

APPLICATION TO APPROPRIATE WATER

SUPPLEMENTAL ATTACHMENT 1

State Water Resources Control Board
APPLICATION TO APPROPRIATE WATER
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SAN ANTONIO CREEK SPREADING GROUNDS
REHABILITATION PROJECT

VENTURA COUNTY, CALIFORNIA
SEPTEMBER 2010

I. STRUCTURE OF THIS DOCUMENT

This Supplemental Attachment was prepared to provide further detail and analysis of the application elements for the State Water Resources Control Board (SWRCB) Application to Appropriate Water. The section headers in this document directly correspond to those in the Application to Appropriate Water, with the exception of **Section 3.0**, which provides numerical subsection headers to provide a concise and thorough description of the project location, background, and design. For example, **Section 9.0** discusses the Justification of Amounts Requested with subsections **9.A** and **9.B**, which detail the proposed uses of diverted water (Irrigation and Domestic uses from Application elements **a** and **b**, respectively).

1.0 APPLICANT/ AGENT

Applicant:

Ventura County Watershed Protection District
Attn: Elizabeth Martinez
800 South Victoria Avenue
Ventura, California 93009-1610
Phone: (805) 658-4374
Fax: (805) 654-3350

Assigned Agent:

Analytical Environmental Services
Attn: Peter Bontadelli
1801 7th St., Suite 100
Sacramento, CA 95811
Phone: (916) 447-3479
Fax: (916) 447-1665

2.0 OWNERSHIP INFORMATION

The lead agency for the proposed project, the Ventura County Watershed Protection District (VCWPD or District) owns the 11.4-acre parcel (Assessor's Parcel Number; APN 014-0-050-160) where the proposed San Antonio Creek Spreading Grounds Rehabilitation Project (SACSGRP) is located (**Table 1**). All components of the SACSGRP except the proposed Point of Diversion are located within this parcel; the combined project site acreage is approximately 13 acres. The District was formed by an act of the California State Legislature on September 12, 1944 to provide for the control and conservation of flood and storm waters and for the protection of watercourses, watersheds, public highways, life, and property from damage or destruction from these waters. The legislation was amended in 1972 to provide for the

recreational use and beautification of lands and properties in connection with flood control activities. The legislation was once again amended in 2002 to reflect a change in name from the Ventura County Flood Control District to the Ventura County Watershed Protection District. The District is funded through property taxes, benefit assessments, and land development fees paid by property owners within the county. The District is a separate legal entity from Ventura County, but shares the same board members with the county (VCWPD, 2010).

The proposed Point of Diversion (POD) for the SACSGRP is located on private land adjacent and just upstream along San Antonio Creek to the VCWPD-owned 11.4 acre site. The proposed POD is located within APN 014-0-050-175 (20.9 acres) which is owned by the Ojai Orange Grove, LLC (**Table 1**). Written authorization from Mr. Katz (General Manager for Ojai Orange Grove, LLC) and an access permit allowing the District right-of-entry to the POD on his property is presented in **Appendix A**.

TABLE 1
OWNERSHIP INFORMATION

Owner of 11.4-acre SACSGRP Area	Owner of Point of Diversion
APN 014-0-050-160	APN 014-0-050-175
Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, California 93009-1610	Mr. Jonathan Katz, Manager Ojai Orange Grove, LLC 130 S. Sycamore Avenue Los Angeles, California 90036

Source: VCWPD, 2010.

3.0 PROJECT DESCRIPTION

3.1 PROJECT LOCATION

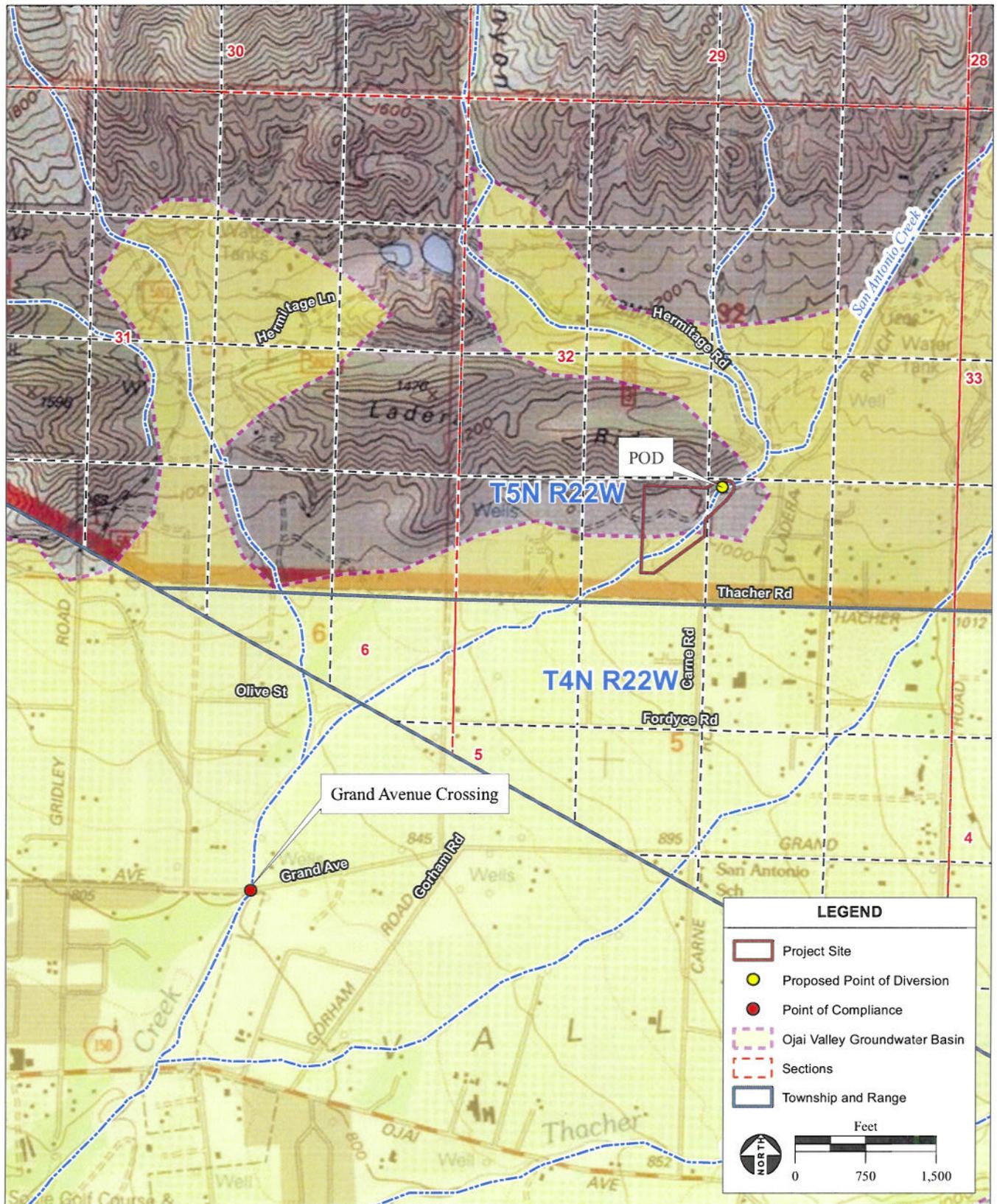
The SACSGRP (approximately 13 acres) is located within the Ojai Valley adjacent to and within the San Antonio Creek Sub-Watershed (SACSW), within an unincorporated portion of Ventura County, approximately 0.9 miles northeast of the City of Ojai, California (**Figure 1**). The existing but now abandoned spreading grounds at the project site are located approximately 1.1 miles north of the State Route 150/Carne Road intersection. The SACSGRP is located in the “Ojai, CA” U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (quad) (USGS, 1997). The SACSGRP site is located in the SE ¼ of the SW ¼ of Section 32, Township 5N, Range 22W (San Bernardino Baseline Meridian). The Proposed POD is located at the SW ¼ of the SE ¼ of Section 32, Township 5N, Range 22W (San Bernardino Baseline Meridian). A topographic map of the vicinity of the project site and POD is illustrated on **Figure 2**. The SACSGRP is located within the SACSW of the Ventura River Watershed, Hydrologic Unit Code #18070101 (USGS, 1978) and will serve to recharge groundwater to the Ojai Valley Groundwater Basin (Unit 4-2, South Coast Hydrologic Region) (DWR, 2003).

3.2 PROJECT BACKGROUND

The San Antonio Creek Sub-Watershed (SACSW, 51 square miles) comprises approximately 22 percent of the Ventura River watershed (228 square miles) in the Ojai Valley. Upstream, drainages from the Gridley Canyon/ Senior Canyon in the Los Padres National Forest feed San Antonio Creek. San Antonio



Figure 1
Regional Location Map



SOURCE: "Ojai, CA" USGS 7.5 Minute Topographic Quadrangle, T5N R22W, Section 32, San Bernardino Baseline and Meridian; AES, 2010

San Antonio Creek Water Right Application / 210535 ■

Figure 2
Project Site and Vicinity

Creek is the first major tributary to the Ventura River; its confluence is located downstream of the confluence of Matilija Creek with the Ventura River. The Ojai Valley Groundwater Basin (OVGB) falls entirely within the SACS and has an alluvial surface area of roughly 10 square miles and a tributary area of 36 square miles (Daniel B. Stephens and Associates, 2006: **Appendix B**). The OVGB includes portions of San Antonio, Senior, McNell and Thacher Creeks. The OVGB surface area is approximately 6,830 acres, storage is approximately 70,000-85,000 acre-feet (approximately 7,000-8,000 acre-feet are considered a “safe yield”) and subject to depletion during drought periods (**Appendix B**).

Unlike much of southern California, residents of the Ventura River watershed do not have access to state water (such as the State Water project). Due to the ephemeral nature of the streams in the Ojai Valley, most of the local farmers and ranchers have developed groundwater wells to the OVGB to provide a reliable source of water. As groundwater extractions throughout the last century began to lower the water table, development of groundwater replenishment techniques was sought, and water users banded together to form the Ojai Valley Water Conservation District (OVWCD). Between 1951 and 1963, groundwater recharge was performed through the importation of approximately 10,000 acre-feet of water from Matilija Lake via pipeline. When this pipeline was abandoned, the OVWCD constructed a groundwater recharge system located on and adjacent to the proposed project site, which was privately owned at the time. The recharge system, which was utilized from 1963 through 1985, was comprised of dozens of settling basins constructed in a terraced manner to facilitate the overspill from one into the next. Diversion occurred seasonally through a 24-inch diameter pipe equipped with an iron gate to control flow rates. No records were kept detailing the amount of surface flow diversions from San Antonio Creek during this period but anecdotal evidence suggests that approximately 500 acre-feet were diverted annually into the settling ponds. Diverted amounts varied annually depending on precipitation, thus diversion only occurred during short periods when sufficient surface flow was present. The proposed project intends to help prevent overdraft of the OVGB by maximizing basin recharge through diversion of peak surface flows only.

The VCWPD acquired the 11.4-acre parcel comprising a portion of San Antonio Creek in 1985 following the Ojai fire to prevent potential damage from future impacts of a heavy stream flow to downstream properties. After the parcel was purchased, a debris basin was constructed, which filled in most of the settling basins of the spreading grounds. Restoration and reconstruction of the settling basins was attempted by the VCWPD and the OVWCD in the early 1990’s, but attempts were unsuccessful and the diversion/ settling basin system was abandoned. Currently during periods of depletion, diverted Ventura River surface water stored in Lake Casitas is imported from the Casitas Municipal Water District (Casitas MWD) to supplement groundwater extraction in the OVGB. This importation of water burdens downstream users of Ventura River water from the Casitas MWD and the City of Ventura.

The replenishment of groundwater to the OVGB remains a critical issue for Ojai Valley. In 2007, the Watershed Coalition of Ventura County was awarded a \$1,315,000 grant from the SWRCB for the proposed SACSGRP through a Proposition 50 Integrated Regional Water Management Grant. The SACSGRP was one of the most favored projects in the Proposition 50 suite, and it received strong initial support from the SWRCB and the California Department of Water Resources. The VCWPD, along with

four other parties formed a stakeholder group in January 2008 and adopted an agreement to collaborate on the implementation and maintenance of the SACSGRP with approximately \$100,000 in local match contributions, for a total project cost of approximately \$1.4 million. The stakeholders group consists of the VCWPD, as well as the Ojai Basin Groundwater Management Agency (OBGMA), the OVWCD, the Golden State Water Company (GSWC) and the Casitas MWD.

San Antonio Creek, from which the passive diversion is proposed, has been classified as one of the remaining watersheds in southern California with the potential to support the Federally Endangered southern California steelhead Ecologically Significant Unit (ESU) (*Oncorhynchus mykiss*). However, the point of diversion appears to be above the point of anadromy in San Antonio Creek. Downstream of the point of diversion is classified as spawning and rearing habitat (Padre Associates, 2009). Consultation for the southern California steelhead in terms of the proposed project is underway with the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS). Based on the hydrological assessment for the proposed project (**Appendix B**), the impacts to downstream flows are insignificant.

3.3 PROJECT GOALS, DESIGN AND COMPONENTS

The project site consists of an 11.4-acre parcel located adjacent to and within the San Antonio Creek (**Figure 3**). The SACSGRP proposes to use diverted San Antonio Creek water to increase groundwater storage and recharge in the OVGB by rebuilding the abandoned diversion works, rehabilitating the existing, relict spreading grounds and constructing passive percolation recharge wells.

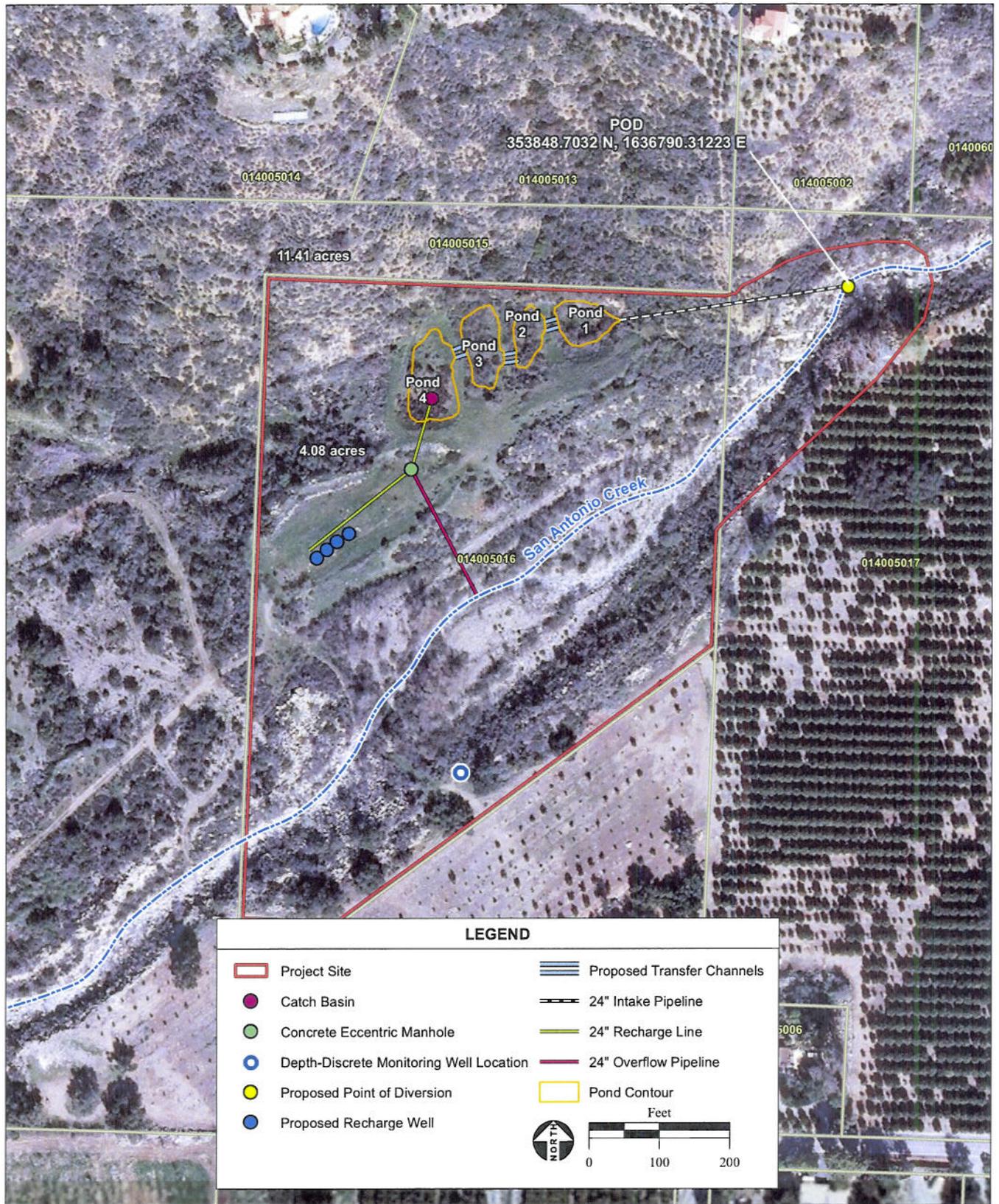
The objectives of the SACSGRP include:

- Augmenting of the Ojai Valley's water supply by diverting to the rehabbed spreading grounds and groundwater recharge wells a portion of San Antonio Creek seasonal peak flows, which are otherwise lost downstream;
- Providing additional stream monitoring data and maintaining fish passage in San Antonio Creek;
- Enhancing reliability of groundwater production from local water supply wells; and
- Promoting a local conjunctive use of water and reducing reliance on limited surface water supplies currently imported from limited Casitas MWD and from Matilija Reservoir supplies.

3.3.1 PRELIMINARY DESIGN AND OPERATION

A hydrological assessment (**Appendix B**) was completed for the VCWPD and GSWC in 2006 to identify surface water available for diversion and benefits to the OVGB (**Figure 4**). Based on this assessment, the following parameters were identified:

- A minimum surface flow of 5 cubic feet per second (cfs) will be maintained in San Antonio Creek approximately 1.3 miles downstream of the POD to support in stream uses, particularly for the southern California steelhead ESU. The minimum stream flow of 5 cfs was identified as necessary to maintain passage for steelhead trout (**Appendix B**). Compliance of in stream flow



SOURCE: Ventura County aerial photograph, 2007; AES, 2010

San Antonio Creek Water Right Application / 210535 ■

Figure 3
Project Site and Components

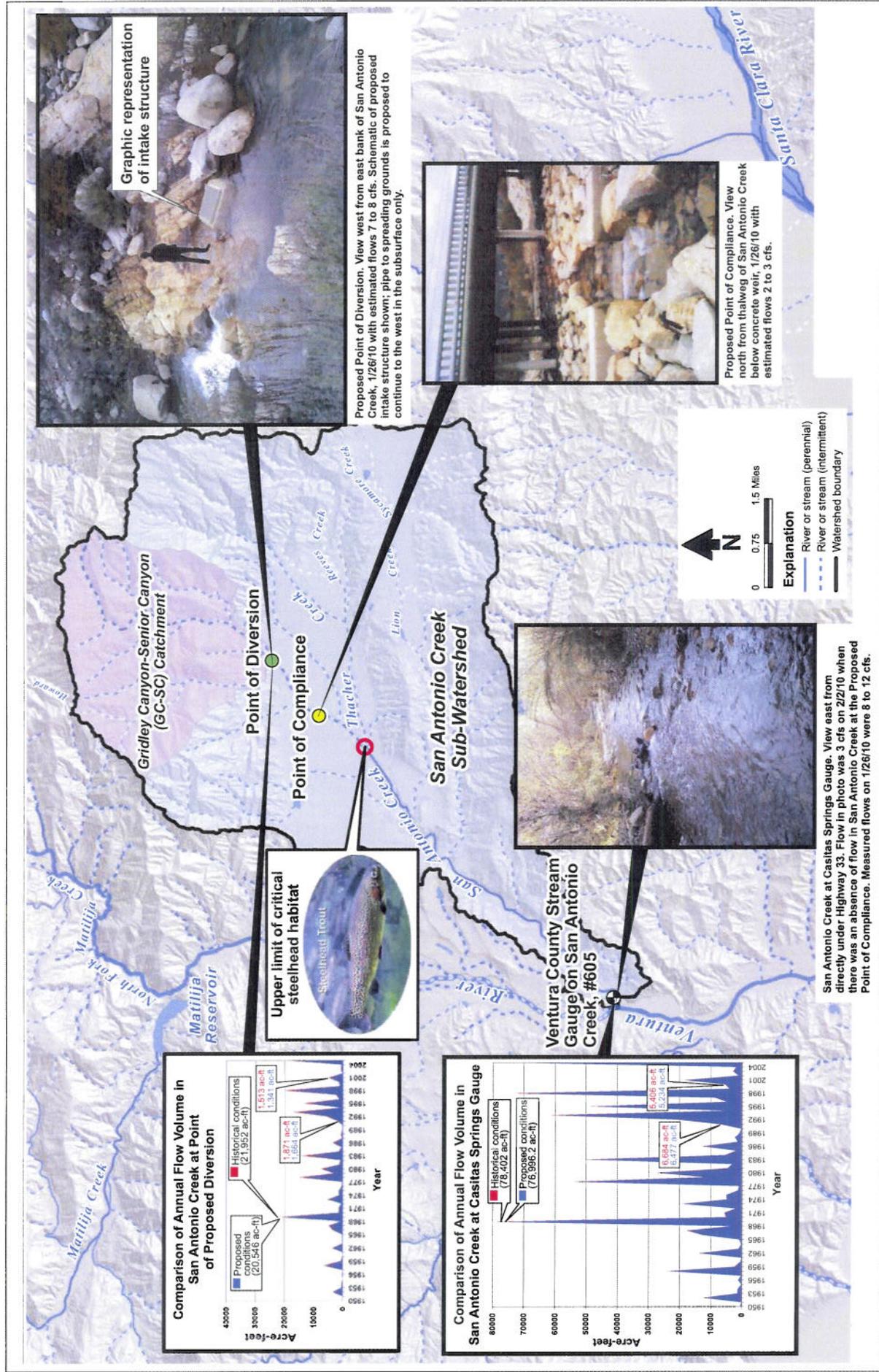


Figure 4
Historic San Antonio Creek Flow versus Project Flow Conditions

of 5 cfs is proposed at the Grand Avenue bridge, located approximately 1.3 miles downstream of the proposed POD. This flow rate downstream equates to 10.65 cfs at the POD upstream. This point of compliance was chosen owing to its tendency to be the first to dry, as well as being the location of the lowest stream flow when flow occurs in this reach of San Antonio Creek (**Appendix B**).

- The diversion of water would only occur when stream flows are sufficiently high to flow over the top of and into the diversion structure (10.65 cfs), and the diversion structure and all transfer pipelines are designed to accommodate up to 25 cfs, which would constitute the maximum diversion rate. These values are based on previous work from local watersheds (Stoecker and Kelley, 2005) and minimum autumn flows in San Antonio Creek (stream gauge 605 located in Casitas Springs) during years when steelhead were present (1998, 2005).
- Surface flows exceeding 5 cfs at the Grand Avenue bridge (10.65 cfs at the proposed POD) occur between 0-141 days per year (based on historical flows between 1950 and 2005: **Appendix B**), with an average diversion of 21 days per year.
- Recharge to groundwater in the OVGB resulting from the proposed SACSGRP would range from 0 to 3,223 acre feet per annum (afa), with an expected average between 308-914 afa.
- For each day stream flow was present between 1950 and 2005, between 21.11 to 134 acre-feet was available for diversion to the spreading grounds (averaging 113 acre-feet per day). Out of the 56 years of data, the average potential annual diversion was approximately 308.78 afa. Diversion at the proposed flow rate would have occurred in 48 of those years at rates ranging from 3.63 acre-feet (1990) to 2,273.24 acre-feet (1998), with the other eight years resulting in potential annual diversion of zero acre-feet, owing to low precipitation and creek flows (Table 3 of **Appendix B**). Seven of the 48 years yielded potential annual diversions over 1,000 acre-feet, ranging from 1,116.09 acre-feet (2005) to 2,273.24 acre-feet (1998). The 56-year “expected” diversion amounts average approximately 308 to 914 acre-feet per year, during years of average precipitation. Thus a maximum annual diversion of 914 acre-feet being sought for this application would allow for diversion to recharge groundwater in the OVGB during high-flow years.
- Based on flow data from San Antonio Creek collected between 1949 and 2005, the total amount of surface flow diverted from the creek would range from 0 to 26 percent, averaging approximately 7 percent at the proposed POD.
- Decrease in demand for imported water from Casitas MWD resulting from the proposed SACSGRP would range from 246 to 731 afa, with an expected average of 500 afa.

3.3.2 PROJECT COMPONENTS

The recharge of groundwater would occur through enhanced filtration (gravity injection) of diverted surface flow from San Antonio Creek. The project will involve the rehabilitation of adjoining relict spreading basins, construction of recharge wells and a intake (diversion) structure designed to accommodate up to 25 cfs of surface flow (when available) to recharge groundwater supply in the OVGB. The project components are described below and are shown in **Figures 2-4**. Drawings of each component

are described in the Design Narrative for 50% Submittal in **Appendix C** and shown as design sheets in **Appendix D**. Water would flow in the order of the below listed components.

Diversion (intake) structure

The POD is proposed to be located on the adjoining, privately owned parcel just upstream of the 11.4-acre site. The POD is proposed as a headwall structure of reinforced concrete (with a trash rack and fine wire mesh to prevent fish from entering the intake pipeline inlet) to be installed along the west bank of San Antonio Creek. Headwall dimensions are yet to be determined, and will be minimized to the extent practicable. Sloped wing walls will extend from both sides of the headwall. One wing wall shall protrude in to San Antonio Creek to help divert water into the pipe, with the other to parallel the existing bank (**Appendix C**). This structure design would ensure that the minimum bypass of 10.65 cfs (rounded to 11 cfs for in stream flow calculations) would remain in stream due to the elevation of the bottom of the diversion structure. Diversion would only occur at a rate of up to 25 cfs (when surface flow is available) and be constrained by the design and 24-inch diameter of the intake pipeline. Construction of the intake structure would require approximately 5 cubic yards of backfill material. The California Coordinate System location for the preferred POD is 353834.0992 Northing, 1636953.9408 Easting (Zone 5).

Intake pipeline

The intake pipeline would transport diverted water from the POD to the upper spreading basin (Pond 1) under gravity flow by a horizontal boring through the hillside. The pipeline would be approximately 360 feet long of smooth steel and 24 inches in diameter, and would link the intake structure to the upper pond. Construction of the intake pipeline would require excavation of approximately 80 cubic yards of earth material.

Rehabilitation of existing spreading basins

The existing spreading basins (labeled as Ponds 1-4 in **Table 2** and **Figure 3**) would require minor rehabilitation work as part of the proposed project; clearing a two-inch depth of soil and grubbing woody vegetation would be involved (**Table 2**). The basins would allow for settling of suspended solids and floating debris, to be followed by aquifer recharge at the wells down gradient of the cascading basins. The flow path would be from Pond 1 to Pond 2, to Pond 3, to Pond 4, by gravity.

TABLE 2
SPREADING POND DIMENSIONS AND ELEVATIONS

Pond	Surface area (sq ft)	Volume (cu ft)	Top of berm elevation (ft msl)	Bottom elevation (ft msl)	Depth (ft)
Pond 1	6,932	23,142.4	1,008	1,001	7
Pond 2	4,445	9,675.2	1,005	1,000	5
Pond 3	7,504	18,018.0	1,005	999	6
Pond 4	6,076	17,029.8	1,001	994	7

Source: Daniel B. Stephens and Associates, 2008 (**Appendix C**).

Basin transfer channels

Three open concrete channels with rock riprap bank protection will connect each pond to the next, and would be constructed to facilitate gravity flow between the four existing basins as they fill with diverted water, while minimizing erosion and turbulence. The bottom width of the channels would be three feet with two-to-one side slopes and a top width of 18 to 20 feet at 25 cfs flow (at three to four feet in depth). Twenty-two cubic yards of riprap material will line the pond banks below each inlet and outlet.

Pond Four Inlet Catch Basin

At the floor base of Pond 4, an inlet basin will be installed to serve as the intake structure to the recharge conveyance system. The basin will measure approximately 6 feet by 4.5 feet with a depth of 5 feet. A metal grate and wire mesh will screen unwanted access to the recharge conveyance piping and wells.

Recharge pipeline connecting to the recharge wells

The recharge pipeline would move water by gravity from the inlet catch basin in Pond 4 to the manhole 110 feet southwest of Pond 4 and then an additional 190 feet to the four recharge wells. The recharge pipeline would be approximately 300 feet long with an inside diameter of 24 inches. This recharge pipeline will allow water to flow into each of the recharge wells.

Manhole

Between Pond 4 and the recharge wells, a manhole will be installed to allow for separate overflow diversion back to San Antonio Creek along the recharge pipeline. This feature will be located approximately 110 feet southwest of Pond 4 and serve as a safety measure in the event flow exceeds that which can be accepted by the four recharge wells. The manhole shall have a three foot outer diameter at the top, expanding to a four foot diameter at the bottom, with a total depth of 12 feet. The top of the manhole will extend two feet above existing grade to facilitate access and maintenance.

Recharge wells

Four recharge wells would be constructed in a level area southwest of the existing basins. **Figure 3** shows the proposed locations. Each well will be completed with slotted screens in a four-foot diameter steel well casing. The wells would facilitate transmittal of water to the alluvial aquifers (Zones A and B). Two wells each will target Zone A and B at depths estimated to be between 90 and 110 feet below ground surface. A polyvinyl chloride (PVC) casing would be installed within the steel casing of each recharge well to monitor water transfer to the aquifer.

Overflow pipeline

A 24-inch diameter overflow pipeline would be connected to a manhole on the recharge pipeline and would direct excess flow from Pond 4 back to San Antonio Creek. The outlet of the overflow pipeline

would be stabilized with 20 cubic yards of quarter-ton rip rap on the west bank of San Antonio Creek. An outlet apron (with a width of approximately 10 feet) will be keyed into the floor of the creek for a minimum depth of five feet, with erosion-resistant rock and filter fabric to prevent infiltration of fine material from the bank.

Depth-discrete monitoring well

The depth-discrete monitoring well (DDMW) was installed in July 2010 to provide baseline groundwater level data to assist with project design. The DDMW consists of nested series of 2-inch diameter PVC casings discretely screened and sealed at intervals between 40 and 300 feet below ground surface. Five depth-discrete well casings were installed to monitor water levels in five aquifer zones (four alluvial and one bedrock) (Kear 2010). The DDMW will allow measurement of recharge amounts to the OVGB during implementation of the proposed project. The five-zone aquifer monitoring will provide quantitative measurements of the aquifer zone levels, information which will likely be important for the Ojai Valley as it continues to face drought conditions in future years. The DDMW is located south of the proposed recharge wells, south of San Antonio Creek at 34° 27.863' N, 119°12.432' W (**Figure 3**) (Kear, 2010).

Access Roads

Access to the project site for construction would be via an existing District easement extending from the corner of Carne Road and Thacher Road to the southern portion of the project site. Minor grading would be required to create a temporary culvert and road crossing of San Antonio Creek to access the project construction area, which is located on the north side of the creek. Access for long-term maintenance of the project would be gained by re-establishing a historical access road extending from the Hermitage Road crossing of San Antonio Creek to the northeastern corner of the project site, depending upon acquisition of easements from adjacent landowners. Some brush clearance and grading would be required to improve this former access road to allow passage of maintenance vehicles and equipment.

Safety Measures and Overflow

Several safety measures applicable to excess flows are incorporated into the project component design or are planned in future design phases. The primary design feature which would limit diversion flows to the 25 cfs sought with this application is the intake and transfer pipeline size. Additional elements include the maintenance of the existing saddle at the northwest berm of Pond 4, where in a major flow or blockage event water could flow through to San Antonio Creek in the existing spillway; the overflow pipeline from Pond 4 to the creek; a manhole and installation of isolation valves at critical points (diversion and recharge conveyance lines, etc.).

3.3.3 CONSTRUCTION

The work area comprises approximately four acres within the approximately 13-acre project site. Construction of the project elements is estimated to require between 9 and 36 months. All construction of in stream components (intake structure and overflow pipeline rip rap bank protection) would occur during the dry season, to avoid potential impacts to surface flows. The general sequence of work includes the drilling for the recharge wells, spreading basin clearing and grubbing, construction of the intake structure, installation of pipelines, manhole and headwalls and construction of the pond transfer channels. Construction equipment would include the following: three-yard bucket track hoe, three-yard front loader, backhoe, lowboy trailer, 1,500-gallon water truck, ten-yard dump truck and support vehicles. Cut and fill volumes would be balanced onsite. The POD would be maintained by the VCWPD, with quarterly (or more frequent, depending on storm events) site inspections.

4.0 PURPOSE OF USE, DIVERSION/STORAGE AMOUNT AND SEASON

The purpose of use of peak flows diverted from San Antonio Creek is the direct recharge to the OVGB. According to the Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (RWQCB 1994), beneficial uses for the OVGB include municipal, industrial service, industrial process and agricultural water supply. The Basin Plan also describes beneficial uses of San Antonio Creek for surface water as municipal, water, agricultural water supplies, groundwater recharge, recreation, and wildlife and rare species habitat. The proposed SACSGRP is consistent with the Basin Plan beneficial uses, and includes irrigation, municipal, domestic and industrial purposes of use of the water diverted from San Antonio Creek. A more detailed explanation is provided below.

4. A, B RECHARGE TO OJAI VALLEY GROUNDWATER BASIN

The total amount of water to be diverted from the SACSWS and transported via gravity pipeline to the four spreading ground ponds and recharge wells is estimated at an average of 308.78 acre-feet per annum. This estimation is based on historical flows greater than 10.65 cfs at the proposed POD at the potential spreading limit of 25 cfs between 1950 and 2005. Based on historical flows, recharge to the OVGB would have occurred in the amounts of 0 to 3,223 acre-feet per year. This averages to approximately 308 to 914 acre-feet per year, during years of normal precipitation, with a peak potential spreading limit (excluding high flows as defined in **Table 3** below) of 657.19 acre-feet. This historical record indicates that water would have been available for use in recharge an average of 21 days per year (ranging from 0 to 141 days, based on historical precipitation records) (Table 3 of **Appendix B**). The diversion of the total measured SACSWS flow amount varies from zero to seven percent, and is displayed as a percentage of the total flow of San Antonio Creek in Table 3 of **Appendix B**.

TABLE 3
HISTORICAL SPREADING LIMITS FOR PROPOSED PROJECT, SAN ANTONIO CREEK

Year	Total flow at SACSW w/proposed project (ac ft)	Available streamflow for Diversion >10.65 cfs (ac-ft/year)	Potential spreading limit at 25 cfs (ac-ft)	Year	Total flow at SACSW w/proposed project (ac ft)	Available streamflow for Diversion >10.65 cfs (ac-ft/year)	Potential spreading limit at 25 cfs (ac-ft)
1950	642.73	79.90	49.50	1978	52,623.93	11,692.05	1,323.47
1951	0	0	0	1979	11,302.70	873.26	196.47
1952	12,126.46	2,622.15	264.88	1980	26,648.08	4,630.12	657.19
1953	1,382.25	13.82	6.97	1981	4,422.64	284.25	84.22
1954	1,270.39	82.67	41.68	1982	3,173.24	167.07	58.37
1955	175.14	0	0	1983	48,350.36	9,922.14	1,759.71
1956	1,121.28	190.45	31.71	1984	5,347.66	116.51	53.23
1957	213.68	7.58	3.91	1985	1,725.15	39.41	19.87
1958	23,263.32	4,825.37	608.16	1986	12,436.03	1,870.45	399.23
1959	2,240.28	78.78	39.72	1987	1,399.82	0	0
1960	463.34	0	0	1988	2,185.31	223.20	47.38
1961	147.97	0	0	1989	729.15	12.73	6.42
1962	13,469.22	3,142	320	1990	294.17	7.20	3.63
1963	1,026.86	129.36	47.39	1991	6,477.38	1,360.96	207.61
1964	318.15	0	0	1992	20,053.27	3,563.17	457.34
1965	846.99	86.56	36.45	1993	59,260.03	13,347.77	1,823.36
1966	12,463.14	2,812.11	266.38	1994	3,273.93	129.88	38.13
1967	17,210.10	2,615.23	351.55	1995	47,202.39	9,878.20	1,400.63
1968	2,793.56	89.89	45.32	1996	4,648.21	465.32	73.78
1969	76,996.18	18,665.93	1,406.36	1997	8,518.43	998.22	233.80
1970	5,047.31	407.50	114.53	1998	71,229.37	16,306.81	2,273.24
1971	5,408.67	747.43	104.19	1999	3,942.57	0	0
1972	1,895.57	259.26	76.48	2000	5,234.21	594.49	171.94
1973	18,810.06	3,487.82	335.36	2001	18,056.87	3,332.83	345.23
1974	4,785.14	441.40	66.95	2002	1,099.28	0	0
1975	4,993.87	526.33	111.07	2003	2,676.72	459.71	112.95
1976	1,240.79	18.86	9.51	2004	1,797.31	305.97	50.00
1977	821.19	83.23	39.81	2005	69,930.13	16,304.57	1,116.07

High potential spreading limit -high flow (>1,000 ac-ft) (1969, 1978, 1983, 1993, 1995, 1998, 2005): **1,116.07-2,273.24 ac-ft**
 Low potential spreading limit - zero flow (1951, 1955, 1960, 1961, 1964, 1987, 1999, 2002): **0 ac-ft**
 Average potential spreading (1950-2005): **308.78 ac-ft**
 Expected average annual diversion: **308-914 ac-ft (914 ac-ft proposed as maximum annual diversion)**

Source: Table 3, Hydrological Assessment, **Appendix B.**

Based on these historical diversion availability rates, recharge in years of low precipitation to years of high precipitation would range from zero to 43 percent of the “safe yield” use of the OVGB. This amount would represent a significant recharge to the OVGB. Based on existing ground water monitoring that has occurred approximately one mile downstream of the proposed project, consistent pumping has resulted in

a pumping depression near GSWC well fields south of the Grand Avenue Bridge. As a result of this pumping depression, additional storage is available to accommodate the OVGB recharge proposed by the SACSGRP. This pumping depression is likely to have increased the storage capacity of the groundwater basin safe yield. Groundwater level monitoring to measure the success of the project, will occur at the depth-discrete monitoring well (**Section 3.3.2**) and at additional other key wells in the OVGB. This ground water monitoring program is designed to measure the success of the project and thereby demonstrate the beneficial use of the water consistent with the Basin Plan.

4. C *UNDERGROUND STORAGE SUPPLEMENTAL INFORMATION*

Question 4(c) of the Application to Appropriate Water requires that Form UGSTOR (12-04) be filled out for underground storage.

Question (5) of Form UGSTOR (12-04) addresses historic groundwater level data from the vicinity of the proposed SACSGRP. The information provided on that form is based on data from well 5N/22W-32P1, which was located approximately 380 feet southeast of the SACSGRP boundary near the location of the current depth-discrete monitoring well. This well has long been abandoned. The DDMW was drilled in July 2010 which will provide additional information on water levels in the OVGB.

5.0 SOURCES AND POINTS OF DIVERSION/ RE-DIVERSION

Please refer to **Figures 2** and **3** above which show the project location and proposed POD as well as project components. The proposed POD is located approximately 1,225 feet north and 5,150 feet west of the SW corner of Section 32, Township 5N, Range 22W.

6.0 WATER AVAILABILITY

6. A, B *WATER AVAILABILITY ANALYSIS AND APPROPRIATION*

A hydrological assessment for the SACSW was completed in June 2006 by Daniel B. Stephens and Associates for the GSWC and the VCWPD and is attached as **Appendix B** (DBS&A, 2006). The San Antonio Creek Watershed is not considered a fully appropriated stream by the SWRCB, according to the Ventura County list dated November 19, 1998 and as re-verified by the SWRCB in 2010 (SWRCB 2010a).

6. C, D *SEASONAL STREAMFLOW AND ALTERNATE SOURCES*

San Antonio Creek dries up on a seasonal basis downstream of the proposed project site, with the most common dry months occurring in July, August and September. The application for the proposed project proposes a minimum bypass flow of 5 cfs measured for compliance purposes at the Grand Avenue bridge during the diversion season. This point of compliance was chosen owing to the tendency of this location to have the lowest stream flow and become the first to dry in the season. If the 5 cfs minimum is maintained at this monitoring compliance location, it translates to a 10.65 minimum in stream flow at the

proposed POD. The elevation design of the passive diversion structure at the POD will not allow for the capture of any flows from San Antonio Creek when in stream flows are below 10.65 cfs. In years when flows are so low that diversion does not occur, based on the minimum flow standards, the importation of diverted Ventura River water from Lake Casitas will continue to occur to supplement groundwater use in the OVGB, as currently performed in order to maintain well production in the OVGB.

7.0 PLACE OF USE

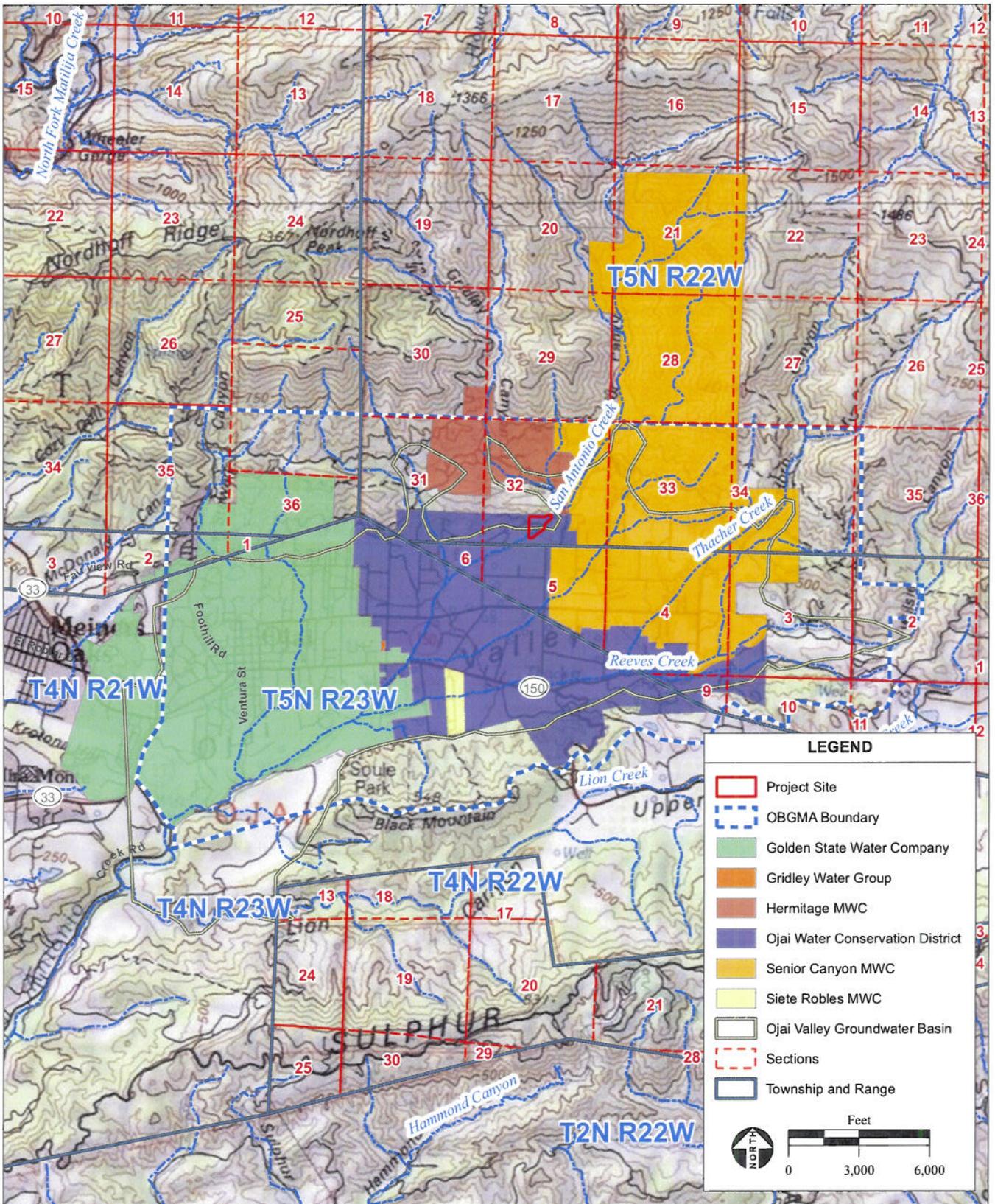
The purpose of the SACSGRP is to recharge the OVGB located within the SACSW. The ultimate use of the diverted water, once recharged to the OVGB will be the multiple subscribers which utilize water for localized irrigation and domestic uses from the OVGB under supervision of the OBGMA. Thus, the place of use is defined as the OBGMA boundary (service area) (**Section 7.1**). The OBGMA service area is located within Sections 35 and 36, Township 5N, Range 23 W, Sections 1, 2, 11, 12, 13 and 14 of Township 4N, Range 23 W, Sections 31, 32, 33 and 34 of Township 5N, Range 22W, Sections 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 17 and 18 of Township 4N, Range 22W, referenced from the San Bernardino Baseline and Meridian. The OBGMA service area (place of use of water for the SACSGRP) is shown in **Figure 5**. There are 3,422 parcels (APNs) which correspond to this place of use, for a total service area size of 10,528.48 acres (16.45 square miles). These parcels for the OBGMA service area and place of use are shown in **Figure 6**.

7. A OJAI BASIN GROUNDWATER MANAGEMENT AGENCY

The OBGMA oversees the extraction of groundwater from the OVGB (6,830 acres, 10.7 square miles) within the Casitas MWD. By OBGMA Ordinance No. 1, adopted April 29, 1993, all wells in the OVGB must be registered with the OBGMA (OBGMA, 2008). As of June 28, 2007, 145 wells are registered with the OBGMA, with 125 classified as active and 20 as inactive. Approximately 60 additional well are reported to have function in the past but are considered abandoned, bringing the number of historically-known wells in the OVGB to over 200 (OBGMA, 2008). Currently, 24 wells are monitored for groundwater levels by the Ventura County Department of Water Resources, and 22 are monitored for water quality under Title 22 by the Department of Health Services and cooperators (DWR, 2003). In 2008, approximately 5,052 acre-feet of water was extracted from the OVGB for Ojai City and local agricultural uses. Between 1981 and 2005, groundwater use averaged approximately 5,170 acre feet per annum, of which 35% was pumped by the GSWC for municipal and domestic use (**Section 9.0**). Three mutual water companies (Senior Canyon, Siete Robles and Hermitage Mutual Water Companies) and approximately 100 active, private wells supply both agricultural and domestic water to users in the OVGB (OBGMA 2007a).

8.0 PROJECT SCHEDULE

Construction is estimated to take between nine and 36 months, depending on the presence of water within San Antonio Creek in the vicinity of the project site. The amount of time required to obtain the full amount of water permitted under the Water Right is estimated to take up to 10 years, but this timeframe



SOURCE: "Ojai, CA" USGS 7.5 Minute Topographic Quadrangle, T5N R22W, Section 32, San Bernardino Baseline and Meridian; AES, 2010

San Antonio Creek Water Right Application / 209542 ■

Figure 5
Ojai Valley Ground Water Basin Water Purveyors (Place of Use)

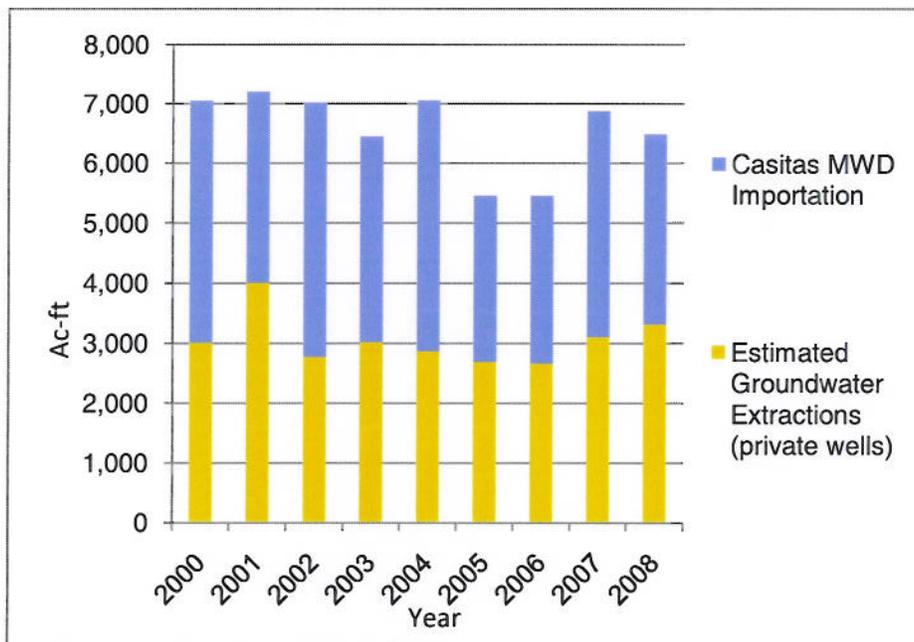
will depend on the future flows within San Antonio Creek. An Initial Study/ Mitigated Negative Declaration is being prepared for the proposed project.

9.0 JUSTIFICATION OF AMOUNTS REQUESTED

9.A IRRIGATION USE

The OBGMA started recording groundwater extractions from the OVGB on an annual basis in 1993. Extractions from privately-owned wells within the OBGMA have primarily been for irrigation uses (OBGMA, 2008). These annual amounts have been combined since 1993 with the annual amounts of water imported from the Casitas MWD, comprising the estimated annual irrigation demand (Figure 7). Estimated irrigation demand between 2000 and 2008 by groundwater and importation averaged 6,564 acre-feet (OBGMA 2007b and 2008); annual variation in irrigation demand is depicted in Figure 7. Thus over the period of 9 years, 53% of the irrigation demand for well subscribers of the OVGB is from imported Casitas MWD water, with the other 47% utilizing OVBG groundwater for irrigation needs. According to the state’s Farmland Mapping and Monitoring Program, approximately 2,537 acres of land classified as “farmland” exists within the general vicinity of the OVGB, though individual crop data was not available (California Dept. of Conservation, 2008). The Proposed SACRSRP would alleviate the need to import an estimated 246-731 acre-feet per year from the Casitas MWD, most of which is allocated for irrigation purposes (representing a 7-21% reduction in demand based on importation amounts and proposed diversion amounts) (Appendix B). Based on previous groundwater extraction amounts for irrigation between 2000 and 2008, between 136 and 479 acre-feet per year would be used for irrigation from the amount of diverted flow recharged to the OVGB with the proposed project.

FIGURE 7. ESTIMATED IRRIGATION DEMAND, 2000-2008

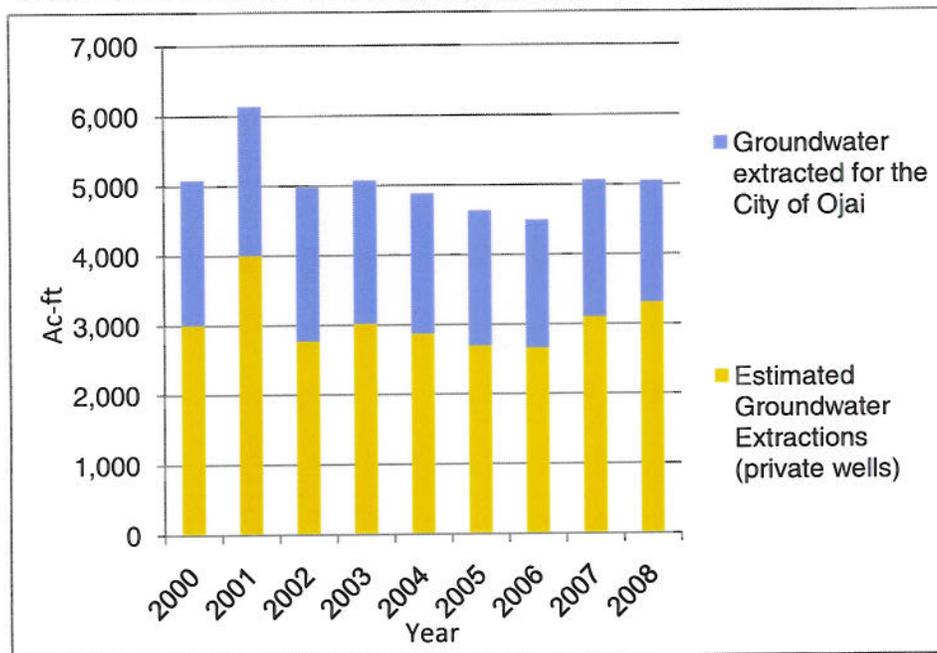


Source: OBGMA, 2007b and 2008.

9. B DOMESTIC/MUNICIPAL USE

Groundwater extractions by the GSWC for domestic and municipal use in the city of Ojai have constituted lower amounts in the previous nine years than those withdrawn by private wells intended for irrigation use (Figure 8). The GSWC serves approximately 2,900 customers in the vicinity of Ojai for both domestic and municipal use (GSWC, 2010). Among other water purveyors in the area, the Senior Canyon Mutual Water Company supplies approximately 600-800 customers at 247 metered connections, primarily in the Upper Ojai Valley (Watersheds Coalition of Ventura County, 2010). Between 2000 and 2008, groundwater extractions from the OVGB averaged 1,996 acre-feet (OBGMA 2007b and 2008). Information regarding the separate amounts of groundwater extracted from the OVGB for ultimate domestic and municipal use supplied by the different water purveyors was not available for this analysis. Based on groundwater extraction amounts for municipal use between 2000 and 2008, between 84 and 324 acre-feet per year would be used for domestic distribution from the amount of diverted flow recharged to the OVGB with the proposed project.

FIGURE 8. ESTIMATED TOTAL OVGB GROUNDWATER EXTRACTION, 2000-2008



Source: OBGMA, 2007b and 2008.

10.0 DIVERSION AND DISTRIBUTION METHOD

The passive design of the intake structure and distribution to the spreading grounds relies primarily on gravity and elevation changes to function. The POD is proposed as a headwall structure that would capture water when flows exceed 10.65 cfs (see Sections 3.3.2 and 6.0). No surface flow will be diverted if flows at the POD are less than 10.65 cfs at the POD, which equates to 5 cfs at the point of compliance. Engineering drawings are described in Appendix C and shown as plans in Appendix D.

11.0 CONSERVATION AND MONITORING

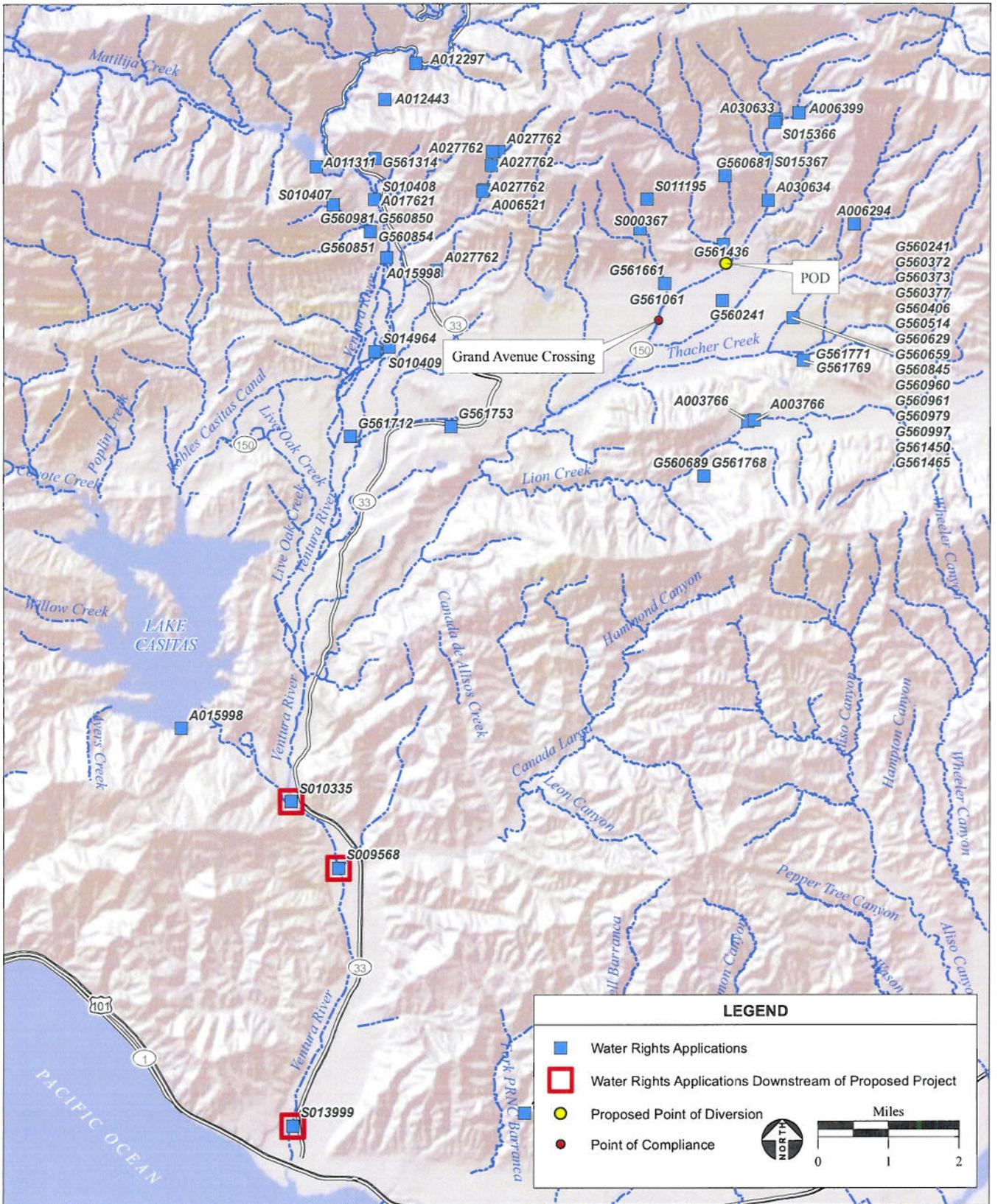
Over the last 100 years, several periods of drought have plagued Ventura County. Local precipitation, the only source of water in the Ventura River watershed, is predicted by several models to decrease in annual averages. Within the Ventura River watershed, most water allocated to the various water purveyors in the watershed is already accounted for; it has been predicted that, in a long-term drought, Lake Casitas could go dry. In 2007, the driest year since 1948, the Casitas MWD asked residents in and surrounding the City of Ventura to voluntarily cut back on water usage by 20%. Existing wells already in the OVGB are producing groundwater at a rate that is considered to be at or near the safe yield of the basin, and it is predicted (with historical precedence) that in a long-term drought a significant number of the existing wells will go dry. Stakeholders in the OVGB are restricted to use of groundwater, with no economically reasonable new source of water (OBGMA, 2007a). Within the OBGMA, no water restrictions are currently in place, but water conservation practices are encouraged by agricultural and domestic users (OBGMA, 2007a). The OBGMA works to secure state and federal funding for water conservation and education programs as well as for implementation of conservation measures. In addition, the major domestic and municipal water distributor for the Ojai Valley, the GSWC, has initiated a conservation plan (approved by the Public Utilities Commission) and supported by the City of Ojai which includes a Model Landscaping Project, residential rebate programs, and voluntary non-essential usage restrictions (OBGMA, 2007a and GSWC, 2010).

12.0 RIGHT OF ACCESS

The proposed Point of Diversion (POD) for the SACSGRP is located on private land adjacent and just upstream along San Antonio Creek to the VCWPD-owned 11.4-acre site. This parcel (APN 014-0-050-175) is owned by Ojai Orange Grove, LLC (**Table 1**). Mr. Katz, General Manager of Ojai Orange Grove, LLC has granted permission to the VCWPD, its agents and/or employees to have access to APN 014-0-050-175 during the design phase of the proposed project. Mr. Katz acknowledges that the VCWPD would require a Temporary Easement for construction and a Permanent Easement for facility maintenance after final design and project approval. Mr. Katz's authorization letter is provided as **Appendix A**.

13.0 EXISTING WATER RIGHTS AND RELATED FINDINGS

The VCWPD does not claim existing right(s) for the use of water sought by this application. However, three water rights applications with other applicants or permit holders are on file with the SWRCB downstream of the proposed SACSGRP in the Ventura River (**Figure 9**) (SWRCB 2010b). **Table 4** details these three existing water rights in the Ventura River. There are no recorded water rights downstream of the proposed project on San Antonio Creek, and no other water rights utilize the proposed POD. **Table 5** outlines four water right applications on file which are located in the vicinity of the SACSGRP and have Groundwater Recordation from the OVGB. Application ID G561465, located at 1991535 Northing, 6198111 Easting (California Coordinate System) for Groundwater Recordation is inactive at this time (SWRCB 2010b). Application ID G561662L004 claims a Groundwater Recordation



SOURCE: California Integrated Water Quality System (CIWQS), 2009; "Ojai, CA" USGS 7.5 Minute Topographic Quadrangle, T5N R22W, Section 32, San Bernadino Baseline and Meridian; AES, 2010

San Antonio Creek Water Right Application / 209542 ■

Figure 9
Existing Water Rights in Vicinity of Project Site

right; this and other Groundwater Recordations are discussed in further detail in **Table 5** (SWRCB 2010b). Application ID G561436L004, located at 1995722 Northing, 6198149 Easting (California Coordinate System) claims Groundwater Recordation whose POD is active, is located upstream of the proposed Project just west of Ladera Creek; this water right is discussed in further detail in **Table 5** (SWRCB 2010b).

TABLE 4
EXISTING WATER RIGHT FILINGS DOWNSTREAM OF THE PROPOSED PROJECT SITE

Application ID	S009568	S013999	S010335
Status	Claimed	Claimed	Claimed
Water Right Type	Statement of Diversion and Use	Statement of Diversion and Use	Statement of Diversion and Use
Application Acceptance Date	3/22/1978	5/3/1993	5/22/1981
Party	James Finch, Primary Owner and Individual	John Welty, Primary Owner and Individual	City of Buenaventura, Primary Owner and Corporation
effective from date	9/15/1994	2/17/1999	9/15/1994
effective to date	Not specified	Not specified	Not specified
Party	N/A	August Ferro Trust, non-primary owner	Wilson Steven, Individual and Agent
effective from date	N/A	10/17/1994	1/5/1996
effective to date	N/A	10/16/1994	7/27/2004
Party	N/A	Mary Ferro, non-primary owner	Jim Passanisi, Individual and Agent
effective from date	N/A	10/17/1994	5/13/2008
effective to date	N/A	2/17/1999	
Source	Ventura River	Ventura River	Ventura River
Watershed	Ventura River	Ventura River	Ventura River
POD status	Active	Active	Active
Year of First Use	1935	1928	1870
Purpose	Irrigation	Irrigation	Municipal
Amount diverted/ stored	0.65 GPD	2.2 CFS	24.5 CFS/ 31 AFA
Season of Diversion	1 March - 30 November	1 January - 31 December	1 January - 31 December
Season of Storage			1 January - 31 December
Location of POD (San Bernardino Baseline Meridian)	NE 1/4 of NW 1/4, Section 16, Township 3N, Range 23W	SE 1/4 of NE 1/4 of Section 17, Township 2N, Range 23W	NE 1/4 of NW 1/4 of Section 8, Township 3N, Range 23W
Point of Diversion (California Coordinate System, Section 5)			
CCS Northing	1949028	1929729	1953928
CCS Easting	6169789	6166589	6166189

Source: SWRCB 2010b (Electronic Water Rights Information Management System).

TABLE 5
EXISTING WATER RIGHT FILINGS WITHIN THE VICINITY OF THE PROPOSED PROJECT SITE

Application ID	G560241	G561436L004	G561753	G561662L004 (G561661)
Status	Claimed	Claimed - Local Oversight	Claimed	Claimed - Local Oversight
Permit	N/A	N/A	N/A	
License	N/A	N/A	N/A	
Water Right Type	Groundwater Recordation	Groundwater Recordation	Groundwater Recordation	Groundwater Recordation
Application Acceptance Date	5/11/1982	6/25/1985	2/16/1993	10/1/1986
Party: Primary Owner	McNell Creek Ranch, Corporation	Hermitage Mutual Water Company, Corporation	Ventura River County Water District, Corporation	San Antonio Creek Ranch, Primary Owner and Corporation
effective from date	2/9/1995	9/15/1994	9/15/1994	9/15/1994
effective to date	Not specified	Not specified	Not specified	Not specified
Party: Other	N/A	N/A	N/A	Huntsinger Ojai Ranch, Non-Primary Owner and Corporation
effective from date	N/A	N/A	N/A	9/15/1994
effective to date	N/A	N/A	N/A	9/4/2003
Source	Unknown	Unknown	Unknown	Unknown
Watershed	Ventura River	Ventura River	Ventura River	Ventura River
POD status	Active	Active	Active	Active
Year of First Use	Not specified	Not specified	Not specified	Not specified
Purpose	Not specified	Not specified	Not specified	Not specified
Amount diverted/stored	5 AFA	5 AFA	5 AFA	5 AFA
Season of Diversion	Not specified	Not specified	Not specified	Not specified
Season of Storage	Not specified	Not specified	Not specified	Not specified
Location of POD (San Bernardino Baseline Meridian)	NW 1/4 of NW 1/4, Section 6, Township 3N, Range 23W	SE, NW 1/4 of NW 1/4 of Section 32, Township 5N, Range 22W	NW 1/4 of NE 1/4 OF Section 15, Township 4N, Range 23W	L2 1/4 of the NE 1/4 of Section 6, Township 4N, Range 22W
Point of Diversion (California Coordinate System, Section 5)				
Northing	1991535	1995722	1981969	1992761
Easting	6198111	6198149	6177892	6193789

Source: SWRCB 2010b (Electronic Water Rights Information Management System).

14.0 OTHER SOURCES OF WATER

Between 2000 and 2008, an average of 3,512 afa was imported from Casitas MWD to supplement groundwater use in the OVGB (OBGMA, 2007b and 2008). This water comes from Lake Casitas, which

is diverted from the Ventura River downstream of its confluence with San Antonio Creek. The SACSGRP is proposed to reduce reliance on imported water from the Casitas MWD and utilize run-off which is otherwise lost downstream during peak flow events. It is predicted that the proposed project would reduce the need to import water to supplement groundwater use in the OVGB by an average amount of 246-731 afa, with a median value of approximately 500 afa (**Appendix B**). Thus, the SACSGRP would reduce importation of Ventura River water, and instead supplement the OVGB with surface water flows which would otherwise be lost downstream during peak flow events to the Pacific Ocean; no net impact on the Ventura River watershed would result from the SACSGRP.

15.0 MAP REQUIREMENTS

Please refer to **Figures 2** and **3** showing the proposed POD and spreading grounds. **Figures 5** and **6** depict the place of use, and **Appendices C** and **D** provide the design plans for the project.

16.0 COUNTY PERMITS

The 11.4-acre parcel of the proposed SACSGRP site (APN 014-0-050-160) is zoned AE-40 (Agricultural Exclusive, 40 acre minimum parcel size), with the non-taxable status serving the purpose of “flood control basins and channels” (Ventura County, 2010). The 20.9-acre parcel where the proposed POD is located (APN 014-0-050-175) is zoned OS-20 (Open Space, 20 acre minimum parcel size). The SACSGRP does not propose any changes to existing land use designations. No permits from the County of Ventura are anticipated to be required for the SACSGRP.

17.0 STATE/FEDERAL PERMITS AND REQUIREMENTS

Table 6 displays the names and contact information for state and federal agencies regarding permits or informal consultation sought for the proposed SACSGRP. Contact has still yet to be made with the Regional Water Quality Control Board (RWQCB), U.S. Army Corps of Engineers (USACE) and Ventura County.

TABLE 6
LIST OF AGENCIES AND CONTACT INFORMATION REGARDING PROPOSED PROJECT

Agency	Permit/ Consult	Person(s) contacted	Contact date	Telephone No.
CDFG	1603, Consult	Mary Larson	April 27, 2010	562-342-7186
CDFG	Consult	Natasha Lohmus	April 27, 2010	805-684-6281
NOAA; NMFS	Consult	Rick Bush	April 27, 2010	562-980-3562
NOAA; NMFS	Consult	Anthony Spina	March 4, 2010	562-980-4045
RWQCB	401, 402		Not yet contacted	
SWRCB	Consult	Danielle Siebel	April 13, 2010	916-327-4838
USACE	404		Not yet contacted	
USFWS	Consult	Jenny Marek	April 27, 2010	805-965-4804
USFWS	Consult	Chris Dellith	March 4, 2010	805-644-1766

Note: CDFG=California Dept. of Fish and Game; NOAA=National Oceanic Atmospheric Administration; NMFS=National Marine Fisheries Service; RWQCB=Regional Water Quality Control Board; SWRCB=State Water Resources Control Board; USACE=U.S. Army Corps of Engineers; USFWS=U.S. Fish and Wildlife Service.

Source: VCWPD, 2010; AES 2010.

18.0 ENVIRONMENTAL DOCUMENT

A Draft Initial Study/ Mitigated Negative Declaration (IS/MND) is under preparation for the proposed SACSGRP with the VCWPD as the lead agency. It is anticipated the SWRCB will become a responsible party for the IS/MND for the purposes of this water right application, thus eliminating the need for a separate CEQA document. The Draft IS/MND is scheduled for public release in December 2010 or early 2011.

19.0 WASTE/WASTEWATER

The proposed SACSGRP would not generate wastewater or solid waste, but could cause erosion, turbidity or sedimentation. Implementation of Best Management Practices (BMPs) following Storm Water Discharges Associated with Construction Activity (WQO 99-08-DWQ) and Stormwater Pollution Prevention Plan (SWPPP) preparation will ensure that no impacts to stormwater or other waters occur during construction of the proposed project. While more detail on waste and wastewater is available in the IS/MND under preparation for the SACSGRP, the following lists measures that will be implemented to ensure no impacts from hazardous materials to water quality will occur:

- All work in the San Antonio creek channel will occur during the dry season (summer).
- All ground disturbances will be limited to periods when no rainfall is predicted to minimize erosion and sediment transport.
- Waste and debris generated during construction shall be stored in designated waste collection areas and containers away from water courses, and shall be disposed of regularly.
- All fueling of heavy equipment shall occur in a designated area removed from San Antonio Creek, such that if any spillage were to occur it would not enter surface waters. All refueling areas shall include absorbent materials or drip pans to facilitated rapid cleanup were a spill to occur. All maintenance of vehicles will occur off-site. If a spill were to occur in the construction area, the RWQCB will be contacted immediately.
- Groundwater discharged to surface waters (if any) shall be allowed to settle to reduce suspended sediment, prior to such discharge.
- Construction materials and soil piles shall be placed in designated areas where they could not enter stream flow due to spillage or erosion. Waste and debris generated during construction shall be stored in designated waste collection areas away from watercourses and disposed of regularly.

20.0 ARCHAEOLOGY

A Negative Archeological Survey Report was completed for the IS/MND for the project (Compass Rose Archeological Consultants, 2009) and is on file at the South Central Coast Information Center (SCCIC). The records search was conducted at the SCCIC on June 23, 2009 at the request of the VCWPD. No archeological sites, cultural resource locations or isolated finds have been recorded within 0.5 mile of the project location. Additional field surveys conducted as part of the Negative Archeological Survey Report did not identify any cultural resources on-site.

21.0 ENVIRONMENTAL SETTING

Site photos depicting the surrounding vegetation within the immediate vicinity of the proposed POD are presented in **Figures 10a** and **10b**. Photos 1-2 show the existing vegetation along the San Antonio Creek channel immediately downstream of the proposed POD (**Figure 10a**). Photos 3-5 show the creek channel and existing vegetation immediately upstream of the proposed POD (**Figures 10a, 10b**). Photos 6-8 show the existing vegetation within the settling ponds within the spreading grounds (**Figure 10b**). Additional copies of each of these figures are provided in **Appendix E** per Application instructions.

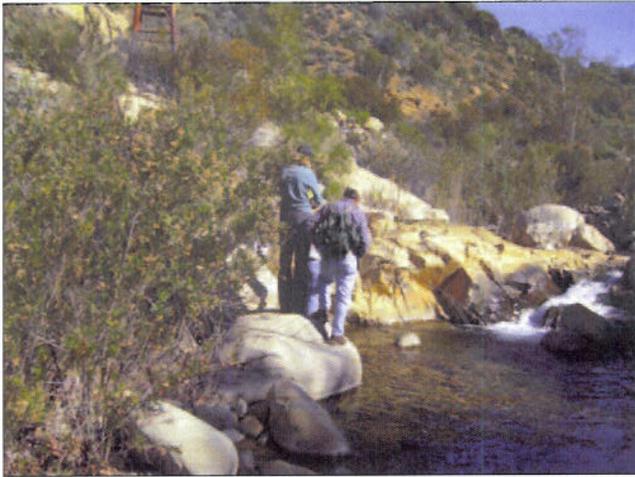


PHOTO 1: View north of San Antonio Creek channel and surrounding vegetation downstream of the proposed POD (wet period: March 2010).

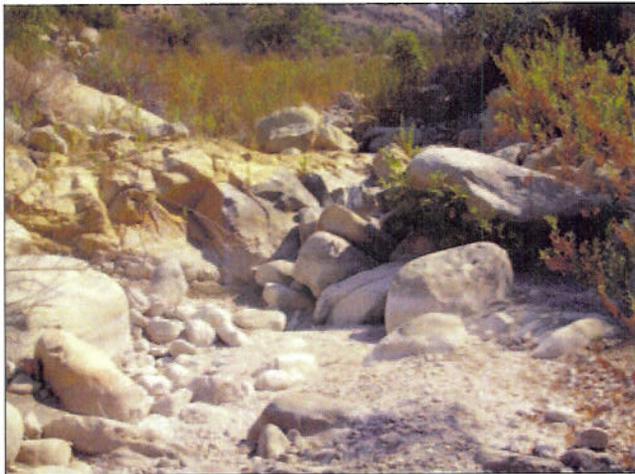


PHOTO 3: View north of San Antonio Creek channel and surrounding vegetation upstream of the proposed POD (dry period: July 2009).



PHOTO 2: View southwest of San Antonio Creek channel and surrounding vegetation downstream of the proposed POD (wet period: March 2010).



PHOTO 4: View south of San Antonio Creek channel and surrounding vegetation upstream of the proposed POD (dry period: July 2009).

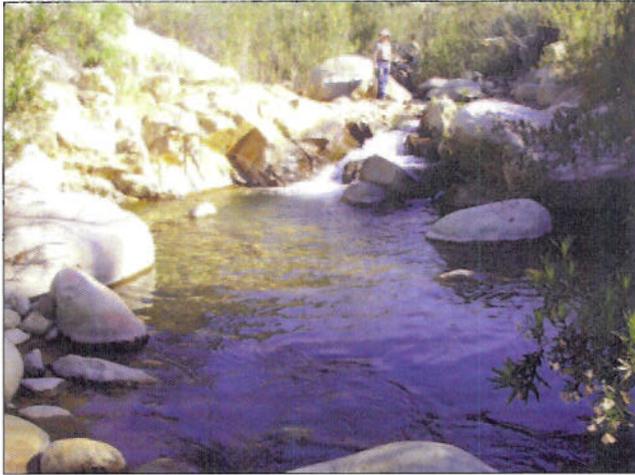


PHOTO 5: View north of San Antonio Creek channel and surrounding vegetation upstream of the proposed POD (wet period: March 2010).



PHOTO 7: View north of relict spreading ground basins #2 and 3 showing existing vegetation (wet period: March 2010).



PHOTO 6: View west of relict spreading ground basin #4 (most western basin) showing existing vegetation (wet period: March 2010).



PHOTO 8: View west of relict spreading ground basins #1 and 2 showing existing vegetation (wet period: March 2010).

22.0 REFERENCES

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