

VENTUCOPA WATER SUPPLY COMPANY

Water System Evaluation Report



Draft

February 2007

NOLTE

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INTRODUCTION

Ventucopa is a rural agricultural community of approximately 100 people located in the northeastern corner of Santa Barbara County (County) (see Figure 1). The Ventucopa Water Supply Company (VWSC) owns a water system which serves the town of Ventucopa. The system was constructed in the late 1940s and is inadequate to serve the needs of the community. The system includes an existing well with a 3-inch submersible pump, a 750 gallon hydropneumatic tank, and approximately 2-inch diameter distribution piping.

There are a number of issues with the existing water system including:

1. The primary well (Well #1) has high nitrate levels, possibly from adjacent fertilized vineyards.
2. A secondary well (Well #2) is available but is not integrated into the water system.
3. Sporadic power outages occur with no backup power for the well pump.
4. When there is a power outage and the well pump is inoperative, the existing hydropneumatic tank does not have sufficient storage capacity to serve the residents.
5. There are no individual water meters for the residences.
6. There is no fire system water protection for the community.

BACKGROUND

Potable water systems and individual house wells in the Ventucopa area are regulated by the Santa Barbara County Public Health Department Environmental Health Services (SBCEHS). The VWSC is designated as Water System #4200872.

A meeting was held with Norman Fujimoto (SBCEHS), Wendall and Gayle Carpenter (VWSC), and Reid Johnson (Nolte Associates, Inc.) to discuss the water system, to identify the needs to be addressed in the water system evaluation report, and to obtain information. Santa Barbara County Ordinance 3458 (Chapter 34A of the County Code) and Ordinance 4181 regulate water wells and water systems in the unincorporated areas of the County. Copies of the ordinances are included in Appendix A.

The Ventucopa water system is classified as a transient non-community water system. When the water system has 15 connections or 25 full-time residents, the system will be reclassified as a small community system.

Well #1 has historically been the source of water for the Ventucopa water system and is an approved well, even though the well log and other information are not available. SBCEHS indicated that an approved well that is high in nitrates could be used for blending or emergency backup. SBCEHS also indicated that currently there is no building moratorium or any restrictions on the water system if the water meets the nitrate requirements.

The current sampling requirements for the Ventucopa water system are comprised of quarterly nitrate sampling (because some test results have exceeded the MCL of 45 mg/L), nitrite sampling every three years, and monthly bacteriological monitoring. A summary of water quality testing for Well #1 is included in Appendix B.

WATER SYSTEM EVALUATION

After reviewing the available information, the needs of the Ventucopa water system were identified and prioritized as follows:

1. Water quality
2. Water supply
3. Fire protection
4. Distribution system upgrade

Water quality consistently meeting California Department of Health Services (DHS) requirements could be provided by water treatment or by integrating another water source or well into the system. There are no other water systems within a feasible distance to which the Ventucopa system could connect. Therefore, the only options for improved water quality would be water treatment, which requires significant capital, or another well with better water quality. There is an available well within the Ventucopa town site (Well #2) that has had favorable nitrate test results. As such, Well #2 could possibly solve the water quality problem and provide increased water supply capacity.

A copy of the Well #2 completion report and the County inspection report were provided by SBCEHS and are included in Appendix C. The report shows that the well has a 50-foot annular seal and therefore could be acceptable for use as a public water system well.

Water Quality

To determine if Well #2 would be a good water source, the SBCEHS requirements for test pumping and permitting of water wells was obtained.

Due to the summer of 2006 being a busy period for test pumpers and the remote location of Ventucopa, scheduling of a pump test was problematic. Well #2 has been inactive but was previously used for agriculture. When a pump was installed, there was very little production water, indicating restrictions in the well perforations. Remedial work was performed on the well before the pumping test was completed. The pump test report indicates that Well #2 stabilized at a pumping rate of 55 gpm, a water level of 82 feet, and only 5 feet of drawdown. The test was conducted with a 5 hp pump. The well production may be significantly more with a larger pump or with additional remedial work to the well and screens. The water quality testing indicated a

nitrate level of only 12 mg/L and an overall good water quality that meets DHS requirements. The Well #2 pump test report and water analysis are included in Appendix C.

This testing indicates that Well #2 would be a good water source for solving the water quality concerns while significantly adding to the water supply capacity of the system. Water treatment would not be necessary if Well #2 was utilized as a source. Therefore, it is recommended that VWSC proceed with filing an application with SBCEHS to permit Well #2 as a water source for the system.

Water Supply

The existing Ventucopa water system is shown on Figure 2 and serves eleven connections from a 750 gallon hydropneumatic tank which is supplied by a 3-inch submersible pump in Well #1. This is an antiquated water system with inadequate capacity by current standards that provides no fire protection.

Well #2 is in the northwest section of Ventucopa while Well #1 is southeast of the town, as shown in Figure 3. A pipeline of approximately 2,100 feet is required to connect Well #2 to the hydropneumatic tank at Well #1, which is at a higher elevation. The Well #1 parcel would also be a good location for a water storage tank. The Well #2 pipeline should be at least 8-inch diameter to function as a main distribution line and provide fire protection flows.

County Ordinance 4181 (Code Section 34B-18) Minimum Domestic Water System Source Yield, requires that sufficient water is available from the water system sources to provide a minimum of 3 gallons per minute (gpm) for at least 24 hours for each service connection served by the system. However, the new DHS Revision of Waterworks Standards R-14-03, Section 64554, provides a procedure for permitting source capacity when water usage records are not available, and states:

(4) If no water usage data are available, utilize records from a system that is similar in size, elevation, climate, demography, residential property size, and metering to determine the average water usage per service connection. From the average water usage per service connection, calculate the average daily demand and follow the steps in paragraph (3) to calculate the MDD and PHD.

(c) Community water systems using only groundwater shall have a minimum of two approved sources before being granted an initial permit. The system shall be capable of meeting MDD with the highest-capacity source off line.

(3)(c) To calculate the MDD, multiply the average daily usage by a peaking factor of 2.25.

The Cuyama Community Services District (CCSD) is the closest community to Ventucopa and has similar climatic conditions. The CCSD serves 250 connections and the maximum day demand (MDD) to date has been approximately 450,000 gallons. This would be an MDD of 1,800 gallons per connection, or a 24-hour supply flow of 1.3 gpm. If this factor was used for source capacity, the 55 gpm Well #2 pump test would support 42 connections with only 5 feet of drawdown.

The 5 hp pump test on Well #2 indicated that with only 5 feet of drawdown, the well could at a minimum provide for the needs of the existing connections, allow for new connections, and

comply with the County requirements. A pump test with a larger pump would likely stabilize at a larger flow rate and deeper well drawdown and would probably verify that Well #2 could provide for more connections. Additionally, water from Well #1 could be used if the water was blended with water from Well #2, thus increasing the system supply capacity.

In view of the pump test results, it is recommended that the capacity of the water sources, and amount of growth that could be supported, be determined after: 1) a pump is installed in Well #2; 2) the pump is on line; and 3) meters have been installed at both wells.

Fire Protection

The County Fire Department requirements for Ventucopa are included in Appendix D. Water systems must be designed to deliver the required fire flow at a residual pressure during peak demand of at least 20 psi. Fire hydrant spacing in residential areas must not exceed 500 feet and be located so all residences are within 250 feet of a fire hydrant. A proposed fire protection system is shown in Figure 4. All the fire hydrants would be within 2,500 pipeline feet from the water storage tank. As shown on the calculations included in Appendix E, an 8-inch PVC pipeline would be required to provide a minimum fire flow of 1,000 gpm and would also deliver 1,500 gpm at an operational system pressure of at least 70 psi.

The fire protection requirements specify a residential water storage volume of two hours at the required flow. At a minimum residential fire flow of 1,000 gpm, the water storage volume would need to be 120,000 gallons, plus system operational storage.

The water stored for fire protection will be a large volume in relationship to the quantity used on a daily basis by the water system. Therefore, a chlorination system and water circulation piping will be required to maintain water quality in the tank.

Water System Upgrade

As indicated, the Ventucopa water system has several significant deficiencies. The major needed elements are discussed above. Additional improvements recommended to upgrade system reliability and meet current standards include a larger hydropneumatic tank, water meters, and larger water distribution lines.

Replacing the existing 750 gallon hydropneumatic tank with a new hydropneumatic tank with at least a 3,000 gallon capacity would provide more pressurized water supply during power outages, reduce the pump cycling times, and make the water system more reliable. Water meters should be provided at both wells and at each service connection. Any main water line that does not terminate at a fire hydrant should have a flush valve. Following construction of the fire protection system, many of the service connections can be moved to the larger pipelines and some of the older small water lines could be disconnected and abandoned.

If adequate funding is not available, the needed system improvements could be implemented in a phased approach.

SUMMARY AND RECOMMENDATIONS

It is anticipated that the water system improvements may need to be implemented in a sequential process beginning with water supply/water quality upgrades. Therefore, the following summary of needed water system improvements is listed in a phased approach.

Phase I

1. Well #2 has been successfully test pumped and sampled, verifying that it is an adequate source of water meeting DHS requirements. Therefore, it is recommended that VWSC complete the application process to permit Well #2 as a water supply source.
2. Water supply/water quality improvements should be completed first including:
 - a. Install Well #2 pump, electrical service, and controls
 - b. Construct a water supply pipeline (8-inch) from Well #2 to the hydropneumatic tank near Well #1.
 - c. Install meters at both wells to record well production.
 - d. Install SCADA (telemetry cable or radio system) from Well #2 to a water system controller at the tank near Well #1.
 - e. Install piping, valves, and inline mixer to blend Well #1 water with Well #2 water.
3. System upgrade items needed include:
 - a. Replace hydropneumatic tank.
 - b. Provide emergency generator for one well.
 - c. Install service connection meters.

Phase II

4. Fire protection system should be constructed including:
 - a. Water storage tankage for fire protection of at least 120,000 gallons plus system operational storage of at least 20,000 gallons.
 - b. Chlorination system and water recycling piping and pump.
 - c. Fire flow distribution pipelines, including highway crossing.
 - d. Install fire hydrants.

OPINION OF PROBABLE CONSTRUCTION COST

The following is an opinion of probable construction cost to provide the system modifications discussed above:

Table 1
Ventucopa Water Supply Company
Proposed Water System Improvements
Opinion of Probable Construction Costs

Item	Quantity	Unit	Unit Cost, \$	Total, \$
Phase I				
Water Supply				
Well #2 pump and electrical	1	LS	15,000	15,000
8-inch water line	2,100	FT	50	105,000
8-inch gate valves	4	EA	1,500	6,000
Well meters	2	EA	3,000	6,000
Buried telemetry cable	2,100	FT	2	4,200
Well #1 blending piping, valves, etc.	1	LS	3,000	3,000
Well control instrumentation	1	LS	3,000	3,000
Subtotal Water Supply				142,200
System Upgrade				
Hydropneumatic tank and controls	1	LS	8,000	8,000
Service meters in existing connections	11	EA	200	2,200
Emergency generator (20 kw min)	1	EA	7,000	7,000
Subtotal System Upgrade				17,200
Phase I Water Supply and Upgrade				159,400
Contingency 20%				31,800
Total Phase I Water Supply and Upgrade				191,200
Phase II				
Fire Protection System				
8-inch water lines	2,350	FT	50	117,500
Fire hydrants	8	EA	3,000	24,000
8-inch gate valves	8	EA	1,500	12,000
Highway crossing bore & jack	1	LS	15,000	15,000
Steel tankage, (150,000 gallons)	1	LS	200,000	200,000
Chlorination and recirculation system	1	LS	15,000	15,000
Booster/recirculating pump station	1	LS	15,000	15,000
Subtotal Fire Protection System				398,500
Phase II Fire Protection System				398,500
Contingency 20%				79,700
Total Phase II Fire Protection System				478,200
TOTAL OPINION OF PROBABLE CONSTRUCTION COST				669,400

INITIAL OPTION – WATER SUPPLY

As discussed above, incorporating Well #2 into the system would provide water meeting the DHS regulations. Well #1 would then only be used as an emergency backup and later as an additional supply to be blended with Well #2 water. An initial scope of improvements needed to add Well #2 to the existing system is shown on Table 2, along with an opinion of construction costs. It is recommended that if this option is pursued, the small existing hydropneumatic tank be replaced with one of at least 3,000 to 5,000 gallons so Well #2 would not cycle on and off too frequently and the water supply would not be adversely impacted by the cyclical hydraulic pressure changes in the small diameter water lines between the well and the tank. Also, a larger hydropneumatic tank would provide some pressurized water storage during power outages.

The owners of the VWSC have indicated a willingness to contribute significant personal resources to solving the water quality and water supply problems. This would include deeding Well #2 and the parcel it is on to the VWSC to facilitate the water supply project. They would also install a 15 hp submersible pump in Well #2 and provide the electrical power service. These items are shown on Table 2 as essential items, but with no reimbursable cost to the project. Possibly, these items can be considered project contributions by the water system to support funding of the additional needed water system improvements.

The following is an opinion of probable construction cost to provide the system modifications discussed above:

Table 2
Ventucopa Water Supply Company
Water Supply – Initial Option
Opinion of Probable Construction Costs

Item	Quantity	Unit	Unit Cost, \$	Total, \$
VWSC Contribution				
Well #2 and Parcel 17 deeded				No cost
Well #2 pump and electrical				No cost
Water Supply – Initial Option				
8-inch water line	400	FT	50	20,000
Well meters	2	EA	3,000	6,000
Well #1 blending piping, valves, etc.	1	LS	3,000	3,000
Well control instrumentation	1	LS	3,000	3,000
Hydropneumatic tank and controls	1	LS	8,000	8,000
Water Supply – Initial Option				40,000
Contingency 20%				4,000
TOTAL WATER SUPPLY – INITIAL OPTION				44,000

48,000

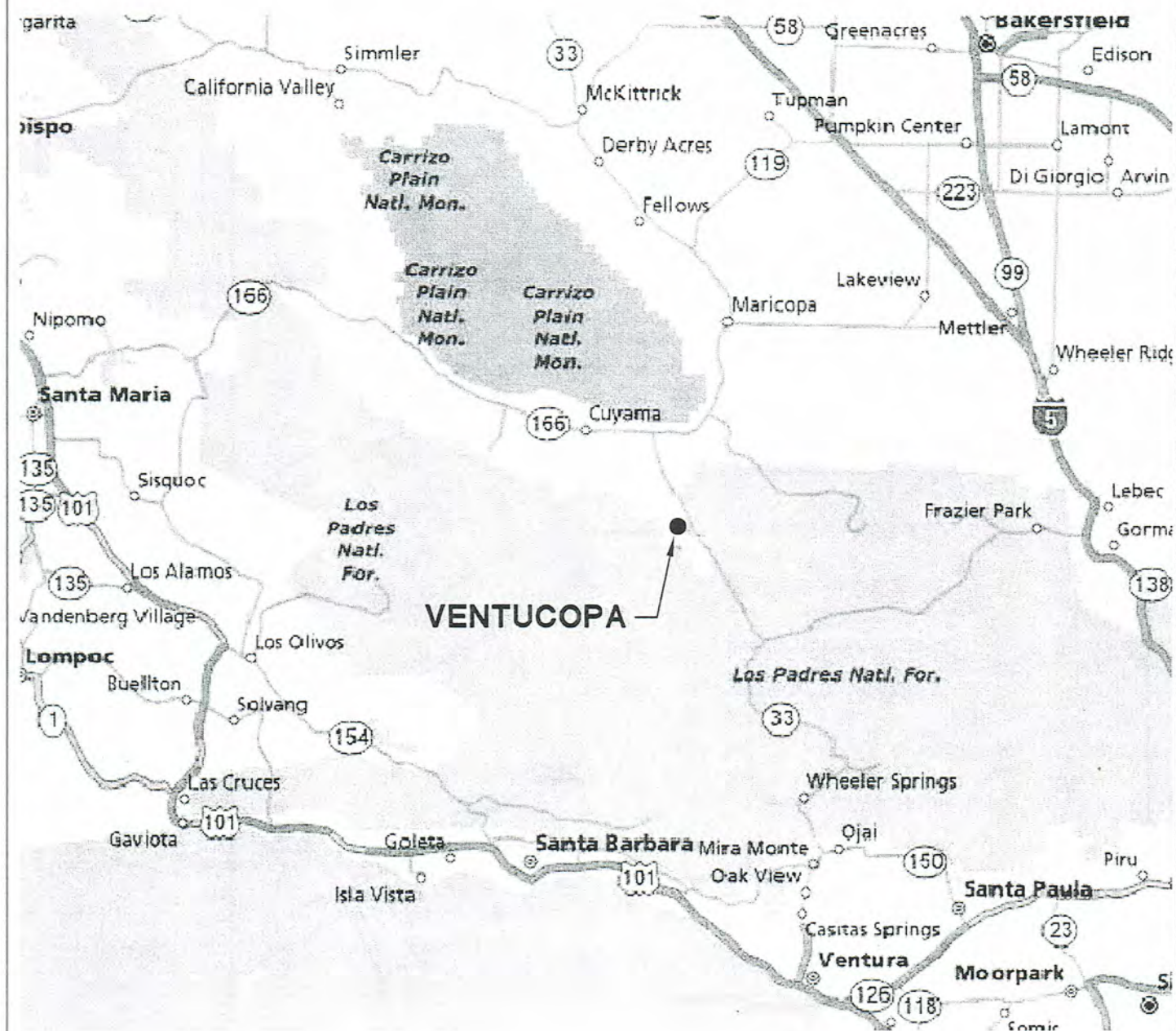
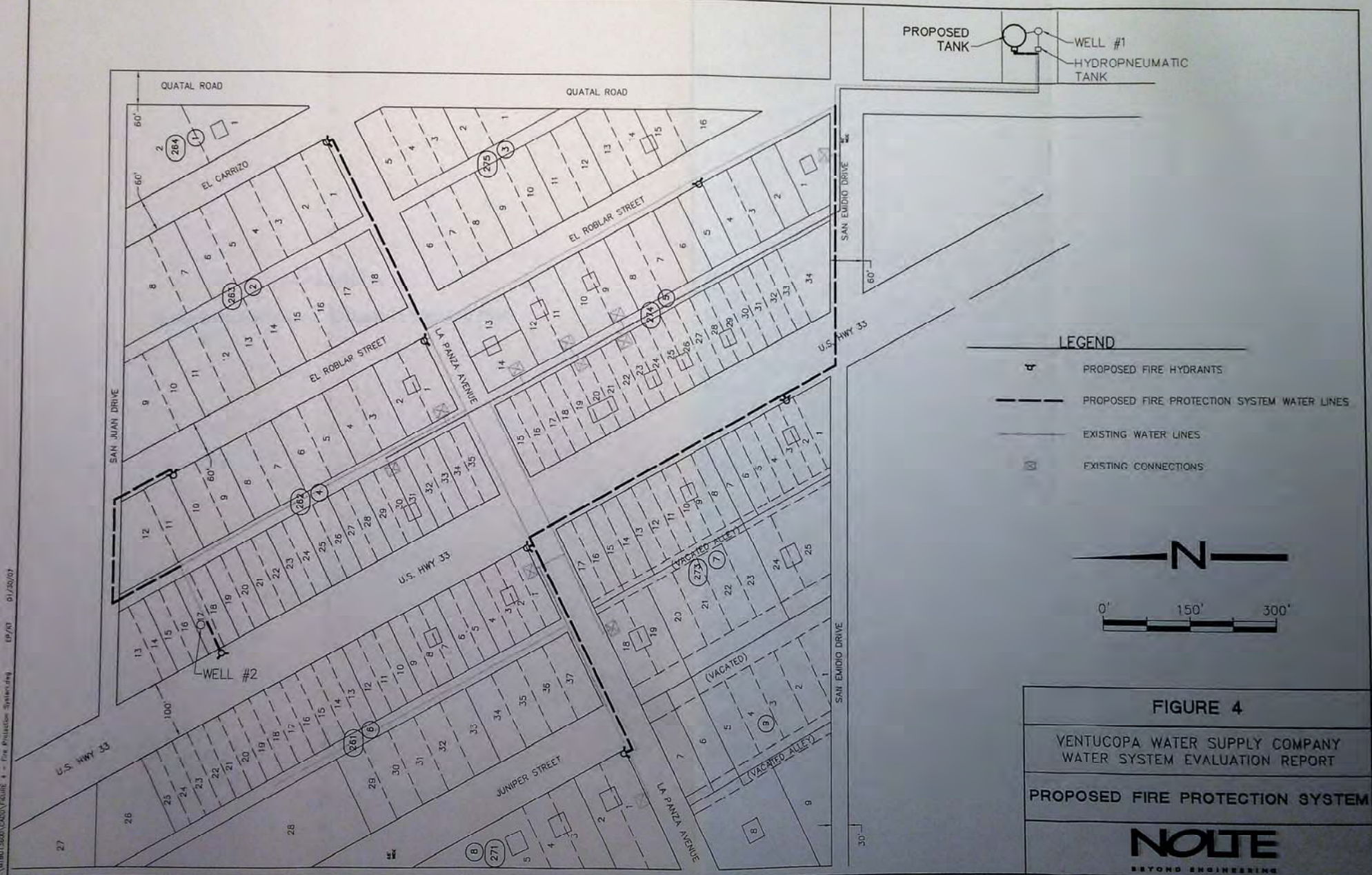


FIGURE 1

VENTUCOPA WATER SUPPLY COMPANY
WATER SYSTEM EVALUATION REPORT

LOCATION MAP

NOLTE
BEYOND ENGINEERING



APPENDIX A

Santa Barbara County Ordinances 3458 and 4181

Attached to this cover sheet you will find a copy of Santa Barbara County Ordinance 3458 (Chapter 34A of the County Code). This ordinance regulates the construction, destruction, inactivation, modification and repair of water wells in the unincorporated areas of the county. By defining terms, this information will assist you in completing the Well Permit Application.

In reviewing the Ordinance, please be aware that the California Water Code requires that any person constructing, modifying or destroying a water well must possess a valid C-57 Water Well Contractor's License. As a State law, this requirement supersedes any local ordinance or regulation that is less restrictive.

Finally, you will note that the ordinance specifies the fees that are to be submitted with an application. Please be advised that the ordinance contains a provision that allows these fees to be modified by Resolution of the County Board of Supervisors. The amounts listed in the attached copy of the ordinance are no longer accurate and you should confirm the correct fee amount prior to submitting the application.

Santa Barbara County Code

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CHAPTER 34A WELLS

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Sec. 34A-1. Purpose.

It is the purpose of the ordinance codified in this chapter to regulate the (1) construction, (2) modification or repair, (3) destruction, (4) inactivation of wells in such a manner that the groundwater of the county will not be contaminated or polluted, and that water obtained from wells will be suitable for beneficial use and will not jeopardize the health, safety or welfare of the people of this county. (Ord. No. 3458, § 1)

Sec. 34A-2. Acts prohibited, permit required.

(a) It shall be unlawful for any person to construct, modify or repair, destroy or inactivate any well unless such person has:

- (1) Obtained a permit issued from the county for the specific work to be performed; or
- (2) In the case of an emergency, fully complied with the provisions of this chapter relating to emergencies.

(b) It shall be unlawful for any person to construct, modify or repair, destroy or inactivate any well unless such construction, modification or repair, destruction or inactivation is in accordance with the standards set forth in this chapter. (Ord. No. 3458, § 1)

Sec. 34A-3. Definitions.

For the purpose of this chapter:

(a) Applicant. "Applicant" shall mean:

- (1) The legal owner(s) of the property on which the well is to be constructed, modified or repaired or destroyed;
- (2) That owner's agent authorized in writing to make this application; or
- (3) A licensed well drilling contractor who shall perform the work on the well.

(b) Contamination and Pollution. "Contamination and pollution" shall have the meanings ascribed to them by California Water Code, section 13050.

(c) County. "County" shall mean the County of Santa Barbara, acting through its board of supervisors or the Santa Barbara County health officer, as the duly authorized representative of the board of supervisors.

(d) Destruction. Destruction of wells shall consist of the complete filling of the well in accordance with the procedures outlined in Bulletin 74-81, "Water Well Standards: State of California" of the California Department of Water Resources.

(e) Emergency. "Emergency" shall mean a circumstance which is either:

- (1) An imminent threat of or is actually contaminating or polluting the groundwater of this county; or
- (2) Jeopardizes the health or safety of the people of the county; or
- (3) Will cause a substantial or immediate loss of property, crops or livestock.

(f) Inactive Well or Inactivation. An "inactive well" is one not routinely operating but capable of being made operable with a minimum effort. It shall be considered abandoned and proper destruction required when it has not been used for a period of one year, unless the owner demonstrates his intention to use the well again. Inactivation of a well shall be accomplished by filing a permit stating the intention to reuse the well and properly maintaining the well as inactive per the requirements of Bulletin 74-81.

(g) Modification or Repair. "Modification" or "repair" shall only mean the deepening of a well, reperforation, sealing or replacement of a well casing.

(h) Nuisance. "Nuisance" shall mean a well which threatens to or which contaminates or pollutes the groundwater of this county in such a way that it jeopardizes the health and safety of the public. A nuisance also means anything which creates an unsanitary or unsafe condition resulting from water well drilling activity.

(i) Person. "Person" shall mean any individual, firm, partnership, general corporation, association or governmental entity. Governmental entity, as used herein, shall not include any local agency exempt from the application of the ordinance codified in this chapter pursuant to state law.

(j) Well or Water Well. The term "well" or "water well" means any artificial excavation constructed by any method for the purpose of extracting water from, or injecting water into the ground. It shall also include "cathodic protection wells," as defined in California Water Code, section 13711. This definition shall not include:

- (1) Oil and gas wells, or geothermal wells constructed under the jurisdiction of the California State Department of Conservation, except those wells converted to use as water wells; or
- (2) Wells used for the purpose of:
 - A) Dewatering excavation during construction, or
 - B) Stabilizing hillsides or earth embankments.

(k) Words not otherwise defined in the ordinance codified in this chapter shall have the meaning ascribed to them in chapter II of the California Department of Water Resources Bulletin No. 74-81 (Water Well Standards) and chapter II of 74-1 (Cathodic Protection Well Standards), as each may be amended. (Ord. No. 3458, § 1)

Sec. 34A-4. Permits.

Application for the permit required by this chapter shall be:

- (a) Made in writing to the county on such forms as may be prescribed by the county;
- (b) Signed by the applicant; and,
- (c) Accompanied by a fee established by this chapter (no part of said fee shall be refundable); and,
- (d) Shall include but not be limited to the following:
 - (1) Applicant's name and address; a statement that the person drilling the well is licensed under the provisions of chapter 9 of division 3 of the Business and Professions Code as a well drilling contractor and such license is in full force and effect; the number of such license; or, in lieu of the two latter enumerated matters, a statement that the applicant is exempt from the provisions of chapter 9 of division 3 of the Business and Professions Code and the basis for the alleged exemption,
 - (2) Estimated or proposed depth of the well, casing material, sealing material, sealing method, use of the well, and drilling method to be used,
 - (3) Location of the property and well site including street address and/or assessor's parcel number; and the legal owner of the property,
 - (4) A plot plan indicating the location of the well with respect to the following items:
 - (A) Property lines,
 - (B) Sewage disposal systems or works carrying or containing sewage or industrial wastes within a two hundred foot radius of the proposed well,
 - (C) All perennial, seasonal, natural, or artificial water bodies or watercourses, including location of one hundred year floodplain, if applicable,
 - (D) Drainage pattern of the property,
 - (E) Existing wells within a one hundred foot radius of the proposed well,
 - (F) Access roads and easements (water, sewer, utility, roadway),
 - (G) Existing and/or proposed structures,
 - (H) Animal or fowl enclosures, pens, paddocks, stockyards within a one hundred foot radius of proposed well site,
 - (5) Permits shall be issued subject to the terms, conditions and standards of this chapter and may be denied only if the specific work to be performed of construction, modification or repair, destruction or inactivation as proposed would violate the terms, conditions or standards of this chapter,
 - (6) The issuance of a permit hereunder shall be deemed to be an administrative, ministerial, nondiscretionary act, and if an applicant complies with the terms, conditions, and standards of this chapter, said permit shall be issued within five working days,
 - (7) A permit issued for construction of a well covers the construction of one completed well. If the well driller proposes to change the site of the well from that shown on the site plan of a permit, the change in site must be approved by the county prior to drilling. The county shall give approval or disapproval of the change in site within twenty-four hours of notification by the well driller,
 - (8) Every permit issued pursuant to this chapter shall expire upon completion of the task authorized thereby; however, in any event such permit shall expire one year from date of issuance, the remedy of improper work, but not in excess of the total estimated cost of such work. Licensed well drilling contractors shall not be required to post a bond or deposit guaranteeing performance. Eighty-five percent of the deposit or bond shall be returned to the permittee when the work has been completed to the satisfaction of the health officer; the remaining fifteen percent of the bond shall be returned after one year of satisfactory well operation as determined by the health officer. These percentages may vary to cover special conditions and circumstances in order to guarantee performance and compliance with this chapter. (Ord. No. 3458, § 1)

Sec. 34A-5. Standards.

Standards for construction, repair or modification, destruction or inactivation are set forth in chapter II of the California Department of Water Resources Bulletin No. 74-81, Water Well Standards, and Bulletin No. 74-1, Cathodic Protection Well Standards, and are hereby adopted as part of this chapter, with the following additional clarification and requirements for well construction.

- (a) Annular Space. Gravity installation of the sealant in an annular space of a well is acceptable if the interval to be sealed is dry and the interval depth is fifty feet or less. Sealant shall be pumped into the space using a tremie or grout pipe when there is water in the annulus, or the annulus exceeds fifty feet.
- (b) Disinfection Tube. Every well shall be equipped with an adequately sized opening by which disinfecting agents may be conveniently introduced directly into the well casing. This opening shall be protected against entrance of contaminants by installation of a watertight cap or plug.
- (c) Drilling Waste. Drilling waste must be controlled and may not be discharged so as to create conditions which violate Water Quality Control Board Regulations, other state laws, federal regulations or local ordinances.
- (d) Mud Pits. Mud pits created to confine drilling mud shall be maintained during the well drilling operation so as not to be a safety hazard. It shall be the well driller's responsibility to properly earth fill the mud pit(s) upon completion of the job.
- (e) Setup Time. The minimum time that must be allowed for annular seals containing type II and III (6-sack) cement to set shall be sixteen hours before construction operations on the well may be resumed. When additives to shorten setting time are used with the cement, this setup time may be reduced to a minimum of twelve hours before air jetting, bailing, swabbing, test pumping or further construction on the well may be resumed.
- (f) Log of Well. Any person who has drilled, dug, excavated or bored a well subject to this chapter, shall within thirty days after completion of the work, furnish the county with a copy of the state driller's report. The well driller shall notify the county if submission of the log is to be delayed.
- (g) Horizontal Wells. The location and design of horizontal or lateral wells shall be approved by the county on a case-by-case basis prior to approval to construct or reconstruct such wells.
- (h) Administrative Variance. The health officer may grant an administrative variance to the provisions of this chapter where written evidence is submitted that a modification of the standards will not endanger the health or safety of the public and strict compliance would be unreasonable in view of all the circumstances. (Ord. No. 3458, § 1)

Sec. 34A-6. Emergency.

In the event of an emergency, a person may construct, modify or repair, destroy or inactivate a well without the permit required by this chapter; providing, that:

- (a) Such work is performed in conformance with the standards set forth herein;
- (b) The county is notified of such emergency work by the following county working day; and
- (c) An application for the required permit is made within three county working days after initiation of such emergency work. (Ord. No. 3458, § 1)

Sec. 34A-7. Enforcement.

(a) The county may suspend or revoke a well permit issued under this chapter whenever the county determines that a condition resulting from any work performed under such a permit constitutes a nuisance as defined herein, or when the applicant, his agents, employees or the licensed well drilling contractor performing the work:

- (1) Violates any provision of this chapter or any terms and conditions of the permit; or
- (2) Misrepresents any material facts in the application for a permit.

(b) Except in emergency situations, before the county suspends or revokes a well permit, the county shall make reasonable effort to notify the applicant and the licensed well driller performing work under the permit if he is not the applicant and to provide an opportunity for each to show cause why the permit should not be suspended or revoked.

(c) Upon notification by the county that the permit is suspended or revoked, or finding that no valid permit has been issued, no further work shall be performed until such violation has been abated.

(d) Rules and Regulations. The health officer may adopt rules and regulations to implement and administer this chapter. (Ord. No. 3458, § 1)

Sec. 34A-8. Nuisance.

Upon finding by the county that a well or well drilling activity constitutes a nuisance, as defined herein, the county may take the necessary action to abate such nuisance. The property owner where the well is located and/or the person causing the nuisance thereof shall be jointly liable for the reasonable costs incurred by or at the request of the county for abatement of the nuisance. (Ord. No. 3458, § 1)

Sec. 34A-9. Appeal.

Any person whose application for a permit has been suspended, revoked or denied or whose request for an administrative variance has been denied may appeal to the board of supervisors of the County of Santa Barbara in writing within ten days after the notice of such suspension, revocation or denial. Said appeal shall specify the reasons therefor and shall be accompanied by a filing fee, if any, as established by the board of supervisors of the County of Santa Barbara. The clerk of the board of supervisors shall set the appeal for the hearing and shall give notice to the appellant and the appropriate county personnel of the time and place of the hearing. (Ord. No. 3458, § 1)

Sec. 34A-10. Inspection.

The county shall be notified at least twenty-four hours in advance to make an inspection of:

- (a) The sealing of the annular space on a well;
- (b) The destruction of wells; and
- (c) Any other operation which may be stipulated on the permit by the county to cope with special or unusual conditions.

The county shall have the right to enter upon any property at any reasonable time to make inspections and examinations for the purpose of enforcement of this chapter, subject to the provisions of Code of Civil Procedure section 1822.50 et seq. (Ord. No. 3458, § 1)

Sec. 34A-11. Application--Fees.

- (a) Each application for a well construction or modification permit shall be accompanied by a permit fee of one hundred fifty-five dollars.
- (b) Each application for a well destruction or inactivation permit shall be accompanied by a permit fee of ninety-five dollars.
- (c) An additional fee of thirty dollars per hour shall be charged to the permittee for any inspection service by the health officer which exceeds two hours on-site for witnessing annular seals, and the abatement of nuisances or hazards resulting from the well drilling operation. These application fees may be modified by resolution of the board of supervisors. (Ord. No. 3458, § 1)

Sec. 34A-12. Penalties.

Any person who violates any provision of this article is guilty of a misdemeanor. Each offense shall be punishable by a fine of not less than twenty-five dollars or more than one thousand dollars or by imprisonment in the county jail for a term not exceeding six months, or by both such fine and imprisonment. Each day such offense continues shall constitute a separate offense. (Ord. No. 3458, § 1)

ORDINANCE NO. 4181

AN ORDINANCE (1) REPEALING CHAPTER 34B ENTITLED DOMESTIC WATER SYSTEMS, SECTIONS 34B-1 THROUGH 34B-19 OF THE SANTA BARBARA COUNTY CODE REGULATING THE CONSTRUCTION AND MODIFICATION OF DOMESTIC WATER SYSTEMS SERVING ONE THROUGH FOUR WATER CONNECTIONS WITHIN THE UNINCORPORATED AREA OF THE COUNTY OF SANTA BARBARA AND (2) ADDING CHAPTER 34B ENTITLED DOMESTIC WATER SYSTEMS, SECTIONS 34B-1 THROUGH 34B-28 OF THE SANTA BARBARA COUNTY CODE REGULATING THE CONSTRUCTION, MODIFICATION AND OPERATION OF DOMESTIC WATER SYSTEMS SERVING ONE THROUGH FOURTEEN WATER CONNECTIONS WITHIN THE UNINCORPORATED AREA OF THE COUNTY OF SANTA BARBARA.

The Board of Supervisors of the County of Santa Barbara ordains as follows:

Section 1.

Chapter 34B entitled Domestic Water Systems, sections 34B-1 through 34B-19, of the Santa Barbara County Code be and the same is hereby repealed. The repeal of said chapter 34B shall not have any effect on any criminal or civil litigation or claims, including claims for fees, arising under said chapter 34B and shall not operate as an abatement of any criminal or civil action or proceeding arising under said chapter 34B and pending before or filed after the effective date of this ordinance.

Section 2.

Chapter 34B, sections 34B-1 through 34B-28, entitled Domestic Water Systems, is hereby added to the Santa Barbara County Code.

Chapter 34B
Domestic Water Systems

- § 34B-1. Declaration of Findings, Purposes and Intent;
- § 34B-2. Definitions.
- § 34B-3. Acts Prohibited, Permit Required.
- § 34B-4. Permits.
- § 34B-5. Permit Procedure for Single Parcel Water Systems.
- § 34B-6. Permit Procedure for Multiple Parcel Water Systems.

- § 34B-7. Permit Procedure for State Small Water Systems.
- § 34B-8. Special Conditions.
- § 34B-9. Permit Approval.
- § 34B-10. Permit Denial.
- § 34B-11. Commencement of Work.
- § 34B-12. Completion of Work.
- § 34B-13. Permit Application Fees.
- § 34B-14. Transferral and Expiration.
- § 34B-15. Suspension and Revocation.
- § 34B-16. Appeals.
- § 34B-17. Emergency Water Supply.
- § 34B-18. Minimum Domestic Water System Source Yield.
- § 34B-19. Source Construction for Domestic Water Systems.
- § 34B-20. Source Testing for Domestic Water Systems.
- § 34B-21. Qualified Individuals for Water Quality Sampling for Water Systems.
- § 34B-22. Domestic Water System Storage Requirements.
- § 34B-23. Domestic Water System Treatment Requirements.
- § 34B-24. Rules and Regulations.
- § 34B-25. Powers and Duties of the Director.
- § 34B-26. Right to Inspect.
- § 34B-27. Severability.
- § 34B-28. Remedies.

Section 34B-1. DECLARATION OF FINDINGS, PURPOSES AND INTENT

- (a) It is the purpose of this chapter to regulate domestic water systems, as defined herein, to ensure that they are developed, constructed, modified and operated in a manner to protect the health, safety and general welfare of the people of Santa Barbara County. The intent of the board of supervisors in adopting the standards described in this chapter is to ensure that upon permit issuance, all domestic water systems are capable of providing pure, wholesome and potable water on a continuous basis and under adequate pressure.
- (b) There is a need to provide economic incentives for the promotion of affordable housing units in the unincorporated area of the county.
- (c) The intent of this chapter is to develop standards for domestic water systems which will serve multiple dwelling units on a single parcel, up to and including four water

connections, in order to meet the need to provide economic incentives for affordable housing identified in subdivision b above.

- (d) The requirements in this chapter for geohydrologic evaluations and engineered plans and specifications for multiple parcel water systems are established because water demand is typically greater for these types of water systems and because there is no designated individual or party to serve as a water purveyor who will be solely responsible for controlling, maintaining and operating these types of water systems after they are constructed and put into service.

- (e) It is the intent of the board of supervisors to adopt local standards to implement the regulation of state small water systems on and after November 12, 1991, in accord with state law, Title 22, California Code of Regulations, Division 4, Chapter 14, Article 3, sections 64211 et seq., adopted pursuant to California Health and Safety Code section 4010.8.

Section 34B-2. DEFINITIONS

- (a) Unless the context requires otherwise, the definitions set forth in this section shall govern the construction of this chapter.

- (1) "APPLICANT" shall mean 1) the legal owner of the property on which the water system is intended to be constructed, operated or in service, or 2) the owner's agent authorized in writing to make application.

- (2) "BOARD OF SUPERVISORS" shall mean the Santa Barbara County Board of Supervisors. The Board of Supervisors is the governing board within the unincorporated area of the county which has the local jurisdiction and authority over domestic water system standards.

- (3) "CONSTRUCTION" of a domestic water system shall mean installation of new water storage, treatment, distribution, monitoring and/or system automation facilities and equipment. Construction shall also mean the addition of new water

connection.

- (4) "CONTAMINATION" means an impairment of the quality of the waters of the state by waste to a degree which creates a hazard to the public health through poisoning or through the spread of disease. "Contamination" includes any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected.

- (5) "COUNTY" shall mean the County of Santa Barbara.

- (6) "CROSS-CONNECTION" shall mean any potential or existing unprotected connection between any part of a water system used or intended to supply water for domestic purposes and any source or system containing water or other substance that is not or cannot be approved as safe, pure, wholesome and potable for human consumption.

- (7) "DIRECTOR" shall mean the Director of Santa Barbara County Environmental Health Services Division of the Department of Agriculture and Environmental Management or his designee.

- (8) "DOMESTIC PURPOSES" shall mean use of water for human consumption, sanitation, hygiene and cooking purposes.

- (9) "DOMESTIC WATER SYSTEM" shall mean a water system serving one (1) through fourteen (14) water connections, including all source, treatment, storage, distribution, monitoring and automation facilities and equipment. A domestic water system includes a single parcel water system, multiple parcel water system, and a state small water system. An "existing domestic water system" is a domestic water system existing and operating prior to July 11, 1979, the effective date of Santa Barbara County Ordinance No. 1096.

- (10) "DROUGHT" shall mean a period of below average rainfall as defined and declared by the County Water Agency and Board of Supervisors.
- (11) "EMERGENCY" shall mean a circumstance which is an imminent and immediate threat to or is actually (1) contaminating or polluting the groundwaters of this County, or (2) jeopardizing the health or safety of the people of the County, or (3) causing a substantial or immediate loss of property, crops, or livestock.
- (12) "ENFORCING AGENCY" shall mean the Santa Barbara County Environmental Health Services Division of the Department of Agriculture and Environmental Management. In the event the Environmental Health Services Division is reorganized and transferred to and made part of the Santa Barbara County Health Care Services Department on or before December 31, 1995, the enforcing agency shall be the corresponding Environmental Health Services Division of the Santa Barbara County Health Care Services Department.
- (13) "GUEST HOUSE" is defined as detached living quarters of a permanent type of construction without kitchen or cooking facilities of any kind, intended and used primarily for temporary guests of the occupants of the main building on the lot on which such guest house is located, and not rented or otherwise used as a separate dwelling.
- (14) "MODIFICATION" shall mean the alteration of a domestic water system by the addition to such system which changes the water source, or the treatment, storage or distribution facilities and/or components of said system. Modification does not mean the repair or replacement of the existing approved domestic water system facilities or components or the alteration of existing domestic water systems operating prior to July 11, 1979. The addition of new water connections to an existing domestic water system shall be considered new construction rather than modification.
- (15) "MULTIPLE PARCEL DOMESTIC WATER SYSTEM" shall mean a domestic water system serving two (2) through four (4) water connections, located on two or more parcels of land, residential or commercial, and serving less than an average of twenty-five (25) persons in any part of the year.
- (16) "NUISANCE" shall mean a domestic water system or component thereof which contaminates or pollutes or threatens to contaminate or pollute the groundwaters of this County, or otherwise cause the delivery of insufficient or nonpotable water in such a way that the health and safety of the water consumer or general public is jeopardized or threatened.
- (17) "PERMIT" shall mean a written document issued by the Director permitting the construction or modification of a domestic water system.
- (18) "PERSON" shall mean any individual, trust, firm, joint stock company, corporation (including a state or federal government corporation), partnership, or association. "Person" also includes any city, county, city and county, district, the state, the federal government or any agency thereof to the extent that such public entities may lawfully be regulated under this chapter and are not exempt from the application of this chapter pursuant to state or federal law.
- (19) "POLLUTION" means an alteration of the quality of the waters of the state by waste to a degree which unreasonably affects either of the following: (1) the waters for beneficial uses, or (2) facilities

which serve these beneficial uses.

- (20) "POTABLE WATER" shall mean water which can be used for domestic purposes and meets all State Domestic Water Quality Standards established in Title 22 California Code of Regulations, Division 4, Chapter 15, Article 3, section 64421 et seq., Article 4, section 64431 et seq., and Article 16, section 64449 et seq., and as hereinafter amended.

- (21) "SINGLE PARCEL DOMESTIC WATER SYSTEM" shall mean a domestic water system serving one (1) through four (4) water connections, located on a single parcel of land, residential or commercial, and serving less than an average of twenty-five (25) persons any part of the year.

- (22) "STATE SMALL DOMESTIC WATER SYSTEM" means a system for the provision of piped water to the public for human consumption that serves at least five (5), but not more than fourteen (14), service connections on one or more parcels and does not regularly serve more than an average of twenty-five (25) individuals daily for more than sixty (60) days out of the year.

- (23) "WATER CONNECTION" shall mean a water connection to a habitable dwelling unit, or a structure utilized for commercial or manufacturing purposes, whether located on one or more parcels of land and which requires potable water for human consumption or use, except that a water connection shall not mean a water connection to an attached second dwelling unit or an auxiliary building such as a guest house, a barn, a private art studio, workshop, or private office.

- (24) "WATER SUPPLY WELL" shall mean any well developed for the purpose of domestic water supply, capable of delivering potable water, with or without treatment, and constructed by any method of

artificial excavation. This includes single parcel, multiple parcel, and state small water system wells.

- (b) TENSE OR GENDER: Words used in the present tense include the future as well as the present. Words used in the masculine gender include the feminine and neuter. The singular number includes the plural, and the plural the singular.

Section 34B-3. ACTS PROHIBITED, PERMIT REQUIRED

- (a) It shall be unlawful to construct, modify or operate a domestic water system unless a permit from the Director is first obtained.
- (b) It shall be unlawful to construct, modify or operate a domestic water system unless such construction, modification or operation is in accordance with the standards and provisions set forth in this chapter.
- (c) It shall be necessary to obtain a permit for a domestic water system from the Director prior to issuance of any building permits for new dwelling units and/or new places of business intended to be served by the domestic water system.
- (d) It shall be unlawful to occupy a new dwelling unit or new place of business served by a domestic water system, unless a written occupancy clearance for the domestic water system is first obtained from the Director.
- (e) It shall be unlawful to willfully submit any false statement, record, test or water quality data in connection with an application for a permit to construct, modify or operate a domestic water system.

Section 34 B-4. PERMITS

- (a) WHEN REQUIRED: No person shall construct, modify or operate a domestic water system as defined by this chapter without first applying for and receiving a permit as provided in this chapter, unless exempted by section 34B-4, subd. (c), of this chapter.
- (b) FAILURE TO OBTAIN A PERMIT: It is a violation of this chapter for any person to commence work for which a permit is required by this chapter, on a domestic water

system without first having obtained a permit.

- (c) **EMERGENCY WORK:** In the event of an emergency, a person may construct, modify or operate a domestic water system without the permit required by this chapter. In such cases, the person responsible for the emergency work shall comply with the following:

- (1) **NOTIFICATION:** The responsible party shall notify the enforcing agency, in writing or orally, of the emergency within three (3) working days after commencement of emergency work to obtain verbal approval to proceed.
- (2) **PROOF OF EMERGENCY:** The responsible party shall submit a written statement, within 10 working days after commencement of the emergency work, to the enforcing agency showing the facts in support of the emergency work.
- (3) **TIME LIMIT:** The responsible party shall apply for a permit and pay applicable fee within ten (10) working days after commencement of emergency work.
- (4) **CONFORMANCE WITH STANDARDS:** The responsible party shall demonstrate that all work performed was in conformance with the standards designated in this chapter.

Section 34B-5. PERMIT PROCEDURE FOR SINGLE PARCEL WATER SYSTEMS

- (a) Applications for single parcel water system permits shall be made to the enforcing agency and shall contain all information that the enforcing agency requires to achieve the purpose of this chapter. This application shall be made in writing and signed by the applicant or designated agent on such forms as may be prescribed by the enforcing agency. A fee in an amount specified in the current Board of Supervisors Fee Resolution adopted pursuant to this chapter shall accompany the application.

- (b) Application for the construction or

modification of a single parcel domestic water system shall include, but not be limited to, the following information:

- (1) A detailed plot plan drawn to scale, prepared and signed by an approved water system designer. An approved designer is a C-57 California Water Well Contractor, a C-61 California Pump Contractor or a California Registered Civil Engineer. Such person's licenses shall be active and in good standing with the appropriate state licensing or registration board. The plot plan shall show the following items:

- (a) Location and elevation of all existing and proposed domestic water system components; water source; treatment and treatment wastewater discharge facilities; storage tank, p u m p i n g a n d pressurization equipment; distribution piping; water connection; irrigation connection; and cross-connection devices.

- (b) Location of all possible sources of contamination within two hundred (200) feet of the water source; Existing or proposed water system; treatment works; tanks located above or below ground, containing, carrying or disposing of storm drain water, sewage (graywater or blackwater), industrial or hazardous waste, hazardous materials, petroleum products; and solid waste or any animal/fowl enclosures such as pens, or paddocks.

- (c) Property lines.

- (d) Existing and proposed easements for property access and for water and sewer facilities.

- (e) Existing and proposed

structures.

- (f) A north arrow for orientation.
- (2) A schematic diagram prepared and signed by an approved designer as specified in section 34B-5, subd. (b)(1), showing detailed information for the proposed single parcel domestic water system components including source, treatment, treatment wastewater discharge, pumping and pressurization, storage, distribution, water connection and cross-connection prevention facilities and associated piping and fittings.
- (3) Source yield test report for each proposed water source, prepared and signed by an approved source tester as specified in section 34B-20. This test shall have been conducted and reported in accordance with the requirements set forth in section 34B-20 and performed within five (5) years from the date of application.
- (4) Complete chemical analyses of each domestic water source performed by a state approved laboratory within three (3) years from the date of application. Accompanying these analyses shall be written verification that the water sample was collected, preserved and transported by an approved sampler as set forth in section 34B-21, and in accordance with approved sampling and analytical methods.
- (5) Legible signed copy of the well driller's log for each proposed domestic water source.
- (6) Copies of equipment specifications to include but not be limited to: well pump and booster pump curves, storage tank, repressurization equipment and cross-connection protection specifications.
- (7) Treatment equipment specifications and a completed Treatment Form completed by an authorized representative of the treatment equipment manufacturer or a Registered Civil or Chemical Engineer.
- (8) For a single parcel domestic water system which is to be located exclusively on the parcel on which it is proposed to serve, the applicant shall complete, sign and date an Exclusive Ownership Declaration statement verifying that the proposed single parcel domestic water system is owned exclusively by the record owner of the property to be served and is available for use solely to that property. Proof of ownership in the form of a copy of the recorded grant deed must accompany this declaration statement.
- (9) For a single parcel domestic water system where the water source is to be located off-site from the parcel to be served, the applicant shall provide the following information:
- (a) Identification of any other persons or properties having, or proposed to have, an interest in the domestic water system.
- (b) Copies of recorded grant deeds or equivalent ownership documentation of properties with ownership interest or rights in the domestic water system. Such documentation shall include name, property address and property assessor's parcel number.
- (c) Documentation in the form of recorded deeds or recorded legal agreements establishing the legal right of the property to be served by the proposed water system to obtain water in quantities sufficient to meet the minimum source yield requirements established

by this chapter.

- (d) Documentation indicating that the property to be served by the proposed domestic water system possesses legal easements, rights and obligations for purposes of access to and operation and maintenance of the water source, p u m p i n g a n d pressurization, treatment and treatment discharge, storage and distribution components. Legal easements shall be described by metes and bounds which have been prepared by a licensed surveyor and recorded or are shown on a Final Parcel or Tract Map ready for recordation.

- (10) It shall be specified in all the aforementioned legal documentation that all rights easements and obligations shall run with the land and shall be conveyed with the property upon transference of ownership.

Section 34B-6. PERMIT PROCEDURE FOR MULTIPLE PARCEL WATER SYSTEMS

- (a) Applications for multiple parcel water system permits shall be made to the enforcing agency and shall contain all information that the enforcing agency requires to achieve the purpose of this chapter. This application shall be made in writing and signed by the applicant or designated agent on such forms as may be prescribed by the enforcing agency. A fee in an amount specified in the current Board of Supervisors Fee Resolution adopted pursuant to this chapter shall accompany the application.

- b) The design, supervision and certification for the construction or modification of a multiple parcel domestic water system shall be performed by a California Registered Civil Engineer with registration which is

active and in good standing from the appropriate state licensing or certification board. Application for the construction or modification of a multiple parcel domestic water system shall include, but not be limited to, the following information:

- (1) Complete engineered plans and specifications prepared and signed by a California Registered Civil Engineer. These plans and specifications shall include the following information, but not be limited to:

- (a) A domestic water system plan drawn to scale locating all source, treatment, treatment wastewater discharge, p u m p i n g a n d pressurization, storage and distribution facilities to serve each water connection of the proposed system. The plan is to be superimposed on a topographical map of the properties to be served by the system.

- (b) Location of all possible sources of contamination within one hundred fifty (150) feet of the water source, including but not limited to: existing or proposed water systems; treatment works; tanks located above or below ground, containing, carrying or disposing of storm drain water, sewage (graywater or blackwater), industrial or hazardous waste, hazardous materials, petroleum products; and solid waste or any animal/fowl enclosures such as pens or paddocks.

- (c) Protection zones of fifty (50), one hundred (100) and one hundred and fifty (150) feet radii are to be included on the plans to assure that proper setbacks are maintained between the

water source and potential sources of contamination.

- (d) All domestic water system easements for access, maintenance, operation and distribution to each property to be served by the proposed domestic water system.
 - (e) Existing and proposed structures.
 - (f) A north arrow for orientation and a vicinity map for reference on the domestic water plan.
 - (g) Detailed drawings of separate components of the proposed domestic water system, including all water source, treatment facilities, treatment wastewater discharge, pumping and pressurization, storage, distribution, water connection and cross-connection prevention equipment and associated piping and fittings. In addition, details for pipe trenching, storage tank and repressurization equipment must be included in the detailed drawings.
- (2) A report by a California Registered Civil Engineer shall include, but not be limited to, complete engineering calculations and specifications adequate to meet this chapter and all other applicable laws, standards or regulations. These calculations and specifications shall justify and certify that the proposed domestic water system's source, treatment and treatment wastewater discharge facilities, pumping and pressurization works, storage tanks, distribution facilities, water connection and cross-connection prevention works, are based on accepted design criteria. If water treatment is required, this report must include a completed Treatment Form completed by an authorized

representative of the treatment equipment manufacturer or a Registered Civil or Chemical Engineer.

- (3) Source yield test report for each proposed water source shall be prepared and signed by an approved source tester as specified in section 34B-20. This test shall have been conducted and reported in accordance with the requirements set forth in section 34B-20 and performed within five (5) years from the date of application.

Accompanying the source yield report must be an analysis by a California Registered Geologist or a Certified Engineering Geologist of the source yield test results. This analysis shall incorporate a geohydrologic evaluation of the underground water formation or basin and a certification that water resources are available in sufficient quantity and on a long-term basis to supply the proposed system and meet the minimum requirements of this chapter.

- (4) Complete chemical analyses of each domestic water source performed by a state-approved laboratory within three (3) years from the date of application. Accompanying the analyses shall be written verification that the water sample was collected, preserved and transported by an approved sampler as set forth in section 34B-21 and in accordance with approved sampling and analytical methods.
- (5) A legible signed copy of the well driller's log for each proposed domestic water source.
- (6) Identification of all other persons or properties having, or proposed to have, an interest in the domestic water system. Such identification shall include name, property address, and assessor's parcel number of all properties intended to be served by the domestic water system.

- (7) Copies of the recorded grant deed or other equivalent ownership documentation for each parcel to be served.
- (8) Documentation establishing the legal right of each property owner participating in the proposed water system to obtain water in quantities sufficient to meet the minimum source yield requirements established by this chapter. This documentation shall be submitted in the form of recorded deeds or recorded legal agreements.
- (9) Documentation indicating that the properties to be served by the proposed multiple parcel domestic water system possess legal easements, rights and obligations for purposes of access to and operation and maintenance of the water source, pumping and pressurization, treatment and treatment discharge facilities, and storage and distribution components. Legal easements shall be described by metes and bounds which have been prepared by a licensed surveyor and recorded or are shown on the final map ready for recordation.
- (10) It shall be specified in all the aforementioned documentation of section 34B-6, subd. (b)(8) and (9) that all rights, easements and obligations shall run with the land and shall be conveyed with the property upon transferral of ownership.

Section 34B-7. PERMIT PROCEDURE FOR STATE SMALL WATER SYSTEMS

- (a) Applications for state small water system permits shall be made to the enforcing agency and shall contain all information that the enforcing agency requires to achieve the purpose of this chapter. This application shall be made in writing and signed by the applicant or designated agent on such forms as may be prescribed by the enforcing agency. A fee in an amount specified in the current Board of Supervisors Fee Resolution adopted pursuant to this chapter shall accompany the application.

- (b) The design, supervision and certification for the construction or modification of a state small domestic water system shall be performed by a California Registered Civil Engineer with registration which is active and in good standing from the appropriate state licensing or certification board. Application for the construction or modification of a state small domestic water system must include, but not limited to, the following information:

- (1) All items required for a multiple parcel domestic water system applications as specified in section 34B-6.
- (2) For new state small water systems not in existence on November 12, 1991, legal documentation indicating that the record owners of the properties to be served by the proposed water system have incorporated into an association organized under Title 3 of Division 3 of the Corporations Code, section 20000 et seq.

Section 34B-8. SPECIAL CONDITIONS

If the enforcing agency issues a permit pursuant to sections 34B-5, 34B-6 and 34B-7 of this chapter, it may condition the permit in any manner necessary to carry out the purpose of this chapter.

Section 34B-9. PERMIT APPROVAL

- (a) If the enforcing agency finds the application for permits requested under sections 34B-5, 34B-6 and 34B-7 to contain all the necessary information and the proposed work is in compliance with all applicable domestic water system standards, as defined in this chapter, the enforcing agency shall issue the applicant a permit. Should the applicant wish to change any conditions of the permit, the change must be approved by the enforcing agency in writing prior to commencing work. The permit approval received from the enforcing agency is separate from any other permit or clearance that may be required by another governmental agency or entity. Permits shall be issued within the time specified in section 34B-9, subd. (a)(1) through (3) below, unless the time is extended by written mutual agreement between the enforcing agency and

the applicant:

- (1) Within fifteen (15) working days of receiving a completed single parcel domestic water system permit application.
- (2) Within thirty (30) working days of receipt of a multiple parcel domestic water system permit application.
- (3) Within 30 calendar days of receipt of a state small domestic water system permit application, the enforcing agency shall notify the applicant in writing that the application is either complete and accepted for filing or that it is deficient and the notice of deficiency shall advise the applicant of specific information or documentation that is required to complete the application. Within 90 calendar days from the date of filing of a completed application, the enforcing agency shall inform the applicant in writing of its decision to approve or deny the permit application.

Section 34B-10. PERMIT DENIAL

- (a) The enforcing agency shall deny any permit application requested under sections 34B-5, 34B-6 and 34B-7 if:
 - (1) The applicant is not a person authorized to perform the work as provided by this chapter.
 - (2) The permit application is not complete.
 - (3) The proposed work does not meet the domestic water system standards of this chapter and regulations adopted pursuant thereto.

Section 34B-11. COMMENCEMENT OF WORK

A completed application must be submitted and an approved permit must be issued by the enforcing agency prior to commencement of work, except as under the emergency conditions specified in section 34B-4, subc.

(c), of this chapter. Notification for emergency work shall be given in accordance with the procedures adopted by the Director under the emergency provisions of this chapter.

Section 34B-12. COMPLETION OF WORK

Upon completion of construction of the domestic water system, an applicant shall request occupancy clearance from the enforcing agency. Written occupancy clearance shall be granted by the enforcing agency upon: (1) acceptance of all completed construction as approved in the permit, and (2) a determination by the enforcing agency that bacteriological and chemical test samples meet drinking water standards.

Section 34B-13. PERMIT APPLICATION FEES

The board of supervisors may by resolution adopt such fees as are allowed under sections 510 and 4010.8 of the California Health and Safety Code and may prescribe such terms and conditions as may be necessary to enable the County of Santa Barbara to recover the reasonable and necessary costs incurred by the County in administering this chapter.

Section 34B-14. TRANSFERRAL AND EXPIRATION

- (a) The permit is not transferable, unless the new property owner makes a new application and the conditions under which the existing approved permit was issued have not changed. If changes are proposed in the design or construction of the water system, the new owner shall file an application for a new water system permit.
- (b) Each permit shall expire and become null and void if the work authorized has not been completed within three (3) years from the date of permit issuance. Upon the expiration of the permit, no further work shall be done until the applicant receives a new permit.

Section 34B-15. SUSPENSION AND REVOCATION

- (a) The enforcing agency may suspend or revoke any permit issued pursuant to this chapter, whenever it finds that the permittee has violated any provisions of this chapter, has misrepresented any material fact in his

application or supporting documents for such a permit, and/or performed any work under the permit that has resulted in a nuisance as defined in this chapter.

- (b) No person whose permit has been suspended or revoked shall continue to perform the work for which the permit was granted until, in the case of suspension, such permit has been reinstated by the enforcing agency. The permit shall not be reinstated until the violation has been abated.
- (c) Upon suspending or revoking any permit, if any work already done by the permittee has left a domestic water system in such condition as to constitute an emergency, the enforcing agency may order the permittee to perform any work reasonably necessary to protect the groundwater and/or public. No permittee or person who has held any permit issued pursuant to the chapter shall fail to comply with any such order.

Section 34B-16. APPEALS

- (a) **RIGHT OF HEARING:** Any person whose application for a permit has been conditioned, denied, suspended, or revoked, may appeal to the Board of Supervisors, in writing, within ten (10) working days after notification of the imposition of any condition, denial, suspension, or revocation. Such appeal must specify the grounds upon which it is taken. The Clerk of the Board shall set such appeal for hearing at the earliest practicable time, and shall notify the appellant and the enforcing agency, in writing, of the established time and place at least ten (10) days prior to the date of the hearing.
- (b) **ACTION BY THE BOARD OF SUPERVISORS:** After such hearing, the Board of Supervisors may affirm, modify, condition, or reverse, wholly or in part, the order or determination being appealed.

Section 34B-17. EMERGENCY WATER SUPPLY

- (a) **EMERGENCY WATER SUPPLIES FOR ALL DOMESTIC WATER SYSTEMS:** In the event of an officially declared state or local emergency or an emergency as defined in section 34B-2, subd. (a)(11), the existing domestic water system may utilize hauled water from a state-approved domestic water hauler or install an interconnection with

another nearby domestic water system as a temporary source of supply, upon approval by the enforcing agency.

- (b) **HAULED WATER PROHIBITED FOR DOMESTIC WATER SUPPLIES:** Except in the case of an emergency as specified above in section 34B-17, subd.(a), water furnished by a potable water hauler shall not be used as a source of water by any domestic water system.

Section 34B-18. MINIMUM DOMESTIC WATER SYSTEM SOURCE YIELD

- (a) When modifying or constructing a state small domestic water systems which was not in existence on November 12, 1991, the operator/owner shall demonstrate to the enforcing agency that sufficient water is available from the water system's sources and distribution storage facilities to supply a minimum of three (3) gallons per minute for at least 24 hours for each service connection served by the system.
- (b) For modifications or new construction of state small domestic water systems which were in existence prior to November 12, 1991, the required minimum domestic water source yield shall be based on one of the following: a minimum of three (3) gallons per minute per water connection based on a valid pump test; documented historical water use figures; or the State Waterworks Standards Charts from section 64564 of Division 4, Chapter 16, Article 2, of Title 22 of the California Code of Regulations.
- (c) **CREEK AND STREAM SOURCE:** If approved for use by the enforcing agency as described in section 34B-20, subd. (c), a creek or stream source supplying a domestic water system shall be capable of yielding water continuously throughout the year and providing a minimum of three (3) gallons per minute of water to each domestic water connection served. Source capacity is to be determined by the source testing procedures defined in section 34B-20, subd. (c).
- (d) **HORIZONTAL WELL AND SPRING SOURCE:** If approved for use by the enforcing agency as described in section 34B-20, subd. (d), a horizontal well or spring supplying a domestic water system shall be capable of providing on a continuous basis a minimum of one and one

half gallons per minute per domestic water connection, providing all conditions of the yield determination test as described in section 34B-20, subd. (d), are satisfactorily met. If these conditions are not met, then a minimum of three (3) gallons per minute per domestic connection is required. Source capacity is to be determined by the source testing procedure defined in section 34B-20, subd. (d).

- (e) **WATER WELL SOURCE:** A water well source or combination of well sources supplying a domestic water system shall be capable of providing on a continuous basis a minimum of three (3) gallons per minute of water to each domestic water connection served. The source capacity is to be determined by the source testing procedures set forth in section 34B-20, subd. (e).

Section 34B-19. SOURCE CONSTRUCTION FOR DOMESTIC WATER SYSTEMS

- (a) **ANNULAR SEAL DEPTH FOR DOMESTIC WATER SYSTEM SUPPLY WELLS:** All domestic water system supply wells shall have a minimum annular seal depth as specified in applicable standards in the Santa Barbara County Code Chapter 34A, Well Standards.
- (b) **CONSTRUCTION OF CREEK, SPRING AND STREAM SOURCES FOR ALL DOMESTIC WATER SYSTEMS:** Collection and inlet facilities for these types of surface water sources must be designed to exclude airborne, animal and surface drainage contamination to the maximum extent feasible. A durable, cleanable, tight fitting water collection facility with an elevated, screened inlet, not subject to clogging, shall be required.
- (c) **CONSTRUCTION OF WATER WELL SOURCE:** All domestic water system wellhead construction shall include, but not be limited to:

- (1) A minimum of eighteen (18) inch clearance above finish grade.
- (2) An approved disinfection port or tube shall be installed and shall be protected against entrance of contaminants by installation of a water tight cap or plug.

- (3) A tight fitting, water and vermin-proof well seal.
- (4) A minimum of a National Sanitation Foundation approved single check valve must be installed on the above ground pump discharge line. Should the well be used for any non-domestic purposes such as irrigation, including landscape irrigation, the wellhead shall be equipped with a County-approved backflow prevention device.
- (5) A hose bibb installed on the pump discharge line on the distribution side of the check valve.
- (6) A protective enclosure or fence to prevent physical damage or contamination of the wellhead. The requirement for enclosure may be waived by the Director or designated representative if in the opinion of the enforcing agency, the property where the well is located is sufficiently secure to protect the wellhead. Subsurface vaulting of a wellhead is prohibited unless an administrative variance has been granted in accordance with Santa Barbara County Code Chapter 34A, Well Standards.

Section 34B-20. SOURCE TESTING FOR DOMESTIC WATER SYSTEMS

- (a) **SINGLE PARCEL DOMESTIC WATER SYSTEM SOURCE YIELD TESTING:** The source yield testing for a single parcel domestic water system shall be performed only by a C-57 California Water Well Contractor, a C-61 California Pump Contractor's License, a State Registered Geologist or Engineering Geologist. Such person's licenses shall be active and in good standing with the appropriate state licensing or certification board.
- (b) **MULTIPLE PARCEL AND STATE SMALL DOMESTIC WATER SYSTEM SOURCE YIELD TESTING:** The source yield testing for a multiple parcel or state small domestic water system shall be performed by a State Registered Geologist or Engineering Geologist. Such person's license shall be active and in good standing

with the appropriate state licensing or certification board.

and periods were as follows:

Minimum Flow Rate
Test Duration(Hours)

3-10 gpm
72 hours
>10-50 gpm
24 hours
>50 gpm
12 hours

(c) CREEK AND STREAM SOURCE TESTING: This type of source testing for a domestic water system shall require the applicant to establish his legal right to utilize such source in the quantities required and satisfactorily fulfill one of the two following conditions:

- (1) Provide documentation of historical use or yield during two (2) consecutive drought years, or
- (2) Submit a geohydrologic report prepared by a California Registered Geologist or Engineering Geologists certifying that minimum required yields are available on a continuous, long-term basis.

(d) HORIZONTAL WELL AND SPRING SOURCE TESTING: This type of source testing for a domestic water system shall be performed by an approved domestic water system source tester as defined in sections 34B-20, subd.(a), and 34B-20, subd. (b), and shall meet the following two conditions:

- (1) The yield determination was made during the months of August through October.
- (2) Documentation is submitted of historical use or yield during two (2) drought years or a geohydrological report, prepared by a California Registered Geologist or Engineering Geologist, certifying that minimum required yields are available on a continuous long-term basis.

(e) WATER WELL SOURCE TESTING: This type of source testing for a domestic water system shall be performed by an approved domestic water system source tester as defined in sections 34B-20, subd. (a), and 34B-20, subd. (b), and shall meet the following conditions:

- (1) Yield test was performed following the proper development of the water well source and any step-drawdown testing.
- (2) Minimum yield test pumping rates

(3) Yield test was conducted at a constant flow rate on a continuous, non-interrupted basis for the durations specified above in section 34B-20, subd. (e)(2).

(4) The water level in the well remained constant or varied less than one (1) foot during the last four (4) hours of test pumping. If the water level did not remain constant and varied more than one foot in the last four hours of testing, then a California Registered Geologist or a Certified Engineering Geologist shall determine long-term drawdown and reliability using accepted engineering well yield formulas and/or the time recovery data.

(5) If two or more domestic water wells are necessary to meet the minimum yield requirements, these wells must be test pumped simultaneously for the test durations specified above in section 34B-20, subd. (e)(2).

(6) A test report prepared and signed by an approved source tester. This report shall include, but not be limited to, the following information: date of test, constant flow rate of drawdown test in gallons per minute, duration of test, hourly drawdown readings, and recovery data readings.

(7) Multiple parcel or state small domestic water system source test reports shall also include: drawdown and recovery curves on logarithm vs. time graph; transmissibility calculation;

geohydrological evaluation of the underground water formation or basin; and certification that water resources are available in sufficient quantity and on a long-term basis to supply the proposed domestic water system and meet the minimum yield requirements of this chapter.

Section 34B-21. QUALIFIED INDIVIDUALS FOR WATER QUALITY SAMPLING FOR WATER SYSTEMS

Water quality sampling of domestic water system source shall be performed only by a C-57 California Water Well Contractor, C-61 California Pump Contractor, a State Registered Geologist, or Engineering Geologist, a State Registered Civil Engineer, State Certified Water Treatment Operator or by a technician trained by a state-certified laboratory. For organic chemical water quality sampling only a State Certified Water Treatment Operator or state-approved laboratory technician, specifically trained in this type of sampling, may perform these tasks. All such aforementioned person's licenses and/or certifications must be active and in good standing with the appropriate state licensing or certification board.

Section 34B-22. DOMESTIC WATER SYSTEM STORAGE REQUIREMENTS

- (a) The specified storage facilities described below may be combined with fire protection water storage if approved in writing by the appropriate fire department or district:

- (1) **STORAGE CAPACITY REQUIREMENTS FOR SINGLE PARCEL DOMESTIC WATER SYSTEMS:** A single parcel domestic water system shall install domestic water storage facilities with minimum capacity of one thousand (1000) gallons per water connection.

A single parcel domestic water system serving a commercial or industrial development shall install water storage facilities with a capacity equal to five (5) times the daily average domestic demand as determined by the enforcing agency and/or the project engineer.

- (2) **STORAGE CAPACITY REQUIREMENTS FOR MULTIPLE PARCEL AND STATE SMALL DOMESTIC WATER SYSTEMS:** A multiple parcel or state small domestic water system shall install domestic water storage facilities with minimum capacity of two thousand five hundred (2,500) gallons per habitable dwelling unit.

A multiple parcel or state small domestic water system serving a commercial or industrial development shall install water storage facilities with a capacity equal to five (5) times the daily average domestic demand as determined by the enforcing agency and/or the project engineer.

Section 34B-23. DOMESTIC WATER SYSTEM TREATMENT REQUIREMENTS

- (a) **BEST AVAILABLE TECHNOLOGY:** All proposed water treatment equipment for domestic water systems must be effective in treating the source water as required, and approved by the Drinking Water Field Operations Branch of the State Department of Health Services.

- (b) **CENTRALIZED TREATMENT FOR DOMESTIC WATER SYSTEMS:** In the event the quality of the water source does not meet primary drinking water standards or secondary standards as specified in Title 22 California Code of Regulations, Division 4, Chapter 15, Article 3, section 64421 et seq., Article 4, section 64431 et seq., and Article 16, section 64449 et seq., with respect to Total Dissolved Solids and Specific Conductance, centralized treatment facilities installed prior to the domestic storage tank shall be required.

- (c) **POINT OF ENTRY TREATMENT FOR DOMESTIC WATER SYSTEMS:** In the event the quality of the water source does not meet secondary standards as specified in Title 22 California Code of Regulations, Division 4, Chapter 15, Article 16, section 64449 et seq., with the exception of Total Dissolved Solids and Specific Conductance, point-of-entry treatment at each structure served may be installed in lieu of centralized treatment.

(d) TREATMENT CAPACITY FOR DOMESTIC WATER SYSTEMS: For centralized treatment facilities for all domestic water systems, the proposed treatment facilities must be capable of meeting maximum day demand of the water system. For point-of-entry treatment systems, the peak domestic demand may be utilized for design purposes.

(e) TREATMENT WASTE WATER DISCHARGE FACILITIES: Treatment equipment backwash and wastewater discharge from all domestic water systems shall be disposed of via an approved fixed air gap device into approved public sewer facilities. Where a public sewer connection is not available, wastewater effluent from the treatment unit should be disposed of in accordance with the adopted Central Coast Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan), Resolution 89-04.

Section 34B-24. RULES AND REGULATIONS

The Director may issue such rules and regulations as are necessary for the proper and orderly administration of this chapter.

Section 34B-25. POWERS AND DUTIES OF THE DIRECTOR

The Director is authorized and directed to enforce all of the provisions of this chapter and such rules and regulations as are adopted by the Director. The Director is authorized to consult with qualified experts in any matter concerning domestic water supply to the extent that he deems it reasonably necessary to assist him in carrying out his duties. The Director may request and shall receive the assistance and cooperation of other officials in the County, so far as may be necessary in the discharge of his duties.

Section. 34B-26. RIGHT TO INSPECT

The Director shall have the right to enter any property at any reasonable time to make inspections and examinations for the purposes of administration and enforcement of this chapter, subject to the provisions of the Code of Civil Procedure sections 1822.50 et seq.

Section. 34B-27. SEVERABILITY

If any section, subsection, clause or

provision of this chapter is held invalid, the remainder of this chapter shall not be affected by such invalidity.

Section. 34B-28. REMEDIES

Any violation of the provisions of this chapter by any person who is subject to the provisions of this chapter, is a misdemeanor as defined in, and punishable as provided in, section 1-7 of this code.

Section 4.

This ordinance shall take effect and be in force thirty (30) days from the date of its passage; and before the expiration of fifteen (15) days after its passage it, or a summary of it, shall be published once, with the names of the members of the Board of Supervisors voting for and against the same in the Santa Barbara News-Press, a newspaper of general circulation published in the County of Santa Barbara, State of California.

PASSED, APPROVED AND ADOPTED this ____th day of _____, 1994.

AYES:

NOES:

ABSTAIN:

ABSENT:

Chair, Board of Supervisors
ATTEST:

ZANDRA CHOLMONDELEY
CLERK OF THE BOARD

By _____
Deputy
[DO NOT PUBLISH APPROVAL]

APPROVED AS TO FORM:

SHANE STARK
COUNTY COUNSEL

By _____
Deputy County Counsel

APPENDIX B

Well #1 Water Quality Information

**VENTUCOPA WATER SUPPLY COMPANY
SUMMARY OF WATER QUALITY
TESTING RESULTS**

Constituent	Date	Results^a, mg/L	MCL	Location
Nitrate (as NO ₃)	6/28/05	56.7	45	Well Site
Nitrate (as NO ₃)	7/12/05	ND	45	System Sample
Nitrate (as NO ₃)	2/23/05	ND	45	Well Site
Nitrate (as NO ₃)	9/21/04	50.0	45	System Sample
Nitrate (as NO ₃)	6/29/04	46.4	45	System Sample
Nitrate (as N)	4/27/04	9.8	10	
Nitrate (as N)	10/6/97	6.7	10	
Nitrate (as NO ₃)	10/6/97	30		
VOCs	8/12/87	ND		
Simazine	8/12/87	ND		
Triazine	8/12/87	ND		
TDS	1/15/75	1,845		Water System
Sulfates	1/15/75	1,019		Water System
Bicarbonate	1/15/75	151		Water System
Alkalinity	1/15/75	151		Water System
Calcium	1/15/75	248		Water System
Magnesium	1/15/75	100		
Iron	1/15/75	0.15		
Sodium	1/15/75	108		
Potassium	1/15/75	3.8		
Chlorides	1/15/75	50		
Fluorides	1/15/75	0.74		
Nitrates	1/15/75	28		
pH	1/15/75	8.1		

^a ND = non-detect

VENTUCOPA WATER SUPPLY COMPANY
SUMMARY OF WATER QUALITY
TESTING RESULTS
(continued)

Constituent	Date	Results ^a , mg/L	MCL	Location
TDS	7/26/72	1615		Well
Hardness	7/26/72	940		Well
Bicarbonate	7/26/72	157		
Alkalinity	7/26/72	157		
Calcium	7/26/72	232		
Magnesium	7/26/72	88		
Sodium	7/26/72	91		
Potassium	7/26/72	4		
Chlorides	7/26/72	29		
Sulfates	7/26/72	934		
Fluorides	7/26/72	0.78		
Nitrates	7/26/72	13		
pH	7/26/72	7.9		
TDS	10/4/76	1,764		
Nitrate (as NO ₃)	12/10/02	32.3		
Nitrite	7/12/01	3.39		
Nitrate (as NO ₃)	3/12/02	25.5		Well
Nitrate (as NO ₃)	6/4/02	22.1		Well
Nitrate (as NO ₃)	9/9/02	26.1		
Nitrate (as NO ₃)	12/9/02			
Nitrate (as N)	6/24/03	7.9		
Nitrate (as NO ₃)	1/27/06	13.8		
Nitrate (as NO ₃)	2/8/06	47.5		Well
Nitrate (as NO ₂)	2/8/06	ND		
Nitrate (as NO ₃)	8/4/05	51.7		Well

^aND = non-detect

APPENDIX C

Well #2 Water Quality Information

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

Page of Owner's Well No. Date Work Began 12-10, Ended 12-21-94 No. 432048Local Permit Agency Permit No. Permit Date 11-25-94

DWR USE ONLY - DO NOT FILL IN	
STATE WELL NO./STATION NO.	
LATITUDE	LONGITUDE
APN/TRS/OTHER	

GEOLOGIC LOG

ORIENTATION () VERTICAL HORIZONTAL ANGLE (SPECIFY)DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DESCRIPTION

Describe material, grain size, color, etc.

DEPTH FROM SURFACE

Ft. to Ft.

0 20

Gravel + Rocks

70 85

Clay

85 175

Small gravel + sand

125 204

Clay + Rock

WELL OWNER

Name Wen CarpenterMailing Address Rt 1 Box 128City MaricopaState Cal ZIP 92572

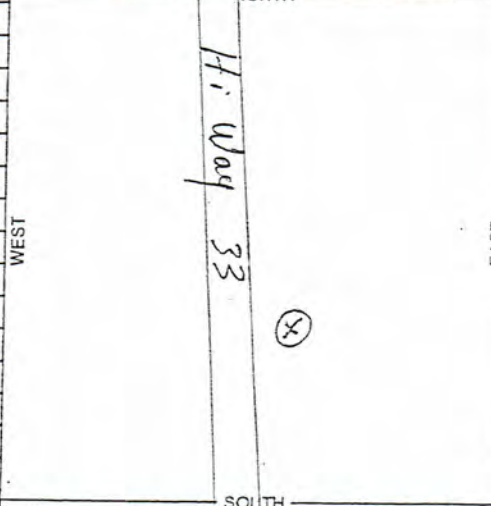
WELL LOCATION

Address SameCity County Santa BarbaraAPN Book 149 Page 262 Parcel 17-00Township Range Section Latitude Longitude

DEG. MIN. SEC. NORTH Longitude DEG. MIN. SEC. WEST

LOCATION SKETCH

NORTH



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)

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

DRILLING METHOD RotaryFLUID Mud

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 74 (Ft.) & DATE MEASURED 12-20-94ESTIMATED YIELD 300 (GPM) & TEST TYPE Air LiftTEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

* May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING 204 (Feet)TOTAL DEPTH OF COMPLETED WELL 197 (Feet)

CASING(S)

DEPTH FROM SURFACE

BORE-HOLE DIA.

TYPE ()

MATERIAL GRADE

INTERNAL DIAMETER

GAUGE OR WALL THICKNESS

SLOT SIZE IF ANY

Ft. to Ft.

(Inches)

BLANK SCREEN COU. UNCTOR FILL PIPE

(Inches)

(Inches)

(Inches)

0 80

12 1/2

Steel

10"

1/4

60#s

80 180

✓

0 60

✓

ANNULAR MATERIAL

DEPTH FROM SURFACE

TYPE

Ft. to Ft.

CE-MENTITONITE FILL FILTER PACK

() () () (TYPE/SIZE)

0 50

✓

Pia Cement

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 Paul Sanders

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS Rt 1 Box 128 MaricopaCity Maricopa State Cal ZIP 92572Signed Paul SandersDATE 12-21-94 WELL NUMBER 432048

APN 149-262-17

Permit No. 9084
Page of pagesENVIRONMENTAL HEALTH DIVISION
SANTA BARBARA COUNTY HEALTH CARE SERVICES
WELL PERMIT FIELD INVESTIGATION RECORDWell Permit Application Received: Date 12/1/94Site Investigation By J. Davis Date 5/19/94

Findings: (Check applicable boxes and give clearance)

☒ Overhead Power Lines	☒ Animal Enclosure
☒ Sewer Lines	☒ Creek or Watercourse
☒ Leach Field	☒ Petroleum Tank or Pipeline
☒ Cesspool/Drywell	☒ Other

Setbacks OK (Checked at well seal of nearby well 5/19/94)
Assessor - OKApplication Reviewed and Approved: By J. Davis Date 12/6/94

Work Investigation Record

Date 12/21/94Well Site #: 1

Casing Information

Type: Steel ☒ PVC ☐ Other ☐Class/Gage/NSF: 1/4"

ASTM#:

Diameter: 10" Total Depth: 200'

Borehole

Total Depth of Well: 200'Annular Seal Depth: 50'Well Bore Diameter: 17.5"Sealing Material: 6-sack cement

Casing Schedule

Amount: 5 ydsMethod of Pour: GravityUse of Tremie: NoDriller(s): Brad SandersDrillingComments: no annulusFinal Inspection and Approval/Denial: By J. Davis Date 3/24/95Notice of Work Acceptance/Rejection Sent to Well owner On 3/28/95



Farm Pump and Irrigation, Co., Inc.
 F.P.I. Traveling Water Screens Co., Inc.
 F.P.I. Water Well Drilling Co., Inc.

535 N. Shafter Ave., Shafter, California 93263
 P.O. Box 1477, Shafter, California 93263

Well Development Report

Customer: Ventucopa Water Supply Co.

Date: 11/14/06

Job # 806045

Location: E side of Hwy 33, N of Wen's house.

Time	Pump RPM	GPM	Pumping Level	Draw Down	Yield G.P.M. Per Ft.	Sand P/P/M	Comments
6:00A		55	82 ft.	5 ft.			Start Test
6:20A		55	82 ft.	5 ft.			
6:40A		55	82 ft.	5 ft.			
7:10A		55	82 ft.	5 ft.			
7:35A		55	82 ft.	5 ft.			
7:50A		55	82 ft.	5 ft.			
8:15A		55	82 ft.	5 ft.			
8:40A		55	82 ft.	5 ft.			
9:30A		55	82 ft.	5 ft.			
9:55A		55	82 ft.	5 ft.			
10:25A		55	82 ft.	5 ft.			
11:00A		55	82 ft.	5 ft.			
11:20A		55	82 ft.	5 ft.			
11:45A		55	82 ft.	5 ft.			
12:20P		55	82 ft.	5 ft.			
12:45P		55	82 ft.	5 ft.			
1:10P		55	82 ft.	5 ft.			

5 Min. Recovery:

Static Water Level: 77 ft.

Remarks:

Farm Pump and Irrigation
P.O. Box 1477
Shafter, CA, 93203

Project: Water Samples
Project Number: Ventacopa Water
Project Manager: Frank

Reported: 12/01/06 08:41

Laboratory / Client Sample Cross Reference

Laboratory Client Sample Information

0611978 01	COC Number:	28783	Receive Date:	11/14/06 14:15
	Project Number:	---	Sampling Date:	11/14/06 12:35
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	Steel & Puc Discharge(Merols)	Sample Matrix:	Water
	Sampled By:	---		

Farm Pump and Irrigation
P O Box 1477
Shafter CA, 93263

Project: Water Samples
Project Number: Ventacopa Water
Project Manager: Frank

Reported: 12/01/06 08:41

Water Analysis (General Chemistry)

BCI Sample ID: 0611978 01		Client Sample Name: Steel & Puc Discharge(Merols), 11/14/2006 12:35:00PM											
Constituent	Result	Units	PQL	MDL	Method	Prep Date	Run Date/Time	Analyst	Instru- ment ID	Dilution	QC Batch ID	MB Bias	Lab Quals
Total Recoverable Calcium	260	mg/L	0.10		EPA-200.7	11/21/06	11/22/06 09:57	EMC	PE-OP2	1	BPK1299	.372359E-0	
Total Recoverable Magnesium	100	mg/L	0.050		EPA-200.7	11/21/06	11/22/06 09:57	EMC	PE-OP2	1	BPK1299	ND	
Total Recoverable Sodium	98	mg/L	0.50		EPA-200.7	11/21/06	11/22/06 09:57	EMC	PE-OP2	1	BPK1299	ND	
Total Recoverable Potassium	3.5	mg/L	1.0		EPA-200.7	11/21/06	11/22/06 09:57	EMC	PE-OP2	1	BPK1299	ND	
Bicarbonate	220	mg/L	12		EPA-310.1	11/22/06	11/22/06 12:30	MAR	BDB	4	BPK1443	ND	A01
Carbonate	16	mg/L	6.0		EPA-310.1	11/22/06	11/22/06 12:30	MAR	BDB	4	BPK1443	ND	A01
Hydroxide	<3.2	mg/L	3.2		EPA-310.1	11/22/06	11/22/06 12:30	MAR	BDB	4	BPK1443	ND	A01
Alkalinity as CaCO3	200	mg/L	10		Calc	11/15/06	11/28/06 16:29	TMS	Calc	1	BPK0939	ND	
Chloride	15	mg/L	1.0		EPA-300.0	11/14/06	11/14/06 22:27	EDA	IC2	2	BPK0851	ND	A01
Fluoride	0.61	mg/L	0.10		EPA-300.0	11/14/06	11/14/06 22:27	EDA	IC2	2	BPK0851	ND	A01
Nitrate as NO3	12	mg/L	0.88		EPA-300.0	11/14/06	11/14/06 22:27	EDA	IC2	2	BPK0851	ND	A01
Sulfate	1100	mg/L	5.0		EPA-300.0	11/14/06	11/15/06 04:08	EDA	IC2	5	BPK0851	ND	A01
Total Cations	25	meq/L	0.10		Calc	11/15/06	11/28/06 16:29	TMS	Calc	1	BPK0939	ND	
Total Anions	27	meq/L	0.10		Calc	11/15/06	11/28/06 16:29	TMS	Calc	1	BPK0939	ND	
Hardness as CaCO3	1100	mg/L	0.50		Calc	11/15/06	11/28/06 16:29	TMS	Calc	1	BPK0939	ND	
pH	7.98	pH Units	0.05		EPA-150.1	11/17/06	11/17/06 13:10	JSM	B360	1	BPK1083		
Electrical Conductivity @ 25 C	1900	umhos/cm	1.0		EPA-120.1	11/21/06	11/21/06 12:30	JSM	CND-3	1	BPK1363		
Total Dissolved Solids @ 180 C	1700	mg/L	50		EPA-160.1	11/15/06	11/15/06 08:00	VEL	MANUAL	5	BPK1545	60	
Color	1.0	Color Units	1.0		EPA-110.2	11/15/06	11/15/06 11:00	MAR	MANUAL	1	BPK1161		
Odor	1.0	Odor Units	1.0		EPA-140.1	11/15/06	11/15/06 11:00	MAR	MANUAL	1	BPK1175	ND	
Turbidity	1.2	NT Units	0.10		EPA-180.1	11/15/06	11/15/06 11:00	MAR	T2100	1	BPK1153		
MBAS	<0.20	mg/L	0.20		EPA-425.1	11/15/06	11/15/06 12:10	SLC	SPEC05	2	BPK0930	ND	A01

BC Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

4100 Atlas Court • Bakersfield, CA 93308 • (661) 327-4911 • FAX (661) 327-1918 • www.bclabs.com

Farm Pump and Irrigation
P.O. Box 1477
Shafter, CA, 93263

Project: Water Samples
Project Number: Ventacopa Water
Project Manager: Frank

Reported: 12/01/06 08:41

Water Analysis (General Chemistry)

BCI Sample ID: 0611978 01		Client Sample Name: Steel & Puc Discharge(Merols), 11/14/2006 12:35:00PM											
Constituent	Result	Units	PQL	MDL	Method	Prep Date	Run Date/Time	Analyst	Instru-ment ID	Dilution	QC Batch ID	MB Bias	Lab Quals
Nitrite as N	<50	ug/L	50		EPA-353.2	11/14/06	11/14/06 16:03	TDC	KONE-1	1	BPK1092	ND	

Farm Pump and Irrigation
P.O. Box 1477
Shafter CA, 93263

Project: Water Samples
Project Number: Ventacopa Water
Project Manager: Frank

Reported: 12/01/06 08:41

Water Analysis (Metals)

BCI Sample ID: 0611978 01 Client Sample Name: Steel & Puc Discharge(Merols), 11/14/2006 12:35:00PM

Constituent	Result	Units	PQL	MDL	Method	Prep Date	Run Date/Time	Analyst	Instru-ment ID	Dilution	QC Batch ID	MB Bias	Lab Quals
Total Recoverable Aluminum	<50	ug/L	50		EPA-200.7	11/21/06	11/27/06 15:15	EMC	PE-OP2	1	BPK1299	23.04751	
Total Recoverable Antimony	<2.0	ug/L	2.0		EPA-200.8	11/20/06	11/21/06 00:36	PPS	PE-EL1	1	BPK1145	ND	
Total Recoverable Arsenic	<2.0	ug/L	2.0		EPA-200.8	11/20/06	11/21/06 00:36	PPS	PE-EL1	1	BPK1145	ND	
Total Recoverable Barium	15	ug/L	10		EPA-200.7	11/21/06	11/22/06 09:57	EMC	PE-OP2	1	BPK1299	ND	
Total Recoverable Beryllium	<1.0	ug/L	1.0		EPA-200.8	11/20/06	11/21/06 00:36	PPS	PE-EL1	1	BPK1145	0.019	
Total Recoverable Cadmium	<1.0	ug/L	1.0		EPA-200.8	11/20/06	11/21/06 00:36	PPS	PE-EL1	1	BPK1145	ND	
Total Recoverable Chromium	<10	ug/L	10		EPA-200.7	11/21/06	11/22/06 09:57	EMC	PE-OP2	1	BPK1299	ND	
Total Recoverable Copper	<10	ug/L	10		EPA-200.7	11/21/06	11/22/06 09:57	EMC	PE-OP2	1	BPK1299	ND	
Total Recoverable Iron	170	ug/L	50		EPA-200.7	11/21/06	11/22/06 09:57	EMC	PE-OP2	1	BPK1299	ND	
Total Recoverable Lead	1.2	ug/L	1.0		EPA-200.8	11/20/06	11/21/06 00:36	PPS	PE-EL1	1	BPK1145	ND	
Total Recoverable Manganese	350	ug/L	10		EPA-200.7	11/21/06	11/22/06 09:57	EMC	PE-OP2	1	BPK1299	ND	
Total Recoverable Mercury	<0.20	ug/L	0.20		EPA-245.1	11/21/06	11/28/06 08:20	PRA	CETAC1	1	BPK1354	ND	
Total Recoverable Nickel	<10	ug/L	10		EPA-200.7	11/21/06	11/22/06 09:57	EMC	PE-OP2	1	BPK1299	ND	
Total Recoverable Selenium	2.2	ug/L	2.0		EPA-200.8	11/20/06	11/21/06 14:42	PPS	PE-EL1	1	BPK1145	ND	
Total Recoverable Silver	<10	ug/L	10		EPA-200.7	11/21/06	11/22/06 09:57	EMC	PE-OP2	1	BPK1299	ND	
Total Recoverable Thallium	<1.0	ug/L	1.0		EPA-200.8	11/20/06	11/21/06 00:36	PPS	PE-EL1	1	BPK1145	ND	
Total Recoverable Zinc	220	ug/L	50		EPA-200.7	11/21/06	11/22/06 09:57	EMC	PE-OP2	1	BPK1299	ND	

Farm Pump and Irrigation
P O Box 1477
Shafter CA, 93263

Project: Water Samples
Project Number: Ventacopa Water
Project Manager: Frank

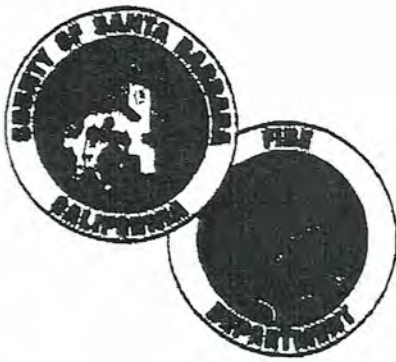
Reported: 12/01/06 08:41

Notes and Definitions

- Q02 Matrix spike precision is not within the control limits.
- J Estimated value
- A03 The sample concentration is more than 4 times the spike level.
- A02 The difference between duplicate readings is less than the PQL.
- A01 PQL's and MDL's are raised due to sample dilution.
- L00 Analyte NOT DETECTED at or above the reporting limit
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

APPENDIX D

Santa Barbara County Fire Department Requirements



Fire Department

"Serving the community since 1926"

4410 Cathedral Oaks Road
Santa Barbara, CA 93110-1042
(805) 681-5500 FAX (805) 681-5563

John M. Scherre
Fire Chief

November 23, 2005

Mr. Wen Carpenter
4014 Highway 33
Ventucopa, California 93252

Dear Mr. Carpenter:

SUBJECT: Water System for the Township of Ventucopa

Thank you for your phone call of November 16, 2005, and your request for fire department requirements for the establishment of a new water system for Ventucopa. Here is some information that I hope will help you as you move forward:

Any water distribution system that is established should adhere to the requirements and standards of the American Water Works Association (AWWA). The required storage capacity and fire flows necessary to serve the district shall be established based upon the standards as set forth in the 2001 California Fire Code, Appendix III-A, III-AA, III-B, III-BB, and their associated "TABLES".

The Santa Barbara County Fire Department uses a fire hydrant standard spacing requirement of 500 feet for residential areas and 300 feet for commercial areas. Residential fire hydrants are required to have a minimum of one 4-inch outlet and one 2½-inch outlet and commercial fire hydrants are required to have a minimum of one 4-inch outlet and two 2½-inch outlets.

You should also coordinate your system requirements with the Public Utilities Commission and any other regulatory agencies that may need to be involved. The system shall be designed and certified by a licensed engineering firm and plans must be submitted to the Santa Barbara County Fire Department for review and approval prior to any work being undertaken.

If you have any other questions, please call me at (805) 681-5528.

Yours in the interest of life and fire safety,


Martin Johnson, Captain
Fire Prevention Division

cc: APN/Chron

Division III
FIRE PROTECTION
APPENDIX III-A

FIRE-FLOW REQUIREMENTS FOR BUILDINGS

(See UFC Section 903.3)

SECTION 1 — SCOPE

The procedure determining fire-flow requirements for buildings or portions of buildings hereafter constructed shall be in accordance with Appendix III-A. Appendix III-A does not apply to structures other than buildings.

SECTION 2 — DEFINITIONS

For the purpose of Appendix III-A, certain terms are defined as follows:

FIRE AREA is the floor area, in square feet, used to determine the required fire flow.

FIRE FLOW is the flow rate of a water supply, measured at 20 psi (137.9 kPa) residual pressure, that is available for firefighting.

SECTION 2 — MODIFICATIONS

2.1 Decreases. Fire-flow requirements may be modified downward by the chief for isolated buildings or a group of buildings in rural areas or small communities where the development of full fire-flow requirements is impractical.

2.2 Increases. Fire flow may be modified upward by the chief where conditions indicate an unusual susceptibility to group fires or conflagrations. An upward modification shall not be more than twice that required for the building under consideration.

SECTION 3 — FIRE AREA

3.1 General. The fire area shall be the total floor area of all floor levels except as modified in Section 4

3.2 Area Separation. Portions of buildings which are separated by one or more four-hour area separation walls constructed in accordance with the Building Code, without openings and provided with a 30-inch (762 mm) parapet, are allowed to be considered as separate fire areas.

3.3 Type I and Type II-F.R. Construction. The fire area of buildings constructed of Type I and Type II-F.R. construction shall be the area of the three largest successive floors.

SECTION 4 — FIRE-FLOW REQUIREMENTS FOR BUILDINGS

4.1 One- and Two-Family Dwellings. The minimum fire flow and flow duration requirements for one- and two-family dwellings having a fire area which does not exceed 3,600 square feet (344.5 m²) shall be 1,000 gallons per minute (3785.4 L/min.). Fire flow and flow duration for dwellings having a fire area in excess of 3,600 square feet (344.5 m²) shall not be less than that specified in Table A-III-A-1.

EXCEPTION: A reduction in required fire flow of 50 percent, as approved, is allowed when the building is provided with an approved automatic sprinkler system.

4.2 Buildings other than One- and Two-Family Dwellings. The minimum fire flow and flow duration for buildings other than one- and two-family dwellings shall be as specified in Table A-III-A-1.

EXCEPTION: A reduction in required fire flow of up to 75 percent, as approved, is allowed when the building is provided with an approved automatic sprinkler system. The resulting fire flow shall not be less than 1,500 gallons per minute (5677.5 L/min.).

TABLE A-III-A-1—MINIMUM REQUIRED FIRE FLOW AND FLOW DURATION FOR BUILDINGS

FIRE AREA (square feet)					FIRE FLOW (gallons per minute) ²	FLOW DURATION (hours)
× 0.0929 for m ²						
Type I-F.R. II-F.R. ¹	Type II One-HR. III One-HR. ¹	Type IV-H.T. V-One-HR. ¹	Type II-N III-N ¹	Type V-N ¹	× 3.785 for L/min.	
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	2
22,701-30,200	12,701-17,000	8,201-10,900	5,901-7,900	3,601-4,800	1,750	
30,201-38,700	17,001-21,800	10,901-12,900	7,901-9,800	4,801-6,200	2,000	
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12,600	6,201-7,700	2,250	
48,301-59,000	24,201-33,200	17,401-21,300	12,601-15,400	7,701-9,400	2,500	
59,001-70,900	33,201-39,700	21,301-25,500	15,401-18,400	9,401-11,300	2,750	
70,901-83,700	39,701-47,100	25,501-30,100	18,401-21,800	11,301-13,400	3,000	3
83,701-97,700	47,101-54,900	30,101-35,200	21,801-25,900	13,401-15,600	3,250	
97,701-112,700	54,901-63,400	35,201-40,600	25,901-29,300	15,601-18,000	3,500	
112,701-128,700	63,401-72,400	40,601-46,400	29,301-33,500	18,001-20,600	3,750	
128,701-145,900	72,401-82,100	46,401-52,500	33,501-37,900	20,601-23,300	4,000	4
145,901-164,200	82,101-92,400	52,501-59,100	37,901-42,700	23,301-26,300	4,250	
164,201-183,400	92,401-103,100	59,101-66,000	42,701-47,700	26,301-29,300	4,500	
183,401-203,700	103,101-114,600	66,001-73,300	47,701-53,000	29,301-32,600	4,750	
203,701-225,200	114,601-126,700	73,301-81,100	53,001-58,600	32,601-36,000	5,000	
225,201-247,700	126,701-139,400	81,101-89,200	58,601-65,400	36,001-39,600	5,250	
247,701-271,200	139,401-152,600	89,201-97,700	65,401-70,600	39,601-43,400	5,500	
271,201-295,900	152,601-166,500	97,701-106,500	70,601-77,000	43,401-47,400	5,750	
295,901-Greater	166,501-Greater	106,501-115,800	77,001-83,700	47,401-51,500	6,000	
"	"	115,801-125,500	83,701-90,600	51,501-55,700	6,250	
"	"	125,501-135,500	90,601-97,900	55,701-60,200	6,500	
"	"	135,501-145,800	97,901-106,800	60,201-64,800	6,750	
"	"	145,801-156,700	106,801-113,200	64,801-69,600	7,000	
"	"	156,701-167,900	113,201-121,300	69,601-74,600	7,250	
"	"	167,901-179,400	121,301-129,600	74,601-79,800	7,500	
"	"	179,401-191,400	129,601-138,300	79,801-85,100	7,750	
"	"	191,401-Greater	128,301-Greater	85,101-Greater	8,000	

¹Types of construction are based upon the Building Code.²Measured at 20 psi (137.9 kPa). See Appendix III-A, Section NO TAG.

Division III
FIRE PROTECTION
[FOR SFM] STATE APPENDIX III-AA

FIRE-FLOW REQUIREMENTS FOR BUILDINGS

(See UFC Section 903.3)

SECTION 1 — SCOPE

[For SFM] The procedures determining fire-flow requirements for any school buildings or portions of buildings hereafter constructed for which review and approval is required under Subdivision (a) of Section 39140 of the Education Code shall be in accordance with this appendix as amended by the state fire marshal. This appendix does not apply to structures other than buildings.

SECTION 2 — DEFINITIONS

For the purpose of Appendix III-A, certain terms are defined as follows:

FIRE AREA is the floor area, in square feet, used to determine the required fire flow.

FIRE FLOW is the flow rate of a water supply, measured at 20 psi (137.9 kPa) residual pressure, that is available for firefighting.

SECTION 3 — MODIFICATIONS

[For SFM] An alternative method of providing water for fire protection or any other alternative in lieu of providing the water may be enforced when deemed appropriate by the fire chief and the state fire marshal.

SECTION 4 — FIRE AREA

4.1 General. The fire area shall be the total floor area of all floor levels within the exterior walls, and under the horizontal projections of the roof of a building, except as modified in Section 4.

4.2 Area Separation. Portions of buildings which are separated by one or more four-hour area separation walls constructed in accordance with the Building Code, without openings and provided with a 30-inch (762 mm) parapet, are allowed to be considered as separate fire areas.

4.3 Type I and Type II-F.R. Construction. The fire area of buildings constructed of Type I and Type II-F.R. construction shall be the area of the three largest successive floors.

SECTION 5 — FIRE-FLOW REQUIREMENTS FOR BUILDINGS

[For SFM] The minimum fire flow and flow duration for school buildings shall be as specified in Table A-III-AA-1.

EXCEPTION: A reduction in required fire flow of up to 75 percent, is allowed when the building is provided with an approved automatic sprinkler system.

C
A

TABLE A-III-AA-1 MINIMUM REQUIRED FIRE FLOW AND FLOW DURATION FOR BUILDINGS

FIRE AREA (square feet)					FIRE FLOW (gallons per minute) ¹ × 3.785 for L/min.	FLOW DURATION (hours)
× 0.0929 for m ²						
Type I-F.R. II-F.R. ¹	Type II One-HR. III One-HR. ¹	Type IV-H.T. V-One-HR. ¹	Type II-N III-N ¹	Type V-N ¹		
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	2
22,701-30,200	12,701-17,000	8,201-10,900	5,901-7,900	3,601-4,800	1,750	
30,201-38,700	17,001-21,800	10,901-12,900	7,901-9,800	4,801-6,200	2,000	
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12,600	6,201-7,700	2,250	
48,301-59,000	24,201-33,200	17,401-21,300	12,601-15,400	7,701-9,400	2,500	
59,001-70,900	33,201-39,700	21,301-25,500	15,401-18,400	9,401-11,300	2,750	3
70,901-83,700	39,701-47,100	25,501-30,100	18,401-21,800	11,301-13,400	3,000	
83,701-97,700	47,101-54,900	30,101-35,200	21,801-25,900	13,401-15,600	3,250	
97,701-112,700	54,901-63,400	35,201-40,600	25,901-29,300	15,601-18,000	3,500	
112,701-128,700	63,401-72,400	40,601-46,400	29,301-33,500	18,001-20,600	3,750	
128,701-145,900	72,401-82,100	46,401-52,500	33,501-37,900	20,601-23,300	4,000	4
145,901-164,200	82,101-92,400	52,501-59,100	37,901-42,700	23,301-26,300	4,250	
164,201-183,400	92,401-103,100	59,101-66,000	42,701-47,700	26,301-29,300	4,500	
183,401-203,700	103,101-114,600	66,001-73,300	47,701-53,000	29,301-32,600	4,750	
203,701-225,200	114,601-126,700	73,301-81,100	53,001-58,600	32,601-36,000	5,000	
225,201-247,700	126,701-139,400	81,101-89,200	58,601-65,400	36,001-39,600	5,250	
247,701-271,200	139,401-152,600	89,201-97,700	65,401-70,600	39,601-43,400	5,500	
271,201-295,900	152,601-166,500	97,701-106,500	70,601-77,000	43,401-47,400	5,750	
295,901-Greater	166,501-Greater	106,501-115,800	77,001-83,700	47,401-51,500	6,000	
"	"	115,801-125,500	83,701-90,600	51,501-55,700	6,250	
"	"	125,501-135,500	90,601-97,900	55,701-60,200	6,500	
"	"	135,501-145,800	97,901-106,800	60,201-64,800	6,750	
"	"	145,801-156,700	106,801-113,200	64,801-69,600	7,000	
"	"	156,701-167,900	113,201-121,300	69,601-74,600	7,250	
"	"	167,901-179,400	121,301-129,600	74,601-79,800	7,500	
"	"	179,401-191,400	129,601-138,300	79,801-85,100	7,750	
"	"	191,401-Greater	128,301-Greater	85,101-Greater	8,000	

¹Types of construction are based upon the Building Code.²Measured at 20 psi (137.9 kPa). See Appendix III-A, Section NO TAG.

FIRE HYDRANT LOCATIONS AND DISTRIBUTION

APPENDIX III-B

(See UFC Section 903.4.2)

SECTION 1 — SCOPE

Fire hydrants shall be provided in accordance with Appendix III-B for the protection of buildings, or portions of buildings, hereafter constructed.

SECTION 2 — LOCATION

Fire hydrants shall be provided along required fire apparatus access roads and adjacent public streets.

SECTION 3 — NUMBER OF FIRE HYDRANTS

The minimum number of fire hydrants available to a building shall not be less than that listed in Table A-III-B-1. The number of fire hydrants available to a complex or subdivision shall not be less than that determined by spacing requirements listed in Table A-III-B-1 when applied to fire apparatus access roads and perimeter public streets from which fire operations could be conducted.

SECTION 4 — CONSIDERATION OF EXISTING FIRE HYDRANTS

Existing fire hydrants on public streets are allowed to be considered as available. Existing fire hydrants on adjacent properties shall not be considered available unless fire apparatus access roads extend between properties and easements are established to prevent obstruction of such roads.

SECTION 5 — DISTRIBUTION OF FIRE HYDRANTS

The average spacing between fire hydrants shall not exceed that listed in Table A-III-B-1.

EXCEPTION: The chief may accept a deficiency of up to 10 percent where existing fire hydrants provide all or a portion of the required fire hydrant service.

Regardless of the average spacing, fire hydrants shall be located such that all points on streets and access roads adjacent to a building are within the distances listed in Table A-III-B-1.

TABLE A-III-B-1—NUMBER AND DISTRIBUTION OF FIRE HYDRANTS

FIRE-FLOW REQUIREMENT (gpm) × 3.785 for L/min.	MINIMUM NO. OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS ^{1,2,3} (feet)	MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT ⁴
		× 304.8 for mm	
1,750 or less	1	500	250
2,000-2,250	2	450	225
2,500	3	450	225
3,000	3	400	225
3,500-4,000	4	350	210
4,500-5,000	5	300	180
5,500	6	300	180
6,000	6	250	150
6,500-7,000	7	250	150
7,500 or more	8 or more ⁵	200	120

¹Reduce by 100 feet (30 480 mm) for dead-end streets or roads.

²Where streets are provided with median dividers which can be crossed by firefighters pulling hose lines, or arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet (152.4 m) on each side of the street and be arranged on an alternating basis up to a fire-flow requirement of 7,000 gallons per minute (26 495 L/min.) and 400 feet (122 m) for higher fire-flow requirements.

³Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet (305 m) to provide for transportation hazards.

⁴Reduce by 50 feet (15 240 mm) for dead-end streets or roads.

⁵One hydrant for each 1,000 gallons per minute (3 785 L/min.) or fraction thereof.

TABLE A-III-BB-1 NUMBER AND DISTRIBUTION OF FIRE HYDRANTS

FIRE-FLOW REQUIREMENT (gpm) × 3.785 for L/min.	MINIMUM NO. OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS ^{1,2,3} (feet)	MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT ⁴
		× 304.8 for mm	
1,750 or less	1	500	250
2,000-2,250	2	450	225
2,500	3	450	225
3,000	3	400	225
3,500-4,000	4	350	210
4,500-5,000	5	300	180
5,500	6	300	180
6,000	6	250	150
6,500-7,000	7	250	150
7,500 or more	8 or more ⁵	200	120

¹Reduce by 100 feet (30 480 mm) for dead-end streets or roads.

²Where streets are provided with median dividers which can be crossed by firefighters pulling hose lines, or arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet (152.4 m) on each side of the street and be arranged on an alternating basis up to a fire-flow requirement of 7,000 gallons per minute (26 495 L/min.) and 400 feet (122 m) for higher fire-flow requirements.

³Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet (305 m) to provide for transportation hazards.

⁴Reduce by 50 feet (15 240 mm) for dead-end streets or roads.

⁵One hydrant for each 1,000 gallons per minute (3785 L/min.) or fraction thereof.

APPENDIX E

Fire Protection System Calculations

Ventucopa WSC - Fire flow calculations

Project Description

Friction Method Hazen-Williams Formula
Solve For Pressure at 2

Input Data

Pressure 1	70.00	psi
Elevation 1	0.00	ft
Elevation 2	0.00	ft
Length	2500.00	ft
Roughness Coefficient	130.000	
Diameter	8.00	in
Discharge	1000.00	gpm

Results

Pressure 2	50.19	psi
Headloss	45.68	ft
Energy Grade 1	162.09	ft
Energy Grade 2	116.41	ft
Hydraulic Grade 1	161.46	ft
Hydraulic Grade 2	115.78	ft
Flow Area	0.35	ft ²
Wetted Perimeter	2.09	ft
Velocity	6.38	ft/s
Velocity Head	0.63	ft
Friction Slope	0.01827	ft/ft

Ventucopa WSC - Fire flow calculationsWorksheet for Pressure Pipe - 1

Project Description

Friction Method Hazen-Williams Formula
Solve For Pressure at 2

Input Data

Pressure 1	70.00	psi
Elevation 1	0.00	ft
Elevation 2	0.00	ft
Length	2500.00	ft
Roughness Coefficient	130.000	
Diameter	8.00	in
Discharge	1500.00	gpm

Results

Pressure 2	28.03	psi
Headloss	96.80	ft
Energy Grade 1	162.88	ft
Energy Grade 2	66.09	ft
Hydraulic Grade 1	161.46	ft
Hydraulic Grade 2	64.66	ft
Flow Area	0.35	ft ²
Wetted Perimeter	2.09	ft
Velocity	9.57	ft/s
Velocity Head	1.42	ft
Friction Slope	0.03872	ft/ft

Ventucopa WSC - Water distribution calculations

Project Description

Friction Method Hazen-Williams Formula
Solve For Pressure at 2

Input Data

Pressure 1	70.00	psi
Elevation 1	0.00	ft
Elevation 2	0.00	ft
Length	2500.00	ft
Roughness Coefficient	130.000	
Diameter	8.00	in
Discharge	200.00	gpm

Results

Pressure 2	68.99	psi
Headloss	2.32	ft
Energy Grade 1	161.49	ft
Energy Grade 2	159.17	ft
Hydraulic Grade 1	161.46	ft
Hydraulic Grade 2	159.14	ft
Flow Area	0.35	ft ²
Wetted Perimeter	2.09	ft
Velocity	1.28	ft/s
Velocity Head	0.03	ft
Friction Slope	0.00093	ft/ft