Mitigation Measure:

As part of the enhancement/mitigation projects implemented by LADWP and Inyo County since 1985, approximately 942 acres of these abandoned agricultural lands have been revegetated with irrigated pasture or alfalfa. These areas are the Independence Pasture Lands and native pasture lands, the Van Norman and Richards Fields, and the Lone Pine Woodlot adjacent to Lone Pine.

Mitigation Goals/
Strategies/Actions:

Independence Pasturelands/Native Pastures - To revegetate abandoned cropland that was removed from irrigation. Van Norman Field and Richards Field - To revegetate abandoned agricultural lands and native vegetation stands that were revegetating slowly. Lone Pine Woodlot - To supply fuel wood to needy individuals and to mitigate blowing dust.

Project Status/
Effectiveness:

Currently, at the Independence Pasturelands/Native Pastures approximately 520 acres are incorporated into the project. The EIR noted the acreage for this project as 610 acres. The figure(12-2) for the project in the 1991 EIR was scanned and rubber sheeted onto a quad sheet for acreage calculations in GIS. The Independence pasturelands acreage in this image was 522 acres. Therefore, LADWP has implemented the acreage designated in the figure presented in the 1991 EIR. The other projects noted above are complete and the goals for the projects have been met. At the Lone Pine Woodlot, the California Department of Forestry helps with harvesting and cleanup and the Lone Pine Future Farmers of America irrigate the woodlot and distributes the wood in accordance with the operation plans and management guidelines that were developed by the Technical Group. At the Van Norman Field, a portion of the project cannot be irrigated because of topography. This area was evaluated jointly by LADWP and Inyo County and a decision was made that this high area could not be modified to increase irrigation efficiency but that the project was fulfilling its stated goals.

Mitigation Plan
Required/Status:

No.

Lone Pine East Side Regreening (11 acres),
Lone Pine West Side Regreening (7 acres)

1991 Owens Valley EIR Impact No. 10-16

Impacts: Continued from above.

Project Description/

Mitigation Measure: A field of approximately seven acres along the Whitney Portal Road in Lone Pine, and a field of approximately 11 acres located north of Lone Pine and east of U.S. Highway 395, have been converted to irrigated pasture as part of the Lone Pine Regreening enhancement/mitigation projects. A field of approximately seven acres along the Whitney Portal Road in Lone Pine, and a field of approximately 11 acres located north of Lone Pine and east of U.S. Highway 395, have been converted to irrigated pasture as part of the Lone Pine Regreening enhancement/mitigation projects.

Mitigation Goals/

Strategies/Actions: To enhance the aesthetics and to regreen abandoned agricultural lands in the Lone Pine area.

Project Status/

Effectiveness: Project implementation is complete and the goals for these projects have been met.

Mitigation Plan

Required/Status: No.

Bishop Area Revegetation Project (120 acres)

1991 Owens Valley EIR Impact No. 10-16

Impacts: Continued from above.

Project Description/

Mitigation Measure: In addition, 120 acres of formerly irrigated land near Bishop with a loss of vegetation cover will be revegetated. The process to successfully revegetate these lands will be determined through studies to be conducted by LADWP and Inyo County. These lands will not be permanently irrigated, but will be revegetated with Owens Valley vegetation not requiring irrigation except perhaps during its initial establishment.

Mitigation Goals/

Strategies/Actions: To revegetate the parcel with species found in the surrounding area. The goal will be to achieve as full a vegetation cover as is feasible, but at a minimum, a vegetation cover sufficient to avoid blowing dust.

Project Status/
Effectiveness: The area has been fenced and a consulting firm has conducted revegetation studies on the site. Monitoring of the site was completed in 2003. A seed farm has been initiated for seed harvest. The seed farm will aid in the implementation of all revegetation projects in the Owens Valley. In addition, a green house was purchased and LADWP has begun growing plants for the seed farm and revegetation. Depending on the amount of rainfall and runoff, successful revegetation of these lands could take a decade or longer.

Mitigation Plan
Required/Status: Yes – complete.

Irrigated Lands in the Owens Valley Since 1981-82

1991 Owens Valley EIR Impact No. 10-16

Impacts: Continued from above.

Project Description/
Mitigation Measure: Irrigated lands in Owens Valley (including the Olancho-Cartago area) in existence during the 1981-82 runoff year or that have been irrigated in the future, except perhaps in very dry years. (Reductions in very dry years must be agreed upon in advance by LADWP and the Inyo County Board of Supervisors).

Mitigation Goals/
Strategies/Actions: To maintain existing irrigated lands.

Project Status/
Effectiveness: Irrigation is ongoing.

Mitigation Plan
Required/Status: No.

**Meadow/Riparian Vegetation Dependent on Agricultural Tailwater,
LORP Project (60 miles of river, perhaps more than 1,000 acres)**

1991 Owens Valley EIR Impact No. 10-17

Impacts: Meadow and riparian vegetation that were supplied by tailwater from formerly irrigated lands has been impacted.

Project Description/
Mitigation Measure: The loss of meadow or riparian vegetation that was dependent on tailwater from formerly irrigated fields will be mitigated in the form of compensation by the restoration of meadow and riparian vegetation by the Lower Owens River Project.

Mitigation Goals/
Strategies/Actions: See LORP (Impact 10-14).

Project Status/
Effectiveness: See LORP (Impact 10-14).

Mitigation Plan
Required/Status: No.

Laws Area Revegetation Project (140 acres)

1991 Owens Valley EIR Impact No. 10-18

Impacts: Significant adverse vegetation decrease and change have occurred in the Laws area due to a combination of factors, including abandoned agriculture, groundwater pumping, water spreading in wet years, livestock grazing, and drought.

Project Description/
Mitigation Measure: Approximately 140 acres will be revegetated within the Laws area, which has lost all or part of its vegetation cover due to increased groundwater pumping or to abandonment of irrigation operations to supply the second aqueduct.

Mitigation Goals/
Strategies/Actions: To revegetate the site with native species found in the surrounding area.

Project Status/
Effectiveness:

The area has been fenced and two consulting firms have conducted revegetation studies on the site. Final monitoring was conducted in 2004. The results of these studies were utilized to move forward with larger scale revegetation efforts at this site. The drip irrigation system installed during one of the studies was expanded and seed was planted at all emitters. In 2005, the drip irrigation system located in areas with well established plants was moved to the interspaces between rows. Permanent transects were run in 2006. In 2009, the irrigation system was run from April to October as in previous years. Maintenance was performed as needed on the irrigation system. A seed farm has been initiated for seed harvest. The seed farm will aid in the implementation of all revegetation projects in the Owens Valley. In addition, a green house was purchased and LADWP has begun growing out plants for the seed farm and revegetation

Mitigation Plan
Required/Status: Yes – complete.

Laws/Poleta Native Pasture (216 acres),
Laws Historical Museum Pasturelands (21+15 acres),
and McNally Ponds and Native Pasturelands (348 acres)

1991 Owens Valley EIR Impact No. 10-18

Impacts: See description above.

Project Description/
Mitigation Measure:

In the mid-1980s, LADWP and Inyo County implemented the Laws-Poleta Pasture Land, Laws Museum, and McNally Ponds enhancement/mitigation projects in the Laws area totaling approximately 541 acres of pasture land.

Mitigation Goals/
Strategies/Actions:

Laws/Poleta Pasturelands - To revegetate the project site with native pasture. Laws Museum - To improve native vegetated areas adjacent to the Museum and to provide windbreak trees. McNally Ponds and Native Pasturelands - To provide a seasonal water supply to ephemeral ponds, create waterfowl habitat, enhance vegetation, and increase grazing capabilities.

Project Status/
Effectiveness:

Fully implemented. Laws Historical Museum Pasture. The project is complete and the goals for the project are being met. The

Standing Committee decided in 1991 to eliminate the water commitment to the McNally Ponds Project because of dry conditions. In most normal and below-normal runoff years since that time, the Standing Committee has eliminated water releases to this project. In 2009-2010 the project did not receive water because the Interim Management Plan did not allow the associated wells to be pumped.

Mitigation Plan
Required/Status: No.

Farmers Pond

1991 Owens Valley EIR Impact No. 10-18

Impacts: See description above.

Project Description/
Mitigation Measure: In the 1970s, LADWP started the Farmer's Pond environmental project.

Mitigation Goals/
Strategies/Actions: To provide water to fill the ponds each fall for use by wildlife.

Project Status/
Effectiveness: Being implemented.

Mitigation Plan
Required/Status: No.

Groundwater Monitoring/Pumping Reductions in the Laws Area

1991 Owens Valley EIR Impact No. 10-18

Impacts: See description above.

Project Description/
Mitigation Measure: The area where it is suspected that groundwater pumping during the recent drought has caused decreases or changes in vegetation is being monitored by LADWP and Inyo County. Groundwater pumping has been reduced in the area. Should it be determined that any significant decreases or changes have occurred, the area will be mitigated under the Water Agreement.

Mitigation Goals/
Strategies/Actions: No project at this time.

Project Status/
Effectiveness: Being implemented.

Mitigation Plan
Required Status: No.

Laws 640-Acre Potential

1991 Owens Valley EIR Impact No. 10-18

Impacts: Approximately 640 acres in the Laws area have a very low density of vegetation cover. The primary cause of the loss or reduction of vegetation is not a result of the project.

Project Description/
Mitigation Measure: These lands will be considered by the Standing Committee for selective mitigation, which would be compatible with water spreading and groundwater recharge activities during wet years.

Mitigation Goals/
Strategies/Actions: To increase vegetation density.

Project Status/
Effectiveness: A determination has not been made by the Standing Committee for selective mitigation.

Mitigation Plan
Required/Status: Yes, if implemented.

Big Pine Area Revegetation Project (160 acres)

1991 Owens Valley EIR Impact No. 10-19

Impacts: Water management practices in a portion of the Big Pine Well Field have resulted in significant adverse change and decrease of plant cover.

Project Description/
Mitigation Measure: A revegetation program will be implemented for approximately 160 acres within the Big Pine area, which have lost all or part of its vegetation cover due to increased groundwater pumping or to abandonment of irrigation as part of operations to supply the second aqueduct, will be revegetated.

Mitigation Goals/
Strategies/Actions: To revegetate the area with species found in the surrounding area.

Project Status/
Effectiveness: The site has been fenced. Permanent transects were run in 2006. A seed farm has been initiated for seed harvest. The seed farm will aid in the implementation of all revegetation projects in the Owens Valley. In addition, a greenhouse was purchased and LADWP has begun growing plants for the seed farm and revegetation.

Mitigation Plan
Required/Status: Yes – complete.

Big Pine Northeast Regreening (30 acres)

1991 Owens Valley EIR Impact No. 10-19

Impacts: See description above.

Project Description/
Mitigation Measure: LADWP and Inyo County will implement the Big Pine Regreening enhancement/mitigation project by establishing irrigated pasture on approximately 30 acres to the north and east of Big Pine.

Mitigation Goals/
Strategies/Actions: Northeast Big Pine Regreening - See Impact 10-11.

Project Status/
Effectiveness: Mitigation plans were transmitted to the County in 2004. Comments were received from the County in 2005. The County identified a portion of the project area for land release and sale. In addition, a portion of the Big Pine Ditch system runs through the project area. This reduced the original project area by less than an acre. A letter was sent to Inyo County in February 2008 asking for concurrence on the acreage change but a response has not been received. An archaeological survey of the site was completed as required by the CEQA process. Cultural resources were identified during the survey. These resources will be avoided during implementation. LADWP also identified issues making the project unfeasible as originally scoped. In order to facilitate implementation of the project LADWP recommended the following changes: 1) Change the water source for the project to be the Big Pine town supply system or exempt Well 375 as a project supply well or from a well to be drilled on site,

2) Change irrigation method from flood irrigation to the option of flood or sprinkler irrigation, 3) Move the project area closer to U.S. Highway 395, 4) Change the lessee identified for the project to an unspecified lessee. These changes were discussed publicly at the September 9, 2009 Inyo County Water Commission meeting and the November 5, 2009 Inyo/LA Standing Committee meeting. The ICWD is currently reviewing the proposed changes.

Mitigation Plan
Required/Status: Yes – in progress.

Big Pine Area Revegetation Project (20 acres)

1991 Owens Valley EIR Impact No. 10-19

Impacts: See description above.

Project Description/
Mitigation Measure: An area of approximately 20 acres directly to the east of Big Pine that is poorly vegetated as a result of pre-project activities and activities which are not a part of the project will be evaluated as a potential enhancement/mitigation project. If, in planning this project, it is determined that it is not feasible to permanently irrigate this area, a revegetation program will be implemented.

Mitigation Goals/
Strategies/Actions: To establish a cultivated crop. If irrigation is not feasible, the goal will be to revegetate the site with species found in the surrounding area.

Project Status/
Effectiveness: The site was fenced in 2007 to eliminate disturbances and encourage natural revegetation. If this area does not revegetate naturally, it will be included with LADWP's ongoing revegetation efforts.

Mitigation Plan
Required/Status: Yes, if implemented.

Big Pine Ditch or Alternate Project

1991 Owens Valley EIR Impact No. 10-19

Impacts: See description above.

Project Description/
Mitigation Measure:

The Big Pine Ditch project is planned to be implemented as provided in the Water Agreement. This area will also be mitigated by the Valley-wide mitigation under the Water Agreement.

Mitigation Goals/
Strategies/Actions:

Big Pine Ditch - To re-establish a ditch system within the town of Big Pine so that residents in the town could have a surface supply through their properties if desired.

Project Status/
Effectiveness:

The Standing Committee approved procedures and guidelines for implementing the project in 1998. A Mitigated Negative Declaration has been completed. The Inyo/LA Water Agreement has been modified to provide a reliable water supply of 300 AF for the project. The Big Pine Irrigation and Improvement Association has implemented Phase 1, 2 and 3 of the project. Phase 4 is 25% complete. LADWP has provided \$99,745 of the \$100,000 committed to the project. After test pumping and identification of a monitoring site for Well 415 to supply supplemental water for the ditch system, a contract will be considered for the installation of another well in Bell Canyon to provide additional water for the project. Pipe has been purchased and installed from Big Pine Creek via Mendenhall Ditch to the ditch system headgate. The installation of street crossings, ditches, and returns needed for Phase 4 are being completed. In 2009 the Big Pine Ditch System consumed 332 AF of water.

Mitigation Plan
Required/Status:

No.

Thibaut/Sawmill Marsh Habitat, LORP Project
(60 miles of river, perhaps more than 1,000 acres)

1991 Owens Valley EIR Impact No. 10-20

Impacts: A significant loss and reduction of marsh vegetation has occurred in the Thibaut-Sawmill area primarily due to surface water diversion, but also due to lowered groundwater from increased groundwater pumping.

Project Description/
Mitigation Measure: Portions of the Lower Owens River Project, including Thibaut Ponds, are in this area. Thus, portions of the impacted area will be mitigated directly, however, for much of the impacted area, mitigation will be in the form of compensation through the Lower Owens River Project's restoration of wetland, meadow, and riparian vegetation. Any significant decreases in vegetation cover or changes in vegetation composition due to groundwater pumping during the recent drought period will be mitigated under the Water Agreement.

Mitigation Goals
Strategies/Actions: See LORP (Impact 10-14).

Project Status/
Effectiveness: See LORP (Impact 10-14).

Mitigation Plan
Required/Status: No.

11 – WILDLIFE

Aquatic Habitat (Klondike Lake)

1991 Owens Valley EIR Impact No. 11-1

Impacts: Changes of surface water management practices and increased groundwater pumping have altered the habitats on which wildlife depends. Vegetation changes have been significant in many locations throughout the Valley. Therefore, impacts to certain species of wildlife, which were entirely dependent upon the impacted habitat, can be presumed to be significant.

Project Description/
Mitigation Measure: The importance of riparian, marsh, and aquatic habitats is recognized for mitigation of the impacts to wildlife that occurred during the 1970 to 1990 period. Wetter habitats support many more species and greater populations of wildlife; therefore, water management to create wet habitats will be used to mitigate the significant adverse impacts of the project.

Mitigation Goals/
Strategies/Actions: To create and maintain the lake level to enhance the attractiveness of the facility for recreation as well as improve waterfowl nesting and feeding habitat by providing a firm water supply to the site.

Project Status/
Effectiveness: The Klondike Lake Project is being implemented. The estimated water usage for the project was reduced from 2,200 AF to 1,700 AF, with 1,500 AF allocated for conveyance and lake level maintenance and 200 AF allocated for waterfowl habitat south of the lake. A new diversion was installed and implementation of the releases for waterfowl habitat south of the lake began in May 2005. Delivery of the total allocation of 200 AF to the south has been problematic because of the low hydraulic gradient between the lake and the waterfowl habitat areas. Sand accumulations have periodically been cleared from the conveyance pipe inlet and vegetation removed from the pipe outflow area to facilitate flow. Conditions continue to make delivery of the entire 200 impracticable. Water releases total 96 AF in 2007, 89 AF of in 2008, and 80 AF in 2009.

Mitigation Plan
Required/Status: No.

Aquatic Habitat (LORP Project, Farmers, Buckley, Billy, Lone Pine Pond, etc.)

1991 Owens Valley EIR Impact No. 11-1

Impacts: Continued from above.

Project Description/
Mitigation Measure: See above.

Mitigation Goals/
Strategies/Actions: See LORP (Impact 10-14). See Farmers (Impact 10-18), Buckley Ponds - To provide for a warm-water fishery and waterfowl area. Billy Lake - To provide waterfowl habitat in the region. Lone Pine Pond - To create habitat for a warm-water fishery.

Project Status/
Effectiveness: See LORP (Impact 10-14). Farmers Ponds, Buckley Ponds, Billy Lake and Lone Pine Pond are fully implemented and functioning as determined by the goals.

Mitigation Plan
Required/Status: No.

12 – AIR QUALITY

Independence Springfield (297 acres),
Independence East Side Regreening (30 acres),
Shepherds Creek Alfalfa Field (198 acres),
Revegetation Project East of Independence (part of Independence Springfield, 40 acres)

1991 Owens Valley EIR Impact No. 12-1

Impacts: Significant impacts on air quality resulting from groundwater pumping during the period of 1970 to 1990 have occurred due to vegetation losses.

Project Description/
Mitigation Measure: As part of the Independence Pasture Lands and Springfield enhancement/mitigation projects, approximately 730 acres of barren or near-barren ground have been revegetated with either native pasture or alfalfa. This area was affected by groundwater pumping and surface diversions of water. Approximately 40 acres remain barren and will be revegetated with native pasture. Under the Shepherd Creek enhancement/mitigation project,

approximately 200 acres of poorly vegetated land has been converted to alfalfa. In addition, other areas that have the potential to cause significant adverse impacts to air quality have been identified in Section 10 (above) and will be mitigated as set forth in that section.

Mitigation Goals/
Strategies/Actions: See Impact 10-11.

Project Status/
Effectiveness: See Impact 10-11.

Mitigation Plan
Required/Status: No.

Elevated PM-10 Levels

1991 Owens Valley EIR Impact No. 12-2

Impacts: Increased groundwater pumping could result in elevated PM₁₀ levels due to vegetation losses.

Project Description/
Mitigation Measure: See mitigation measure for item 12-1, above.

Mitigation Goals/
Strategies/Actions: Minimize impact to less than significant.

Project Status/
Effectiveness: N/A

Mitigation Plan
Required/Status: No.

Air Quality Impacts from Loss of Vegetation

1991 Owens Valley EIR Impact No. 12-3

Impacts: Significant impacts to air quality have resulted from the abandonment of irrigated lands to supply the second aqueduct.

Project Description/
Mitigation Measure: Approximately 1,240 acres of formerly irrigated agricultural lands that had not successfully revegetated have been planted with pasture or alfalfa (see mitigation measure 10-11, above). In addition, other areas that have the potential to cause significant

adverse impacts on air quality have been identified in Section 10, Vegetation, and will be mitigated as set forth in that section.

Mitigation Goals/
Strategies/Actions: Minimize impact to less than significant.

Project Status/
Effectiveness: N/A

Mitigation Plan
Required/Status: No.

16 – ANCILLARY FACILITIES

Vegetation Loss from Construction Activities

1991 Owens Valley EIR Impact No. 16-1 - Vegetation

Impacts: The construction phase of the addition of new recharge facilities could result in vegetation decrease or change.

Project Description/
Mitigation Measure: Provisions of the Water Agreement will be met. No further mitigation measures are required.

Mitigation Goals/
Strategies/Actions: No significant vegetation decrease or change.

Project Status/
Effectiveness: N/A

Mitigation Plan
Required/Status: No.

Air Quality Effects from Construction Activities

1991 Owens Valley EIR Impact No. 16-3 – Air Quality

Impacts: Air quality could be adversely affected by the construction of recharge facilities.

Project Description/
Mitigation Measure: All disturbed areas would be wetted during construction to minimize fugitive dust.

Mitigation Goals/
Strategies/Actions: Minimize impact to less than significant.

Project Status/
Effectiveness: N/A
Mitigation Plan
Required/Status: No.

Archaeological Disturbance from Construction Activities

1991 Owens Valley EIR Impact No. 16-5 – Cultural Resources

Impacts: Construction of proposed recharge projects could disturb subsurface archaeological resources, with possible significant impact.

Project Description/
Mitigation Measure: 16-5(a) The proposed recharge facility project locations would be surveyed for cultural resources prior to the initiation of any ground-disturbing project activities associated with the construction of any culverts, ditches, or trenches, once the exact locations of these features are determined. The significance of any site recorded during the survey would be determined through the use of subsurface testing, as appropriate.

Mitigation Goals/
Strategies/Actions: N/A

Project Status/
Effectiveness: N/A

Mitigation Plan
Required/Status: No.

Compliance with Archaeological and Preservation Act of 1974

1991 Owens Valley EIR Impact No. 16-5 – Cultural Resources

Impacts: Continued from above.

Project Description/
Mitigation Measure: 16-5(b) In accordance with the requirements of 36 CFR 800.11, should a previously unidentified National Register or eligible property be discovered during construction on any and all parts of the project, LADWP will comply with the provisions of the Archaeological and Historic Preservation Act of 1974 by evaluating the resources and implementing mitigation measure as warranted.

Mitigation Goals/ Strategies/Actions:	Minimize impact to less than significant.
Project Status/ Effectiveness:	N/A
Mitigation Plan Required/Status:	No.

Water Quantity Impacts from New Wells in Big Pine Area

1991 Owens Valley EIR Impact No. 16-7 – Water Resources

Impacts:	New wells in the Big Pine area would lower groundwater levels, and could result in significant impacts to local private wells.
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Project Description/ Mitigation Measure:	Monitoring will be conducted as provided in the Water Agreement and the Green Book. If pumping of the new production well is shown to cause a significant adverse impact to any private well, the impact will be mitigated as described in the Water Agreement and in Section 4 of the Green Book.
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Mitigation Goals/ Strategies/Actions:	Minimize to less than significant impacts to private wells.
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Project Status/ Effectiveness:	N/A
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Mitigation Plan Required/Status:	No.
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Water Quantity Impacts to Artesian Wells in Laws Area from Operation of Two New Wells

1991 Owens Valley EIR Impact No. 16-9 – Vegetation

Impacts:	Operation of the two new wells in the Laws area could cause flow in artesian wells to stop or diminish to a degree that impacts the vegetation dependent on such flow would result.
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Project Description/ Mitigation Measure:	Existing and new monitoring wells will be used to monitor water levels and vegetation as provided in the Water Agreement and the Green Book. Groundwater pumping will be managed to avoid causing reductions in the amount of water flowing from these wells such that significant decreases and changes to vegetation
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would result. If it is projected that such decreases and changes could occur, water will be supplied to avoid such vegetation decreases or changes.

Mitigation Goals/
Strategies/Actions: Avoidance of impact.

Project Status/
Effectiveness: N/A

Mitigation Plan
Required/Status: No.

**Type D Vegetation Impacts Along Fault Zone West of Big Pine
from Pumping Big Pine Well BP-1**

1991 Owens Valley EIR Impact No. 16-10 – Vegetation

Impacts: Pumping of the Big Pine well BP-1 may impact Type D vegetation along the fault zone west of Big Pine.

Project Description/
Mitigation Measure: As provided in the Water Agreement and the Green Book, existing and new monitoring sites would be utilized to monitor vegetation, water levels, and soil water. Groundwater pumping would be managed to avoid significant decreases and changes in vegetation.

Mitigation Goals/
Strategies/Actions: Avoidance of impact.

Project Status/
Effectiveness: N/A

Mitigation Plan
Required/Status: No.

Reduction or Elimination of Flow from Reinhackle Spring and Subsequent Loss of Vegetation from New Wells in the Independence-Symmes-Bairs Area

1991 Owens Valley EIR Impact No. 16-11 – Vegetation

Impacts: New wells in the Independence-Symmes-Bairs area may reduce or eliminate the flow from Reinhackle Spring and impact vegetation dependent upon flow from the spring.

Project Description/
Mitigation Measure: At Reinhackle Spring groundwater pumping from wells that affect the spring flow will be managed so that flows from the spring will not be significantly reduced compared to flows under prevailing natural conditions. In addition, all of the provisions for protecting springs, described in Impact 10-15 (above) and contained in the Water Agreement and the Green Book, will be applied equally to Reinhackle Spring.

Mitigation Goals/
Strategies/Actions: Avoidance of impact.

Project Status/
Effectiveness: N/A

Mitigation Plan
Required/Status: No.

Air Quality Impacts from Construction and Maintenance of New Wells

1991 Owens Valley EIR Impact No. 16-13 – Air Quality

Impacts: Air quality could be affected by the construction and maintenance of new wells.

Project Description/
Mitigation Measure: All areas disturbed during construction of the new wells would be wetted during construction to minimize generation of fugitive dust.

Mitigation Goals/
Strategies/Actions: Minimize impact to less than significant.

Project Status/
Effectiveness: N/A

Mitigation Plan
Required/Status: No.

Archaeological Disturbance from Construction of 15 New Wells

1991 Owens Valley EIR Impact No. 16-16 – Cultural Resources

Impacts: Construction of 15 new wells could disturb subsurface archaeological resources, with possible significant impact.

Project Description/
Mitigation Measure: 16-16(a) Construction activity at the LP-1, BP-1, and BP-2 sites will be monitored. If subsurface prehistoric archaeological resource evidence is found, excavation or other construction activity in the area will cease and an archaeological consultant would be retained to evaluate findings in accordance with standard practice and applicable regulations. Data/artifact recovery, if deemed appropriate, would be conducted during the period when construction activities are on hold.

Mitigation Goals/
Strategies/Actions: Minimize impact to less than significant.

Project Status/
Effectiveness: N/A

Mitigation Plan
Required/Status: No.

Notification of Proper Authorities (Native American Representatives, Coroner) if Remains are Discovered

1991 Owens Valley EIR Impact No. 16-16 – Cultural Resources

Impacts: Continued from above.

Project Description/
Mitigation Measure: 16-16(b) An appropriate representative of Native American Indian groups and the County Coroner would be informed and consulted if remains are discovered, as required by State law.

Mitigation Goals/
Strategies/Actions: Minimize impact to less than significant.

Project Status/

Effectiveness: N/A

Mitigation Plan
Required/Status: No.

**Discharge Rates Could Be Affected in Flowing Wells
on Bishop Cone from Increased Pumping**

1991 Owens Valley EIR Impact No. 16-18 – Water Resources

Impacts: Increased pumping on the Bishop Cone could affect the rate of discharge of flowing wells.

Project Description/
Mitigation Measure: Changes in flow rates from flowing wells will be monitored along with vegetation dependent upon flows from such wells. Groundwater pumping will be managed to avoid significant decreases or changes in vegetation dependent upon water from flowing wells. Water will be provided if necessary to avoid such decreases and changes in vegetation if flows from such wells are diminished due to groundwater pumping.

Mitigation Goals/
Strategies/Actions: Avoidance of impact.

Project Status/
Effectiveness: N/A

Mitigation Plan
Required/Status: No.

Bishop Cone Pumping Effects on Vegetation

1991 Owens Valley EIR Impact No. 16-19 – Vegetation

Impacts: Increased pumping on the Bishop Cone could adversely affect vegetation due to lowered water levels or reduced flows from flowing wells.

Project Description/
Mitigation Measure: As provided in the Water Agreement, existing and new monitoring sites would be utilized to monitor vegetation, water levels, and soil water. Groundwater pumping would be managed to avoid significant decrease and change to vegetation and other significant effects on the environment.

Mitigation Goals/
Strategies/Actions: Avoidance of impact.

Project Status/
Effectiveness: N/A

Mitigation Plan
Required/Status: No.

6. STATUS OF OTHER STUDIES, PROJECTS, AND ACTIVITIES

6. STATUS OF OTHER STUDIES, PROJECTS, AND ACTIVITIES

The Following describes the status of studies, projects, and activities conducted under the Water Agreement and the 1997 MOU.

Tables 19 and 20 detail mitigation and monitoring of the irrigation projects in the Laws and Big Pine areas, respectively. Table 21 lists the Water Agreement provisions and their respective status. Table 22 lists the MOU provisions and their respective status. Table 23 lists the Cooperative Studies that have been approved by the Los Angeles/Inyo Standing Committee and their respective status. Table 24 lists the 1991 EIR revegetation projects, progress to date, and proposed future work. Section 6.8 provides a report on the Mitigation Monitoring and Reporting Program for the LORP. This document provides an update for 2009 activities. The history of activities at these sites can be found in Annual Reports from previous years.

6.1. Irrigation Project in the Laws Area 2009

6.1.1. Progress Report

Seed Collection

Seed production in 2009 was minimal because of dry conditions. Some seed was collected by LADWP staff from native stands of vegetation and from the Seed Farm.

Plant Propagation

In January 2009, LADWP began plant propagation in a new greenhouse. Approximately 6,000 plants were propagated utilizing seed from 27 species that are native to the Owens Valley.

Seed Farm

In 2009, damage was repaired on drip lines with successful plantings. Irrigation was conducted during the growing season. Blocks of the seed farm with few plants were cleared of existing drip lines and were replaced with buried drip lines. A filter system was installed to insure successful implementation of irrigation.

In the fall of 2009, approximately 2,100 plants, consisting of 14 native species propagated in the LADWP greenhouse, were planted at the seed farm. Seed was harvested at the Seed Farm that will be used to grow additional plants in the greenhouse.

Center Pivot Systems

The center pivot systems are fully implemented. All fields were treated for weeds in the spring of 2009.

Lease RFP

In February 2003, an RFP was prepared and advertised to solicit proposals for ranch management for the portion of the Laws Ranch north of Silver Canyon Road. The 4-J Cattle Company submitted the successful proposal.

The portion of the Laws Ranch located south of Silver Canyon Road was included in the Cashbaugh Ranch lease.

6.1.2. Mitigation Monitoring Report for the Irrigation Project in the Laws Area

See Table 19 for the Mitigation Monitoring Program for the Irrigation Project in the Laws Area.

Mitigation Measure M-1

Impact: Creation of dust during pipeline installation and ground preparation for planting.

Measure: Ground surfaces will be thoroughly wet prior to and during work to minimize dust.

All seeding work during 2006 was conducted utilizing the Trux No-till drill seeder and water was applied before initiating seeding and as soon as seeding was complete to control dust emissions.

Mitigation Measure M-2 and M-3

Impact: Groundwater pumping to supply water to the project could adversely affect groundwater-dependent vegetation in the vicinity of the project and cause blowing dust.

Measure: Department of Water and Power on a Long-Term Ground Water Management Plan in the Owens Valley and Inyo County (Water Agreement).

Table A illustrates the vegetation cover in vegetation parcels within the Laws wellfield as determined by ICWD. Data from 2002 and 2003 indicates estimates of vegetation cover in the parcels prior to implementation of the Irrigation Project in the Laws Area. Data since 2004 are estimates of vegetation cover after implementation of the Irrigation Project in the Laws Area.

Table B illustrates the depth to water in the Laws area test holes prior to, and after implementation of the Irrigation Project in the Laws Area.

Table A. Vegetation Cover in Selected Parcels Within the Laws Wellfield

Parcel	Percent Perennial Cover							
	200 2	200 3	200 4	200 5	200 6	2007	2008	2009
LAW030	19.5	nd	20.5	24.2	32.4	36.6	32.7	28.1
LAW035	nd	3.1	1.6	4.7	17.9	6.4	6.3	1.1
LAW043	nd	3	2.4	Nd	40.8	7.4	7.2	1.5
LAW052	2.3	2.9	3.9	5.4	12.5	10.1	7.6	3.4
LAW062	2.8	4.7	3.3	7.2	12.8	10.9	10.8	5.6
LAW063	3.7	6.3	5.4	9.6	24.0	16.7	15.9	6.2
LAW065	3.3	2.9	2.1	5.1	13.9	10.7	12.3	3.8
LAW070	nd	1	1.6	Nd	nd	nd	11.1	8.0
LAW078	36.2	31.8	27.1	39.0	49.7	50.1	53.7	30.8
LAW082	2.1	3	4.4	4.2	12.7	7.1	12.6	6.5
LAW085	7.1	9.8	7.7	14.8	28.5	22.3	30.2	21.9
LAW107	37.6	43.9	38.2	65.1	59.8	67.2	78.2	56.3
LAW112	12.9	25.1	15.8	32.9	33.3	45.0	47.3	32.3
LAW120	17.6	24.3	21	27.6	28.8	36.2	38.5	26.4
LAW122	59	54.8	47.8	56.6	54.6	62.8	52.7	57.9
LAW137	17	20.3	13	19.1	32.3	17.0	21.3	19.3

Table B. Depth to Water (in feet) for Test Holes in the Laws Wellfield.

Well	April 2004	April 2005	April 2006	April 2007	April 2008	April 2009	April 2010
T107	30.1	31.9	18.6	21.1	25.2	28.0	31.0
T436	10.1	10.2	4.8	5.3	7.1	8.8	9.5
T438	11.6	8.9	3.8	6.3	8.2	9.1	11.4
T490	14.6	14.7	13.3	10.2	12.6	13.8	13.5
T492	32.1	31.5	24.4	23.0	26.8	29.1	30.8

Mitigation Measure M-4

Impact: Reducing the irrigation duty from 5 AF per-acre to 3 AF per-acre and of changing from flood irrigation to sprinkler irrigation.

Measure: Water Agreement

LADWP and the Laws Ranch Lease jointly determined irrigated field, pasture, or area vegetation condition using the Natural Resource Conservation Service Pasture Condition Assessment. This protocol, once followed, is designed to optimize plant and livestock productivity while minimizing detrimental effects to soil or water resources.

Pasture condition scoring involves the visual evaluation of 10 indicators each having five environmental conditions (Cosgrove, et al. 1991). Each indicator is rated separately and the scores are combined into an overall score for the pasture. The overall score for a pasture can then be divided by the total possible score to give a percent rating ($\{\text{overall score} \div \text{total possible score}\} \times 100 = \text{percent rating}$). Not all 10 indicators may

be appropriate for use in every pasture. In this case, using less than 10 indicators will reduce the possible score, but the percent rating will still be comparable. Irrigated pastures on the Laws Ranch Lease will be evaluated after the area has been seeded and irrigated for at least three growing seasons in order to allow the seeded pasture mix to become fully established. The average pasture score for the Laws Ranch Lease during the 2007 growing season was 88%. The next scheduled evaluation is in 2010.

Mitigation Measure M-5

Impact: Altering the flow in a ditch that carries water diverted from Coldwater Canyon.

Measure: Water Agreement

Diversions from Coldwater Canyon Ditch are utilized for irrigation of the Seed Farm. During operation, approximately 1/4 of the total flow remains in the ditch.

Periodic examinations were conducted along the ditch throughout the growing season. These examinations did not indicate any signs of vegetation stress. Photo points have been established along the ditch.

Diversions for irrigation from Coldwater Canyon Ditch for the Laws Seed Farm continued in 2009. Periodic examinations were conducted along the ditch throughout the growing season. These examinations did not indicate any signs of vegetation stress. Photos points will be replicated during the 2010 growing season.

Mitigation Measure M-6

Impact: Altering the flow in Silver Canyon Ditch.

Measure: Water Agreement

Diversions from Silver Canyon Ditch are utilized for irrigation of Parcels LAWS 90, 94, and 95. During operation, approximately 1/4 of the total flow remains in the ditch.

Diversions for irrigation from Silver Canyon Ditch for the Laws Parcels 90, 94 and 95 continued in 2009. Periodic examinations were conducted along the ditch throughout the growing season. These examinations did not indicate any signs of vegetation stress. Photo points have been established along the ditch and will be replicated during the 2010 growing season.

Mitigation Measure M-7

Impact: Growth of state listed A or B noxious weeds in the project area.

Measure: LADWP or its lessee or lessees, in conjunction with Inyo County's weed abatement program, will promptly treat or remove the weed.

Surveys were conducted on the Irrigation Project in the Laws Area for noxious weeds during the 2009 growing season. No A or B listed noxious weeds were found. Weed

control was conducted in the 2009 season for other weedy species. The lessee treated weeds through a combination of grazing and burning.

Mitigation Measure M-8

Impact: Archaeological investigations identified six previously unrecorded archaeological sites and 11 isolates within the project area.

Measure: Pipeline placement was to avoid identified sites; if new sites are encountered during implementation, work will be halted until an archeologist can be consulted.

No cultural resources were encountered during construction or operation of the Irrigation Project in the Laws Area in 2006.

TABLE 19. Mitigation and Monitoring Program for Irrigation Project in the Laws Area

POT. IMPACT		MITIGATION			MONITORING			
Summary of Impact	MM No.	Measure	Timing	Responsibility	Method	Period	Frequency	Responsibility
<u>Air Quality</u>								
Creation of dust during pipeline installation and ground preparation for planting	M-1	Ground surfaces will be thoroughly wet prior to and during work to minimize dust	To be implemented throughout the project as needed	LADWP construction staff and/or LADWP lessee.	Water trucks will pre-wet construction areas and water as necessary throughout construction. Ground will be pre-irrigated prior to planting.	As needed throughout construction and/ or prior to planting.	Throughout the construction or agricultural period	LADWP construction staff and/or LADWP lessee.
Groundwater pumping to supply water to the project could adversely affect groundwater dependent vegetation in the vicinity of the project and cause blowing dust	M-2	Section III and Section IV of the Agreement between the County of Inyo and the City of Los Angeles and its Department of Water and Power on a Long Term Groundwater Management Plan for Owens Valley and Inyo County (the Water Agreement)	To be implemented throughout the project as needed	Inyo LA Technical Group	Annual monitoring of the vegetation in the vicinity is being conducted.	During the period when groundwater pumping and water management practices could affect vegetation.	Annually during the growing season	Inyo LA Technical Group
<u>Hydrology and Water Quality</u>								
Groundwater pumping	M-3	Water Agreement	To be implemented throughout the project as needed	Inyo LA Technical Group	Monitoring at each identified site will consist of one or more field visits during the period when groundwater pumping and water management practices could affect such vegetation.	During the period when groundwater pumping and water management practices could affect vegetation.	Annually during the growing season	Inyo LA Technical Group

POT. IMPACT		MITIGATION			MONITORING			
Summary of Impact	MM No.	Measure	Timing	Responsibility	Method	Period	Frequency	Responsibility
Reducing the irrigation duty from 5 acre-feet per acre to 3 acre-feet per acre and of changing from flood irrigation to sprinkler irrigation	M-4	Water Agreement	To be implemented throughout the work as needed	Inyo LA Technical Group	Monitoring at each identified site will consist of one or more field visits during the period when groundwater pumping and surface water management practices could affect such vegetation.	During irrigation season	Annually during the growing season	Inyo LA Technical Group
<u>Biological Resources</u>								
Altering the flow in a ditch that carries water diverted from Coldwater Canyon	M-5	Water Agreement	To be implemented throughout the work as needed.	Inyo LA Technical Group	Monitoring at each identified site will consist of one or more field visits during the period when surface water management practices could affect such vegetation.	During the period of changes in surface water management practices could affect vegetation.	Annually during the growing season	Inyo LA Technical Group
Altering the flow in Silver Canyon Ditch	M-6	Water Agreement	To be implemented throughout the work as needed.	Inyo LA Technical Group	Monitoring at each identified site will consist of one or more field visits during the period when surface water management practices could affect such vegetation.	During the period of changes in surface water management practices could affect vegetation.	Annually during the growing season	Inyo LA Technical Group
Growth of noxious weeds	M-7	LADWP or its lessee or lessees, in conjunction with Inyo County's weed abatement program, will promptly treat or remove the weed.	To be implemented throughout the work as needed.	LADWP Watershed Resources Staff; LADWP Lessee; and/or Inyo County Agricultural Dept.	Monitoring consists of field visits during the growing season.	Annually during the growing season.	Annually during the growing season	LADWP Watershed Resources Staff; LADWP Lessee; and/or Inyo County Agricultural Dept.

POT. IMPACT		MITIGATION			MONITORING			
Summary of Impact	MM No.	Measure	Timing	Responsibility	Method	Period	Frequency	Responsibility
<u>Cultural Resources</u>								
Archaeological investigations identified six previously unrecorded archaeological sites and 11 isolates within the project area.	M-8	Pipeline placement was to avoid identified sites; if new sites are encountered during implementation, work will be halted until an archaeologist can be consulted.	To be implemented throughout the work as needed.	LADWP Construction Manager	Construction personnel will monitor for unidentified sites during the progression of construction.	During construction activities	Throughout the construction period	LADWP Construction Manager

6.2. Mitigation Monitoring Report for the Irrigation Project in the Big Pine Area

See Table 20 for the Mitigation Monitoring Program for the Irrigation Project in the Big Pine Area.

TABLE 22. Mitigation and Monitoring Program for the Irrigation Project in the Big Pine Area

POT. IMPACT	MM No.	MITIGATION			MONITORING			
		Measure	Timing	Responsibility	Method	Period	Frequency	Responsibility
<u>Hydrology and Water Quality</u>								
The cumulative effect of groundwater pumping from well 415, the new Bell Canyon well, as proposed in the project, in combination with the operation of other wells in the Big Pine area could cause significant adverse impacts to groundwater dependent vegetation, other vegetation, or non-LADWP wells in the area.	M-1	Water Agreement	To be implemented throughout the project as needed	Inyo LA Technical Group	A monitoring site will be developed by the Inyo LA Technical Group as called for in the Inyo/LA Long Term Water Agreement to manage operation of each well.	During the period when groundwater pumping is needed for the project.	As decided by the Inyo LA Technical Group, consistent with the Long Term Water Agreement	Inyo LA Technical Group

6.3. Water Agreement Provisions

See Table 21 for the Water Agreement Provisions.

TABLE 21. Water Agreement Provisions

Title	Provision	Status
Groundwater Management	LADWP and Inyo County are to manage water resources within Inyo County to avoid certain described decreases and changes in vegetation and to cause no significant effect on the environment which cannot be acceptably mitigated while providing a reliable supply of water for export to Los Angeles and for use in Inyo County.	By agreement of the Standing Committee, implementation of groundwater management, pursuant to the Agreement, commenced in 1987.
New Wells & Production Capacity	In order to provide for increased operational flexibility and to facilitate rotational pumping, LADWP may replace existing wells and construct new wells in areas where hydrogeologic conditions are favorable and where operation of such wells will not cause a change in vegetation that would be inconsistent with the agreement. The Water Agreement and 1991 EIR describe 15 new wells that LADWP proposes to construct in the Owens Valley.	LADWP has constructed 6 replacement wells on Bishop Cone and one of the 15 new wells allowed under the Water Agreement. The new well is located in Lone Pine. The Technical Group must establish management for the well before it can be operated. Currently, LADWP is planning to construct 1 new well on the Bishop Cone. LADWP has abandoned or converted to monitoring wells 13 previously replaced wells.
Groundwater Pumping on the Bishop Cone	Before LADWP may increase groundwater pumping on the Bishop Cone, or construct new wells on the Cone, Inyo County and LADWP are to develop an audit procedure for determining the exact amount of water used annually on City-owned land on the Cone. LADWP pumping on the Cone must be in strict adherence to the provisions of the "Hillside Decree."	The Standing Committee has adopted the Bishop Cone audit procedure. The audit has been conducted since 1996. In 1998, the Superior Court entered a "Memorandum of Judgment" in Matlick v City of Los Angeles which reaffirmed LADWP's pumping practices on the Bishop Cone.
Groundwater Recharge Facilities	LADWP may construct groundwater banking and groundwater recharge facilities in the County. The 1991 EIR describes certain groundwater recharge facilities in Laws, Big Pine, and Rose Valley.	LADWP has not proposed re-construction of groundwater recharge facilities in Laws, or Big Pine, or new facilities in Rose Valley.
Cooperative Studies	LADWP may provide funding for the costs of conducting studies related to the effects of groundwater pumping on the environment of the Owens Valley.	Studies approved by the Standing Committee are underway. See Table 25, "Cooperative Studies."

Title	Provision	Status
Enhancement/ Mitigation Projects	All existing E/M projects will be maintained, unless the Standing Committee agrees to modify or discontinue a project, and new projects may be implemented if approved by the Standing Committee. The Water Agreement provides that E/M projects will continue to be supplied by E/M wells unless otherwise agreed.	<p>All E/M projects that have been implemented are being maintained. It is planned to supply approximately 10,700 acre-feet of water to these projects in 2010-2011. Now that the LORP is fully implemented, the water supplied to the project is no longer included within the E/M project account of water uses. Therefore, the amount of water supplied to E/M Projects annually is much less then it was when the LORP was included in the water supply value.</p> <p>The Standing Committee eliminated the water commitment to the McNally Ponds Project for the 1991 year because of dry conditions. For most years since then, the Standing Committee has decided annually on water releases to this project. In 2009 the project did not receive water because project supply wells could not be pumped under the Interim Management Plan.</p> <p>The Laws Museum Project is fully implemented</p> <p>LADWP sent Mitigation Plans for the Independence regreening projects to ICWD in August, 2004 and CEQA documents were completed by LADWP for the Independence East Side Regreening Project and Town Water System in September, 2004. The Board of Water and Power Commissioners approved the project in May 2005. Inyo County requested changes to the project after the completion of CEQA including: relocation of the project supply well, change of irrigation type from flood to sprinkler, and addition of corrals/stables. Inyo County has agreed to complete additional CEQA evaluation if required. The Standing Committee approved a revised scope of work on April 23, 2009. LADWP is currently preparing the specification for well drilling services and has included funding for drilling and equipping a well for the project in its 2010-11 and 2011-12 fiscal year budgets.</p> <p>Mitigation Plans for the Big Pine Northeast Regreening were transmitted to the County in 2004. Comments were received from the County in 2005. The County identified a portion of the project area for land release and sale. Note that a portion of the Big Pine Ditch system runs through the project area. This reduced the original project area by less than an acre. A letter was sent to Inyo County in February 2008 requesting concurrence on the acreage change but a response has not been received. An archaeological survey of the site was completed as required by the CEQA process. Cultural resources were identified during the survey. These resources will be avoided during implementation. An amended mitigation plan will be submitted for Technical Group approval and CEQA will be completed for the project LADWP identified issues making the project unfeasible as originally scoped. In order to facilitate implementation of the project LADWP recommended the following changes: 1) Change the water source for the project</p>

Title	Provision	Status
		to be the Big Pine town supply system or exempt Well 375 as a project supply well or drill a sole source well, 2) Change irrigation method from flood irrigation to the option of flood or sprinkler irrigation, 3) Move the project area closer to Highway 395, 4) Change the lessee identified for the project to an unspecified lessee. These changes were discussed publicly at the September 9, 2009 Inyo County Water Commission meeting and the November 5, 2009 Inyo/LA Standing Committee meeting. The ICWD is currently reviewing the proposed changes.
Town Water Systems	LADWP will transfer to Inyo County, or another Owens Valley public entity or entities, ownership of the water systems in the communities of Lone Pine, Independence, and Laws. Prior to transferring the systems, evaluations of each system will be performed by a mutually agreed upon consultant, and if necessary, work will be done to upgrade the systems. LADWP will provide free water, up to specified amounts for each town.	The County contracted with a private company to assume the operation, maintenance and billing for the systems in July 1999. Pursuant to an agreement with LADWP, the County completed upgrades of the systems in December 2002, using \$2.6 million in funds provided by LADWP. LADWP completed the transfer of ownership to the County in January 2005.
Lower Owens River	See Table 24, "MOU Provisions."	See Table 24, "MOU Provisions."
Lower Owens River Project (LORP)	Los Angeles will pay the costs of implementing the project. The County will repay Los Angeles one half of the project costs up to maximum of \$3.75 million. Any funds provided for the project from sources other than Los Angeles will be an off-set against the County's repayment obligation. Los Angeles will pay the annual costs of operating the pumpback system. The County and Los Angeles will each pay one half of the other costs of the project.	As part of a negotiated agreement with Inyo County to not pursue funding from the USEPA, LADWP has credited the County \$5.1 million to cover the County's \$3.75 million obligation for LORP implementation with the remaining \$1.35 million to be used by the County towards post implementation costs.
Haiwee Reservoir	Inyo County and LA will develop a recreational plan for South Haiwee. The recreation plan will be implemented and operated by the County or a concessionaire. Any plan must take into account Los Angeles' operating and security needs.	A recreational plan has not been developed. A security audit was performed following the September 11, 2001 incident. This audit concluded that due to a potential security threat to a municipal water source, Haiwee Reservoir should be closed to the public. CEQA documentation (Negative Declaration) was filed to close Haiwee Reservoir on December 16, 2004. The facility was officially closed to the public in 2005.
Salt Cedar Control	LADWP is to provide funding to Inyo County to implement a Salt Cedar Control Program: \$750,000 during the first three years of the program; thereafter, \$50,000 per year (adjusted upward or downward in	LADWP initiated payments and ICWD initiated the Salt Cedar Control Program in 1997. In 2009, LADWP paid ICWD \$65,031 for this work. LADWP has paid Inyo County \$1,331,846 since 1997 under this provision of the Water Agreement. In 2004, as part of a Wildlife Conservation Board (WCB) grant, LADWP provided \$56,000 for salt cedar control, and the balance of the program was funded from a

Title	Provision	Status
	accordance with the consumers' price index).	WCB grant for \$490,000 obtained by the County working in cooperation with LADWP. Approval for a second grant from the WCB for \$560,000 was received in February 2004. In addition to the monies provided under the Water Agreement for salt cedar control, LADWP committed, as part of the 2004 Stipulation and Order, to match the amount of grant monies the ICWD received up to \$1.5 million for additional salt cedar control in the LORP Project Area. Under Item 6 of the Stipulation and Order, LADWP has paid Inyo County a total of \$914,754.19 as of February 2010 leaving a balance of \$585,245.81 available to the County per the Stipulation and Order. A third grant for \$600,000 from the WCB was received by ICWD in November 2007.
Park Rehabilitation, Development, & Maintenance	During the 10-year period following entry of the Stipulation and Order, LADWP is to provide up to \$2 million to Inyo County to rehabilitate existing County parks and campgrounds and to develop new recreational facilities. LADWP is to make an annual payment of \$100,000 (Adjusted upward or downward in accordance with the consumer's price index) to Inyo County to maintain existing and new recreational facilities.	The remainder of the money available for parks rehabilitation and maintenance is \$168,086. In addition, LADWP has provided annual payments to the County for parks operation and maintenance activities including a payment in 2009 of \$138,826 for a total of \$1,556,216. LADWP has paid Inyo County a total of over \$3,388,130 since 1997 under this provision of the Agreement
Owens River Recreational Use Plan	As part of the parks rehabilitation program, Inyo County may develop a plan for recreational use and management of the Owens River from Pleasant Valley Reservoir to the Owens River delta as one of the programs to be funded by LADWP under the provisions of the Agreement concerning Park Rehabilitation, Development, & Maintenance.	<p>The County formed a collaborative group to generate a Recreational Use Plan for the LORP in 2007. This group is made up of County, City, and local Chamber personnel, as well as interested members of the public. This group was formed to exchange ideas and concerns with regard to recreation, and pursue the development of a Recreational Use Plan for the LORP. From this effort, the County submitted a grant proposal to the Sierra Nevada Conservancy in December 2007 for grant monies to fund two individuals to conduct scoping efforts and write a draft Plan. The funds were awarded but were returned to the Conservancy by the County when time constraints were not met.</p> <p>Recreation in the Lower Owens River area was addressed by LADWP in the LORP EIR. Recreation issues discussed in the LORP EIR do not include camping but do include the use of adaptive management for locating facilities, fencing of sensitive areas and maintaining access by providing walkthroughs and parking areas. Recreation issues from Pleasant Valley Reservoir to the aqueduct Intake are being addressed in the Owens Valley Management Plans that are being developed by LADWP.</p>

Title	Provision	Status
Financial Assistance for Water-Related Activities	LADWP is to make an annual payment to Inyo County to assist the County in funding water and environmentally-related activities. The annual payment is to be adjusted upward or downward each year in accordance with the consumer's price index	Los Angeles has provided annual payments to Inyo County, and provided \$1,294,031 in July 2009. Funds provided by Los Angeles have been expended to fund the County Water Department. LADWP has paid Inyo County over \$22 million since 1988 for this purpose.
General Financial Assistance to the County	LADWP is to make an annual payment to Inyo County to assist the County in providing services to its citizens. The annual payment is to be adjusted upward or downward each year in accordance with a formula in the State Constitution for an assessment of Los Angeles-owned property in Inyo County.	Los Angeles has provided annual payments to Inyo County, and provided \$3,289,965 in 2009. Funds provided by Los Angeles have been deposited into the County General Fund and expended on County services as directed by the Board of Supervisors. LADWP has paid Inyo County more than \$36.5 million since 1991 for this purpose.
Big Pine Ditch System	LADWP is to provide up to \$100,000 for reconstruction and upgrading of the Big Pine ditch system. LADWP is to supply up to 6 cfs to the ditch system from a new well to be constructed west of Big Pine.	The Standing Committee approved procedures and guidelines for implementing the project in 1998. A Mitigated Negative Declaration has been completed. The Water Agreement has been modified to provide a reliable water supply of 300 acre-feet for the project. The Big Pine Irrigation and Improvement Association has implemented Phase 1, 2 and 3 of the project. Phase 4 is 25% complete. LADWP has provided \$99,745 of the \$100,000 committed to the project. After test pumping and identification of a monitoring site for Well 415 to supply supplemental water for the ditch system, a contract will be considered for the installation of another well in Bell Canyon to provide additional water for the project. Pipe has been purchased and installed from Big Pine Creek via Mendenhall Ditch to the ditch system headgate. The installation of street crossings, ditches, and returns needed for Phase 4 are being completed. In 2009 the Big Pine Ditch System consumed 332 acre-feet of water.
Park & Environmental Assistance to City of Bishop	LADWP is to make an annual payment to the City of Bishop to assist the City in maintaining its park and for other environmentally-related activities. The payment of \$125,000 is to be adjusted upward or downward each year in accordance with the consumer price index. Inyo County shall make an annual payment to the City of Bishop in an amount equal to the payment made by LADWP.	Los Angeles has provided annual payments to the City of Bishop, and provided \$173,534 in 2009. LADWP has paid the City of Bishop \$2,020,123 since 1997 for this purpose. The County has made its required payment under this section of the agreement.
Release of City-Owned Lands	Los Angeles is to sell 26 acres of surplus LA-owned land within the Bishop city limits; and LADWP is to release for sale 75 acres of LA-owned land, in areas noted on Exhibit B of the Water Agreement, for public or private	LADWP has sold the 26 acres within Bishop city limits. Inyo County and LADWP determined which parcels of the 75 acres were to be sold and set a schedule for the phased release of these lands. An auction occurred on April 28, 2008 for the release of the Phase 1 lands and one parcel out of eighteen sold. Approval was received from the Inyo County Board of Supervisors and the Board of Water and

	development	Power Commissioners to amend the maps for the parcels included in the 75 acres to make a parcel on Hanby Street in Bishop eligible for sale. Approval of the Court is pending. A new auction consisting of Phase I and II properties (approximately 54 acres) is planned for summer 2010.
Additional Sales of City-owned Lands	LADWP will negotiate in good faith for the sales of additional surplus Los Angeles-owned land in or near valley towns for specific identified needs. Any such sales are to occur subsequent to those described above.	One parcel was sold in the Laws area in 2009.
Lands for Public Purposes	Los Angeles will negotiate in good faith for the sale or lease to the County of any City-owned land requested by the County for use as a public park or for other public purposes.	In 2009, there were no lands released for public purposes. One agreement with Inyo County for public purposes was renewed.
Withdrawn Lands	Inyo County will support passage of withdrawn land legislation pertaining to federally-owned lands in the County.	There is no withdrawn land legislation pending.
Legislative Coordination	Except under certain circumstances, LADWP and Inyo County are to refrain from seeking or supporting any legislation, administrative regulation, or litigation that would weaken or strengthen local or state authority to regulate groundwater or that would affect any provision of the agreement.	The legislative coordination policy has somewhat been followed.
Dispute Resolution	The agreement provides a process for resolving disputes between LADWP and Inyo County regarding issues related to the agreement or the Green Book.	Issues concerning annual pumping programs and operation of the McNally Canals have been addressed utilizing the dispute resolution procedures. Inyo County has agreed to not initiate a dispute over groundwater pumping during the term of the Interim Management Plan provided the pumping provisions of the plan are observed.

6.4. Provisions of the MOU

See Table 22 for the Provisions of the MOU.

TABLE 22. MOU Provisions

Title	Provision	Status
Lower Owens River Project (LORP)	A project to rewater approximately 60 miles of the Owens River channel below the aqueduct intake, the enhancement of several environmental features along and near the river, and the return of water to the aqueduct by means of a pumpback facility near the Owens River delta. The LORP is also identified in the 1991 EIR as compensatory mitigation for impacts that occurred between 1970 and 1990 that were considered difficult to quantify or mitigate directly. The LORP, as described in the Long Term Water Agreement and the 1991 EIR, is augmented by the provisions of the MOU. The four physical features of the LORP are listed below:	See Section 5, Table 20, "1991 EIR Mitigation Measures" (Impact #10-14), and Table 23, "Agreement Provisions." Project base flows of 40 cfs continued in 2009. On May 23, 2009 the Seasonal Habitat Flow was initiated. Drew Slough and Waggoner received water as provided in the MOU.
LORP, Item 1	1. The Lower Owens River Riverine-Riparian System. A continuous flow will be established and maintained in the river channel from at or near the intake structure which diverts the Owens River into the Los Angeles Aqueduct to a pumpback system located near the river delta that will return water to the LAA. The baseflow in the river channel will be approximately 40 cfs. In average and above runoff years, there will be "seasonal habitat flows" of approximately 200 cfs, with reductions of the habitat flows in years when runoff is forecast to be less than average.	This component of the project was achieved in February 2007. Work is completed on installing necessary facilities to implement the 40 cfs baseflow and seasonal habitat flow.
LORP, Item 2	2. The Owens River Delta Habitat Area. This feature provides for the enhancement and maintenance of approximately 325 acres of existing habitat and the establishment and maintenance of new habitat consisting of riparian areas and ponds suitable for shorebirds, waterfowl and other animals. An annual average of approximately 6 to 9 cfs will be released below the pumpback system to supply this area.	Releases for the delta occur simultaneously with the 40 cfs baseflow. No construction was necessary for this component of the project other than the completion of the pumpback station.
LORP, Item 3	3. Off-River Lakes and Ponds. Off-river lakes and ponds in the LORP area will be maintained and/or established through flow and land management to provide habitat for fisheries, waterfowl, shorebirds and other animals. These habitats will be as self-sustaining as possible.	This component of the project is on-going.
LORP, Item 4	4. The 1500-Acre Blackrock Waterfowl Habitat Area. In average and above runoff years, approximately 500 acres within an overall project area of 1500 acres will be flooded to provide habitat for resident and	All preliminary construction work identified for implementation of the Blackrock Waterfowl component has been completed. The forecasted runoff for 2009-2010 was 71%. Per Ecosystems Sciences recommendation and consistent with the Blackrock

Title	Provision	Status
	migratory waterfowl and other native species. In years when the runoff is forecasted to be less than average, the water supply to the area will be reduced in general proportion to the forecasted runoff in the watershed.	Waterfowl Management Area (BWMA) flooding strategies for drier years, as well as the Standing Committee's BWMA policy approved this year, 355 acres in the BWMA was flooded this year. Acreage was combined between the Waggoner and Drew units. There are no requirements for each unit and no plans for allocating a set amount of water to each unit. CDFG consultation occurred prior to Standing Committee approval.
LORP (cont)	see Table 21, Agreement Provisions."	
LORP (cont)	LADWP and the County will direct and assist Ecosystem Sciences, Inc. in the preparation and implementation of a management plan for the LORP area that addresses each of the four physical features of the LORP. The parties to the MOU, government agencies, LADWP ranch lessees, and the public will be consulted as the plan is developed.	Ecosystem Sciences has prepared a draft management plan for the project. These plans are listed as draft as the project is based on adaptive management and adjustments may be made in the future. Thus the term "final plan" is not used.
LORP (cont)	LADWP as the lead agency and the County as responsible agency will jointly prepare an EIR on the LORP. A draft EIR was to be released by June of 2000, but the deadline has been extended by the MOU Group. A final EIR will be completed as soon as possible following release of the draft.	This project required an EIR. The Draft EIR was released November 1, 2002. The public comment period concluded January 14, 2003. The Final EIR was approved by the Board of Water and Power Commissioners in July 2004. The Inyo County Board of Supervisors approved the EIR in November 2005. LADWP received all the necessary permits for implementation by January 9, 2006 and construction began immediately.
LORP (cont)	The baseflow in the river channel will be commenced not later than June 2003 unless circumstances beyond LADWP's control prevent the completion of the pumpback system and/or the commencement of baseflow. Implementation of the other features of the LORP will commence upon certification of the LORP EIR.	The Draft EIR stated that the baseflow would not commence on June 13, 2003. The Final EIR was completed in June 2004 per the February 13, 2004 Stipulation and Order. Phase I releases started December 6, 2006. Phase II releases of 40 cfs were physically achieved in February 2007 and were certified by the court in July 2007. Additional punitive conditions involving maintaining flows and recording of flows were added to the 2007 Stipulation and Order following certification of the 40 cfs base flows.
Yellow-Billed Cuckoo Habitat	Under the direction of LADWP and the County, Ecosystem Sciences, Inc. will evaluate Yellow-billed Cuckoo habitat in riparian woodland areas of Hogback and Baker Creeks. Based on the evaluation, if deemed warranted, habitat enhancement plans for these areas will be developed by Ecosystem Sciences, Inc. in consultation with LADWP, the lessee for the area and the parties to the MOU. The evaluations were to be completed within 36 months of the discharge of the writ, but the deadline has been extended by the MOU Group. Actions or projects recommended by this evaluation will be presented to the Board of Water and	Ecosystem Sciences completed a Yellow-billed Cuckoo (YBC) habitat plan in April 2005. LADWP released a Draft EIR in January, 2006. The MOU Parties and others expressed displeasure with the Consultant's project. The MOU Parties and the lessees for the Baker Creek and Hogback Creek areas entered into negotiations with LADWP staff to develop another alternative for the YBC Habitat Plan. The <i>Ad Hoc Yellow-billed Cuckoo Habitat Enhancement Plan</i> was completed and a Mitigated Negative Declaration was released for public review. The Board of Water and Power Commissioners approved the project on January 19, 2010. Implementation of the project has begun.

Title	Provision	Status
	Power Commissioners for approval and implementation. If approved by the Board of Water and Power Commissioners, habitat enhancement plans will be implemented as expeditiously as feasible.	
Inventories of Plants and Animals at Springs and Seeps (within the LORP Planning Area)	Within 36 months of the discharge of the writ, an inventory of plants and animals at wetlands associated with springs and seeps was to be conducted by ES. The deadline has been extended by the MOU Group.	The deadline for completion of the inventories was extended to December 2000 and then to July 2001 by the MOU parties. No further extensions have been granted. ES completed and submitted results of its inventory to the MOU parties in June 2001. ES has completed this work.
Additional Mitigation	A total of 160-AF of water per year will be supplied by LADWP for the implementation of on-site mitigation measure at Hines Springs identified in the 1991 EIR and on-site or off-site mitigation that is in addition to the mitigation measures identified in the 1991 EIR for impacts at Fish Springs, Big and Little Seely Springs and Big and Little Blackrock Springs. Under the direction of LADWP and the County, ES, will recommend reasonable and feasible on-site and/or off-site mitigation measures, including the implementation of mitigation at Hines Springs. Projects recommended by these studies and evaluations will be presented to the Board of Water and Power Commissioners for approval and implementation. The mitigation measures are to be implemented by LADWP and maintained by LADWP and/or the County. The measures were to be implemented within 36 months of the discharge of the writ, but the deadline has been extended by the MOU Group.	This issue was also addressed in the Stipulation and Order of 2004. The Consultants completed draft plans for the 1600-AF water allocation. Comments were submitted by the Parties. The Parties to the MOU and others expressed displeasure with the Consultant's plan. An ad hoc process was initiated which included MOU and other interested Parties trying to resolve issues regarding the additional sites. Plans have been completed. CEQA will be completed and submitted for Board approval (planned for June 2010). The plans will then be implemented if approved.
Owens Valley Management Plans	LADWP, in consultation with the parties to the MOU and others, is to identify areas of City-owned land, which are not included in the LORP planning area, and develop plans for the identified areas to remedy problems caused by livestock grazing and other uses of the land. Priority will be given to riparian areas, irrigated meadows and sensitive plant and animal habitats. The plans will provide for the continuation of sustainable uses (including recreation, livestock grazing, agriculture, and other activities) will promote biodiversity and a healthy ecosystem, and will consider the enhancement of threatened and endangered species habitats. LADWP, working with ES, will commence the planning effort within 5 years, and plans are to be completed within approximately 10 years.	Ecosystem Sciences has completed draft land management plans for Los Angeles land within the LORP area. ES and LADWP personnel are currently developing the land management plans for all of LADWP lands in Inyo County. The final draft report has been completed and Corporate Environmental is performing the CEQA review.

Title	Provision	Status
	Each plan will contain an implementation schedule and will be implemented in compliance with CEQA. As plans become final, they will be presented to the Board of Water and Power Commissioners for approval and implementation.	
Inventories of Plants and Animals at Springs and Seeps (outside the LORP Planning Area)	Within 36 months of the discharge of the writ, an inventory of plants and animals at wetlands associated with springs and seeps was to be conducted jointly by LADWP and the County on lands owned by the City of Los Angeles within the portion of the Owens River watershed located in Inyo County that is not included in the LORP Planning Area.	LADWP has completed data collection for spring and seep discharge. LADWP had ES completed the inventory of plants and animals.
Type E Vegetation	By December 1999, LADWP and the County are to develop baseline conditions for management of vegetation classified as Type E in the long-term agreement. These conditions will be adopted by the Standing Committee.	The inventory of Type E Vegetation was conducted by Resource Concepts, Inc. (RCI) under a contract administered by Inyo County and funded by LADWP. The final report on the inventory was completed in December 1999.
Aerial Photo Analysis	By June 2000, LADWP, the County and experts in aerial photography interpretation were to conduct a study analyzing existing air photos of the Owens Valley to evaluate the merits of using air photos in monitoring vegetation in the valley, to determine the feasibility of using air photos to analyze and refine the vegetation map data base, and to provide recommendations on how aerial photography, or other remote sensing techniques, could be used to monitor vegetation conditions and changes. If feasible and cost-effective relative to other field monitoring techniques, recommendations will be implemented.	The deadline was extended by the MOU group. In January 2002, Ecosat Geobotanical Surveys, Inc., the consultant conducting the study, completed reports addressing the MOU requirements.
Mitigation Plans for Impacts Identified in the 1991 EIR and the Water Agreement	The Technical Group will prepare mitigation plans and implementation schedules for all area for which on-site mitigation measures have been adopted in the 1991 EIR. The plans will be completed by June 1998. In accordance with the EIR, on-site mitigation will be accomplished through revegetation with native Owens Valley species and through establishment of irrigation.	<p>In August 1999, following the receipt of comments from the MOU parties, the Inyo/Los Angeles Technical Group approved the mitigation plans. In January 2002, the County identified four on-site mitigation measures for which plans were inadvertently omitted from the mitigation plans. The County prepared draft plans and schedules for these measures. Mitigation plans were submitted by LADWP to ICWD for the Independence Eastside Regreening and Big Pine Northeast Regreening projects and evaluations of East of Shepherd Creek Alfalfa Potential E/M and East of Big Pine Potential E/M projects on August 13, 2004.</p> <p>CEQA documentation was completed for the <u>Independence Eastside Regreening</u> Project and Town Water System on September 23, 2004, with a public comment period from</p>

Title	Provision	Status
		<p>September 23 to October 29, 2004. The Board of Water and Power Commission approved the project in May 2005. Inyo County requested changes to the project after the completion of CEQA including: relocation of the project supply well, change of irrigation type from flood to sprinkler, and addition of corrals/stables. These changes were incorporated into a project scoping document amendment that was approved by the Standing Committee on April 23, 2009. Inyo County has agreed to complete additional CEQA evaluation if required to address project changes.</p> <p><u>Big Pine Northeast Regreening Project</u>- Mitigation Plans for the project were transmitted to the County in 2004. Comments were received from the County in 2005. LADWP identified issues making the project unfeasible as originally scoped. In order to facilitate implementation of the project LADWP recommended the following changes: 1) Change the water source for the project to be the Big Pine town supply system, a soul source on site well, or exempt Well 375 as a project supply well, 2) Change irrigation method from flood irrigation to the option of flood or sprinkler irrigation, 3) Move the project area closer to Highway 395, 4) Change the lessee identified for the project to an unspecified lessee. These changes were discussed publicly at the September 9, 2009 Inyo County Water Commission meeting and the November 5, 2009 Inyo/LA Standing Committee meeting. The ICWD is currently reviewing the proposed changes.</p>
Technical Group Meetings	Technical Group meetings are to be open to the public	Scheduled Technical Group meetings were opened to the public beginning October 15, 1997.
Annual Reports	LADWP and the County are to prepare annual reports describing environmental conditions in the Owens Valley, and describing studies, projects and activities conducted under the long-term agreement and the MOU. The report will be released on or about May 1 of each year.	Inyo County has prepared annual reports since 1991. LADWP released annual reports for 2001 through 2009. This report is intended to fulfill the obligation for 2010.
Fish Slough	The MOU acknowledges that LADWP and CDFG have reached agreement concerning threatened and endangered species that involves land management and other activities in the Fish Slough area of Mono County. The agreement is to be memorialized in a letter from LADWP to CDFG.	A letter agreement was never memorialized; however, LADWP has worked closely with CDFG on the Fish Slough Area of Critical Environmental Concern (ACEC).
Dispute Resolution and Litigation	The parties to the MOU will maintain frequent, informal communications to minimize disagreements. In the	The parties to the MOU, called the "MOU Signatory Group," have met regularly on an as needed basis. In addition, the Group and

Title	Provision	Status
	event of a dispute among the parties over the MOU the parties will meet and confer before any litigation concerning the dispute may be commenced. The parties may elect to retain the services of a mutually acceptable impartial mediator/facilitator to assist in dispute resolution. Any litigation arising out of the MOU is to be commenced in the Inyo County Superior Court.	their attorneys met several times during the fall/winter of 2003-04 to develop the 2004 Stipulation and Order. Due to conditions beyond LADWP's control, the 2004 Stipulation and Order schedule for putting water in the LORP could not be met. The MOU parties filed suit in the Inyo County Superior Court on July 25, 2005. The Court ordered limited pumping, required groundwater recharge, no reduction of in-valley uses, a fine, and implementation of LORP base flows by July 25, 2007. The Court also stayed an injunction against the use of the second aqueduct if base flows were not achieved in the LORP. Upon achieving base flows prior to July 25, 2007 the injunction and daily fines were dismissed.
Financial Assistance	The County will pay the sum of \$53,000 to the Sierra Club and the sum of \$30,000 to the Owens Valley Committee for professional services in the development and preparation of the MOU.	The specified amounts have been paid by the County to the identified parties.

6.5. Cooperative Studies

See Table 23 for the details of the Cooperative Studies approved by the Standing Committee.

TABLE 23. Cooperative Studies

Title	Provision	Status
Development of Hydrological Modeling Tools (Robert Harrington, ICWD; Saeed Jorat, LADWP)	The purpose of this study is to improve hydrological models developed by previous cooperative studies to evaluate the impact of groundwater pumping, weather variations, surface water management, and other hydrologic changes on groundwater levels. Because groundwater modeling is the only method for consistent interpretation of groundwater data and evaluation of management options, this task is a prerequisite to fulfill the monitoring and technical goals of the Water Agreement. Inyo County and LADWP want to jointly develop a common set of modeling tools so that methods and analyses are understood and accessible to each agency.	The first model to be considered for improvement was the regional groundwater model by USGS. With the assistance from USGS staff, this model has been updated and recalibrated. A draft final report was completed in 2004.
Development of a Model for Predicting Phreatophyte Water Use and Soil Water Replenishment (Aaron Steinwand, Robert Harrington, ICWD; Saeed Jorat, Paula Hubbard, LADWP)	The purpose of this study is to combine information from vegetation, groundwater, precipitation, and soil water monitoring into a model to predict depletion and replenishment of stored soil water above a fluctuating water table. This capability will help protect Owens Valley vegetation by predicting how long soil water will support the vegetation after pumping commences. If soil water information is to continue to be used to trigger pumping decisions, this type of models needed by the Technical Group to evaluate the environmental effects of opposed pumping scenarios and to provide reliable forecasts of expected pumping yields.	The study is underway.
Evapotranspiration from Groundwater-Dependent Plant Communities: Comparison of Micrometeorological Measurements and Vegetation-based Measurements (Robert Harrington, Aaron Steinwand, ICWD; Paula Hubbard, David Martin, LADWP)	The objective of this study is to provide direct measurements of evapotranspiration (ET), the combination of evaporation from the ground surface and plant water use, using micrometeorological methods to corroborate current estimates of vegetation transpiration. ET estimates are essential to the Green Book methods for managing pumping and may remain an important component of groundwater management strategies in the future. Results from this study will be applied to improve the ET component of numerical groundwater models (study #1) and soil water models (study #2).	This project was completed in 2004.

Title	Provision	Status
Characterization of Confining Layer Hydrologic Conductivity and Storage Properties in the Owens Valley (Randy Jackson, ICWD; Saeed Jorat, LADWP)	The purpose of this study is to determine confining layer hydrologic properties to assist groundwater modeling efforts (study #1) and to improve the management of wells sealed to the deep aquifer. Pumping from deep aquifers potentially could be managed differently than the Green Book methods. Without information to be developed by this study, however, the magnitude and timing of the water table drawdown from pumping deep aquifers is difficult to predict, complicating any assessment of the effects of different pumping scenarios. A stepwise approach is proposed, starting with analysis of existing data and progressing to low and high intensity field projects, if necessary.	The first phase was completed in April 2003. The final report included sections on identification of methods and tool for characterizing confining layer, analysis of existing aquifer pumping test data, and development of GIS layers for confining layer characteristics in the Owens Valley. A work plan was prepared in March 2004 to perform short-term aquifer pumping tests on 11 production wells throughout Owens Valley to further refine distribution of the confining layer and its hydraulic characteristics.
Shallow and Deep Groundwater Geochemistry and the Source of Spring and Seep Water in the Owens Valley (Aaron Steinwand, Randy Jackson, ICWD; Saeed Jorat, Paula Hubbard, LADWP)	Springs and seeps are valuable and sensitive habitats in the Owens Valley. The purposes of this study are to monitor basic water quality indices seasonally for one year to develop a database to be used to assist restoration of spring waters should any impacts occur. Secondly, the geochemical signatures of water from selected springs and seeps will be examined and compared to shallow and deep groundwater samples to identify the source of the water. These results will be used to link spring and seep flows to particular aquifers to improve groundwater models (study#1) used to assess potential effects of pumping on these areas. An expert in geochemical modeling will be selected by the fall of 2000 to assist the principal investigators with this study.	In Spring 2002, sampling and chemical analysis from shallow test holes, springs, deep wells, surface water and seep area from Lone Pine to Big Pine was completed. A second, more limited round of sampling was conducted in Spring of 2003. A final report on the chemical analyses is complete, which includes results of the chemical analysis and the final interpretations on the source of water in each of the springs and seeps.
Application of Canonical Community Ordination (CANOCO) to Assess Owens Valley Vegetation Change (Sally Manning, ICWD; David Martin, LADWP)	Over the past decade, the Technical Group has collected a vegetation data set that contains information on species abundances and several environmental data sets have become available. Multivariate data analysis techniques provide a means to analyze the vegetation data in conjunction with the environmental influences. By applying these analyses, the Technical Group will be better able to understand the relationship between environmental variables and vegetation change, the rates of change, and the predisposing conditions that are likely to result in	Since 2000, the principal investigators have worked independently on studying factors influencing vegetation change. The results of preliminary County evaluations have been produced for internal County review and were presented by the County at a meeting of the Ecological Society of America.

Title	Provision	Status
	significant long-term, adverse conditions.	
Inventory and Classification of Riparian Vegetation in the Owens Valley for Use in Future Monitoring (Consultant)	The objective of this study is to inventory, map, and classify riparian (Type D) vegetation on Los Angeles-Owned land in the Owens Valley to improve monitoring and management of these areas. This study was suggested in the Green Book but has not been completed.	The Inyo/Los Angeles Standing Committee agreed that this work will be conducted by a consultant through an RFP process. During the 2006 growing season Ecosystem Sciences completed an inventory and classification of all riparian areas in Inyo and Mono Counties as part of their preparation of the Habitat Conservation Plan associated with the Owens Valley Land Management Plan. Therefore, this project is complete.
Development of a Demographic Model for Nevada saltbush (<i>Atriplex torreyi</i>) (Sally Manning, ICWD; David Martin, LADWP)	The purpose of this study is to develop a stage-based demographic model for the native, invasive shrub, Nevada Saltbush (<i>Atriplex lentiformis</i> spp. <i>torreyi</i>). Development of a demographic model will allow existing data to be used to estimate the probability of populations reaching certain sizes in the future, given various assumptions about environmental factors. Model development will also allow a sensitivity analysis to be performed in which points in the species' life cycle, having the most impact on population growth, would be identified. Identification of such points could be extremely useful to determine the nature and timing of intervention which could be implemented to control Nevada Saltbush in places where its invasion could cause a conversion in vegetation type that is not allowed under the long-term water agreement.	Since 2000, the principal investigators have worked independently on this study.
Owens Lake Groundwater Evaluation	LADWP has proposed pumping groundwater from Owens Lake for use in the abatement of dust on the lake bed. Any pumping by LADWP from the lake is subject to the provisions of the Inyo/Los Angeles Agreement	The Consulting firm of Camp, Dresser & McKee, Inc. (CDM) completed an evaluation of proposed pumping from the lake. In 2000, CDM submitted a report to the Standing Committee presenting the public's views on the objectives and standards that should govern Owens Lake pumping and a work plan for a long-term groundwater evaluation. MWH, Inc. was selected by Inyo County and LADWP to implement the recommendations of the CDM work plan.

6.6. Revegetation/Regreening Projects, Progress, and Proposed Future Work

See Table 24 for the details of the Revegetation/Regreening Projects, Progress, and Proposed Future Work.

TABLE 24. Revegetation/Regreening Projects, Progress, and Proposed Future Work

Title	Provision	Status
Laws 90	The site has been fenced.	In 2009, buried drip irrigation lines were installed. Approximately 3,000 plants that were propagated in LADWP's greenhouse were planted at emitters.
Laws 94	The site has been fenced.	In 2009, the drip system ran from April through October. Repairs were completed on the drip irrigation system as needed.
Laws 95	The site has been fenced.	In 2009, the drip system ran from April through October. Repairs were completed on the drip irrigation system as needed.
Laws 118	The site has been fenced. Permanent transects have been installed and baseline monitoring has been conducted. Revegetation studies have been implemented by SAIC using seed with sprinklers and plants with drip irrigation. In addition, MWH conducted studies on dryland revegetation techniques using native seed and various treatments.	Approximately 32 acres of this revegetation parcel was removed to become irrigated pasture. In 2009, the drip system ran from April through October. Repairs were completed on the drip irrigation system as needed.
Laws 129	This site has been fenced.	In 2009, the drip system ran from April through October. Repairs were completed on the drip irrigation system as needed.
Five Bridges	Water releases to this area were initiated in 1987. Permanent photo points and transects have been monitored annually. Fences were installed to eliminate grazing in the riparian and meadow areas that water releases flow through. Initial water releases were from Bishop Creek Canal to C-Drain. The Mitigation Plan stated that releases should be conducted by high flows in the Owens River. These high flows were very difficult to implement. As a consequence, a change was made and water releases originated from Bishop Creek Canal to C-Drain. Water has been released three times a year during the growing season. All water releases are monitored. Weed control is conducted annually. Controlled burns have been conducted to help with weed control. Grass qualitative monitoring has been conducted and the results of this and the monitoring noted above indicate that the area is responding well to the water releases.	In 2009, releases from the Bishop Creek Canal via C Drain were conducted three times during the growing season. Permanent photo points and transects were monitored. Grass qualitative monitoring was conducted. Weed control continued.

Title	Provision	Status
Bishop 97	The site has been fenced. Permanent transects have been installed and baseline monitoring has been conducted. Permanent transects were run in 2003 to document any changes from baseline conditions. MWH conducted studies on dryland revegetation techniques using native seed and various treatments.	Potential water sources are being evaluated and a drip irrigation system is being designed for this site. Implementation at this site will commence one year after the project at Big Pine 160 is fully implemented and operating properly. Once the irrigation system is installed and operational, plants/seeds from species identified for this site will be placed at emitters.
Big Pine NE Regreening	A revised scope of work was sent to ICWD that reflected the interests of the citizens of the community of Big Pine. ICWD did not provide comments on this revised scope of work. On August 13, 2004 LADWP submitted a Mitigation Plan that reflected the project as described in the Final Scoping Document that was approved by the Standing Committee in 1988. Comments were received from the County in 2005.	<u>Big Pine Northeast Regreening Project-</u> Mitigation Plans for the project were transmitted to the County in 2004. Comments were received from the County in 2005. LADWP identified issues making the project unfeasible as originally scoped. In order to facilitate implementation of the project LADWP recommended the following changes: 1) Change the water source for the project to be the Big Pine town supply system, a sole source on site well, or exempt Well 375 as a project supply well, 2) Change irrigation method from flood irrigation to the option of flood or sprinkler irrigation, 3) Move the project area closer to Highway 395, 4) Change the lessee identified for the project to an unspecified lessee. These changes were discussed publicly at the September 9, 2009 Inyo County Water Commission meeting and the November 5, 2009 Inyo/LA Standing Committee meeting. The ICWD is currently reviewing the proposed changes.
Big Pine 160	The site has been fenced. Permanent transects have been installed and baseline monitoring has been conducted. MWH conducted studies on dryland revegetation techniques using native seed and various treatments.	Potential water sources are being evaluated and a drip irrigation system is being designed for this site. Once the irrigation system is installed and operational, plants/seeds from species identified for this site will be placed at emitters. The irrigation system will cover an area of approximately 17 acres. During 2010-2011 LADWP will implement 3 of the 17 acres.
East Big Pine	"An area of approximately 20 acres directly to the east of Big Pine that is poorly vegetated as a result of pre-project activities and activities which are not a part of the project will be evaluated as a potential enhancement/mitigation project. If, in planning this project, it is determined	A survey was completed in 2006 for a fence for this site. The area was fenced in 2007 to eliminate disturbances and encourage natural revegetation. If this area does not revegetate naturally, it will be included with LADWP's ongoing revegetation efforts.

Title	Provision	Status
	that it is not feasible to permanently irrigate this area, a revegetation program will be implemented" (1991 EIR Impact 10-19). The "Revegetation Plan for Impacts Identified in the LADWP, Inyo County EIR for Groundwater Management" that was submitted to the MOU Group in 1999 states that this area is within the same parcel as Big Pine 160 and, therefore, the mitigation will be the same for both sites.	
Tinemaha 54	The site has been fenced. Permanent transects have been installed and baseline monitoring has been conducted. Grass plants were planted in 1999. A drip irrigation system was installed in 2001. The grass plants were irrigated during the growing season from the time the system was installed through 2004.	Transects were run in 2004 to assess cover at this site.
Blackrock 16E	The site has been fenced. Permanent transects have been installed and baseline monitoring has been conducted. A controlled burn was conducted by LADWP in conjunction with California Department of Forestry to remove weed litter. Permanent transects were run in 2002 to document any changes from baseline conditions. Site native perennial cover has increased, so no active revegetation plans will be developed at this time.	Transects were run in 2005 to assess cover at the site.
Hines Springs S	This site will likely be affected by the Hines Springs on-site mitigation. The site goal and revegetation plan for this area will be developed within three years after the work at Hines Springs is completed.	No action will be initiated until the Hines Springs on-site mitigation is completed.
Independence Regreening	A revised scope of work has been submitted to ICWD that reflects the interests of the citizens of the community of Independence	CEQA was filed for the Independence East Side Regreening Project and Town Water System September 23, 2004 with a public comment period from September 23 to October 29, 2004. Responses to comments were completed. The Board of Water and Power Commission approved the project in May 2005. CEQA was completed for the project with the well location on the project site. Inyo County requested changes to the project after the completion of CEQA including: relocation of the project supply well, change of irrigation

Title	Provision	Status
		type from flood to sprinkler, and addition of corrals/stables. These changes were incorporated into a project scoping document amendment that was approved by the Standing Committee on April 23, 2009. Inyo County has agreed to complete additional CEQA if required to address project changes.
Independence 105	The site has been fenced. Permanent transects have been installed and baseline monitoring has been conducted. Permanent transects were run in 2001 to document any changes from baseline conditions. Site native perennial cover has increased, so no active revegetation plans will be developed at this time.	Transects were be run in 2006 to assess cover at the site. The site has attained the goals for cover and composition delineated in the revegetation plan.
Independence 123	The site has been fenced. Permanent transects have been installed and baseline monitoring has been conducted.	Transects were run in 2006 to assess cover at the site. The site has attained the goals for cover and composition delineated in the revegetation plan.
Independence 131	The site has been fenced. Permanent transects have been installed and baseline monitoring has been conducted. Revegetation studies have been implemented by SAIC using seed with sprinklers and plants with drip irrigation. In addition, MWH conducted studies on dryland revegetation techniques using native seed and various treatments.	Monitoring of the SAIC study was conducted during the 2004 growing season. Data indicates that placing seed at emitters produced positive results. Therefore, seed will be used for this portion of the revegetation project. Precipitation conditions in the last few years have resulted in recruitment of native species and an increase in vegetation cover in areas not disturbed by the revegetation trials. Permanent transects were run in 2006.

6.7. Mitigation Monitoring and Reporting Program for the LORP

This Mitigation Monitoring and Reporting Program (MMRP) was developed to ensure implementation of the mitigation measures outlined in the Final Environmental Impact Report and Environmental Impact Statement (EIR/EIS) for the LORP (State Clearinghouse No. 2000011075). The MMRP was prepared by the City of Los Angeles Department of Water and Power (LADWP), the lead agency for the LORP under the California Environmental Quality Act (CEQA), in conformance with Public Resources Code Section 21081.6 and CEQA Guidelines Section 15097.

Project Description Summary

The LORP is a large-scale habitat restoration project in Inyo County, California, is being implemented through a joint effort by LADWP and Inyo County. The LORP was identified in a 1991 Environmental Impact Report as mitigation for impacts related to groundwater pumping by LADWP from 1970 to 1990. The description of the project was augmented in a Memorandum of Understanding (MOU), signed by LADWP, Inyo County, California Department of Fish and Game (CDFG), California State Lands Commission (SLC), Sierra Club, and the Owens Valley Committee. The MOU specifies the goal of the LORP, timeframe for development and implementation, and specific actions. It also provides certain minimum requirements for the LORP related to flows, locations of facilities, and habitat and species to be addressed.

The overall goal of the LORP, as stated in the MOU, is as follows:

“The goal of the LORP is the establishment of a healthy, functioning Lower Owens River riverine-riparian ecosystem, and the establishment of healthy functioning ecosystems in the other elements of the LORP, for the benefit of biodiversity and threatened and endangered species, while providing for the continuation of sustainable uses including recreation, livestock grazing, agriculture, and other activities.”

LORP implementation includes release of water from the Los Angeles Aqueduct to the Lower Owens River, flooding of approximately 500 acres in the Blackrock Waterfowl Habitat Area, maintenance of several off-river lakes and ponds, modifications to grazing practices, construction of minor new facilities (to facilitate the release, monitoring, etc.), and installation of a pump station to capture a portion of the water released to the river.

Mitigation Monitoring and Reporting Plan (MMRP) Responsibility

Implementation and monitoring of most of the identified mitigation measures are post-implementation costs to be shared equally between LADWP and Inyo County. Operation and maintenance related to the pump station and monitoring for grazing management is solely the responsibility of LADWP. For other elements of the LORP, LADWP and Inyo County staff shares the responsibility for implementation and monitoring.

Organization of the MMRP

The LORP MMRP presents the mitigation measures by geographic area (Riverine-Riparian System, Blackrock Waterfowl Habitat Area, Pump Station and Associated Facilities, Land Management Plan, and other mitigation measures associated with the LORP as a whole).

(Note: Some mitigation measures apply to more than one area.) The timing of the measure, the party responsible for implementing the measure, the agency responsible for mitigation monitoring, and the monitoring method are identified for each mitigation. A line for documentation of compliance is also provided.

Riverine-Riparian System

Air Quality

Mitigation Measure AQ-1 PM10 (fugitive dust) emissions from ground disturbance during construction of the pump station.

To minimize dust/ PM10 emissions during construction activity, as necessary, one or more of the following measures have been implemented:

- After clearing, grading, earth moving, or excavation has been completed, the disturbed areas have been treated by watering, or revegetated.
- During construction, water trucks were used to keep areas of vehicle movement, temporary soil stockpiles, and construction disturbance damp enough to prevent dust from leaving the site.
- The amount of disturbed area was minimized and on site vehicle speeds were reduced to 15 miles per hour or less.

Biological Resources

Mitigation Measure F-1 Impacts on game fishery associated with potential water quality degradation during initial flow releases to the river.

No work has been conducted that would require action for this mitigation measure.

Mitigation Measure RW-1 Impacts on breeding birds during mechanical removal of tules.

Removal of cattail and bulrush obstructions, mechanical removal of cattail and bulrush stands occurred in winter to avoid conflicts with breeding birds. Work after March 15 was conducted after field surveys determined there would be no affect to nesting birds.

Mitigation Measure R-1 Short-term disturbance of desert sink scrub associated with the establishment of temporary access roads during initial channel clearing.

Temporary access roads used to clear the river channel were seeded with native or naturalized grasses and shrubs common to the valley after completion of the de-silting operation to facilitate restoration of vegetative cover and species compatible with the surrounding vegetation. The colonization by non-native aggressive or noxious weeds will be inhibited by weed control for 3 years after construction.

Mitigation Measure RW-2 Impacts on wetland and riparian vegetation during mechanical removal of tules.

Impacts to wetland and riparian habitats adjacent to the work area were minimized by making use of existing barren areas for staging, operations, and stockpiling; crushing vegetation in the work area rather than clearing or grading it; and mulching areas denuded during operations with vegetative debris to encourage natural revegetation and discourage noxious weeds.

Cultural Resources

Mitigation Measure CRR-1 Potential disturbance of known archaeological and historic sites during establishment and use of construction-related roads and/or use of construction equipment for the channel clearing work.

LADWP implemented the following management actions to avoid impacts on cultural resources during the channel clearing work:

- LADWP worked with qualified archaeologists to locate the temporary access road for the channel clearing work to avoid the two historic sites identified in the field survey by Far Western (2003).
- Temporary construction fencing was installed along the perimeter of the area where these two historic sites are located to avoid construction equipment, vehicles, or personnel from accidentally entering and disturbing the site.
- Temporary construction fencing was installed between the sediment stockpile area and the adjacent prehistoric site to avoid heavy equipment and or sediment spoil from accidentally entering and disturbing the site.
- Installation of temporary fencing referenced above was conducted under the supervision of a qualified archaeologist.
- LADWP notified representatives of regional Native American Tribes prior to beginning earthwork for the channel clearing work.
- No previously unknown prehistoric or historic cultural material was encountered.

Mitigation Measure CRR-2, Potential impacts on unknown archeological sites or cultural deposits that could be affected by the new flows or earthwork.

No previously unknown prehistoric or historic cultural material was encountered.

Hydrology

Mitigation Measure H-1 Localized overbank flooding that could affect public roads and lease roads that cross the river if floating debris clogs the culverts and bridges, primarily under the seasonal habitat flows.

No work has been conducted that would require action for this mitigation measure.

Pumpstation and Associated Facilities

Air Quality

Mitigation Measure AQ-1 PM₁₀ (fugitive dust) emissions from ground disturbance during construction of the pump station.

To minimize dust/ PM₁₀ emissions during construction activity, as necessary, one or more of the following measures have been implemented:

- After clearing, grading, earth moving, or excavation has been completed, the disturbed areas have been treated by watering, or revegetated.
- During construction, water trucks were used to keep areas of vehicle movement, temporary soil stockpiles, and construction disturbance damp enough to prevent dust from leaving the site.
- The amount of disturbed area was minimized and on site vehicle speeds were reduced to 15 miles per hour or less.

Mitigation Measure AQ-2 PM₁₀ (fugitive dust) emissions from sediment stockpile at the pump station site.

LADWP stabilized the sediment stockpile at the pump station site as necessary to minimize wind-blown dust from the stockpile. The method to reduce fugitive dust emissions was water application.

Biological Resources

Mitigation Measure P-1 Disturbance to upland vegetation from construction of the pump station and associated facilities.

Upland areas disturbed during construction at the pump station site were regraded to create natural contours that match adjacent topography. These areas were then seeded with native plant species in mid-February 2007. The species included were based on the species removed, and the availability of seeds or plant materials.

Mitigation Measure P-3 Disturbance of upland vegetation during construction of the power line.

The area of temporary disturbance associated with construction of the power line was minimized to the extent feasible by using overland travel to reach pole sites, prohibiting construction of new roads, and minimizing soil disturbance such as scraping or excavation, except where necessary to ensure safe passage or to complete construction.

Mitigation Measure P-4 Potential inadvertent disturbance of a freshwater seep that is located within 100 feet of the proposed power line alignment, about 2000 feet north of Highway 395 on the margins of Owens Lake.

The small freshwater seep along the power line was avoided during construction by marking its boundary on construction drawings and flagging them in the field prior to construction activities to indicate an environmentally sensitive area to be avoided.

Mitigation Measure P-5 The potential for increase in predation on plovers and other shorebirds from the increase in power poles.

Power poles installed for the LORP pump station that are located within 0.25 mile of Owens Lake were equipped with anti-predator perches (aluminum combs or other appropriate devices placed on top of poles or other potential perching sites).

Cultural Resources

Mitigation Measure CRP-1 Potential disturbance of unknown cultural resources during construction of the pump station.

LADWP implemented the following management actions to avoid impacts on cultural resources during construction of the pump station:

- LADWP notified representatives of regional Native American Tribes prior to beginning earthwork for the pump station. Interested Tribal representatives shall be invited to participate (on a volunteer basis) in the monitoring of the earthwork.
- A qualified archaeologist has been present during earthwork for the pump station to monitor for and avoid cultural resources. Human remains were encountered during work at the Pump Station in June 2006. Representatives from Far Western Archeological and from the local tribe reinterred the remains at a nearby location.

Mitigation Measure CRP-2 Potential disturbance of unknown cultural resources during construction of the power line.

LADWP notified representatives of regional Native American Tribes prior to beginning construction of the power line.

Water Quality

Mitigation Measure P-2 Temporary water quality impacts associated with site disturbance and equipment use during construction of the pump station.

The Storm Water Pollution Prevention Plan (SWPPP) was prepared under the provisions of the required Construction General Storm Water NPDES Permit and specifically included measures to: (1) prevent erosion from the construction site and from the post-construction site that could cause sedimentation into the river, with a focus on stabilizing the river banks to prevent sloughing and erosion during the initial river flows and due to water level fluctuations in the forebay; and (2) prevent discharge of construction materials, contaminants, washings, concrete, fuels, and oils into the river from construction equipment and vehicles. These measures included, at a minimum, physical devices to prevent sedimentation and discharges (e.g., silt fencing, hay bales), and routine monitoring of these devices and the conditions of the river downstream of the pump station site.

Blackrock Waterfowl Habitat Area

Air Quality

Mitigation Measure AQ-1 PM₁₀ (fugitive dust) emissions from ground disturbance during construction of the berms and ditches in Blackrock Waterfowl Habitat Area.

To minimize dust/ PM₁₀ emissions during construction activity, as necessary, one or more of the following measures have been implemented:

- After clearing, grading, earth moving, or excavation has been completed, the disturbed areas have been treated by watering, or revegetated.
- During construction, water trucks were used to keep areas of vehicle movement, temporary soil stockpiles, and construction disturbances damp enough to prevent dust from leaving the site.
- The amount of disturbed area was minimized and on site vehicle speeds were reduced to 15 miles per hour or less.
- Roads throughout the LORP area have been improved and covered with shale to help reduce dust emission.

Biological Resources

Mitigation Measure B-1 Disturbance of upland vegetation during construction of berms and ditches in the Blackrock Waterfowl Habitat Area.

Temporarily disturbed upland habitats in the Blackrock Waterfowl Habitat Area have been seeded with native grasses and shrubs common to the valley to facilitate restoration of vegetative cover utilizing species compatible with the surrounding vegetation. The colonization by non-native weeds will be inhibited by weed control for 3 years after construction. During the 2008 growing season tamarisk seedlings were treated and removed.

Cultural Resources

Mitigation Measure B-2 Potential disturbance of known archaeological sites during construction of a ditch in the Blackrock Waterfowl Habitat Area.

LADWP implemented the following management actions to avoid impacts on cultural resources during construction of the proposed ditch to be located in proximity of the two known prehistoric sites:

- LADWP notified representatives of regional Native American Tribes prior to beginning construction of the proposed ditch to be located in proximity of the two known prehistoric sites. Interested Tribal representatives have been invited to be present (on a volunteer basis) during the construction of the ditch.
- LADWP worked with a qualified archaeologist to locate the proposed ditch to avoid the two known prehistoric sites identified in the field survey by Far Western (2001).
- Temporary protective fencing has been placed between the known prehistoric sites and proposed ditch areas. A qualified archaeologist supervised the placement of temporary protective barriers.
- All vehicles have remained on the road in the vicinity of the known prehistoric sites.
- If construction must occur within 25 feet of these sites, an archaeologist will monitor construction activities.

Land Management Plan

Rangelands

Mitigation Measure LM-1 Potential increase in livestock drift onto public lands.

The work associated with this measure is complete. There has not been an increase in livestock drift onto public lands.

Other Mitigation Measures Associated with the LORP as a Whole

Deleterious Species

Mitigation Measure V-1 Potential increase in the distribution and abundance of perennial pepperweed, Russian knapweed, saltcedar, and other noxious non-native weeds.

LADWP has implemented the following actions to minimize infestations of noxious weeds:

- Construction and other disturbance of substrates have been minimized.
- The use of fire for vegetation management has been minimized.
- Construction equipment was maintained “weed free” by washing and inspecting equipment used in weed-infested areas prior to moving to another site.
- On-site fill materials for construction were used to the extent possible. Off-site fill materials were taken from borrow pits located in areas that are free of noxious weeds.

Mitigation Measure V-2 Potential increase in the distribution and abundance of perennial pepperweed, Russian knapweed, and other noxious non-native weeds (excluding saltcedar).

LADWP is providing \$50,000 per year to the Agricultural Commissioner to fund the monitoring and control of new infestations of perennial pepperweed and other noxious weeds (excluding saltcedar) in the LORP project area for the first 7 years of LORP implementation. In addition, LADWP is providing \$150,000 per year for the first 7 years to the Agricultural Commissioner to fund the control of existing perennial pepperweed and other noxious weed populations outside of the LORP area that could serve as seed sources for the LORP area. The commitment by LADWP in this effort over the 7-year period is a total of \$1,400,000. As of January 19, 2010, LADWP has provided \$750,000 to the Inyo-Mono County Agricultural Commissioner for this provision.

The Agricultural Commissioner has developed protocols for monitoring and controlling infestations based upon past experience and current literature. Based on the protocols, the Agricultural Commissioner will use the funds to identify and treat new infestations of noxious weeds within the LORP area in a timely manner, with priority given to the riparian areas. Existing infestations outside of the LORP area that could serve as seed sources for the LORP area will also be monitored and treated. A Memorandum of Understanding between the Agricultural Commissioner and LADWP will be entered into, and will outline the responsibilities of each agency under the protocols.

Mitigation Measure V-3 Potential increase in the distribution and abundance of saltcedar.

In addition to LADWP's contribution to the existing Inyo County Saltcedar Control Program, LADWP will provide funding to Inyo County in order for the County's Saltcedar Control Program to implement the following measures.

Monitoring and Treatment of New Saltcedar Infestations

Protocols for monitoring and treating new saltcedar infestations in the project area will be developed and implemented by the Inyo County Saltcedar Control Program in cooperation with LADWP. Several joint meetings were held in 2007-08 to discuss this issue. The protocols will include, but not be limited to, the following:

- Prioritization for monitoring and treatment of areas that are to undergo a change in hydrologic status and that do not have an established cover of native plants.
- Provisions for treating new saltcedar infestations, including protocols for treating saltcedar near rare plant populations.
- Provisions for annual pedestrian monitoring of project areas potentially subject to saltcedar infestations.
- Provisions for annual follow-up treatments of previously treated saltcedar infestations.

Treatment of Saltcedar Seed Sources

If the ongoing Inyo County Saltcedar Control Program is not able to achieve the priorities for the control of existing saltcedar populations in the LORP area identified in Section 10.4.1.6 of the LORP EIR, the control of existing saltcedar populations will be completed as part of this mitigation measure.

Coordination

In addition to the above, the program will include:

- LADWP will provide to the Saltcedar Control Program reports and data compiled through the LORP monitoring program concerning flows and water levels related to the river baseflow and seasonal habitat flows, releases to the Delta, and water levels at the Off-River Lakes and Ponds and in the Blackrock area.
- LADWP will notify the Saltcedar Control Program of the timing and extent of annual seasonal habitat flows, increased flow releases to Blackrock units, pulse flows to the Delta, and other changes in land management that could cause a new infestation of saltcedar.
- LADWP will provide to the Saltcedar Control Program work products relevant to saltcedar control that are prepared through the LORP monitoring program, such as maps, imagery, etc.

Funding

LADWP will provide matching funds for LORP saltcedar control equal to the amount obtained by the County up to a total of \$1.5 million. The intent of this mitigation measure is to suppress increases in saltcedar resulting from LORP implementation. If continuation of the LORP-focused saltcedar control program is required and the matching funds described above are exhausted, funding for the program will be an ongoing post-implementation cost (EIR/EIS Section 2.2.2.2).

Mitigation Measure V-4 Potential increase in the distribution and abundance of noxious weeds and New Zealand mud snails.

LADWP conducted a training program for LADWP and Inyo County personnel, lessees, and their employees working within the LORP area on identification and reporting of noxious weeds, including saltcedar, and New Zealand mud snails. The training was conducted at all LADWP maintenance facilities in the Owens Valley. The Eastern Sierra Weed Management Area Noxious Weed Identification Handbook was provided to program participants. The instruction detailed how to accurately describe their locations to aid in verification and timely response and identify the agencies to which sightings of the species should be reported. As new personnel are hired or when training is updated, a refresher course will continue to be provided. In addition, photos of relevant deleterious species have been posted in the assembly rooms of appropriate LADWP and Inyo County facilities.

Mitigation Measure V-5 Potential increase in the distribution and abundance of New Zealand mud snails.

Informational materials have been prepared regarding how to identify New Zealand mud snails and notifying recreational users to take precautionary measures to prevent the spread of New Zealand mud snails. The signs are currently being developed and will be posted in 2010 at key access points to the LORP area, such as Mazourka Canyon Road, Manzanar Reward Road, the pump station, and the Delta. The precautionary measures that will be described on the signs include: scrubbing and rinsing waders, boots, watercraft, and equipment before leaving the water (using hot water or drying will enhance this measure); disposing of fish entrails in proper trash receptacles; and reporting to the Non-indigenous Aquatic Species Toll Free Hotline if this species is observed.

Mitigation Measure V-6 Potential increase in the distribution and abundance of New Zealand mud snails.

During project construction and maintenance, LADWP has either completely dried construction equipment between use in water infested with New Zealand mud snails and non-infested water or steam cleaned the equipment before use in non-infested water.

Public Health and Safety

Mitigation Measure PS-1 Potential increase in mosquito breeding habitat.

LADWP has entered into an agreement with Owens Valley Mosquito Abatement Program (OVMAP) to abate the potential increase in mosquitoes resulting from the LORP. This mitigation measure is considered an ongoing post-implementation cost which is to be shared

equally by the County of Inyo and the LADWP. Mitigation Measure PS-1 has three components:

- Pre-project and post-implementation surveillance, monitoring, and control (to be performed by OVMAP).
- Agency coordination and LORP management adjustments (to be performed by LADWP).
- Public education, program administration, and reporting (to be performed by OVMAP).

OVMAP estimates that the annual cost to fully implement Mitigation Measure PS-1 could be approximately \$109,000, depending on the severity of the impact (L. Kirk, pers. comm., December 2003). This is considered an ongoing post-implementation cost that will continue for the life of the project. Post-implementation costs are to be shared equally by LADWP and the County as described in EIR/EIS Section 2.2.2.2. In February 2010, LADWP paid OVMAP \$10,738.15 which represents one half of the cost of monitoring and control of mosquitoes resulting from the LORP between the dates of April 1, 2009 and September 30, 2009.

Recreation-Related Impacts

Mitigation Measure RC-1 Impacts on biological resources, grazing operations, cultural resources, existing recreational uses, and roadways from future increase in recreational activities.

LADWP personnel observed and received a complaint regarding access through new LORP related fencing. A field review was conducted on February 22, 2007 by LADWP personnel and concerned citizens. In addition, a public meeting was held on April 4, 2007 in Independence to document public concerns about recreation access. Another field review with LADWP and concerned citizens was conducted on April 19, 2007. Walkthrough access was improved as a result of these concerns. Additionally, LADWP staff utilized the information from these meetings to improve recreation access to alleviate the public's concerns.

Mitigation Measure RC-2 Impacts on cultural resources from future increase in recreational activities.

Although no work has been conducted that would require action for this mitigation measure, LADWP has conducted a training program for LADWP and Inyo County personnel working within the LORP on identifying and reporting of cultural resources or potential cultural resources at LADWP or Inyo County facilities in the Owens Valley. Training is offered and provided to new employees on an ongoing basis.

6.8. Green Book Revision Cooperative Study Status

ICWD and LADWP have been working on cooperative studies intended to facilitate improvements to the Green Book since 2007. Work on the Green Book revision cooperative study is being conducted under the *Framework and Procedures for Developing Revisions to the Green Book* document as approved by the Standing Committee on November 27, 2006. An outline of the cooperative studies being addressed for the Green Book revision effort are

included in the *Working Document, Outline of Issues and Tasks for Revising the Green Book and Related Issues* (Working Document), November 2007.

The Working Document is divided into four general sections and 11 tasks. A description of the tasks included in the Working Document follows:

- Hydrologic Management Issues
 - Development of new or improved operational triggers for pumping wells
 - Re-evaluate groundwater mining provisions
 - Procedures for new wells
 - Surface water management
- Monitoring Issues
 - Vegetation monitoring
 - Hydrologic Monitoring (groundwater, surface water, and precipitation)
- Goal Attainment
 - Compliance monitoring
 - Attributability
 - Significance
- Revise Draft Green Book
 - Draft Green Book revisions
 - Seek approval of Draft Green Book revisions

Efforts to date have focused on procedures for developing new operational triggers for pumping wells and improving the procedures for installing new wells and replacing existing wells. The task to cooperatively address vegetation monitoring also began in early 2010.

Inyo County and LADWP have been working to obtain a facilitator for the Green Book revision effort in order to expedite the process.

6.9. Mitigation Monitoring and Reporting Program Ad Hoc Yellow-billed Cuckoo Habitat Enhancement Plan

MITIGATION MONITORING AND REPORTING PROGRAM

Final Ad Hoc Yellow-Billed Cuckoo Habitat Enhancement Plan Initial Environmental Study/Mitigated Negative Declaration SCH# 2009101098

Introduction

This Mitigation Monitoring and Reporting Program (MMRP) has been developed to ensure implementation of the mitigation measures outlined in the Initial Environmental Study/Mitigated Negative Declaration (IES/MND) for the Final Ad Hoc Yellow-Billed Cuckoo (YBC) Habitat Enhancement Plan (State Clearinghouse No. 2009101098). The MMRP has been prepared by the City of Los Angeles Department of Water and Power (LADWP), the lead agency for the Final Ad Hoc YBC Habitat Enhancement Plan under the California Environmental Quality Act (CEQA), in conformance with Public Resources Code Section 21081.6 and CEQA Guidelines Section 15097. Adoption of a MMRP is required for projects in which the Lead Agency has required changes or adopted mitigation to avoid significant environmental effects.

Project Description Summary

The 1997 Memorandum of Understanding (MOU) among LADWP, Inyo County, the Owens Valley Committee (OVC), Carla Scheidlinger, the Sierra Club, the California Department of Fish and Game (CDFG), and the California State Lands Commission (SLC) outlines the requirement for an evaluation of YBC habitat at Baker and Hogback Creeks. The Final Ad Hoc YBC Habitat Enhancement Plan was developed to maintain and/or improve conditions for YBC at Baker and Hogback Creeks. Under the proposed Project, habitat conditions would be maintained and/or improved at each site through the implementation of project actions such as planting of native riparian vegetation, alteration of grazing practices, amended recreation policies, and altered trails.

Mitigation Monitoring and Reporting Responsibility

LADWP shall have primary responsibility for administrating the MMRP activities to staff, consultants, or contractors. LADWP has the responsibility of ensuring that monitoring is documented through periodic reports and that deficiencies are promptly corrected. LADWP's designated environmental monitor will track and document compliance with mitigation measures, note any problems that may result, and take appropriate action to remedy problems. Specific responsibilities of LADWP include:

- **Coordination of all mitigation monitoring activities**
- **Management of the preparation, approval, and filing of monitoring or permit compliance reports**
- **Maintenance of records concerning the status of all approved mitigation measures**
- **Coordination with MOU Parties and other agencies**

Resolution of Noncompliance Complaints

LADWP will act as the contact for interested parties who wish to register comments or complaints. Any person or agency may file a complaint that states noncompliance with the mitigation measures that were adopted as part of the approval process for the Final Ad Hoc YBC Habitat Enhancement Plan. The complaint shall be directed to the LADWP (111 N. Hope Street, Room 1044, Los Angeles, CA 90012) in written form providing detailed information on the purported violation. The LADWP shall conduct an investigation and determine the validity of the complaint. If noncompliance with a mitigation measure is verified, the LADWP shall take the necessary action(s) to remedy the violation. The complaint shall receive written confirmation indicating the results of the investigation or the final corrective action that was implemented to respond to the specific noncompliance issue.

Mitigation Monitoring and Reporting Plan Matrix

The MMRP is organized in a matrix format and includes: mitigation measure by number, text of the mitigation measures, time frame for monitoring, agency responsible (in this case, LADWP), and space to indicate verification the measures were implemented. This last column will be used by LADWP to document the person who verified the implementation of the mitigation measure, the date on which this verification occurred, and any other notable remarks.

MITIGATION MONITORING AND REPORTING PROGRAM

SCH # 2009101098

Final Ad Hoc Yellow-Billed Cuckoo Habitat Enhancement Plan
Initial Environmental Study / Mitigated Negative Declaration

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	7. Verification of Compliance		
					8. Initials	Date	Remarks
Biological Resources							
BIO-1	Fence installation, plantings, and exotics removal could disturb sensitive plant species, if any are present in the specific locations to be disturbed for project implementation.	<ul style="list-style-type: none"> • Areas of Owens Valley checkerbloom, Inyo County star-tulip, or other sensitive plant species will be flagged and access restricted during earth disturbing activities (vehicle travel, mowing, fence post installation, planting, herbicide use and/or tree removal) to prevent impacts to rare plant species. • Work within areas known for sensitive plants will be done by hand, including pounding fence posts by hand. Vehicles and larger construction equipment will be excluded from areas containing rare plant populations. 	<p>Prior to and during construction</p> <p>During Construction</p>	LADWP		April 2010	Completed during implementation in the Spring of 2010
BIO-2	Vehicle travel outside of established roads, fence installation, pole plantings, and tree removal could disturb riparian	<ul style="list-style-type: none"> • Installation of fencing, plantings, and exotics removal will be done under the supervision of LADWP biologists. 	During Construction	LADWP		April 2010	Access maps were developed by a LADWP biologist that designated access on established roads and parking areas outside

8.1. Cultural Resources

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	7. Verification of Compliance		
					8. Initials	Date	Remarks
		<ul style="list-style-type: none"> • If more extensive ground disturbances (including, but not limited to, tree removal or grading) become necessary within the flagged buffer zones, further archaeological investigations, which may include evaluation, testing and data recovery, will be required prior to implementation of those actions. • If previously unrecorded cultural resources are encountered during the project, all work shall cease within 100 feet of the discovery until the find can be evaluated by a qualified archaeologist. • Prior to the start of construction, construction personnel shall be trained regarding the possibility of encountering previously unidentified or buried cultural materials, including both prehistoric and historic resources, during construction. Prior to the initiation of construction or ground-disturbing activities, the project proponent should complete training by a qualified archaeologist for construction personnel. Worker education will focus on the rationale for cultural resources monitoring; regulatory policies protecting 	<p>During construction</p> <p>During construction</p> <p>Prior to construction</p>				

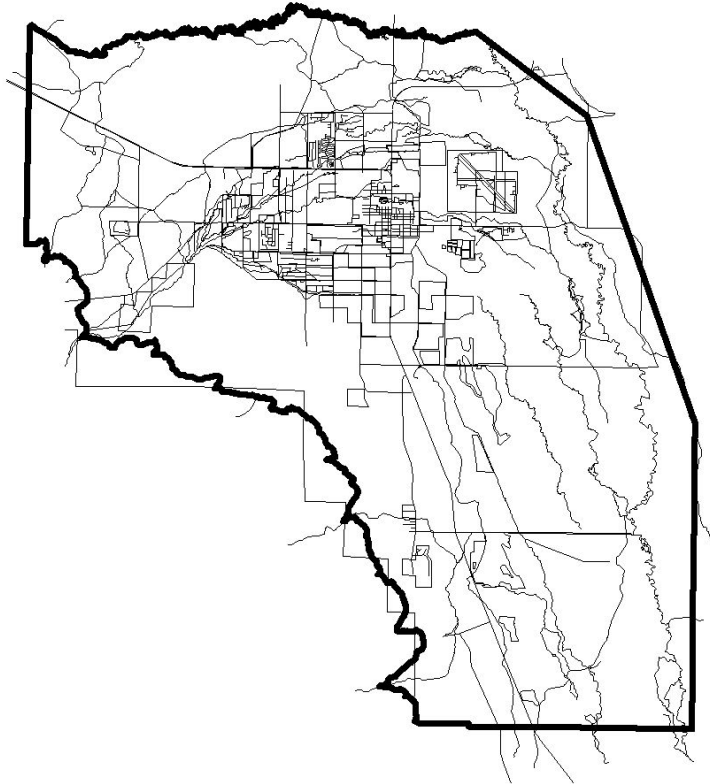
No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	7. Verification of Compliance		
					8. Initials	Date	Remarks
		resources - a discussion of applicable laws and penalties under the law; a basic identification of cultural resources; and the protocol to follow in case of discovery, including Native American burials.					
CUL-2	Fence installation, tree removal, and plantings have the potential to disturb fossiliferous older dissected alluvial fan and lakebed deposits and younger alluvial fan deposits.	<ul style="list-style-type: none"> • Prior to the start of construction, a qualified paleontologist will conduct training for construction personnel to review the procedures to be followed upon the discovery of paleontological materials. Worker education will focus on the rationale for paleontological resources monitoring; regulatory policies protecting resources - a discussion of applicable laws and penalties under the law; a basic identification of fossils; and the protocol to follow in case of discovery. 	Prior to construction	LADWP		Jan. 2010	All employees received training specified in this mitigation measure.
CUL-3	Fence installation, tree removal and plantings have the potential (unlikely) to disturb human remains.	<ul style="list-style-type: none"> • In the unexpected event that human remains are discovered, the Inyo County Coroner would be contacted, the area of the find would be protected, and provisions of State CEQA Guidelines Section 15064.5 would be followed. 	During construction	LADWP		2010	No human remains were discovered.

APPENDIX A

The Bishop Cone Audit for 2008-2009 Runoff Year

LADWP TECHNICAL GROUP REVIEW DRAFT

THE BISHOP CONE AUDIT FOR THE 2008-2009 RUNOFF YEAR-DRAFT



Randy Jackson
Senior County Hydrologist



Inyo County Water Department
Report 2009-1
September 9, 2009

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INTRODUCTION

The Bishop Cone audit is an annual accounting of Los Angeles Department of Water and Power's (LADWP) groundwater extraction and water usage on Los Angeles-owned lands on the Bishop Cone. Section VII.A of the Inyo County/Los Angeles long-term groundwater management agreement provides that, "Before the Department may increase groundwater pumping above present levels, or construct any new wells on the [Bishop] Cone, the Technical Group must agree on a method for determining the exact amount of water annually used on Los Angeles-owned lands on the Cone. The agreed upon method shall be based on a jointly conducted audit of such water uses." (Appendix A).

At its October 17, 1995 meeting, the Technical Group agreed to recommend to the Inyo County/Los Angeles Standing Committee the description of a Bishop Cone audit procedure to be incorporated into the Green Book. That audit procedure is attached (See Appendix A of this report for section IV.D of the Green Book). The Green Book is the technical appendix to the long-term agreement. The Inyo County/Los Angeles Standing Committee adopted the procedure on November 7, 1996 as section IV.D of the Green Book.

WATER USES ON LADWP-OWNED LAND ON THE BISHOP CONE

Section IV.D.1.a. of the Green Book states, "For the purposes of the Bishop Cone audit, water usage on Los Angeles-owned land on the Bishop Cone is defined as the quantity of water supplied to such land, including conveyance losses, less any return flow to the aqueduct system" (See Appendix A). Table 1, below, is a compilation of water usage in acre-feet (AF) on LADWP-owned land on the Bishop Cone for the runoff years of 2007-2008 and 2008-2009.

TABLE 1. WATER USES ON LOS ANGELES-OWNED LAND ON THE BISHOP CONE.

LADWP ACCOUNT NUMBER	RUNOFF YEAR*¹ 2007-2008 (AF)	RUNOFF YEAR*¹ 2008-2009 (AF)
BA354B or BA362B	27.00	354.00
BA302A	217.00	104.00
BA302B	832.09	1184.04
BA311	2528.24	2587.95
BA313	489.91	590.22
BA324* ³	812.36	1003.58
BA324A	NO DATA	NO DATA
BA324C	NO DATA	NO DATA
BA387A	758.00	960.00
BARECF	226.57	347.10
BA339	249.46	275.94
BA342	NO DATA	NO DATA

LADWP	RUNOFF YEAR*¹	RUNOFF YEAR*¹
ACCOUNT NUMBER	2007-2008 (AF)	2007-2008 (AF)
BA362C	NO DATA	NO DATA
BA362D	920.08	622.48
BA304	89.00	271.00
BA324B	NO DATA	NO DATA
BA387B	NO DATA	NO DATA
BA397 (SAME AS BA387B-NEW LEASE HOLDER)	2560.04	2383.79
BA361A	866.30	2336.75
BA361B	1552.62	1837.63
BA354A or 362A	944.00	1081.00
BARECA	536.00	565.00
BARECC	66.00	61.00
BARECD	2404.00	2992.00
BA338	2326.49	2772.97
BAOPRA	0.00	0.00
BAOPRB	0.00	0.00
BAGWRA	NO DATA	NO DATA
RV361	0.00	99.53
RV361B	NO DATA	NO DATA
RVRECA	1200.00	1159.00
LARECB	NO DATA	NO DATA
LAE&MH	253.00	0.00
BAICR	NO DATA	NO DATA
BA1478 (SAME AS BAICR-NEW LEASE HOLDER)	157.88	206.16
BA353	189.40	209.74
BA393	53.00	134.32
BA500* ³	913.53	778.15
* ³ BA005A	71.45	36.59
* ² BA005B	110.00	45.00
* ² BA006A	64.20(No Credit)	0.00(No Credit) * ⁵
BA1479	66.00	32.00
BA392 (Lacey)	NO ACCOUNT	402.00 (No Credit) * ⁵
BA301 (Aubrey and Moxley)	NO ACCOUNT	600.52
BA335 (Partridge and Johnson)	NO ACCOUNT	213.63
BA394 (Berner)	NO ACCOUNT	58.10 (No Credit) * ⁵
BA360 (Allen)	NO ACCOUNT	366.00 (No Credit) * ⁵
TOTAL	21,419.42	25,845.09

*¹ A runoff year is defined as starting April 1st and ending March 31st of the following year.

*² Accounts were first listed in the 2002-2003 runoff year. The accounts (BA005A, BA005B and BA006A) are active water use accounts, but in the past have been denied by Inyo for lack of measuring devices. A device has been installed at BA005A and at BA005B and inspected by ICWD personnel . Devices have not yet been installed at accounts BA006A and BAGOLF). NO DATA –The Account was not active, no data was reported. 0.00-The account was active, no use was reported, data was 0.00 acre-feet.

*3 New accounts in years past, field inspection performed and accounts credited.

*4 Account BA1479 same as BA342.

*5 Accounts need field inspection in the next runoff year to establish credit.

Field inspections were performed on August 31, 2009 with LADWP personnel and new accounts BA301 and BA335 were given credit and accepted as valid accounts. Field inspections are planned for the other new accounts next runoff year, but credit was denied in this audit.

Map 1 attached, shows the location of the Bishop Cone, the pumping and flowing wells on the Bishop Cone and the location of Bishop Cone Accounts. In general, there was an increase in water use, on most accounts from runoff years 2007-2008 to 2008-2009 as well as an overall total increase in water use of 4,212.04 acre-feet in 2008-2009. Several accounts were not granted credit this runoff year and await inspections in the next runoff year (See Table 1).

TOTAL LADWP GROUNDWATER EXTRACTION ON LADWP-OWNED LAND ON THE BISHOP CONE FOR RUNOFF YEARS 2007-2008 AND 2008-2009

Section IV.D.1.d of the Green Book states, "Total groundwater extraction by LADWP will be compared with corrected water usage on the Bishop Cone for the runoff year. Total groundwater extraction is defined as the sum of all groundwater pumped by LADWP plus the amount of artesian water that flowed out of LADWP uncapped wells on the Bishop Cone during the runoff year."

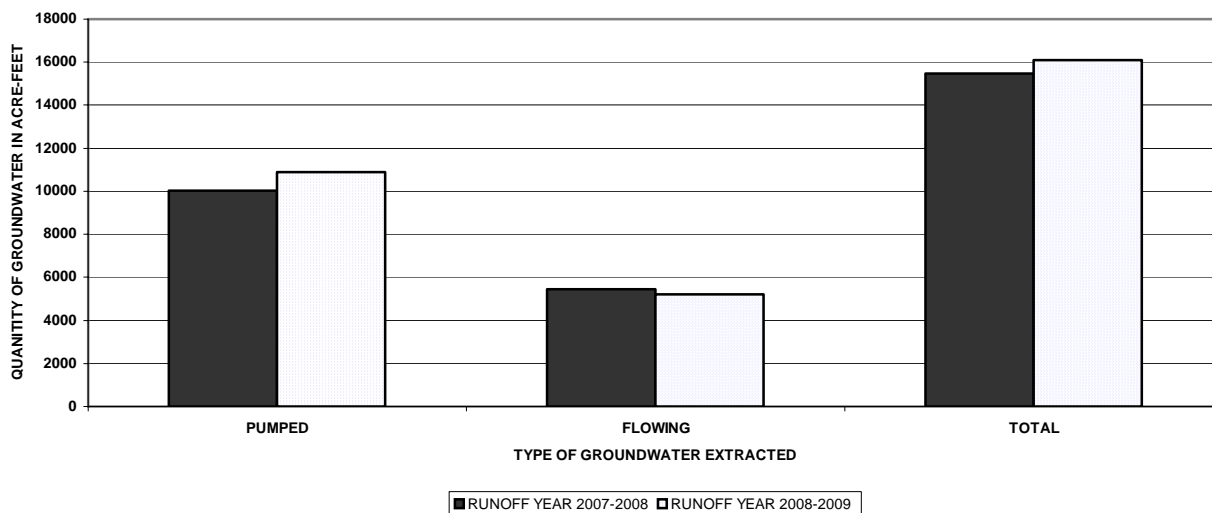
Total LADWP groundwater extraction and groundwater extraction classified as flowing and pumped groundwater in acre-feet, on the Bishop Cone for the runoff years of 2007-2008 and 2008-2009, are shown in Table 2, below. The 2008-2009 Runoff Year groundwater extraction shows an increase over the previous runoff year's extraction of some 623 acre-feet, but is within the range of extractions previously conducted by LADWP since the Bishop Cone Audit began in Runoff Year 1996-1997.

TABLE 2. TYPE OF GROUNDWATER EXTRACTION ON LADWP LANDS ON THE BISHOP CONE

TYPE OF GROUNDWATER	RUNOFF YEAR 2007-2008 (AF)	RUNOFF YEAR 2008-2009 (AF)
PUMPED	10,018.00	10,900.00
FLOWING	5,454.00	5,195.00
TOTAL	15,472.00	16,095.00

Total groundwater extraction and groundwater extraction classified as flowing and pumped groundwater in acre-feet on LADWP-owned land on the Bishop Cone are shown in a bar chart in Figure 2, below.

FIGURE 2: TYPE OF LADWP GROUNDWATER AND TOTAL GROUNDWATER EXTRACTION ON THE BISHOP CONE FOR RUNOFF YEARS 2007-2008 AND 2008-2009



Flowing and Pumped groundwater by well on the Bishop Cone are shown in Table 3, below.

TABLE 3. FLOWING AND PUMPED GROUNDWATER BY WELL ON THE BISHOP CONE IN RUNOFF YEAR 2008-2009. (NA- NOT APPLICABLE)

WELL	FLOWING GROUNDWATER (ACRE-FEET)	PUMPED GROUNDWATER (ACRE-FEET)
F121	36	NA
F122	160	NA
F123	165	NA
F124	0	NA
F125	982	NA
F126	287	NA
F127	388	NA
F128	371	NA
F129	171	NA
F130	208	NA
F131	886	NA
F132	357	NA
F133	415	NA
F134	625	NA
F136	144	NA
W410	NA	1,950
W406	NA	1,194
W371	NA	501
W411	NA	2,712
W407	NA	1,028
W408	NA	1,139
W140	NA	892
W412	NA	1,484
TOTAL	5,195	10,900

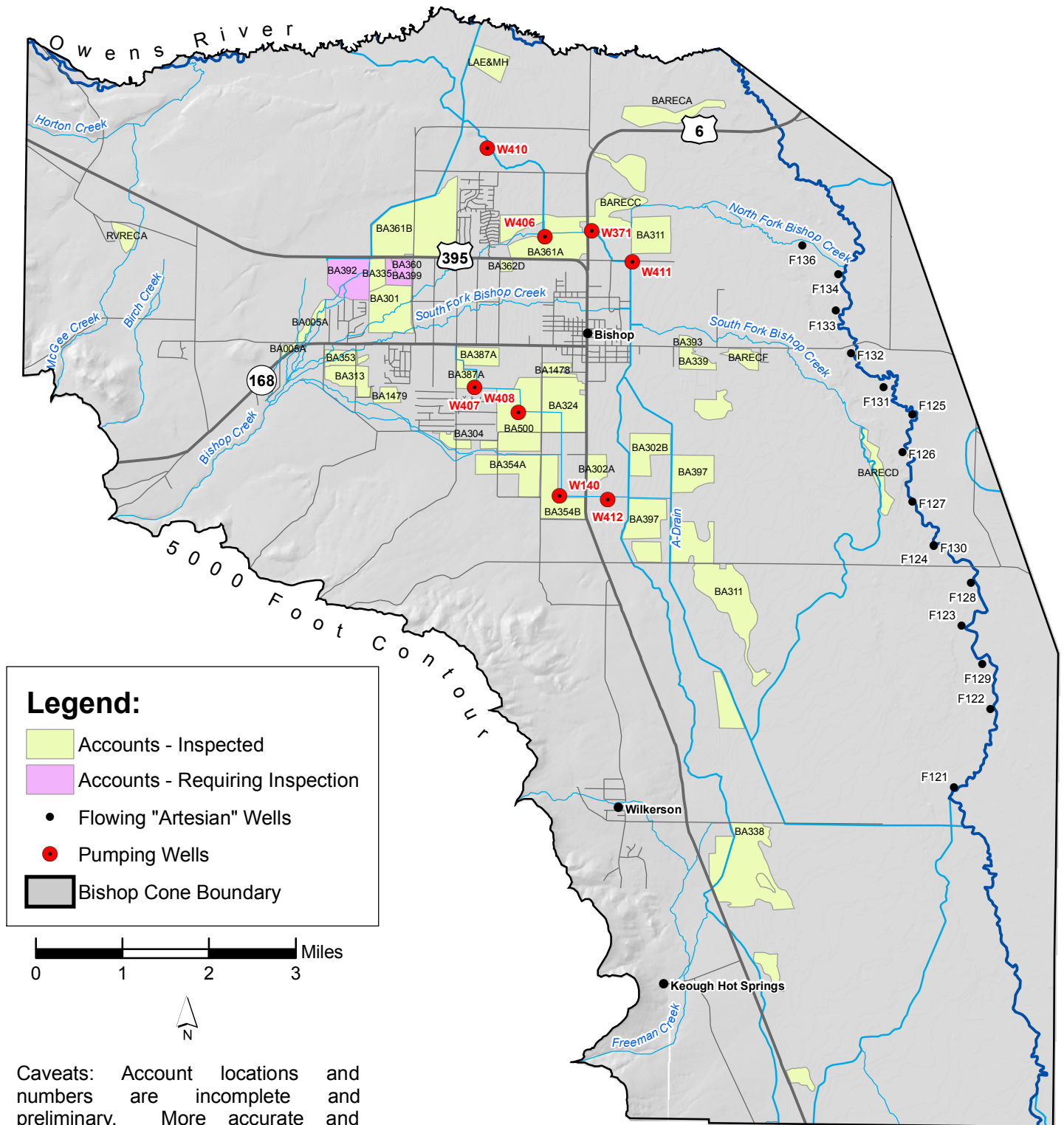
COMPLIANCE WITH THE INYO COUNTY/LOS ANGELES LONG-TERM GROUNDWATER MANAGEMENT AGREEMENT

The Inyo County/Los Angeles long-term groundwater management agreement provides that, during any runoff year, total groundwater extraction by LADWP on the Bishop Cone shall not exceed water usage on Los Angeles-owned land on the Cone. Table 4, below, shows that LADWP was within compliance with the above provision for runoff years 2007-2008 and 2008-2009.

TABLE 4. LADWP USES IN COMPARISON TO LADWP GROUNDWATER EXTRACTION ON THE BISHOP CONE.

	RUNOFF YEAR 2007-2008(AF)	RUNOFF YEAR 2008-2009(AF)
TOTAL USES	21,419.42	25,631.46
TOTAL GROUNDWATER EXTRACTION	15472.00	16,095.00

Map 1. Bishop Cone Audit Features



APPENDIX A

**Section VII.A of the Inyo County/Los Angeles Long-Term Groundwater
Management Agreement**

Section IV.D of the Green Book

THE INYO/LA AGREEMENT

1 state water well standards. The sealing of a monitoring well
2 shall be designed to prevent cross flow between aquifers.

3 The EIR describes the impacts of the construction
4 and operation of fifteen (15) new wells. The construction and
5 operation of any new wells not described in the EIR will be
6 the subject of a subsequent CEQA review.

7 The Technical Group may agree that some existing
8 wells that now supply enhancement/mitigation projects be
9 converted to Department production wells. Wells that are the
10 only source of supply for an enhancement/mitigation project
11 shall not be converted. Water for the enhancement/mitigation
12 project formerly supplied by a converted well will be supplied
13 as necessary from Department production wells. Any enhance-
14 ment/mitigation well converted to a production well could
15 later be reverted to an enhancement/mitigation well if agreed
16 to by the Technical Group.

17 VII. GROUNDWATER PUMPING ON THE BISHOP CONE ✓

18 A. Any groundwater pumping by the Department on the "Bishop
19 Cone" (Cone) shall be in strict adherence to the provi-
20 sions of the Stipulation and Order filed on the 26th day
21 of August, 1940, in Inyo County Superior Court in the
22 case of Hillside Water Company, a corporation, et al. vs.
23 The City of Los Angeles, a Municipal Corporation, et al.,
24 ("Hillside Decree").

25 Before the Department may increase ground-
26 water pumping above present levels, or construct any new
27 wells on the Cone, the Technical Group must agree on a
28 method for determining the exact amount of water annually
29 used on Los Angeles-owned lands on the Cone. The agreed
30 upon method shall be based on a jointly conducted audit

1 of such water uses.

2 The Department's annual groundwater extractions
3 from the Cone shall be limited to an amount not greater
4 than the total amount of water used on Los Angeles-owned
5 lands on the Cone during that year. Annual groundwater
6 extractions by the Department shall be the total of all
7 groundwater pumped by the Department on the Cone, plus
8 the amount of artesian water that flowed out of the
9 casing of uncapped wells on the Cone during the year.
10 Water used on Los Angeles-owned lands on the Cone, shall
11 be the quantity of water supplied to such lands, includ-
12 ing conveyance losses, less any return flow to the
13 aqueduct system.

- 14 B. The overall management goals and principles and the spe-
15 cific goals and principles for each vegetation classifi-
16 cation of this Stipulation and Order apply to vegetation
17 on the Cone.

18 **VIII. GROUNDWATER RECHARGE FACILITIES**

19 It is recognized that development of new groundwater
20 storage, and the implementation and operation of feasible
21 groundwater banking and recharge facilities in the Owens
22 Valley and in the Rose Valley that will not cause significant
23 effects on the environment may be beneficial. The development
24 of any such facilities in the Owens Valley and in Rose Valley
25 are subject to agreement of the Inyo County Board of Supervi-
26 sors and the Department, acting through the Standing Commit-
27 tee. The Inyo County Board of Supervisors shall not unreason-
28 ably refuse to agree to a feasible groundwater banking facili-
29 ty that will not cause significant decrease or change in
30 vegetation or a significant effect on the environment. The

GREEN BOOK

D. Bishop Cone Audit

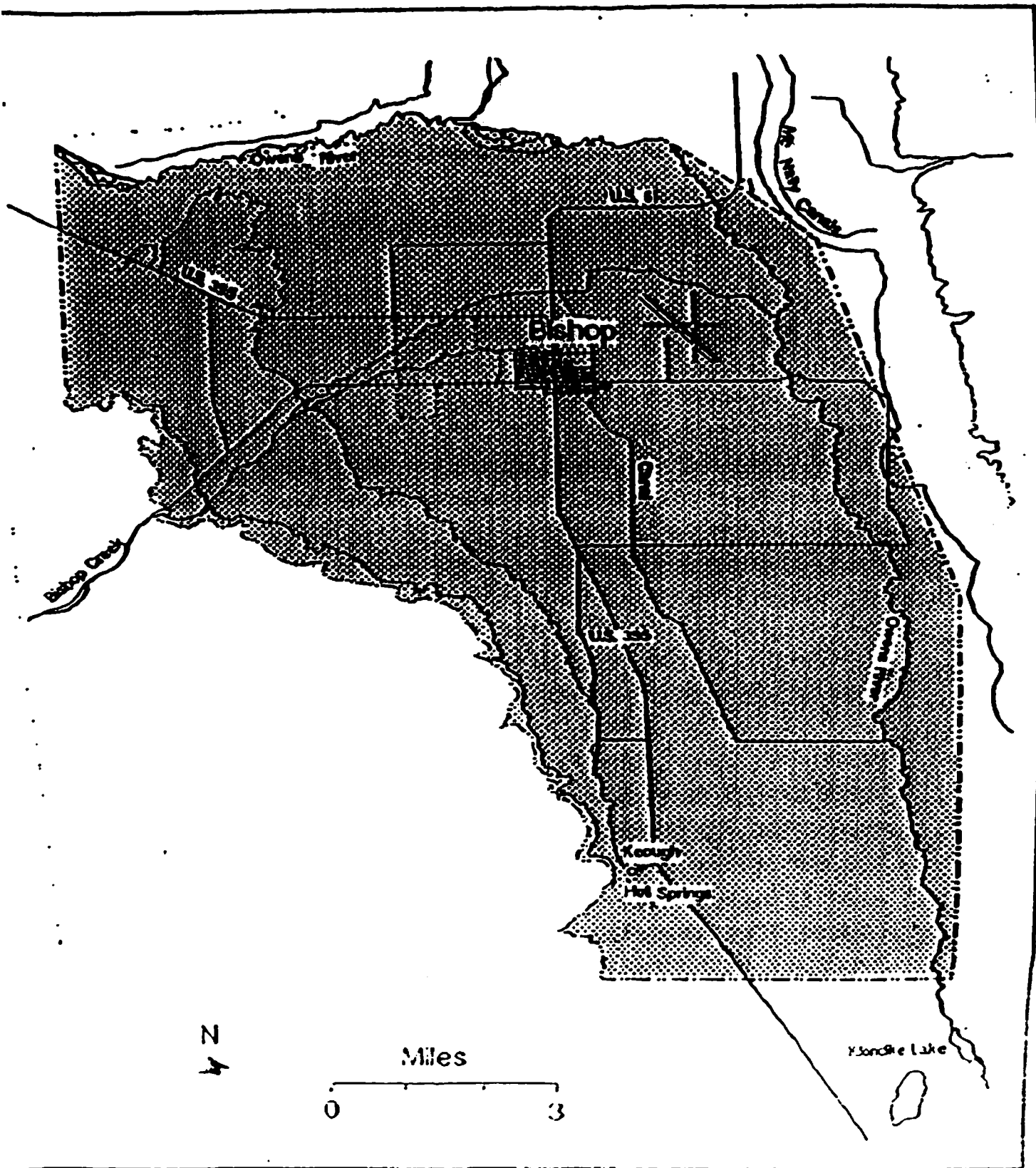
This sub-section describes the procedures for conducting the Bishop Cone audit in accordance with Section VII.A of the Agreement. The Bishop Cone audit is an annual accounting of LADWP groundwater extraction and water usage on Los Angeles-owned land on the Bishop Cone. The Agreement provides that, during any runoff year, total groundwater extraction by LADWP on the Bishop Cone shall not exceed water usage on Los Angeles-owned land on the Cone. The area defined as the Bishop Cone is shown as Figure IV.D.1.

1. Procedures for Conducting the Bishop Cone Audit

- a. For the purposes of the Bishop Cone audit, water usage on Los Angeles-owned land on the Bishop Cone is defined as the quantity of water supplied to such land, including conveyance losses, less any return flow to the aqueduct system. Water usage is documented on a runoff-year basis and is compiled by LADWP each May in the Bishop Area Water Use Report. At the conclusion of each runoff year, LADWP will forward the final water use report for the runoff year to Inyo County.
- b. The final water use report will be compared for consistency with the previous year's report. If measuring stations have been added or removed from the water-use report during the year, or if a significant change in the pattern of water usage occurs (for example, an account that has not received water for one year receives a

FIGURE IV.D.1

Bishop Cone Boundary



considerable amount the next year), the location will be field-checked. The field-check will evaluate whether changes in water usage warrant the changes noted in the report. If a change is made in the method of delivery to or return from an account that results in an overestimation of uses on the Bishop Cone, water usage for that account will not be credited to the total uses for the audit.

- c. Water usage for accounts BAIND (Bishop Indian Reservation), BA391 (outside of Bishop Cone boundary), and BANEST (West Bishop private uses) will be subtracted from the total reported water usage.
- d. Total groundwater extraction by LADWP will be compared with the corrected water usage on the Bishop Cone for the runoff year. Total groundwater extraction is defined as the sum of all groundwater pumped by LADWP plus the amount of artesian water that flowed out of uncapped wells on the Bishop Cone during the runoff year. During any runoff year, total groundwater extraction by LADWP on the Bishop Cone shall not exceed water usage on Los Angeles-owned land on the Cone.
- e. A draft report summarizing the results of the Bishop Cone audit will be prepared annually as an Inyo County Water Department report and will be submitted to the Technical Group in June for a 30-day review.
- f. A final Bishop Cone audit report will be submitted in July to the Technical Group, the Standing

**Committee, the Inyo County Board of Supervisors,
and the Inyo County Water Commission.**

LADWP will notify Inyo County of any changes in the status, location, or operation of any measuring station used to conduct the Bishop Cone audit at the time the final Bishop Area Water Use Report is submitted to the County. LADWP will also notify the County of any changes in the boundaries of the accounts included in the audit.

Upon request by Inyo County, LADWP will provide measuring station data for accounts included in the audit to assist the County in verifying water usage for individual accounts.

APPENDIX B

Data on Uses and Total Groundwater Extracted on the Bishop Cone Supplied by LADWP

Department of Water and Power



the City of Los Angeles

ANTONIO R. VILLARAIGOSA
Mayor

Commission
NICK PATSAOURAS, *President*
EDITH RAMIREZ, *Vice-President*
LEE KANON ALPERT
WALLY KNOX
FORESCEE HOGAN-ROWLES
BARBARA E. MOSCHOS, *Secretary*

H. DAVID NAHAI
Chief Executive Officer and General Manager

May 7, 2009

Dr. Robert Harrington, Director
Inyo County Water Department
P.O. Box 337
Independence, CA 93526

Dear Dr. Harrington:

Subject: Bishop Cone Audit

Enclosed is flowing well data from Bishop Cone for the 2008-2009 runoff year. The Los Angeles Department of Water and Power also pumped 10,900 acre-feet of groundwater from the Cone during the year.

Also enclosed is the Bishop Cone Audit Report for the 2008-2009 runoff year.

LA is the Place

If you have any questions, please contact Mr. Wayne Hopper at (760) 873-0267.

Sincerely,

Clarence E. Martin
Assistant Aqueduct Manager

Enclosures

c: Mr. Wayne Hopper

Water and Power Conservation . . . a way of life

□ Bishop, California mailing address: 300 Mandich Street • Bishop, CA 93514-3449 • Telephone: (760) 872-1104 • Fax (760) 873-0266
111 North Hope Street, Los Angeles, California • □ Mailing address: Box 51111 • Los Angeles, CA 90051-0100
Telephone: (213) 367-4211 • Cable address: DEWAPOLA

2008/2009 RUNOFF YEAR BISHOP CONE FLOWING WELL TOTALS
(ACRE-FEET)

	2008									2009			
WELL	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	TOTAL
F121	3	3	3	3	3	3	3	3	3	3	3	3	36
F122	4	7	8	17	19	18	17	13	13	15	14	15	160
F123	1	0	1	16	19	18	19	18	19	19	17	18	165
F124	0	0	0	0	0	0	0	0	0	0	0	0	0
F125	83	85	80	79	79	79	85	82	83	85	77	85	982
F126	25	26	24	25	24	22	23	22	24	24	23	25	287
F127	32	33	32	33	33	32	33	32	33	33	29	33	388
F128	30	31	30	31	32	32	32	30	31	32	28	32	371
F129	16	16	15	15	15	13	14	13	14	14	12	14	171
F130	20	21	17	17	16	17	19	16	15	15	16	19	208
F131	79	79	74	73	71	72	76	73	73	73	67	76	886
F132	30	31	30	31	31	30	31	29	28	28	28	30	357
F133	41	40	33	28	28	31	36	33	32	37	35	41	415
F134	55	52	48	51	48	48	53	54	54	55	51	56	625
F136	15	14	9	10	11	11	12	13	14	12	11	12	144
TOTAL	434	438	404	429	429	426	453	431	436	445	411	459	5195

(BCA)
5/01/09
08:26

BISHOP CONE AUDIT

PAGE 1

FROM 3/01/09 TO 3/31/09

A C C O U N T S & S T A T I O N S		PERIOD	A C R E - F E E T MAR M-T-D	S I N C E 4/01/08
BA354B SMITH				
A-1 DRAIN				
3031	A-1 DRAIN PP #1 @ HALL DITCH	.00	.00	.00
3032	A-1 DRAIN PP #3 @ WELL 140	17.00	17.00	354.00
*TOTALS	ACRES= 148 ALOT= 740 LEFT= 386	17.00	17.00	✓ 354.00 ✓
BA302A ALICE J. BOOTHE, ET AL				
HALL DITCH				
3006	HALL DITCH @ GOLF COURSE RETURN	1.00	1.00	104.00
B02A11	HALL DITCH @ BOOTHE	5.01	5.01	54.05
B02A21	STOCKWATER	5.01-	5.01-	54.05-
B02A32	OPERATIONS	.00	.00	.00
*TOTALS	ACRES= 47 ALOT= 235 LEFT= 131	1.00	1.00	✓ 104.00 ✓
BA302B ALICE J. BOOTH, ET AL				
BISHOP CREEK CANAL				
3161	BISHOP CREEK CANAL #16	72.00	72.00	762.00
3162	BISHOP CREEK CANAL #17	.00	.00	521.00
3164	BISHOP CREEK CANAL #20	40.00	40.00	654.00
3165	BISHOP CREEK CANAL #21	.00	.00	120.00
B02B21	STOCKWATER @ #16	30.69-	30.69-	356.60-
B02B22	STOCKWATER @ #20	6.20-	6.20-	72.86-
B02B41	DITCH MAKE	.00	.00	.00
B02B31	OPERATIONS	75.11-	75.11-	✓ 443.50-
*TOTALS	ACRES= 120 ALOT= 600 LEFT= 584-	.00	.00	✓ 1184.04 ✓
BA311 J.W. CASHBAUGH, ET AL				
BISHOP CREEK CANAL				
3166	BISHOP CREEK CANAL #5	.00	.00	537.00
3022	BISHOP CREEK CANAL #5A	.00	.00	374.00
3167	BISHOP CREEK CANAL #9	.00	.00	381.00
3168	BISHOP CREEK CANAL #30	38.00	38.00	2109.00
B11201	STOCKWATER @ #30	30.00-	30.00-	358.98-
3022	CREDIT FOR TATUM RETURN @ #5A	.00	.00	374.00-
B11301	OPERATIONS	8.00-	8.00-	80.07-
B11302	OPERATIONS @ DIVERSION #1	.00	.00	.00
*TOTALS	ACRES= 561 ALOT= 2805 LEFT= 217	.00	.00	✓ 2587.95 ✓
BA313 BOYD & ONEY				
NORTH INDIAN DITCH				
3016	NORTH INDIAN ABOVE MUMY LANE #58E	472.00	472.00	6543.00
3017	WONACOTT A-2	56.00	56.00	867.00
3015	WONACOTT A-1	63.00-	63.00-	1047.00-
3054	WONACOTT A-3 RETURN	11.00-	11.00-	189.00-
3051	WONACOTT 58F	42.00-	42.00-	680.00-
3018	NORTH INDIAN B-2	345.00-	345.00-	4177.00-
B13401	NORTH INDIAN DITCH LOSS	64.00-	64.00-	718.89-
B13402	WONACOTT DITCH LOSS	3.00-	3.00-	16.00-
B13404	WONACOTT DITCH MAKE	.00	.00	11.00
B13301	OPERATIONS	.00	.00	✓ 2.89-
*TOTALS	ACRES= 84 ALOT= 420 LEFT= 170-	.00	.00	✓ 590.22 ✓

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		A C R E - F E E T		
			MAR	SINCE
A C C O U N T S & S T A T I O N S	PERIOD	M-T-D	4/01/08	
BA324 DANIELS, ROSSI, HANNON				
NORTH & SOUTH INDIAN DITCH				
3370	NORTH INDIAN DIVERSION W/O SUNLAND	.00	.00	44.00
3270	SOUTH INDIAN D-3	77.00	77.00	2170.00
3005	SOUTH INDIAN DITCH D-4	87.00-	87.00-	1146.00-
B244	DITCH LOSS	.00	.00	84.42-
B2442	DITCH MAKE	10.00	10.00	22.00
B243	OPERATIONS	.00	.00	2.00-
*TOTALS	ACRES= 163 ALOT= 815 LEFT= 188-	.00	.00	✓1003.58 ✓
BA1478 INDIAN CREEK RANCH (BL-1478)				
GEORGE & N. INDIAN DITCH				
3002	GEORGE DITCH WEST OF SUNLAND AVENUE	50.00	50.00	749.00
3068	GEORGE DITCH C-3	36.00-	36.00-	510.00-
BICR42	GEORGE DITCH LOSS	14.00-	14.00-	111.07-
BAICR4	DITCH MAKE	.00	.00	.00
3264	NORTH INDIAN DITCH BELOW A-1 DRAIN B3A	313.00	313.00	2439.00
3370	NORTH INDIAN DIVERSION W/O SUNLAND	.00	.00	44.00-
3364	NORTH INDIAN DITCH W/O HWY 395	309.00-	309.00-	2358.00-
BICR43	NORTH INDIAN DITCH LOSS	4.00-	4.00-	41.23
BAICR3	OPERATIONS	.00	.00	.00
*TOTALS	ACRES= 41 ALOT= 205 LEFT= 1-	.00	.00	✓206.16 ✓
BA387A GIACOMINI				
NORTH INDIAN DITCH				
3043	NORTH INDIAN DITCH B-3	.00	.00	734.00
3011	WEST LINE L-2	.00	.00	226.00
B87A3	OPERATIONS	.00	.00	.00
*TOTALS	ACRES= 122 ALOT= 610 LEFT= 350-	.00	.00	✓960.00 ✓
BARECF RECREATION FOREST SERVICE				
KINGSLEY DITCH				
3023	KINGSLEY DITCH C-4	46.00	46.00	1153.00
3183	CEMETERY DITCH	41.00-	41.00-	629.00-
BRCF41	DITCH MAKE	.00	.00	.00
BRCF42	DITCH LOSS	5.00-	5.00-	176.90-
*TOTALS	ACRES= 43 ALOT= 215 LEFT= 132-	.00	.00	✓347.10 ✓
BA339 DOHNEL				
KINGSLEY DITCH				
3170	KINGSLEY DITCH C-1	16.00	16.00	576.00
B39201	STOCKWATER @ C-1	15.98-	15.98-	292.13-
B39301	OPERATIONS	.02-	.02-	7.93-
*TOTALS	ACRES= 39 ALOT= 195 LEFT= 80-	.00	.00	✓275.94 ✓
BA393 CABALLERO				
KINGSLEY DITCH				
3061	KINGSLEY DITCH PUMP PLANT	.00	.00	66.32
3171	BISHOP CREEK DITCH # 11	.00	.00	72.00
BA933	OPERATIONS @ #11	.00	.00	4.00-
*TOTALS	ACRES= 18 ALOT= 90 LEFT= 44-	.00	.00	✓134.32 ✓

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A C C O U N T S & S T A T I O N S		A C R E - F E E T		
		PERIOD	MAR M-T-D	SINCE 4/01/08
BA362D JJ TATUM, LJ TATUM				
DAIRY DITCH				
3388	INDIAN SOUTH RETURN ON SEE-VEE LANE	.00	.00	696.00
3389	INDIAN MIDDLE RETURN ON SEE-VEE LANE	.00	.00	90.00
3390	INDIAN NORTH RETURN ON SEE-VEE LANE	2.00	2.00	429.00
3001	DAIRY DITCH # 69	19.00	19.00	1137.00
B62D21	DAIRY STOCKWATER	18.96-	18.96-	288.14-
B62D31	OPERATIONS DAIRY DITCH	2.04-	2.04-	1343.38-
3160	INDIAN IRRIGATION/DAIRY DITCH	.00	.00	98.00-
*TOTALS	ACRES= 182 ALOT= 578 LEFT= 44-	.00	.00	✓ 622.48 ✓
BA304 ANDREW & DAN BOYD				
NEWLON DITCH				
3026	NEWLON DITCH BOYD PUMP PLANT	2.00	2.00	271.00
*TOTALS	ACRES= 48 ALOT= 240 LEFT= 31-	2.00	2.00	✓ 271.00 ✓
BA500 TALBOT				
GEORGE & S. INDIAN DITCH				
3012	GEORGE DITCH C-1	45.00	45.00	1053.00
3002	GEORGE DITCH WEST OF SUNLAND AVENUE	50.00-	50.00-	749.00-
B24B41	BUHS STOCKWATER	5.00	5.00	33.08-
B24B44	DITCH LOSS	.00	.00	47.14-
B24B04	DITCH MAKE	.00	.00	280.00-
3365	PARK WEST RETURN S/O A-DRAIN	3.00	3.00	201.00
3047	4 X - 58D	344.00	344.00	3523.00
3366	SOUTH INDIAN DITCH DIVERSION # 1 N/O S	.00	.00	46.00
3367	SOUTH INDIAN DITCH DIVERSION # 2 N/O S	.00	.00	514.00
W408	WELL # 408	4.00	4.00	1139.00
3046	SOUTH INDIAN RETURN AT A-1 DRAIN	253.00-	253.00-	2082.00-
3270	SOUTH INDIAN D-3	77.00-	77.00-	2170.00-
B004	DITCH LOSS	21.00-	21.00-	426.24-
B0040	DITCH MAKE	.00	.00	168.00
B50B31	OPERATIONS	.00	.00	78.39-
*TOTALS	ACRES= 178 ALOT= 890 LEFT= 111	.00	.00	✓ 778.15 ✓
BA397 GIACOMINI				
BISHOP CREEK CANAL				
3172	BISHOP CREEK DITCH # 16-A	.00	.00	.00
3163	BISHOP CREEK DITCH # 19	.00	.00	647.00
3173	BISHOP CREEK DITCH # 19-A	.00	.00	.00
3174	BISHOP CREEK DITCH # 22	.00	.00	414.00
3019	BISHOP CREEK CANAL DIVERSION # 24	62.00	62.00	1248.00
3020	BISHOP CREEK CANAL DIVERSION # 25	.00	.00	276.00
3024	BISHOP CREEK CANAL DIVERSION # 29	38.00	38.00	664.00
3392	FORD RAWSON-DIV 1A	.00	.00	38.00
B9721	STOCKWATER @ #29	30.69-	30.69-	304.25-
B9722	BOOTHE STOCKWATER @ #19	.00	.00	60.07-
B9723	STOCKWATER @ #19 & #24	30.63-	30.63-	298.40-
B9731	OPERATIONS	38.68-	38.68-	240.49-
*TOTALS	ACRES= 482 ALOT= 2410 LEFT= 26	.00	.00	✓ 2383.79 ✓

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A C C O U N T S & S T A T I O N S	P E R I O D	A C R E - F E E T	
		MAR M-T-D	SINCE 4/01/08

BA361A ST RANCH

NORTH FORK BISHOP CREEK

3036	NORTH FORK BISHOP CREEK I-1	62.00	62.00	1460.00
3004	NORTH FORK BISHOP CREEK I-2	.00	.00	940.00
3042	TATUM RETURN AT HIGHWAY 6	.00	.00	55.00-
3039	TATUM RETURN AT BISHOP CREEK CANAL	42.00-	42.00-	470.00-
3022	BISHOP CREEK CANAL #5A	.00	.00	374.00-
B61A21	STOCKWATER @ I-1	13.90-	13.90-	273.81-
3316	WELL #406	5.00	5.00	1203.00
B61A41	DITCH MAKE	.00	.00	.00
B61A31	OPERATIONS	11.10-	11.10-	93.44-
*TOTALS	ACRES= 262 ALOT= 1005 LEFT= 1331-	.00	.00	2336.75✓

BA361B ST RANCH

MATLICK DITCH

3009	MATLICK DITCH F-10	57.00	57.00	1692.00
3040	MATLICK DITCH F-13 N	105.00	105.00	1470.00
3008	MATLICK DITCH F-13 E	35.00	35.00	511.00
3007	MATLICK DITCH F-14	2.00	2.00	59.00
3035	MATLICK DITCH #154	58.00	58.00	1285.00
3154	TATUM RETURN G-2	.00	.00	28.00-
3037	MATLICK DITCH #63A	42.00-	42.00-	547.00-
3038	TATUM RETURN H-1	.00	.00	412.00-
3003	MATLICK DITCH RETURN @ B-1 DRAIN	39.00-	39.00-	319.00-
3010	MATLICK RETURN @ C DRAIN	106.00-	106.00-	928.00-
B61B41	DITCH LOSS #154 TO RETURN @ B1	19.00-	19.00-	314.39-
B61B42	DITCH MAKE F-10 TO RETURN @ C DRAIN	.00	.00	7.47
B61B21	SPENCER STOCKWATER	15.50-	15.50-	182.50-
B61B22	STOCKWATER @ F-10	30.69-	30.69-	357.94-
B61B31	OPERATIONS	4.81-	4.81-	98.01-
*TOTALS	ACRES= 412 ALOT= 2365 LEFT= 527	.00	.00	1837.63✓

BA354A SMITH

HALL DITCH

3027	HALL DITCH PUMP PLANT #2	2.00	2.00	169.00
3028	HALL DITCH PUMP PLANT #4	4.00	4.00	912.00
*TOTALS	ACRES= 219 ALOT= 1095 LEFT= 14	6.00	6.00	1081.00✓

BARECA RECREATION FARMERS PONDS

BISHOP CREEK CANAL

3155	BISHOP CREEK CANAL #5B	6.00	6.00	565.00
BRCA31	OPERATIONS @ #5B	.00	.00	.00
*TOTALS		6.00	6.00	565.00✓

BARECC RECREATION SADDLE CLUB

BISHOP CREEK CANAL

3021	BISHOP CREEK CANAL #67	.00	.00	61.00
BRECC3	OPERATIONS	.00	.00	.00
*TOTALS	ACRES= 13 ALOT= 65 LEFT= 4	.00	.00	61.00✓

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A C C O U N T S & S T A T I O N S		PERIOD	A C R E - F E E T MAR M-T-D	S I N C E 4/01/08
BARECD RECREATION BUCKLEY PONDS				
SOUTH FORK BISHOP CREEK				
3194	S FORK BISHOP CR BELOW BISHOP CR CANAL	422.00	422.00	5181.00
3193	SANDERS POND RETURN	250.00-	250.00-	2189.00-
		.00	.00	.00
BRCD31	OPERATIONS	.00	.00	.00
*TOTALS		172.00	172.00	✓2992.00 ✓
BA338 YRIBARREN				
FORD-RAWSON CANAL & KEOUGH				
2003	FORD RAWSON CANAL DIVERSION #2	48.00	48.00	971.00
2024	FORD RAWSON CANAL DIVERSION #3	.00	.00	3944.00
2004	FORD RAWSON CANAL DIVERSION #7	.00	.00	969.00-
2043	YRIBARREN RETURN #2	.00	.00	.00
B38402	FORD RAWSON CANAL LOSS	.00	.00	730.36-
B38201	STOCKWATER @ #2	30.69-	30.69-	351.43-
B38401	FORD RAWSON CANAL DITCH MAKE	.00	.00	.00
3368	RAWSON & KEOUGH DITCH E/O HWY 395	63.00	63.00	525.00
3369	RAWSON & KEOUGH DITCH RETURN AT A-DRAI	43.00-	43.00-	344.00-
B38202	CASHBAUGH STOCKWATER	11.18-	11.18-	109.86-
B38403	KEOUGH DITCH LOSS	8.82-	8.82-	71.14-
B38301	OPERATIONS	17.31-	17.31-	91.24-
*TOTALS	ACRES= 427 ALOT= 2135 LEFT= 637-	.00	.00	✓2772.97 ✓
BAOPRA OPERATION FORD-RAWSON CANAL				
FORD-RAWSON CANAL				
2026	FORD RAWSON CANAL BELOW BCC	.00	.00	.00
2024	FORD RAWSON CANAL DIVERSION #3	.00	.00	.00
BOPA31	OPERATIONS	.00	.00	✓.00 ✓
*TOTALS		.00	.00	✓.00 ✓
BAOPRB OPERATIONS A-DRAIN				
A-DRAIN				
2086	A-DRAIN DIVERSION TO ARKANSAS FLATS	.00	.00	.00
BOPB31	OPERATIONS	.00	.00	✓.00 ✓
*TOTALS		.00	.00	✓.00 ✓
RV361 ST RANCH				
HORTON CREEK				
BC361	HORTON CREEK E-7	.00	.00	99.53
BC3613	OPERATIONS	.00	.00	.00
*TOTALS	ACRES= 26 ALOT= 130 LEFT= 30	.00	.00	✓99.53 ✓
RVRECA RECREATION MILL POND				
MCGEE CREEK				
3185	MCGEE CREEK @ ABELOUR RANCH	192.00	192.00	2163.00
3235	MILL POND RETURN	120.00-	120.00-	1004.00-
RRCA41	DITCH MAKE	.00	.00	.00
*TOTALS		72.00	72.00	✓1159.00 ✓

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ACRE - FEET

ACCOUNTS & STATIONS	PERIOD	MAR M-T-D	SINCE 4/01/08
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LAE&MH FIVE BRIDGES RECHARGE
BISHOP CREEK CANAL

3242	BISHOP CREEK CANAL DIVERSION #2	.00	.00	552.00
LEMGE5	MITIGATION WATER @ DIVERSION #4	.00	.00	.00
3317	BISHOP CREEK CANAL DIVERSION #6	4.00	4.00	197.00
LEMH2	STOCKWATER @ DIVERSION #2 & #6	4.00-	4.00-	290.00-
LEMH3	OPERATIONS	.00	.00	459.00-
*TOTALS		.00	.00	✓.00 ✓

BA353 HADELER & MILORADICH
WONACOTT & SMITH DITCH

3015	WONACOTT A-1	63.00	63.00	1047.00
3053	TOMMY SMITH DITCH # 162-A	1.00	1.00	101.00
3013	164-B WATTERSON	.00	.00	.00
3017	WONACOTT A-2	56.00-	56.00-	867.00-
BA3534	WONACOTT DITCH LOSS	8.00-	8.00-	71.26-
BA3533	OPERATIONS	.00	.00	.00
*TOTALS	ACRES= 38 ALOT= 190 LEFT= 19-	.00	.00	✓209.74 ✓

BAGOLF BISHOP GOLF COURSE
WELL AND HALL DITCH

*TOTALS		.00	.00	✓.00 ✓
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BA005A ONEY
OTey DITCH

3049	# 161 OTEY	33.00	33.00	699.00
3377	OTey DITCH RETURN AT MATLICK DITCH	28.00-	28.00-	603.00-
B05A4	DITCH LOSS	5.00-	5.00-	59.41-
B05A42	DITCH MAKE	.00	.00	.00
*TOTALS	ACRES= 13 ALOT= 65 LEFT= 28	.00	.00	✓36.59 ✓

BA005B SAFSTROM
MATLICK DITCH

3378-	OTey DITCH DIVERSION ABOVE MATLICK DIT	.00	.00	45.00
B05B4	DITCH LOSS	.00	.00	.00
*TOTALS	ACRES= 20 ALOT= 100 LEFT= 55	.00	.00	✓45.00 ✓

BA006A BARTON
MATLICK DITCH

3064	MATLICK DITCH AT INTAKE # 61	129.00	129.00	2909.00
3377	OTey DITCH RETURN AT MATLICK DITCH	28.00	28.00	603.00
3387	MATLICK DITCH TO THE NORTH	48.00-	48.00-	1084.00-
3379	MATLICK DIV. TO THE EAST	4.00-	4.00-	260.00-
B06A4	DITCH LOSS	105.00-	105.00-	2178.37-
*TOTALS	ACRES= 14 ALOT= 70 LEFT= 80	.00	.00	✓10.37 ✓

INSPECTION NEEDED

BA1479 HIDDEN CREEKS RANCH
SOUTH INDIAN DITCH

3025	SOUTH INDIAN DITCH DIVERSION # 3	.00	.00	32.00 ✓
B14793	OPERATIONS	.00	.00	.00
*TOTALS	ACRES= 27 ALOT= 135 LEFT= 103	.00	.00	✓32.00 ✓

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		A C R E - F E E T		
			MAR	SINCE
A C C O U N T S & S T A T I O N S	PERIOD	M-T-D	4/01/08	
BA392 LACEY LIVESTOCK				
YOUNG & MATLICK DITCHES				
3387	MATLICK DITCH TO THE NORTH	48.00	48.00	1084.00
3398	MATLICK DITCH #1	174.00	174.00	3031.00
BA9444	DITCH LOSS	28.00-	28.00-	28.00-
3399	REINACKEL #1	62.00	62.00	563.00
3400	YOUNG DITCH #1	11.00	11.00	378.00
3401	YOUNG DITCH #2	52.00-	52.00-	889.00-
3406	C-DRAIN AT INTAKE	192.00-	192.00-	2230.00-
BA921	MATLICK DITCH F-10	57.00-	57.00-	1692.00-
BA924	DITCH MAKE	34.00	34.00	215.00
BA923	OPERATIONS	.00	.00	30.00-
*TOTALS	ACRES= 262 ALOT= 1310 LEFT= 908	.00	.00	✓ 402.00 ✓
INSPECTION NEEDED				
BA301 AUBREY & MOXLEY				
NELLIGAN & YOUNG DITCHES				
3396	NELLIGAN DIV. #1	73.00	73.00	1343.00
3397	NELLIGAN BELOW DIV. #1	64.00	64.00	1072.00
3401	YOUNG DITCH #2	52.00	52.00	889.00
3050	HOLLAND # 63-B	32.00-	32.00-	251.00-
3404	NELLIGAN DITCH #2	75.00-	75.00-	1506.00-
3402	YOUNG DITCH #3	54.00-	54.00-	828.00-
3407	YOUNG DITCH # 4	3.79-	3.79-	53.42-
BA014	DITCH LOSS	28.00-	28.00-	28.00-
BA013	OPERATIONS	3.79	3.79	37.06-
*TOTALS	ACRES= 99 ALOT= 495 LEFT= 105-	.00	.00	✓ 600.52 ✓
INSPECTION NEEDED				
BA335 PARTRIDGE & JOHNSON				
YOUNG DITCH				
3402	YOUNG DITCH #3	54.00	54.00	828.00
3407	YOUNG DITCH # 4	3.79	3.79	53.42
3403	YOUNG DITCH RETURN TO NELLIGAN	44.00-	44.00-	576.00-
BA354	DITCH LOSS	10.00-	10.00-	10.00-
BA353	OPERATIONS	3.79-	3.79-	81.79-
*TOTALS	ACRES= 30 ALOT= 150 LEFT= 63-	.00	.00	✓ 213.63 ✓
INSPECTION NEEDED				
BA394 BERNER				
NELLIGAN & YOUNG DITCHES				
BA941	YOUNG DITCH RETURN TO NELLIGAN	44.00	44.00	576.00
BA9412	NELLIGAN DITCH #2	75.00	75.00	839.82
BA9413	NELLIGAN DITCH #3	91.00-	91.00-	1352.00-
BA9414	HOLLAND RETURN	.00	.00	366.00
BA9444	DITCH LOSS	28.00-	28.00-	28.00-
BA943	OPERATIONS	.00	.00	343.72-
*TOTALS	ACRES= 14 ALOT= 70 LEFT= 11	.00	.00	✓ 58.10 ✓
INSPECTION NEEDED				
BA360 ALLEN				
NELLIGAN & YOUNG DITCHES				
BA601	YOUNG DITCH RETURN TO NELLIGAN	44.00	44.00	576.00
BA6012	NELLIGAN DITCH #2	75.00	75.00	839.82
BA6013	NELLIGAN DITCH #3	91.00-	91.00-	1352.00-
BA6014	HOLLAND RETURN	.00	.00	✓ 366.00 ✓
INSPECTION NEEDED				

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A C C O U N T S & S T A T I O N S		A C R E - F E E T		
		PERIOD	MAR M-T-D	SINCE 4/01/08
BA6044 DITCH LOSS		28.00-	28.00-	28.00-
BA603 OPERATIONS		.00	.00	343.72-
*TOTALS ACRES= 13 ALOT= 65 LEFT= 6		.00	.00	58.10
AREA SUMMARY		IRG	26.00	21228.82
		SW	269.12	3684.10
		OPER	157.07	3780.63
		E&M	.00	.00
		GWRC	.00	.00
		REC	250.00	5124.10
		IND	.00	.00
		DOM	.00	.00
		LORP	.00	.00
TOTAL WATER USE		702.19	702.19	33817.65
TOTAL IRG AC 4165		TOTAL ALOT 20493	DUTY TO DATE 5.1 AF/AC	