APPENDIX G.1

BUY-IN METHODOLOGY

PROJECT MEMORANDUM

Project Name:	Chino Desalter Phase 3 Expansion	**Date:**	August 6, 2010
Client:	Western Municipal Water District	**Project Number:**	7651B.00
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Reviewed By:	Matthew Marshall, Gary Meyerhofer		
Subject:	Buy-In Cost Methodology for Chino Desalter Phase 3 Expansion - FINAL		
Distribution:			

Introduction and Overview

This memorandum describes the methodology for calculation of the buy-in cost for the Chino Desalter Phase 3 Expansion Project including on-site facilities, off-site facilities, and SARI capacity. This methodology is based on standard practices of water financing and charges as documented in the AWWA Manual M1 "Principles of Water Rates, Fees, and Charges" and the WEF Manual of Practice No.27 "Financing and Charges for Wastewater Systems".

The seven Chino Basin Desalter Authority (CDA) member agencies that purchased the original total water allocation of 24,600 Acre-Feet/Year (AFY) in Phase 1 and Phase 2 of the Chino Desalter projects, with their individual entitlements, include:

- Jurupa Community Services District (JCSD) – 8,200 AFY
- Ontario – 5,000 AFY
- Chino – 5,000 AFY
- Chino Hills – 4,200 AFY
- Norco – 1,000 AFY
- Santa Ana River Water Company (SARWC) – 1,200 AFY
- Inland Empire Utilities Agency (IEUA) – 0 AFY

With the Phase 1 and 2 design and construction of the existing CDA facilities, the above agencies paid to build easily expandable facilities recognizing that future users would buy-into the system. Under the current Phase 3 project, the total water allocation for the system will be expanded by 10,600 AFY to a total of 35,200 AFY. In Phase 3, Western Municipal Water District (WMWD) is purchasing new capacity in the system and Ontario and JCSD are purchasing additional capacity above their original entitlements in the existing Phase 1 and 2 capacity. This will bring the total number of member agencies in the completed Phase 1, 2, and 3 CDA facilities to eight.

As WMWD becomes a new CDA member agency it must buy-into the capacity of the facilities it will use and share with the seven original member agencies. The existing Phase 1 and 2 facilities were engineered to be expandable, and there are facilities that will be shared amongst all member agencies, such as structures, pipelines, and treatment facilities.. The cost incurred to build the shared CDA facilities with the existing Phase 1 and 2 system, must be reallocated and the original CDA members credited for their investment. Additionally, the new member agency, WMWD, must be assured that it is not paying, or crediting the original member agencies, for components of the existing Phase 1 and 2 CDA facilities that are not required for delivering its water allocation or entitlement as part of Phase 3.

This analysis also includes the repayment of JCSD's expenses incurred to increase the size of a Chino II raw water pipeline from 30 inches to 36 inches. In 2004, the original CDA members made an agreement with JCSD such that JCSD would incur the costs of upsizing the pipeline. The CDA members agreed to repay JCSD the original cost of upsizing the pipeline, with interest, upon expansion of the existing CDA facilities

The CDA facilities under consideration include the on-site treatment facilities and the raw water off-site facilities. The system components consist of the individual elements that make up the CDA facilities such as the Chino I and II treatment systems, pump stations, and raw water distribution lines. Capacity in the Santa Ana Regional Interceptor (SARI) was originally considered as part of this evaluation. However, due to design changes that may alleviate the need for additional SARI capacity, it has not been included in this buy-in cost evaluation.

Methodology

The methodology includes several tasks that will calculate the existing facilities buy-in cost or credit for each of the CDA member agencies. This methodology includes the following steps:

1. Determine the components of the existing Phase 1 and 2 CDA facilities that are shared facilities necessary to deliver the expanded capacity of the Phase 3 facilities. Summarize the shared costs as a portion of the total capital costs for Chino I, Chino I Expansion, and Chino II facilities.
2. Calculate the current value of the shared CDA facilities by adjusting to current dollars using the ENRCCI and depreciating based on the average useful lives of the assets. This current asset value is sometimes referred to as "replacement cost new less depreciation" or RCNLD.
3. Calculate the prorated offset of the shared facilities costs for the grant funding received for the Chino I expansion and Chino II desalter projects. The offset is calculated based on the percentage of grant funding received of the total Chino I and Chino II total project costs, multiplied by the original shared facilities costs. Subtract the grant funding from the RCNLD shared facilities costs to calculate the total buy-in cost.
4. Allocate the costs of the shared CDA facilities to each of the member agencies based on their entitlements of the expanded Phase 3 facilities total water allocation (35,200 AFY).

Calculate the equivalent shared CDA facilities credit for each of the original CDA member agencies based on their entitlements of the Phase 1 and 2 total water allocation (24,600 AFY).

5. Determine the cost to upsize the Chino II Raw Water Pipeline including interest payments using annual yields of the California Local Agency Investment Fund (LAIF) based on the 2004 agreement (Appendix A). Allocate this payment from JCSD to the CDA sponsor agencies based upon their entitlements in the Phase 3 expansion.
6. Summarize the total costs for each of the CDA member agencies as the buy-in cost or credit for existing Phase 1 and 2 shared CDA facilities, plus the Chino II Raw Water Pipeline upsizing.

For WMWD, as a new member agency, and JCSD and Ontario, who are buying additional capacity over their Phase 1 and 2 entitlements, there will be an additional buy-in cost for their increased capacity allocation for the shared CDA facilities. For the other member agencies, Chino, Chino Hills, Norco, and SARWC, whose new effective allocations are decreasing because they are not buying into the expanded capacity, they will be given a credit for their original investment in the shared CDA facilities.

Shared CDA Facilities Evaluation

For the buy-in cost evaluation, the existing Phase 1 and 2 CDA facilities were analyzed to determine those shared components that are necessary to deliver the Phase 3 expansion capacity. Original Phase 1 and 2 audited acquisition and construction cost information was used to determine the value of each of the major assets in the existing CDA facilities and associated "soft costs" such as administrative, legal, and bonding costs. The construction costs of Chino I, Chino I Expansion, and Chino II facilities were reconciled with the audited asset capitalization schedules provided by IEUA to provide the summary by project number in Table 1.

The cost of the shared CDA facilities was adjusted to today's dollars using the Engineering News Record Construction Cost Index (ENRCCI) for Los Angeles, July 2010. The current value of assets was then determined using straight-line depreciation and industry standard useful life for each component of the facilities. "Soft costs" such as bonds, insurance, testing and drawings, were not depreciated.

Determination of Shared CDA Facilities

An engineering evaluation was conducted to allocate the value of the shared components between the original CDA member agencies and the expansion sponsor agencies based on an analysis of capacity utilized by the individual facility or component for the Phase 3 expansion. Table 1 identifies the allocation of the original capital costs and shared facilities capital costs for the Phase 1 and 2 CDA facilities, based on this engineering evaluation. Refer to Appendix A for the line item details of this evaluation. A total of $48,000,000 in grant funding was received by the CDA for the Chino I expansion and Chino II desalter projects. The offset of the grant funding for the shared facilities costs was calculated based on the percentage of the grant funding received to the total Chino I and Chino II total project costs, multiplied by the original

shared facilities costs. The grant funding offset for the shared facilities was calculated as $11,502,170. Subtracting the grant funding offset from the RCNLD capital costs was used to calculate the total buy-in cost of $29,575,345 for the shared facilities.

ENRCCI Adjustment and Depreciation

The intent of the buy-in analysis is to represent the present day cost to the Phase 3 sponsoring agencies of gaining buy-in into the system. The cost to the sponsoring agencies reflects the full value (replacement cost) that would have to be paid if the sponsoring agencies were to construct the shared facilities from the ground up, less depreciation for the time they have been in service. This current asset value is sometimes referred to as "replacement cost new less depreciation" or RCNLD. These costs were calculated by converting the original costs of the shared facilities to their current value using adjustments for ENRCCI and depreciation. Construction costs were escalated to present day dollars using the July 2010 ENRCCI index for Los Angeles (9969). Depreciation was calculated by dividing the present value of the asset over the asset's original useful life. This calculation gives the annual depreciation, (i.e. the annual loss of value of an asset due to wear and tear). Annual depreciation was multiplied by the number of years already in service and subtracted from the present value of the construction cost.

RCNLD = Construction Cost X ENRCCI adjustment –
[(Construction cost X ENRCCI adjustment) / Useful Life X (# of Years in Service)]

The useful life estimates are based on average values from the International Infrastructure Management Manual (IIMM), Edition 2006, US Environmental Protection Agency guidelines, water industry references, and Carollo's project experience. The month and year of the project completion date, obtained from the CDA's final grant funding report, was used as the starting point for ENRCCI adjustment. "Soft costs" such as administrative, legal, and bonding costs were adjusted to today's value but not depreciated. Table 1 presents the adjusted shared capital costs, or RCNLD, for each of the Phase 1 and 2 CDA facilities projects.

Table 1: Summary of Chino I and II Capital Costs by Project Number Buy-In Cost Evaluation				
Project No.	**Project Name**	**Original Capital Cost**	**Original Shared Capital Cost**	**Adjusted Shared Capital Cost (RCNLD)**
NA	Chino I Original Facilities	$65,991,690	$0	$0
DL02001	Chino I Land Acquisition	$806,751	$0	$0
DL02001	Chino I SARI Capacity Rights	$4,140,000	$0	$0
DL02001	Chino I Other Misc. Design/ Construction Costs	$7,720,272	$0	$0
DL02101	Chino I Onsite Improvements	$1,752,613	$0	$0
DL02102	Chino I Ion Exchange Treatment	$4,015,117	$0	$0
DL02103	Chino I - Chino Hills Pump Station	$1,682,283	$0	$0
DL02104	Chino I Well Drilling	$0	$0	$0
DL02105	Chino I Wells I-13 to I-15 Equipment	$1,725,171	$0	$0
DL02106	Chino I Raw Water & Product Water Pipelines	$1,572,062	$0	$0
DL02107	Chino I Archibald Pipeline	$2,092,357	$0	$0
DL02108	Chino I Archibald Pump Station	$1,291,918	$0	$0
DL02110	Chino I Storm Drain and SARI Meter	$611,741	$0	$0
DL02111	Chino Turnout	$0	$0	$0
DL02002	Chino II Land Acquisition	$3,519,914	$3,519,914	$4,232,813
DL02002	Chino II SARI Capacity Rights	$10,105,000	$0	$0
DL02002	Chino II Other Misc Design/Construction Costs	$4,846,132	$4,846,132	$5,827,635
DL02201	Chino II Onsite Improvements	$14,206,781	$9,864,611	$10,966,226
DL02202	Chino II Ion Exchange Treatment	$4,442,725	$2,762,725	$2,946,885
DL02204	Chino II Well Drilling	$988,873	$988,873	$1,090,266
DL02205	Chino II Well Equipment Pkg No. 1	$3,016,860	$3,016,860	$3,267,996
DL02206 & DL02209	Chino II RW Pipeline Phase 1 & Chino II Brine Line	$3,443,429	$3,443,429	$3,844,782
DL02207	SARWCO Product Line	$339,964	$0	$0
DL02208	Ontario Pump Station	$1,728,608	$0	$0
DL02210	Ontario Product Water Pipeline	$3,928,347	$0	$0
DL02211	Chino II Raw Water Pipeline Phase 2	$4,011,995	$4,011,995	$4,499,532
DL02212	Chino II Raw Water Pipeline Phase 3	$1,129,915	$817,263	$897,752
DL02213	Well Equipment Pkg. No. 2	$3,234,387	$3,234,387	$3,503,630
	Totals	**$152,344,905**	**$36,506,189**	**$41,077,515**
Chino I Expansion and Chino II Grant Funding Offset		($48,000,000)	($11,502,170)	($11,502,170)
	Total with Grant Funding Offset	**$104,344,905**	**$25,004,019**	**$29,575,345**

Buy-in Cost and Credit Calculation

The current value of the shared facilities, minus the grant funding offset, was allocated to the CDA member agencies based on their entitlements in the total expanded facilities. These entitlements are shown in Table 2.

Table 2: Expanded CDA Member Agency Entitlements Buy-In Cost Evaluation				
Member Agency	**Phase 1 & 2 (AFY)**	**Phase 3 (AFY)**	**Total Expanded (AFY)**	**Total Expanded (%)**
JCSD	8,200	3,533	11,733	33.3%
Ontario	5,000	3,533	8,533	24.2%
Chino	5,000	0	5,000	14.2%
Chino Hills	4,200	0	4,200	11.9%
Norco	1,000	0	1,000	2.8%
SARWC	1,200	0	1,200	3.4%
WMWD	0	3,534	3,534	10.0%
Total	**24,600**	**10,600**	**35,200**	**100.0%**

The buy-in costs were then credited to the original CDA member agencies based on their entitlements in the Phase 1 and 2 facilities. Table 3 shows the original Phase 1 and 2 entitlements for the CDA member agencies.

Table 3: Original CDA Member Agency Entitlements Buy-In Cost Evaluation				
Member Agency	**Phase 1 (AFY)**	**Phase 2 (AFY)**	**Total Original (AFY)**	**Total Original (%)**
JCSD	2,700	5,500	8,200	33.3%
Ontario	1,500	3,500	5,000	20.3%
Chino	5,000	0	5,000	20.3%
Chino Hills	4,200	0	4,200	17.1%
Norco	0	1,000	1,000	4.1%
SARWC	800	400	1,200	4.9%
Total	**14,200**	**10,400**	**24,600**	**100.0%**

Table 4 presents the summary of the buy-in cost allocations to all the CDA member agencies, based on the total expanded facilities entitlements, including the Phase 1 and 2 facilities and Phase 3 expansion facilities, along with the buy-in credits to the original CDA member agencies, based on the original Phase 1 and 2 facilities entitlements. Subtracting these two values results in the net buy-in cost or credit for each member agency for the shared Phase 1 and 2 CDA facilities.

Table 4: Shared Phase 1 and 2 Facilities Buy-in Cost Summary Buy-In Cost Evaluation					
Member Agency	**Phase 1 and 2 Facilities Cost Allocation**	**Phase 3 Expansion Cost Allocation**	**Total Expanded Facilities Cost Allocation**	**Original Facilities Cost Allocation**	**Net Buy-In Cost or (Credit)**
JCSD	$6,889,711	$2,968,457	$9,858,168	$9,858,448	($280)
Ontario	$4,201,043	$2,968,457	$7,169,501	$6,011,249	$1,158,252
Chino	$4,201,043	$0	$4,201,043	$6,011,249	($1,810,206)
Chino Hills	$3,528,876	$0	$3,528,876	$5,049,449	($1,520,573)
Norco	$840,209	$0	$840,209	$1,202,250	($362,041)
SARWC	$1,008,250	$0	$1,008,250	$1,442,700	($434,449)
WMWD	$0	$2,969,297	$2,969,297	$0	$2,969,297
Total	**$20,669,133**	**$8,906,212**	**$29,575,345**	**$29,575,345**	**($0)**

Chino II Pipeline Upsizing Reimbursement

In 2004, the original CDA members made an agreement with JCSD to upsize the Chino II Raw Water Pipeline from 30 inches to 36 inches (per JCSD and CDA Agreement, Appendix B). In the agreement, JCSD paid to upsize the pipeline at an expense of $482,000 to be repaid by the CDA members at a later date. CDA agreed to repay JCSD's original expenses plus annually accrued simple interest at a rate equal to the average quarterly apportionment rates established by the California Local Agency Investment Fund (LAIF). The interest rates and calculation for the associated interest payments are shown in Table 5.

Table 5: Chino II Raw Water Pipeline Upsizing Interest Rates and Cost Buy-In Cost Evaluation								
	2004[(1)]	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Quarterly Average LAIF Rate	1.65%	3.01%	4.65%	5.15%	3.15%	1.23%	0.56%	-
Interest Cost[(2)]	$7,929	$14,747	$23,467	$27,199	$17,500	$7,046	$3,247	$101,136

Notes:
(1) Calendar basis is used. Actual date of escrow account establishment in 2004 to be determined.
(2) Interest compounded annually.

The interest payments combined with the original construction cost total $583,136. This cost was allocated to the sponsoring agencies based on their Phase 3 entitlements. The cost and credits for the pipeline upsizing are presented in Table 6.

Table 6: Chino II Pipeline Upsizing Cost Summary Buy-In Cost Evaluation			
Sponsor Agency	**Upsizing Cost Allocation**	**Upsizing Reimbursement**	**Net Cost or (Credit)**
JCSD	$194,360	$583,136	($388,775)
Ontario	$194,360	$0	$194,360
WMWD	$194,415	$0	$194,415
Notes: (1) Total cost is the original cost to upsize the pipeline ($482,000) plus the total interest cost presented in Table 5.			

Summary

In summary, the sponsors of the Phase 3 expansion will pay a total buy-in cost of $8,906,212, or approximately $2,968,500 each, based on their 33 percent shares of the new capacity entitlement. Based on the capacity allocations for Phase 1 and 2, as compared to the total system capacity including Phase 3 expansion, Ontario and Western will pay a net buy-in cost for their additional capacity allocations of $1,352,612 and $3,163,712, respectively. JCSD will receive a credit of $389,056 for the repayment of the Chino II raw water pipeline upsizing. This includes a negligible amount (primarily due to rounding of the capacity allocations) for the additional shared CDA facilities buy-in cost because their effective percent allocation of 33% remains the same between the existing and expanded system (existing 8,200 AFY of total 24,600 AFY, expanded 11,733 AFY of total 35,200 AFY). Chino, Chino Hills, Norco, and SARWC will each receive a buy-in credit for the existing shared CDA facilities of $1,810,206, $1,520,573, $362,041, and $434,449 respectively, due to decreases in their effective existing versus expanded allocations. The net buy-in cost and credits for each CDA member agency are summarized in Table 7.

Table 7: Summary of Shared CDA Facilities Buy-In Cost Buy-In Cost Evaluation				
Member Agency	**Phase 3 Expansion Buy-In Cost Allocation**	**Net Buy-In for Shared CDA Facilities**	**Chino II Pipeline Upsizing Reimbursement**	**Total Net Buy-In Cost or (Credit)**
JCSD	$2,968,457	($280)	($388,776)	**($389,056)**
Ontario	$2,968,457	$1,158,252	$194,360	**$1,352,612**
Chino		($1,810,206)	$0	**($1,810,206)**
Chino Hills		($1,520,573)	$0	**($1,520,573)**
Norco		($362,041)	$0	**($362,041)**
SARWC		($434,449)	$0	**($434,449)**
WMWD	$2,969,297	$2,969,297	$194,415	**$3,163,712**
Totals	**$8,906,212**	**$0**	**$0**	**$0**

Appendix A

Shared Phase 1 and 2 CDA Facilities Cost Calculations

CDA Facilities Cost Summary by Project
Revised: August 6, 2010

Project No.	Project Name	Original Capital Cost	Original Shared Capital Cost	Adjusted Shared Capital Cost (RCNLD)
NA	**Total Chino I Original Facilities**	**$65,991,690**	$0	$0
DL02001	Chino I Land Acquisition	$806,751	$0	$0
DL02001	Chino I SARI Capacity Rights	$4,140,000	$0	$0
DL02001	Chino I Other Misc. Design/Construction Costs	$7,720,272	$0	$0
DL02101	Chino I Onsite Improvements	$1,752,613	$0	$0
DL02102	Chino I Ion Exchange Treatment	$4,015,117	$0	$0
DL02103	Chino I - Chino Hills Pump Station	$1,682,283	$0	$0
DL02104	Chino I Well Drilling	$0	$0	$0
DL02105	Chino I Wells I-13 through 15 Equipment	$1,725,171	$0	$0
DL02106	Chino I Raw Water Pipeline and Product Water Pipeline	$1,572,062	$0	$0
DL02107	Chino I Archibald Pipeline	$2,092,357	$0	$0
DL02108	Chino I Archibald Pump Station	$1,291,918	$0	$0
DL02110	Chino I Storm Drain and SARI Meter	$611,741	$0	$0
DL02111	Chino Turnout	$0	$0	$0
	Total Chino I Expansion	**$27,410,285**	**$0**	**$0**
DL02002	Chino II Land Acquisition	$3,519,914	$3,519,914	$4,232,813
DL02002	Chino II SARI Capacity Rights	$10,105,000	$0	$0
DL02002	Chino II Other Misc Design/Construction Costs	$4,846,132	$4,846,132	$5,827,635
DL02201	Chino II Onsite Improvements	$14,206,781	$9,864,611	$10,966,226
DL02202	Chino II Ion Exchange Treatment	$4,442,725	$2,762,725	$2,946,885
DL02204	Chino II Well Drilling	$988,873	$988,873	$1,090,266
DL02205	Chino II Well Equipment Pkg No. 1	$3,016,860	$3,016,860	$3,267,996
DL02206 & DL02209	Chino II RW Pipeline Phase 1 & Chino II Brine Line	$3,443,429	$3,443,429	$3,844,782
DL02207	SARWCO Product Line	$339,964	$0	$0
DL02208	Ontario Pump Station	$1,728,608	$0	$0
DL02210	Ontario Product Water Pipeline	$3,928,347	$0	$0
DL02211	Chino II Raw Water Pipeline Phase 2	$4,011,995	$4,011,995	$4,499,532
DL02212	Chino II Raw Water Pipeline Phase 3	$1,129,915	$817,263	$897,752
DL02213	Well Equipment Pkg. No. 2	$3,234,387	$3,234,387	$3,503,630
DL02214	Pump to Waste	$0	$0	$0
	Total Chino II	**$58,942,930**	**$36,506,189**	**$41,077,515**
	Totals Chino I Expansion and Chino II	**$86,353,214**	**$36,506,189**	**$41,077,515**
	Totals Chino I, Chino I Expansion, and Chino II	**$152,344,905**	**$36,506,189**	**$41,077,515**
	Chino I Expansion and Chino II Grants Offset	-$48,000,000	-$11,502,170	-$11,502,170
	Totals with Grant Offset	**$104,344,905**	**$25,004,019**	**$29,575,345**

Shared CDA Facilities Cost Adjustment and Depreciation

Revised: August 6, 2010

Present Year 2010 **ENR July-2010** **9969**

Project Name	Project Element	Shared Construction Cost	Completion of Construction	ENR at Construction	Present Value Cost of Construction	OUL	Depreciation	Replacement Cost New Less Depreciation (RCNLD)
Chino II	Chino II Land Acquisition	$3,519,914	2006	8290	$4,232,813			$4,232,813
Chino II	Chino II Other Misc Design/Construction Costs	$4,846,132	2006	8290	$5,827,635			$5,827,635
Chino II Ion Exchange Treatment	Administration	$77,000	2006	8570	$89,570			$89,570
	Prep and Testing	$629,250	2006	8570	$731,971			$731,971
	Structures	$286,475	2006	8570	$333,240	50	$22,918	$310,322
	Piping	$75,000	2006	8570	$87,243	75	$4,000	$83,243
	Electrical	$275,000	2006	8570	$319,892	30	$36,667	$283,225
	Furnish & Install Brine Saturators Chino 2	$240,000	2006	8570	$279,179	20	$48,000	$231,179
	Furnish & Install Brine Storage Tanks Chino 2	$72,000	2006	8570	$83,754	20	$14,400	$69,354
	Furnish & Install Water Softener Tanks Chino 2	$100,000	2006	8570	$116,324	15	$26,667	$89,658
	Furnish & Install Freeboard Tank Chino 2	$32,000	2006	8570	$37,224	20	$6,400	$30,824
	Furnish & Install Pumps Chino 2	$320,000	2006	8570	$372,238	20	$64,000	$308,238
	Furnish & Install Blowers Chino 2	$60,000	2006	8570	$69,795	20	$12,000	$57,795
	Furnish & Install SS Pipe Chino 2	$596,000	2006	8570	$693,293	75	$31,787	$661,507
	Subtotal	**$2,762,725**			**$3,213,723**			**$2,946,885**
Chino II Well Drilling	Total (#2204)	$988,873	2005	8290	$1,189,153	50	$98,887	$1,090,266

Present Year 2010 **ENR July-2010** **9969**

Project Name	Project Element	Shared Construction Cost	Completion of Construction	ENR at Construction	Present Value Cost of Construction	OUL	Depreciation	Replacement Cost New Less Depreciation (RCNLD)
Chino II Onsite Improvements	Administration	$167,300	2006	8290	$201,184			$201,184
	Prep	$1,019,900	2006	8290	$1,226,464			$1,226,464
	Structural Elements	$3,210,950	2006	8290	$3,861,274	50	$256,876	$3,604,398
	Piping	$1,063,750	2006	8290	$1,279,195	75	$56,733	$1,222,461
	Inlet Filters	$0	2006	8290	$0	20	$0	$0
	Static Mixer	$36,000	2006	8290	$43,291	30	$4,800	$38,491
	RO Membrane Feed Pumps	$0	2006	8290	$0			$0
	RO CIP Pump	$35,000	2006	8290	$42,089	20	$7,000	$35,089
	Sulfuric Acid Pumps	$30,000	2006	8290	$36,076	20	$6,000	$30,076
	Sulfuric Acid Tanks and Piping	$120,000	2006	8290	$144,304	50	$9,600	$134,704
	Threshold Inhibitor Pumps	$30,000	2006	8290	$36,076	20	$6,000	$30,076
	Threshold Inhibitor Tanks and Piping	$50,000	2006	8290	$60,127	50	$4,000	$56,127
	Sodium Hydroxide Pumps	$30,000	2006	8290	$36,076	15	$8,000	$28,076
	Sodium Hydroxide Tanks and Piping	$60,000	2006	8290	$72,152	15	$16,000	$56,152
	Sodium Hypochlorite Pumps	$30,000	2006	8290	$36,076	20	$6,000	$30,076
	Sodium Hypochlorite Tanks and Piping	$60,000	2006	8290	$72,152	20	$12,000	$60,152
	Sodium Hypochlorite Generator System	$250,000	2006	8290	$300,633	15	$66,667	$233,967
	RO Racks	$0	2006	8290	$0			$0
	RO Vessels	$0	2006	8290	$0			$0
	RO Suction and Discharge Headers	$231,000	2006	8290	$277,785	20	$46,200	$231,585
	RO CIP Tank, Pipe and Valves	$95,000	2006	8290	$114,241	20	$19,000	$95,241
	RO Pipe and Valves - ss	$0	2006	8290	$0			$0
	RO Pipe and Valves - pvc	$0	2006	8290	$0			$0
	FRP Pipe and Valves	$247,900	2006	8290	$298,108	20	$49,580	$248,528
	Decarbonators	$180,000	2006	8290	$216,456	20	$36,000	$180,456
	Transfer Pump Station Pumps	$0	2006	8290	$0			$0
	Transfer Pump Station Valves & Piping	$0	2006	8290	$0			$0
	Product Water Pumps	$0	2006	8290	$0			$0
	Product Water Valves and Piping	$0	2006	8290	$0			$0
	Surge Tank System	$0	2006	8290	$0			$0
	Clearwell Steel Tank - Oil Sand	$28,000	2006	8290	$33,671	50	$2,240	$31,431
	Clearwell Steel Tank - Construct	$300,000	2006	8290	$360,760	50	$24,000	$336,760
	Clearwell Steel Tank - Paint	$300,000	2006	8290	$360,760	50	$24,000	$336,760
	Electrical	$1,767,000	2006	8290	$2,124,876	30	$235,600	$1,889,276
	Change Orders	$522,811	2006	8290	$628,697			$628,697
	Subtotal	$9,864,611			$11,862,522			$10,966,226

Present Year 2010 **ENR July-2010** **9969**

Project Name	Project Element	Shared Construction Cost	Completion of Construction	ENR at Construction	Present Value Cost of Construction	OUL	Depreciation	Replacement Cost New Less Depreciation (RCNLD)
Chino II Well Equipment Pkg No. 1	Total (#2205)	$3,016,860	2006	8570	$3,509,344	50	$241,349	$3,267,996
Chino II RW Pipeline Phase 1 & Chino II Brine Line	Administration	$65,000	2005	8567	$75,637			$75,637
	Prep	$325,250	2005	8567	$378,478			$378,478
	Piping	$2,148,908	2005	8567	$2,500,579	75	$143,261	$2,357,319
	Structural Elements	$47,500	2005	8567	$55,273	50	$4,750	$50,523
	Administration (Brine Line)	$34,000	2005	8567	$39,564			$39,564
	Prep (Brine Line)	$23,000	2005	8567	$26,764			$26,764
	Piping (Brine Line)	$212,360	2005	8567	$247,113	75	$14,157	$232,956
	Change Orders (RW Pipeline Phase 1 and Brine Line)	$587,411	2005	8567	$683,541			$683,541
	Subtotal	**$3,443,429**			**$4,006,950**			**$3,844,782**
Chino II Raw Water Pipeline Phase 2	Prep - Schedule I	$330,900	2006	8563	$385,232			$385,232
	Piping - Schedule I	$1,940,776	2006	8563	$2,259,441	75	$103,508	$2,155,933
	Structural Elements - Schedule I	$232,034	2006	8563	$270,133	50	$18,563	$251,570
	Prep - Schedule II	$20,000	2006	8563	$23,284			$23,284
	Piping - Schedule II	$539,280	2006	8563	$627,827	75	$28,762	$599,065
	Structural Elements - Schedule II	$23,425	2006	8563	$27,271	50	$1,874	$25,397
	Prep - Schedule III	$25,400	2006	8563	$29,571			$29,571
	Piping - Schedule III	$318,703	2006	8563	$371,032	75	$16,997	$354,035
	Structural Elements - Schedule III	$18,850	2006	8563	$21,945	50	$1,508	$20,437
	Change Orders	$562,627	2006	8563	$655,007			$655,007
	Subtotal	**$4,011,995**			**$4,670,744**			**$4,499,532**
Chino II Raw Water Pipeline Phase 3	Administration	$2,500	2005	8567	$2,909			$2,909
	Prep and Testing	$81,500	2005	8567	$94,838			$94,838
	Piping	$597,770	2005	8567	$695,596	75	$39,851	$655,744
	Structural Elements	$134,053	2005	8567	$155,990	50	$13,405	$142,585
	Change Orders	$1,440	2005	8567	$1,676			$1,676
	Subtotal	**$817,263**			**$951,009**			**$897,752**
Well Equipment Pkg. No. 2	Total (#2213)	$3,234,387	2006	8570	$3,762,381	50	$258,751	$3,503,630
	TOTAL SHARED FACILITIES/ALL PROJECTS	**$36,506,189**			**$43,226,273**			**$41,077,515**

Chino II Onsite Improvements (RO) DL02201

Description	Qty	Unit Price	Unit	Total Contract Amount	Shared?	Shared Cost
Administration						
Bonds and Insurance	1	$136,500	ls	$136,500	Yes	$136,500
As Built Drawings	1	$10,000	ls	$10,000	Yes	$10,000
Submittals (by Spec Section)	104	$200	ea	$20,800	Yes	$20,800
Prep						
Mobilization	1	$682,500	ls	$682,500	Yes	$682,500
Demobilization	1	$50,000	ls	$50,000	Yes	$50,000
Sheeting, Shoring and Bracing	1	$25,000	ls	$25,000	Yes	$25,000
Building Earthwork	5800	$12	cy	$69,600	Yes	$69,600
Site Earthwork	3800	$15	cy	$57,000	Yes	$57,000
Site Paving	63000	$2	sf	$100,800	Yes	$100,800
Testing - Control System & Instrument	1	$10,000	ls	$10,000	Yes	$10,000
Testing - RO Pumps	1	$5,000	ls	$5,000	No	$0
Testing - Plant Startup	1	$25,000	ls	$25,000	Yes	$25,000

Chino II Onsite Improvements (RO) DL02201

Description	Qty	Unit Price	Unit	Total Contract Amount	Shared?	Shared Cost
Structural Elements						
RO Building Concrete	1400	$500	cy	$700,000	Yes	$700,000
RO Building Rebar	1	$140,000	ls	$140,000	Yes	$140,000
Transfer Pump Station Concrete	205	$800	cy	$164,000	Yes	$164,000
Transfer Pump Station Rebar	1	$20,500	ls	$20,500	Yes	$20,500
Product Water Pump Station Concrete	40	$500	cy	$20,000	Yes	$20,000
Product Water Pump Station Rebar	1	$4,000	ls	$4,000	Yes	$4,000
Decarbonator Slab Concrete	65	$300	cy	$19,500	Yes	$19,500
Decarbonator Slab Rebar	1	$6,500	ls	$6,500	Yes	$6,500
Electrical Building Slab Concrete	25	$300	cy	$7,500	Yes	$7,500
Electrical Building Slab Rebar	1	$2,500	ls	$2,500	Yes	$2,500
Clearwell Ring Concrete	125	$500	cy	$62,500	Yes	$62,500
Clearwell Ring Rebar	1	$12,500	ls	$12,500	Yes	$12,500
Surge Tank Slab Concrete	20	$300	cy	$6,000	Yes	$6,000
Surge Tank Slab Rebar	1	$2,000	ls	$2,000	Yes	$2,000
Site Concrete - curb and gutter	960	$20	lf	$19,200	Yes	$19,200
Site Concrete - curb	1400	$15	lf	$21,000	Yes	$21,000
Site Concrete - swale	850	$18	sf	$15,300	Yes	$15,300
Site Concrete - ramps	900	$8	sf	$7,200	Yes	$7,200
Site Concrete - walks	1400	$6	ls	$8,400	Yes	$8,400
Miscellaneous Metals - embeds	1	$90,000	ls	$90,000	Yes	$90,000
Miscellaneous Metals - other	1	$70,000	ls	$70,000	Yes	$70,000
Grating - F&I steel grating	5500	$60	sf	$330,000	Yes	$330,000
Grating - F&I FRP grating	750	$55	ls	$41,250	Yes	$41,250
RO Building - Frame and Shell	1	$450,000	ls	$450,000	Yes	$450,000
RO Building - Masonry Walls	1	$45,000	ls	$45,000	Yes	$45,000
RO Building - Achitectural Woodwork	1	$18,000	ls	$18,000	Yes	$18,000
RO Building - Fiberglass Insulation	1	$25,000	ls	$25,000	Yes	$25,000
RO Building - Fire Sprinklers	1	$50,000	ls	$50,000	Yes	$50,000
RO Building - Doors and Frames	1	$92,100	ls	$92,100	Yes	$92,100
RO Building - Roll up Doors	1	$50,000	ls	$50,000	Yes	$50,000
RO Building - Metal Windows	1	$28,000	ls	$28,000	Yes	$28,000
RO Building - Drywall	1	$103,000	ls	$103,000	Yes	$103,000
RO Building - Finishes	1	$45,000	ls	$45,000	Yes	$45,000
RO Building - Accessories	1	$74,000	ls	$74,000	Yes	$74,000
Electrical Building - Frame and Shell	1	$40,000	ls	$40,000	Yes	$40,000
RO Building - Plumbing	1	$27,000	ls	$27,000	Yes	$27,000
RO Building - HVAC	1	$109,000	ls	$109,000	Yes	$109,000
Eyewash System	1	$10,000	ls	$10,000	Yes	$10,000
Painting	1	$275,000	ls	$275,000	Yes	$275,000

Chino II Onsite Improvements (RO) DL02201

Description	Qty	Unit Price	Unit	Total Contract Amount	Shared?	Shared Cost
Piping						
Install 8" Sewer	920	$35	lf	$32,200	Yes	$32,200
Install 4" Sewer	146	$30	lf	$4,380	Yes	$4,380
install 15" Sewer	800	$50	lf	$40,000	Yes	$40,000
Sewer Manholes	6	$3,500	ea	$21,000	Yes	$21,000
Steel Water Pipe, CMLC	3379	$400	lf	$1,351,600	1361LF Shared	$544,400
Precast Vaults	5	$40,000	ea	$200,000	Yes	$200,000
18" Storm Drain	148	$75	lf	$11,100	Yes	$11,100
12" Storm Drain	195	$60	lf	$11,700	Yes	$11,700
36" Storm Drain	326	$95	lf	$30,970	Yes	$30,970
Catch Basins	6	$2,500	ea	$15,000	Yes	$15,000
Manholes	3	$3,500	ea	$10,500	Yes	$10,500
8" PVC Water Line	1260	$50	lf	$63,000	Yes	$63,000
3" PVC Water Line	1220	$25	lf	$30,500	Yes	$30,500
2" Down PVC Piping	500	$15	lf	$7,500	Yes	$7,500
12" PVC Drain Pipe	180	$75	lf	$13,500	Yes	$13,500
6" PVC Drain Pipe	560	$50	lf	$28,000	Yes	$28,000
Equipment						
Inlet Filters	3	$55,000	ea	$165,000	No	$0
Static Mixer	1	$36,000	ea	$36,000	Yes	$36,000
RO Membrane Feed Pumps	3	$120,000	ea	$360,000	No	$0
RO CIP Pump	1	$35,000	ea	$35,000	Yes	$35,000
Sulfuric Acid Pumps	2	$15,000	ea	$30,000	Yes	$30,000
Sulfuric Acid Tanks and Piping	2	$60,000	ea	$120,000	Yes	$120,000
Threshold Inhibitor Pumps	2	$15,000	ea	$30,000	Yes	$30,000
Threshold Inhibitor Tanks and Piping	2	$25,000	ea	$50,000	Yes	$50,000
Sodium Hydroxide Pumps	3	$10,000	ea	$30,000	Yes	$30,000
Sodium Hydroxide Tanks and Piping	2	$30,000	ea	$60,000	Yes	$60,000
Sodium Hypochlorite Pumps	3	$10,000	ea	$30,000	Yes	$30,000
Sodium Hypochlorite Tanks and Piping	2	$30,000	ea	$60,000	Yes	$60,000
Sodium Hypochlorite Generator System	1	$250,000	ls	$250,000	Yes	$250,000
RO Racks	3	$25,000	ea	$75,000	No	$0
RO Vessels	144	$1,250	ls	$180,000	No	$0
RO Suction and Discharge Headers	42	$5,500	ea	$231,000	Yes	$231,000
RO CIP Tank, Pipe and Valves	1	$95,000	ls	$95,000	Yes	$95,000
RO Pipe and Valves - ss	540	$1,850	lf	$999,000	No	$0
RO Pipe and Valves - pvc	760	$400	lf	$304,000	No	$0
FRP Pipe and Valves	670	$370	lf	$247,900	Yes	$247,900
Decarbonators	2	$90,000	ea	$180,000	Yes	$180,000
Transfer Pump Station Pumps	4	$50,000	ea	$200,000	No	$0
Transfer Pump Station Valves & Piping	1	$100,000	ls	$100,000	No	$0
Product Water Pumps	3	$50,000	ea	$150,000	No	$0
Product Water Valves and Piping	1	$30,000	ls	$30,000	No	$0
Surge Tank System	1	$90,000	ls	$90,000	No	$0
Clearwell Steel Tank - Oil Sand	400	$70	ton	$28,000	Yes	$28,000
Clearwell Steel Tank - Construct	1	$300,000	ls	$300,000	Yes	$300,000
Clearwell Steel Tank - Paint	1	$300,000	ls	$300,000	Yes	$300,000

Chino II Onsite Improvements (RO) DL02201

Description	Qty	Unit Price	Unit	Total Contract Amount	Shared?	Shared Cost
Electrical						
SCE Primary UG Duct Banks	1	$53,000	ls	$53,000	Yes	$53,000
SCE Secondary UG Duct Banks	1	$194,000	ls	$194,000	Yes	$194,000
Set Tubs and Transformer Pads	1	$75,000	ls	$75,000	Yes	$75,000
Misc Yard UG Conduit	1	$37,000	ls	$37,000	Yes	$37,000
Loadcenter F&I	2	$70,000	ea	$140,000	Yes	$140,000
MCC F&I	2	$78,000	ls	$156,000	Yes	$156,000
Lighting and Power Panels F&I	1	$22,000	ls	$22,000	Yes	$22,000
VFD's F&I	5	$56,000	ea	$280,000	No	$0
Transformers F&I	1	$23,000	ls	$23,000	Yes	$23,000
Fixtures F&I	1	$66,000	ls	$66,000	Yes	$66,000
Flowmeters Furnish	1	$220,000	ls	$220,000	Yes	$220,000
Analyzers F&I	1	$55,000	ls	$55,000	Yes	$55,000
Instrument Racks F&I	1	$55,000	ls	$55,000	Yes	$55,000
Pressure Instruments F&I	1	$8,000	ls	$8,000	Yes	$8,000
Local Control Panels F&I	1	$201,000	ls	$201,000	Yes	$201,000
Misc Instruments F&I	1	$42,000	ls	$42,000	Yes	$42,000
Lightning Protection F&I	1	$29,000	ls	$29,000	Yes	$29,000
Control Console F&I	1	$33,000	ls	$33,000	Yes	$33,000
RO Building - Underground conduit	1	$175,000	ls	$175,000	No	$0
RO Building - Exposed Conduit	1	$77,000	ls	$77,000	No	$0
RO Building - Pull Wire and Cable	1	$96,000	ls	$96,000	No	$0
RO Building - Terminations	1	$31,000	ls	$31,000	No	$0
Decarbonation - Underground Conduit	1	$32,000	ls	$32,000	Yes	$32,000
Decarbonation - Exposed Conduit	1	$22,000	ls	$22,000	No	$0
Decarbonation - Pull Wire and Cable	1	$35,000	ls	$35,000	No	$0
Decarbonation - Terminations	1	$21,000	ls	$21,000	No	$0
Transfer PS - Underground Conduit	1	$40,000	ls	$40,000	Yes	$40,000
Transfer PS - Exposed Conduit	1	$22,000	ls	$22,000	Yes	$22,000
Transfer PS - Pull Wire and Cable	1	$30,000	ls	$30,000	Yes	$30,000
Transfer PS - Terminations	1	$31,000	ls	$31,000	Yes	$31,000
Chemical Areas - Underground Conduit	1	$33,000	ls	$33,000	Yes	$33,000
Chemical Areas - Exposed Conduit	1	$22,000	ls	$22,000	Yes	$22,000
Chemical Areas - Pull Wire and Cable	1	$24,000	ls	$24,000	Yes	$24,000
Chemical Areas - Terminations	1	$17,000	ls	$17,000	Yes	$17,000
Product Water PS - U/G Conduit	1	$33,000	ls	$33,000	No	$0
Product Water PS - Exposed Conduit	1	$22,000	ls	$22,000	No	$0
Product Water PS - Wire and Cable	1	$28,000	ls	$28,000	No	$0
Product Water PS - Terminations	1	$23,000	ls	$23,000	No	$0
East Electrical Bldg - U/G Conduit	1	$33,000	ls	$33,000	Yes	$33,000
East Electrical Bldg - Exposd Conduit	1	$18,000	ls	$18,000	Yes	$18,000
East Electrical Bldg - Wire and Cable	1	$27,000	ls	$27,000	Yes	$27,000
East Electrical Bldg - Terminations	1	$29,000	ls	$29,000	Yes	$29,000
Subtotal Original Contract:				**$13,650,000**		**$9,341,800**

Chino II Onsite Improvements (RO) DL02201

Description	Qty	Unit Price	Unit	Total Contract Amount	Shared?	Shared Cost
Change Orders						
Addition of Water Stop at Transfer Pump Station	1	$3,848	LS	$3,848	Yes	$3,848
Pipe Penetration Detail Per Delta 2 Change on Sheet C14	1	$6,113	LS	$6,113	Yes	$6,113
Decarbonator Discharge Piping	1	$10,786	LS	$10,786	Yes	$10,786
Various Electrical Fittings	1	($5,739)	LS	($5,739)	Yes	($5,739)
Sump Pumps at TPS	1	$7,283	LS	$7,283	Yes	$7,283
Control Joints at Clearwell Foundation	1	$1,241	LS	$1,241	Yes	$1,241
Decarbonator Layout for Future Unit	1	$5,018	LS	$5,018	Yes	$5,018
Thickened Footing at Electrical Building	1	$1,049	LS	$1,049	Yes	$1,049
16" Flush Waste Encasement	1	$1,111	LS	$1,111	Yes	$1,111
Anchor Bolt and Foundation Modifications to RO Building	1	$71,500	LS	$71,500	Yes	$71,500
Overhead Door Change to Insulated Panels from the Specified Vision Panels	1	($5,991)	LS	($5,991)	Yes	($5,991)
Additional Reinforced Concrete Wall at North West end of RO Piping Sand Trench	1	$3,250	LS	$3,250	Yes	$3,250
Provide 1-shower drain to be located in the RO Building Bathroom	1	$2,410	LS	$2,410	Yes	$2,410
Transfer Pump Station Revisions (TPS-100) Aluminum Grating	1	$18,275	LS	$18,275	Yes	$18,275
Revised S013 Drawing for Interior Masonry Walls	1	$7,971	LS	$7,971	Yes	$7,971
Flume Package	1	$33,548	LS	$33,548	Yes	$33,548
Cathodic Protection RO Feed Pipe	1	$8,324	LS	$8,324	Yes	$8,324
Fiber Optic Conduit Routing - RFI No. 125	1	$6,744	LS	$6,744	Yes	$6,744
Floor Topping	1	$9,700	LS	$9,700	Yes	$9,700
24" Product Water Line & Profile & Layout	1	$49,500	LS	$49,500	No	$0
Demolition of Existing JCSD Storage Bin	1	$16,029	LS	$16,029	Yes	$16,029
Area Lighting & Outlets RFD #0034	1	$5,497	LS	$5,497	Yes	$5,497
CIP Heater Control	1	$10,488	LS	$10,488	Yes	$10,488
Additional PIT Vault #1	1	$5,739	LS	$5,739	Yes	$5,739
Disconnect Switches RO/PWPS Pumps	1	($15,530)	LS	($15,530)	No	$0
PVC Coated Rigid Conduit & Fittings	1	$69,660	LS	$69,660	Yes	$69,660
East Electrical Finish & Doorways	1	$3,921	LS	$3,921	Yes	$3,921
Fixture Transformers	1	$4,974	LS	$4,974	Yes	$4,974
Vinyl Flooring	1	$783	LS	$783	Yes	$783
Rollup Doors/Misc Electrical	1	$119,987	LS	$119,987	Yes	$119,987
Control room Modifications	1	$1,032	LS	$1,032	Yes	$1,032
Control Room Computor Network, UPS & Telephone	1	$0	LS	$22,754	Yes	$22,754
Temporary Water Service	1	$27,000	LS	$27,000	Yes	$27,000
FRP & Cement Backerboard	1	$14,000	LS	$14,000	Yes	$14,000
Extend Wall Between Bldg. Line B & C	1	$17,118	LS	$17,118	Yes	$17,118
RO Feed line Transition and Expansion Joint Restraint	1	$17,387	LS	$17,387	Yes	$17,387
Subtotal Change Orders:		$534,026		**$556,781**		**$522,811**
			Total	**$13,650,000**		**$9,341,800**
			Change Orders	$556,781		$522,811
			Actual Invoiced Amount	$14,206,781		$9,864,611

Ion Exchange Treatment DL02202

Description	Qty	Unit Price	Unit	Total Contract Amount	Shared?	Shared Cost
Administration						
Bonds and Insurance	1	$ 55,000.00	ls	$55,000	yes	$55,000
As Built Drawings	1	$ 10,000.00	ls	$10,000	yes	$10,000
Submittals (by Spec Section)	40	$ 300.00	ea	$12,000	yes	$12,000
					Subtotal	$77,000
Prep and Testing						
Mobilization	1	$ 418,250.00	ls	$418,250	yes	$418,250
Demobilization	1	$ 50,000.00	ls	$50,000	yes	$50,000
Sheeting, Shoring and Bracing	1	$ 5,000.00	ls	$5,000	yes	$5,000
Demonstration Testing	1	$ 120,000.00	ls	$120,000	yes	$120,000
Pipe Testing Chino 2	1	$ 10,000.00	ls	$10,000	yes	$10,000
System Test Chino 2	1	$ 26,000.00	ls	$26,000	yes	$26,000
					Subtotal	$629,250
Structures						
Concrete Slabs Chino 2 Site	227	$ 400.00	cy	$90,800	yes	$90,800
Concrete Pads Chino 2 Site	170	$ 450.00	cy	$76,500	yes	$76,500
Rebar Chino 2 Site	1	$ 75,000.00	ls	$75,000	yes	$75,000
Underground Drains Chino 2 Site	465	$ 95.00	lf	$44,175	yes	$44,175
Painting Chino 2	1	$ 28,000.00	ls	$28,000	no	$0
					Subtotal	$286,475
Piping						
Furnish & Install Pipe Supports Chino 2	1	$ 75,000.00	ls	$75,000	yes	$75,000
					Subtotal	$75,000
Electrical						
Furnish & Install Instruments Chino 2	40	$ 1,000.00	ea	$40,000	no	$0
Electrical Chino 2	1	$ 200,000.00	ls	$200,000	yes	$200,000
Instrumentation Chino 2	1	$ 75,000.00	ls	$75,000	yes	$75,000
					Subtotal	$275,000
Equipment						
Furnish & Install Bag Filters Chino 2	2	$ 70,000.00	ea	$140,000	no	$0
Furnish & Install NRV Tanks Chino 2	4	$ 120,000.00	ea	$480,000	no	$0
Furnish & Install Resin Chino 2	3400	$ 130.00	cf	$442,000	no	$0
Furnish & Install Brine Saturators Chino 2	2	$ 120,000.00	ea	$240,000	yes	$240,000
Furnish & Install Brine Storage Tanks Chino 2	2	$ 36,000.00	ea	$72,000	yes	$72,000
Furnish & Install Water Softener Tanks Chino 2	2	$ 50,000.00	ea	$100,000	yes	$100,000
Furnish & Install Freeboard Tank Chino 2	1	$ 32,000.00	ea	$32,000	yes	$32,000
Furnish & Install Pumps Chino 2	8	$ 40,000.00	ea	$320,000	yes	$320,000
Furnish & Install Blowers Chino 2	2	$ 30,000.00	ea	$60,000	yes	$60,000
Furnish & Install SS Pipe Chino 2	1490	$ 400.00	lf	$596,000	yes	$596,000
Furnish & Install Valves Chino 2	1	$ 550,000.00	ls	$550,000	no	$0
					Subtotal	$1,420,000
			Total	**$4,442,725**		**$2,762,725**

Chino II Well Drilling Package No. 1 DL02204

Description	Quantity	Unit Price	Unit	Total Contract Amount
Prep				
Mobilization to first site; demobilization, site clean-up and restoration of project area.	1	$72,627	SITE	$72,627
Mobilization between well locations.	2	$54,507	SITE	$109,014
Provide sound control measures as specified, if required.	3	$12,000	LF	$36,000
Drill 42 inch diameter conductor boreholes, furnish and install 30 inch OD diameter by 5/16 inch wall conductor casings. Cement into place.	150	$280	LF	$42,000
Drill maximum 17-1/2 inch diameter pilot boreholes.	1,550	$30	EA	$46,500
Provide geophysical borehole logs of each pilot borehole as specified.	3	$3,833	ZONE	$11,499
Perform isolated aquifer zone testing on approximately three zones per extraction well.	9	$8,200	LF	$73,800
Provide caliper surveys of each reamed borehole.	3	$1,833	LF	$5,499
Provide Dual-Cam video survey on VHS and DVD format for each extraction well.	3	$500	LF	$1,500
Construction				
Abandonment of pilot hole, if required.	90	$35	LF	$3,150
Ream each 17-1/2 inch pilot borehole to 26 inches in diameter.	1,550	$25	EA	$38,750
Develop and clean each extraction well by airlifting and swabbing from between packers.	216	$200	EA	$43,200
Provide development for each extraction well by pumping and surging with deep well turbine pump.	180	$165	HR	$29,700
Provide pumping tests for yield and drawdown as specified.	144	$165	EA	$23,760
Provide a spinner survey in each extraction well, as specified.	3	$3,000	EA	$9,000
Complete each wellhead as designed and clean up each well site, including conducting plumbness and alignment surveys and disinfection on each extraction well.	3	$1,250	EA	$3,750

Chino II Well Drilling Package No. 1 DL02204

Description	Quantity	Unit Price	Unit	Total Contract Amount
Equipment				
Furnish and install 16-inch ID diameter x 5/16 inch wall 304L stainless steel blank casings.	500	$230	LF	$115,000
Furnish and install 16-inch ID diameter x 5/16 inch wall 304L stainless steel ful-flo louvered screens.	1,200	$262	LF	$314,400
Furnish and install (2 each per well) 2-inch sch 40 stainless steel sounding tubes in each extraction well, as specified.	1,200	$23	LF	$27,600
Furnish and install filter pack material in each extraction well, as specified.	1,550	$22	HR	$34,100
Install and remove development/test pumps in each extraction well.	3	$12,000	HR	$36,000
Change Orders				
Description	Quantity	Unit Price	Unit	Total Contract Amount
Add well 9a	1	$115,000	LS	$115,000
Upsize stainless steel blank casing from 16-inch to 18-inch	192	$95	FT	$18,159
Upsize stainless steel louvered screen casing from 16-inch to 18-inch	124	$86	LS	$10,683
Contract Reconciliation	1	($231,818)	LS	($231,818)
Anchor Bolt and Foundation Modifications to RO Building	45	$0	DAYS	$0
Subtotal Change Orders:				($87,976)
Total Contract with Change Orders:				**$988,873**
			Sub Total	$1,076,849
			Change Orders	($87,976)
			Total Contract with Change Orders:	$988,873

Wells Equipment Pkg No. 1 (6,7,8,9a) DL02205

Description	Qty	Unit Price	Total Contract Amount
Prep			
Mobilization	1	$120,000	$120,000
Provide svs to test and being well on line II-6	1	$10,600	$10,600
Furnish trench per CAL OSHA well II-6	1	$1,500	$1,500
Provide svs to test and being well on line II-7	1	$10,600	$10,600
Furnish trench per CAL OSHA well II-7	1	$1,500	$1,500
Provide svs to test and being well on line II-8	1	$10,600	$10,600
Furnish trench per CAL OSHA well II-8	1	$1,500	$1,500
Provide svs to test and being well on line II-9	1	$10,600	$10,600
Furnish trench per CAL OSHA well II-9	1	$1,500	$1,500
Equipment			
Install pumps, piping equipment well II-6	1	$277,400	$277,400
Provide install pumps piping equipment well II-7	1	$279,400	$279,400
Install pumps, piping equipment well II-8	1	$279,300	$279,300
Install pumps, piping equipment Well II-9	1	$319,400	$319,400
Electrical			
Provide install electrical instrumentation II-6	1	$155,500	$155,500
Provide install electrical instrumentation well II-7	1	$155,500	$155,500
Provide install electrical instrumentation II-8	1	$122,100	$122,100
Provide install electrical instrumentation II-9	1	$122,000	$122,000
Site Improvements			
Provide install site improvements AC paving concrete work well II-6	1	$149,200	$149,200
Provide install site improvements AC paving concrete work well II-7	1	$78,300	$78,300
Provide install site improvements AC paving concrete work well II-8	1	$139,800	$139,800
Provide install site improvements AC paving concrete work well II-9	1	$122,600	$122,600
		Total	**$2,368,900**
		Change Orders	$647,960
		Actual Invoiced Amount	$3,016,860

All costs are shared

Chino II Raw Water Pipeline Phase I DL02206 & DL02209

Description	Qty	Unit Price	Unit	Total Contract Amount	Shared?	Shared Cost
Administration						
Traffic Control & Safety	1	$25,000	LS	$25,000	yes	$25,000
Permit Fee Allowance	1	$15,000	LS	$15,000	yes	$15,000
SWPPP	1	$20,000	LF	$20,000	yes	$20,000
Provide Record Drawings	1	$5,000	LS	$5,000	yes	$5,000
Prep						
Mobilization, Insurance and Bonds	1	$150,000	LS	$150,000	yes	$150,000
Trench and Excavation Sheeting, Shoring and Bracing	1	$25,000	LS	$25,000	yes	$25,000
Pavement Removal, Disposal & Replacement	9350	$15	LF	$140,250	yes	$140,250
Additional demobilization/mobilization	1	$5,000	LS	$5,000	yes	$5,000
Pressure Test of Water Transmission Pipeline	1	$5,000	LS	$5,000	yes	$5,000
Piping						
30" Dia. PVC C-905 Watermain	11670	$125	LF	$1,458,750	yes	$1,458,750
24" Dia. PVC C-905 Watermain	1770	$90	LF	$159,300	yes	$159,300
18" Dia. PVC C-905 Watermain	1044	$72	LF	$75,168	yes	$75,168
16" Dia. PVC C-905 Watermain	3319	$60	EA	$199,140	yes	$199,140
12" Dia. PVC C-900 Watermain	142	$125	EA	$17,750	yes	$17,750
30" Dia. Class 150 BFV	6	$16,000	EA	$96,000	yes	$96,000
24" Dia. Class 150 BFV	1	$10,000	EA	$10,000	yes	$10,000
18" Dia. Class 150 BFV	1	$10,000	EA	$10,000	yes	$10,000
16" dia. Class 150 BFV	2	$4,300	EA	$8,600	yes	$8,600
12" Dia. Class 150 RSGVq4q2800	4	$2,800	EA	$11,200	yes	$11,200
3" Dia. Air Valve Assembly - Bellegrave (36"30")	6	$4,000	EA	$24,000	yes	$24,000
3" Dia. Air Valve Assembly - Wineville (24"/18")	2	$4,000	EA	$8,000	yes	$8,000
2" Dia. Air Valve Assembly	3	$3,000	EA	$9,000	yes	$9,000
4" Dia. Blow-Off Installation - Bellegrave (36"30")	7	$3,400	LF	$23,800	yes	$23,800
4" Dia. Blow-Off Installation - Wineville (24"/18")	3	$3,400	LF	$10,200	yes	$10,200
Connect to Exist 36" Dia. Waterline	1	$28,000	LS	$28,000	yes	$28,000
Structural Elements						
Asphalt Concrete Gap	9500	$5	LS	$47,500	yes	$47,500
Chino II Raw Water Pipeline Phase I Subtotal[(1)]				**$2,586,658**		**$2,586,658**

(1) Change orders are shared between the Chino II Raw Water Pipeline Phase 1 and the Brine Line. See the totals following the Brine Line asset list.

Brine Line DL02206 & DL02209

Description	Qty	Unit Price	Unit	Total Contract Amount	Shared?	Shared Cost
Administration						
Mobilization, Insurance and Bonds	1	$29,000.00	LS	$29,000	yes	$29,000
Traffic Control & Safety	1	$5,000.00	LS	$5,000	yes	$5,000
Prep						
Trench and Excavation Sheeting, Shoring and Bracing	1	$18,000.00	LS	$18,000	yes	$18,000
Testing Sewer	1	$5,000.00	LF	$5,000	yes	$5,000
Piping						
15" Dia. Sewer Pipe	1453	$120.00	LS	$174,360	yes	$174,360
Manholes	1	$18,000.00	LF	$18,000	yes	$18,000
Pipe Hangers	1	$20,000.00	LF	$20,000	yes	$20,000
Brine Line Subtotal				**$269,360**		**$269,360**
Chino II Raw Water Pipeline Phase I Subtotal				**$2,586,658**		**$2,586,658**
Total				$2,856,018		$2,856,018
Change Orders				$587,411		$587,411
Total Contract with Change Orders:				$3,443,429		$3,443,429

Chino II Raw Water Pipeline Phase II DL02211

Description	Qty	Unit Price	Total Contract Amount	Shared?	Shared Cost
Schedule 1					
Prep and Testing					
Mobilization, Insurance and Bonds	1	$195,000	$195,000	yes	$195,000
Additional demobilization/mobilization	1	$29,000	$29,000	yes	$29,000
Trench & Excavation, Sheeting, Shoring	1	$12,000	$12,000	yes	$12,000
Traffic Control & Safety	1	$38,000	$38,000	yes	$38,000
SWPPP & Monitoring Program	1	$7,000	$7,000	yes	$7,000
Pothole existing utilities	1	$15,000	$15,000	yes	$15,000
Remove & replace existing traffic lo	1	$9,000	$9,000	yes	$9,000
Unknown mainline utilitiy crossing	10	$750	$7,500	yes	$7,500
Presssure test	1	$10,000	$10,000	yes	$10,000
Cathodic protection test station	12	$700	$8,400	yes	$8,400
					$330,900
Piping					
42" dia (class 150 min.) CML/CMC	300	$350	$105,000	yes	$105,000
36" dia (class 150 min.) CML/CMC	5383	$137	$737,471	yes	$737,471
30" dia (class 150 min.) CML/CMC	4245	$129	$547,605	yes	$547,605
36" dia. BFV installation	2	$14,200	$28,400	yes	$28,400
30" dia. BFV installation	3	$10,500	$31,500	yes	$31,500
16" dia. BFV installation	2	$3,150	$6,300	yes	$6,300
12" dia. RSGV installation	5	$1,900	$9,500	yes	$9,500
20" manway	13	$6,700	$87,100	yes	$87,100
4" air valve	10	$4,900	$49,000	yes	$49,000
2" air valve	2	$2,300	$4,600	yes	$4,600
6" blow off installation	10	$3,700	$37,000	yes	$37,000
Connection to existing 30" dia. Watermain	1	$6,300	$6,300	yes	$6,300
Connect to existing 24" dia. WSP watermain	1	$6,100	$6,100	yes	$6,100
48" dia. X 1/2 " thick steel bore	385	$740	$284,900	yes	$284,900
					$1,940,776
Structural Elements					
Pavement removal, disposal & replacement	8756	$9	$78,804	yes	$78,804
Asphalt concrete cap	8756	$18	$153,230	yes	$153,230
					$232,034
		Total Schedule 1	$2,503,710		$2,503,710

Chino II Raw Water Pipeline Phase II DL02211

Description	Qty	Unit Price	Total Contract Amount	Shared?	Shared Cost
Schedule 2					
Prep and Testing					
Mobilization	1	$10,000	$10,000	yes	$10,000
Trench & Excavation, Sheeting, Shoring	1	$2,000	$2,000	yes	$2,000
Traffic Control & Safety	1	$2,000	$2,000	yes	$2,000
Pressure test, chlorination of water	1	$6,000	$6,000	yes	$6,000
					$20,000
Piping					
30" dia. (class 150 min) CML/CMC	1568	$160	$250,880	yes	$250,880
6" dia. Blow-off installation	1	$3,500	$3,500	yes	$3,500
48" dia. X 1/2" thick steel bore	385	$740	$284,900	yes	$284,900
					$539,280
Structural Elements					
Pavement removal, disposal & replacement	155	$60	$9,300	yes	$9,300
Asphalt concrete cap	155	$75	$11,625	yes	$11,625
Pothole existing utilities	1	$2,500	$2,500	yes	$2,500
					$23,425
		Total Schedule 2	$582,705		$582,705
Schedule 3					
Prep and Testing					
Mobilization	1	$5,000	$5,000	yes	$5,000
Trench & Excavation, Sheeting, Shoring	1	$2,500	$2,500	yes	$2,500
Traffic Control & Safety	1	$2,000	$2,000	yes	$2,000
Install temporary fencing	1	$11,900	$11,900	yes	$11,900
Air Test Sewerline	1	$4,000	$4,000	yes	$4,000
					$25,400
Piping					
Install 15" dia.VCP sewer main	1229	$92	$113,068	yes	$113,068
Install 5' dia. Manhole	6	$3,500	$21,000	yes	$21,000
30" dia. X 1/2" thick steel bore	373	$495	$184,635	yes	$184,635
					$318,703
Structural Elements					
Pavement removal, disposal & replacement	110	$60	$6,600	yes	$6,600
Asphalt concrete cap	110	$75	$8,250	yes	$8,250
Pothole existing utilities	1	$4,000	$4,000	yes	$4,000
					$18,850
		Total Schedule 3	$362,953		$362,953
		Total	$3,449,368		$3,449,368
		Change Orders	$562,627		$562,627
		Actual Invoiced Amount	$4,011,995		$4,011,995

Chino II Raw Water Pipeline Phase III DL02212

Description	Qty	Unit Price	Unit	Total Contract Amount	Shared?	Shared Cost
Administration						
Provide Record Drawings in accordance with the specifications	1	$2,500	LS	$2,500	yes	$2,500
Prep and Testing						
Mobilization, Insurance and Bonds	1	$50,000	LS	$50,000	yes	$50,000
Trench and Excavation Sheeting, Shoring and Bracing for Protection of Life and Limb	1	$8,000	LS	$8,000	yes	$8,000
Traffic Control and Safety, Roadway Temporary and Final Striping	1	$6,000	LS	$6,000	yes	$6,000
Storm Water Pollution Prevention Plan and Monitoring Program in accordance with the Specifications	1	$5,000	LS	$5,000	yes	$5,000
Replace Traffic Loops per Riverside County Requirements	1	$2,500	LS	$2,500	yes	$2,500
Additional demobilization/mobilization cost should easement/permit not be acquired by CDA prior to completion of all other Contract Work. Payment for this item will be made only as authorized by Owner (Ref to Special Requirements Section 6)	1	$5,000	LS	$5,000	yes	$5,000
Pressure Test of Water Transmission Pipeline along with all other work in the Contract Documents not outlined in Bid Items 101 through 124 to make system operational	1	$5,000	LS	$5,000	yes	$5,000
Piping						
30" Dia. (CR25) PVC C-905 Watermain, including fitting and thrust restraint	1998	$155	LF	$309,690	yes	$309,690
24" Dia. (DR 25) PVC C-905 Watermain, including fittings and thrust restraint	2681	$92	LF	$246,652	no	$0
16" Dia. (DR 25) PVC C-905 Watermain, including fittings and thrust restraint	3670	$55	LF	$201,850	yes	$201,850
12" Dia. (DR 18) PVC C-900 Watermain, including fittings and thrust restraint	284	$70	LF	$19,880	yes	$19,880
30" Dia. Class 150 BFV per CDA Std. Dwg. No. B-3	1	$8,950	EA	$8,950	yes	$8,950
24" Dia. Class 150 BFV per CDA Std. Dwg. No. B-3	2	$6,000	EA	$12,000	no	$0
16" Dia. Class 150 BFV per CDA Std. Dwg. No. B-3	3	$2,600	EA	$7,800	no	$0
12" Dia. Class 150 RSGV per CDA Std. Dwg. No. B-1	3	$1,800	EA	$5,400	yes	$5,400
4" Dia. Air Valve Assembly per CDA Std. Dwg. No. E-2	2	$10,000	EA	$20,000	yes	$20,000
3" Dia. Air Valve Assembly per CDA Std. Dwg. No. E-2	2	$5,500	EA	$11,000	no	$0
2" Dia. Air Valve Assembly per CDA Std. Dwg. No. E-1	4	$2,800	EA	$11,200	no	$0
6" Dia. Blow-Off Installation per CDA Std. Dwg. No. F-1	2	$13,000	EA	$26,000	yes	$26,000
4" Dia. Blow-Off Installation per CDA Std. Dwg. No. F-1	6	$4,000	EA	$24,000	no	$0
Connect to Existing 30" Dia. Waterline at Interstate 15	1	$6,000	LS	$6,000	yes	$6,000
Structural Elements						
Pavement Removal, Disposal and Replacement	7634	$12	LF	$91,608	yes	$91,608
Asphalt Concrete Cap	7634	$4	LF	$32,445	yes	$32,445
Pothole existing utilities prior to construction	1	$10,000	LS	$10,000	yes	$10,000
Subtotal Original Contract:				**$1,128,475**		**$815,823**

Chino II Raw Water Pipeline Phase III DL02212

Description	Qty	Unit Price	Unit	Total Contract Amount	Shared?	Shared Cost
Change Orders						
Caution Tape & Loss of 1-Day	1	$1,440	LS	$1,440	yes	$1,440
Loss of 5-Days as a result of not receiving approved material submittals. (No dollar increase.)	1	$0	LS	$0	yes	$0
Loss of 3-Days as a result of the Survey Delay. (No dollar increase.)	1	$0	LS	$0	yes	$0
Anchor Bolt and Foundation Modifications to RO Building	45	$0	DAYS	$0	yes	$0
			Total Original Contract	$1,128,475		$815,823
			Change Orders	$1,440		$1,440
			Total Contract with Change Orders:	$1,129,915		$817,263

Wells Equipment Pkg. No. 2 (1,2,3,4) DL02213

Description	Qty	Unit Price	Total Contract Amount
Prep			
Mobilization (all wells)	1	$150,000	$150,000
Provide all sercices needed to test and bring well II-1 on line to produce water	1	$5,000	$5,000
Provide all services needed to test and bring well II-2 on line to produce water	1	$5,000	$5,000
Provide all services needed to test and bring well II-3 on line to produce water	1	$5,000	$5,000
Provide all services needed to test and bring well II-4 on line to produce water	1	$5,000	$5,000
Provide all services needed to test and bring well II-5 on line to produce water	1	$5,000	$5,000
Furnish trench protection (shoring or sloping) in accordance with CAL OSHA Standards for all trenches greater than five feet for well no. II-1	1	$1,500	$1,500
Furnish trench protection (shoring or sloping) in accordance with CAL OSHA Standards for all trenches greater than five feet for well no. II-2	1	$1,500	$1,500
Furnish trench protection (shoring or sloping) in accordance with CAL OSHA standards for all trenches greater than five feet for well no. II-3	1	$1,500	$1,500
Furnish trench protection (shoring or sloping) in accordance with CAL OSHA Standards for all trenches greater than five feet for well no. II-4	1	$1,500	$1,500
Furnish trench protection (shoring or sloping) in accordance with CAL OSHA standards for all trenches greater than five feet for well no. II-5	1	$1,500	$1,500
Equipment			
Provide and install all pumps, piping, and mechanical equipment to complete water well no. II-1	1	$337,400	$337,400
Provide and install all pumps, piping, and mechanical equipment to complete water well no. II-2	1	$292,700	$292,700
Provide and install all pumps, piping, and mechanical equipment to complete water well no. II-3	1	$285,500	$285,500
Provide and install all pumps, piping, and mechanical equipment to complete water well no. II-4	1	$287,500	$287,500
Provide and install all pumps, piping, and mechanical equipment to complete water well no. II-5	1	$292,000	$292,000

Wells Equipment Pkg. No. 2 (1,2,3,4) DL02213

Description	Qty	Unit Price	Total Contract Amount
Electrical			
Provide and install all electrical and instrumentation equpiment to complete water well no. II-1	1	$155,500	$155,500
Provide and install all electrical and instrumentation equpiment to complete water well no. II-2	1	$125,600	$125,600
Provide and install all electrical and instrumentation equipment to complete water well no. II-3	1	$125,600	$125,600
Provide and install all electrical and instrumentation equipment to complete water well no. II-4	1	$155,000	$155,000
Provide and install all electrical and instrumentation equipment to complete water well no. II-5	1	$125,600	$125,600
Site Improvements			
Provide and install site improvements, base material, earthwork, AC Pavind and Concrete works for water well no. II-1	1	$94,500	$94,500
Provide and install site improvements, base material, earthwork, AC Paving and Concrete works for water well no. II-2	1	$267,700	$267,700
Provide and install site improvementes, base material, earthwork, AC paving and concrete works for water well no. II-3	1	$188,200	$188,200
Provide an install site improvements, base material, earthwork, AC Paving and concrete works for water well no. II-4	1	$88,400	$88,400
Provide and install stie irpvements, base material, earthwork, AC Paving and Concrete works for water well no. II-5	1	$105,300	$105,300
		Total	$3,108,500
		Change Orders	$125,887
		Actual Invoiced Amount	$3,234,387

All costs are shared

Appendix B

Reference Documents

COOPERATIVE AGREEMENT BETWEEN

CHINO BASIN DESALTER AUTHORITY AND JURUPA COMMUNITY SERVICES DISTRICT

FOR UPSIZING CHINO II RAW WATER PIPELINE

This **COOPERATIVE AGREEMENT** ("Agreement") is made and is effective this ____ day of _____, 2004, by and between the **CHINO BASIN DESALTER AUTHORITY** ("CDA"), a joint exercise of powers agency duly organized and existing pursuant to Article 1, Chapter 5, Division 7, Title 1 of the Government Code, commencing with Section 6500 and the **JURUPA COMMUNITY SERVICES DISTRICT** ("JCSD"), a pubic agency. Herein, CDA and JCSD may sometimes be referred to individually as a "Party" or collectively as the "Parties".

RECITALS

WHEREAS, CDA desires the construction and installation of a raw water pipeline with sufficient capacity to facilitate CDA's operation of the desalting facility commonly known as Chino II Desalter; and

WHEREAS, CDA has determined that a 30-inch diameter pipeline would have sufficient capacity to facilitate the operation of Chino II Desalter at the facility's current maximum capacity of 10 mgd; and

WHEREAS, CDA is considering, in the future, making certain modifications and additions to Chino II Desalter that will expand the facility's maximum capacity from 10 mgd to as high as 18 mgd (the "Desalter Expansion"). CDA has determined that at least a 36-inch diameter pipeline will be required to facilitate the operation of Chino II Desalter after the completion of the Desalter Expansion; and

WHEREAS, CDA has competitively bid and received bid proposals for the construction and installation of a 30-inch diameter PVC pipeline together with appurtenances, pursuant to that certain bid package entitled "Bidding Documents, Contract, Basic Specifications and Special Requirements for Chino II Raw Water Pipeline Phase 1, dated May 6, 2004" (the "Bid Package"), and intends to award a construction contract pursuant to the Bid Package; and

WHEREAS, CDA and JCSD agree that it would be more efficient and economical for CDA to award a contract for the construction and installation of a larger 36-inch diameter pipeline pursuant to the Bid Package, rather than constructing such a pipeline in the future to when the Desalter Expansion occurs; and

WHEREAS, CDA has reserved an option (the "Additive Item Option") under the terms of the Bid Package to upsize the requested 30-inch diameter pipeline bid item to a larger 36-inch diameter pipeline; and

WHEREAS, CDA and JCSD mutually agree to construct the upsized 36-inch diameter pipeline in the Day Creek Channel and Harrel Street between Bellegrave Avenue and the Chino II Desalter, north of the County of San Bernardino line, together with the additional equipment, piping, and appurentances thereto as required by JCSD; and

WHEREAS, CDA has determined and segregated the additional project costs to be incurred by exercising the Additive Item Option and upsizing the requested 30-inch diameter pipeline bid item to a 36-inch diameter pipeline (the "Added Project Costs"), and JCSD desires to advance the sums necessary to pay for the Added Project Costs pursuant to the terms and provisions of this Agreement; and

WHEREAS, CDA desires to award a contract for the construction and installation of a 36-inch diameter pipeline (the "Project or Upsized Pipeline") pursuant to the Bid Package; and

WHEREAS, CDA and JCSD shall jointly own capacity rights in the Upsized Pipeline pursuant to the terms and provisions of this Agreement.

NOW THEREFORE THE PARTIES AGREE AS FOLLOWS:

1. Construction of Upsized Pipeline. The construction and installation of the Project shall be accomplished as follows:

1.1 Award of Contract. Upon JCSD's establishment of the Escrow Account in accordance with Section 1.2, CDA shall exercise the Additive Item Option and award a contract for the construction and installation of a 36-inch diameter pipeline (the "Upsized Pipeline") pursuant to the Bid Package.

1.2 Payment of Project Costs. CDA shall pay for the total project costs of constructing and installing the Project. JCSD shall advance to CDA an amount equal to the cost of upsizing the requested 30-inch diameter pipeline bid item to a 36-inch diameter pipeline (the "Added Project Costs"). Based on review of the submitted bid proposals, CDA has determined that the Added Project Costs equal Four Hundred Eighty Two Thousand Dollars ($482,000). Within thirty (30) days of the effective date of this Agreement, JCSD shall establish an escrow account ("Escrow Account") with a deposit amount equaling the sum of Four Hundred Eighty Two Thousand Dollars ($482,000) (the "Deposit Amount"). CDA shall use the Deposit Amount to pay for the Added Project Costs.

2. Ownership of the Upsized Pipeline. CDA shall own the Upsized Pipeline and shall have primary responsibility for the operation, maintenance, repair and replacement of the Upsized Pipeline. JCSD shall own only a capacity right in and to the Upsized Pipeline, as specified in Section 3 hereof.

3. Capacity Rights; Percentage Shares. CDA and JCSD shall each own a "Percentage Share" of the total capacity of the Upsized Pipeline, as follows:

CDA's Percentage Share shall be equal to sixty-nine percent (69%) of the total capacity of the Upsized Pipeline.

JCSD's Percentage Share shall be equal to thirty-one percent (31%) of the total capacity of the Upsized Pipeline.

3.1 Calculation of Percentage Shares. The Percentage Shares are calculated based on the GPM Assumptions and Formula, as follows:

GPM Assumptions

30-inch diameter pipeline 7,640 gpm @ 3.5 feet per second

36-inch diameter pipeline 11,100 gpm @ 3.5 feet per second

In other words, if a 30-inch diameter pipeline conveys water at a velocity of 3.5 feet per second, it could convey approximately 7,640 gallons per minute. If a 36-inch diameter pipeline conveys water at a velocity of 3.5 feet per second, it could convey approximately 11,100 gallons per minute.

Formula

gpm of 30-inch diameter pipeline = X% of gpm of 36-inch diameter pipeline

or

7,640 gpm = 69% of 11,100 gpm

In other words, assuming a conveyance velocity of 3.5 feet per second, the 7,640 gpm that a 30-inch diameter pipeline can convey equals 69% of the 11,100 gpm that a 36-inch diameter pipeline can convey.

The Parties agree and acknowledge that without exercising the Additive Item Option pursuant to this Agreement, CDA would award the contract for the construction and installation of a 30-inch diameter pipeline, and would have sole ownership and capacity rights to such 30-inch diameter pipeline. Because, pursuant to this Agreement, JCSD will only advance to CDA an amount equal to the cost of upsizing from a 30-inch diameter pipeline to a 36-inch diameter pipeline, the Parties agree that CDA's Percentage Share of the total capacity of the Upsized Pipeline should at least equal the full amount of capacity benefit that CDA would have received from the construction and use of a 30-inch diameter pipeline. As demonstrated in the formula above, a 30-inch diameter pipeline would have approximately sixty-nine percent (69%) of the gpm capacity of a 36-inch diameter pipeline. Therefore, CDA's Percentage Share of capacity in the Upsized Pipeline shall be equal to sixty-nine percent (69%) of the total capacity of the Upsized Pipeline. The Parties also agree that because JCSD will advance to CDA an amount equal to cost of upsizing from a 30-inch diameter pipeline to a 36-inch diameter pipeline, JCSD's Percentage Share of capacity in the Upsized Pipeline shall be equal to the remaining thirty-one percent (31%) of the total of capacity the Upsized Pipeline.

Each Party's Percentage Share as set forth in this Section 3 is subject to adjustment pursuant to CDA's reimbursement to JCSD of the Deposit Amount, in accordance with Section 5 hereof.

4. Operation and Maintenance. CDA shall have primary responsibility for the operation, maintenance, repair and replacement of the Upsized Pipeline. CDA and JCSD shall each be responsible for the costs and expenses incurred by CDA for the operation, maintenance, repair and replacement of the Upsized Pipeline in proportion to each Party's Percentage Share of capacity rights, as specified in Section 3 above. At the end of each calendar quarter, CDA shall provide to

JCSD a written itemization of the costs and expenses incurred by CDA for the operation, maintenance, repair and replacement of the Upsized Pipeline during that quarter and an invoice for the payment of JCSD's Percentage Share of such costs and expenses. JCSD shall pay all such invoices within fifteen (15) business days of the date of receipt thereof. CDA shall, upon request by JCSD, provide to JCSD copies of all invoices, bills and statements relating to the operation, maintenance, repair and replacement of the Upsized Pipeline which are paid by CDA during any calendar quarter, together with such proof of payment as JCSD may require. In the event of a dispute between JCSD and CDA over such invoices, JCSD shall pay the disputed amount to CDA pending a final determination with respect to such dispute. Notwithstanding the above, JCSD shall not pay any operations and maintenance costs until such time as JCSD utilizes its capacity rights in the Upsized Pipeline.

5. Reimbursement of Deposit Amount. CDA shall be obligated to reimburse JCSD for the Deposit Amount advanced for the Added Project Costs in accordance with this Section 5. CDA shall have no obligation to reimburse the Deposit Amount or any accrued interest thereon (a) unless and until CDA awards a contract for the construction and installation of the Desalter Expansion, and (b) unless the new municipal water wells designated as a component of the Desalter Expansion will utilize the Upsized Pipeline. For the purposes this Section 5, "Desalter Expansion" means material substitution, modification, and/or addition to Chino II Desalter that has the intended effect of expanding the facility's current maximum capacity of 10 mgd by 2 mgd or greater. The Desalter Expansion, if any, will increase the Chino II Desalter's current maximum capacity of 10 mgd in increments of 2 mgd (i.e. maximum capacity will increase to either 12 mgd, 14 mgd, 16 mgd, or 18 mgd). CDA shall provide JCSD with five (5) days prior written notice of its intent to commence the Desalter Expansion and the intended scope of such expansion. If CDA becomes obligated to reimburse JCSD pursuant to this Section 5, CDA shall pay to JCSD the full Deposit Amount of Four Hundred Eighty Two Thousand Dollars ($482,000) plus interest as calculated hereinbelow. For a period commencing with the establishment of the Escrow Account and ending upon repayment of the Deposit Amount pursuant to this Section ("the Term"), the Deposit Amount shall annually accrue simple interest at a percentage rate equal to the average of quarterly apportionment rates established during the Term for the Local Agency Investment Fund (LAIF) as published by the California State Treasurer's Office.

5.1 Effect of Reimbursement on Capacity Rights. In the event CDA repays the Deposit Amount plus interest pursuant to this Section 5, JCSD shall no longer own a Percentage Share of the capacity in the Upsized Pipeline and CDA's Percentage Share shall equal one-hundred percent (100%). In the event CDA does not reimburse the Deposit Amount plus interest, JCSD shall retain its Percentage Share as set forth in Section 3.

6. Representatives of the Parties. Each Party shall designate a Contact in all matters pertaining to the administration of this Agreement. All requirements of the Parties pertaining to this Agreement shall be coordinated through their respective Contacts. All direction related to this Agreement shall come through the Parties' Contacts.

JCSD Representative

Project Manager:	General Manager
Address:	Jurupa Community Services District 11201 Harrel Street Mira Loma, CA 91752
Telephone:	909-685-7434
Facsimile:	909-685-1153

CDA Representative

Project Manager:	CDA Treasurer
Address:	PO Box 2290 Chino Hills, CA 91709
Telephone:	909-993-1600
Facsimile:	909-993-1982

Any notice of Change of Party Contact designee, address and phone number shall be given by written notice in the manner provided in Paragraph 7 below.

7. Notices. Any notices, requests or approvals given under this Agreement from one party to another may be personally delivered or deposited with the United States Postal Service for mailing, postage prepaid, registered or certified mail, return receipt requested to the following address:

JCSD

Jurupa Community Services District
11201 Harrel Street
Mira Loma, CA 91752

CDA

Chino Basin Desalter Authority
c/o Inland Empire Utilities Agency
P.O. Box 2290
Chino Hills, CA 91709

Either party may change its address for notice by giving written notice thereof to the other party.

8. Successors and Assigns. All of the terms, conditions, and provisions of this Agreement shall inure to the benefit of and be binding upon JCSD, CDA and their respective successors and assigns. Notwithstanding the foregoing, neither Party shall assign its rights or obligations under this Agreement without the written consent of the other Party, which consent will not be unreasonably withheld.

9. Entire Agreement; Amendment. This Agreement contains the entire agreement and understanding between the Parties with respect to the subject matter of this Agreement and supersedes any and all prior or contemporaneous negotiations, correspondence, or agreements between the Parties.

10. Partial Invalidity. If any portion of this Agreement shall be declared by any court of competent jurisdiction to be invalid, illegal, or unenforceable, then such portion shall be deemed severed from this Agreement and the balance hereof shall remain in full force and effect, as fully as though such invalid, illegal, or unenforceable portion had never been a part of this Agreement.

11. California Law. This Agreement shall be governed by and construed in accordance with the laws of the State of California. Venue shall be the County of San Bernardino, as articulated in Paragraph 18 – Disputes.

12. Waivers. Any waiver by JCSD or CDA of any breach of any one or more of the terms of this Agreement shall not be construed to be a waiver of any subsequent or other breach hereof.

13. Days. All references in this Agreement to days shall be deemed to be references to working days.

14. Termination.

14.1 Parties' Obligations Severable. The Parties acknowledge that the obligations of JCSD and CDA are severable, and termination of this Agreement may be effectuated against one of the Parties without affecting the rights, duties, and obligations of the remaining Party with respect to this Agreement or third party contracts.

14.2 Termination for Cause. Any Party to this Agreement may declare a breach hereof by serving written notice describing the nature of the breach to the other Party. The Party alleged to have breached the Agreement shall be afforded thirty (30) days from service of the notice of breach to take whatever steps necessary to cure the breach. If the breach is not cured within the time parameters set forth herein, the Parties will avail themselves of the dispute procedure set forth in Section 18.

14.3 Termination for Convenience. Any Party to this Agreement may terminate this Agreement by serving one hundred-eighty (180) days written notice describing the nature of the termination to the other Party. The Party terminating the Agreement will bear all costs related to such termination incurred by the remaining Party, including all legal costs and damages resulting from the termination. Not withstanding the termination, JCSD will be reimbursed in accordance with section 5 herein.

15. Force Majeure. If, due to act of God; fire; flood; storm; inclement weather; earthquake; drought; acute restrictions or riot; war or insurrection; plant or animal infestation or disease; sudden or severe energy shortage; strike; work stoppage; work slowdown or other concerted job action; terrorist action or other condition of emergency or disaster beyond the control of either Party which makes performance of any of its obligations under this Agreement impossible or extremely impracticable, such obligations shall be suspended during such time any such condition or conditions exist.

16. Compliance with Laws. JCSD and CDA shall carry out their responsibilities under this Agreement in a manner that will comply with all applicable federal, state, and local regulations. In carrying out their responsibilities, the Parties shall conduct their own Safety Programs related to this Agreement.

17. Indemnity. The Parties recognize that this Agreement is subject to the provisions of Section 895 *et seq.* of the Government Code. Pursuant to Section 895.4 of the Government Code, the Parties as part of this Agreement will provide for contribution or indemnification upon any liability arising out of the performance of this Agreement. Each Party shall defend, indemnify, and hold harmless the other Party, its directors, elected officials, officers, employees, and agents from any and all actual or alleged claims, demands, causes of action, liability, loss, damage, or injury, to property or persons, including wrongful death, whether imposed by a court of law or administrative action of any federal, state, or local governmental body or agency, arising out of or incident to the performance of this Agreement and resulting from the negligence or wrongful act of a Party, its directors, elected officials, officers, employees, and agents. This indemnification includes, without limitation, the payment of all penalties, fines, judgments, awards, decrees, attorneys' fees, and related costs or expenses relating to this section.

18. Disputes. All disputes arising out of, or in relation to this Agreement, shall be determined in accordance with this section. The activities and obligations contemplated by this Agreement shall be pursued to completion, notwithstanding the existence of a dispute. Both Parties are obligated, and hereby agree, to submit all disputes arising under or relating to this Agreement, which remain unresolved after the exhaustion of the procedures provided herein, to independent arbitration. Except as otherwise provided herein, arbitration shall be conducted under the California Code of Civil Procedure Sections 1280, *et seq.*

18.1 Any and all disputes arising out of or relating to this Agreement shall be subjected to resolution by agreement, to the satisfaction of the Parties' designated Contact. If the designated contacts cannot agree to a satisfactory resolution to the dispute within a ten (10) calendar day period, the issue shall be forwarded to the Parties' Governing Bodies for resolution. Finally, if no agreement concerning the resolution of the issue can be reached within a sixty (60) calendar day period, the issue shall be submitted to arbitration.

18.2 In the event of arbitration, the Parties hereby agree that there shall be a single neutral Arbitrator who shall be selected in the following manner:

(a) The Demand for Arbitration shall include a list of five names of persons acceptable to the first Party requesting Arbitration. The second Party shall determine if any of the names submitted by the first Party are acceptable and, if so, such person will be designated as Arbitrator.

(b) In the event that none of the names submitted by the first Party are acceptable to the second Party, or if for any reason the Arbitrator selected in step (a) is unable to serve, the second Party shall submit a list to the first Party of five acceptable names for appointment as Arbitrator within ten (10) working days. The first Party shall, in turn, have seven (7) calendar days in which to determine if one such person is acceptable.

(c) If after Steps (a) and (b), the Parties are still unable to mutually agree upon a neutral Arbitrator, the matter of selection of an Arbitrator shall be submitted to the San Bernardino County Superior Court, pursuant to the Code of Civil Procedures Section 1281.6, or its successor. The costs of arbitration, including but not limited to reasonable attorneys' fees, shall be recoverable by the Party prevailing in the arbitration. If this arbitration is appealed to a court, pursuant to the procedure under California Code of Civil Procedure Section 1294, *et seq.*, the costs of arbitration shall also include court costs associated with such appeals, including but not limited to reasonable attorneys' fees, which shall be recovered by the prevailing Party.

19. Time of the Essence. Time is of the essence of this Agreement.

20. Independent Capacity. JCSD and CDA, their officers, employees and agents, shall act in an independent capacity during the term of this Agreement and not as officers, employees or agents of each other. Neither shall have authority to contract for, or on behalf of each other.

[Signatures on next page]

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be entered into as of the date set forth above.

"JCSD"

JURUPA COMMUNITY SERVICES DISTRICT,
a public agency

By:_____

Its:_____

"CDA"

CHINO BASIN DESALTER AUTHORITY,
a joint exercise of powers agency

By:_____

Its:_____

APPROVED AS TO FORM:

STRADLING YOCCA CARLSON & RAUTH

_____
Douglas S. Brown, General Counsel

APPENDIX G.2

WELL COST ESTIMATES

Table G.2.1 Well CCFWA-1 (Well I-21) Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Well Drilling [1]				
Mobilization/Demobilization	LS	1	$60,000	$60,000
Noise Control	LS	1	$35,000	$35,000
Drill Cutting Disposal	LS	1	$5,000	$5,000
NPDES Compliance	LS	1	$15,000	$15,000
Drill 48" Conductor Borehole w/Casing	LF	50	$550	$27,500
Drill 17.5" Pilot Borehole	LF	650	$60	$39,000
Borehole Logs	LS	1	$5,500	$5,500
Install Aquifer Zones	EA	3	$8,000	$24,000
Pump Each Zone	HR	54	$300	$16,200
Zone Water Quality Testing	EA	3	$3,000	$9,000
Ream Pilot Borehole for 28"	FT	650	$50	$32,500
Caliper Survey	LS	1	$2,250	$2,300
18"Casing	LF	171	$434	$74,300
18"Screen	LF	510	$533	$271,900
SoundingTube	LF	149	$67	$10,000
FilterPack	LF	700	$40	$28,000
Develop Well (airlifting)	HR	96	$325	$31,200
Test Pump	LS	1	$20,000	$20,000
Develop Well (pumping)	HR	60	$275	$16,500
Pumping Test	HR	38	$275	$10,500
Spinner Survey	LS	1	$4,500	$4,500
Title 22 Water Quality Analysis	LS	1	$5,000	$5,000
Complete Wellhead	LS	1	$2,500	$2,500
Video Survey	LS	1	$2,000	$2,000
Equip Well [2]				
Pumps/Piping and Associated Equipment	LS	1	$326,000	$326,000
Building				
Building	SF	400	$450	$180,000
Site Work				
Mobilization/Demobilization	LS	1	$60,000	$60,000
Concrete Work	CY	9	$800	$7,200
Fencing	LF	400	$50	$20,000
20' Gate	LS	1	$4,000	$4,000
Grading	LS	1	$5,000	$5,000
Pavement	SF	2000	$5	$10,000
Gravel	SF	8000	$1	$8,800
12" PVC Pipe	LF	150	$115	$17,300
12" BFV	EA	1	$1,500	$1,500
Connection to Existing Piping	LS	1	$20,000	$20,000

Table G.2.1 Well CCFWA-1 (Well I-21) Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Pump-to-Waste Site Piping [3]				
8" PVC Pipe	LF	50	$92	$4,600
8" DIP	LF	10	$100	$1,000
8" DI 90 Deg. Bend	EA	3	$1,300	$3,900
Air Gap Structure	LS	1	$5,000	$5,000
16" PVC	LF	150	$133	$20,000
Electrical & Instrumentation (12%)	LS	1	$174,000	$174,000
Design Contingency (30%)	LS	1	$485,000	$485,000
Contractor OH/P (15%)	LS	1	$316,000	$316,000
Total Estimated Construction Cost				**$2,416,700**
Land Acquisition	AC	0.25	$400,000	$100,000
Total Estimated Project Cost				**$2,516,700**

Notes:

1. Cost estimate taken from Chino Creek Wellfield PDR which was written by Geoscience Support Services, inc.
2. Cost includes a 750 gallon surge tank
3. Assumed pump to waste piping goes to storm drain

Table G.2.2 Well CCFWA-2 (Well I-20) Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Well Drilling [1]				
Mobilization/Demobilization	LS	1	$60,000	$60,000
Noise Control	LS	1	$35,000	$35,000
Drill Cutting Disposal	LS	1	$5,000	$5,000
NPDES Compliance	LS	1	$15,000	$15,000
Drill 48" Conductor Borehole w/Casing	LF	50	$550	$27,500
Drill 17.5" Pilot Borehole	LF	650	$60	$39,000
Borehole Logs	LS	1	$5,500	$5,500
Install Aquifer Zones	EA	3	$8,000	$24,000
Pump Each Zone	HR	54	$300	$16,200
Zone Water Quality Testing	EA	3	$3,000	$9,000
Ream Pilot Borehole for 28"	FT	650	$50	$32,500
Caliper Survey	LS	1	$2,250	$2,300
18"Casing	LF	171	$434	$74,300
18"Screen	LF	510	$533	$271,900
SoundingTube	LF	149	$67	$10,000
FilterPack	LF	700	$40	$28,000
Develop Well (airlifting)	HR	96	$325	$31,200
Test Pump	LS	1	$20,000	$20,000
Develop Well (pumping)	HR	60	$275	$16,500
Pumping Test	HR	38	$275	$10,500
Spinner Survey	LS	1	$4,500	$4,500
Title 22 Water Quality Analysis	LS	1	$5,000	$5,000
Complete Wellhead	LS	1	$2,500	$2,500
Video Survey	LS	1	$2,000	$2,000
Equip Well [2]				
Pumps/Piping and Associated Equipment	LS	1	$326,000	$326,000
Building				
Building	SF	400	$450	$180,000
Site Work				
Mobilization/Demobilization	LS	1	$60,000	$60,000
Concrete Work	CY	9	$800	$7,200
Fencing	LF	400	$50	$20,000
20' Gate	LS	1	$4,000	$4,000
Grading	LS	1	$5,000	$5,000
Pavement	SF	2000	$5	$10,000
Gravel	SF	8000	$1	$8,800
12" PVC Pipe	LF	150	$115	$17,300
12" BFV	EA	1	$1,500	$1,500
Connection to Existing Piping	LS	1	$20,000	$20,000

Table G.2.2 Well CCFWA-2 (Well I-20) Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Pump-to-Waste Site Piping [3]				
8" PVC Pipe	LF	50	$92	$4,600
8" DIP	LF	10	$100	$1,000
8" DI 90 Deg. Bend	EA	3	$1,300	$3,900
Air Gap Structure	LS	1	$5,000	$5,000
16" PVC	LF	150	$133	$20,000
Electrical & Instrumentation (12%)	LS	1	$174,000	$174,000
Design Contingency (30%)	LS	1	$485,000	$485,000
Contractor OH/P (15%)	LS	1	$316,000	$316,000
Total Estimated Construction Cost				**$2,416,700**
Land Acquisition	AC	0.25	$400,000	$100,000
Total Estimated Project Cost				**$2,516,700**

Notes:

1. Cost estimate taken from Chino Creek Wellfield PDR which was written by Geoscience Support Services, inc.
2. Cost includes a 750 gallon surge tank
3. Assumed pump to waste piping goes to storm drain

Table G.2.3 Well CCFWA-3 (Well I-19) Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Well Drilling [1]				
Mobilization/Demobilization	LS	1	$60,000	$60,000
Noise Control	LS	1	$35,000	$35,000
Drill Cutting Disposal	LS	1	$5,000	$5,000
NPDES Compliance	LS	1	$15,000	$15,000
Drill 48" Conductor Borehole w/Casing	LF	50	$550	$27,500
Drill 17.5" Pilot Borehole	LF	650	$60	$39,000
Borehole Logs	LS	1	$5,500	$5,500
Install Aquifer Zones	EA	3	$8,000	$24,000
Pump Each Zone	HR	54	$300	$16,200
Zone Water Quality Testing	EA	3	$3,000	$9,000
Ream Pilot Borehole for 28"	FT	650	$50	$32,500
Caliper Survey	LS	1	$2,250	$2,300
18"Casing	LF	171	$434	$74,300
18"Screen	LF	510	$533	$271,900
SoundingTube	LF	149	$67	$10,000
FilterPack	LF	700	$40	$28,000
Develop Well (airlifting)	HR	96	$325	$31,200
Test Pump	LS	1	$20,000	$20,000
Develop Well (pumping)	HR	60	$275	$16,500
Pumping Test	HR	38	$275	$10,500
Spinner Survey	LS	1	$4,500	$4,500
Title 22 Water Quality Analysis	LS	1	$5,000	$5,000
Complete Wellhead	LS	1	$2,500	$2,500
Video Survey	LS	1	$2,000	$2,000
Equip Well [2]				
Pumps/Piping and Associated Equipment	LS	1	$326,000	$326,000
Building				
Building	SF	400	$450	$180,000
Site Work				
Mobilization/Demobilization	LS	1	$60,000	$60,000
Concrete Work	CY	9	$800	$7,200
Fencing	LF	400	$50	$20,000
20' Gate	LS	1	$4,000	$4,000
Grading	LS	1	$5,000	$5,000
Pavement	SF	2000	$5	$10,000
Gravel	SF	8000	$1	$8,800
12" PVC Pipe	LF	500	$115	$57,500
12" BFV	EA	1	$1,500	$1,500
Connection to Existing Piping	LS	1	$20,000	$20,000

Table G.2.3 Well CCFWA-3 (Well I-19) Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Pump-to-Waste Site Piping [3]				
8" PVC Pipe	LF	50	$92	$4,600
8" DIP	LF	10	$100	$1,000
8" DI 90 Deg. Bend	EA	3	$1,300	$3,900
Air Gap Structure	LS	1	$5,000	$5,000
16" PVC	LF	150	$133	$20,000
Electrical & Instrumentation (12%)	LS	1	$178,000	$178,000
Design Contingency (30%)	LS	1	$498,000	$498,000
Contractor OH/P (15%)	LS	1	$324,000	$324,000
Total Estimated Construction Cost				**$2,481,900**
Land Acquisition	AC	0.25	$400,000	$100,000
Total Estimated Project Cost				**$2,581,900**

Notes:

1. Cost estimate taken from Chino Creek Wellfield PDR which was written by Geoscience Support Services, inc.
2. Cost includes a 750 gallon surge tank
3. Assumed pump to waste piping goes to storm drain

Table G.2.4 Well CCFWA-4 (Well I-18) Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Well Drilling [1]				
Mobilization/Demobilization	LS	1	$60,000	$60,000
Noise Control	LS	1	$35,000	$35,000
Drill Cutting Disposal	LS	1	$5,000	$5,000
NPDES Compliance	LS	1	$15,000	$15,000
Drill 48" Conductor Borehole w/Casing	LF	50	$550	$27,500
Drill 17.5" Pilot Borehole	LF	550	$60	$33,000
Borehole Logs	LS	1	$5,500	$5,500
Install Aquifer Zones	EA	3	$8,000	$24,000
Pump Each Zone	HR	54	$300	$16,200
Zone Water Quality Testing	EA	3	$3,000	$9,000
Ream Pilot Borehole for 32"	FT	70	$60	$4,200
Ream Pilot Borehole for 28"	FT	480	$50	$24,000
Caliper Survey	LS	1	$2,250	$2,300
18"Casing	LF	201	$434	$87,300
18"Screen	LF	380	$533	$202,600
SoundingTube	LF	179	$67	$12,000
3"GravelFeedPipes	LF	222	$10	$2,300
FilterPack	LF	500	$40	$20,000
Annular Cement Seal	LF	100	$45	$4,500
Develop Well (airlifting)	HR	96	$325	$31,200
Test Pump	LS	1	$20,000	$20,000
Develop Well (pumping)	HR	60	$275	$16,500
Pumping Test	HR	38	$275	$10,500
Spinner Survey	LS	1	$4,500	$4,500
Title 22 Water Quality Analysis	LS	1	$5,000	$5,000
Complete Wellhead	LS	1	$2,500	$2,500
Video Survey	LS	1	$2,000	$2,000
Equip Well [2]				
Pumps/Piping and Associated Equipment	LS	1	$326,000	$326,000
Building				
Building	SF	400	$450	$180,000
Site Work				
Mobilization/Demobilization	LS	1	$60,000	$60,000
Concrete Work	CY	9	$800	$7,200
Grading	LS	1	$2,000	$2,000
Pavement Repair	SF	400	$5	$2,000
12" PVC Pipe	LF	200	$115	$23,000
12" BFV	EA	1	$1,500	$1,500
Connection to Existing Piping	LS	1	$20,000	$20,000

Table G.2.4 Well CCFWA-4 (Well I-18) Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Pump-to-Waste Site Piping [3]				
8" PVC Pipe	LF	50	$92	$4,600
8" DIP	LF	10	$100	$1,000
8" DI 90 Deg. Bend	EA	3	$1,300	$3,900
Air Gap Structure	LS	1	$5,000	$5,000
16" PVC	LF	150	$133	$20,000
Electrical & Instrumentation (12%)	LS	1	$161,000	$161,000
Design Contingency (30%)	LS	1	$450,000	$450,000
Contractor OH/P (15%)	LS	1	$293,000	$293,000
Total Estimated Construction Cost				**$2,241,800**

Notes:

1. Cost estimate taken from Chino Creek Wellfield PDR which was written by Geoscience Support Services, inc.
2. Cost includes a 750 gallon surge tank
3. Assumed pump to waste piping go to storm drain

Table G.2.5 Well CCFWA-3 (Well I-17) Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Well Drilling [1]				
Mobilization/Demobilization	LS	1	$60,000	$60,000
Noise Control	LS	1	$35,000	$35,000
Drill Cutting Disposal	LS	1	$5,000	$5,000
NPDES Compliance	LS	1	$15,000	$15,000
Drill 48" Conductor Borehole w/Casing	LF	50	$550	$27,500
Drill 17.5" Pilot Borehole	LF	550	$60	$33,000
Borehole Logs	LS	1	$5,500	$5,500
Install Aquifer Zones	EA	3	$8,000	$24,000
Pump Each Zone	HR	54	$300	$16,200
Zone Water Quality Testing	EA	3	$3,000	$9,000
Ream Pilot Borehole for 28"	FT	550	$50	$27,500
Caliper Survey	LS	1	$2,250	$2,300
18"Casing	LF	171	$434	$74,300
18"Screen	LF	410	$533	$218,600
SoundingTube	LF	149	$67	$10,000
FilterPack	LF	600	$40	$24,000
Develop Well (airlifting)	HR	96	$325	$31,200
Test Pump	LS	1	$20,000	$20,000
Develop Well (pumping)	HR	60	$275	$16,500
Pumping Test	HR	38	$275	$10,500
Spinner Survey	LS	1	$4,500	$4,500
Title 22 Water Quality Analysis	LS	1	$5,000	$5,000
Complete Wellhead	LS	1	$2,500	$2,500
Video Survey	LS	1	$2,000	$2,000
Equip Well [2]				
Pumps/Piping and Associated Equipment	LS	1	$326,000	$326,000
Building				
Building	SF	400	$450	$180,000
Site Work				
Mobilization/Demobilization	LS	1	$60,000	$60,000
Concrete Work	CY	9	$800	$7,200
Fencing	LF	400	$50	$20,000
20' Gate	LS	1	$4,000	$4,000
Grading	LS	1	$5,000	$5,000
Pavement	SF	2000	$5	$10,000
Gravel	SF	8000	$1	$8,800
12" PVC Pipe	LF	150	$115	$17,300
12" BFV	EA	1	$1,500	$1,500

Table G.2.5 Well CCFWA-3 (Well I-17) Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Pump-to-Waste Site Piping [3]				
8" PVC Pipe	LF	50	$92	$4,600
8" DIP	LF	10	$100	$1,000
8" DI 90 Deg. Bend	EA	3	$1,300	$3,900
Air Gap Structure	LS	1	$5,000	$5,000
16" PVC	LF	100	$133	$13,300
Electrical & Instrumentation (12%)	LS	1	$162,000	$162,000
Design Contingency (30%)	LS	1	$453,000	$453,000
Contractor OH/P (15%)	LS	1	$295,000	$295,000
Total Estimated Construction Cost				**$2,256,700**
Land Acquisition	AC	0.25	$400,000	$100,000
Total Estimated Project Cost				**$2,356,700**

Notes:

1. Cost estimate taken from Chino Creek Wellfield PDR which was written by Geoscience Support Services, inc.
2. Cost includes a 750 gallon surge tank
3. Assumed pump to waste piping goes to storm drain

Table G.2.6 Well CCFWA-6 (Well I-16) Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Well Drilling [1]				
Mobilization/Demobilization	LS	1	$60,000	$60,000
Noise Control	LS	1	$35,000	$35,000
Drill Cutting Disposal	LS	1	$5,000	$5,000
NPDES Compliance	LS	1	$15,000	$15,000
Drill 48" Conductor Borehole w/Casing	LF	50	$550	$27,500
Drill 17.5" Pilot Borehole	LF	550	$60	$33,000
Borehole Logs	LS	1	$5,500	$5,500
Install Aquifer Zones	EA	3	$8,000	$24,000
Pump Each Zone	HR	54	$300	$16,200
Zone Water Quality Testing	EA	3	$3,000	$9,000
Ream Pilot Borehole for 32"	FT	70	$60	$4,200
Ream Pilot Borehole for 28"	FT	480	$50	$24,000
Caliper Survey	LS	1	$2,250	$2,300
18"Casing	LF	201	$434	$87,300
18"Screen	LF	380	$533	$202,600
SoundingTube	LF	179	$67	$12,000
3"GravelFeedPipes	LF	222	$10	$2,300
FilterPack	LF	500	$40	$20,000
Annular Cement Seal	LF	100	$45	$4,500
Develop Well (airlifting)	HR	96	$325	$31,200
Test Pump	LS	1	$20,000	$20,000
Develop Well (pumping)	HR	60	$275	$16,500
Pumping Test	HR	38	$275	$10,500
Spinner Survey	LS	1	$4,500	$4,500
Title 22 Water Quality Analysis	LS	1	$5,000	$5,000
Complete Wellhead	LS	1	$2,500	$2,500
Video Survey	LS	1	$2,000	$2,000
Equip Well [2]				
Pumps/Piping and Associated Equipment	LS	1	$326,000	$326,000
Building				
Building	SF	350	$450	$157,500
Site Work				
Mobilization/Demobilization	LS	1	$60,000	$60,000
Concrete Work	CY	9	$800	$7,200
Fencing	LF	200	$50	$10,000
20' Gate	LS	1	$4,000	$4,000
Grading	LS	1	$5,000	$5,000
Pavement	SF	2000	$5	$10,000
Gravel	SF	1600	$1	$1,800
12" PVC Pipe	LF	100	$115	$11,500
12" BFV	EA	1	$1,500	$1,500

Table G.2.6 Well CCFWA-6 (Well I-16) Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Pump-to-Waste Site Piping [3]				
8" PVC Pipe	LF	50	$92	$4,600
8" DIP	LF	10	$100	$1,000
8" DI 90 Deg. Bend	EA	3	$1,300	$3,900
Air Gap Structure	LS	1	$5,000	$5,000
16" PVC	LF	900	$133	$119,700
Electrical & Instrumentation (12%)	LS	1	$170,000	$170,000
Design Contingency (30%)	LS	1	$475,000	$475,000
Contractor OH/P (15%)	LS	1	$309,000	$309,000
Total Estimated Construction Cost				**$2,364,300**

Notes:

1. Cost estimate taken from Chino Creek Wellfield PDR which was written by Geoscience Support Services, inc.
2. Cost includes a 750 gallon surge tank
3. Assumed pump to waste piping go to storm drain

Table G.2.7 Monitoring Well CCFWA-6 (MW I-18) Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Monitoring Well Drilling [1]				
Mobilization/Demobilization	LS	1	$22,500	$22,500
Noise Control	LS	1	$20,000	$20,000
Drill Cutting Disposal	LS	1	$5,000	$5,000
NPDES Compliance	LS	1	$6,500	$6,500
Drill 30" Conductor Borehole w/Casing	LF	35	$150	$5,300
Drill 17.5" Pilot Borehole	LF	580	$40	$23,200
Borehole Logs	LS	1	$4,200	$4,200
4.5" Casing	LF	191	$15	$2,900
4.5" Screen	LF	380	$20	$7,600
FilterPack	LF	560	$25	$14,000
Annular Bentonite Seal	LF	40	$45	$1,800
Develop Well (airlifting)	HR	40	$300	$12,000
Test Pump	LS	1	$5,000	$5,000
Develop Well (pumping)	HR	20	$200	$4,000
Complete Wellhead	LS	1	$4,000	$4,000
Site Work				
Pavement	SF	400	$5	$2,000
Design Contingency (30%)	LS	1	$42,000	$42,000
Contractor OH/P (15%)	LS	1	$28,000	$28,000
Total Estimated Construction Cost				**$210,000**

Note:

1. Cost estimate taken from Chino Creek Wellfield PDR which was written by Geoscience Support Services, inc.

Table G.2.8 Monitoring Well CCFWA-6 (MW I-16) Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Monitoring Well Drilling [1]				
Mobilization/Demobilization	LS	1	$22,500	$22,500
Noise Control	LS	1	$20,000	$20,000
Drill Cutting Disposal	LS	1	$5,000	$5,000
NPDES Compliance	LS	1	$6,500	$6,500
Drill 30" Conductor Borehole w/Casing	LF	35	$150	$5,300
Drill 17.5" Pilot Borehole	LF	580	$40	$23,200
Borehole Logs	LS	1	$4,200	$4,200
4.5" Casing	LF	191	$15	$2,900
4.5" Screen	LF	380	$20	$7,600
FilterPack	LF	560	$25	$14,000
Annular Bentonite Seal	LF	40	$45	$1,800
Develop Well (airlifting)	HR	40	$300	$12,000
Test Pump	LS	1	$5,000	$5,000
Develop Well (pumping)	HR	20	$200	$4,000
Complete Wellhead	LS	1	$4,000	$4,000
Site Work				
Pavement	SF	400	$5	$2,000
Design Contingency (30%)	LS	1	$42,000	$42,000
Contractor OH/P (15%)	LS	1	$28,000	$28,000
Total Estimated Construction Cost				**$210,000**

Note:

1. Cost estimate taken from Chino Creek Wellfield PDR which was written by Geoscience Support Services, inc.

RAW WATER PIPELINE COST ESTIMATES

Table G.3.1 Pipeline from CCWFA-6 to Chino I Desalter Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Pipeline				
10" PVC Pipeline	LF	2500	$28	$69,500
14" PVC Pipeline	LF	5200	$40	$209,300
10" BFV	EA	2	$900	$1,800
14" BFV	EA	4.0	$1,400	$5,600
Trench & Excavation, Sheeting, Shoring & Bracing	LF	7700	$26	$197,200
Roadway Traffic Control & Safety	LS	1	$45,000	$45,000
Connection to Existing Pipeline at Chino I Desalter	LS	1	$20,000	$20,000
Pavement Removal, Disposal & Replacement	LF	7700	$46	$356,100
Design Contingency (30%)	LS	1	$272,000	$272,000
Contractor OH/P (15%)	LS	1	$177,000	$177,000
Total Estimated Construction Cost				**$1,354,000**

Table G.3.2 Raw Water Intertie Pipeline Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Pipeline				
24" PVC Pipeline	LF	14773	$105	$1,557,100
24" BFV	EA	12	$3,000	$36,000
Trench & Excavation, Sheeting, Shoring & Bracing	LF	14773	$36	$527,200
Roadway Traffic Control & Safety	LS	1	$87,000	$87,000
Connection to Existing Pipeline	LS	2	$25,000	$50,000
Pavement Removal, Disposal & Replacement	LF	14773	$51	$760,500
Design Contingency (30%)	LS	1	$906,000	$906,000
Contractor OH/P (15%)	LS	1	$589,000	$589,000
Total Estimated Construction Cost				**$4,513,000**

APPENDIX G.4

RAW WATER PUMP STATION
COST ESTIMATES

Table G.4.1 Intertie Pump Station Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Site Work				
Sitework Excavation/Grading	LS	1	$50,000	$50,000
Stormwater Piping	LS	1	$16,000	$16,000
Fencing	LF	400	$50	$20,000
Steel Gate	LS	1	$12,000	$12,000
Pavement	SF	3750	$5	$18,800
Civil Piping				
16" PVC	LF	100	$133	$13,300
18" PVC	LF	75	$148	$11,100
24" PVC	LF	300	$199	$59,700
18" BFV	EA	3	$2,200	$6,600
24" BFV	EA	2	$3,500	$7,000
Metering Vault	LS	1	$26,000	$26,000
24" Magnetic Flow Meter	LS	1	$13,000	$13,000
24" Isolation Valves	EA	2	$3,500	$7,000
24" Flex Couplings	EA	4	$3,000	$12,000
Mechanical Piping				
200 hp Can Pumps (316 SSw/ motor, cans, etc.)	EA	3	$80,000	$240,000
Install Pumps (including encasement)	EA	3	$25,000	$75,000
VFD	EA	3	$30,000	$90,000
16" Disc Check	EA	3	$13,000	$39,000
6" Air/Vac Valve	EA	3	$3,000	$9,000
16" BFV	EA	8	$3,200	$25,600
16" 316L SS Piping	EA	120	$550	$66,000
16" 316L SS 90	EA	8	$2,300	$18,400
16" Flow Contol Valve	EA	1	$20,000	$20,000
Pipe Supports	EA	10	$400	$4,000
Surge Tank and Equipment	LS	1	$40,000	$40,000
Building	SF	1050	$450	$472,500
General Requirements (10%)	LS	1	$138,000	$138,000
Electrical & Instrumentation (25%)	LS	1	$343,000	$343,000
Design Contingency (30%)	LS	1	$556,000	$556,000
Contractor OH/P (15%)	LS	1	$362,000	$362,000
Total Estimated Construction Cost				**$2,771,000**
Land Acquisition	AC	0.25	$400,000	$100,000
Total Estimated Project Cost				**$2,871,000**

APPENDIX G.5

TREATMENT PLANT COST ESTIMATES

Table G.5.1 Chino I -- Add Two RO Trains
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
RO Trains				
RO Feed Pumps	EA	2	$215,000	$430,000
Interstage Pumps	EA	2	$50,000	$100,000
Suction Isolation Valve	EA	2	$5,000	$10,000
Discharge Isolation Valve	EA	2	$7,500	$15,000
Discharge Check Valve	EA	2	$10,000	$20,000
Vessels	EA	84	$1,500	$126,000
CIP Isolation Valves, SST	EA	20	$7,500	$150,000
CIP Isolation Valves, PVC	EA	10	$2,500	$25,000
Concentrate Check Valves	EA	2	$3,500	$7,000
Permeate Check Valves	EA	2	$7,500	$15,000
SST Piping	EA	2	$75,000	$150,000
PVC Piping	EA	2	$50,000	$100,000
Conductivity Meters	EA	6	$2,500	$15,000
Pressure Indicating Transmitters	EA	10	$1,500	$15,000
Pressure Switches	EA	10	$500	$5,000
Flow Switches	EA	4	$500	$2,000
Membranes	EA	588	$700	$412,000
Sample Panel	EA	2	$15,000	$30,000
Frames	EA	2	$25,000	$50,000
450 hp VFD	EA	2	$100,000	$200,000
75 hp VFD	EA	2	$40,000	$80,000
PLC	EA	2	$10,000	$20,000
Decarbonator	EA	1	$200,000	$200,000
Building, Process Area [1]	SF	2000	$200	$400,000
Installation Factor for Equipment (25%)	LS	1	$545,000	$545,000
Sitework	EA	1	$50,000	$50,000
Electrical & I/C (10%) [2]	LS	1	$273,000	$273,000
Mechanical (10%) [3]	LS	1	$243,000	$243,000
Contractor General Conditions (6%)	LS	1	$222,000	$222,000
Design Contingency (30%)	LS	1	$1,173,000	$1,173,000
Contractor OH/P (15%)	LS	1	$763,000	$763,000
Total Estimated Construction Cost				**$5,846,000**

Notes:
1. Includes general building HVAC and plumbing.
2. Excludes VFDs, PLC, and building mechanical (HVAC, plumbing, etc.)
3. Includes all equipment and installation costs. Excludes building electrical (lights, HVAC, etc.)

Table G.5.2 Chino I -- Expand Existing RO Trains
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
RO Trains				
RO Feed Pumps (per Train)	EA	4	$150,000	$600,000
Vessels (per Train)	EA	4	$9,000	$36,000
SST Piping (per Train)	EA	4	$10,000	$40,000
Membranes (per Train)	EA	4	$25,000	$100,000
Frames (per Train)	EA	4	$10,000	$40,000
Installation Factor for Equipment (25%)	LS	1	$204,000	$204,000
Electrical & I/C (10%)	LS	1	$102,000	$102,000
Mechanical (10%)	LS	1	$102,000	$102,000
Contractor General Conditions (6%)	LS	1	$74,000	$74,000
Design Contingency (30%)	LS	1	$390,000	$390,000
Contractor OH/P (15%)	LS	1	$260,000	$260,000
Total Estimated Construction Cost				**$1,948,000**

Notes:
1. Assumes addition of one row of pressure vessels (6 vessels per train) and operation at 14.2 gfd to produce 1 mgd additional permeate.
2. Assumes replacement of pump bowls and motors is required.

Table G.5.3 Chino II Expansion by 10.5 MGD RO/IX Capacity
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
September 17, 2009 Bid Items				
Mob/Demob/Bonds/Insurance	LS	1	$450,000	$450,000
IX System	LS	1	$6,319,000	$6,319,000
RO System	LS	1	$2,500,000	$2,500,000
RO Feed Pumps and VFD	LS	1	$1,100,000	$1,100,000
Allowance for RO System SCADA	LS	1	$150,000	$150,000
Allowance for IX System SCADA	LS	1	$50,000	$50,000
CMMS Update	LS	1	$75,000	$75,000
Earthquake Insurance	LS	1	$27,000	$27,000
Flood Insurance	LS	1	$27,000	$27,000
Transfer Pumps	LS	1	$780,000	$780,000
Chemical Piping Modifications	LS	1	$18,000	$18,000
Supplemental Spare Parts	LS	1	$350,000	$350,000
Cartidge Filters [1]	LS	1	$320,000	$320,000
RO Membranes [1]	LS	1	$817,000	$817,000
Decarbonator [1]	LS	1	$300,000	$300,000
Bid Subtotal				**$13,283,000**
HVAC Modifications to Electrical Room	LS	1	$150,000	$150,000
Design Contingency (30%)	LS	1	$45,000	$50,000
Contractor OH/P (15%)	LS	1	$23,000	$30,000
HVAC Subtotal				**$230,000**
Total Estimated Construction Cost				**$13,513,000**

Notes:
1. Item was not included as part of Construction Contract awarded 10/30/09.

APPENDIX G.6

PRODUCT WATER PIPELINE COST ESTIMATES

Table G.6.1 Pipeline from Chino II Desalter to Riverside Dr./Hamner Ave. Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Pipeline				
30" CML/C Steel Pipeline	LF	11612	$246	$2,860,300
30" BFV	EA	9	$5,000	$45,000
Air Release Valve Station	EA	3	$10,000	$30,000
Cathodic Test Station	EA	15	$3,000	$45,000
Water Sample Station	EA	10	$3,000	$30,000
Trench & Excavation, Sheeting, Shoring & Bracing	LF	11612	$42	$486,000
Roadway Traffic Control & Safety	LS	1	$68,000	$68,000
Connection to Existing Pipeline	LS	1	$25,000	$25,000
Pavement Removal, Disposal & Replacement	LF	11612	$54	$630,100
Design Contingency (30%)	LS	1	$1,266,000	$1,266,000
Contractor OH/P (15%)	LS	1	$823,000	$823,000
Total Estimated Construction Cost				**$6,309,000**

Table G.6.2 Pipeline from Riverside Dr./Hamner Ave. to Detroit St. Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Pipeline				
14" CML/C Steel Pipeline (install in existing casing)	LF	321	163.04	$52,400
18" CML/C Steel Pipeline	LF	21125	$182	$3,846,300
24" CML/C Steel Pipeline	LF	60	$233	$14,000
30" CML/C Steel Pipeline	LF	6044	$246	$1,488,800
18" BFV	EA	16	$2,000	$32,000
30" BFV	EA	5	$5,000	$25,000
Air Release Valve Station	EA	10	$10,000	$100,000
Cathodic Test Station	EA	34	$3,000	$102,000
Water Sample Station	EA	24	$2,500	$60,000
Remove and Dispose 8" Sewer in Existing Casing	LF	321	$25	$8,100
Jack & Bore Pits Setup	LS	1	$40,000	$40,000
Jack & Bore 54" Casing	LF	535	$1,600	$856,000
Trench & Excavation, Sheeting, Shoring & Bracing	LF	26694	$33	$888,300
Roadway Traffic Control & Safety	LS	1	$156,000	$156,000
Connection to Existing Pipeline	EA	7	$10,000	$70,000
Pavement Removal, Disposal & Replacement	LF	26694	$51	$1,356,600
Design Contingency (30%)	LS	1	$2,713,000	$2,713,000
Contractor OH/P (15%)	LS	1	$1,764,000	$1,764,000
Total Estimated Construction Cost				**$13,521,000**

APPENDIX G.7

PRODUCT WATER PUMP STATIONS COST ESTIMATES

Table G.7.1 JCSC Zone 1110 Pump Station Cost Estimate[3]
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Site Work				
Sitework Excavation/Grading	LS	1	$15,000	$15,000
Concrete Pad	CY	17	$600	$10,000
Piping				
450 hp Can Pumps (w/ motor, cans, etc.)	EA	1	$120,000	$120,000
Install Pumps (including encasement)	EA	1	$40,000	$40,000
VFD	EA	2	$60,000	$120,000
14" Pump Control Valve	EA	1	$25,000	$25,000
4" Air/Vac Valve	EA	2	$2,500	$5,000
14" BFV	EA	1	$2,500	$2,500
18" BFV	EA	1	$4,500	$4,500
14" Steel Pipe	LF	20	$250	$5,000
18" Steel Pipe	LF	15	$280	$4,200
14" 90 Degree Bend	EA	1	$1,800	$1,800
14" Mechanical Coupling	EA	1	$2,000	$2,000
Pipe Supports	EA	2	$500	$1,000
Tie-in to existing Zone 1110 Suction Line	LS	1	$5,000	$5,000
Tie-in to existing Zone 1110 Discharge Line	LS	1	$5,000	$5,000
General Requirements (15%)	LS	1	$55,000	$55,000
Electrical & Instrumentation (35%)	LS	1	$129,000	$129,000
Design Contingency (30%)	LS	1	$165,000	$165,000
Contractor OH/P (15%)	LS	1	$108,000	$108,000
Total Estimated Construction Cost				**$823,000**

Note:

1. Because use of an existing site is proposed, it is assumed that fencing and land purchase is not needed.

Table G.7.2 Ontario/WMWD Zone 1010 Pump Station Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Site Work				
Sitework Excavation/Grading	LS	1	$15,000	$15,000
Concrete Pad	CY	27	$600	$16,000
Civil Piping				
20" PVC Piping	LF	60	$164	$9,900
30" PVC Piping	LF	300	$301	$90,300
36" PVC Piping	LF	150	$392	$58,800
20" BFV	EA	3	$2,200	$6,600
30" BFV	EA	1	$5,000	$5,000
36" BFV	EA	1	$5,900	$5,900
30" 90 Degree Bend	EA	4	$8,000	$32,000
36" 90 Degree Bend	EA	1	$11,500	$11,500
30" Tee	EA	1	$10,500	$10,500
36" Tee	EA	5	$16,000	$80,000
Tie-in to Existing 36" Line	LS	1	$10,000	$10,000
Mechanical Piping				
350 hp Can Pumps (w/ motor, cans, etc.)	EA	3	$90,000	$270,000
Install Pumps (including encasement)	EA	3	$25,000	$75,000
VFD	EA	3	$40,000	$120,000
16" Disc Check	EA	3	$13,000	$39,000
6" Air/Vac Valve	EA	3	$3,000	$9,000
16" BFV	EA	3	$3,200	$9,600
30" BFV	EA	2	$8,700	$17,400
16" Steel Pipe	LF	60	$240	$14,400
30" Steel Pipe	LF	40	$400	$16,000
30" 90 Degree Bend	EA	1	$4,600	$4,600
30" Tee	EA	3	$11,500	$34,500
30" Magnetic Flow Meter	EA	1	$18,000	$18,000
Pipe Supports	EA	10	$400	$4,000
Surge Tank and Equipment	LS	1	$40,000	$40,000
General Requirements (10%)	LS	1	$103,000	$103,000
Electrical & Instrumentation (25%)	LS	1	$256,000	$256,000
Design Contingency (30%)	LS	1	$415,000	$415,000
Contractor OH/P (15%)	LS	1	$270,000	$270,000
Total Estimated Construction Cost				**$2,067,000**

Note:

1. Because use of an existing site is proposed, it is assumed that fencing and land purchase is not needed.

Table G.7.3 Milliken Pump Station Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Site Work				
Sitework Excavation/Grading	LS	1	$10,000	$10,000
Stormwater Piping	LS	1	$16,000	$16,000
Pavement	SF	3800	$5	$19,000
Civil Piping				
10" PVC - Discharge Piping	LF	60	$103	$6,200
14" PVC - Discharge Piping	LF	250	$120	$30,000
12" PVC - Suction Piping	LF	80	$115	$9,200
18" PVC - Suction Piping	LF	400	$148	$59,200
12" BFV	EA	3	$1,100	$3,300
14" BFV	EA	1	$1,400	$1,400
18" BFV	EA	1	$2,200	$2,200
10" 90 Degree Bend	EA	3	$1,200	$3,600
14" Tee	EA	3	$3,300	$9,900
14" 90 Degree Bend	EA	2	$2,200	$4,400
18" Tee	EA	3	$4,000	$12,000
18" 90 Degree Bend	EA	2	$2,900	$5,800
Metering Vault	LS	1	$30,000	$30,000
14" Magnetic Flow Meter	LS	1	$5,500	$5,500
14" Isolation Valves (Flanged)	EA	2	$3,500	$7,000
14" Flex Couplings	EA	4	$2,000	$8,000
Mechanical Piping				
100 hp Can Pumps (w/ motor, cans, etc.)	EA	3	$38,000	$114,000
Install Pumps (including encasement)	EA	3	$15,000	$45,000
VFD	EA	3	$20,000	$60,000
10" Disc Check	EA	3	$5,500	$16,500
4" Air/Vac Valve	EA	3	$2,500	$7,500
10" BFV	EA	3	$3,000	$9,000
10" Steel Pipe	LF	60	$200	$12,000
10" 90 Degree Bend	EA	3	$3,000	$9,000
Pipe Supports	EA	10	$400	$4,000
Surge Tank and Equipment	LS	1	$40,000	$40,000
Building	SF	1050	$450	$472,500
General Requirements (10%)	LS	1	$104,000	$104,000
Electrical & Instrumentation (25%)	LS	1	$259,000	$259,000
Design Contingency (30%)	LS	1	$419,000	$419,000
Contractor OH/P (15%)	LS	1	$273,000	$273,000
Total Estimated Construction Cost				**$2,088,000**

Note:

1. Because use of an existing site is proposed, it is assumed that fencing and land purchase is not needed.

APPENDIX G.8

CONCENTRATE DISPOSAL PIPELINE

Table G.8.1 SARI Pipeline from Chino II Desalter to Bellgrave Ave. Cost Estimate
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

Item / Description	Unit	Quantity	Unit Price	Total Cost
Pipeline				
12" PVC	LF	7000	37.26	$260,900
Air Release Valve Station	EA	2	$10,000	$20,000
Dry Creek Channel Crossing	LS	1	$30,000	$30,000
Trench & Excavation, Sheeting, Shoring & Bracing	LF	7000	$25.01	$175,100
Roadway Traffic Control & Safety	LS	1	$41,000	$41,000
Connection to Existing Pipeline	EA	2	$20,000	$40,000
Pavement Removal, Disposal & Replacement	LF	7000	$46	$321,400
Design Contingency (30%)	LS	1	$267,000	$267,000
Contractor OH/P (15%)	LS	1	$174,000	$174,000
Total Estimated Construction Cost				**$1,069,000**

APPENDIX G.9

DESALTER EXPANSION OPTION A AND OPTION B COSTS

Table G.9.1 Summary of Construction Project Capital Costs for Option A: Expand Chino II to 20.5 mgd and Modify Chino I to Nameplate Capacity (14.2 mgd)
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

	Detailed Costs in Appendix	Construction ($)	Contingency and Engineering ($)	(%)	Administrative and Legal ($)	(%)	Aug-09 Dollars Total ($)	Construction Dates Start	Stop	Midpoint	Time to Midpoint From Aug-09 (years)	Escalation Factor [3.0% Annual Inflation]	Constr. Midpoint Dollars Total ($)
RAW WATER SYSTEM													
Wells													
Well CCWFA-1	G.2.1	2,516,700	500,000	20	130,000	5	3,146,700	May-11	Jan-14	Aug-12	3.08	1.10	3,450,000
Well CCWFA-2	G.2.2	2,516,700	500,000	20	130,000	5	3,146,700	May-11	Jan-14	Aug-12	3.08	1.10	3,450,000
Well CCWFA-3	G.2.3	2,581,900	520,000	20	130,000	5	3,231,900	May-11	Jan-14	Aug-12	3.08	1.10	3,540,000
Well CCWFA-4	G.2.4	2,241,800	450,000	20	110,000	5	2,801,800	Sep-09	Jan-12	Nov-10	1.25	1.04	2,910,000
Well CCWFA-5	G.2.5	2,356,700	470,000	20	120,000	5	2,946,700	May-11	Jan-14	Aug-12	3.08	1.10	3,230,000
Well CCWFA-6	G.2.6	2,364,300	470,000	20	120,000	5	2,954,300	Sep-09	Jan-12	Nov-10	1.25	1.04	3,070,000
Monitoring Well	G.2.7	210,000	40,000	20	10,000	5	260,000	Sep-09	Jan-12	Nov-10	1.25	1.04	270,000
Monitoring Well	G.2.8	210,000	40,000	20	10,000	5	260,000	Sep-09	Jan-12	Nov-10	1.25	1.04	270,000
Pipelines													
Pipeline from Well CCWFA-6 to Chino I	G.3.1	1,354,000	270,000	20	70,000	5	1,694,000	Aug-13	Sep-14	Feb-14	4.55	1.14	1,940,000
Raw Water Intertie Pipeline	G.3.2	4,510,000	900,000	20	230,000	5	5,640,000	Sep-10	Nov-11	Apr-11	1.73	1.05	5,940,000
Raw Water Pump Stations													
Raw Water Intertie Pump Station	G.4.1	2,870,000	570,000	20	140,000	5	3,580,000	Sep-10	Nov-11	Apr-11	1.73	1.05	3,770,000
TREATMENT FACILITIES													
Chino I													
Modifications to achieve Nameplate Capacity (14.2 mgd)	G.5.1	5,850,000	1,170,000	20	290,000	5	7,310,000	Jun-11	Sep-12	Jan-12	2.46	1.08	7,860,000
Chino II													
10.5 mgd RO/IX Expansion	G.5.3	12,130,000	2,430,000	20	610,000	5	15,170,000	Sep-09	Sep-09	Sep-09		1.00	15,210,000
Transfer Pump Modifications	G.5.3	780,000	160,000	20	40,000	5	980,000	Sep-09	Sep-09	Sep-09		1.00	980,000
Chemical Modifications	G.5.3	10,000	0	20	0	5	10,000	Sep-09	Sep-09	Sep-09		1.00	10,000
Spare Parts	G.5.3	350,000	70,000	20	20,000	5	440,000	Sep-09	Sep-09	Sep-09		1.00	440,000
HVAC Modifications	G.5.3	230,000	50,000	20	10,000	5	290,000	Sep-10	Nov-11	Apr-11	1.73	1.05	310,000
PRODUCT WATER SYSTEM													
Pipelines													
Pipeline from Chino II to Riverside Dr./Hamner Ave.	G.6.1	6,310,000	1,260,000	20	320,000	5	7,890,000	Jan-11	Feb-12	Jul-11	1.99	1.06	8,370,000
Pipeline from Riverside Dr./Hamner Ave. to Detroit St.	G.6.2	13,520,000	2,700,000	20	680,000	5	16,900,000	Jan-11	Feb-12	Jul-11	1.99	1.06	17,920,000
Product Water Pump Stations													
Chino II: JCSD Zone 1110	G.7.1	825,000	170,000	20	40,000	5	1,035,000	Sep-10	Nov-11	Apr-11	1.73	1.05	1,090,000
Chino II: Ontario/WMWD Zone 1010	G.7.2	2,070,000	410,000	20	100,000	5	2,580,000	Sep-10	Nov-11	Apr-11	1.73	1.05	2,720,000
Milliken Pump Station: Ontario Zone 1010 to Zone 1212	G.7.3	2,090,000	420,000	20	100,000	5	2,610,000	Sep-10	Nov-11	Apr-11	1.73	1.05	2,750,000
PRODUCT WATER SYSTEM													
Chino II Brine Pipeline	G.8.1	1,070,000	210,000	20	50,000	5	1,330,000	Jun-11	Sep-12	Jan-12	2.46	1.08	1,430,000
TOTAL		68,967,100	13,780,000		3,460,000		86,207,100						90,930,000

Table G.9.2 Summary of Construction Project Capital Costs for Option B: Expand Chino II to 22.7 mgd with Raw Water Bypass
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

	Detailed Costs in Appendix	Construction ($)	Contingency and Engineering ($)	(%)	Administrative and Legal ($)	(%)	Aug-09 Dollars Total ($)	Construction Dates Start	Stop	Midpoint	Time to Midpoint From Aug-09 (years)	Escalation Factor [3.0% Annual Inflation]	Constr. Midpoint Dollars Total ($)
RAW WATER SYSTEM													
Wells													
Well CCWFA-1	G.2.1	2,515,000	500,000	20	130,000	5	3,145,000	May-11	Jan-14	Aug-12	3.08	1.10	3,450,000
Well CCWFA-2	G.2.2	2,515,000	500,000	20	130,000	5	3,145,000	May-11	Jan-14	Aug-12	3.08	1.10	3,450,000
Well CCWFA-3	G.2.3	2,580,000	520,000	20	130,000	5	3,230,000	May-11	Jan-14	Aug-12	3.08	1.10	3,540,000
Well CCWFA-4	G.2.4	2,240,000	450,000	20	110,000	5	2,800,000	Sep-09	Jan-12	Nov-10	1.25	1.04	2,910,000
Well CCWFA-5	G.2.5	2,360,000	470,000	20	120,000	5	2,950,000	May-11	Jan-14	Aug-12	3.08	1.10	3,230,000
Well CCWFA-6	G.2.6	2,370,000	470,000	20	120,000	5	2,960,000	Sep-09	Jan-12	Nov-10	1.25	1.04	3,070,000
Monitoring Well	G.2.7	210,000	40,000	20	10,000	5	260,000	Sep-09	Jan-12	Nov-10	1.25	1.04	270,000
Monitoring Well	G.2.8	210,000	40,000	20	10,000	5	260,000	Sep-09	Jan-12	Nov-10	1.25	1.04	270,000
Chino II Wells II-10, 11, 12, and 13	Table 8.4	10,400,000	2,080,000	20	520,000	5	13,000,000	May-11	Jan-14	Aug-12	3.08	1.10	14,240,000
Pipelines													
Pipeline from Well CCWFA-6 to Chino I	G.3.1	1,350,000	270,000	20	70,000	5	1,690,000	Aug-13	Sep-14	Feb-14	4.55	1.14	1,930,000
Chino II Well Expansion Raw Water Pipeline	Table 8.4	6,510,000	1,300,000	20	330,000	5	8,140,000	Sep-10	Nov-11	Apr-11	1.73	1.05	8,570,000
TREATMENT FACILITIES													
Chino I													
Modifications to Maintain Current Capacity	G.5.2	1,950,000	390,000	20	100,000	5	2,440,000	Jun-11	Sep-12	Jan-12	2.46	1.08	2,620,000
Chino II													
10.5 mgd RO/IX Expansion (100% Sponsor)	G.5.3	12,130,000	2,430,000	20	610,000	5	15,170,000	Sep-09	Sep-09	Sep-09		1.00	15,210,000
Transfer Pump Modifications (48.8% CDA/51.2% Sponsors)	G.5.3	780,000	160,000	20	40,000	5	980,000	Sep-09	Sep-09	Sep-09		1.00	980,000
Chemical Modifications (100% CDA)	G.5.3	10,000	0	20	0	5	10,000	Sep-09	Sep-09	Sep-09		1.00	10,000
Spare Parts (100% CDA)	G.5.3	350,000	70,000	20	20,000	5	440,000	Sep-09	Sep-09	Sep-09		1.00	440,000
HVAC Modifications (38% CDA/62% Sponsor)	G.5.3	230,000	50,000	20	10,000	5	290,000	Sep-10	Nov-11	Apr-11	1.73	1.05	310,000
PRODUCT WATER SYSTEM													
Pipelines													
Pipeline from Chino II to Riverside Dr./Hamner Ave.	G.6.1	6,310,000	1,260,000	20	320,000	5	7,890,000	Jan-11	Feb-12	Jul-11	1.99	1.06	8,370,000
Pipeline from Riverside Dr./Hamner Ave. to Detroit St.	G.6.2	13,520,000	2,700,000	20	680,000	5	16,900,000	Jan-11	Feb-12	Jul-11	1.99	1.06	17,920,000
Product Water Pump Stations													
Chino II: JCSD Zone 1110	G.7.1	825,000	170,000	20	40,000	5	1,035,000	Sep-10	Nov-11	Apr-11	1.73	1.05	1,090,000
Chino II: Ontario/WMWD Zone 1010	G.7.2	2,070,000	410,000	20	100,000	5	2,580,000	Sep-10	Nov-11	Apr-11	1.73	1.05	2,720,000
Milliken Pump Station: Ontario Zone 1010 to Zone 1212	G.7.3	2,090,000	420,000	20	100,000	5	2,610,000	Sep-10	Nov-11	Apr-11	1.73	1.05	2,750,000
PRODUCT WATER SYSTEM													
Chino II Brine Pipeline	G.8.1	1,070,000	210,000	20	50,000	5	1,330,000	Jun-11	Sep-12	Jan-12	2.46	1.08	1,430,000
TOTAL		74,595,000	14,910,000		3,750,000		93,255,000						98,780,000

Table G.9.3 Summary of O&M Costsfor Option A: Expand Chino II to 20.5 mgd and Modify Chino I for 14.2 mgd
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

	Change in Variable Costs				Change in Fixed Costs				Total Cost
	Quantity	Units	Unit Cost	Annual Cost	Quantity	Units	Unit Cost	Annual Cost	
OFF-SITE BUDGET ADJUSTMENT									
Energy									
Additional Pumping Cost of Chino II Raw Water Supply (Higher Head) [a]	23,860	AF/yr	$5.58	$134,000					
Milliken Pump Station [b]	3,500	AF/yr	$46.00	$161,000					
Maintenance									
Pipeline (RW) from Well CCWFA-6 to Chino I					7,700	LF	$1	$8,000	
Pipeline (RW) Chino II Well Field Extension (Intertie)					14,770	LF	$1	$15,000	
Pipeline (PW) from Chino II to Riverside Dr./Hamner Ave.					32,740	LF	$1	$33,000	
Pipeline (Brine) from Chino II to SARI Reach IVD					7,000	LF	$1	$7,000	
Pump Station Chino I-Chino II Raw Water Intertie					1	ea	$15,000	$15,000	
Pump Station Chino II (Zone 1010)					1	ea	$15,000	$15,000	
Pump Station Milliken Res - Ontario (Zone 1010 to Zone 1212)					1	ea	$15,000	$15,000	
Wells (CCWF)					6	ea	$15,000	$90,000	
Off-site Budget Adjustment Subtotal				$295,000				$198,000	$493,000
ON-SITE BUDGET ADJUSTMENT									
Chino II Expansion Additional Equipment Maintenance/Reserves [c]								$160,000	
1010 Zone Product Water Pumping -- Cost Reduction [d]									
Ontario	7,033	AF/yr	$16	($118,000)					
Norco	1,000	AF/yr	$16	($16,000)					
WMWD	3,534	AF/yr	$16	($60,000)					
Cost of Reduced Raw Water Bypass [e]	1,230	AF/yr	$152	$187,000					
On-site Budget Adjustment Subtotal				($7,000)				$160,000	$153,000
TOTAL CDA BUDGET									
Base Budget (24,300 AF of Product Water) [f]	24,600	AF/yr	$310	$7,636,386	24,600	AF/yr	$234	$5,760,783	$13,397,169
Phase 3 Expansion (10,600 AF of Product Water)	10,600	AF/yr	$310	$3,290,475					$3,290,475
Off-Site Budget Adjustment Subtotal				$295,000				$198,000	$493,000
On-Site Budget Adjustment Subtotal				($7,000)				$160,000	$153,000
Total New Budget				$11,214,862				$6,118,783	$17,333,644

Notes:

a. Based on 10 percent average increase in well TDH resulting from greater flow in Chino II raw water pipelines.
b. Based on 230 feet design TDH at the Milliken Pump Station and energy cost of $20/AF per 100 feet of lift. Assumes pumping of the entire Ontario Phase 3 Expansion entitlement from the 1010 zone to the 1212 zone.
c. Based on 2 percent of $8M estimated equipment cost for annual O&M and reserve fund RO membrane and IX resin replacement.
d. CDA FY09/10 budget variable unit costs include product water pumping to 1110 zone. Cost reduction represents product water pumping to a lower zone (see Table 6.2).
e. Reduction in raw water bypass volume is 5 percent (based on increased TDS from Wells I-13, 14, and 15). Unit cost of treatment is assumed as FY 09/10 budget Chino II on-site total variable cost ($218/AF) less cost of product water pumping to the 1110 zone (330 feet lift at $20/AF per 100 feet of lift).
f. Base Budget is the FY09/10 Final budget.

Table G.9.4 Summary of O&M Costsfor Option B: Expand Chino II to 22.7 mgd Including Raw Water Bypass
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

	Change in Variable Costs				Change in Fixed Costs				Total Cost
	Quantity	Units	Unit Cost	Annual Cost	Quantity	Units	Unit Cost	Annual Cost	
OFF-SITE BUDGET ADJUSTMENT									
Energy									
Additional Pumping Cost of Chino II Raw Water Supply (Higher Head) [a]	23,860	AF/yr	$5.58	$134,000					
Milliken Pump Station [b]	3,500	AF/yr	$46.00	$161,000					
Maintenance									
Pipeline (RW) from Well CCWFA-6 to Chino I					7,700	LF	$1	$8,000	
Pipeline (RW) Chino II Well Field Extension (Intertie)					21,300	LF	$1	$22,000	
Pipeline (PW) from Chino II to Riverside Dr./Hamner Ave.					32,740	LF	$1	$33,000	
Pipeline (Brine) from Chino II to SARI Reach IVD					7,000	LF	$1	$7,000	
Pump Station Chino II (Zone 1010)					1	ea	$15,000	$15,000	
Pump Station Milliken Res - Ontario (Zone 1010 to Zone 1212)					1	ea	$15,000	$15,000	
Wells (Chino II Well Field Expansion)					4	ea	$15,000	$60,000	
Wells (CCWF)					6	ea	$15,000	$90,000	
Off-site Budget Adjustment Subtotal				$295,000				$250,000	$545,000
ON-SITE BUDGET ADJUSTMENT									
Chino I: 0 AF/Yr									
Chino II Expansion Additional Equipment Maintenance/Reserves [c]								$160,000	
1010 Zone Product Water Pumping -- Cost Reduction [d]									
Ontario	7,033	AF/yr	$16	($118,000)					
Norco	1,000	AF/yr	$16	($16,000)					
WMWD	3,534	AF/yr	$16	($60,000)					
On-site Budget Adjustment Subtotal				($194,000)				$160,000	($34,000)
TOTAL CDA BUDGET									
Base Budget (24,300 AF of Product Water) [e]	24,600	AF/yr	$310	$7,636,386	24,600	AF/yr	$234	$5,760,783	$13,397,169
Phase 3 Expansion (10,600 AF of Product Water)	10,600	AF/yr	$310	$3,290,475					$3,290,475
Off-Site Budget Adjustment Subtotal				$295,000				$250,000	$545,000
On-Site Budget Adjustment Subtotal				($194,000)				$160,000	($34,000)
Total New Budget				$11,027,862				$6,170,783	$17,198,644

Notes:

a. Based on 10 percent average increase in well TDH resulting from greater flow in Chino II raw water pipelines.
b. Based on 230 feet design TDH at the Milliken Pump Station and energy cost of $20/AF per 100 feet of lift. Assumes pumping of the entire Ontario Phase 3 Expansion entitlement from the 1010 zone to the 1212 zone.
c. Based on 2 percent of $8M estimated equipment cost for annual O&M and reserve fund RO membrane and IX resin replacement.
d. CDA FY09/10 budget variable unit costs include product water pumping to 1110 zone. Cost reduction represents product water pumping to a lower zone (see Table 6.2).
e. Base Budget is the FY09/10 Final budget.

Table G.9.5 **Capital Cost Distribution for Option A: Expand Chino II to 20.5 mgd and Modify Chino I for 14.2 mgd**
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

	Chino Phase 3 Sponsors						Non-Sponsors								TOTAL [a]	
	Ontario		JCSD		Western		Chino		Chino Hills		Norco		SARWC			
PRODUCT WATER ALLOCATION																
Phases 1 and 2 (Acre-Feet/Year)	20%	5,000	33%	8,200	0%	0	20%	5,000	17%	4,200	4%	1,000	5%	1,200	100%	24,600
Phase 3 (Acre-Feet/Year)	33%	3,533	33%	3,533	33%	3,534	0%	0	0%	0	0%	0	0%	0	100%	10,600
Total (Acre-Feet/Year)	24%	8,533	33%	11,733	10%	3,534	14%	5,000	12%	4,200	3%	1,000	3%	1,200	100%	35,200
RAW WATER SYSTEM CAPITAL COSTS:																
Wells:																
Wells CCWFA-1, 2, 3, 4, 5, and 6 + Monitoring Wells	33%	$6,729,365	33%	$6,729,365	33%	$6,731,270	0%	$0	0%	$0	0%	$0	0%	$0	100%	$20,190,000
Pipelines:																
Raw Water Pipeline from Well CCWFA-6 to Chino I	33%	$646,606	33%	$646,606	33%	$646,789	0%	$0	0%	$0	0%	$0	0%	$0	100%	$1,940,000
Raw Water Intertie Pipeline	33%	$1,979,813	33%	$1,979,813	33%	$1,980,374	0%	$0	0%	$0	0%	$0	0%	$0	100%	$5,940,000
Raw Water Pump Station																
Raw Water Intertie Pump Station	33%	$1,256,548	33%	$1,256,548	33%	$1,256,904	0%	$0	0%	$0	0%	$0	0%	$0	100%	$3,770,000
WATER TREATMENT FACILITIES CAPITAL COSTS:																
Chino I Modifications to Nameplate @ 14 .2 mgd	33%	$2,619,753	33%	$2,619,753	33%	$2,620,494	0%	$0	0%	$0	0%	$0	0%	$0	100%	$7,860,000
Chino II 10.5 mgd RO/IX Expansion (100% Sponsors)	33%	$5,069,522	33%	$5,069,522	33%	$5,070,957	0%	$0	0%	$0	0%	$0	0%	$0	100%	$15,210,000
Chino II Transfer Pumps (48.8% CDA/51.2% Sponsors)	27%	$264,441	33%	$326,651	17%	$167,285	10%	$97,203	8%	$81,651	2%	$19,441	2%	$23,329	100%	$980,000
Chino II Chemical System Modifications (100% CDA)	24%	$2,424	33%	$3,333	10%	$1,004	14%	$1,420	12%	$1,193	3%	$284	3%	$341	100%	$10,000
Chino II Spare Parts (100% CDA)	24%	$106,663	33%	$146,663	10%	$44,175	14%	$62,500	12%	$52,500	3%	$12,500	3%	$15,000	100%	$440,000
HVAC Modifications (38% CDA/62% Sponsors)	28%	$88,004	33%	$103,327	21%	$64,079	8%	$23,943	6%	$20,112	2%	$4,789	2%	$5,746	100%	$310,000
PRODUCT WATER SYSTEM CAPITAL COSTS:																
Pipelines:																
Pipeline from Chino II to Riverside Dr./Hamner Ave. (Ontario Zone 1010)	61%	$5,089,151	0%	$0	39%	$3,280,849	0%	$0	0%	$0	0%	$0	0%	$0	100%	$8,370,000
Pipeline from Riverside Dr./Hamner Ave. to Detroit St.	0%	$0	0%	$0	100%	$17,920,000	0%	$0	0%	$0	0%	$0	0%	$0	100%	$17,920,000
Pump Stations:																
Chino II - JCSD Product Water (Clearwell to Zone 1110)	0%	$0	100%	$1,090,000	0%	$0	0%	$0	0%	$0	0%	$0	0%	$0	100%	$1,090,000
Chino II - Ontario/Western Product Water (Clearwell to Zone 1010)	61%	$1,653,822	0%	$0	39%	$1,066,178	0%	$0	0%	$0	0%	$0	0%	$0	100%	$2,720,000
Milliken Res - Ontario (Zone 1010 to Zone 1212)	100%	$2,750,000	0%	$0	0%	$0	0%	$0	0%	$0	0%	$0	0%	$0	100%	$2,750,000
SARI CAPITAL COSTS:																
Pipelines:																
Chino II Brine Pipeline	33%	$476,622	33%	$476,622	33%	$476,757	0%	$0	0%	$0	0%	$0	0%	$0	100%	$1,430,000
SARI Purchase																
Chino I Additional SARI Pipeline Capacity @ 3.75 M/mgd (Sponsors)	33%	$1,113,228	33%	$1,113,228	33%	$1,113,543	0%	$0	0%	$0	0%	$0	0%	$0	100%	$3,340,000
Chino I Additional SARI Treatment Capacity @ 11.332 M/mgd (Sponsors)	33%	$3,363,016	33%	$3,363,016	33%	$3,363,968	0%	$0	0%	$0	0%	$0	0%	$0	100%	$10,090,000
Chino II Additional SARI Treatment Capacity @ 11.332 M/mgd (CDA)	24%	$824,210	33%	$1,133,301	10%	$341,352	14%	$482,955	12%	$405,682	3%	$96,591	3%	$115,909	100%	$3,400,000
Chino II Additional SARI Pipeline Capacity @ 3.75 M/mgd (Sponsors)	33%	$2,139,798	33%	$2,139,798	33%	$2,140,404	0%	$0	0%	$0	0%	$0	0%	$0	100%	$6,420,000
Chino II Additional SARI Treatment Capacity @ 11.332 M/mgd (Sponsors)	33%	$6,536,050	33%	$6,536,050	33%	$6,537,900	0%	$0	0%	$0	0%	$0	0%	$0	100%	$19,610,000
Capital Costs Subtotal		**$42,709,035**		**$34,733,596**		**$54,824,280**		**$668,021**		**$561,138**		**$133,604**		**$160,325**		**$133,790,000**
Less Approved Grant Funding	32%	($8,976,630)	26%	($7,300,344)	41%	($11,523,025)		$0		$0		$0		$0		($27,800,000)
Adjusted Capital Costs		**$33,732,405**		**$27,433,252**		**$43,301,255**		**$668,021**		**$561,138**		**$133,604**		**$160,325**		**$105,990,000**
30 Year Amortization Period																
5.0% Fixed Amortization Rate																
ANNUALIZED CAPITAL ($/YEAR)		**$2,194,341**		**$1,784,572**		**$2,816,809**		**$43,456**		**$36,503**		**$8,691**		**$10,429**		**$6,894,802**

Notes:
a. Capital costs are construction costs plus engineering/contingency and legal/administration costs escalated to construction midpoint.

Table G.9.6 **Capital Cost Distribution for Option B: Expand Chino II to 22.7 mgd Including Raw Water Bypass**
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

	Chino Phase 3 Sponsors						Non-Sponsors								TOTAL [a]	
	Ontario		JCSD		Western		Chino		Chino Hills		Norco		SARWC			
PRODUCT WATER ALLOCATION																
Phases 1 and 2 (Acre-Feet/Year)	20%	5,000	33%	8,200	0%	0	20%	5,000	17%	4,200	4%	1,000	5%	1,200	100%	24,600
Phase 3 (Acre-Feet/Year)	33%	3,533	33%	3,533	33%	3,534	0%	0	0%	0	0%	0	0%	0	100%	10,600
Total (Acre-Feet/Year)	24%	8,533	33%	11,733	10%	3,534	14%	5,000	12%	4,200	3%	1,000	3%	1,200	100%	35,200
RAW WATER SYSTEM CAPITAL COSTS:																
Wells:																
Wells CCWFA-1, 2, 3, 4, 5, and 6 + Monitoring Wells	33%	$6,729,365	33%	$6,729,365	33%	$6,731,270	0%	$0	0%	$0	0%	$0	0%	$0	100%	$20,190,000
Chino II Wells II-10, 11, 12, and 13	33%	$4,746,219	33%	$4,746,219	33%	$4,747,562	0%	$0	0%	$0	0%	$0	0%	$0	100%	$14,240,000
Pipelines:																
Raw Water Pipeline from Well CCWFA-6 to Chino I	33%	$646,606	33%	$646,606	33%	$646,789	0%	$0	0%	$0	0%	$0	0%	$0	100%	$1,940,000
Chino II Well Expansion Raw Water Pipeline	33%	$2,856,397	33%	$2,856,397	33%	$2,857,206	0%	$0	0%	$0	0%	$0	0%	$0	100%	$8,570,000
WATER TREATMENT FACILITIES CAPITAL COSTS:																
Chino I Modifications to Maintain Current Capacity (100% Sponsors)	33%	$873,251	33%	$873,251	33%	$873,498	0%	$0	0%	$0	0%	$0	0%	$0	100%	$2,620,000
Chino II 10.5 mgd RO/IX Expansion (100% Sponsors)	33%	$5,069,522	33%	$5,069,522	33%	$5,070,957	0%	$0	0%	$0	0%	$0	0%	$0	100%	$15,210,000
Chino II Transfer Pumps (48.8% CDA/51.2% Sponsors)	27%	$264,441	33%	$326,651	17%	$167,285	10%	$97,203	8%	$81,651	2%	$19,441	2%	$23,329	100%	$980,000
Chino II Chemical System Modifications (100% CDA)	24%	$2,424	33%	$3,333	10%	$1,004	14%	$1,420	12%	$1,193	3%	$284	3%	$341	100%	$10,000
Chino II Spare Parts (100% CDA)	24%	$106,663	33%	$146,663	10%	$44,175	14%	$62,500	12%	$52,500	3%	$12,500	3%	$15,000	100%	$440,000
HVAC Modifications (38% CDA/62% Sponsors)	28%	$88,004	33%	$103,327	21%	$64,079	8%	$23,943	6%	$20,112	2%	$4,789	2%	$5,746	100%	$310,000
PRODUCT WATER SYSTEM CAPITAL COSTS:																
Pipelines:																
Pipeline from Chino II to Riverside Dr./Hamner Ave. (Ontario Zone 1010)	61%	$5,089,151	0%	$0	39%	$3,280,849	0%	$0	0%	$0	0%	$0	0%	$0	100%	$8,370,000
Pipeline from Riverside Dr./Hamner Ave. to Detroit St.	0%	$0	0%	$0	100%	$17,920,000	0%	$0	0%	$0	0%	$0	0%	$0	100%	$17,920,000
Pump Stations:																
Chino II - JCSD Product Water (Clearwell to Zone 1110)	0%	$0	100%	$1,090,000	0%	$0	0%	$0	0%	$0	0%	$0	0%	$0	100%	$1,090,000
Chino II - Ontario/Western Product Water (Clearwell to Zone 1010)	61%	$1,653,822	0%	$0	39%	$1,066,178	0%	$0	0%	$0	0%	$0	0%	$0	100%	$2,720,000
Milliken Res - Ontario (Zone 1010 to Zone 1212)	100%	$2,750,000	0%	$0	0%	$0	0%	$0	0%	$0	0%	$0	0%	$0	100%	$2,750,000
SARI CAPITAL COSTS:																
Pipelines:																
Chino II Brine Pipeline	33%	$476,622	33%	$476,622	33%	$476,757	0%	$0	0%	$0	0%	$0	0%	$0	100%	$1,430,000
SARI Purchase																
Chino I Additional SARI Pipeline Capacity @ 3.75 M/mgd (Sponsors)	33%	$276,641	33%	$276,641	33%	$276,719	0%	$0	0%	$0	0%	$0	0%	$0	100%	$830,000
Chino I Additional SARI Treatment Capacity @ 11.332 M/mgd (Sponsors)	33%	$829,922	33%	$829,922	33%	$830,157	0%	$0	0%	$0	0%	$0	0%	$0	100%	$2,490,000
Chino II Additional SARI Treatment Capacity @ 11.332 M/mgd (CDA)	24%	$824,210	33%	$1,133,301	10%	$341,352	14%	$482,955	12%	$405,682	3%	$96,591	3%	$115,909	100%	$3,400,000
Chino II Additional SARI Pipeline Capacity @ 3.75 M/mgd (Sponsors)	33%	$2,139,798	33%	$2,139,798	33%	$2,140,404	0%	$0	0%	$0	0%	$0	0%	$0	100%	$6,420,000
Chino II Additional SARI Treatment Capacity @ 11.332 M/mgd (Sponsors)	33%	$6,536,050	33%	$6,536,050	33%	$6,537,900	0%	$0	0%	$0	0%	$0	0%	$0	100%	$19,610,000
Capital Costs Subtotal		**$41,959,106**		**$33,983,667**		**$54,074,139**		**$668,021**		**$561,138**		**$133,604**		**$160,325**		**$131,540,000**
Less Approved Grant Funding	32%	($8,971,626)	26%	($7,266,331)	42%	($11,562,043)		$0		$0		$0		$0		($27,800,000)
Adjusted Capital Costs		**$32,987,480**		**$26,717,335**		**$42,512,096**		**$668,021**		**$561,138**		**$133,604**		**$160,325**		**$103,740,000**
30 Year Amortization Period																
5.0% Fixed Amortization Rate																
ANNUALIZED CAPITAL ($/YEAR)		**$2,145,883**		**$1,738,001**		**$2,765,473**		**$43,456**		**$36,503**		**$8,691**		**$10,429**		**$6,748,436**

Notes:
a. Capital costs are construction costs plus engineering/contingency and legal/administration costs escalated to construction midpoint.

Table G.9.7 **Original and New CDA Costs (FY 09/10 Budget Year) for Option A: Expand Chino II to 20.5 mgd and Modify Chino I for 14.2 mgd**
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

	Original CDA Entitlement		New CDA Entitlement		Fixed Project Cost [a]	Fixed Proj Costs	New Debt Service [b]	Fixed O&M		Variable O&M		Total Cost		Less MWD Rebate [d]		Net Cost		Net Unit Cost	
								Original Cost	New Cost	Original Cost	New Cost	Original Cost	New Cost	Original Cost	New Cost	Original Cost	New Cost	Original Cost	New Cost
	(AF/yr)	(%)	(AF/yr)	(%)	($)	Non-debt ($)	($)	($)	($)	($)	($)	($)	($)	($)	($)	($)	($)	($/AF)	($/AF)
JCSD	8,200	33.3%	11,733	33.3%	$ 2,214,774	$122,745	$1,784,572	$1,920,261	$2,039,536	$2,545,462	$3,738,181	$ 6,803,242	$ 9,899,809	$1,139,800	$1,630,887	$5,663,442	$8,268,922	691	705
Ontario	5,000	20.3%	8,533	24.2%	1,492,617	74,845	2,194,341	1,170,891	1,483,283	1,552,111	2,718,648	4,290,463	7,963,734	695,000	1,186,087	3,595,463	6,777,647	719	794
WMWD	-	0.0%	3,534	10.0%			2,816,809	-	614,312	-	1,125,947	-	4,557,067	-	491,226	-	4,065,841	-	1150
Chino	5,000	20.3%	5,000	14.2%	1,534,568	74,845	43,456	1,170,891	869,145	1,552,111	1,593,020	4,332,414	4,115,033	695,000	695,000	3,637,414	3,420,033	727	684
Chino Hills	4,200	17.1%	4,200	11.9%	1,287,671	62,869	36,503	983,548	730,082	1,303,773	1,338,137	3,637,862	3,455,262	583,800	583,800	3,054,062	2,871,462	727	684
SARWC	1,200	4.9%	1,200	3.4%	365,722	17,963	10,429	281,014	208,595	372,507	382,325	1,037,206	985,034	166,800	166,800	870,406	818,234	725	682
Norco	1,000	4.1%	1,000	2.8%	309,023	14,969	8,691	234,178	173,829	310,422	318,604	868,593	825,116	139,000	139,000	729,593	686,116	730	686
Total	24,600	100%	35,200	100%	$7,204,376	$368,235	$6,894,802	$5,760,783	$6,118,783	$7,636,386	$11,214,862	$20,969,780	$31,801,057	$3,419,400	$4,892,800	$17,550,380	$26,908,257	713	764
F/V O&M								43%		57%									
Unit Cost ($ Per AF)					293	15	196	234	174	310	319	852	903	139	139	713	764		

Original CDA Member Dept Service [c]

	Allocation %	Debt Service 2008 Bond	Other Expenses	Total Fixed Project Cost
JCSD	39.1%	$2,201,469	$ 13,305	$ 2,214,774
Chino	26.8%	1,525,456	9,112	1,534,568
Ontario	0.0%	1,492,617	-	1,492,617
Chino Hills	22.5%	1,280,025	7,646	1,287,671
SARWC	6.4%	363,538	2,184	365,722
Norco	5.3%	307,213	1,810	309,023
	100.0%	$ 7,170,318	$ 34,058	$ 7,204,376

Original FY09/10 Budget

Onsite O&M	$10,565,116
Offsite O&M	$2,832,053
	$13,397,169

Notes:
a. Original CDA Budget: Fixed Project Cost Allocation plus Ontario (separate financing from CDA budget)
b. Includes non-Phase 3 project costs (e.g., Chino II transfer pumps, Chino I nameplate modifcations, etc.) for non-Sponsor CDA members.
c. Original CDA Budget: Debt Service based on 'level' plan - 2008 Bonds.
d. $139/AF for all product water (Source: Jack Safely e-mail 10/29/10).

Table G.9.8 **Original and New CDA Costs (FY 09/10 Budget Year) for Option B: Expand Chino II to 22.7 mgd Including Raw Water Bypass**
Chino Desalter Phase 3 PDR
JCSD/Ontario/WMWD

	Original CDA Entitlement		New CDA Entitlement		Fixed Project Cost [a]	Fixed Proj Costs	New Debt Service [b]	Fixed O&M		Variable O&M		Total Cost		Less MWD Rebate [d]		Net Cost		Net Unit Cost	
								Original Cost	New Cost	Original Cost	New Cost	Original Cost	New Cost	Original Cost	New Cost	Original Cost	New Cost	Original Cost	New Cost
	(AF/yr)	(%)	(AF/yr)	(%)	($)	Non-debt ($)	($)	($)	($)	($)	($)	($)	($)	($)	($)	($)	($)	($/AF)	($/AF)
JCSD	8,200	33.3%	11,733	33.3%	$ 2,214,774	$122,745	$1,738,001	$1,920,261	$2,056,869	$2,545,462	$3,675,849	$ 6,803,242	$ 9,808,239	$1,139,800	$1,630,887	$5,663,442	$8,177,352	691	697
Ontario	5,000	20.3%	8,533	24.2%	1,492,617	74,845	2,145,883	1,170,891	1,495,889	1,552,111	2,673,317	4,290,463	7,882,550	695,000	1,186,087	3,595,463	6,696,463	719	785
WMWD	-	0.0%	3,534	10.0%			2,765,473	-	619,533	-	1,107,172	-	4,492,178	-	491,226	-	4,000,952	-	1132
Chino	5,000	20.3%	5,000	14.2%	1,534,568	74,845	43,456	1,170,891	876,532	1,552,111	1,566,458	4,332,414	4,095,857	695,000	695,000	3,637,414	3,400,857	727	680
Chino Hills	4,200	17.1%	4,200	11.9%	1,287,671	62,869	36,503	983,548	736,287	1,303,773	1,315,824	3,637,862	3,439,154	583,800	583,800	3,054,062	2,855,354	727	680
SARWC	1,200	4.9%	1,200	3.4%	365,722	17,963	10,429	281,014	210,368	372,507	375,950	1,037,206	980,432	166,800	166,800	870,406	813,632	725	678
Norco	1,000	4.1%	1,000	2.8%	309,023	14,969	8,691	234,178	175,306	310,422	313,292	868,593	821,281	139,000	139,000	729,593	682,281	730	682
Total	24,600	100%	35,200	100%	$7,204,376	$368,235	$6,748,436	$5,760,783	$6,170,783	$7,636,386	$11,027,862	$20,969,780	$31,519,691	$3,419,400	$4,892,800	$17,550,380	$26,626,891	713	756
F/V O&M								43%		57%									
Unit Cost ($ Per AF)					293	15	192	234	175	310	313	852	895	139	139	713	756		

Original CDA Member Dept Service [c]

	Allocation %	Debt Service 2008 Bond	Other Expenses	Total Fixed Project Cost
JCSD	39.1%	$2,201,469	$ 13,305	$ 2,214,774
Chino	26.8%	1,525,456	9,112	1,534,568
Ontario	0.0%	1,492,617	-	1,492,617
Chino Hills	22.5%	1,280,025	7,646	1,287,671
SARWC	6.4%	363,538	2,184	365,722
Norco	5.3%	307,213	1,810	309,023
	100.0%	$ 7,170,318	$ 34,058	$ 7,204,376

Original FY09/10 Budget

Onsite O&M	$10,565,116
Offsite O&M	$2,832,053
	$13,397,169

Notes:
a. Original CDA Budget: Fixed Project Cost Allocation plus Ontario (separate financing from CDA budget)
b. Includes non-Phase 3 project costs (e.g., Chino II transfer pumps, Chino I nameplate modifcations, etc.) for non-Sponsor CDA members.
c. Original CDA Budget: Debt Service based on 'level' plan - 2008 Bonds.
d. $139/AF for all product water.

INDEPENDENT O&M COST REVIEW

M E M O R A N D U M

To: Jack Safely, CDA **JN:** 10-107206

From: Cindy Miller, RBF Consulting
Jake Wiley, RBF Consulting

Date: May 11, 2010

Subject: Addendum #1 – CDA Phase 3 Operations and Maintenance Cost Estimate

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1.0 Purpose

A technical memorandum was prepared by RBF on April 22, 2010. This memo summarized an evaluation and estimation of the operations and maintenance (O&M) cost impacts for the Chino Basin Desalter Authority (CDA) related to the proposed Phase 3 expansion project. The approach to estimate these O&M costs and compare them to both existing CDA O&M costs and the estimates from the *August 2009 Chino Desalter Phase 3 Preliminary Design Report, including Addendums 1 through 4* (PDR) used the Fiscal Year 2009/2010 CDA budgets as a baseline for unit cost of water, related to operations and maintenance only, and identified additive and deductive costs related to the Phase 3 expansion in 2010 dollars.

This addendum provides an alternative approach by utilizing audited CDA budgets from fiscal year 2008/2009 as a baseline and relating these actual FY08/09 recorded costs for operation and maintenance for those additive and deductive items identified as part of the Phase 3 expansion.

2.0 Results of Alternative Cost Evaluation

The result of this alternative evaluation is a comparison of estimated unit O&M costs, in FY08/09 dollars, for the expanded facilities identified in the PDR as Project Option C, against the audited FY08/09 Chino I and Chino II Desalters O&M costs. Table 1 shows the results of the analysis. Table 2 itemizes the O&M cost components.

Table 1 – Phase 3 O&M Cost Analysis Summary (Addendum #1)

Cost Source	Unit Cost of Water, $/AF	Difference from Audited FY08/09 O&M Cost, %
FY08/09 O&M Costs[1]	$459	
RBF Estimate w/ Phase 3 Expansion[2]	$484	5.5%

1 Based on FY 08/09 audited O&M costs for existing facilities ($261.36/AF Variable Costs + $197.17/AF Fixed Costs)

2 Cost derived for expanded facilities(Project Option C) in 08/09 dollars from the analysis included herein

TABLE 2
CHINO DESALTER AUTHORITY
CHINO DESALTER PHASE 3 EXPANSION
SUMMARY OF OPERATIONS AND MAINTENANCE COSTS

TABLE 2 - ITEMIZED SUMMARY OF O&M COST FOR CDA PHASE 3

	Variable O&M				Fixed				Totals
	Quantity	Units	Unit Cost	Annual Cost	Quantity	Units	Unit Cost	Annual Cost	
Off-Site Adjustments									
Energy									
Additional Pumping Cost of Chino II Raw Water Supply	23860	afy	$ 4.02	$ 95,900					
Milliken Pump Station	3500	afy	$ 25.40	$ 88,900					
CCWFA Wells 1-6 Additional Pumping Cost [1]	7740	afy	$ 19.66	$ 152,200					
Intertie Booster Pump Station [2]	7740	afy	$ 10.36	$ 80,200					
Maintenance									
Pipeline from CCWA Wells to Chino I					7700	LF	0.97	$ 7,470	
Pipeline Chino II Well Field Extension					14770	LF	0.97	$ 14,330	
Pipeline - Chino II to Riverside Dr/Hamner					32740	LF	0.97	$ 31,760	
Pump Station Chino I-Chino II Intertie					1	EA	$ 14,550	$ 14,550	
Pump Station Chino II (Zone 1010)					1	EA	$ 14,550	$ 14,550	
Pump Station - Milliken					1	EA	$ 14,550	$ 14,550	
CCWF Wells					6	EA	$ 14,550	$ 87,300	
				$ 417,200				$ 184,510	**$ 601,710**
On-Site Adjustments									
Replacement Fund (Maintenance Reserves)								$ 160,000	
1010 Zone Product Water Pumping									
Ontario	7033	afy	$ (11.04)	$ (78,000)					
Norco	1000	afy	$ (11.04)	$ (11,100)					
WMWD	3534	afy	$ (11.04)	$ (40,000)					
Reduced Raw Water Bypass	1230	afy	152	$ 187,000					
Concentrate Reduction Facilities (incl. variable & labor) [3]				$ 2,019,700					
Additional Salt Usage From Increased Nitrate Conc. (Chino I) [4]				$ 74,100					
Additional Salt Usage From Increased Nitrate Conc. (Chino II) [5]				$ 48,700					
Additional Feed Pressure Required from Increased TDS - Chino I [6]				$ 8,400					
Additional Feed Pressure Required from Increased TDS - Chino II [7]				$ 5,500					
				$ 2,214,300				$ 160,000	**$ 2,374,300**
Total Budget									
Base Budget [8]	24600	afy	$ 261.36	$ 6,429,500	24600	afy	197.17	$ 4,850,400	**$ 11,279,900**
Phase 3 Expansion	10600	afy	$ 261.36	$ 2,770,500					**$ 2,770,500**
Off-Site Budget Adjustment				$ 417,200				$ 184,510	**$ 601,710**
On-Site Budget Adjustment				$ 2,214,300				$ 160,000	**$ 2,374,300**
Totals				$ 11,831,500				$ 5,194,910	**$ 17,026,410**

Total, $/AF	**$ 484**
08/09 $/AF Costs	**$ 459**
Difference, %	**5.5%**

Indicates agreement with cost and value is unchanged from Table 8.8 in Phase 3 PDR (incl. Addenda)

Indicates new cost or cost adjusment from Phase 3 PDR

1 Power cost differential based on projected CCWFA well output of 4,800 gpm (800 gpm x 6 wells) @ specific capacity of 3.6 gpm/ft

2 Power cost for intertie pump station based on projected CCWFA well output of 4,800 gpm (800 gpm x 6 wells) @ total lift of 200 ft TDH

3 Includes additional labor and replacement fund costs

4 Raw water Nitrate concentrations are projected to increase at Chino I due to integration of CCWFA wells and diversion of Chino I wells I-13, I-14 & I-15

5 Raw water Nitrate concentrations are projected to increase at Chino II due to diversion of Chino I wells I-13, I-14 & I-15 from Chino I to Chino II

6 Raw water TDS concentrations are projected to increase at Chino I due to integration of CCWFA wells and diversion of Chino I wells I-13, I-14 & I-15

7 Raw water TDS concentrations are projected to increase at Chino II due to diversion of Chino I wells I-13, I-14 & I-15 to Chino II

8 Base budget derived from audited actual FY08/09 operations costs for Chino I and Chino II Desalter facilities

3.0 Summary of Cost Adjustments

To provide an "apples to apples" comparison of actual audited FY08/09 CDA O&M costs with the Phase 3 expansion requires adjustments to the additive and deductive costs identified for the Phase 3 facilities back to actual FY08/09 dollars. To the extent possible CDA operations costs from FY08/09 were utilized for unit costs adjustments associated with labor, power and chemicals in the revised RBF O&M estimate shown in Table 2. Where unit costs adjustments were not available from audited CDA expenses, for example cost for sand and lime associated with the new concentrate reduction facilities, individual suppliers were contacted to ascertain current costs versus costs from FY08/09 for the required adjustments. Table 3 summarizes the cost items and the data sources used for adjustment of O&M costs to FY 08/09 dollars.

Table 3 – FY08/09 Cost Adjustment Descriptions

Cost Item	April 22 RBF O&M Estimate Cost Source	Adjusted Cost Description - RBF O&M Estimate Addendum #1
Energy	$0.125/kWh - Industry standard used for budget estimating purposes	FY08/09 actual CDA energy cost averaged $0.088/kWh - Revised cost utilized = $0.090/kWh
Labor	Full time equivalent x labor rate based on FY 09/10 Budget and as identified in PDR @ $80/hr. General maintenance for pipelines estimated @ $1.00/LF/yr, facilites at $15,000/EA/yr	Adjusted based on overall FY 08/09 Audited Labor Cost vs. Budgeted FY 09/10 Labor. General maintenance adjusted downward by 3% to account for increases in staff salaries.
Chemicals/Materials		
Sulfuric Acid	Adjusted from PDR estimate based on current CDA contract delivery price	Adjusted unit cost to FY 08/09 dollars based on actual FY 08/09 CDA costs vs. FY09/10 CDA budget
Threshold Inhibitor	Adjusted from PDR estimate based on recent supplier quotes	Adjusted unit cost to FY 08/09 dollars based on actual FY 08/09 CDA costs vs. FY09/10 CDA budget
Flocculant Aid Polymer	Agreement w/PDR estimate for current costs	Adjusted unit costs from PDR estimate based on supplier quotes for FY08/09
Sodium Hypochlorite	Agreement w/PDR estimate for current costs	Adjusted unit cost to FY 08/09 dollars based on actual FY08/09 CDA costs vs. FY09/10 CDA budget
Sodium Hydroxide	Agreement w/PDR estimate for current costs	Adjusted unit cost to FY 08/09 dollars based on actual FY08/09 CDA costs vs. FY09/10 CDA budget
Lime	Agreement w/PDR estimate for current costs	Adjusted unit costs from PDR estimate based on supplier quotes for FY08/09
Sand	Agreement w/PDR estimate for current costs	Adjusted from PDR budget estimate based on sand purchased in October 2008 for RBF's San Pasqual Desalination Demonstration Project
Salt	FY 09/10 Budget	Adjusted unit cost to FY 08/09 dollars based on actual FY 08/09 CDA costs vs. FY09/10 CDA budget
SARI	Agreement w/PDR estimate ($850,000) for credit applied to Concentrate Reduction Facilities O&M accounting for reduced SARI discharge at Chino II	Adjusted value of reduced SARI discharge credit downward to FY 08/09 dollars based on actual FY 08/09 SARI CDA costs vs. FY09/10 CDA budget

Summary tables of the revised itemized additive and deductive cost calculations for the Phase 3 expansion are shown below. The calculations in these tables take into account the modified unit costs for labor, energy and chemicals necessary for FY08/09 adjustment.

Additional Pumping Cost from CCWFA Wells 1-6

Item	Value	Units
Ex. Specific Capacity Wells I-13, I-14 & I-15	92.4	gpm/ft
Projected Specific Capacity CCWFA Wells 1-6	3.6	gpm/ft
Loss in Specific Capacity	88.8	gpm/ft
Projected Flow CCWFA Wells 1-6 (800 gpm x 6 wells)	4800	gpm
Projected Flow CCWFA Wells 1-7	7740	AFY
Avg. Additional Total Lift Required	214	ft
Assumed Wire to Water Efficiency	75%	%
Additional Power Required per well	58	hp
Additional Power Required per well	43	kw
Operating Factor	75%	%
Unit Power Cost	0.090	$/kwh
Annual Additional Pumping Cost	**$152,200**	**$/yr**

Additional Pumping Cost from I-13, I-14 & I-15 Intertie Booster Station

Item	Value	Units
Design Flow	4,800	gpm
Design TDH	200	ft
Assumed Wire to Water Efficiency	75%	%
Additional Power Required	182	hp
Additional Power Required	136	kw
Operating Factor	75%	%
Unit Power Cost	0.090	$/kwh
Annual Additional Pumping Cost	**$80,200**	**$/yr**

Additional Salt Costs at Chino I due to increased Nitrate Concentrations		
Salt Cost (FY08/09)	$497,646	$/yr
Existing Nitrate Conc.[1]	207	mg/l
Projected Phase 3 Nitrate Conc. w/Wells I-13, I-14 & I-15[2] diverted	243	mg/l
Increase in Nitrate Concentration	14.9%	%
Estimated increase in salt usage	14.9%	%
Annual Additional Salt Cost	**$74,100**	**$/yr**

1 Overall Nitrate Concentration based on design production rates from Chino I wells and average Nitrate Values derived from August 2009 Phase 3 PDR

2 Projected Phase 3 Nitrate Concentration includes additional flow at projected nitrate concentrations from CCWFA Wells 1-6

Additional Salt Costs at Chino II due to increased Nitrate Concentrations		
Salt Cost (FY08/09)	$224,582	$/yr
Existing Nitrate Conc.[1]	98.5	mg/l
Projected Phase 3 Nitrate Conc. w/Wells I-13, I-14 & I-15[2] diverted	125.7	mg/l
Increase in Nitrate Concentration	21.6%	%
Estimated increase in salt usage	21.6%	%
Annual Additional Salt Cost	**$48,700**	**$/yr**

1 Overall Nitrate Concentration based on design production rates from Chino II wells and average Nitrate Values derived from August 2009 Phase 3 PDR

2 Projected Phase 3 Nitrate Concentration includes additional flow at average nitrate concentration from Wells I-13, I-14 & I-15

Higher RO Feed Pressure at Chino I due to increased Raw Water TDS Concentrations		
Existing Raw Water TDS Conc.[1]	841	mg/l
Projected Phase 3 TDS Conc. w/Wells I-13, I-14 & I-15[2] diverted	1212	mg/l
Increase in TDS Concentration	30.6%	%
Raw Water Flow to RO	5,960	gpm
Estimated increase required feed pressure	14	ft
RO Feed Pump Overall Efficiency	75%	%
Add'l Power Required	15.8	hp
Add'l Power Required	11.8	kw
Operating Factor	90%	%
Unit Power Cost	$0.090	$/kwh
Annual Additional Power Cost	**$8,400**	**$/yr**

1 Overall TDS concentration based on design production rates from Chino I wells and average Nitrate Values incl. 13, 14, 15 derived from August 2009 Phase 3 PDR

2 Projected Phase 3 TDS concentration assumes I-13, I-14 and I-15 diverted to Chino II and uses projected conc. from CCWFA wells 1-6

Higher RO Feed Pressure at Chino II due to increased Raw Water TDS Concentrations		
Existing Raw Water TDS Conc.[1]	630	mg/l
Projected Phase 3 TDS Conc. w/Wells I-13, I-14 & I-15[2]	680	mg/l
Increase in TDS Concentration	7.4%	%
Phase 3 Raw Water Flow to RO	10,850	gpm
Estimated increase required feed pressure	5	ft
RO Feed Pump Overall Efficiency	75%	%
Add'l Power Required	10.3	hp
Add'l Power Required	7.7	kw
Operating Factor	90%	%
Unit Power Cost	$0.090	$/kwh
Annual Additional Power Cost	**$5,500**	**$/yr**

1 Overall TDS concentration based on design production rates from Chino II wells and average TDS conc. derived from August 2009 Phase 3 PDR

2 Projected Phase 3 TDS Concentration includes additional flow at average TDS conc. from Wells I-13, I-14 & I-15

Concentrate Reduction O&M Cost Estimate

Item, units	Unit Cost (PDR)	Unit Cost (RBF Memo 09/10)	Unit Cost (RBF Memo 08/09 Actual)	Quantity	Annual Cost (PDR)	Total Annual Cost (RBF Memo 09/10)	Total Annual Cost (RBF Memo 08/09 Actual)
Sulfuric Acid, lb H2SO4	$ 0.030	$ 0.045	$ 0.019	1,129,000	$34,000	$50,900	$21,100
Threshold Inhibitor, lb of solution	$ 1.00	$ 1.70	$ 0.95	38,000	$38,000	$64,600	$36,100
Flocculant Aid Polymer, lb of solution	$ 1.00	$ 1.00	$ 0.95	15,000	$15,000	$15,000	$14,300
Sodium Hypochlorite, lb NaHCl	$ 0.050	$ 0.050	$ 0.050	8,000	$1,000	$1,000	$400
Sodium Hydroxide, lb as NaOH	$ 0.180	$ 0.180	$ 0.120	3,718,000	$670,000	$670,000	$446,200
Limelb as Ca(OH)4	$ 0.120	$ 0.120	$ 0.115	6,395,000	$768,000	$768,000	$735,500
Sand, lb	$ 0.018	$ 0.018	$ 0.014	5,770,000	$101,000	$101,000	$80,800
Pellet Disposal Cost, lb	$ 0.015	$ 0.015	$ 0.015	27,886,000	$419,000	$419,000	$418,300
RO CIP	$ 2,000	$ 2,000	$ 2,000	4	$8,000	$8,000	$8,000
Energy, $/kWh	$ 0.125	$ 0.125	$ 0.090	4,680,000	$585,000	$585,000	$421,200
Labor, $/hr	$ 80	$ 80	$ 68.20	4,160	$333,000	$333,000	$283,800
Reserve Fund Contribution, $/yr	$ 200,000	$ 200,000	$ 200,000	1	$200,000	$200,000	$200,000
SARI Credit, $/AF Product Water	$ (35)	$ (35)	$ (26)	24,600	-$850,000	-$850,000	-$646,000
					$2,322,000	**$2,365,500**	**$2,019,700**