

TABLE 3

**SONOMA COUNTY WATER AGENCY PROJECT BUDGET
Sonoma Valley Enhanced Groundwater Recharge Study**

Task	Description	Cost Share	Grant Share	Total Project Costs
1.0	Pre-field Activities (planning, environmental, permitting)	18,302	18,302	36,603
2.0	Drilling and Well Construction	10,918	207,442	218,360
3.0	Aquifer Testing (72-hour pump test)	4,982	10,588	15,570
4.0	Geochemical Modeling	15,077	5,863	20,940
5.0	Reporting	7,590	7,590	15,181
	Total Project Cost	56,869	249,785	306,654

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SONOMA COUNTY WATER AGENCY PROJECT BUDGET DETAIL
Sonoma Valley Enhanced Groundwater Recharge Study

Task	Description	Quantity	Units	Unit Cost	Cost Share	Grant Share	Total Project Costs
1.0	Pre-field Activities (planning, environmental, permitting)						
	Chief Engineer	4	Hours	\$ 256	\$ 512	\$ 512	\$ 1,024
	Hydrogeologist	30	Hours	\$ 172	\$ 2,580	\$ 2,580	\$ 5,160
	Water Agency Engineer	40	Hours	\$ 171	\$ 3,420	\$ 3,420	\$ 6,840
	Senior Environmental Specialist	4	Hours	\$ 130	\$ 260	\$ 260	\$ 520
	Environmental Specialist	15	Hours	\$ 91	\$ 683	\$ 683	\$ 1,365
	Right-of-Way Agent	8	Hours	\$ 130	\$ 520	\$ 520	\$ 1,040
	Technical Writing Manager	2	Hours	\$ 173	\$ 173	\$ 173	\$ 346
	Technical Writing Specialist	12	Hours	\$ 128	\$ 768	\$ 768	\$ 1,536
	Water Agency GIS/CAD Manager	8	Hours	\$ 159	\$ 636	\$ 636	\$ 1,272
	Consultant	100	Hours	\$ 175	\$ 8,750	\$ 8,750	\$ 17,500
	Total Task 1.0	223	Hours		\$ 18,302	\$ 18,302	\$ 36,603
2.0	Drilling and Well Construction						
	Hydrogeologist	30	Hours	\$ 172	\$ 258	\$ 4,902	\$ 5,160
	Water Agency Engineer	40	Hours	\$ 171	\$ 342	\$ 6,498	\$ 6,840
	Engineering Technician 3	20	Hours	\$ 118	\$ 118	\$ 2,242	\$ 2,360
	Consultant	200	Hours	\$ 175	\$ 1,750	\$ 33,250	\$ 35,000
	Drilling 2 nested deep wells (660 and 400 feet) including geophysical and geochemical sampling	1 total		\$ 151,000	\$ 7,550	\$ 143,450	\$ 151,000
	Drilling 4 shallow wells (50 feet) <i>(see detailed backup for drilling costs)</i>	1 total		\$ 18,000	\$ 900	\$ 17,100	\$ 18,000
	Total Task 2.0	290	Hours		\$ 10,918	\$ 207,442	\$ 218,360
3.0	Aquifer Testing (72-hour pump test)						
	Hydrogeologist	10	Hours	\$ 172	\$ 550	\$ 1,170	\$ 1,720
	Consultant	30	Hours	\$ 175	\$ 1,680	\$ 3,570	\$ 5,250
	Pump Contractor	40	Hours	\$ 125	\$ 1,600	\$ 3,400	\$ 5,000
	Equipment	3	Days	\$ 1,200	\$ 1,152	\$ 2,448	\$ 3,600
	Total Task 3.0	80	Hours		\$ 4,982	\$ 10,588	\$ 15,570

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Task Description	Quantity	Units	Unit Cost	Cost Share	Grant Share	Total Project Costs
4.0 Geochemical Modeling						
Hydrogeologist	20	Hours	\$ 172	\$ 2,477	\$ 963	\$ 3,440
Consultant	100	Hours	\$ 175	\$ 12,600	\$ 4,900	\$ 17,500
Total Task 4.0	120	Hours		\$ 15,077	\$ 5,863	\$ 20,940
5.0 Reporting						
Hydrogeologist	20	Hours	\$ 180	\$ 1,800	\$ 1,800	\$ 3,600
Administrative Services Officer	25	Hours	\$ 153	\$ 1,913	\$ 1,913	\$ 3,825
Department Analyst	40	Hours	\$ 126	\$ 2,523	\$ 2,523	\$ 5,046
Assistant Project Specialist	30	Hours	\$ 65	\$ 975	\$ 975	\$ 1,950
Office Assistant	10	Hours	\$ 76	\$ 380	\$ 380	\$ 760
Total Task 5.0	125	Hours		\$ 7,590	\$ 7,590	\$ 15,181
Total Project Cost	838	Hours		\$ 56,869	\$ 249,785	\$ 306,654

Notes:

Task 1.0:

Initial planning and finalizing well locations - field inspection and utility survey.

CEQA - NOE filed.

Permitting - well permit through PRMD.

Public Notice - advertise consultant/drilling contractor competitive selection.

Consultant/Drilling Contractor selection - prepare technical specifications, drawings, contract documents, conduct bidding and award.

Obtain Water Agency Board of Directors approval.

Task 2.0:

See detail attached.

Task 3.0:

Equipment setup and calibration.

Collect baseline data over two week period.

Conduct constant rate pumping test.

Water Quality Sampling - monitor field parameters hourly for first 6 hours, every four hours throughout 72 hour pump test.

Collect 3 samples (beginning, middle, end of pumping period) - analyze for general minerals, total dissolved solids.

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Task 4.0:

Based on results from Task 3.0, perform geochemical simulations using USGS aqueous modeling code.

Task 5.0:

Reporting: Monitoring Well Completion Report, Aquifer Testing Report, Geochemical Modeling Summary Report

Distribute reports to DWR and Basin Advisory Panel

Submit quarterly reports to DWR and perform project management tasks - communications with DWR, and track scope, schedule and budget.

Estimates are based on experience from other projects of similar scope and size, and the Water Agency's AB 303 FY07-08 Local Groundwater Assistance Grant. DWR deemed the Water Agency's FY 07-08 grant expenses as realistic and cost-effective in meeting the project's objectives.

Engineer's Estimate
Sonoma County Water Agency
Sonoma Valley Nested Groundwater Monitoring Wells

Drilling 2 nested deep wells (660 and 400 feet) including geophysical and geochemical sampling.

Item No.	Description	Quantity	Unit	Engineer's Estimate	
				Unit Price	Total
	Mobilization / Demobilization	1	L.S.	\$ 10,000.00	\$ 10,000.00
	Permits	2	ea	\$ 500.00	\$ 1,000.00
	Conductor Casing	40	L.F.	\$ 200.00	\$ 8,000.00
	Pilot Borehole Drilling	1,040	L.F.	\$ 40.00	\$ 41,600.00
	Neat Cement Grout for Pilot Borehole	100	L.F.	\$ 15.00	\$ 1,500.00
	Borehole Reaming (16-inch)	1,040	L.F.	\$ 25.00	\$ 26,000.00
	Blank Monitoring Well Casings	1,530	L.F.	\$ 12.00	\$ 18,360.00
	Monitoring Well Screens	130	L.F.	\$ 15.00	\$ 1,950.00
	Sand Filterpacks	150	L.F.	\$ 14.00	\$ 2,100.00
	Bentonite Seals	830	L.F.	\$ 20.00	\$ 16,600.00
	Neat Cement Grout for Surface Seal	100	L.F.	\$ 14.00	\$ 1,400.00
	Surface Completion (Both Sites)	1	L.S.	\$ 3,000.00	\$ 3,000.00
	Well Development	80	Hour	\$ 150.00	\$ 12,000.00
	Geochemical Analysis	3	ea	\$ 1,200.00	\$ 3,600.00
	Geophysics	2	L.S.	\$ 2,000.00	\$ 4,000.00
	TOTAL			\$	151,110.00

Consultant Days		20	ea		\$ 1,800.00	\$	36,000.00	
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Engineer's Estimate

Sonoma County Water Agency

Sonoma Valley Nested Groundwater Monitoring Wells

Drilling 4 shallow wells (50 feet).

Item	Description	Quantity	Unit	Engineer's Estimate	
				Unit Price	Total
	Mobilization / Demobilization	1	L.S.	\$ 1,500.00	\$ 1,500.00
	Pilot Borehole Drilling	200	L.F.	\$ 20.00	\$ 4,000.00
	Blank Monitoring Well Casings	140	L.F.	\$ 12.00	\$ 1,680.00
	Monitoring Well Screens	80	L.F.	\$ 15.00	\$ 1,200.00
	Sand Filterpacks	100	L.F.	\$ 14.00	\$ 1,400.00
	Bentonite Seals	20	L.F.	\$ 20.00	\$ 400.00
	Neat Cement Grout for Surface Seal	100	L.F.	\$ 14.00	\$ 1,400.00
	Surface Completion (Both Sites)	4	ea	\$ 300.00	\$ 1,200.00
	Well Development	20	Hour	\$ 150.00	\$ 3,000.00
	Permits	4	ea	\$ 500.00	\$ 2,000.00
	TOTAL			\$	17,780.00