

**East Contra Costa County Region  
Proposition 84 Round 2 Grant Proposal**

**ATTACHMENT 4 –  
BUDGET**

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**Summary Proposal Budget**

The total cost of implementing the five high-priority projects, plus grant administration, included within this Proposal is **\$11,570,783**. Of this amount, **\$8,179,537** is Non-State funding, **\$4,800,000** of which is federal contribution. **\$0** is other state funding and **\$3,391,246** is being requested as part of the Proposition 84 Round 2 Implementation Grant Program. The funding match for this proposal is **71%**.

The summary tables on the following pages provide a breakdown of the overall costs for proposal implementation by budget category and project (task), respectively. Detailed cost estimates for each of the projects are provided in the following pages, including the budget table and supporting documentation for these estimates. In accordance with the PSP, the budget items align with the work tasks described in Attachment 3 – Work Plan and Attachment 5 – Schedule.

**Table 4-1: Summary Budget by Budget Category**

<b>Table 7 - Project Budget (from PSP)</b>						
<b>Project Title: East Contra Costa County Region Proposition 84 Round 2 Grant Proposal</b>						
<b>Budget Category</b>		<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>	
		<b>Requested Grant Amount</b>	<b>Cost Share: Non-State Fund Source</b>	<b>Cost Share: Other State Fund Source</b>	<b>Total Cost</b>	<b>% Funding Match</b>
<b>(a)</b>	Direct Project Administration Costs	\$232,674	\$181,766	\$0	\$414,440	44%
<b>(b)</b>	Land Purchase/Easement	\$59,638	\$4,828,912	\$0	\$4,888,550	99%
<b>(c)</b>	Planning/Design/Engineering/ Environmental Documentation	\$441,140	\$414,810	\$0	\$855,950	48%
<b>(d)</b>	Construction/Implementation	\$2,387,982	\$2,468,791	\$0	\$4,586,773	51%
<b>(e)</b>	Environmental Compliance/Mitigation/Enhancement	\$48,338	\$64,720	\$0	\$113,058	57%
<b>(f)</b>	Construction Administration	\$212,862	\$217,000	\$0	\$429,862	50%
<b>(g)</b>	Other Costs	\$8,612	\$3,538	\$0	\$12,150	29%
<b>(h)</b>	Construction/Implementation Contingency	\$0	\$0	\$0	\$0	0%
<b>(i)</b>	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	<b>\$3,391,246</b>	<b>\$8,179,537</b>	<b>\$0</b>	<b>\$11,570,783</b>	<b>71%</b>
<b>Sources of funding:</b> Refer to individual project budget tables for sources of funding.						

Table 4-2: Summary Budget by Project

<b>Table 8 – Summary Budget (from PSP)</b>						
<b>Proposal Title: East Contra Costa County Region Proposition 84 Round 2 Grant Proposal</b>						
		<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>	<b>(e)</b>
	<b>Individual Project Title</b>	<b>Requested Grant Amount</b>	<b>Cost Share: Non-State Fund Source</b>	<b>Cost Share: Other State Fund Source</b>	<b>Total Cost</b>	<b>% Funding Match</b>
<b>(a)</b>	Beacon West Arsenic Well & Tank Replacement Project	\$136,262	\$0	\$0	\$136,262	0%
<b>(b)</b>	Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project	\$430,000	\$917,200	\$0	\$1,347,200	68%
<b>(c)</b>	Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project	\$675,000	\$803,587	\$0	\$1,478,587	54%
<b>(d)</b>	Knightsen Wetland Restoration and Flood Protection Project	\$500,000	\$4,958,750	\$0	\$5,458,750	91%
<b>(e)</b>	Recycled Water Salinity Reduction and Distribution System Expansion Project	\$1,500,000	\$1,500,000	\$0	\$3,000,000	50%
<b>(f)</b>	East Contra Costa County Prop 84 Round 2 Grant Administration	\$149,984	\$0	\$0	\$149,984	0%
<b>(i)</b>	<b>Proposal Total (Sum rows (a) through (h) for each column)</b>	<b>\$3,391,246</b>	<b>\$8,179,537</b>	<b>\$0</b>	<b>\$11,570,783</b>	<b>71%</b>
<b>(j)</b>	<b>DAC Funding Match Waiver Total</b>				<b>\$136,262</b>	<b>0%</b>
<b>(k)</b>	<b>Grand Total</b>	<b>\$3,391,246</b>	<b>\$8,179,537</b>	<b>\$0</b>	<b>\$11,434,521</b>	<b>72%</b>
<b>*List sources of funding:</b> Refer to individual project budget tables for sources of funding.						

## **1 - Beacon West Arsenic Well & Tank Replacement Project**

The table below presents the budget for the Diablo Water District's Beacon West Arsenic Well & Tank Replacement Project. The following pages document the basis for this cost estimate. The project cost developed during completion of the *Diablo Water District Feasibility Study for the Beacon West Arsenic & Tank Replacement Project* (February 2013) is used as the basis for the project budget. The Feasibility Study is included in Appendix 4.1.

**Table 4-3: Beacon West Arsenic Well & Tank Replacement Project (Project 1) Summary Budget**

<b>Project Budget</b>					
		<b>Project Title: Beacon West Arsenic Well &amp; Tank Replacement Project</b>			
		<b>Project serves a need of a DAC? (Yes or No): Yes</b>			
		<b>Funding Match Waiver request? (Yes or No): Yes</b>			
<b>Budget Category</b>		<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>
		<b>Requested Grant Amount</b>	<b>Cost Share: Non-State Fund Source*</b>	<b>Cost Share: Other State Fund Source*</b>	<b>Total Cost</b>
<b>(a)</b>	Direct Project Administration Costs	\$6,750	\$0	\$0	\$6,750
<b>(b)</b>	Land Purchase/Easement	\$0	\$0	\$0	\$0
<b>(c)</b>	Planning/Design/Engineering/ Environmental Documentation	\$16,228	\$0	\$0	\$16,228
<b>(d)</b>	Construction/Implementation	\$107,287	\$0	\$0	\$107,287
<b>(e)</b>	Environmental Compliance/ Mitigation/Enhancement	\$0	\$0	\$0	\$0
<b>(f)</b>	Construction Administration	\$5,997	\$0	\$0	\$5,997
<b>(g)</b>	Other Costs	\$0	\$0	\$0	\$0
<b>(h)</b>	Construction/Implementation Contingency	\$0	\$0	\$0	\$0
<b>(i)</b>	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	<b>\$136,262</b>	<b>\$0</b>	<b>\$0</b>	<b>\$136,262</b>
<b>*List sources of funding: not applicable</b>					

**Row(a) Direct Project Administration Costs**

Project Administration costs for the Beacon West Arsenic Well & Tank Replacement Project, corresponding to Task 1.1 through Task 1.3 of the Work Plan, are estimated to be \$6,750 in 2013 dollars. This assumes administration costs of \$2,724, labor compliance program costs of \$3,000, and reporting costs of \$1,026. The Labor Compliance Program cost is estimated based on experience on previous similar projects. Direct project administration costs total approximately 5 percent of total project costs.

**Task 1.1 Administration Cost**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Gen. Mgr.	\$153	8	\$1,224			\$1,224
Admin Analyst	\$60	25	\$1,500			\$1,500
<b>Total</b>			<b>\$2,724</b>			<b>\$2,724</b>

**Task 1.2 Labor Compliance Program Cost**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
				Labor Compliance Consultant (Lump Sum estimate)	\$3,000	\$3,000
<b>Total</b>					<b>\$3,000</b>	<b>\$3,000</b>

**Task 1.3 Reporting Cost**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Gen. Mgr.	\$153	2	\$306			\$306
Admin Analyst	\$60	12	\$720			\$720
<b>Total</b>			<b>\$1,026</b>			<b>\$1,026</b>

**Row(b) Land Purchase/Easement**

There is no land purchase or easement acquisition associated with the Beacon West Arsenic Well & Tank Replacement Project, and therefore no associated cost.

**Row(c) Planning/Design/Engineering/Environmental Documentation**

This budget line item is estimated to cost \$16,228 and includes \$2,000 for Task 1.4 - Assessment and Evaluation; \$13,228 for Task 1.5 - Final Design; and \$1,000 for Task 1.7 - Permitting. A breakdown of the labor and expense costs associated with each of these tasks is provided below. There are no environmental documentation activities associated with this project (the project is categorically exempt under CEQA).

**Task 1.4 Assessment and Evaluation**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Distribution Worker	\$25	4	\$100	Contract for Lab Analysis (Lump Sum)	\$1,900	\$2,000
<b>Total</b>			<b>\$100</b>		<b>\$1,900</b>	<b>\$2,000</b>

**Task 1.5 Final Design**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
General Mgr	\$153	33	\$5,049			\$5,049
Operations Manager	\$79	61	\$4,819			\$4,819
Admin Analyst	\$60	56	\$3,360			\$3,360
<b>Total</b>			<b>\$13,228</b>			<b>\$13,228</b>

**Task 1.6 Environmental Documentation**

There is no cost for environmental documentation associated with the project. The project is Categorically Exempt under Class 2. A Notice of Exemption was filed with the County Clerk in March 2013.

**Task 1.7 Permitting**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
				Well Permit Lump Sum to County Health Department	\$1,000	\$1,000
<b>Total</b>					<b>\$1,000</b>	<b>\$1,000</b>

**Row(d) Construction/implementation**

Implementation costs for the Beacon West Arsenic Well & Tank Replacement Project are estimated to be \$107,287. This includes \$2,872 for Task 1.8 - Construction Contracting and \$104,415 for Task 1.9 - Construction. A breakdown of the labor and expense costs associated with each of these tasks is provided below.

**Task 1.8 Construction Contracting**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
General Mgr	\$153	4	\$612	Printing Bid documents (Lump Sum)	\$750	\$1,362
Admin Analyst	\$60	12	\$720			\$720
Operations Manager	\$79	10	\$790			\$790
<b>Total</b>			<b>\$2,122</b>		<b>\$750</b>	<b>\$2,872</b>

**Task 1.9 Construction**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
				8" well	\$18,200	\$18,200
				18 gpm Test Pump	\$2,718	\$2,718
				Concrete Slab with raised wellhead	\$1,800	\$1,800
				10 HP, 165 gpm pump	\$12,208	\$12,208
				4" piping to tie-in new well	\$3,732	\$3,732
				Convert old well to monitoring well	\$3,100	\$3,100
				Remove and replace 2 existing 1,500 gal tanks	\$62,657	\$62,657
<b>Total</b>					<b>\$104,415</b>	<b>\$104,415</b>

**Row(e) Environmental Compliance/Mitigation/Enhancement**

There are no costs identified for this budget item. The Beacon West Arsenic Well & Tank Replacement Project is considered categorically exempt under CEQA, and any construction mitigation activities associated with the project have already been accounted for in the construction costs noted for in Task 1.9.

**Row(f) Construction Administration**

Construction administration costs associated with the Beacon West Arsenic Well & Tank Replacement Project, corresponding to Task 1.11 in the Work Plan, are estimated to cost \$5,997.

**Task 1.11 Construction Administration**

Discipline	Labor Costs			Expenses		Total Cost
	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
General Mgr	\$153	10	\$1,530			\$1,530
Mgr of Construction	\$86	20	\$1,720			\$1,720
Inspector	\$67	41	\$2,747			\$2,747
<b>Total</b>			<b>\$5,997</b>			<b>\$5,997</b>

**Row(g) Other Costs**

There are no other costs identified for this project.

**Row(h) Construction/Implementation Contingency**

There are no separate contingency costs identified for this project. Contingency costs are included in the various project costs.

**Row(i) Proposal Total (Sum Rows (a) through (h))**

The total estimated cost of the Beacon West Arsenic Well & Tank Replacement Project is \$136,262. The project will be funded through the following mechanisms:

- \$136,262 in requested grant funding
- \$0 in non-State funding (funding match)
- \$0 in other State funding

**Row (j) DAC Funding Match Waiver Total**

The Beacon West Arsenic Well & Tank Replacement Project is for the benefit of the residents of Beacon West residing on Willow Road West, Bethel Island. This community is located within Census Tract 3010 and also the Census Designated Place of Bethel Island, both of which are considered Disadvantaged Communities (DACs) based on the definition contained in PRC §75005 (g). As such, the Diablo Water District is seeking a funding match waiver for the project.

## **2 - Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project**

The table below presents the budget for the City of Pittsburg’s Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project. The following pages document the basis for this cost estimate.

**Table 4-4: Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project (Project 2) Summary Budget**

<b>Project Budget</b>					
		<b>Project Title: Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project</b>			
		<b>Project serves a need of a DAC? (Yes or No): Yes</b>			
		<b>Funding Match Waiver request? (Yes or No): No</b>			
<b>Budget Category</b>		<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>
		<b>Requested Grant Amount</b>	<b>Cost Share: Non-State Fund Source*</b>	<b>Cost Share: Other State Fund Source*</b>	<b>Total Cost</b>
<b>(a)</b>	Direct Project Administration Costs	\$0	\$20,000	\$0	\$20,000
<b>(b)</b>	Land Purchase/Easement	\$0	\$0	\$0	\$0
<b>(c)</b>	Planning/Design/Engineering/ Environmental Documentation	\$5,000	\$148,200	\$0	\$153,200
<b>(d)</b>	Construction/Implementation	\$425,000	\$699,000	\$0	\$1,124,000
<b>(e)</b>	Environmental Compliance/ Mitigation/Enhancement	\$0	\$0	\$0	\$0
<b>(f)</b>	Construction Administration	\$0	\$50,000	\$0	\$50,000
<b>(g)</b>	Other Costs	\$0	\$0	\$0	\$0
<b>(h)</b>	Construction/Implementation Contingency	\$0	\$0	\$0	\$0
<b>(i)</b>	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	<b>\$430,000</b>	<b>\$917,200</b>	<b>\$0</b>	<b>\$1,347,200</b>
<b>*List sources of funding: City of Pittsburg Water Enterprise Fund and In-kind services</b>					

**Row(a) Direct Project Administration Costs**

Project Administration costs for the Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project corresponding to Task 2.1 through Task 2.3 of the Work Plan, are estimated to be \$20,000 in 2013 dollars. This assumes administration costs of \$10,000, labor compliance program costs of \$5,000, and reporting costs of \$5,000. All of these tasks will be completed by a consultant. Direct project administration costs total approximately 1.5 percent of total project costs.

**Task 2.1 Administration Cost**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
				Consultant project administration services	\$10,000	\$10,000
<b>Total</b>						<b>\$10,000</b>

**Task 2.2 Labor Compliance Program Cost**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
				Labor Compliance (Consultant)	\$5,000	\$5,000
<b>Total</b>						<b>\$5,000</b>

**Task 2.3 Reporting Cost**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
				Reporting and Preparation of the Project Performance Monitoring Plan (Consultant)	\$5,000	\$5,000
<b>Total</b>						<b>\$5,000</b>

**Row(b) Land Purchase/Easement**

Land purchase was completed in 2005 when Contra Costa County transferred property to the City of Pittsburg. No other land purchase acquisition is required and therefore there is no associated cost for the Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project.

**Row(c) Planning/Design/Engineering/Environmental Documentation**

This budget line item is estimated to cost \$153,200 which includes \$151,000 for Task 2.5 - Final Design; \$200 for Task 2.6 – Environmental Documentation, and \$2,000 for Task 2.7 - Permitting. A breakdown of the labor and expense costs associated with each of these tasks is provided below. Assessment and evaluation studies (Task 2.4) have been completed and there are no further assessment and evaluation activities associated with this project. The cost estimate for Task 2.5 is based on the August 24, 2012

Proposal from Luhdorff & Scalmanini Consulting Engineers for Engineering and Construction Services, Rossmoor Well Replacement (Appendix 4.2). The cost included in the Luhdorff & Scalmanini for CEQA was not used as only a Notice of Exemption filed by Pittsburg staff is expected. Costs for design of the monitoring well and pipeline are based on recently completed similar projects.

**Task 2.5 Final Design**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
				Rossmoor Well Design/Specifications (Consultant)	\$136,000	\$136,000
				Monitoring Wells (2), Consultant	\$5,000	\$5,000
				Pipeline, Consultant	\$10,000	\$10,000
<b>Total</b>					<b>\$151,000</b>	<b>\$151,000</b>

**Task 2.6 Environmental Documentation**

There is no environmental documentation associated with the project besides the filing of the Notice of Exemption since the project is categorically exempt.

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Planner	\$100	2	\$200			\$200
<b>Total</b>			<b>\$200</b>			<b>\$200</b>

**Task 2.7 Permitting**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
				California Department of Public Health Permit	\$1,000	\$1,000
				Contra Costa County Health Department Permit	\$1,000	\$1,000
<b>Total</b>			<b>\$0</b>		<b>\$2,000</b>	<b>\$2,000</b>

**Row(d) Construction/implementation**

Implementation costs for the Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project are estimated to be \$1,124,000. This includes \$4,000 for Task 2.8 – Construction Contracting and \$1,120,000 for Task 2.9 - Construction. A breakdown of the labor and expense costs associated with each of these tasks is provided below. Construction cost is based on the bids received for construction of the Bodega Well in the City of Pittsburg, increased to reflect additional work anticipated to be needed for the Rossmoor Well. The bid summary is included in Appendix 4.3.

**Task 2.8 Construction Contracting**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
				Bid phase support (Consultant)	\$4,000	\$4,000
<b>Total</b>						<b>\$4,000</b>

**Task 2.9 Construction**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
				Drilling and installation of two monitoring wells	\$95,000	\$95,000
				Drilling and installation / construction of Rossmoor Well	\$900,000	\$900,000
				Pipeline Construction (1000 feet)	\$125,000	\$125,000
<b>Total</b>					<b>\$1,120,000</b>	<b>\$1,120,000</b>

**Row(e) Environmental Compliance/Mitigation/Enhancement**

There are no costs identified for this budget item. The Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project is considered categorically exempt under CEQA, and any construction mitigation activities associated with the project have already been accounted for in the construction costs noted for Task 2.9.

**Row(f) Construction Administration**

Construction administration costs associated with the Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project, corresponding to Task 2.11 in the Work Plan, are estimated to cost \$50,000.

**Task 2.11 Construction Administration**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
				Consultant fee for inspection, testing and other construction management activities	\$50,000	
<b>Total</b>					<b>\$50,000</b>	<b>\$50,000</b>

**Row(g) Other Costs**

There are no other costs identified for this project.

**Row(h) Construction/Implementation Contingency**

There are no contingency costs identified for this project.

**Row(i) Proposal Total (Sum Rows (a) through (h))**

The total estimated cost of the Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project is \$1,347,200. The project will be funded through the following mechanisms:

- \$430,000 in requested grant funding
- \$917,200 in non-State funding (funding match) from City of Pittsburg's Water Enterprise Fund and in kind-services
- \$0 in other State funding

**Row (j) DAC Funding Match Waiver Total**

The City of Pittsburg is not seeking a funding match waiver for the Rossmoor Well Replacement/Groundwater Monitoring Well System Expansion Project.

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### **3- Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project**

The table below presents the budget for the Contra Costa Water District's (CCWD's) and Contra Costa County Flood Control and Water Conservation District's (FCD's) Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project. The following pages document the basis for this cost estimate. A detailed cost estimate was prepared by FCD in coordination with CCWD. This is included as Appendix 4.4 and was used as the basis for this budget.

**Table 4-5: Integrated Regional Flood Protection and Water Quality Improvement Borrow Area (Project 3) Summary Budget**

<b>Project Budget</b>					
<b>Project Title: Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project</b>					
<b>Project serves a need of a DAC? (Yes or No): Yes</b>					
<b>Funding Match Waiver request? (Yes or No): No</b>					
		<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>
<b>Budget Category</b>		<b>Requested Grant Amount</b>	<b>Cost Share: Non State Fund Source*</b>	<b>Cost Share: Other State Fund Source*</b>	<b>Total Cost</b>
<b>(a)</b>	Direct Project Administration Costs	\$0	\$13,006	\$0	\$13,006
<b>(b)</b>	Land Purchase/Easement	\$0	\$0	\$0	\$0
<b>(c)</b>	Planning/Design/Engineering/ Environmental Documentation	\$5,762	\$13,510	\$0	\$19,272
<b>(d)</b>	Construction/Implementation	\$657,170	\$767,216	\$0	\$1,424,386
<b>(e)</b>	Environmental Compliance/ Mitigation/Enhancement	\$3,203	\$9,855	\$0	\$13,058
<b>(f)</b>	Construction Administration	\$8,865	\$0	\$0	\$8,865
<b>(g)</b>	Other Costs	\$0	\$0	\$0	\$0
<b>(h)</b>	Construction/Implementation Contingency	\$0	\$0	\$0	\$0
<b>(i)</b>	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	<b>\$675,000</b>	<b>\$803,587</b>	<b>\$0</b>	<b>\$1,478,587</b>
<b>*List sources of funding:</b> <i>Contra Costa County Flood Control and Water Conservation District, Flood Control Zone 1 and Drainage Area 130. In-kind services.</i>					

**Row(a) Direct Project Administration Costs**

Project Administration costs for the Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project corresponding to Task 3.1 through Task 3.3 of the Work Plan, are estimated to be \$13,006 in 2013 dollars. Task 3.1 is estimated to cost \$10,102, Task 3.2 is estimated to cost \$1,920 and Task 3.3 is estimated to cost \$984. Direct project administration costs total approximately 1 percent of total project costs.

**Task 3.1 Project Administration**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total (rounded)	Expense Item	Cost	
Senior Engineer	\$213.05	30	\$6,392			\$6,392
Assoc. Engineer	\$187.03	5	\$935			\$935
Eng. Technician	\$115.65	24	\$2,776			\$2,776
<b>Total</b>			<b>\$10,102</b>			<b>\$10,102</b>

**Task 3.2 Labor Compliance Program Cost**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Assoc. Engineer	\$120	16	\$1,920			\$1,920
<b>Total</b>			<b>\$1,920</b>			<b>\$1,920</b>

**Task 3.3 Reporting Cost**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Grant Specialist	\$123	8	\$984			
<b>Total</b>			<b>\$984</b>			<b>\$984</b>

**Row(b) Land Purchase/Easement**

There is no easement cost associated with the Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project.

**Row(c) Planning/Design/Engineering/Environmental Documentation**

This budget line item is estimated to cost \$19,272 and includes \$1,065 for Task 3.4 – Assessment and Evaluation, \$11,966 for Task 3.5 - Final Design; and \$6,241 for Task 3.7 - Permitting. A breakdown of the labor and expense costs associated with each of these tasks is provided below. Assessment and evaluation studies have been completed for the exception of the review of the USCB and Contra Costa Canal information to ensure project plans meet the intended objectives.

**Task 3.4 Assessment and Evaluation**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total (rounded)	Expense Item	Cost	
Senior Engineer	\$213.05	5	\$1,065			\$1,065
<b>Total</b>			<b>\$1,065</b>			<b>\$1,065</b>

**Task 3.5 Final Design**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total (rounded)	Expense Item	Cost	
Senior Engineer	\$213.05	15	\$3,196			\$3,196
Assoc. Engineer	\$187.03	5	\$935			\$935
Eng. Technician	\$115.65	50	\$5,783			\$5,783
Senior Engineer	\$205.22	10	\$2,052			\$2,052
<b>Total</b>			<b>\$11,966</b>			<b>\$11,966</b>

**Task 3.6 Environmental Documentation**

CCWD will have prepared all of the necessary environmental documentation for the hauling of fill to Segment 2 of the Canal Levee Elimination and Flood Protection project as part of its process to support construction of Segment 2. No additional costs are expected to be charged for this grant. CCWD CEQA Addendum 3 addresses potential impacts from hauling fill from the borrow area to the Canal. CCWD's 2006 CEQA IS/MND was approved by CCWD Board in November 2006. There are no work items associated with this work plan and therefore no associated costs.

**Task 3.7 Permitting**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total (rounded)	Expense Item	Cost	
Senior Planner	\$205.22	10	\$2,052			\$2,052
Planner	\$139.63	30	\$4,189			\$4,189
<b>Total</b>			<b>\$6,241</b>		<b>\$0</b>	<b>\$6,241</b>

**Row(d) Construction/implementation**

Implementation costs for Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project are estimated to be \$1,424,386. This includes \$3,870 for Task 3.8 - Construction Contracting, and \$1,420,516 for Task 3.9 - Construction. A breakdown of the labor and expense costs associated with each of these tasks is provided below.

**Task 3.8 Construction Contracting**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Assoc. Engineer	120	24	\$2,880			\$2,880
Clerical	99	10	\$990			\$990
<b>Total</b>			<b>\$3,870</b>			<b>\$3,870</b>

**Task 3.9 Construction**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total (rounded)	Expense Item	Cost	
<b>Mobilization</b>				<b>Mobilization (Lump Sum)</b>	\$20,000	\$20,000
<b>Construction</b>						
Stockpile Material					\$225,000	\$225,000
Traffic Control					\$8,000	\$8,000
SWPPP					\$5,000	\$5,000
Excavate/Transport/Place Fill					\$1,125,000	\$1,125,000
Hydroseed Borrow Site					\$20,000	\$20,000
Contractor Surveying					\$15,000	\$15,000
<b>Project Close-out</b>						
Clerical	\$92.76	5	\$464			\$464
Senior Engineer	\$205.22	10	\$2,052			\$2,052
<b>Total</b>			<b>\$2,516</b>		<b>\$1,418,000</b>	<b>\$1,420,516</b>

**Row(e) Environmental Compliance/Mitigation/Enhancement**

Environmental compliance/mitigation/enhancement costs associated with the Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project total \$13,058.

**Task 3.10 Environmental Compliance/Mitigation/Enhancement**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Senior Planner	\$205.22	7	\$1,437			\$1,437
Planner	\$139.63	50	\$6,982			\$6,982
Senior Engineer	\$235	4	\$940			\$940
Assoc. Engineer	\$185	20	\$3,700			\$3,700
<b>Total</b>			<b>\$13,058</b>			<b>\$13,058</b>

**Row(f) Construction Administration**

Construction administration costs associated with the Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project, corresponding to Task 3.11 in the Work Plan, are estimated to cost \$8,865.

**Task 3.11 Construction Administration**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Surveyor	\$170	5	\$340			\$340
Survey Technician	\$125	2	\$625			\$625
Survey Crew	\$310	10	\$3,100			\$3,100
Eng. Technician	\$120	40	\$4,800			\$4,800
<b>Total</b>			<b>\$8,865</b>			<b>\$8,865</b>

**Row(g) Other Costs**

There are no other costs identified for this project.

**Row(h) Construction/Implementation Contingency**

There are no contingency costs identified for this project.

**Row (i) Proposal Total (Sum Rows (a) through (h))**

The total estimated cost of the Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project is \$1,478,587. The project will be funded through the following mechanisms:

- \$675,000 in requested grant funding
- \$258,468 in non-State funding (funding match) from CCFCD
- \$545,120 in non-State funding (funding match) from CCWD additional cost share for hauling of fill
- \$0 in other State funding

**Row (j) DAC Funding Match Waiver Total**

The Contra Costa County Flood Control and Water Conservation is not seeking a funding match waiver for the Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project. The Grand Total for the project is \$1,478,587.

#### 4- Knightsen Wetland Restoration and Flood Protection Project

The table below presents the budget for the East Contra Costa County Habitat Conservancy’s Knightsen Wetland Restoration and Flood Protection Project. The following pages document the basis for this cost estimate.

**Table 4-6: Knightsen Wetland Restoration and Flood Protection Project (Project 4) Summary Budget**

Project Title: <b>Knightsen Wetland Restoration and Flood Protection</b> Project serves a need of a DAC? (Yes or No): <b>No</b> Funding Match Waiver request? (Yes or No): <b>No</b>					
Budget Category		(a)	(b)	(c)	(d)
		Requested Grant Amount	Cost Share: Non State Fund Source	Cost Share: Other State Fund Source	Total Cost
<b>(a)</b>	Direct Project Administration Costs	\$40,000	\$5,000	\$0	\$45,000
<b>(b)</b>	Land Purchase/Easement	\$50,000	\$4,800,000	\$0	\$4,850,000
<b>(c)</b>	Planning/Design/Engineering/ Environmental Documentation	\$200,000	\$68,750	\$0	\$268,750
<b>(d)</b>	Construction/Implementation	\$210,000	\$80,000	\$0	\$290,000
<b>(e)</b>	Environmental Compliance/ Mitigation/Enhancement	\$0	\$0	\$0	\$0
<b>(f)</b>	Construction Administration	\$0	\$5,000	\$0	\$5,000
<b>(g)</b>	Other Costs / Permits	\$0	\$0	\$0	\$0
<b>(h)</b>	Construction/Implementation Contingency	\$0	\$0	\$0	\$0
<b>(i)</b>	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	<b>\$500,000</b>	<b>\$4,958,750</b>	<b>\$0</b>	<b>\$5,458,750</b>
*US Fish and Wildlife ESA Section six funding (secured), East Bay Regional Park District Measure WW local funds, other local assistance grants and contributions anticipated or currently under negotiation.					

**Row(a) Direct Project Administration Costs**

Project Administration costs for the Knightsen Wetland Restoration and Flood Protection Project corresponding to Task 4.1 through Task 4.3 of the Work Plan, are estimated to be \$45,000 in 2013 dollars. They include \$1,250 for Project Administration, \$40,000 for contracting the Labor Compliance Program and \$3,750 for reporting activities.

**Task 4.1 Project Administration**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Planner	\$125	10	\$1,250			\$1,250
<b>Total</b>			<b>\$1,250</b>			<b>\$1,250</b>

**Task 4.2 Labor Compliance Program Cost**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
				Labor Compliance Program - contractor	\$40,000	\$40,000
<b>Total</b>						<b>\$40,000</b>

**Task 4.3 Reporting Cost**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Planner	\$125	30	\$3,750			
<b>Total</b>			<b>\$3,750</b>			<b>\$3,750</b>

**Row(b) Land Purchase/Easement**

The land acquisition costs associated with the Knightsen Wetland Restoration and Flood Protection Project are estimated to be \$4,850,000.

**Land Purchase/Easement**

Labor Costs				Expenses		Total Cost (rounded)
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
				Land Acquisition	\$4,850,000	\$4,850,000
<b>Total</b>					<b>\$4,850,000</b>	<b>\$4,850,000</b>

**Row(c) Planning/Design/Engineering/Environmental Documentation**

This budget line item is estimated to cost \$268,750 and includes \$200,000 for Task 4.5 - Final Design; \$18,750 for Task 4.6 Environmental Documentation; and \$50,000 for Task 4.7 - Permitting. A breakdown of the labor and expense costs associated with each of these tasks is provided below. Assessment and evaluation studies have been completed and no further Task 4.4 activities are included as part of this project.

**Task 4.5 Final Design**

Labor Costs				Expenses		Total Cost (rounded)
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Ecologist	\$180	400	\$72,000			\$72,000
Landscape Arch.	\$170	400	\$68,000			\$68,000
Engineer	\$200	300	\$60,000			\$60,000
<b>Total</b>			<b>\$200,000</b>			<b>\$200,000</b>

**Task 4.6 Environmental Documentation**

This task covers the development of a Mitigated Negative Declaration for the project and totals \$18,750.

**Task 4.6 Environmental Documentation**

Labor Costs				Expenses		Total Cost (rounded)
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Planner	\$125	150	\$18,750			\$18,750
<b>Total</b>			<b>\$18,750</b>			<b>\$18,750</b>

**Task 4.7 Permitting**

Labor Costs				Expenses		Total Cost (rounded)
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Ecologist	\$180	125	\$22,500			\$22,500
Planner	\$125	220	\$27,500			\$27,500
<b>Total</b>			<b>\$50,000</b>			<b>\$50,000</b>

**Row(d) Construction/implementation**

Implementation costs for the Knightsen Wetland Restoration and Flood Protection Project are estimated to be \$290,000. Task 4.8 totals \$10,000 and Task 4.9 total \$280,000. A breakdown of the labor and expense costs associated with the construction task is provided below.

**Task 4.8 Construction Contracting**

Labor Costs				Expenses		Total Cost (rounded)
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Construction Admin	\$100	100	\$10,000			\$10,000
<b>Total</b>			<b>\$10,000</b>			<b>\$10,000</b>

**Task 4.9 Construction**

Labor Costs				Expenses		Total Cost (rounded)
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Revegetation Seeding –	\$40	150	\$6,000	Seeds, mulch, tackifier	\$34,000	\$40,000

native wetland and alkali grassland seed						
Revegetation - Plugs	\$40	250	\$10,000	Native plant plugs for area	\$30,000	\$40,000
Earthwork Crew	\$80	2,250	\$180,000	BMP materials (waddles, hay bales)	\$20,000	\$200,000
<b>Total</b>			<b>\$196,000</b>		<b>\$84,000</b>	<b>\$280,000</b>

**Row(e) Environmental Compliance/Mitigation/Enhancement**

The Knightsen Wetland Restoration and Flood Protection Project being a restoration project, there are no associated environmental compliance/mitigation/enhancement costs.

**Row(f) Construction Administration**

Construction administration costs associated with the Knightsen Wetland Restoration and Flood Protection Project corresponding to Task 4.11 in the Work Plan are estimated to cost \$5,000.

**Task 4.11 Construction Administration**

Labor Costs				Expenses		Total Cost (rounded)
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Accounting Administrator	\$100	50	\$5,000			\$5,000
<b>Total</b>			<b>\$5,000</b>			<b>\$5,000</b>

**Row(g) Other Costs**

There are no other costs identified for this project.

**Row(h) Construction/Implementation Contingency**

There are no contingency costs identified for this project.

**Row(i) Proposal Total (Sum Rows (a) through (h))**

The total estimated cost of the Knightsen Wetland Restoration and Flood Protection Project is \$5,458,750. The project will be funded through the following mechanisms:

- \$500,000 in requested grant funding
- \$4,958,750 in non-State funding (funding match) US Fish and Wildlife ESA Section six funding (secured), East Bay Regional Park District Measure WW local funds, and other contributions currently under negotiation
- \$0 in other State funding

***Row (j) DAC Funding Match Waiver Total***

The East Contra Costa Conservancy is not seeking a funding match waiver for Knightsen Wetland Restoration and Flood Protection Project. The Grand Total for the project is the same as the Proposal Total of \$5,846,250.

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## 5 - Recycled Water Salinity Reduction and Distribution System Expansion Project

The table below presents the budget for Delta Diablo Sanitation District’s Recycled Water Salinity Reduction and Distribution System Expansion Project. The following pages document the basis for this cost estimate.

**Table 4-7: Recycled Water Salinity Reduction and Distribution System Expansion Project (Project 5) Summary Budget**

<b>Project Budget</b>					
		<b>Project Title: Recycled Water Salinity Reduction and Distribution System Expansion Project</b>			
		<b>Project serves a need of a DAC? (Yes or No): Yes</b>			
		<b>Funding Match Waiver request? (Yes or No): No</b>			
		(a)	(b)	(c)	(d)
Budget Category		Requested Grant Amount	Cost Share: Non State Fund Source*	Cost Share: Other State Fund Source*	Total Cost
(a)	Direct Project Administration Costs	\$35,940	\$143,760	\$0	\$179,700
(b)	Land Purchase/Easement	\$9,638	\$28,912	\$0	\$38,550
(c)	Planning/Design/Engineering/ Environmental Documentation	\$214,150	\$184,350	\$0	\$398,500
(d)	Construction/Implementation	\$988,525	\$922,575	\$0	\$1,911,100
(e)	Environmental Compliance/ Mitigation/Enhancement	\$45,135	\$54,865	\$0	\$100,000
(f)	Construction Administration	\$198,000	\$162,000	\$0	\$360,000
(g)	Other Costs	\$8,612	\$3,538	\$0	\$12,150
(h)	Construction/Implementation Contingency	\$0	\$0	\$0	\$0
(i)	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	<b>\$1,500,000</b>	<b>\$1,500,000</b>	<b>\$0</b>	<b>\$3,000,000</b>
<b>*List sources of funding: <i>In-kind services and local funds</i></b>					

**Row(a) Direct Project Administration Costs**

Project Administration costs for the Recycled Water Salinity Reduction and Distribution System Expansion Project corresponding to Task 5.1 through Task 5.3 of the Work Plan, are estimated to be \$179,700 in 2013 dollars. They include \$88,200 for administration, \$60,000 for labor compliance, and \$31,500 for reporting activities.

**Task 5.1 Administration**

Labor Costs				Expenses		Total Cost)
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Engineering Staff	\$180	490	\$88,200			\$88,200
<b>Total</b>			<b>\$88,200</b>			<b>\$88,200</b>

**Task 5.2 labor Compliance**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Consultant					\$60,000	\$60,000
<b>Total</b>					<b>\$60,000</b>	<b>\$60,000</b>

**Task 5.3 Reporting**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Engineering Staff	\$180	175	\$31,500			\$31,500
<b>Total</b>			<b>\$31,500</b>		<b>\$0</b>	<b>\$31,500</b>

**Row(b) Land Purchase/Easement**

This line item is for an easement with one of the railroad companies to install the new pipeline to re-direct Dow Chemical Company TDS stream to the District Treatment Plant. The costs to acquire the additional easement include District legal counsel and District staff labor cost and easement fees.

**Land Purchase/Easement**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Easement Acquisition					\$38,550	\$38,550
<b>Total</b>					<b>\$38,550</b>	<b>\$38,550</b>

**Row(c) Planning/Design/Engineering/Environmental Documentation**

This budget line item is estimated to cost \$398,500 and includes \$120,200 for Task 5.4 -Assessment and Evaluation, \$193,500 for Task 5.5 - Final Design; \$72,000 for Task 5.6 Environmental Documentation; and \$12,800 for Task 5.7 - Permitting. A breakdown of the labor and expense costs associated with each of these tasks is provided below.

**Task 5.4 Assessment and Evaluation**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Feasibility Study				Consultant	\$117,000	\$117,000
Development of Financing Principal Engineer	\$200	15	\$3,000			\$3,000
<b>Total</b>			<b>\$3,200</b>		<b>\$117,000</b>	<b>\$120,200</b>

**Task 5.5 Final Design**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Preliminary Design				Consultant	\$54,000	\$54,000
50% Design				Consultant	\$49,500	\$49,500
90% Design				Consultant	\$45,000	\$45,000
Final Design				Consultant	\$45,000	\$45,000
<b>Total</b>					<b>\$193,500</b>	<b>\$193,500</b>

**Task 5.6 Environmental Documentation**

This task covers the development of a Mitigated Negative Declaration for the project and totals \$72,000.

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Mitigated Negative Declaration				Consultant	\$72,000	
<b>Total</b>					<b>\$72,000</b>	<b>\$72,000</b>

**Task 5.7 Permitting**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Project Manager	\$160	80	\$12,800			\$12,800
<b>Total</b>			<b>\$12,800</b>		<b>\$0</b>	<b>\$12,800</b>

**Row(d) Construction/implementation**

Implementation costs for the Recycled Water Salinity Reduction and Distribution System Expansion Project are estimated to be \$1,911,100. A breakdown of the labor and expense costs associated with the construction task is provided below.

**Task 5.8 Construction Contracting**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Preparation of Bid Package				Consultant	\$30,600	\$30,600
<b>Total</b>					<b>\$30,600</b>	<b>\$30,600</b>

**Task 5.9 Construction**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
<b>Mobilization</b>						
Site Preparation Laborer	\$75	2640	\$198,000	Cranes-Trucks	\$70,000	\$268,000
<b>Construction</b>						
Pipeline Installation	\$75	4160	\$312,000	Pipe	\$552,000	\$864,000
Pipeline Installation Equipment				Cranes/Trucks	\$390,000	\$390,000
Site Retrofit / Fitting Installation	\$75	2640	\$198,000	Fittings	\$45,000	\$243,000
<b>Demobilization</b>						
Performance Testing	\$75	560	\$42,000		\$17,500	\$59,500
Demobilization	\$75	560	\$42,000	Trucks	\$14,000	\$56,000
<b>Total</b>			<b>\$792,000</b>		<b>\$1,088,500</b>	<b>\$1,880,500</b>

**Row(e) Environmental Compliance/Mitigation/Enhancement**

Mitigation costs associated with the Recycled Water Salinity Reduction and Distribution System Expansion Project corresponding to Task 5.10 in the Work Plan are estimated to cost \$100,000.

**Task 5.10 Environmental Compliance/Mitigation/Enhancement**

Labor Costs				Expenses		Total Cost
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Environmental Mitigation				Consultant	\$100,000	\$100,000
<b>Total</b>					<b>\$100,000</b>	<b>\$100,000</b>

**Row(f) Construction Administration**

Construction administration costs associated with the Recycled Water Salinity Reduction and Distribution System Expansion Project corresponding to Task 5.11 in the Work Plan are estimated to cost \$360,000.

**Task 5.11 Construction Administration**

Labor Costs				Expenses		Total Cost
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Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Construction Management				Consultant	\$360,000	\$360,000
<b>Total</b>					<b>\$360,000</b>	<b>\$360,000</b>

**Row(g) Other Costs**

Other costs identified for this project include \$12,150 for legal fees.

**Row(h) Construction/Implementation Contingency**

No contingency costs are included for this project budget.

**Row(i) Proposal Total (Sum Rows (a) through (h))**

The total estimated cost of the Integrated Recycled Water Salinity Reduction and Distribution System Expansion Project is \$3,000,000. The project will be funded through the following mechanisms:

- \$1,500,000 in requested grant funding
- \$1,500,000 in non-State funding (funding match)
- \$0 in other State funding

**Row (j) DAC Funding Match Waiver Total**

Delta Diablo Sanitation District is not seeking a funding match waiver for the Recycled Water Salinity Reduction and Distribution System Expansion Project.

**6 – East Contra Costa County Prop 84 Round 2 Grant Administration**

The table below presents the budget for Contra Costa Water District’s East Contra Costa Prop 84 Round 2 Grant Administration project. The following pages document the basis for this cost estimate.

**Table 4-8: East Contra Costa County Prop 84 Round 2 Grant Administration Project (Project 5) Summary Budget**

<b>Project Budget</b>					
		<b>Project Title: East Contra Costa County Prop 84 Round 2 Grant Administration</b>			
		<b>Project serves a need of a DAC? (Yes or No): No</b>			
		<b>Funding Match Waiver request? (Yes or No): No</b>			
		<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>
<b>Budget Category</b>		<b>Requested Grant Amount</b>	<b>Cost Share: Non State Fund Source*</b>	<b>Cost Share: Other State Fund Source*</b>	<b>Total Cost</b>
<b>(a)</b>	Direct Project Administration Costs	\$149,984	\$0	\$0	\$149,984
<b>(b)</b>	Land Purchase/Easement	\$0	\$0	\$0	\$0
<b>(c)</b>	Planning/Design/Engineering/ Environmental Documentation	\$0	\$0	\$0	\$0
<b>(d)</b>	Construction/Implementation	\$0	\$0	\$0	\$0
<b>(e)</b>	Environmental Compliance/ Mitigation/Enhancement	\$0	\$0	\$0	\$0
<b>(f)</b>	Construction Administration	\$0	\$0	\$0	\$0
<b>(g)</b>	Other Costs	\$0	\$0	\$0	\$0
<b>(h)</b>	Construction/Implementation Contingency	\$0	\$0	\$0	\$0
<b>(i)</b>	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	\$149,984	<b>\$0</b>	<b>\$0</b>	\$149,984
<b>*List sources of funding: Not applicable</b>					

**Row(a) Direct Project Administration Costs**

Budget category (a) for the East Contra Costa County Prop 84 Round 2 Grant Administration involves general administration and coordination activities associated with all of the projects included in this proposal.

CCWD will be responsible for managing and distributing awarded grant funds to the project proponents (DWD, City of Pittsburg, FCD, the Conservancy, and DDS). Grant funding awarded by DWR for the projects in this proposal will be direct to the proponents by an agreement between CCWD and the proponent. A grant agreement between CCWD and DWR will be executed. General project administration tasks such as project start-up, kickoff and progress meetings or conference calls, general coordination, compilation and submittal of invoices and reimbursement requests, budget tracking, and communications between CCWD and project proponents will also be completed in Task 6.1.

**Task 6.1 Administration**

Labor Costs				Expenses		Total Cost (rounded)
Discipline	Rate (\$/hr)	Hours	Total	Expense Item	Cost	
Planner	\$56.47	2,656	\$149,984. 32			\$149,984
<b>Total</b>			\$149,984. 32			\$149,984

There are no costs associated with any other tasks or budget categories for this project.

**Appendix 4.1: Beacon West Arsenic during completion of the  
Diablo Water District Feasibility Study for the Beacon West  
Arsenic & Tank Replacement Project (February 2013)**

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**Diablo Water District  
Feasibility Study  
Beacon West  
Arsenic Well & Tank Replacement  
Project**

**Project Manager:**

Mike Yeraka, General Manager  
Diablo Water District  
P. O. Box 127  
2107 Main Street  
Oakley, CA 94561

E-mail: [Mikegm1@aol.com](mailto:Mikegm1@aol.com)

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Diablo Water District  
P. O. Box 127  
2107 Main Street  
Oakley, CA 94561

**February, 2013**

**Diablo Water District**  
**Feasibility Study**  
**Beacon West Arsenic Well & Tank Replacement Project**  
**February, 2013**

Background:

The community known as Beacon West, at the end of Bethel Island Road, on Bethel Island, is supplied with drinking water from a well, operated and maintained by Diablo Water District (DWD or District) and has Arsenic levels ranging between 0.029 and 0.032 milligrams per liter (mg/l). On November 15, 2008, the California Department of Public Health (CDPH) revised the California Arsenic Standard Maximum Contaminant Level (MCL) from 0.050 mg/l to 0.010 mg/l. On September 4, 2009, the Contra Costa Environmental Health Department (County Health) issued Compliance Order No. 002-09 to the Beacon West water system for noncompliance with the Arsenic MCL and ordered the system to meet the new Arsenic standards.

The residents of Beacon West reside on Willow Road West is a community located within Census Tract 3010 and also the Census Designated Place of Bethel Island, both of which are considered Disadvantaged Communities (DACs) based on the definition contained in PRC §75005 (g), based on 2010 data from Contra Costa County as noted in green on Attachment 1. The 21 residences pay \$1,018 per year for water service and generate approximately \$21,026 in revenue that is used to pay for the operation and maintenance (O&M) of the water system, which varies from \$14,000 to \$31,000 per year. The system therefore does not have the revenue base to support the installation and additional O&M costs of an Arsenic treatment system. Additionally, the two 1,500 gallon hydro-pneumatic pressure tanks that provide storage and pressure for the water system are in jeopardy of failing due to crumbling footings, corrosion, and pin holes that have been repaired by welding as noted in Attachment 2.

Resolving the Arsenic Problem:

In 1999, the District participated in an Investigation of Ground-Water Resources in the East Contra Costa Area. Attachment 3 is an excerpt from the 1999 investigation which shows in cross section C - C' the geologic relationship between the Beacon West well 10E and Well 3N (also known as the Bob Butler well) located approximately 1,500'

Beacon West  
Arsenic Well & Tank Replacement Project  
Feasibility Study

away. The Beacon West well 10E draws water from the aquifer located at approximately 250' below ground surface (bgs). This is the aquifer zone that has the high Arsenic levels. As can be seen in cross section C - C', the aquifer at elevation 170' bgs for well 3N is continuous with the same 170' bgs location at the Beacon West well 10E. The Well Drillers Reports for both of these wells are included with Attachment 3. In May of 2011, the District sampled well 3N and the lab results came back as non detect for Arsenic in the two samples taken, as noted in Attachment 4. Given that the water in the non Arsenic bearing 170' bgs aquifer is continuous between the two well locations, the District believes that completing a new well 170' bgs in the vicinity of Beacon West into the same aquifer as the 3N well will yield water with Arsenic levels that are non detect or at a minimum below the MCL.

The District prepared a plot plan for the location of the new well targeting the 170' bgs aquifer and after reviewing this information with County Health, they issued a Variance permit approving the installation of the new well, as noted in Attachment 5. The District's contractor will still need to secure a well drilling permit, but that will occur just prior to construction.

Course of Construction:

After preparing a bid package that will include installation of the new 8" well, a pump, electrical cabling to existing switch gear, connecting piping and the new hydro pneumatic tanks the District would award a contract for the project to the lowest responsive responsible bidder. After award of a contract the contractor would mobilize to the site and install the well after completing a test hole to confirm the aquifer location and the screen size. Once the well is developed the District will take water quality samples to confirm that the water will meet County Health requirements. After receiving the approval of County Health, the District will then proceed with completing the project.

Estimate of Cost:

The District secured an estimate for construction of all the facilities from a local well driller in the amount of \$104,400 as noted in Attachment 6. This amount includes approximately 10% in contingencies. The District's total cost estimate for the project is as noted in Table 1.

TABLE 1

<u>Category</u>	<u>Cost</u>
Administration	\$2,724
Labor Compliance	\$3,000
Reporting	\$1,026
Land Purchase Easement (Same Site)	\$0
Assessment & Evaluation	\$2,000
Final Design	\$13,228
Environmental Documentation (Completed prior to 9/2013)	\$0
Permitting	\$1,000
Construction Contracting	\$2,872
Construction with 10% Contingency	\$104,415
Construction Administration	\$5,997
Total	\$136,262

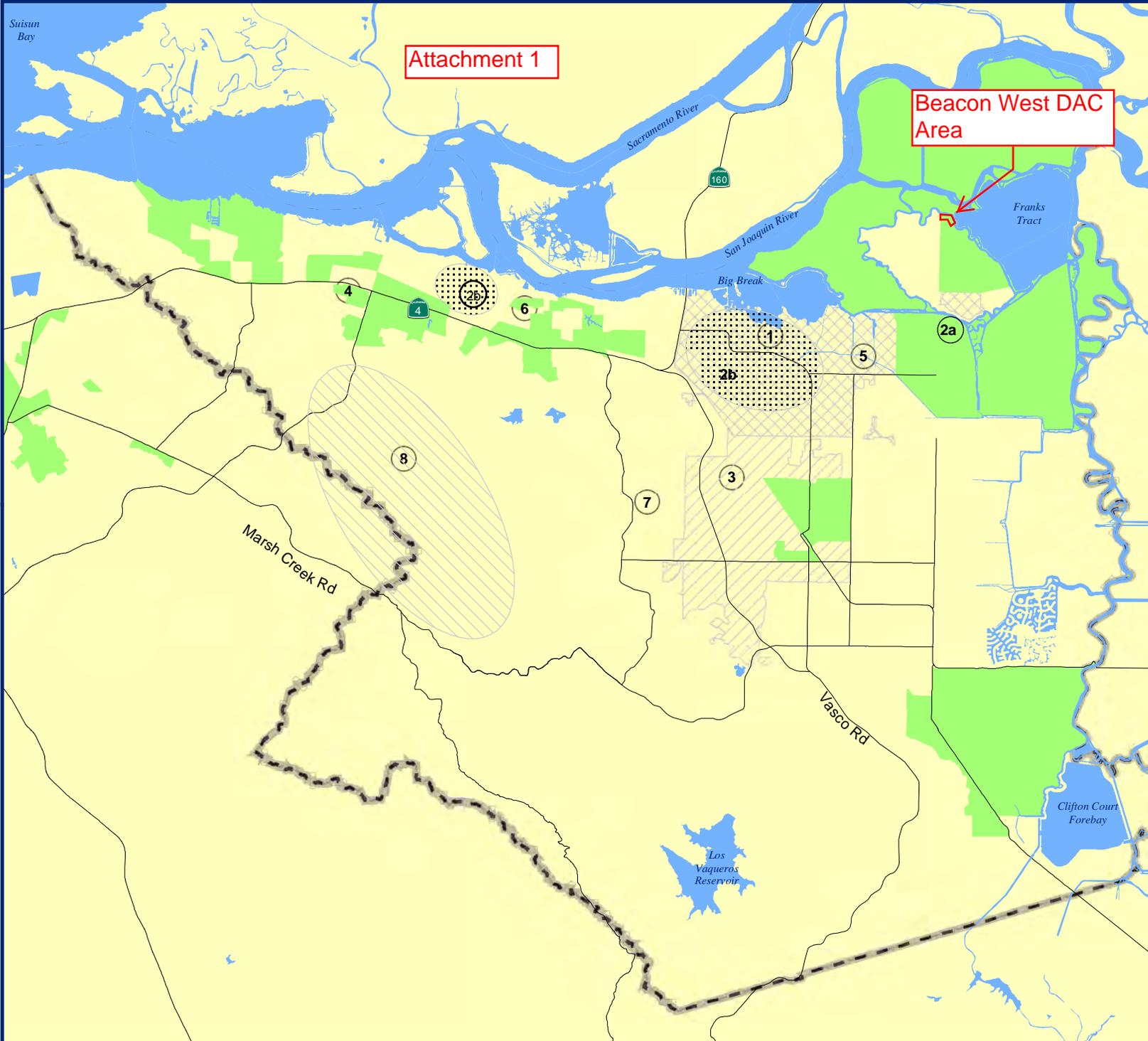
Alternatives to Constructing a New Well:

The District performed a pilot study in 2009 utilizing an Isolux FX0030 treatment module system. The capital cost of the system would be \$73,200 plus the cost of installation. The O&M costs were calculated to be \$45,000 per year, as noted in Attachment 7. These costs are excessive given the water system only generates \$21,000 per year in revenue. The District also looked at utilizing an Adedge treatment system, but that option had a capital cost of \$130,000 and annual O&M costs of \$2,800 as noted in Attachment 8. The only problem with the Adedge system is that there is no place to dispose of the backwash water, and trucking it away would be cost prohibitive.

CEQA Compliance:

The State CEQA Guidelines provide a series of categorical exemptions for projects that have been deemed to have minimal impacts on the environment. The proposed project involves replacing existing facilities in the same right-of-way and will have the same capacity and has been determined to have no potential to cause adverse effects on the environment. Categorical Exemption Class 2 provides an exemption from CEQA for relocation of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced.

# East County Projects Proposed for Funding and East County Disadvantaged Communities - Census Block Groups (2010 data)



Attachment 1

Beacon West DAC Area

- East CCC IRWMP Boundary
- Major Roads

Disadvantaged Communities (Census 2010)

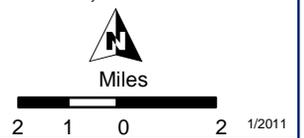
- Block Group
- Census Tract

Proposed Projects\*

- East County Water Conservation Program
- DWD HET Rebate Program
- DWD Leak Detection Locations
- Brentwood Water Conservation Measures
- East County Water Meter Installation Program
- DWD Water Meters
- CCWD Water Meters
- Brentwood Nonpotable Water Distribution System
- Pittsburg Recycled Water Pipeline Rehabilitation
- Phase 2 Contra Costa Canal Levee Elimination and Flood Protection Project
- Drainage Area 55 - West Antioch Creek Channel Improvements
- Upper Sand Creek Basin Project
- Watershed Protection and Restoration \*\*

\* Approximate location of project is represented. Where an area is indicated, the project will occur within the area - but may not cover the entire area.

\*\* Acquisition and Restoration will only occur within the IRWMP Boundary



Attachment 2











***Investigation of Ground-Water Resources  
in the East Contra Costa Area***

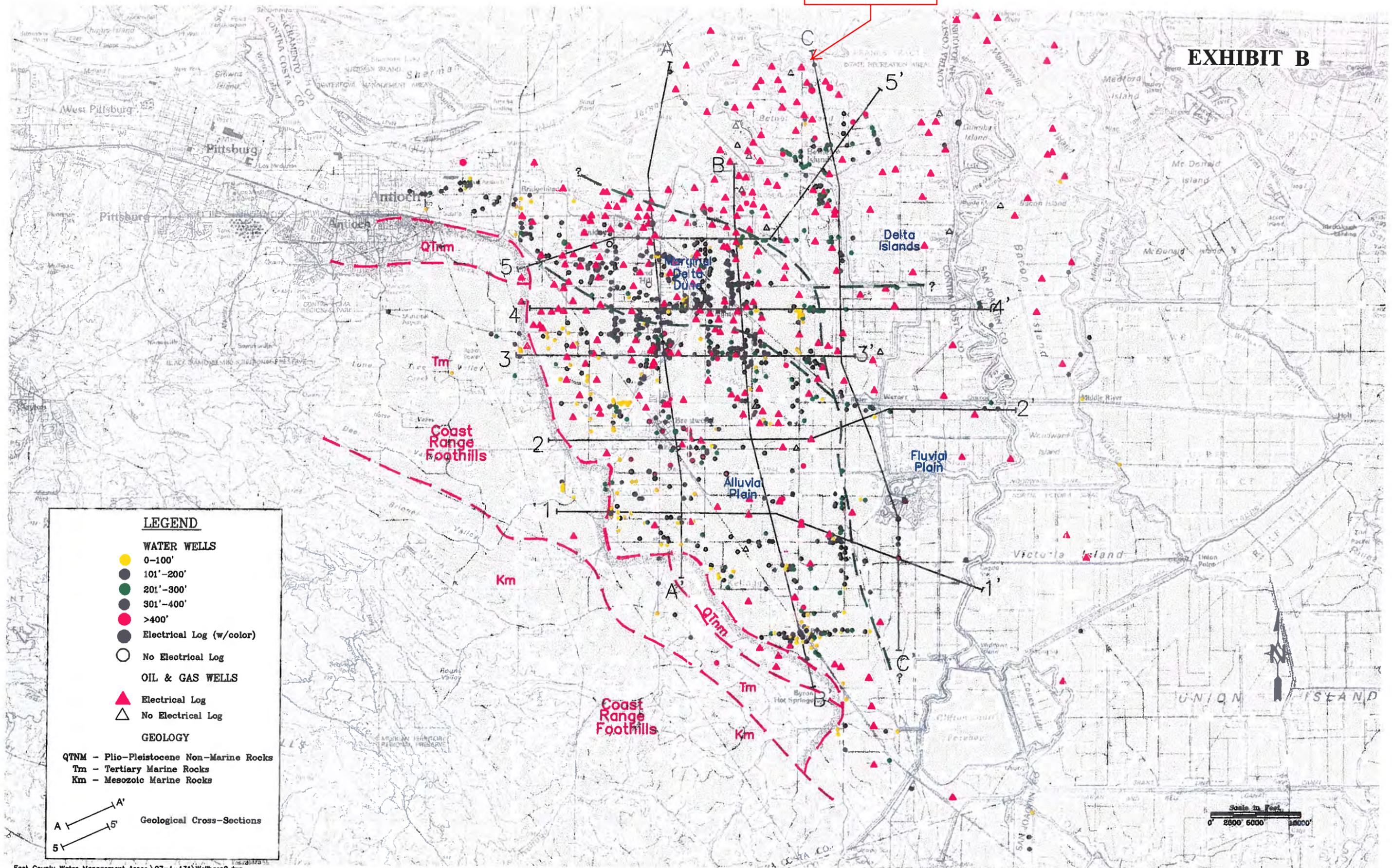
***March 1999***



**LUHDORFF & SCALMANINI  
CONSULTING ENGINEERS**

Beacon West Well

# EXHIBIT B



**LEGEND**

**WATER WELLS**

- 0-100'
- 101'-200'
- 201'-300'
- 301'-400'
- >400'
- Electrical Log (w/color)
- No Electrical Log

**OIL & GAS WELLS**

- ▲ Electrical Log
- △ No Electrical Log

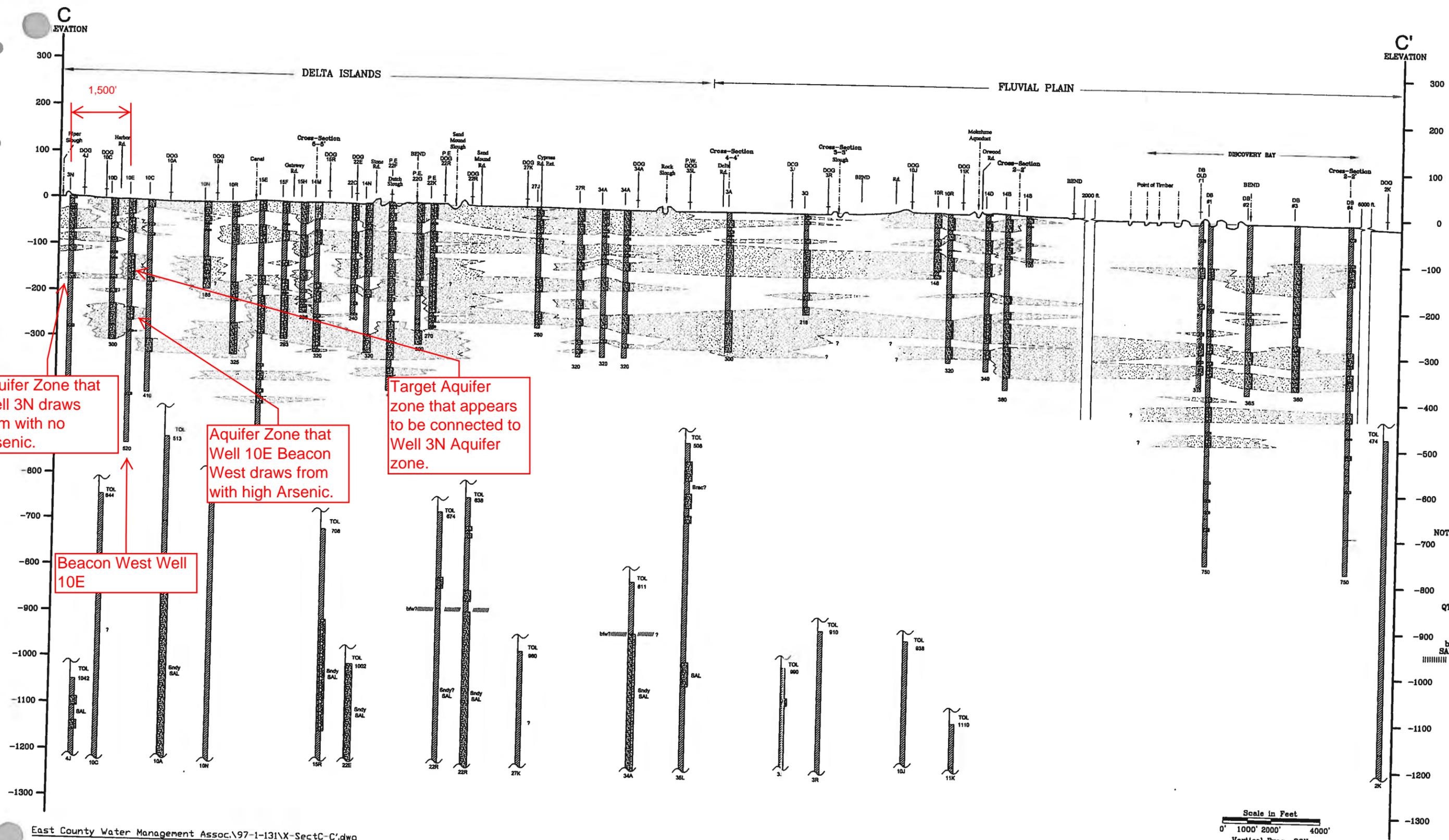
**GEOLOGY**

- QTNM - Plio-Pleistocene Non-Marine Rocks
- Tm - Tertiary Marine Rocks
- Km - Mesozoic Marine Rocks

**Geological Cross-Sections**

A 1' 5'

East County Water Management Assoc. \97-1-131\Wellbase2.dwg



Aquifer Zone that Well 3N draws from with no Arsenic.

Target Aquifer zone that appears to be connected to Well 3N Aquifer zone.

Aquifer Zone that Well 10E Beacon West draws from with high Arsenic.

Beacon West Well 10E

**LEGEND**  
 11P Well Identification  
 Clay  
 Sand/Gravel  
 300 Total Depth

NOTES: DOG=Division Oil & Gas  
 PROJECTED  
 P.N. - North  
 P.S. - South  
 P.S.E. - Southeast  
 P.N.W. - Northwest  
 Qtm = Pleistocene Non-Marine Rocks  
 Tm = Tertiary Marine Rock  
 TOL = Top of Electrical Log  
 brack = brackish  
 SAL/S = saline  
 b/w = base of freshwater

Scale in Feet  
 0' 1000' 2000' 4000'  
 Vertical Exag.=20X

East County Water Management Assoc.\97-1-131\X-SectC-C'.dwg



**Geologic Cross-Section C-C'**  
 East County Water Management Association  
 Ground-Water Resources Assessment

# WELL COMPLETION REPORT

Refer to Instruction Pamphlet

0,2 N 0,3 E 0,3 N M  
STATE WELL NO./STATION NO.  
LATITUDE LONGITUDE  
APN/TRS/OTHER

Owner's Well No. \_\_\_\_\_ No. **476281**  
Date Work Began 10-2-96, Ended 10-3-96  
Local Permit Agency Contra Costa County  
Permit No. D96-0106 Permit Date 10-01-96

## GEOLOGIC LOG

## WELL OWNER

ORIENTATION (∠)		VERTICAL	HORIZONTAL	ANGLE	(SPECIFY)
DEPTH FROM SURFACE		DEPTH TO FIRST WATER (Ft.) BELOW SURFACE			
Ft.	to	Ft.	DESCRIPTION		
Describe material, grain size, color, etc.					
0	4				sand
4	14				peat
14	18				sand
18	20				clay-blue
20	25				sand
25	26				clay-blue to gray
26	70				sand
70	78				clay-gray
78	93				sand
93	107				clay-gray
107	115				sand
115	165				clay-blue
165	177				sand
177	278				clay-blue
278	280				sand
280	400				clay

Name Bob Butler  
Mailing Address P.O. Box 1623  
Bethel Island CA 94511  
CITY STATE ZIP  
WELL LOCATION  
Address 3215 Willow Road West  
City Bethel Island  
County Contra Costa  
APN Book 029 Page 010 Parcel 011  
Township \_\_\_\_\_ Range \_\_\_\_\_ Section \_\_\_\_\_  
Latitude \_\_\_\_\_ North Longitude \_\_\_\_\_ West

LOCATION SKETCH NORTH

WEST EAST SOUTH

Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (∠) —  
 NEW WELL  
MODIFICATION/REPAIR  
— Deepen  
— Other (Specify)  
— DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")  
PLANNED USE(S) (∠)  
— MONITORING  
WATER SUPPLY  
— Domestic  
 Public  
— Irrigation  
— Industrial  
— "TEST WELL"  
— CATHODIC PROTECTION  
— OTHER (Specify)

DRILLING METHOD Rotary FLUID Mud  
WATER LEVEL & YIELD OF COMPLETED WELL  
DEPTH OF STATIC WATER LEVEL 20 (Ft.) & DATE MEASURED 10-5-96  
ESTIMATED YIELD\* \_\_\_\_\_ (GPM) & TEST TYPE \_\_\_\_\_  
TEST LENGTH \_\_\_\_\_ (Hrs.) TOTAL DRAWDOWN \_\_\_\_\_ (Ft.)  
\* May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING 400 (Feet)  
TOTAL DEPTH OF COMPLETED WELL 180 (Feet)

DEPTH FROM SURFACE	BORE-HOLE DIA. (Inches)	CASING(S)						DEPTH FROM SURFACE	ANNULAR MATERIAL								
		TYPE (∠)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)		GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE						
		BLANK	SCREEN	CONDUCTOR	FILL PIPE						CEMENT (∠)	BENTONITE (∠)	FILL (∠)	FILTER PACK (TYPE/SIZE)			
Ft.	to	Ft.					Ft.	to	Ft.								
0	160	12 1/4"	x				SDR-21	6"	.316"								
160	180	12 1/4"		x			SDR-21	6"	.316"	1/32"				1/4" gravel			

- ATTACHMENTS (∠)
- Geologic Log
  - Well Construction Diagram
  - Geophysical Log(s)
  - Soil/Water Chemical Analyses
  - Other \_\_\_\_\_
- ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Dejesus Pump & Well Drilling, Inc.  
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)  
2582 Sellers Avenue Brentwood CA 94513  
ADDRESS CITY STATE ZIP  
Signed [Signature] 10-7-96 542644  
WELL DRILLER AUTHORIZED REPRESENTATIVE DATE SIGNED C-57 LICENSE NUMBER

Notice of Intent No. \_\_\_\_\_  
Local Permit No. or Date D 91-0213

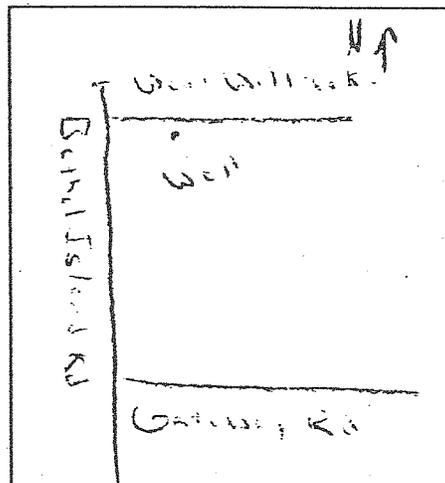
State Well No. \_\_\_\_\_  
Other Well No. \_\_\_\_\_

(1) OWNER: Name Contra Costa County  
Address 255 Glacier Drive  
City Martinez ZIP 94548

(12) WELL LOG: Total depth 520 ft Completed depth 260 ft  
from ft to ft Formation (Describe by color, character, size or material)

(2) LOCATION OF WELL (See instructions):  
County Contra Costa Owner's Well Number \_\_\_\_\_  
Well address if different from above Willow Rd. W. & Bethel Island Rd.  
Township Bethel Island Range \_\_\_\_\_ Section \_\_\_\_\_  
Distance from cities, roads, railroads, fences, etc. \_\_\_\_\_

0 - 28 sand  
28 - 35 clay & sand  
35 - 68 sand  
68 - 115 clay  
115 - 170 sand  
170 - 230 clay  
230 - 258 sand  
258 - 279 clay  
279 - 281 sand  
281 - 413 clay  
413 - 418 sand  
418 - 520 clay



(3) TYPE OF WORK:  
New Well  Deepening   
Reconstruction   
Reconditioning   
Horizontal Well   
Destruction  (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:  
Domestic   
Irrigation   
Industrial   
Test Well   
Municipal   
Other  (Describe)

WELL LOCATION SKETCH

(5) EQUIPMENT:  
Rotary  Reverse   
Cable  Air   
Other  Bucket

(6) GRAVEL PACK:  
Yes  No  Size 1/4"  
Diameter of bore 1 1/2"  
Packed from 225 to 260 ft

(7) CASING INSTALLED:  
Steel  Plastic  Concrete

(8) PERFORATIONS:  
Type of perforation or size of screen  
2" Gravel Feed Tube 0 to 235"

From ft	To ft	Dia. in	Gage or Wall	From ft	To ft	Slot size
0	260	3"	1/4"	260	230	1/16"

(9) WELL SEAL:  
Was surface sanitary seal provided? Yes  No  If yes, to depth 225 ft  
Were strata sealed against pollution? Yes  No  Interval \_\_\_\_\_ ft  
Method of sealing Cement Grout

Work started 6-10- 19 91 Completed 6-12- 19 91

(10) WATER LEVELS:  
Depth of first water, if known \_\_\_\_\_ ft  
Standing level after well completion 22 ft

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

(11) WELL TESTS:  
Was well test made? Yes  No  If yes, by whom? \_\_\_\_\_  
Type of test Pump  Bailer  Air lift   
Depth to water at start of test \_\_\_\_\_ ft At end of test \_\_\_\_\_ ft  
Discharge \_\_\_\_\_ gal/min after \_\_\_\_\_ hours Water temperature \_\_\_\_\_  
Chemical analysis made? Yes  No  If yes, by whom? \_\_\_\_\_  
Was electric log made Yes  No  If yes, attach copy to this report

Signed \_\_\_\_\_ (Well Driller)  
NAME Degesus Pump & Well Drilling, Inc.  
2582 Sellers Avenue  
Address \_\_\_\_\_  
City Brentwood ZIP 94513  
License No. 542644 Date of this report 6-18-91

Attachment 4



1100 Willow Pass Court, Suite A  
 Concord, CA 94520-1006  
 925 462 2771 Fax. 925 462 2775  
 www.cercoanalytical.com

Mr. Paul Urenda  
 Diablo Water District  
 P.O. Box 127  
 Oakley, CA 94561-0127

Sample Source:  
 Test Well H DWD #002289  
 Date Received: 4/27/2011  
 Date Sampled: 4/26/2011  
 Matrix: Drinking Water

May 5, 2011  
 Job No.: 1104198  
 LabNo.: 001-002  
 Cust. No.: 10952  
 Schedule: Upon Request

Analyte	Results	Detection Limit	Method	Date Analyzed
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LabNo.: 001  
 Sample I.D.: HDWD #1

Arsenic (As)	N.D.	0.002 mg/L	SM 3113B	05/04/11
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LabNo.: 002  
 Sample I.D.: DWD #2

Arsenic (As)	N.D.	0.002 mg/L	SM 3113B	05/04/11
--------------	------	------------	----------	----------

N.D. - None Detected

  
 Cheryl McMillen  
 Laboratory Director

Quality Control Summary - All laboratory quality control parameters were found to be within established limits.

*MR. BUTLER WELL AT END OF BEYON WEST MARINE*



ENVIRONMENTAL HEALTH DIVISION  
 2120 Diamond Blvd., Suite 200  
 Concord, CA 94520  
 Phone: (925) 692-2500  
 Fax: (925) 692-2504  
 www.cchsd.org

## REQUEST FOR VARIANCE

<i>Site Location</i> 21 Bethel Island Road (M-26)	<i>City/Zip Code</i> Bethel Island, 94511
<i>Assessors Parcel Number</i> N/A	<i>Contact Email</i> Mike Yeraka MIKEGMI@AOL.COM
<i>Requesting Party</i> Diablo Water District	<i>Daytime Phone</i> 925-625-6159
<i>Mailing Address</i> P. O. Box 127	<i>City/Zip Code</i> Oakley, CA 94561
<i>Owner(s)</i> Diablo Water District	<i>Daytime Phone</i> same
<i>Mailing Address</i> P. O. Box 127	<i>City/Zip Code</i> Oakley, CA 94561

Variance Request:

We would like to drill a new well at 21 Bethel Island Road, Bethel Island, System No. 0707602, M-26, to lower arsenic levels.

Reason for Request:

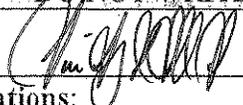
We are requesting a variance because of the lack of available space at the well site. The new well will have the same setbacks from the ditch and sewer lines as the existing well.

Supporting Documentation: (attach additional sheet if necessary)

Attached: Map of location

Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

DO NOT WRITE BELOW THIS LINE - OFFICE USE ONLY

Reviewed by: , Environmental Health Specialist Date: 2/8/13

Recommendations:

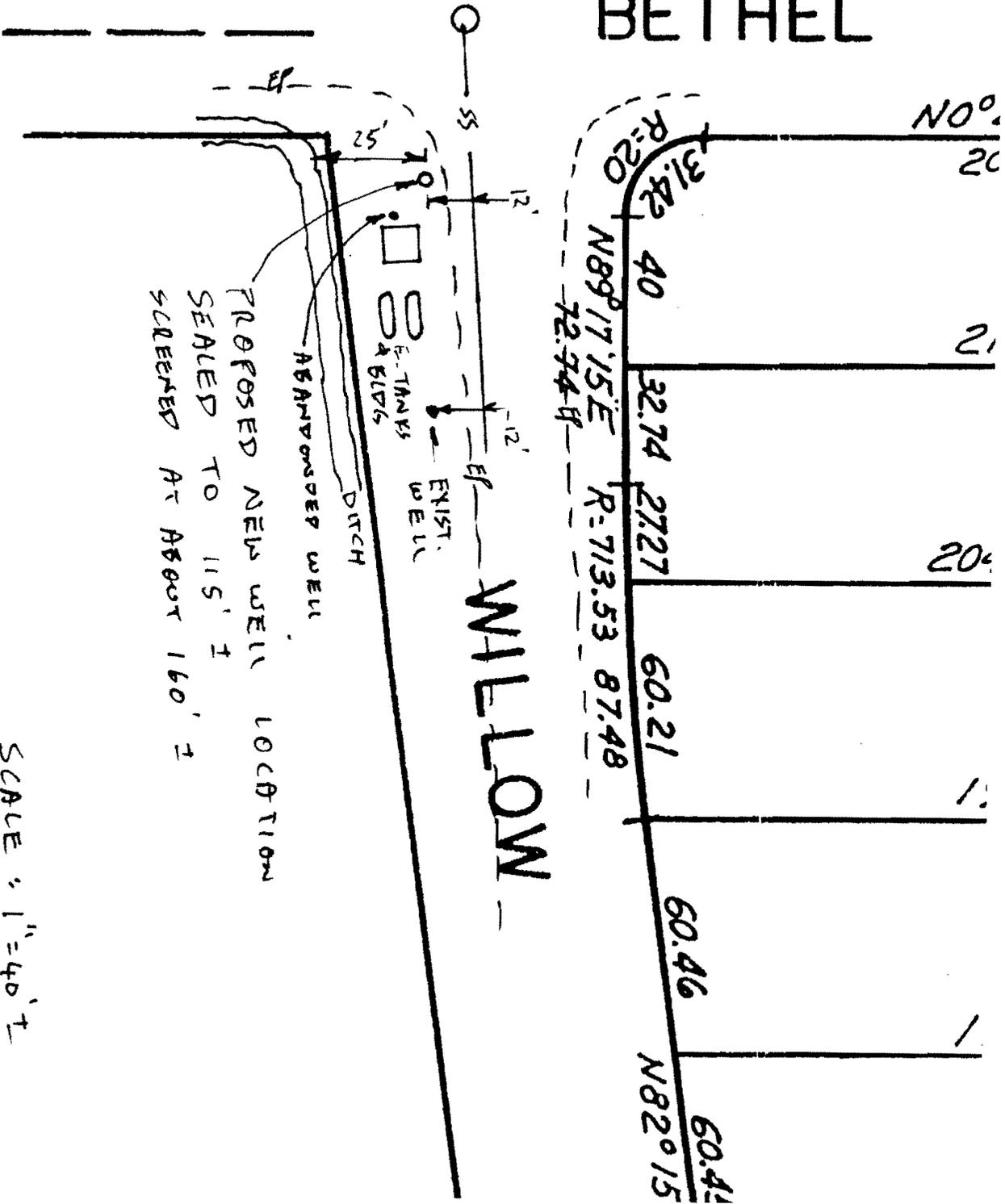
APPROVE VARIANCE REQUEST FOR THE PROPOSED WELL LOCATED WITHIN THE SETBACKS FROM THE SANITARY SEWER LINE AND DRAINAGE DITCH. THE PROPOSED WELL WILL BE LOCATED THE SAME DISTANCE FROM THE SEWER AND DITCH AS THE EXISTING WELL. THERE IS NOT AN ALTERNATIVE LOCATION AVAILABLE FOR THE PROPOSED WELL.

Approved  Denied  2/8/13, Supervising EHS

FA# 0002052	PR#	PE:	REHS: TE
Amount Due: \$ 213.00	Amount Paid:	Receipt #:	Received by:
Check #	Cash:	Credit Card:	Date:

PB  
28

BETHEL



PROPOSED NEW WELL LOCATION  
SEALED TO 115' ±  
SCREENED AT ABOUT 160' ±

SCALE : 1" = 40' ±

**Attachment 6**

**From:** Kevin Dejesus [mailto:kdejesus@diversifiedpumpandwell.com]

**Sent:** Thursday, February 14, 2013 10:31 AM

**To:** nmendoza@diablowater.org

**Subject:** M-26

Mike,

Diversified Pump and Well will install the following. The estimated costs for proposed projects is as follows. These costs include prevailing wages for all labor involved.

1. 8" well \$18200.00
2. 18 GPM test pump installed for sampling purposes \$2718.00
3. Concrete slab with raised wellhead \$1800.00
4. 10 HP, 165 GPM @ 175 TDH, 135 GPM @ 200 TDH pump installed on 4" galv. Pipe \$12208.00
5. 4" piping from new well through building to " T" on southern tank \$3732.00
6. Convert old well to monitoring well/abandon existing piping \$3100.00
7. Remove and replace 2 existing 1500 gallon ANSI pressure tanks \$62657.00

Diversified Pump and Well

Kevin Dejesus

Po Box 861

Knightsen Ca 94548

PH 925-584-9276

Fax 925-679-0731

## Attachment 7

Subj: **RE: Arsenic Removal for Diablo Water System**  
 Date: 9/17/2009 8:58:17 A.M. Pacific Standard Time  
 From: [JPardini@MEIchem.com](mailto:JPardini@MEIchem.com)  
 To: [Mikegm1@aol.com](mailto:Mikegm1@aol.com)

Mike - I've had a chance to take a look at this and give it some thought.

The easy part is the equipment. For a 150 gpm system I recommend two of our FX0030 Central Treatment Modules operating in parallel. Technical Specifications are attached. Each module takes 18 cartridges. Assuming our standard 100 psi design is adequate, the cost of each module including cartridges is \$36,600, FOB Flemington NJ.

Capital Cost  $\rightarrow \times 2 = \$73,200$

Unfortunately, performance is questionable. Your water has an unusually high level of phosphate (1.3 ppm, or 1,300 ppb). By itself this level of phosphate is not a health issue (I think the phosphate MCL is 5 ppm). But it presents a real problem for any arsenic adsorption system. Phosphate is the most powerful competing ion in an arsenic adsorption system. Once the media adsorbs a phosphate ion, an incoming arsenic ion cannot dislodge it. Therefore the 1,300 ppb of phosphate overwhelms the 28 ppb of arsenic and the cartridge lifetime is very short. In a situation like this, it's almost impossible to make any kind of performance estimate. Note that this problem exists for any arsenic adsorption system, not just Isolux.

Before you go too much further I highly recommend you consider conducting a pilot test to determine performance in this water. Pilot testing is something we do frequently with our customers. Our 0.75-gpm Point-Of-Use system makes an excellent pilot unit as it uses the same kind of cartridge design as our central treatment modules, just on a smaller scale. I believe an Isolux pilot test would determine whether any arsenic adsorption system will be practical in this water. I've included technical specifications for the POU system. It sells for \$300. We also have a more elaborate version in a NEMA 4X cabinet with some pressure instrumentation that rents for \$450 per month.

If you would like some details on pilot testing, let me know. We would really like to work with you on this. Let me know what you want to do.

Regards,

Jim Pardini

James J. Pardini PE, CPE  
 Isolux Business Manager  
 MEL Chemicals, Inc.  
 500 Barbertown-Point Breeze Rd.  
 Flemington, NJ 08822  
 908-782-5800, x1200  
[jpardini@meichem.com](mailto:jpardini@meichem.com)

-----Original Message-----

**From:** Mikegm1@aol.com [mailto:Mikegm1@aol.com]

Wednesday, February 06, 2013 AOL: Mikegm1

Subj: **FW: Diablo Water Arsenic Results Beacon West**  
 Date: 2/3/2010 11:16:00 A.M. Pacific Standard Time  
 From: [JPardini@MEIchem.com](mailto:JPardini@MEIchem.com)  
 To: [Mikegm1@aol.com](mailto:Mikegm1@aol.com)  
 CC: [wweaver@diablowater.org](mailto:wweaver@diablowater.org), [nmendoza@diablowater.org](mailto:nmendoza@diablowater.org), [zaferma@cdm.com](mailto:zaferma@cdm.com)

Mike - Subsequent to our phone conversation I found that I made two errors. The first one is the last sentence in the second paragraph. It should read "This translates into a treatment cost that exceeds \$2,500 per acre-ft." This is based on the purchase price of 36 cartridges per change-out at \$180 per cartridge. The second error was in converting from acre-ft to million gallons. There are 3.07 acre-ft per million gallons. This makes the cost per million gallons \$7672. If you blend at a ratio of 67% treated water to 33% untreated, the cost is \$5,140 per million gallons delivered to the customer.

In your original September e-mail you estimated consumption at 18,000 - 30,000 gallons per day. If we use 24,000 gallons per day as an average, consumption is 8,760,000 gallons per year, and the annual cost is about \$45,000 per year. Obviously that is a ridiculous cost to satisfy the needs of 22 households.

Annual O&M Cost

If you consider the 10-gpm Point-Of-Entry units we discussed, you would need 22 POE units. At an average of 200 gallons per day, consumption would be 1,606,000 gallons per year. Each POE unit uses two cartridges with a total bed volume of 4.5 gallons or a capacity of 45,000 gallons (225 days at 200 gpd). On the same basis as the central treatment units, the annual cost is \$12,848. This assumes the POE's treat 100% of the flow. If you use the same 67% blending factor, the cost comes down to \$8,608 per year and the change-out interval would be 336 days. We also have a 20-gpm version with four cartridges and a total bed volume of 9.0 gallons. While this will not change the annual cost, it will double the interval between cartridge change-outs.

I'm sorry for the confusion. If you need anything else let me know.

Jim Pardini

James J. Pardini PE, CPE  
 Isolux Business Manager  
 MEL Chemicals, Inc.  
 500 Barbertown-Point Breeze Rd.  
 Flemington, NJ 08822  
 908-782-5800, x1200  
[jpardini@meichem.com](mailto:jpardini@meichem.com)

-----Original Message-----

**From:** Pardini, James J.  
**Sent:** Wednesday, February 03, 2010 12:01 PM  
**To:** 'Mikegm1@aol.com'  
**Cc:** [wweaver@diablowater.org](mailto:wweaver@diablowater.org); [nmendoza@diablowater.org](mailto:nmendoza@diablowater.org); [zaferma@cdm.com](mailto:zaferma@cdm.com)  
**Subject:** RE: Diablo Water Arsenic Results Beacon West

Mike - I've had a chance to look at the data. Unfortunately the results are about what I expected. For calculating purposes I'm using 1,100 gallons as the breakthrough point. The results do show 10 ppb at 1,000 gallons, but then it dropped to 7.7 ppb at 1,100 gallons before going to 17 ppb at 1,200 gallons.

Wednesday, February 06, 2013 AOL: Mikegm1



Contact Information

Customer / Utility:	Diablo Water District	Date:	06.10.2010 R(1)
Site or Well Identity / Location:	Oakley California	Site Contact:	Paul Urenda
Local Engineer / Firm:	CDM	Contact Phone:	925-625-3798 / P:925-625-6313
Other Pertinent Notes:		Rep Contact:	N/A
Operator:	Local Diablo Water District personnel	Fax:	
Target Date for Installation:	2011	Email:	purenda@diablowater.org
Treatment Goals or Target Parameters:	treatment needed for reducing Arsenic to less than 10 ppb and Manganese to less than 0.05 mg/L		06.10.10eb/gg

System Parameters / Site Specific Info

System Type / Application:	Municipal	(utility, school, MHP, other)	<b>Site Specific Notes:</b> * System sizing based on limited information provided to AdEdge * well >Cl2>FeCl3>CO2>AD26>Hydro Tanks>Distribution * Well pump design flow rate: 162 gpm; to be resized for 50 * System to be installed before HT * AD26 treatment system rated for up to 50 gpm * Revised Proposal * Ferric Chloride included to augment natural iron * Ferric Chloride dosing: Est 2.0+ mg/L as Fe * CO2 pH Adjustment included to adjust pH from 7.9 to 6.8 * Post Treatment NaOH pH adjustment module (optional)
Population Served:	35	(estimated)	
Number of Connections:	22		
Number of Wells to be treated:	1	(# wells to be treated)	
Design Flow (GPM):	50	(Max design flow rate)	
Ave Flow (GPM):	50	(Typical demand)	
Adedge Sizing Basis (max GPM):	50	(Sizing Basis - Adedge)	
Gallons per day:	30,000	(Ave throughput per day) assume	
Est. Usage (Gals / Year):	10,950,000	(Best estimate)	
Existing Pretreatment or disinfection:	Sodium Hypochlorite		
Equipment available for offloading:	not known		
Pump Operation / Pressure:	35 - 60 psi		
Electrical Power Availability:	not known		
Atm Storage Tank Present / Size:			
Hydropneumatic Tank Present / Size:	yes, two 1,500 gallon HT		
Building present/ available space:	24 ft x 18 ft		
Any additives ie, phosphates, fluoride:	none		
Discharge Options available:	TBD		
<b>Site Shipping Address:</b>			
Oakley - CA			

Water Analysis

Codes	Parameters	Codes	Parameters
All	pH 7.90 adjust to 6.8	All	Total Org. Carbon no data mg/L TOC
1, 2	Total As 0.028 mg/L As	All	Sulfate 130.0 mg/L as SO4
1, 2	As(III) no data mg/L (if known)	4, 5	Nitrates 2.0 mg/L as NO3
All	Sulfides no data mg/L	4, 5	Chlorides 250.00 mg/L Cl
All	Hardness 198.0 mg/L @ CaCO3	4	Uranium 4.7 mg/L U
All	Alkalinity 230.0 mg/L @ CaCO3	4	Gross Alpha 4.5 pCi/L
All	Silica 32.00 mg/L SiO2	3, 4, 5	TDS: 1,000 mg/L
All	Phosphate 1.3 mg/L P04	3	Fluoride 0.1 mg/L F
3, 4, 5	Bicarbonate no data mg/L HCO3	All	Turbidity 0.2 NTU
All	Iron 0.04 mg/L Fe	All	Suspended Solids no data mg/L TSS
All	Manganese 0.18 mg/L Mn	All	Temperature no data degrees F

AD26 Oxidation/Filtration

AdEdge Packaged System	APU26-3060CS-U-2-AVH	Target Parameter(s)	Arsenic and Manganese
Media:	ADGS+ media	Treatment Goal(s):	< 0.010 As & <0.05 Mn mg/l
No of adsorbbers	(2) 30" OD x 60" Side Shell	Ave Flow Rate:	50.0 (typical expected)
Qty of media (cu ft):	26	Ave gallons/day :	30000 (based on utilization)
Approx Containerized System footprint:	240"L x 96"W x 114" H	Hydraulic Utilization %	42% (actual system utilization 24-7)
Filtration Rate:	5.1 gpm / sq ft	Est. working capacity:	560,000 (bed volumes)
Backwashing:	2 - 3 x / week@ 59 gpm	Bed volumes / day:	154.3 (throughput)
Backwashing rate:	12 gpm / sq ft	Est. Gallons of ADGS+ media:	108,908,800 (contam. breakthrough)
Est. BW water (gallons) per event:	1,534	ADGS+ Est. Media life (months):	121.0 (est frequency of changeout)
Iron Augmentation Module	See Scope of Supply	ADGS+ Est. Media life (Years):	10.1 (est frequency of changeout)

System Costs

Packaged Containerized Treatment System:	Optional	Annual Replacement ADGS+ media:	\$219 (media, excluding labor IF replaced)
Chlorination Feed Module:	existing at the site	Annual Chlorine estimate:	use existing (chemical - consumable)
CO2 pH Adjustment Module:	Included	Annual FeCl3 estimate:	\$950 (chemical - consumable)
Iron Augmentation Module:	included	Annual Settling Aid (Polymer) est:	\$350 (chemical - consumable)
Polymer / Settling Aid Module:	Included	Annual cost of CO2 estimate:	\$1,100 (chemical - consumable)
Equipment Shop drawings, tech support:	included	Utilities (annual est):	\$200 (labor, equipment for replace)
AdEdge Startup and Commissioning:	included	Est. Annual Oper. Costs	\$2,819 (prorated media, chemical)
Permitting:	by others	Operating Costs per 1000 gal:	\$0.26 (ave calculated per 1,000 gals)
Estimated Freight:	\$3,800	Est cost per connection/month:	\$10.68 (cost / HH / month) if 22 connections
Total capital, startup (sans freight):	\$86,540		
<b>Other Options:</b>			
Containerized Option, complete packaged syst.	\$36,800		
NaOH Post Treat pH Adjustment Module:	\$4,590 (post-treatment)		
Communication Module for SCADA:	\$2,600		
Total with Options:	\$130,530		

Annual O&M Costs

Capital Cost

## **Appendix 4.2: Luhdorff & Scalmonini Proposal for Engineering Design Services of the Rossmoor Well**

August 24, 2012  
File No. 11-2-110

Mr. Walter Pease  
Director of Water Utilities  
City of Pittsburg  
357 East 12<sup>th</sup> Street  
Pittsburg, CA 94565

**SUBJECT: PROPOSAL FOR ENGINEERING AND CONSTRUCTION SERVICES  
ROSSMOOR WELL REPLACEMENT**

Dear Mr. Pease:

In response to your request, this letter outlines a scope for engineering and field services associated with design and construction of a new water supply well and pump station to replace the City of Pittsburg Rossmoor Well. The proposed scope for this project encompasses assistance with environmental review and regulatory approvals, design and preparation of plans and specifications for well and pump station, and technical assistance during the project construction phases.

**Background**

The existing Rossmoor Well was constructed in 1991 and currently is equipped with a submersible pump and motor rated at 800 gallons per minute (gpm) and 270 feet of head. The Rossmoor well pump is operated at a constant speed; i.e., it is not equipped with a variable frequency drive (VFD).

The existing Rossmoor pump station is located in a small pump house building. Electrical power source and controls are housed in a second building approximately 70 feet south of the well building. Some of the existing electrical control equipment is outdated and may need to be replaced.

An 800-foot pipeline runs from the Rossmoor Well to the Bodega Well with flow from the two wells combined in a common pipeline to the WTP headworks located about one mile away. As apparent during the pump design/selection process for the Rossmoor replacement pump and the pump installed in the new Bodega Well in 2009, there are deficiencies in data for discharge pressure as a function of well flow rates.

As part of a pump change in 2011, a routine video survey revealed that the Rossmoor well casing has multiple holes and exhibits a deteriorated condition. As a result, the City requested that LSCE provide a cost and approach to replacing the well. The project objective is to design and construct the replacement facility so that the source is connected to the existing pipeline that runs to the Bodega Well and then to the WTP.

### **Project Approach**

The proposed project approach is to work collaboratively with the City to replace the Rossmoor Well in a cost-effective manner. To begin the work, LSCE will meet with City at the site to define design objectives, City preferences, construction constraints, and regulatory compliance issues. One topic for discussion will be on increasing the well diameter to achieve higher flow rates. The site visit will also address well location, pump station housing and security needs, utility requirements (e.g., overboard, water supply for water lube pump, and electrical power/SCADA upgrades), and minimum setback requirements specified by the County Environmental Health Department and the California Department of Public Health (CDPH). Following the site visit, LSCE will develop a conceptual site plan showing the station layout with site access, CDPH setbacks, and connections to the existing conveyance pipeline that connects to the Bodega well station. We will also discuss demolition and well abandonment of the existing facilities and whether this work should be part of the replacement well contract.

Typically, a municipal well project would include a test hole drilling phase. As a cost savings measure and recognizing that the existing well can provide a basis for bidding documents, we propose to eliminate test hole drilling. We believe that the current well information, including geophysical data from the Bodega Well and other monitoring sites, can adequately serve preliminary design needs. Minor adjustments to screen depths can be made when a geophysical log is run in the new production well borehole during the construction phase.

We will prepare a preliminary well design for review by regulatory agencies. For this project, submittals of preliminary plans will be made to the County Environmental Health Department and CDPH. Besides the preliminary production well design, the submittal will include the conceptual station plan developed under Task 1. In addition, we will prepare a preliminary Drinking Water Source Assessment and Protection Program (DWSAP) report. The preliminary report prepared at this stage will be finalized upon completion and startup of the well pump station and then submitted with the City's application to amend its water supply permit for the replacement well source.

After obtaining concurrence on site and preliminary well design by the appropriate regulatory agencies, we will finalize design and prepare plans and specifications for a well construction. At the same time, we will initiate design work for the pump station. Besides the conceptual plan cited above, our design effort will include 75- and 100-percent levels of completion. Separate plans and specifications for the pump station construction contract will be finalized after testing of the new well.

LSCE will provide assistance with obtaining competitive bids on the well and pump station contracts, issued separately, and technical assistance during construction phases. For the latter, we will provide milestone inspection services to ensure that construction satisfies the design requirements. We will also review and recommend acceptance of submittals, provide regular progress updates, and provide the City with as-built documents for the new well and pump station facilities.

Finally, it has been our experience that completion of the CEQA process requires varying levels of assistance from the design engineers, depending upon the specific project, the location, and the extent of potential impacts. Because of the variability and extent of these items of work, LSCE proposes that a separate task be established for work associated with CEQA compliance. This work would include assistance in preparing project descriptions, drawings, and technical mitigation measures on an as-needed basis as we assume that the City can handle this task as it did with the Bodega project.

### **Scope for Engineering and Field Services**

LSCE's proposed scope of work consists of seven tasks detailed below:

#### **Task 1: Conceptual Station Layout**

Under Task 1, LSCE will conduct a site visit with City staff to identify a suitable location to construct the Rossmoor replacement well and new pump station. The location must be situated to comply with regulatory offset requirements to accommodate the proposed construction activities and future O&M needs. The site visit will include an assessment of how electrical service will be extended to the new station and to what extent the existing electrical room equipment can be re-used. LSCE will also present the merits of using a submersible pump versus a vertical turbine line shaft pump.

LSCE will prepare a conceptual station layout that delineates the well and pump station facilities. The conceptual design effort will include an assessment of alternative layouts that consider use of one or both existing buildings at the Rossmoor site and the equipment/controls contained in each. The cost and benefit of using existing facilities will be compared to a completely new facility similar to the Bodega well station. LSCE will discuss with the City and prepare a site improvement plan for the preferred option.

Based upon a boundary and topographical base map provided by City, LSCE will delineate site improvements on the conceptual site plan including site access, piping location (including metering and valving to the main line), building, fencing, paving, and tie-ins to utilities.

#### **Task 2: Regulatory Submittals**

Under Task 2, LSCE will prepare a draft DWSAP for inclusion with submittals to CDPH and the local well permitting agency. The DWSAP will be finalized upon commissioning of the well pump station, and submitted in final form to CDPH (see Task 7). Along with the preliminary DWSAP, we will compile project information for review by the regulatory agencies. This information will include the conceptual site plan prepared under Task 1, the preliminary well production well design, and water quality data (summarized from the existing Rossmoor Well). Through this submittal, the agencies will be requested to review and comment prior to initiating final design and construction activities. LSCE will contact each agency to ensure that concurrence on the project plans is obtained.

### **Task 3: Well Design and Plans/Specifications**

Under Task 3, LSCE will design the production well based on available data from the Rossmoor Well and other sites. The principal design parameters shall include well depth, casing and screen materials and dimensions, locations and types of seals, type and locations of intake screen(s), gravel envelope size and gradation for sand control, and size of screen openings to properly retain the gravel pack. These parameters will be selected to achieve a well that is hydraulically efficient and produces sand-free water.

The plans and specifications will follow the City's format for construction of the Bodega Well. We will prepare a review 75- and 100-percent design package. The final design package will be used by the City to solicit bids and award a contract for the work.

### **Task 4: Technical Assistance for Well Construction and Testing**

Under Task 4, LSCE will provide technical assistance during the well construction phase as shown below. During the course of the construction work, LSCE will provide regular telephonic reports to the City's designated representative.

**Competitive Bidding and Bid Evaluation:** Assist with solicitation of competitive bids from qualified, licensed California water well drilling contractors, evaluate bids, and recommend award.

**Drilling Operations:** Check mobilization and drilling fluid control provisions.

**Conductor/Surface Casing:** Witness conductor/surface casing installation and grouting operations to insure compliance with design and well permit requirements.

**Production Borehole Construction:** Monitor drilling operations and drilling fluid control when drilling through the target aquifer units to minimize formation damage.

**Casing Installation:** Witness caliper logging, borehole conditioning and casing assembly installation including casing welds, alignment, casing guide placement, and intake screen locations.

**Gravel and Annular Seal Placement:** Inspect gravel and seal installation and record final quantities installed.

**Well Development:** Witness initial well development with the drilling rig, final development of the well by pumping, and compliance with discharge requirements.

**Well Testing:** Witness acceptance testing for sand production and well efficiency, obtain water quality samples and monitor well pump tests, and evaluate aquifer characteristics for present and projected well performance in order to develop pump design criteria.

**Payment and Acceptance:** Review contractor's progress billings and recommend final acceptance.

LSCE will provide a summary report on the construction and testing activities including an as-built well profile.

#### **Task 5: Pump Station Design and Plans/Specifications**

Under Task 5, LSCE will design the pumping plant, including deep well line shaft or submersible pump and motor, motor control center, discharge piping, and piping that connects the well pumping station to the distribution system and storm drain system. The design will also address site modifications and improvements including grading, drainage, paving, fencing, and painting. For security, it is assumed that the well will be housed in a building. The electrical control logic will be designed to allow effective communication between the new well and the City's WTP.

The parameters incorporated in the design and selection of the pumping equipment will include an analysis of the relationship between the system flow requirements, their effect on pumping levels in the well, and the variable hydraulic losses in the well head piping and the distribution system. System-head input for the distribution main will be based on requirements at the WTP. The development of the resulting system-head relationship will provide the criteria for selecting the most efficient pump to meet desired flow rates. The selection of a prime mover, submersible or vertical hollow shaft motor, and preference for the main pipeline material, will be developed based upon experienced at the WTP.

Based on an evaluation of pumping test data, LSCE will prepare plans and technical specifications for the station at the 75- and 100-percent levels. Note that a conceptual plan is to be prepared under Task 1.

Design elements addressed in the plans are:

**Site Improvements:** Drainage, replacement paving, aboveground and belowground piping for the connection to the distribution system and site access for maintenance.

**Site Plan:** Delineation of site and mechanical facilities.

**Mechanical Plan:** Well pump, station and main piping, and mechanical conduits.

**Structural Plans:** Well Pump House Building including removable roof section.

**Electrical Plan:** Electrical service, metering, main disconnect and transfer switches, motor starter, controls, instrumentation, electrical conduits and conductors.

**Standard Construction Details:** Plans will include pipe supports; pump pedestal construction and other standard details.

Information to be provided by others shall include a topographic base map in AutoCAD format that includes the location of the existing Rossmoor Well station and the electrical room building; and all current surface features, subsurface utilities and applicable easements and property boundaries, and existing roadways, with curb, gutter, and sidewalks. It is

assumed that replacement well will be located entirely on property owned or controlled by City.

It is assumed that the City will provide a geotechnical engineering report that defines site soil conditions and foundation design recommendations.

### **Task 6: Technical Assistance for Station Construction**

Under Task 6, LSCE will provide the following engineering support services during the station construction phase. Note that it is assumed that City staff will perform resident inspection, as needed, and that LSCE will provide submittal and RFI review, key milestone inspections, and assistance during station start-up.

**Competitive Bidding and Bid Evaluation:** Assist with solicitation of competitive bids from qualified, licensed California contractors, evaluate bids, and recommend award.

**Conferences:** Prior to commencement of construction, a conference with the contractor will be held to confirm the contractor's understanding of the intent of the contract documents. Final site visitation with the contractor will be made as part of the conference to review site access and to address questions of the contractor prior to equipment arrival.

**Submittals and RFIs:** Review all submittals and requests for information to ensure all products used during construction are consistent with the plans and specifications.

**Pump Components:** Match field performance characteristics with design parameters for the pumps and their prime movers, and verify that installation meets manufacturer and industry standards.

**Electrical and Control System:** Verify the adequacy of the motor control center components and the operating control and safety features for starting and stopping the pump station.

**Pump Station Building:** Specialty inspection of foundation, rebar, CMU wall, and removable roof.

**Discharge and Mainline Piping:** Inspect materials of construction of the station piping and connection to the mainline.

**Pumping Plant Testing:** Verify field performance of the pumping plant against the manufacturer's quoted performance and the specified performance, including capacity, discharge head, and pumping plant efficiency.

**Payment and Acceptance:** Review, approve, and recommend payment on the contractor's progress billings. Conduct final inspection and recommended acceptance of the work.

At the completion of station construction, LSCE will finalize the preliminary DWSAP according to the selected design capacity and water quality test results at that design rate, for inclusion with the City's CDPH permit amendment application. Here, it is assumed that the City will conduct the final water quality sampling and testing.

**Task 7: Environmental Documentation (CEQA) Support**

It has been our experience that the completion of the CEQA process can require a varying level of assistance from the design engineers, depending upon the specific project, the location, and the extent of potential impacts. For this project, we assume that the City will take the lead in the preparation of the environmental document for the well and that the document will, at most, take the form of a mitigated negative declaration that addresses land-use, impacts from construction, operations, and maintenance, and local and regional groundwater pumping impacts. We also believe that the project may largely be exempt from CEQA as it is a replacement facility. As requested, LSCE will provide brief narratives addressing these issues and respond to questions or comments.

**Cost Estimates and Contract Administration**

Our estimate of costs for engineering and field services for the proposed well and pump station project is encompassed in the following table. Cost estimates are presented by task and are considered suitable for planning and budgeting purposes.

<b>Task</b>	<b>Description</b>	<b>Outside Services</b>	<b>Engr. Services</b>	<b>Total</b>
1	Suitability Assessment and Conceptual Station Layout	4,000 <sup>1</sup>	7,500	11,500
2	Regulatory Submittals	n/a	4,000	4,000
3	Well Design and Plans/Specifications	n/a	4,000	4,000
4	Technical Assistance During Well Construction	n/a	17,500	17,500
5	Pump Station Design and Plans/Specifications	26,000 <sup>1</sup>	30,000	56,000
6	Technical Assistance During Station Construction	11,500 <sup>1</sup>	29,500	41,000
7	Environmental Documentation (CEQA) Support	n/a	5,000	5,000
<b>Totals</b>		<b>\$41,500</b>	<b>\$97,500</b>	<b>\$139,000</b>

**Cost Estimates Notes**

1. Outside service includes electrical and structural engineering subcontractors.

LSCE proposes to perform the work described under Tasks 1 through 7 for a sum of \$140,800. The proposed project sum includes LSCE’s labor under each task as delineated in this proposal. LSCE will bill monthly for labor and materials, only as incurred, in accordance with LSCE’s Schedule of Fees (attached).

In the event that LSCE is directed to deviate from the proposed scope, or as dictated by unforeseen field conditions, LSCE will provide notification of any potential changes in the estimated cost and time to complete the work. LSCE will not proceed with any work that deviates from the approved scope and budget until approval to proceed is granted.

We appreciate the opportunity to provide you with this scope and budget.

Sincerely,

LUHDORFF AND SCALMANINI  
CONSULTING ENGINEERS



Thomas D. Elson



John D. Fawcett, P.E.

Attachments: Schedule of Fees for Engineering and Field Services

**LUHDORFF AND SCALMANINI  
CONSULTING ENGINEERS  
500 FIRST STREET  
WOODLAND, CALIFORNIA 95695**

**SCHEDULE OF FEES - ENGINEERING AND FIELD SERVICES  
January, 2012**

<b>Professional:*</b>	
Principal Professional	\$190 to 270/hr.
Project Manager	\$ 170/hr.
Senior Professional	\$ 160/hr.
Project Professional	\$ 140 to 150/hr.
Staff Professional	\$ 105 to 120/hr.
<b>Technical:</b>	
Engineering Inspector	\$ 105 to 120/hr.
Engineering Assistant	\$ 92/hr.
Technician	\$ 92/hr.
ACAD Drafting	\$ 100/hr.
<b>Clerical Support:</b>	
Word Processing, Clerical	\$ 60/hr.
*****	
Vehicle Use	\$ 0.55/mi.
Aircraft Use	\$ 375.00/hr.
Subsistence	Cost Plus 15%
Groundwater Sampling Equipment (Includes Operator)	\$ 170.00/hr.
Copies	.20 ea.
*****	
Professional or Technical Testimony	200% of Regular Rates
Requested Technical Overtime	150% of Regular Rates
Outside Services/Rentals	Cost Plus 15%
Services by Associate Firms	Cost Plus 15%

\* Engineer, Geologist, Hydrogeologist, and Hydrologist

**Appendix 4.3: City of Pittsburg Bid Results for the Bodega Well  
and Pump Station (Basis for Rossmoor Well Construction)**

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BID SCHEDULE (BASE BID)					
Bid Item	Description	Unit of Measure	Qty	Unit Price	Extended Total
1	Mobilization	Lump Sum	1	60,000 <sup>-</sup>	60,000 <sup>-</sup>
2	Conductor Casing 30" x 3/8" Wall	Feet	75	354 <sup>-</sup>	26,550 <sup>-</sup>
3	28" Production Borehole Drilling	Feet	150	85 <sup>-</sup>	12,750 <sup>-</sup>
4	Geophysical Logging	Lump Sum	1	2000 <sup>-</sup>	2,000 <sup>-</sup>
5a	Blank Well Casing 16.00" I.D. x 3/8" Wall A-139 w/ 0.2% copper	Feet	112	140 <sup>-</sup>	15,680 <sup>-</sup>
5b	Blank Well Casing 16.00" I.D. x 1/4" Wall Type 304 SS	Feet	20	350 <sup>50</sup>	7,010 <sup>-</sup>
6	Wire Wrap Well Screen 16.00" I.D. Type 304 SS	Feet	85	381 <sup>-</sup>	32,385 <sup>-</sup>
7	Sounding Pipe 2" Sch 80 BSP	Feet	110	13 <sup>50</sup>	1,485 <sup>-</sup>
8	Gravel Envelope	Feet	225	62 <sup>-</sup>	13,950 <sup>-</sup>
9	Install/Remove Test pump	Lump Sum	1	2800 <sup>-</sup>	2,800 <sup>-</sup>
10	Well Development	Lump Sum	1	12,100 <sup>-</sup>	12,100 <sup>-</sup>
11	Well and Aquifer Testing	Hours	24	225 <sup>-</sup>	5,400 <sup>-</sup>
12	Plumbness and Alignment Testing	Lump Sum	1	3,500 <sup>-</sup>	3,500 <sup>-</sup>
13	Disinfection	Lump Sum	1	750 <sup>-</sup>	750 <sup>-</sup>
14	Site Cleanup and Records	Lump Sum	1	1000 <sup>-</sup>	1,000 <sup>-</sup>
15	Standby Time	Hours	12	150 <sup>-</sup>	1,800 <sup>-</sup>
<b>Total Bid</b>					<b>199,760<sup>00</sup></b>
Total Bid (in Writing) One hundred ninety nine thousand, seven hundred sixty dollars.					

HYDRO RESOURCES NEVADA, INC.  
 DBA - HUMBOLDT DRILLING & PUMP CO, INC.  
 4975 W. Winnemucca Blvd.  
 Winnemucca, NV 89445  
 (775) 623-5259

Should be  
 199,160

## Bid Results

### CONTRACT 2008-14

Bodega Well Pump Station

Construction Company Address		Engineer's Estimate				Contractor #1 Howk Systems, Inc.	
Item No	Description (section)	Bid Qty	Bid Unit	Unit Price (\$)	Contract Total (\$)	Unit Price (\$)	Contract Total (\$)
1	Mobilization/Demobilization	1	LS	\$8,000.00	\$8,000.00	30000	\$30,000.00
2	Submittals	1	LS	\$3,000.00	\$3,000.00	4000	\$4,000.00
3	Earthwork (including Clearing and Grub	1	LS	\$35,000.00	\$35,000.00	15000	\$15,000.00
4	Paving	1	LS	\$32,000.00	\$32,000.00	20000	\$20,000.00
5	Chain Link Fencing	1	LS	\$12,000.00	\$12,000.00	30000	\$30,000.00
6	Site Clean Up and Contract Closeout	1	LS	\$3,000.00	\$3,000.00	5000	\$5,000.00
7	Concrete	1	LS	\$35,000.00	\$35,000.00	34000	\$34,000.00
8	Painting	1	LS	\$3,000.00	\$3,000.00	15000	\$15,000.00
9	Building	1	LS	\$120,000.00	\$120,000.00	81000	\$81,000.00
10	Signs and Safety Equipment	1	LS	\$500.00	\$500.00	3000	\$3,000.00
11	Pipe	1	LS	\$38,500.00	\$38,500.00	57000	\$57,000.00
12	Valves and Appurtenances	1	LS	\$14,000.00	\$14,000.00	40000	\$40,000.00
13	Submersible Pump Components	1	LS	\$110,000.00	\$110,000.00	120000	\$120,000.00
14	Disinfection of Well, Pumps & Piping	1	LS	\$2,500.00	\$2,500.00	5000	\$5,000.00
15	Start-up and Testing	1	LS	\$3,500.00	\$3,500.00	5000	\$5,000.00
16	Electrical	1	LS	\$200,000.00	\$200,000.00	190000	\$190,000.00
<b>Total Bid Items</b>					<b>\$620,000.00</b>	<b>\$654,000.00</b>	

**Appendix 4.4: Integrated Regional Flood Protection and Water  
Quality Improvement Borrow Area Project Detailed Cost  
Estimate**

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Add CCWD logo, and replace (?) FCD logo

Detailed Cost Estimate

**Project Name:** Integrated Regional Flood Protection and Water Quality Improvement Borrow Area Project

**Project Location:** Upper Sand Creek Basin, Antioch, Contra Costa Canal MP XXX, Oak

**Date of Estimate:** 15-Feb-2013

Revision No.:
Revision Date:

**Prepared by:** Paul Detjens

FCD Match for Grant (Already spent)	FCD Expenditures to be grant funded	CCWD Expenditures to be grant funded
--	-------------------------------------	--------------------------------------

Task No.	Description	Units	Hours	Hourly Rate	Total	Hours	Hourly Rate	Total	Hours	Hourly Rate	Total
1	<b>Project Administrative Tasks</b>										
1.1	<b>Administration</b>										
	Senior Engineer		30	\$ 213.05	\$ 6,392		\$ 213.05	\$ -	0	\$ 213.05	\$ -
	Associate Engineer		5	\$ 187.03	\$ 935		\$ 187.03	\$ -	0	\$ 187.03	\$ -
	Staff Engineer			\$ 169.24	\$ -		\$ 169.24	\$ -	0	\$ 169.24	\$ -
	Engineering Technician		24	\$ 115.65	\$ 2,776		\$ 115.65	\$ -	0	\$ 115.65	\$ -
	Clerical			\$ 92.76	\$ -		\$ 92.76	\$ -	0	\$ 92.76	\$ -
	<b>Administration Subtotal</b>				<b>\$ 10,102</b>			<b>\$ -</b>			<b>\$ -</b>
1.2	<b>Labor Compliance Program</b>										
	Associate Engineer (Consultant)		16	\$ 120.00	\$ 1,920			\$ -	0	\$ 213.05	\$ -
	Associate Engineer							\$ -	0	\$ 187.03	\$ -
	Staff Engineer							\$ -	0	\$ 169.24	\$ -
	Engineering Technician							\$ -	0	\$ 115.65	\$ -
	Clerical							\$ -	0	\$ 92.76	\$ -
	<b>Labor Compliance Program Subtotal</b>				<b>\$ 1,920</b>			<b>\$ -</b>			<b>\$ -</b>
1.3	<b>Reporting</b>										
	Senior Planner			\$ 213.05	\$ -		\$ 213.05	\$ -	0	\$ 213.05	\$ -
	Associate Planner			\$ 175.00	\$ -		\$ 187.03	\$ -	0	\$ 187.03	\$ -
	Staff Engineer			\$ 169.24	\$ -		\$ 169.24	\$ -	0	\$ 169.24	\$ -
	Grant Specialist		8	\$ 123.00	\$ 984		\$ 115.65	\$ -	0	\$ 115.65	\$ -
	<b>Reporting Subtotal</b>				<b>\$ 984</b>			<b>\$ -</b>			<b>\$ -</b>
	<b>Project Administrative Total</b>				<b>\$ 13,006</b>			<b>\$ -</b>			<b>\$ -</b>
2	<b>Planning / Design / Engineering / Environmental Documentation Task</b>										
2.1	<b>Assessment and Evaluation</b>										
	Senior Planner			\$ 213.05	\$ -		\$ 213.05	\$ -	0	\$ 213.05	\$ -
	Associate Engineer			\$ 187.03	\$ -		\$ 187.03	\$ -	0	\$ 187.03	\$ -
	<b>Assessment and Evaluation Subtotal</b>				<b>\$ -</b>			<b>\$ -</b>			<b>\$ -</b>
2.2	<b>Project Design</b>										
	Senior Engineer		20	\$ 213.05	\$ 4,261	10	\$ 205.22	\$ 2,052	0	\$ 205.22	\$ -
	Associate Engineer		5	\$ 187.03	\$ 935		\$ 139.63	\$ -	0	\$ 139.63	\$ -
	Staff Engineer			\$ 169.24	\$ -		\$ 169.24	\$ -	0	\$ 169.24	\$ -
	Engineering Technician		30	\$ 115.65	\$ 3,470	20	\$ 115.65	\$ 2,313	0	\$ 115.65	\$ -
	Clerical			\$ 92.76	\$ -		\$ 92.76	\$ -	0	\$ 92.76	\$ -
	<b>Project Design Subtotal</b>				<b>\$ 8,666</b>			<b>\$ 4,365</b>			<b>\$ -</b>
2.3	<b>Environmental Documentation</b>										
	Clerical			\$ 92.76	\$ -		\$ 92.76	\$ -	0	\$ 92.76	\$ -
	Senior Environmental Planner			\$ 205.22	\$ -		\$ 205.22	\$ -	0	\$ 205.22	\$ -
	<b>Env. Doc. Subtotal</b>				<b>\$ -</b>			<b>\$ -</b>			<b>\$ -</b>
2.4	<b>Permitting</b>										
	Senior Environmental Planner		10	\$ 205.22	\$ 2,052		\$ 205.22	\$ -	0	\$ 205.22	\$ -
	Staff Environmental Planner		20	\$ 139.63	\$ 2,793	10	\$ 139.63	\$ 1,396	0	\$ 139.63	\$ -
	Clerical			\$ 92.76	\$ -		\$ 92.76	\$ -	0	\$ 92.76	\$ -
	<b>Permitting Subtotal</b>				<b>\$ 4,845</b>			<b>\$ 1,396</b>			<b>\$ -</b>
	<b>Planning / Design / Engineering / Env. Doc.</b>				<b>\$ 13,510</b>			<b>\$ 5,762</b>			<b>\$ -</b>
3	<b>Construction / Implementation Task</b>										
3.1	<b>Construction Contracting</b>										
	Associate Engineer			\$ 187.03	\$ -		\$ 187.03	\$ -	24	\$ 120.00	\$ 2,880
	Clerical			\$ 92.76	\$ -		\$ 92.76	\$ -	10	\$ 99.00	\$ 990
	<b>Construction Contracting Subtotal</b>				<b>\$ -</b>			<b>\$ -</b>			<b>\$ 3,870</b>
3.2	<b>Mobilization and Site Prep</b>										
	Mobilization	LS			\$ -			\$ -	1	\$ 20,000	\$ 20,000
	<b>Mobilization and Site Prep. Subtotal</b>				<b>\$ -</b>			<b>\$ -</b>			<b>\$ 20,000</b>
3.3	<b>Project Construction</b>										
	Prepare / Move Material into Stockpile	CY	75,000	\$ 3.00	\$ 225,000						
	Traffic Control	LS							1	\$ 8,000	\$ 8,000
	SWPPP	LS							1	\$ 5,000	\$ 5,000
	Excavate / Transport / Place fill	CY							75,000	\$ 15.00	\$ 1,125,000
	Hydroseed borrow site	Ac							8	\$ 2,500	\$ 20,000
	Hydroseed disposal site	Ac							0	\$ 2,500	\$ -
	Contractor staking and surveying for QC	LS							1	\$ 15,000	\$ 15,000
	<b>Project Construction Subtotal</b>				<b>\$ 225,000</b>			<b>\$ -</b>			<b>\$ 1,173,000</b>
3.4	<b>Project Close-Out</b>										
	Clerical								5	\$ 92.76	\$ 464
	Senior Engineer								10	\$ 205.22	\$ 2,052
	<b>Project Close-Out Subtotal</b>				<b>\$ -</b>			<b>\$ -</b>			<b>\$ 2,516</b>

