

ATTACHMENT A



United States Department of the Interior

U.S. GEOLOGICAL SURVEY
California Water Science Center
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Sacramento, California 95819-6129
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<http://water.wr.usgs.gov>

September 14, 2011

PROGRAM SCOPE

Mr. Thomas D. Fayram, Deputy Director
Santa Barbara County Water Agency
123 East Anapamu Street
Santa Barbara, California 93101

Dear Mr. Fayrame:

This letter confirms discussions between Santa Barbara County Water Agency (County) and U.S. Geological Survey (USGS), concerning the continuation of the water resources program for the period November 1, 2011 to October 31, 2012.

The proposed program for this period and associated costs are as follows:

I. Santa Barbara County Water Agency

A. Surface Water Streamgaging Stations:

Operation and Maintenance

<u>Station number and name</u>	<u>SBCWA Funds</u>	<u>USGS Funds</u>	<u>Total Funds</u>
11119500 Carpinteria Creek near Carpinteria	\$ 13,550	\$ 9,050	\$ 22,600
11119750 Mission Creek near Mission Street at Santa Barbara	13,550	9,050	22,600
11119940 Maria Ygnacio Creek at University Drive near Goleta	13,550	9,050	22,600
11120000 Atascadero Creek near Goleta	13,550	9,050	22,600
11120500 San Jose Creek near Goleta	13,550	9,050	22,600
11123500 Santa Ynez River below Los Laureles Canyon near Santa Barbara	13,550	9,050	22,600
11124500 Santa Cruz Creek near Santa Ynez	13,550	9,050	22,600
11128250 Alamo Pintado Creek near Solvang	13,550	9,050	22,600

Surface Water Streamgaging Stations (continued):

Operation and Maintenance

<u>Station number and name</u>	<u>SBCWA Funds</u>	<u>USGS Funds</u>	<u>Total Funds</u>
11128300 Alisal Reservoir near Solvang	7,900	-0-	7,900
11129800 Zaca Creek near Buellton	13,550	9,050	22,600
11132500 Salsipuedes Creek near Lompoc	13,550	9,050	22,600
11135800 San Antonio Creek at Los Alamos	13,550	9,050	22,600
11136800 Cuyama River below Buckhorn Canyon	13,550	9,050	22,600
11138500 Sisquoc River near Sisquoc	22,600	-0-	22,600
11141050 Orcutt Creek near Orcutt	<u>13,550</u>	<u>9,050</u>	<u>22,600</u>
SW Streamgaging Stations Subtotal	\$ 206,650	\$ 117,650	\$ 324,300

B. Groundwater Monitoring Program:

1. Water-level monitoring

The USGS will conduct monitoring of approximately 280 wells in the spring and 60 wells in the fall as part of the County wide monitoring program described by lists A-1 and A-2, files.

The program continues to evolve as groundwater level and quality sites are lost each year due to abandonment by legal owner, obstruction, denied access, etc. Water-level and water-quality sites need to be evaluated on an ongoing basis to ascertain that the program is collecting the best data and is as cost efficient as possible. Santa Barbara County staff will assist the USGS staff on an annual basis to complete this task. This task was identified in the summer of 2002, and has been worked on intensively in recent years.

2. Water-quality monitoring

In 1981, a groundwater quality network was reestablished in selected basins of Santa Barbara County (List B). Water samples from 17 wells in the network will be collected annually, during the pumping season (in July), and analyzed for the constituents shown in List C. There will be 6-7 wells that need to be replaced in 2012.

B. Groundwater Monitoring Program (continued):

3. Seawater encroachment monitoring

Four water samples from four different water-bearing zones from each of the two well groups known as Guadalupe #1 and Guadalupe #2 will be obtained once during the year at the end of the pumping season in November (List B). These 8 well samples will be analyzed for the chemical constituents shown in List C. Water-levels will be included.

Water samples noted by single asterisks in List B will be obtained at the same time as prescribed in the Santa Ynez River Water Conservation District program letter. These samples will be analyzed for the constituents on List C, plus barium and iodide. The results of chemical analyses will be provided to the County as they become available.

A total of 28 water quality monitoring wells will be sampled and analyzed annually for the constituents noted on List C.

C. Surface Water Quality Monitoring Program:

1. Stream-quality stations - Water samples will be collected on a monthly basis, as flow permits, at the following stations. Once per year (as flow permits, and usually during the month of April) samples will be collected for the constituents on List C. Field determinations of pH, alkalinity, dissolved oxygen, specific conductance, temperature, and discharge will also be made. All other monthly samples will be analyzed for pH, total dissolved solids, specific conductance, temperature, and discharge.

11123500	Santa Ynez River below Los Laureles Canyon near Santa Ynez
11124500	Santa Cruz Creek near Santa Ynez
11132500	Salsipuedes Creek near Lompoc
11133000	Santa Ynez River at Narrows near Lompoc
11135800	San Antonio Creek at Los Alamos
11136800	Cuyama River below Buckhorn Canyon near Santa Maria
11138500	Sisquoc River near Sisquoc
11141050	Orcutt Creek near Orcutt

2. Continuous temperature recording, specific conductance, and dissolved oxygen at Santa Ynez River near Santa Ynez (11126000).*

*Cost of the continuous water quality monitoring at station 11126000 Santa Ynez River near Santa Ynez is split between four agencies as follows:
Santa Barbara County \$3,300
Cachuma Operations Management Board \$12,550
Santa Ynez River Water Conservation District \$2,450 located on City of Lompoc Program
City of Lompoc \$3,300

Mr. Thomas D. Fayram, Deputy Director- Santa Barbara County Water Agency

Following is a summary of the work and associated costs for the Santa Barbara County Water Agency during the period November 1, 2010 to October 31, 2011:

	SBCWA Funds	USGS Funds	Total Funds
A. Surface Water Streamgaging Stations			
Operation and Maintenance	\$ 206,650	\$ 117,650	\$ 324,300
B. Groundwater Monitoring			
1. Water-levels	38,500	1,200	39,700
2. Water-quality	18,650	11,200	29,850
3. Seawater encroachment			
- Guadalupe	9,050	5,550	14,600
- Surf	5,200	2,700	7,900
C. Surface Water Quality Monitoring			
1. Stream-quality stations ¹	19,480	12,960	32,440
2. Continuous temperature, specific conductance, and dissolved oxygen ²	<u>3,300</u>	<u>1,850</u>	<u>5,150</u>
Total	\$ 300,830	\$ 153,110	\$ 453,940

Total cost of the proposed program is \$453,940.00. Cost to County will be \$300,830.00 and subject to the availability of Federal matching funds, the USGS will provide \$153,110.00.

Enclosed, are three originals of Joint Funding Agreement (JFA) 12WSCA03900 for your approval. Work performed with funds from this agreement will be conducted on a fixed-price basis. If you are in agreement with this proposed program, please return two signed JFA's to our office. The third JFA is for your records, pending USGS approval. Upon approval, a fully executed JFA will be forwarded for your records.

¹ Stream-quality stations average cost for SBCWA is \$2,435. The USGS average cost for these stations is \$1,620.

² SBCWA to be reimbursed \$3,300 by the City of Lompoc.

Mr. Thomas D. Fayram, Deputy Director- Santa Barbara County Water Agency

The USGS is required to have an agreement in place prior to any work being performed on a project. We request that the JFA be returned prior to November 1, 2011. If it is not received by November 1, we will be required to suspend operations until an agreement is received.

If you have any questions concerning this program, please contact Al Caldwell, in our Santa Maria Field office, at (619) 225-6103. If you have any administrative questions, please contact Tammy Seubert, in our Sacramento Office, at (916) 278-3040.

Sincerely,

Acting
Sharon G. Gregg

Eric G. Reichard
Director, USGS California Water Science Center

Enclosures

cc: Al Caldwell, USGS CAWSC

Mr. Thomas d. Fayram, Deputy Director- Santa Barbara County Water Agency

List A-1

Groundwater Wells Measured Annually
Santa Barbara County Water Agency
USGS (updated 07/01/10 by M.C. Scrudato)

4N/28W-2P3	6N/31W-10F1	7N/30W-29D1
4N/28W-16J5	6N/31W-11D4	7N/30W-29N2
4N/30W-1G1	6N/31W-13D1	7N/30W-30M1
5N/29W-1C1	6N/31W-17F1	7N/30W-32R1
5N/29W-31C1	6N/31W-17F3	7N/30W-33M1
5N/30W-19E1	6N/32W-2Q1	7N/30W-35R1
5N/30W-28R1	6N/32W-6K1	7N/30W-36N2
5N/30W-28R2	6N/32W-16P3	7N/30W-36N3
5N/30W-30N2	6N/32W-18H1	7N/31W-22A3
6N/29W-5A1	6N/33W-8R1	7N/31W-23P1
6N/29W-6F1	6N/33W-8J3	7N/31W-34M1
6N/29W-6G1	6N/33W-9M1	7N/31W-35K4
6N/29W-7L1	6N/33W-11L4	7N/31W-36L2
6N/29W-8P1	6N/34W-6C4	7N/32W-7B1
6N/29W-8P2	6N/34W-12C5	7N/32W-31M1
6N/30W-1R3	6N/36W-1K1	7N/33W-16G5
6N/30W-7G5	6N/36W-26C1	7N/33W-17M1
6N/30W-7G6	6N/36W-26G1	7N/33W-17N2
6N/30W-9N1	7N/29W-29R1	7N/33W-19D1
6N/30W-11G2	7N/29W-29R2	7N/33W-20G1
6N/31W-1P2	7N/30W-16B1	7N/33W-21G2
6N/31W-1P3	7N/30W-19H1	7N/33W-21N1
6N/31W-2K1	7N/30W-22E1	7N/33W-27G1
6N/31W-3A1	7N/30W-22E2	7N/33W-27J1
6N/31W-4A1	7N/30W-24Q1	7N/33W-28D3
6N/31W-7F1	7N/30W-25Q2	7N/33W-30B2
	7N/30W-27H1	

Mr. Thomas D. Fayram, Deputy Director- Santa Barbara County Water Agency

List A-1 – Continued

Groundwater Wells Measured Annually
Santa Barbara County Water Agency
USGS (updated 07/01/10 by M.C. Scrudato)

7N/33W-36J1	7N/35W-23Q2
7N/34W-9H5	7N/35W-23Q3
7N/34W-9H6	7N/35W-23Q4
7N/34W-12E1	7N/35W-24J4
7N/34W-14F4	7N/35W-24K5
7N/34W-14L1	7N/35W-24N3
7N/34W-15D1	7N/35W-25F6
7N/34W-15D2	7N/35W-25F7
7N/34W-15E1	7N/35W-26F4
7N/34W-15P2	7N/35W-26L1
7N/34W-20K4	7N/35W-26L2
7N/34W-22J6	7N/35W-26L4
7N/34W-24N1	7N/35W-27C1
7N/34W-26H3	7N/35W-27F1
7N/34W-27G6	7N/35W-27H1
7N/34W-29E4	7N/35W-27P1
7N/34W-29N6	7N/35W-30G1
7N/34W-29N7	7N/35W-31J2
7N/34W-30L10	7N/35W-32N1
7N/34W-31R2	7N/35W-35A3
7N/34W-32H2	8N/30W-30R1
7N/34W-35K9	8N/31W-22J1
7N/35W-15M1	8N/31W-22J2
7N/35W-17M1	8N/31W-25K1
7N/35W-17Q6	8N/31W-25Q1
7N/35W-18H1	8N/31W-36H1
7N/35W-18J2	8N/32W-25D1
7N/35W-21G2	8N/32W-28P1
7N/35W-22J1	8N/32W-28P4
7N/35W-22M1	8N/32W-29L2
7N/35W-23B2	8N/32W-30D1
7N/35W-23E2	8N/32W-30E5
7N/35W-23J5	

3 neverland not added to letter – courtesy measurement if granted access: 31D1, 30N1, and 25Q2

Mr. Thomas D. Fayram, Deputy Director- Santa Barbara County Water Agency

List A-1 – Continued

Groundwater Wells Measured Annually
Santa Barbara County Water Agency
USGS (updated 07/01/10 by M.C. Scrudato)

8N/33W-13C1	9N/24W-33M1
8N/33W-13Q1	9N/25W-13B1
8N/33W-19K1	9N/26W-1F3
8N/33W-20Q2	9N/32W-6D1
8N/33W-22K3	9N/32W-16L1
8N/33W-24B3	9N/32W-17G1
8N/33W-24C1	9N/32W-22D1
8N/33W-25B5	9N/32W-23K1
8N/34W-2M1	9N/32W-33F1
8N/34W-9K1	9N/32W-33M1
8N/34W-14L1	9N/32W-33M2
8N/34W-15F2	9N/33W-2A7
8N/34W-15F4	9N/33W-6G1
8N/34W-16C1	9N/33W-12C1
8N/34W-16C2	9N/33W-12R2
8N/34W-16C3	9N/33W-24L1
8N/34W-16C4	9N/34W-3A2
8N/34W-16F1	9N/34W-3F10
8N/34W-16G3	9N/34W-6C1
8N/34W-17E1	9N/34W-8H1
8N/34W-17H1	9N/34W-9R1
8N/34W-17K2	9N/34W-34P1
8N/34W-17Q1	10N/26W-18F1
8N/34W-21A1	10N/26W-20M1
8N/34W-23B1	10N/26W-20P1
8N/34W-24E1	10N/27W-11A1
8N/35W-12M1	10N/32W-19M2
9N/24W-32C1	

Mr. Thomas D. Fayram, Deputy Director- Santa Barbara County Water Agency

List A-1 - Continued

Groundwater Wells Measured Annually
Santa Barbara County Water Agency
USGS (updated 07/01/10 by M.C. Scrudato)

10N/33W-7M1	10N/34W-24K3
10N/33W-7R1	10N/34W-26H2
10N/33W-7R6	10N/34W-29N2
10N/33W-18G1	10N/35W-5P2
10N/33W-19B1	10N/35W-7E5
10N/33W-19K1	10N/35W-9E5
10N/33W-20H1	10N/35W-9F1
10N/33W-21P1	10N/35W-9N2
10N/33W-26N1	10N/35W-11E4
10N/33W-27G1	10N/35W-14P1
10N/33W-28A1	10N/35W-18F2
10N/33W-28F2	10N/35W-21B1
10N/33W-29F1	10N/35W-23M2
10N/33W-30G1	10N/35W-24B1
10N/33W-30M2	10N/35W-24Q1
10N/33W-31Q2	10N/35W-35J2
10N/33W-34E1	10N/36W-12P1
10N/33W-35B1	11N/34W-30Q2
10N/34W-6N1	11N/34W-29R2
10N/34W-9D1	11N/34W-33J1
10N/34W-13C1	11N/35W-20E1
10N/34W-13G1	11N/35W-25F3
10N/34W-13H1	11N/35W-26M3
10N/34W-13J1	11N/35W-28F2
10N/34W-14E4	11N/35W-29E2
10N/34W-14E5	11N/35W-28M1
10N/34W-20H3	11N/35W-33G1
10N/34W-24K1	

Mr. Thomas D. Fayram, Deputy Director- Santa Barbara County Water Agency

List A-1 - Continued

Groundwater Wells Measured Annually
Santa Barbara County Water Agency
USGS (updated 07/01/10 by M.C. Scrudato)

DISCONTINUED WELLS

6N/29W-9J1 (FY07)	10N/25W-21G1 (FY07)
7N/33W-16G3 (FY07)	10N/25W-23E1 (FY07)
7N/33W-36J2 (FY07)	10N/25W-27L2 (FY07)
7N/34W-15P1 (FY05)	10N/25W-29K2 (FY07)
7N/35W-13N2 (FY07)	10N/25W-30F1 (FY08)
7N/35W-25F5 (FY07)	10N/26W-4R1 (FY08)
8N/33W-20R1 (FY05)	10N/26W-9H1 (FY08)
9N/25W-27C1 (FY08)	10N/26W-15N1 (FY07)
9N/32W-7A1 (FY07)	10N/26W-16Q1 (FY08)
9N/32W-8N1 (FY07)	10N/26W-21A1 (FY08)
9N/33W-5A1 (FY07)	10N/26W-22Q1 (FY08)
10N/25W-18J2 (FY08)	10N/32W-19M1 (FY05)
10N/25W-21E1 (FY05)	10N/33W-16N1 (FY07)
10N/25W-21G1 (FY07)	10N/33W-16N2 (FY07)
10N/25W-23E1 (FY07)	10N/33W-28F1 (FY08)
10N/25W-21F1 (FY08)	11N/34W-30Q1 (FY07)

Mr. Thomas D. Fayram, Deputy Director- Santa Barbara County Water Agency

List A-2

Groundwater Wells Measured Annually (September)
 Santa Barbara County Water Agency
 USGS (updated 07/01/10 by M.C. Scrudato)

6N/34W-6C4	E of San Pasqual Rd	10N/34W-29N2	Taylor Residence
7N/33W-16G5	Mid Santa Rita Valley	10N/35W-5P2	W. end of Thornberry
7N/33W-17M1	Upper Cebada Canyon	10N/35W-7E5	North of 18F2 - Gamble
7N/33W-19D1	Lower Cebada Canyon	10N/35W-9E5	Guadalupe City Well
7N/33W-20G1	W of Tularosa Road	10N/35W-9F1	Guadalupe: Waller Seed
7N/33W-21G2	Mid Santa Rita Valley	10N/35W-9N2	SW Main St - Hyw166
7N/33W-21N1	W Santa Rita Valley	10N/35W-11E4	Silva Farm N of Hyw 166
7N/33W-28D3	W Santa Rita Valley	10N/35W-14P1	N of Brown Road
7N/34W-9H5	Vandnbrg Village CSD	10N/35W-18F2	SW from Guadalupe
7N/34W-9H6	Vandnbrg Village CSD	11N/35W-20E1	Oso Flaco Lake Road
7N/34W-12E1	N of Mission Hills	10N/35W-21B1	Mahoney Bros Farm
7N/34W-14F4	Mission Hills CSD	10N/35W-23M2	S of Brown Road
7N/34W-14L1	Mission Hills CSD	10N/35W-24B1	SW Jct Ray & Brown rd
7N/34W-15D1	Vandnbrg Village CSD	10N/35W-24Q1	Ex B&W feedlot well
7N/34W-15D2	Vandnbrg Village CSD	11N/35W-25F3	Division @ Bonita Road
7N/34W-15P2	Uplands E of Hyw 1	11N/35W-26M3	O Flaco Rd E of hwy 1
7N/34W-20K4	USPrison E of Floradale	11N/35W-28F2	Hwy 1 S of O Flaco Rd
7N/34W-24N1	Purisima Mission nr 246	11N/35W-28M1	E of Guadalupe dunes
7N/34W-26H3	Eastern Lompoc Valley	11N/35W-29E2	Oso Flaco next to RVR
7N/34W-27G6	E of North A Street	11N/35W-33G1	Division St @ RR Xing
7N/34W-30L10	SW cor Central & Leege	10N/35W-35J2	Field E of Hyw 1
7N/34W-35K9	Eastern Lompoc Valley	10N/36W-12P1	E of Guadalupe dunes
7N/35W-22M1	W of VAFB entrance N		
7N/35W-17M1	Surf (near RR xing)		
7N/35W-17Q6	Surf (old barrier bridge)		
7N/35W-21G2	W of 22M1 in field		
7N/35W-22J1	W Valley: Jordan Farm		
7N/35W-23B2	N of SY River on VAFB		
7N/35W-23E2	W Valley: Jordan Farm		
7N/35W-24J4	At N end of Douglas Ave		
7N/35W-24K5	DeWolf Ave: Henning		
7N/35W-25F6	NW of DeWolf & Central		
7N/35W-25F7	NW of DeWolf & Central		
7N/35W-26F4	W Valley: Jordan Farm		
7N/35W-27C1	Ocean Ave & Renwick		
7N/35W-27F1	E. of So. VAFB entrance		
7N/35W-27H1	E. of So. VAFB entrance		
9N/34W-6C1	Laguna Sanitation Yard		
10N/34W-6N1	E of Bonita School Rd		

DISCONTINUED

7N/33W-16G3 (FY07)
 7N/33W-16G4 (FY07)
 7N/35W-13N2 (FY07)
 7N/35W-25F5 (FY07)

List B

Groundwater Quality Sampling
Santa Barbara County Water Agency
(updated 07/01/10 by M.C. Scudato)

July Groundwater

7N/30W-33M1
7N/33W-27G1
8N/32W-30E6
9N/24W-33M1
9N/25W-3F(?)
9N/33W-2A7
9M/33W-10M1, Bucio (alternate)
9N/33W-17B1, Addamo
9N/34W-3A2
10N/25W-21Q2 (Kidds)
10N/25W-34N1
10N/26W-20M1
10N/33W-20H1
10N/33W-22N3
10N/33W-30G1
10N/34W-4R2
10N/34W-14E4 (alternate)
10N/34W-14E5
10N/34W-29N1
10N/35W-14D3
TOTAL – 17 Samples

DISCONTINUED

10N/25W-20H2
10N/25W-20H3 (alternate)
10N/26W-9H1(alternate)
10N/26W-10M1
10N/26W-15B1(alternate)
10N/26W-16R1 (alternate)
10N/26W-22Q2
10N/26W-24J4

August Groundwater (Lompoc)

7N/34W-27P5*
7N/35W-17Q6*
7N/35W-21G2*
7N/35W-26F5*
TOTAL – 4 Samples

Mr. Thomas D. Fayram, Deputy Director- Santa Barbara County Water Agency

List B Continued

Groundwater Quality Sampling
Santa Barbara County Water Agency
(updated 07/01/10 by M.C. Scrudato)
November Groundwater (Guadalupe Dunes)

10N/36W-2Q1**
10N/36W-2Q3**
10N/36W-2Q4**
10N/36W-2Q7**
11N/36W-35J2**
11N/36W-35J3**
11N/36W-35J4**
11N/36W-35J5**
TOTAL – 8 Samples

GRAND TOTAL – 29 groundwater samples

Wells will be selected to replace discontinued monitoring sites as needed.

Mr. Thomas D. Fayram, Deputy Director- Santa Barbara County Water Agency

List C

Chemical Constituents
(mg/L or as indicated)

Dissolved boron (\square g/L)	Dissolved solids (sum)
Dissolved calcium	Sodium adsorption ratio
Dissolved chloride	Percent sodium
Dissolved fluoride	Total alkalinity (CaCO_3)
Dissolved iron (\square g/L)	Total hardness (CaCO_3)
Dissolved manganese (\square g/L)	Temperature °C
Dissolved magnesium	pH
Dissolved nitrogen (nitrate + nitrite)	Specific conductance (microsiemens)
Dissolved orthophosphate (PO_4)	
Dissolved orthophosphorus (P)	
Dissolved potassium	
Dissolved silica	
Dissolved sodium	
Dissolved sulfate	

Schedules used: 101, 117

Lab Codes used: 27

Additional analysis for monitoring wells noted by a single asterisk in List B includes: Lab Codes as 1202, Iodine and 1786 as Barium

Double asterisk for lab code 1246 as Bromide.