Apple Valley Heights County Water District

SOURCE WATER PROTECTION PLAN

March 2018

Apple Valley Heights County Water District SOURCE WATER PROTECTION PLAN

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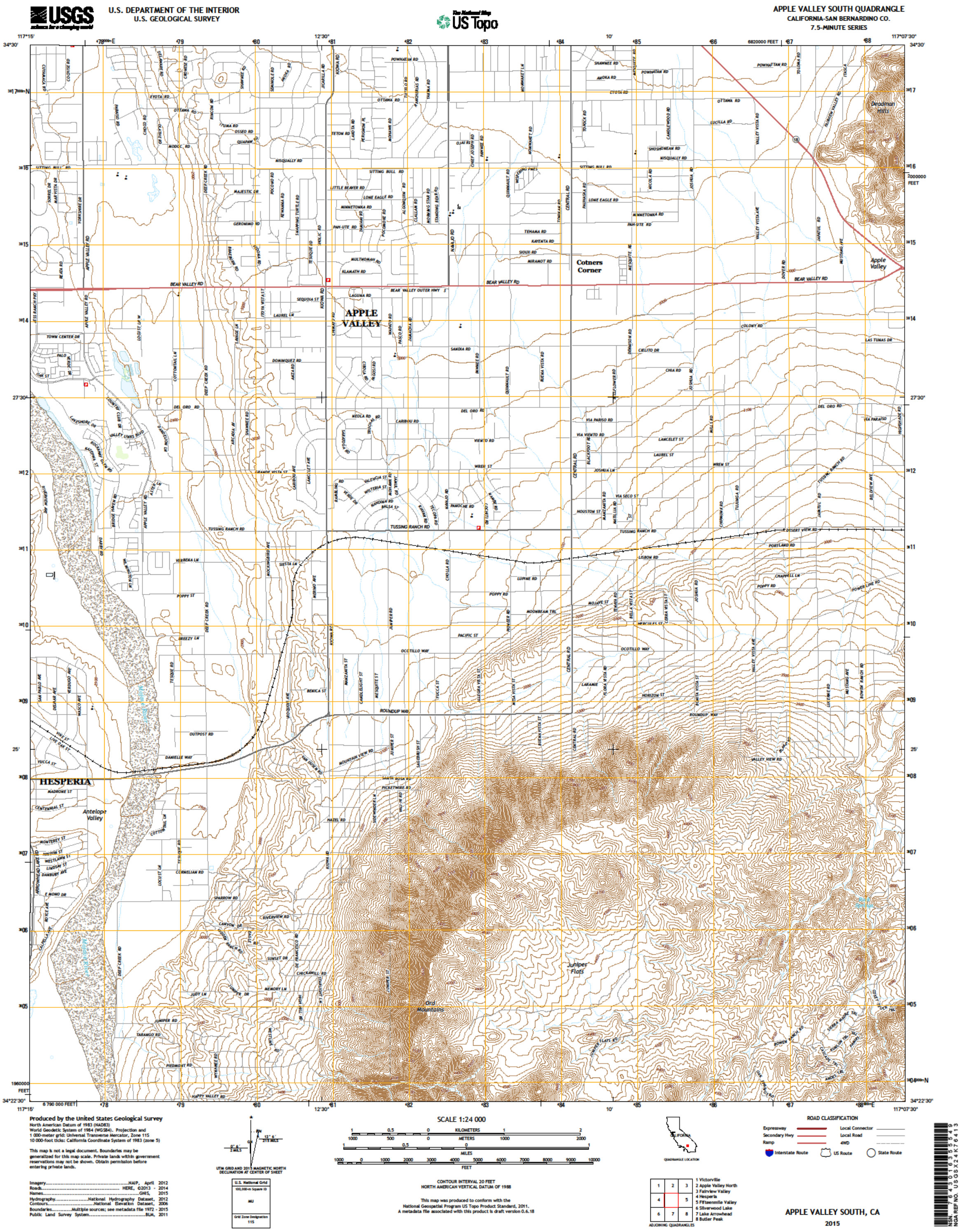
Prepared for:
<u>Apple Valley Heights County Water District</u>

Prepared by: Cian Reger

California
Rural Water Association



USGS
U.S. DEPARTMENT OF THE INTERIOR
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US Topo
APPLE VALLEY SOUTH QUADRANGLE
CALIFORNIA-SAN BERNARDINO CO.
7.5-MINUTE SERIES
APPLE VALLEY
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BEAR VALLEY RD
Produced by the United States Geological Survey
SCALE 1:24 000
CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
ROAD CLASSIFICATION
APPLE VALLEY SOUTH, CA
2015

Apple Valley Heights County Water District

Adopted by the Source Water Protection Plan Steering Committee:

______________________________________ ____________________

Daneil Smith Date

Apple Valley Heights County Water District – General Manager

______________________________________ ____________________

Date

California Rural Water Association

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Introduction

Background

In 1996, the Safe Drinking Water Act (SDWA) was amended to require that each state develop and implement a source water assessment program.

California Department of Public Health responded to this amendment by creating and implementing the Drinking Water Source Assessment and Protection (DWSAP) Program[1] to evaluate each drinking water source in the state. This evaluation includes a determination of how susceptible each drinking water source is to contamination and uses these key elements as the basis for the assessment:

- A delineation of the area around a drinking water source through which contaminants might move and reach that drinking water supply.
- An inventory of possible contaminating activities (PCAs) that might lead to the release of microbiological or chemical contaminants within the delineated area.
- A determination of the PCAs to which the drinking water source is most vulnerable.

California Department of Public Health has overseen the completion of assessments for every drinking water source in the state. Considering that the potential threats to the sources of drinking water have been identified, the natural extension to the assessment is the development of a source water protection plan.

Purpose

A source water protection plan is a document, created with the assistance of members of the community, which identifies possible contaminating activities within drinking water source protection areas and provides specific recommendations to manage these potential threats in order to maintain quality drinking water. The recommendations necessary to make this document viable include:

- Prevention of Possible Contaminating Activities (PCAs)
- Contingency planning in the event of a water supply emergency
- Community education and outreach

Why Source Water Protection?

1. **Because the most cost-effective method to ensure the safety of the drinking water supply is to protect the source from contamination.**
2. **Because it is part of a "multi-barrier" approach to providing safe drinking water; treatment alone cannot always be successful in removing contaminants.**
3. **To improve public perception of the safety of drinking water.**
4. **Because safe drinking water is essential to the public health and economic well-being of communities.**

Why Source Water Protection

The Safe Drinking Water Act (SDWA) was passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. Amendments to the law in 1986 and 1996 require many actions to protect drinking water and its sources.

Originally, SDWA focused primarily on treatment as the means of providing safe drinking water at the tap. The 1996 amendments recognized source water protection as a major component of safe drinking water. Essential pieces of this component include protection and prevention. States and water suppliers must conduct assessments of water sources determine areas of vulnerability to contamination. Water systems may also voluntarily adopt programs to protect their watershed.

SDWA applies to every public water system in the United States. Responsibility for ensuring public water systems provide safe drinking water is divided among US EPA, states, tribes, water systems, and the public. SDWA provides a framework in which these parties work together to protect this valuable resource.

The California Department of Public Health [1] (CDPH) regulates all large water systems greater than 200 connections and was delegated by the state as primary authority for small water systems in 34 of California's 58 counties.

CDPH developed the Drinking Water Source Assessment & Protection Plan (DWSAP), to assist these small water systems. In each assessment, CDPH delineates protection zones that represent the area that would be likely to contribute water to the source within a specified time-of-travel (2, 5, or 10 years) for contaminant movement within the protection area.

The Source Water Protection Program is a voluntary program implemented at the local level to build local stewardship out of DWSAP activities conducted by CDPH. An implemented Source Protection Plan helps protect drinking water resources from contamination by pulling together a broad coalition of active stakeholders and providing guidelines for monitoring land use within the protection area surrounding the drinking source. The planning document considers past, current and future use of the watershed surrounding the drinking water source in making its actions.

Many materials - pesticides, fertilizers, organic chemicals, and human and animal wastes can contaminate water. Using existing protection tools, such as mandated DWSAPs and Sanitary Surveys and drawing on a broad coalition of committed stakeholders, a Source Water Protection (SWP) Plan identifies water system vulnerabilities and describes techniques to manage potentially contaminating activities, land uses and events; outlining a structured approach to managing potential sources of contamination within the source protection area (SPA). A SWP must have buy-in from the agencies who will implement its strategies, and it must be routinely reviewed and updated to remain current and viable.

Source protection planning benefits include:

- Increased consumer awareness about drinking water sources
- Creation of consumer confidence that a drinking water source will continue to be protected and reliable;
- Reduction of risk of contamination incidents with costly and/or potentially harmful results;
- Fostering of positive, proactive relationships with regulatory agencies, water system operators and the public
- Documentation of groundwork to support financial assistance proposals on behalf of the watershed.

Groundwater a Hidden Resource[2]

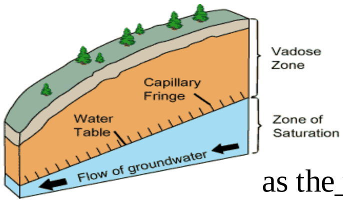
Water. It's vital for all of us. We depend on its good quality-and quantity-for drinking, recreation, use in industry and growing crops. It also is vital to sustaining the natural systems on and under the earth's surface.

Groundwater is a hidden resource. At one time, its purity and availability were taken for granted. Now contamination and availability are serious issues. The importance of groundwater has been confirmed many times. Scientists estimate groundwater accounts for more than 95% of all fresh water available for use. Approximately 50% of Americans obtain all or part of their drinking water from groundwater. Nearly 95% of rural residents rely on groundwater for their drinking supply. About half of irrigated cropland uses groundwater. Approximately one third of industrial water needs are fulfilled by using groundwater. About 40% of river flow nationwide (on average) depends on groundwater.

Thus, groundwater is a critical component of management plans developed by an increasing number of watershed partnerships.

Groundwater ABCs

Groundwater is the water that saturates the tiny spaces between alluvial material (sand, gravel, silt, clay) or the crevices or fractures in rocks.



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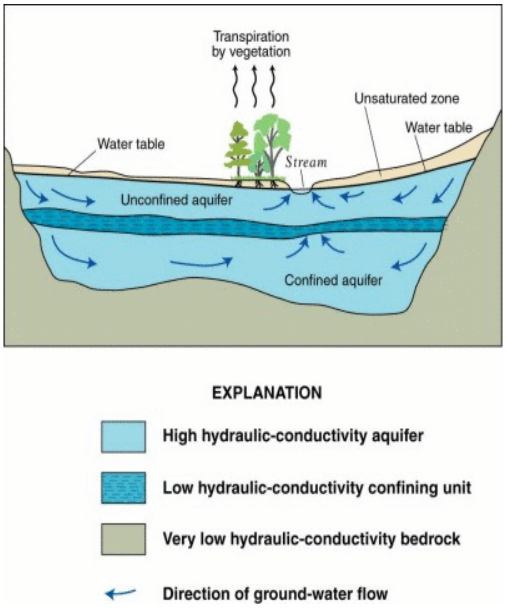
Aeration zone: The zone above the water table is known as the zone of aeration (unsaturated or vadose zone; also termed as the unsaturated zone).Water in the soil (in the ground but above the water table) is referred to as soil moisture. Spaces between soil, gravel and rock are filled with water (suspended) and air.

Capillary water: Just above the water table, in the aeration zone, is capillary water that moves upward from the water table by capillary action. This water can move slowly in any direction, from a wet particle to a dry one. While most plants rely on moisture from precipitation that is present in the unsaturated zone, their roots may also tap into capillary water or into the underlying saturated zone.



Aquifer: Most groundwater is found in aquifers- underground layers of porous rock that are saturated from above or from structures sloping toward it. Aquifer capacity is determined by the porosity of the subsurface material and its area. Under most of the United States, there are two major types of aquifers: confined and unconfined.

Confined aquifers (also known as artesian or pressure aquifers) exist where the groundwater system is between layers of clay, dense rock or other materials with very low permeability.

Water in confined aquifers may be very old, arriving thousands of years ago. It's also under more pressure than unconfined aquifers. Thus, when tapped by a well, water is forced up, sometimes above the soil surface. This is how a flowing artesian well is formed.

Unconfined aquifers are more common and do not have a low-permeability deposit above it. Water in unconfined aquifers may have arrived recently by percolating through the land surface. This is why water in unconfined aquifers is often considered very young, in geologic time.

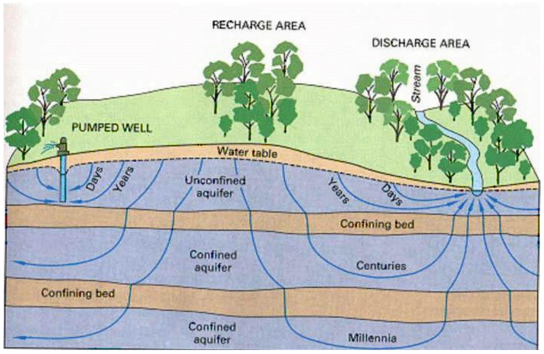
In fact, the top layer of an unconfined aquifer is the water table. It's affected by atmospheric pressure and changing hydrologic conditions. Discharge and recharge rates depend on the hydrologic conditions above them.

Saturation zone: The portion that's saturated with water is called the zone of saturation. The upper surface of this zone, open to atmospheric pressure, is known as the water table (phreatic surface). The earth's crust can be divided into two regions: the *saturated zone* or *phreatic zone* (e.g., aquifers, aquitards, etc.), where all available spaces are filled with water, and the *unsaturated zone* (also called the vadose zone), where there are still pockets of air that can be replaced by water. The term **phreatic** is used in geology to refer to matters relating to underground water below the water table (the word originates from the Greek *phrear*, *phreat-* meaning "well" or "spring"). "Phreatic surface" is a synonym for “water table”.

The **phreatic zone** is the layer(s) of soil or rock below the water table in which voids are permanently saturated with groundwater, as opposed to the higher *vadose zone* in which the pore spaces are not completely filled with water.

Water-bearing rocks: Several types of rocks can hold water, including:

Sedimentary deposits (i.e. sand and gravel)
Channels in carbonate rocks (i.e. limestone)
Lava tubes or cooling fractures in igneous rocks
Fractures in hard rocks



How Groundwater and Surface Water connect

It's crystal clear. <u>Groundwater and surface water are fundamentally interconnected. In fact, it is often difficult to separate the two because they "feed" each other. This is why one can contaminate the other.</u>

A way to study this connection is by understanding how water recycles in the hydrologic (water) cycle.

As rain or snow falls to the earth's surface, some water runs off the land to rivers, lakes, streams and oceans (surface water). Water also can move into those bodies by percolation below ground. Water entering the soil can infiltrate deeper to reach groundwater which can discharge to surface water or return to the surface through wells, springs and marshes. Here it becomes surface water again. And, upon evaporation, it completes the cycle. This movement of water between the earth and the atmosphere through evaporation, precipitation, infiltration and runoff is continuous.

How groundwater "feeds" surface water

One of the most commonly used forms of groundwater comes from unconfined shallow water table aquifers.

These aquifers are major sources of drinking and irrigation water. They also interact closely with streams, sometimes flowing (discharging) water into a stream or lake and sometimes receiving water from the stream or lake.

An unconfined aquifer that feeds streams is said to provide the stream's base-flow. This is called a gaining stream. In fact, groundwater can be responsible for maintaining the hydrologic balance of surface streams, springs, lakes, wetlands and marshes.

It is for this reason that successful watershed partnerships with a special interest in a particular stream, lake or other surface water body always have a special interest in the unconfined aquifer, adjacent to the water body.

How surface water "feeds" groundwater

The source of groundwater (recharge) is through precipitation or surface water that percolates downward. Approximately 5-50% (depending on climate, land use, soil type, geology and many other factors) of annual precipitation results in groundwater recharge. In some areas, streams literally recharge the aquifer through stream bed infiltration, called losing streams. Left untouched, groundwater naturally arrives at a balance, discharging and recharging depending on hydrologic conditions.

Defining Combined Boundaries

Partnerships using the watershed approach to protect natural resources identify and understand the individual resources-water, soil, air, plants, animals and people-early in the process.

This is why watershed partnerships select or define boundaries to address all natural resources - not just one. They realize that groundwater, surface water, air quality, and wildlife and human activities all affect each other.

Occasionally watershed partnerships run into difficulty combining boundaries of surface water (watersheds) and recharge areas (groundwater). One option is to consider combining surface and groundwater into a single, larger area. In other situations-for example if water is being transferred from one watershed or aquifer to distant users-there can be, and should be, two distinct areas.

Thus, watershed partnerships' boundaries may combine the wellhead area, aquifer, watershed, or many other areas depending on the issue(s).

Figure 1: Hydrologic Cycle

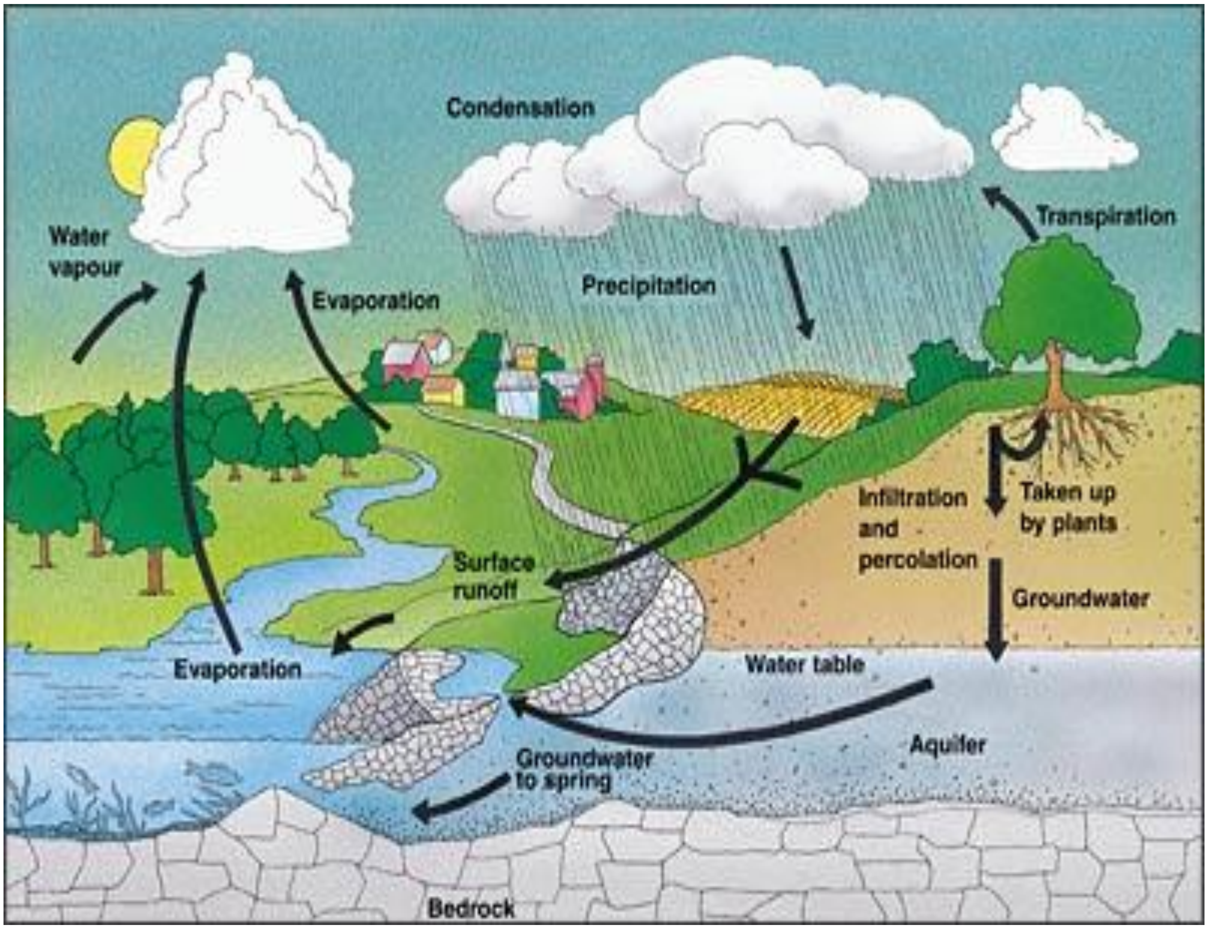


Figure 1 represents a general illustration of the hydrologic cycle that occurs in the Apple Valley area. This illustration is by no means site specific and is simply being used as a reminder of how groundwater and surface water are influenced by this natural cycle.

Plan Area Description

Plan Area[3]

Apple Valley Heights County Water District is located in the town of Apple Valley, in the County of San Bernardino, California. The company is located at 34.4231604°, -117.1938167°. The service area covers approximately 1.5 square miles, all land. The system serves approximately 917 customers via 307 service connections.

Weather: Apple Valley is in a desert region at an elevation of 2,900 feet above mean sea level. The historic average temperatures in Apple Valley range between a low of 31° F in the winter and a high of 105° F in the summer. Average precipitation varies across the basin from 5 to 36 inches with the average for the basin near 12 inches, and occurs mostly in November through April.

History[4]

For centuries, Apple Valley was populated by the Shoshonean, Paiute, Vanyume, Chemehueve, Serrano, and Mojave people, who were attracted to the water and vegetation around the Mojave River. In 1848, members of the Mormon Battalion, mustered out of the U.S. Army after constructing the first wagon road across the southwest to San Diego and up to Los Angeles. In 1885, the railroad came northward through the Cajon Pass and established a train stop, calling it Victor (Victorville) on the Mojave River. Over the next few decades, Victorville boomed as the commercial center of the area with gold refineries, quarries, dance halls and saloons, while Apple Valley remained more pastoral with ranches and apple orchards. The last commercially grown apples in Apple Valley had all but disappeared before the US Post Office officially recognized the name. Apple Valley was incorporated on November 14, 1988.

Hydrology & Geology[3]

The Upper Mojave River Valley Groundwater Basin underlies an elongate north-south valley, with the Mojave River flowing through the valley from the San Bernardino Mountains on the south, northward into the Middle Mojave River Valley Groundwater Basin at the town of Helendale. The groundwater basin is bounded on the north by a roughly east-west linefrom basement rock outcrops near Helendale to those in the Shadow Mountains. The southern boundary is the contact between Quaternary sedimentary deposits and unconsolidated basement rocks of the San Bernardino Mountains. The basin is bounded on the southeast by the Helendale fault and on the east by basement exposures of the mountains surrounding Apple Valley. In the west, the boundary is marked by a surface drainage divide between this basin and El Mirage Valley Basin, and a contact between alluvium and basement rocks that form the Shadow Mountains.

The two primary water-bearing units within the Mojave River Valley Basin system consist of regional Pliocene and younger alluvial fan deposits and of overlying Pleistocene and younger river channel and floodplain deposits. Other potential, but not regionally significant, water-bearing units include older alluvium, old fan deposits, old lake and lakeshore deposits, and dune sand deposits. Water-bearing deposits in this basin are predominantly unconfined.

Description of Water Supply

Apple Valley Heights County Water District currently has two active groundwater wells. Wells 3 and 4 feed the system's storage and distribution system. Water is pumped to three 20,000 gallon storage tanks to feed the lower area of the system. A booster station with two 20 hp pumps sends water to the 200,000 gallon storage tank that feeds the upper area of the system. Water is gravity fed through the distribution system to the customers via 13 miles of 4, 6, and 8-inch pipe of various materials. The system does not chlorinate its wells full time.

Well 3

3600009-003

Well 03 is a 12" well located at 10284 Pioneer St. The well itself is approximately 190 feet from Well 04. The well was drilled in 1958 to a depth of 490 ft. There is a 75 hp oil lubed vertical turbine pump in this well set at a depth of 340 ft., which catalogs a current pumping rate of 260 gallons per minute. Well 03 has a 50 foot sanitary seal.

Well 04

3600009-004

Well 04 is a 12" well located at 10284 Pioneer St. The well itself is approximately 190 feet from Well 03. The well was drilled in 2004 to a depth of 504 ft. There is a 75 hp oil lubed vertical turbine pump in this well set at a depth of 340 ft., which catalogs a current pumping rate of 260 gallons per minute. Well 04 has a 50 foot concrete sanitary seal.

<table>
<tr><th colspan="15">TABLE 1: Water System & Source Summary</th></tr>
<tr><th colspan="15">Well 01</th></tr>
<tr><th colspan="5">System #</th><th colspan="5">Population</th><th colspan="5">Connections</th></tr>
<tr><td colspan="5">3600009</td><td colspan="5">917</td><td colspan="5">307</td></tr>
<tr><th colspan="3">Source Name</th><th colspan="3">Source #</th><th colspan="3">Type</th><th colspan="3">Yield (GPM)</th><th colspan="3">Max. GPD</th></tr>
<tr><td colspan="3">Well 03</td><td colspan="3">3600009-003</td><td colspan="3">Ground</td><td colspan="3">260</td><td colspan="3">374,400</td></tr>
<tr><th colspan="15">Well 02</th></tr>
<tr><th colspan="5">System #</th><th colspan="5">Population</th><th colspan="5">Connections</th></tr>
<tr><td colspan="5">3600009</td><td colspan="5">917</td><td colspan="5">307</td></tr>
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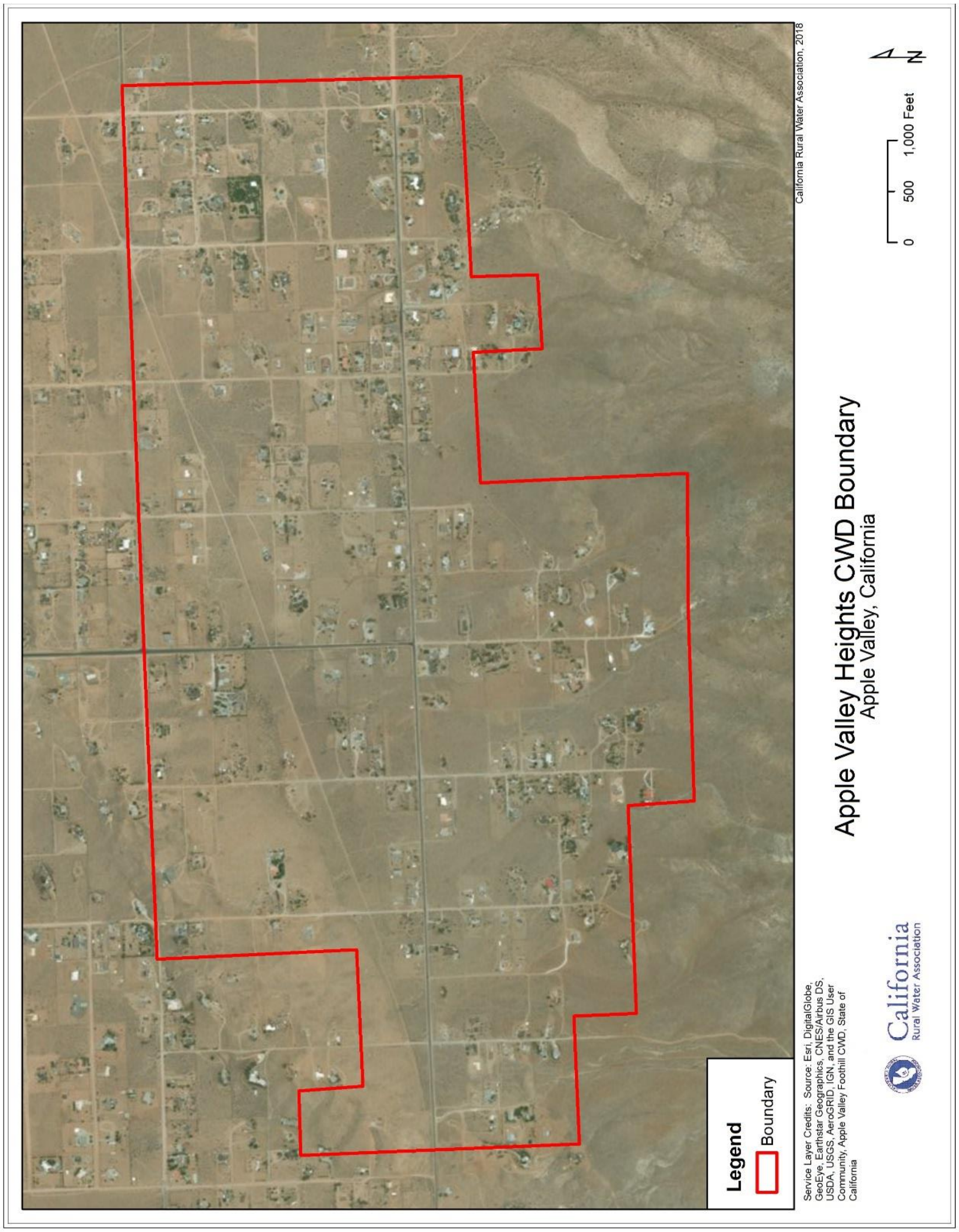
</table>


Apple Valley Heights CWD Boundary
Apple Valley, California
Legend
Boundary
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Apple Valley Foothill CWD, State of California
California Rural Water Association, 2018
0 500 1,000 Feet
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California Rural Water Association

Source Protection Area

Definition

A Source Protection Area is the surface and subsurface area from or through which contaminants are reasonably likely to reach a drinking water source. The purpose of delineating a Source Protection Area is to identify the area that supplies water to the public water source and determine which contaminants pose the greatest threat. Within a Source Protection Area, land uses and/or naturally occurring materials may cause a drinking water source to become vulnerable to contamination. While naturally occurring contaminants can usually be controlled by treatment methods, potentially contaminating land uses need to be managed by implementing measures outlined in a Source Water Protection Plan.[4]

Delineation of Sources

In order to establish the Source Protection Area, the susceptible area around each source needs to be defined. Included in the Drinking Water Source Assessment and Protection Program, performed by California Department of Health Services, is a vulnerability analysis conducted by delineating protection zones around each drinking water source.

Protection Zones

All drinking water source delineation distances are determined by potential contaminant proximity and/or expected time-of-travel to the water supply. However, there is a distinction between surface water and groundwater.

Groundwater

For groundwater sources, there are six primary delineation methods used by California CDPH which include:

Method	Complexity	Cost
Arbitrary Fixed Radius	Non-Technical	$
Calculated Fixed Radius	↓	↓
Modified Calculated Fixed Radius		
Analytical Methods		
Hydro geologic Mapping		
Numerical Models	Senior Hydrologist/Modeler	$$$$

The delineation is divided into three different classifications with a minimum radii distance for each:

600 feet for **Zone A** (microbiological)
1,000 feet for **Zone B5** (chemical)
1,500 feet for **Zone B10** (chemical)

For fractured rock aquifers, the minimum radii are:

900 feet for **Zone A** (microbiological)
1,500 feet for **Zone B5** (chemical)
2,250 feet for **Zone B10** (chemical)

Protection Zones Glossary

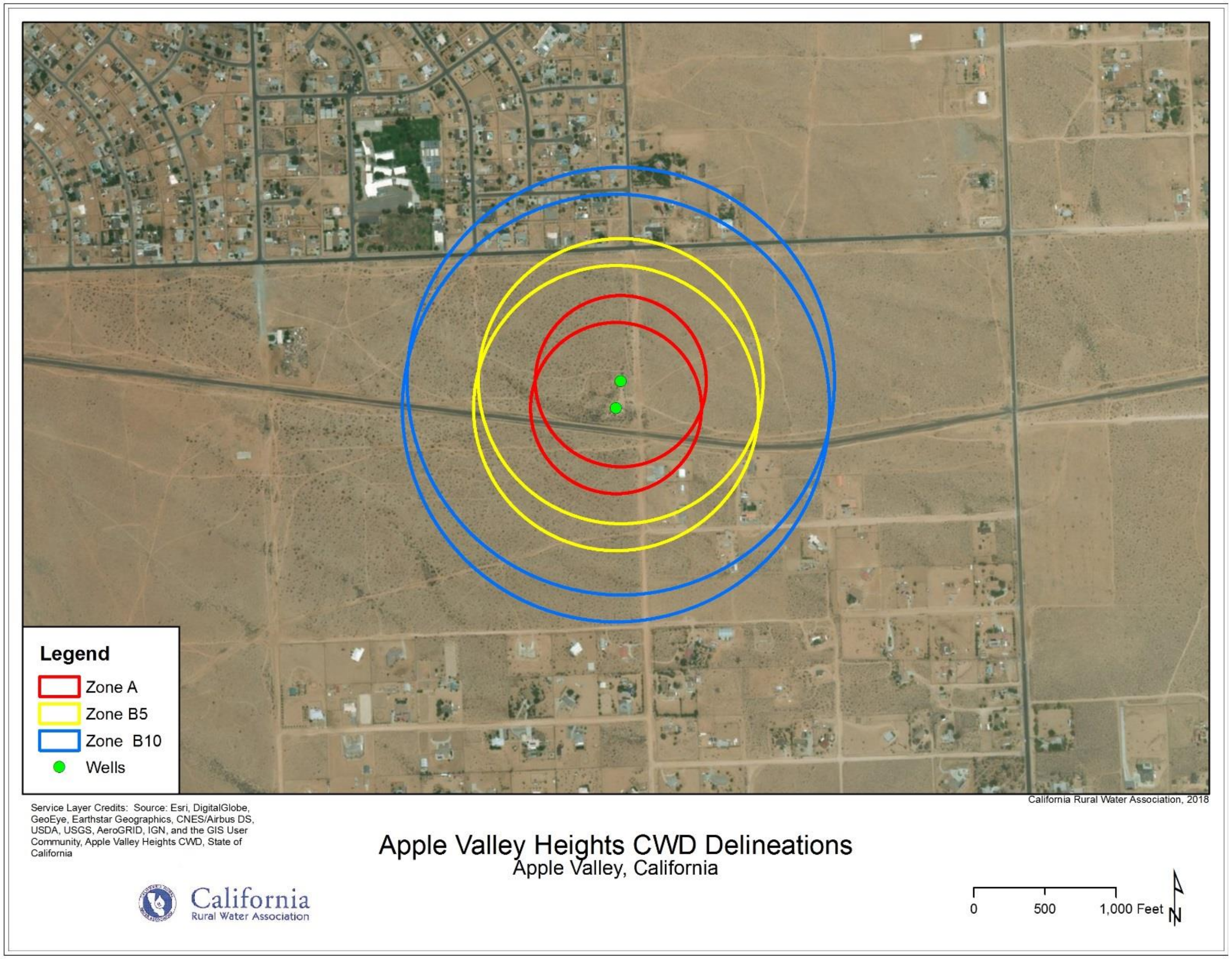
Zone A: Is defined by a **two-year** time of travel. Purpose is to protect the drinking water supply from viral, microbial, and direct chemical contamination.

Zone B5: Is defined by a **five-year** time of travel. Purpose is to provide for more response time for chemical spills than Zone A.

Zone B10: Is defined by a **ten-year** time of travel. Purpose is to allow for recognition of the long-term aspects of potential contamination.

TABLE 2: Ground/Sourcewater Delineation

Water System	Source Name	Arbitrary Fixed Radius	Calculated Fixed Radius	Zone	Radius (feet)
Apple Valley Heights County Water District	Well 03		X	A	600
				B5	1,000
				B10	1,500
Apple Valley Heights County Water District	Well 04		X	A	600
				B5	1,000
				B10	1,500


Legend
Zone A
Zone B5
Zone B10
Wells
California Rural Water Association, 2018
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Apple Valley Heights CWD, State of California
Apple Valley Heights CWD Delineations
Apple Valley, California
California
Rural Water Association
0
500
1,000 Feet
N

Assessment of Threats

Definition

The assessment of threats consists of current and future vulnerabilities in the Source Protection Areas. Using the Drinking Water Source Assessments, information was compiled for Apple Valley Heights County Water District concerning zoning and land uses associated with activities that either are, or could threaten the quantity or quality of the area's water supplies.

Possible Contaminating Activities

These potential and known threats to the drinking water sources were determined from the Drinking Water Source Assessment and Protection Program and/or field observations from water system personnel:

TABLE 3: Possible Contaminating Activities (PCAs)		
Above Ground Storage Tank	Well 03	Well 04
Housing – High Density	X	X
Illegal Dumping	X	X
Other Animal operations	X	X
Septic systems - High density	X	X
Transportation corridors – Railroad	X	X
Transportation corridors - Streets	X	X
Wells - Water supply	X	X

Best Management Practices

Definition

Best Management Practices (BMPs) refer to management measures or actions, based on the threat assessment, that reduce or eliminate the drinking water source's susceptibility to becoming compromised. These measures consist of tactics implemented by land owners, business owners, water system staff, or members of the community.

PCAs & BMPs

The following Possible Contaminating Activities, and corresponding Best Management Practices, are the vulnerabilities of most concern.

1. Above Ground Storage Tanks – Chemicals kept onsite could compromise a drinking water source if used or stored incorrectly. Furthermore, a chemical delivery accident could create an unforeseen emergency for water system personnel. Materials spilled, leaked, or lost from storage tanks may accumulate in soil or be carried away in storm water runoff.

Best Management Practice:
1. Request secondary containment: berms, dikes, liners, vaults or double walled tanks
2. Request that tanks be set back from roads, drainage channels
3. Publicize risks and BMP's for AGSTs.
4. Perform regular inspection for corrosion.
5. Mark tank with reflective material
6. Mark unused tanks "Out of Service"

Who?	Date Implemented?
Apple Valley Heights County Water District	

2. Housing - High Density – Concentrated residences in close proximity to water supplies could pose a threat to the quality of the water if homeowners participate in activities such as improper chemical disposal, and frequent fertilizer and pesticide applications.

Best Management Practice:
1. All PCA material should be stored away from storm water drainage areas.
2. Hazardous waste containers properly disposed of at household hazardous waste collection days.
3. Properly dispose of waste oil and fluids.
4. Vehicle washing should be limited to commercial car washes.

Who?	Date Implemented?
Apple Valley Heights County Water District	

3. Illegal Dumping – Contamination is possible when water polluted by the illegally dumped materials percolates into the aquifer.

Best Management Practice:
1. Work with property owners in a joint effort to remove the potential contaminant.
2. Post signs stating regulations against illegal dumping.

Who?	Date Implemented?
Apple Valley Heights County Water District	

4. Other Animal Operations – Animal waste may contain many pollutants that can contaminate surface and ground water used as drinking water sources. Many pathogens found in animal waste can infect humans if ingested and animal waste is also a common source of nitrates which are harmful to humans.

Best Management Practice:
1. Request owners avoid placing animal waste near creeks or storm water run off collection points.
2. Encourage composting to reduce volume and eliminate pathogens.

Who?	Date Implemented?
Apple Valley Heights County Water District	

5. Septic System - High Density – Septic systems represent potential sources of nitrates, chlorides, bacteria, and viruses. In addition, they could be a source of organic compounds if used improperly for the disposal of paints, solvents, petroleum products and other hazardous waste.

Best Management Practice:
1. Educate owners and residents that commercial and household chemicals should never be disposed of down sinks or toilets
2. Educate commercial managers that septic systems do not treat common chemical waste such as paint, thinners, oil, grease etc.
3. Develop frequent hazardous waste collection program for commercial businesses.
4. Determine if system meets Class IV or V underground injection control well rules.
5. Educate employees on proper disposal of chemical wastes.
6. Implement waste reduction strategies.
7. Rotate inventory of chemicals to avoid spoilage.
8. Evaluate storage and handling of hazardous materials to avoid spills and leaks.

9. Post signs that chemicals should never be disposed of down floor drains, storm drains, or outside on the dirt.

Who?	Date Implemented?
Apple Valley Heights County Water District	

6. Transportation Corridors – Roads – A chemical delivery accident could create an unforeseen emergency for water system personnel. Materials spilled, leaked, or lost during an accident may accumulate in soil or be carried away in storm water runoff.

Best Management Practice:
1. Coordinate with public safety personnel to be informed of any chemical or gasoline spills that occur on roads within the vicinity of the groundwater wells.

Who?	Date Implemented?
Apple Valley Heights County Water District	

7. Transportation Corridors – Railroad – A chemical delivery accident could create an unforeseen emergency for water system personnel. Materials spilled, leaked, or lost during an accident may accumulate in soil or be carried away in storm water runoff.

Best Management Practice:
1. Open dialogue with the rail owners regarding groundwater contamination from maintenance and operations.

Who?	Date Implemented?
Apple Valley Heights County Water District	

8. Wells (Water Supply) – Wells not in use are a direct conduit to the aquifer used for water supply and could pose a threat if not regularly inspected and/or properly maintained.

Best Management Practice:
1. Cap and lock the well and perform regular inspection of well head area for slumps, cracks, and rodent holes.
2. Create schedule for well flushing and inspection prior to use.
3. Contact well maintenance company if necessary for repair.

Who?	Date Implemented?
Apple Valley Heights County Water District	

Public Education and Outreach

Public education and outreach are some of the most important actions a community can use to protect their water supply. Much of the information presented throughout this report is simply not known by all homeowners. Therefore, this information needs to be passed on to the public so that they can make informed and intelligent decisions regarding their actions and activities within their environment. It is recommended that the water system publish some of the following internet links in their upcoming consumer confident reports to keep the general public informed:

EPA Recycling and Waste Homepage
http://www.epa.gov/epawaste/index.htm

Hazardous Waste Publications
http://www.epa.gov/epawaste/hazard/index.htm

Engine Oil Recycling
http://www.recycleoil.org

Disposal and Management of Leftover Paint
http://www.paintcare.org/drop-off-locations/

Non-Toxic Cleaning in the Home
http://www.ns-products.com/nontox.htm

Non-Point Source Protection for Kids
http://www.epa.gov/owowwtr1/NPS/kids/index.html

Septic Systems and Source Water Protection
http://water.epa.gov/infrastructure/drinkingwater/sourcewater/protection/index.cfm

Watershed Information
http://www.epa.gov/owow/watershed/why.html

Public Services

Fire & Rescue

San Bernardino County Fire – Station 302
17288 Olive St.
Hesperia, CA 92345
(760) 949-5506

Sheriff Department

San Bernardino County Sheriff Department
14931 Dale Evans Parkway
Apple Valley, California, 92307
(760) 240-7400

Utilities: Power, Gas, and Trash

Southern California Edison
12353 Hesperia Road
Victorville, CA 92392
(800) 655-4555

Southwest Gas
13471 Mariposa Road
Victorville, CA 92392
(877) 860-6020

Burrtec
17080 Stoddard Wells Rd
Victorville, CA 92394
(760) 243-3967

Transportation

Victor Valley Transit Authority
17150 Smoketree Street
Hesperia, CA 92345
(760) 948-4021

Library
San Bernardino Public Library – Apple Valley
14901 Dale Evans Parkway
Apple Valley, CA 92307
(760) 247-2022

Contingency Plan

Source Water/Wellhead Protection Contingency Plan for Providing Alternative Drinking Water Supplies

For:

Apple Valley Heights County Water District
PWS I.D. # 3600009

Primary Contact:
Daniel Smith, General Manager

Address:
9429 Cerra Vista Rd.
Apple Valley, CA 92308

Work Phone:
(760) 247-7330

Date of Plan:
March 6, 2018

Review and Update Annually

Date Reviewed	Reviewer	Changes or Comments

The purpose of this contingency plan is to establish and to keep up to date the procedures necessary to utilize alternative water supply sources in the event of contamination or loss of the existing source.

Section 2 DESCRIPTION OF THE WATER SYSTEM

Name of System: Apple Valley Heights County Water District

Population Served: 917

Service Connections: 307

Average Daily Production: 90,000 GPD Maximum Daily Productions: 748,800 GPD

Sources of Supply: 2 Active Wells

Interconnections with other Public Water Systems: None

Storage of Finished Water: Three 20,000 and one 200,000 gallon storage tanks

Sources of Power: Normal: Pumped System Emergency: None

Actual Location of System Maps and Records: 9429 Cerra Vista Rd. Apple Valley, CA 92308

Section 3 SUMMARY OF POTENTIAL SOURCE OF CONTAMINATION

A. Potential Sources of Contamination: Septic Systems

B. Other Sources of Contamination: Above ground storage tanks

C. Spill Response Activities: Daniel Smith - (760) 542-2037

Section 4 ALTERNATIVE WATER SUPPLY OPTIONS

1. Conservation (Implement Emergency Notification Plan) – Door to door, post flyers, and phone calls
2. Emergency Treatment – Direct chlorination applied at well heads
3. Boil Water Order
4. Bottled Water

Section 5 PRIORITY WATER USERS AND CONSERVATION MEASURES

A. Customers that would be requested to voluntarily reduce or eliminate water use:

1) Residential – Landscape Irrigation

B. Select conservation measures to be implemented in the event of the need to reduce demand:

1) Public Education

Section 6 PUBLIC EDUCATION / MEDIA RELATIONS

A. Primary spokesperson for the media and public comment in the event of a contamination incident:

   Name: Daniel Smith
   Title: General Manager
   Address: 9429 Cerra Vista Rd. Apple Valley, CA 92308
   Work Phone: (760) 542-2037

B. Information Checklist to be conveyed to the public and media:

   1. Name of water system: Apple Valley Heights County Water District

   2. Contaminant of concern and date: ______________________________

   3. Source of contamination: ______________________________

   4. Public health hazard: ______________________________

   5. Steps the public can take: ______________________________

   6. Steps the water system is taking: ______________________________

   7. Other information: ______________________________

C. Media Contacts:

   1. Newspaper – Apple Valley News
      (760) 242-1930
   2. Radio – KVCR – 91.9
      (909) 384-4444

Reference:

[1] California Department of Public Health: California's Drinking Water Source Assessment and Protection (DWSAP) Program, Overview, 2004.
[2] HLA: Geothermal Resource Assessment, White Sulphur Springs Area, Plumas County California, 1990.
[3] California Groundwater Bulletin 18: Upper Mojave River Valley Groundwater Basin. USGS, 2004.
[4] https://en.wikipedia.org/wiki/Apple_Valley,_California