

**WATER DEPARTMENT
POLICY
Desert Aire Owners Association**

**WATER SERVICES,
INSTALLATION
AND GENERAL
PROCEDURES**

**CREATED BY
WATER COMMITTEE
DESERT AIRE OWNER'S ASSOCIATION**

**Current Policy as of:
8/1/09**

**Adopted by the
Desert Aire Owners Association
Board of Directors
Nov. 1998**

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APPENDIX (To be added too as pertinent information arises)

Appendix A. Water Service Boundary's

Appendix B.

This policy shall be reviewed and updated periodically by the Water Committee and any substantial changes will be forwarded to the Desert Aire Owners Association Board of Directors for approval.

Notice: All sections that are in normal type, have been adopted with the date of adoption below that section.

Any section that is italicized has not been adopted as of the current date of the policy manual.

1.5

Definitions:

Approved Usage Refers to water that is to be used only for beneficial purposes primarily to supply essential household needs. Further Usage is to be limited to the area contained within the boundaries of owner's property.

(adopted 11-13-98)

Authorized Personnel are the employee's or persons who are given the Authority by the Association to access certain facilities and or devices, in order to effect maintenance, repairs and inspections.

(adopted 11-13-98)

Auxiliary shut off valve is a valve that customers install on their Water line between the meter box and the first diversion of their line. This allows the customers to shut off their water if they so choose.

(adopted 11-13-98)

Combined lots are any adjoining lots that a single property owner holds title to which have legally been combined as one.

(adopted 11-13-98)

Commercial lots are property within the service boundaries that are not specifically residential, and are developed to provide a service to the general public and or generate a profit.

(adopted 11-13-98)

Condominium Lots are commercial lots zoned for the development of condominiums. Each lot may contain as many as 6 living units.

(adopted 11-13-98)

Cross Connection refers to any point in the water system at which a source of potable drinking water has the potential to be connected to a non-potable source, creating an actual or potential health threat under certain conditions.

(adopted 11-13-98)

Customer refers to the person that is listed as the legal owner of said property, and that is receiving or has requested water service for that property.

(adopted 11-13-98)

CUCF is an acronym for Combined Utilities Capital Fund. An Assessment charged to each and every lot in Desert Aire which is used for improvements to the domestic water system and for the development of any future sewer system. This assessment may be paid as one lump sum, or may be spread out in payments over a predetermined number of years.

(adopted 11-13-98)

Distribution System is the system of pumps, tanks and piping that allow The delivery of water to the customers property. This system includes the meter assembly. All parts of this system are the property of the Owners Association and shall only be accessed by authorized personnel.

(adopted 11-13-98)

Emergency curtailment of use, shall be asked of customers when situations arise that may jeopardize the ability of the system to deliver safe water to its customers. Anytime, a situation arises which will leave the system with no safe margin of ability to supply the normal needs of Desert Aire. This may be the result of such events as a Natural Disaster to a major long-term power outage, and may also occur with a major pump, mainline or storage tank failure occurs. Curtailment shall remain in effect until customers are properly notified by Water Department Personnel or their designated Agents.

(adopted 11-13-98)

Emergency termination of service may occur in instances where a customer did not immediately comply with emergency curtailment orders, or could not be notified that their irrigation usage need be momentarily curtailed. (see sections 2.3.8.3; 2.3.8.3.1; and 2.3.8.2).

High Water Bill refers to an unusually high bill that is not attributable to high usage, and most likely the direct result of a leak.

(adopted 11-13-98)

Illegal User is any property or property owner that delivers water to another property that is not authorized to receive such delivery by the Owner's Association.

(adopted 11-13-98)

Leak refers to the loss of water through a break or hole in piping which may or may not surface.

(adopted 11-13-98)

Load Density, refers to the normally accepted number of occupants in any one residence, or the designed capability of the septic system for the same residence. Normally accepted density shall be the State DOH recommended maximum.(refer to section 2.3.6.0)

(adopted 11-13-98)

Meter Assembly is the connection assembly that allows customers property to be serviced by the distribution system. It includes the meter box, the water meter and any other components necessary to deliver water to the customer. This assembly is the property of the Owner's Association and shall only be accessed by Authorized personnel. It is usually located on the right of way.

(adopted 11-13-98)

Minimum billing is the base rate at which all water service installations whether used or not are billed. Shutting off or locking out the meter does not relieve the customer of the responsibility to pay this charge. The minimum is not a charge for actual water used but is in part an availability charge which insures that the department generates sufficient revenue to supply the service with water. However, with the minimum billing the customer is entitled to up to 1000 cubic feet of water each month at no extra charge.

(adopted 11-13-98)

Misc. Users prefers to properties within the service boundaries that are not considered

to be part of the Desert Aire Owner's Association. These users may obtain water service only through written agreements with the Desert Aire Owners Association Board of Directors.

(adopted 11-13-98)

Misc. User Fee is a special annual assessment charged to these properties, which is to be determined at the end of the fiscal year. Total amount is determined by dividing the amount of net operating loss (if any) by the total number of property owners. This amount is then billed to each of the Misc. Users for each lot served.

(adopted 11-13-98)

Multiplex / Duplex, refers to residential lots within the service boundaries that are platted to allow the placement of more than one living unit.

(adopted 11-13-98)

Potable Water is any supply of water that is suited for human consumption by standards that are approved by the State of Washington Department of Health and under rules established by the Federal EPA.

(adopted 11-13-98)

Repair billings are charges sent to a customer or individual that causes damage to any part of the distribution system. This billing shall reflect the cost of materials, labor and equipment needed to repair the problem. This includes damage to meter assembly, by illegal, unauthorized operation of the contents, and or damages incurred by reason of negligence, vandalism or other causes that could have been avoided.

Responsible refers to the individual (s) that own or have the authority to occupy or work on the property located at the service address. This is usually the person responsible for payment of rent and bills that are charged to this address.

(adopted 11-13-98)

Right of Way is the area adjacent to your property that connects it to the access road. or an established access route.

(adopted 11-13-98)

Source Protection Program. Commonly referred to as Well Head Protection, is a mandatory program, which requires water department personnel and the governing body to take specific steps through ordinance, policy and or education to ensure that the ground water they draw from is protected from contamination.

(adopted 11-13-98)

Utility right of way, Easement refers to an area on or adjacent to your property that is reserved for the placement of power, phone, cable and water lines. This area must be left open for access to the utility companies for normal and emergency repairs and inspections. The law requires that you notify all utilities prior to any work being done in these right of ways that may result in contact or exposure of any of the utilities property or hindering access to it.

(adopted 11-13-98)

Water Department Manager, Refers to the employee of Desert Aire Owners Association who is required to be certified by the State of Washington to operate and administer the water department. This individual's level of certification shall be in accordance with standards established by the State of Washington Department of Health. In his absence, the assistant water department manager or his designee shall have the responsibility and the duties of the manager. This person also shall be certified by the State.

(*adopted 11-13-98*)

Water Service Boundaries establishes the area to which the water system of Desert Aire Owners Association has been engineered to supply service.

(*adopted 11-13-98*)

2.3.3.0 Procedures for obtaining service.

It is the policy of Desert Aire Owners Association to deliver water only to properties with in the Water Service Boundary Area. (See Section 2.3.12)

In order to obtain a service for potable water to any property within the service boundary, the following steps must be taken.

(*adopted 11-13-98*)

2.3.3.1 Submittal of Application

An application must be submitted to the business office on the currently approved form for both new services and transfers of ownership or tenancy.

(*adopted 11-13-98*)

2.3.3.2 Installation Fee

The application for a new service must be accompanied by payment of the installation fee.

(*adopted 11-13-98*)

2.3.3.2.1 Deposit

In the case of service to a rental unit in which the occupant is liable for payment of bills, the business offices may choose to require a deposit of \$50.00 or more if they feel the situation warrants.

(*adopted 11-13-98*)

2.3.3.3 Back Dues and Assessments

The application for a new service or change in ownership or tenancy must be accompanied by payment of any past dues, assessments, fines or other charges against the lot. This last condition may be waived if written authorization has been received from the Owners Association state that satisfactory arrangements have been made for the payment of such.

(*adopted 11-13-98*)

2.3.3.4 Architectural Committee Approval

The application must be accompanied by architectural committee approval of lot plans and usage, and a copy of Grant County Health Department approval of on site sewage system plans.

2.3.3.5 Business office approval

If the above conditions are met, the application shall be approved by the business office and forwarded to the water department.

(adopted 11-13-98)

2.3.3.6 Water Department Approval

Upon receipt of the application, Water Department personnel shall visit the site and inspect the area. The customer's plans for development will be examined in a timely manner, to ensure that the development of the lot will not endanger or cause problems with the service or the distribution system. If a problem is found the application will be returned to the architectural committee with recommendations for changes.

The water department will not approve any application if the lot developer is unwilling to ensure that the proposed development will not endanger the water system through removal of material from right of ways where mainlines lay or by locating borders, fences, or hedges, In areas that will hinder access to valves, hydrants, or meter boxes.

When any problems have been resolved to the satisfaction of the Water Department, the application shall be approved and a copy delivered to the customer. The service shall then be installed in as timely a manner as possible, provided that the water system is capable of supplying adequate flow to the lot as determined by the current permitted number of connections allowed by the State of Washington Department of Health.

(adopted 11-13-98)

2.3.3.7 Denial of Application

Any service application that is denied shall be immediately returned along with any deposits and fees paid. The customer may resubmit the application at any time, provided they have corrected conditions causing the denial or in the event of non-availability of services, if and when they become available again.

(adopted 11-13-98)

2.3.3.8 Waiting List

There shall be no waiting list for customers whose application has been denied because of unavailability of service.

2.3.3.9 Newly installed and Locked Services

All newly installed services shall be locked out by the Water Department until an approved septic or sewer system is in place

2.3.3.9.1

Any water service that is locked out shall only be turned on by authorized personnel in the presents of the customer or the responsible. If the customer chooses not to be present the water department shall inform the customer that the department shall not be liable for any damages that may result from activation of the service.

(adopted 11-13-98)

2.3.3.10 Activation of Account

Once the service has been installed and activated, the account shall be activated and the customer shall be charged at least the minimum monthly water availability charge, even though water is not being used. The charge shall be prorated as to the date of activation.

(adopted 11-13-98)

**2.3.4.0 Water Rates
Water Service Rates
As of 8/30/02**

**For Services within the Water Service Boundary Area.
Water Rates will annually be adjusted according to the
current years CPI index.**

Meter Size	Monthly Min.	Amount	Overages
3/4 inch	\$11.24	1000 cu ft	\$.68/ 100 cu ft Over 15000 \$.78/100 cu ft
1 inch	\$13.65	1250 cu ft	\$.68/ 100 cu ft commercial only Over 18750 \$.78/100 cu ft
1 1/2 inch	\$34.93	3200 cu ft	\$.68/ 100 cu ft commercial only Over 48000 \$.78/100 cu ft
2 inch	\$46.40	4250 cu ft	\$.68/ 100 cu ft Commercial only Over 63750 \$.78/100 cu ft
Larger than 2			shall be reviewed and acted on by the water committee.

2.3.4.1 (Provisional)

For Water Services outside of the Plats of Desert Aire which are not included

in the Water Service Boundary Area

**Water Rates will annually be adjusted according to the
current years CPI index.**

As of 7/1/99

Meter Size	Min Month billing	Monthly volume	Overage Charge
3/4	\$15.90	1000	1.15 / 100 ft.
1	\$19.88	1250	1.15 / 100 ft.
1 1/2	\$50.88	3200	1.15 / 100 ft.
2	\$67.58	4250	1.15 / 100 ft.

Meter Installation Charge shall be the volume factor X the standard residential fee plus 60% and any additional plumbing expenses to bring the water to the property line.

2.3.5.0 Meter Sizes and Quantity.

In order to simplify billing and accounting, each user will be metered as follows:
(*adopted 11-13-98*)

2.3.5.1 All single family lots.

Single family lots shall have one 3/4 inch meter
(*adopted 11-13-98*)

2.3.5.2 All Duplex lots and Multiplex lots.

Duplex and multiplex lots shall have one 3/4 inch meter for each residential living unit.
(*adopted 11-13-98*)

2.3.5.3 Condominium lots.

Condominiums shall have one 3/4 inch meter for each living unit and it's corresponding yard.
(*adopted 11-13-98*)

2.3.5.4 Commercial.

Commercial sites will be dealt with on a case by case basis, due to the various needs of different types of business.
(*adopted 11-13-98*)

2.3.5.5 Combined lots.

All Single Family lots legally combined after the adoption of this policy shall be served by only one 3/4 inch meter.
(*adopted 11-13-98*)

2.3.5.5.1 All single family lots legally combined before the adoption of this policy shall be served by only one 3/4 inch meter, unless each lot was metered prior to combination, in which case both meters may remain provided they are both being used and beneficially so.
(*adopted 11-13-98*)

2.3.5.5.1.1 The owners of single family lots which were combined prior to the adoption of this policy and on which each was metered, may request to have one meter removed from service. The meter will be removed at no charge to the customer, however, the customer shall not be reimbursed for any materials and relinquishes the right to obtain a meter for that particular lot in the future.
(*adopted 11-13-98*)

2.3.6.0 Source Protection

The ability of the Association to deliver quality water to its customer is contingent on the ability of the Association to have some control over contaminants reaching the water source. The onsite sewage systems in the development are a potential source of contamination and an effort to reduce septic system failure and the resultant contamination and Health Department involvement that results is made as follows.
(*adopted 11-13-98*)

2.3.6.1 Approved Septic System

An approved septic system or sewer shall be installed prior to the initiation of water service installation. See Section 2.3.3.4 and 2.3.3.9.

2.3.6.2 System Loading

Service to a residence or business is subject to termination if it significantly violates the load density design of the system as established by Grant County and Washington State Department of Health.

2.3.6.2. *The load density of a residential system is based on the size of the septic tank, and assumption that the average person generates 70 gallons of sewage per day, and the requirements that the turn over time of the liquid in the tank must not be less than 48 hours. Example 4 people x 70 gallons per day x 2 days = 560 gallon tank minimum. This leads to the following figures.*

- (a) *for a 2 bed room house with a 750 gallon tank-----4 persons.*
- (b) *for a 3 bed room house with a 1000 gallon tank-----6 persons.*
- (c) *for a 4 bed room house with a 1250 gallon tank-----8 persons.*

2.3.6.2.2 *The load density of a lot used for R V's is complicated by long periods of low usage and bacterial inactivity followed by brief periods of high loading which increases the chance of drain field failure. To reduce the risk of contamination from this source no more than two R V's may be attached to the septic system.*

2.3.6.3 Drain field protection from tree roots

*In order to reduce the risk of drain field failure, customers are asked when planting trees to insure that the drip line of the trees does not extend over the drain field. Poplar trees should be kept at least 30 feet from drain fields.
(adopted 11-13-98)*

2.3.7.0 Customer Responsibilities.

*The customer accepts certain responsibilities as a privilege of obtaining water from the Association. Some of these are:
(adopted 11-13-98)*

2.3.7.1 Auxiliary shut off valve

The customer shall see that an auxiliary shut off valve is installed and maintained on the customer's side of the service. This valve is for their use and eliminates any need for entering the Association service vault. The valve shall be located no closer than 2 feet and further than 4 feet from the service prior to any diversion in the piping. The valve shall be of a type approved by the water department. Customers shall have until July 1, 2000 to install the auxiliary shut off. If the customer has not installed said valve by this date, he or she shall be issued a "valve installation assessment" of \$75 for the timely installation of the valve by the Department personnel.

2.3.7.1.1 If a service meter is found shut off, it shall be tagged by authorized personnel and the customer notified that they have 30 days to install their own shut off valve. A violation notice will be issued if the situation is not corrected within 30 days.

(adopted 11-13-98)

2.3.7.1.2 Any customer requesting to have their service turned off shall be charged a five dollar turn off fee, and a lock will be placed on the service during normal business hours. The five-dollar fee will be waived if the request is made in order to install an auxiliary shut off valve.

2.3.7.1.3 Any customer requesting to have their service turned on shall be charged a five dollar turn on fee to have it returned to service during normal business hours. This charge shall be waived if the service was shut off in order to install an auxiliary shut off valve.

(adopted 11-13-98)

Tampering

2.3.7.2 *The customer must not enter the meter box. Tampering and / or modifying any portion of the service assembly may result in the loss of water service, and / or a violation being issued and fines being assessed, as determined by the Board of Directors.*

2.3.7.3 Access

The customer must keep the meter assembly free and clear of any obstruction, including pets, which limit safe access to its contents by authorized personnel.

(adopted 11-13-98)

2.3.7.3.1 Unauthorized access

Any one accessing the meter box will be fined the following amounts.

First infraction the owner will be notified by mail not to access the meter box in any way.

Second infraction the owner will be **fined \$50.**

Third infraction the owner will be **fined \$100 and law enforcement** will be notified for tampering with a utility.

Any unpaid fines will be treated the same as an unpaid water bill.

(adopted 8-1-09)

2.3.7.4 Up keep of system and leaks

The customer must insure that all piping is installed according to code and that all leaks are repaired as soon as reported or discovered.

(adopted 11-13-98)

2.3.7.4.1 High Water Use Policy Relief Procedure For High Water Bills Caused by Leaks (one time only per customer)

1. The customer must contact the office within 45 days after the bill has been mailed to request relief from a high bill caused by a leak.
2. The customer may request the service be shut-off until repairs can be made. The \$5.00 shut-off fee will be waived.
3. The customer must agree to get the leak fixed immediately or they will be liable for the entire bill.
4. A reduced bill will be negotiated if it can be shown by the customer that the high water bill was the result of a leak.
 - a. The reduced bill will be computed by using the highest billing for the past four readings or half of the current billing at this address, whichever is greater.
 - b. A payment agreement schedule will be established with the office staff.
5. The customer must fix the leak before the next billing period in order to not be liable and charged the original full billed amount..

(adopted 11-10-06)

2.3.7.5 Cross Connections

The customer must comply with the Cross-Connection Control Program as directed by the water department. See section 2.3.13.

(adopted 11-13-98)

2.3.7.5.1 All underground irrigation systems shall receive written approval from the water department prior to installation.

(adopted 11-13-98)

2.3.7.5.2 The customer shall not use garden hose attached spray applicators without the use of a properly installed backflow prevention assembly.

(adopted 11-13-98)

2.3.7.6 Conservation

The customer shall comply with the water conservation policy as directed by the department. See section 2.3.14.

2.3.7.7 Off property usage

The customer must notify the water Department and obtain written approval from the Architectural Committee for lot modifications that change water usage requirements and of any landscaping requiring the use of water that will be conducted outside the lot perimeter or on the right-of-ways.

(adopted 11-13-98)

2.3.7.8 Payment of bills

The customer is responsible for payment of all water billings whether water is used or not, and for fines, repair billings and assessments which occur as the result of having potable water service.

(adopted 11-13-98)

2.3.7.8.1 Water usage shall be billed at not less than the minimum rate and shall commence the day the meter assembly is installed and activated. Billing shall continue until such time as the service is removed from service by request of the customer. In the case of renters, the billing will be transferred to the owner during times the premises are not occupied by a tenant.

(adopted 11-13-98)

2.3.8.0 Termination of Service.

Water service may be terminated only by authorized personnel and for the following reasons:

(*adopted 11-13-98*)

2.3.8.1 At the written request of the owner

The meter shall be removed by authorized personnel upon receipt of written request from the Business Office. No refund or credit of any installation fees or other payments shall be made to the customer for such removal. Customers will be advised that in order to regain service for this lot in the future, they will need to submit application and fees as specified for a new service.

(*adopted 11-13-98*)

2.3.8.2 For violation of Cross Connection Control Policy

When an existing cross connection poses a potential health or system hazard, the water department shall shut off water service to the premises until the cross connection hazard has been eliminated. The customer will be notified of termination as provided in section 2.3.9.5 except in cases of a real health hazard, in which case service shall be suspended immediately and notification sent to the property owner by registered mail.

(*adopted 11-13-98*)

2.3.8.3 For emergency or water shortage

During emergencies and water shortages, the water department may place an 'Emergency Curtailment of Use' moratorium on all non life sustain uses, such as irrigation, washing of cars, laundry, filling of swimming and wading pools and the like. An attempt will be made to notify all customers by phone of the moratorium. If contact cannot be made by phone an attempt will be made to notify the customer in person through the use of handbills. Notices shall also be placed in strategic location giving details and approximate time lines. The same process shall be used to notify that the emergency is over and that normal use may resume. Until such notice is given all measures stated herein shall be enforced.

(*adopted 11-13-98*)

2.3.8.3.1 If an individual chooses to ignore the moratorium, the service shall be shut off until the emergency or water shortage no longer exists, and the customer must pay any established disconnect and reconnect charges.

(*adopted 11-13-98*)

2.3.8.3.2 In cases where irrigation is being done and no notification could be made, the water department shall place notice on the main entry door of the residence or business indicating that the service has been temporarily disconnected but that there would be no charge for reconnection.

(*adopted 11-13-98*)

2.3.8.4 For routine maintenance

Water service may be temporarily suspended to allow for routine maintenance to be performed. Such termination shall not be done until all affected customers have received at least 24 hours notice.

(*adopted 11-13-98*)

2.3.8.5 For emergency repairs

Notification requirements may be waived in the event of an emergency, unless it will require more than 6 hours to complete the necessary repairs and return the service to active status.

(*adopted 11-13-98*)

2.3.8.5.1 The Association, its employees and its agents shall not be held liable for any property damage that results during any emergency termination of service.

(*adopted 11-13-98*)

2.3.8.6 For nonpayment

Service may be terminated for nonpayment of water bills, fines, charges, and deposits 10 days after they become delinquent. Delinquency occurs 30 days after issue.

(*adopted 11-13-98*)

2.3.8.7 For unauthorized uses

Service may be terminated for the use of water for purposes or properties not specified on the application.

(*adopted 11-13-98*)

2.3.8.8 For willful waste

Service may be terminated for willful waste of water through improper or imperfect piping, equipment, or otherwise.

(*adopted 11-13-98*)

2.3.8.9 For improper equipment

Service may be terminated for equipment and piping which does not satisfy any relevant codes and regulation or which adversely affects the ability of the utility to provide service to others.

(*adopted 11-13-98*)

2.3.8.10 For tampering

Service may be terminated for tampering with the Utility's property.

(*adopted 11-13-98*)

2.3.8.11 For denying access

Service may be terminated for denying access to properly identified authorized personnel during proper working hours for the purpose of reading meters, or inspecting conditions of pipes and fixtures and the manner in which the water is being used.

2.3.8.12 For violations of Association Rules

Service may be terminated at the direction of the Board of Director's for violations, of any of its governing documents, rules, and regulations.

(*adopted 11-13-98*)

2.3.8.13 For Fraudulent obtaining or use of service

Whenever a fraudulent obtaining or use of the service is detected, the water department may terminate the service without notice, unless the customer is

prepared at the service location to make payment of the estimated amount of service that has been fraudulently taken and all costs resulting from the fraudulent use plus any required deposits.

2.3.8.13 Exceptions

Except in case of danger to life or property, fraudulent use, impairment of service, or violation of a law, the association shall not discontinue service unless the following conditions are met.

(adopted 11-13-98)

2.3.8.13.1 See section 2.3.9.5 on notification

(adopted 11-13-98)

2.3.8.13.2 Disconnection shall not be made on Saturday, Sunday, legal holidays, or on any other day on which the department cannot reestablish service on the same day.

(adopted 11-13-98)

2.3.8.13.3 When an authorized person is dispatched to disconnect a service, that person shall be required to accept payment of a delinquent account at the service if tendered in cash. Any excess payment shall be credited to the customer's account.

(adopted 11-13-98)

2.3.9.0 Notification

Notification involving actions related to water department regulations shall be given as follows.

(adopted 11-13-98)

2.3.9.1 Notification in case of emergency shut off of services

In the event that an emergency shutdown of service is necessary, an effort will be made to inform customers at the earliest time that crews are able, either in person or by phone. No record of notification shall be required.

(adopted 11-13-98)

2.3.9.1.1

In the event that the outage is predicted to last more than six hours, notification will be made by phone or in person, and log kept of such action.

(adopted 11-13-98)

2.3.9.2 Notification of Contamination

Notification of contamination in the water system will be done in accordance with Washington State Department of Health rules and regulations.

2.3.9.3 Notification of Warning

The issuance of a warning notice for improper actions involving water system related issues, shall be delivered in person and in writing, with a copy going to the Board of Directors supplying at least the following information.

- (a) The nature of the problem
- (b) The date and time the problem occurred
- (c) The response, if any, of the individual involved

- (d) Any follow up recommendations
- (e) Names, Addresses, and phone numbers of the responsible individual(s)

(adopted 11-13-98)

2.3.9.4 Notification for Violations

Notification that a customer is in violation of a water system rule or regulation shall be sent by certified mail within twenty-four hours of discovery. An attempt will be made to notify the customer by phone or in person of the violation and a record of such attempts. Any customer that has received such notice shall have 14 days from the date of mailing to respond and/or start corrective measures.

(adopted 11-13-98)

2.3.9.4.1 If the violation concerns issues that are not a threat to health, the notice shall explain the nature of the problem, any fines or action that will be taken, and a time frame for corrective action.

(adopted 11-13-98)

2.3.9.4.2 If the violation involves an immediate threat to health, the notice shall explain the reasons for termination of service, the nature of the problem, any fines or actions that will be taken and the fact that service cannot be re-established until the problem is corrected.

(adopted 11-13-98)

2.3.9.5 Notification for Discontinuation of Service

(a) Before effecting disconnection of service, the association shall make a good faith bona fide effort to reach the customer in person or by telephone to advise the customer of the pending disconnection and reasons therefore. Where telephone contact is elected at least two attempts to reach the customer by telephone at home or his business shall be made during the associations' regular business hours. A record of attempts shall be maintained. Telephone or personal contact shall not be a substitute for written notice of disconnection as specified below.

(b) The association shall provide written notice of disconnection to the customer either by mail or at its option by personal delivery of the notice to the customer's address. If mailed notice is elected, service shall not be disconnected prior to the eighth business day following mailing of the notice. If personal delivery is elected, disconnection shall not be permitted prior to 5 PM of the first business day following delivery. Delivered notice shall be deemed effective if handed to a person of apparent competence in the residence or if a business account, a person employed at the place of business of the service customer. If no person is available to receive notice, notice shall be deemed served if attached to the primary door of the residence unit or business office at which service is provided.

All notices of pending disconnection shall detail procedures pertinent to the situation and provide notice of means by which the customer can make contact with the association to resolve any differences.

(adopted 11-13-98)

2.3.9.6 Notification of Emergency Moratorium

See section 2.3.8.3
(adopted 11-13-98)

2.3.10.0

Fines and Service Charges

**Service Charge and Fine Chart Current as of 8/1/09
Water Department**

All General Service Charges shall be annually adjusted to the next highest dollar amount based on each year's CPI index.

<i>Nature</i>	<i>Amount</i>	<i>Notations</i>
General Services		
<i>Meter Installation</i>	\$650.00	<i>3/4 inch residential</i>
	\$812.50	<i>1 inch Commercial only</i>
	\$2080.00	<i>1 1/2 inch Commercial only</i>
	\$2762.50	<i>2 inch commercial only</i>
<i>Meter Turn on</i>	\$5.00	<i>During normal business hours</i>
<i>Meter turn on</i>	\$25.00	<i>After hours and weekends</i>
<i>Meter Turn off</i>	\$5.00	<i>During normal business hours</i>
<i>Meter Turn off</i>	\$25.00	<i>After hours and weekends</i>
<i>Meter Replacement</i>	NC	<i>Replace defective meter</i>
<i>Meter Replacement</i>	<i>Cost + Labor</i>	<i>Replace non defective meter</i>
<i>Special Requested Samples</i>	<i>Cost + Labor</i>	<i>Customer requested samples</i>
Fines		
<i>By Passing Meter to get water</i>	\$500.00	<i>Also includes tampering with meter</i>
<i>Unauthorized supplying of water</i>	<i>\$150.00 each + Termination</i>	<i>Supplying water to non authorized lots</i>
<i>Destruction of property</i>	<i>\$100.00 + Cost & Labor</i>	<i>damage to meter box contents</i>
<i>Unauthorized receipt of water</i>	<i>\$250.00 + Termination</i>	<i>Unauthorized obtainment of water</i>
<i>Removal of meter locks</i>	<i>\$150.00 + cost and labor</i>	<i>Removal of locks for non violation</i>
<i>Removal of meter locks</i>	<i>\$750.00 + cost and labor</i>	<i>If results from a violation order</i>
<i>Unauthorized operation of contents</i>	<i>WARNING LETTER 1ST TIME \$50.00 FINE 2ND TIME \$100 FINE 3RD TIME AND LAW ENFORCMENT CALLED</i>	<i>Includes any of the components</i>
<i>Violation of Cross Connect order</i>	<i>\$500.00 + Termination</i>	<i>Failure to comply with dept. order</i>
<i>Violation of Conservation order</i>	\$200.00	
<i>Failure to install auxiliary shut off</i>	\$50.00	<i>assessed 30 days after notification</i>

2.3.11.0

Commercial Services

Commercial Meter Installation Charges Within The Water Service Boundaries

Commercial meter service installation and billing minimum are established under what is referred to as a volume factor. In other words, a larger size is capable of supplying a larger quantity of water. This increase is a volume factor above a standard residential service. This increase adds to the cost of materials for installation as well as more demands of the entire distribution system which must supply the need.

<i>Meter Size</i>	<i>Factor</i>	<i>Installation</i>	<i>Base Minimum</i>	<i>Monthly Bill</i>
<i>5/8 x 3/4</i>	<i>1</i>	<i>\$ 650.00</i>	<i>1000/month</i>	<i>\$ 11.24</i>
<i>1</i>	<i>1.25</i>	<i>\$ 812.50</i>	<i>1250/month</i>	<i>\$ 13.65</i>
<i>1 1/2</i>	<i>3.2</i>	<i>\$2080.00</i>	<i>3200/month</i>	<i>\$ 34.93</i>
<i>2</i>	<i>4.25</i>	<i>\$2762.50</i>	<i>4250/month</i>	<i>\$ 46.40</i>

The overage rate is the same as all other residential services. The fees are arrived at by multiplying the volume factor by the current installation and base billing amount. By doing so it will always stay current.

2.3.12.0

Water Service Boundaries

See attached legal description in Appendix A.

**2.3.13.0 Cross Connection Control Policy
 Cross Connection Control**

- 2.3.13.1 Back Ground
- 2.3.13.2 Index
- 2.3.13.3 Purpose
- 2.3.13.4 Application
- 2.3.13.5 Definitions
- 2.3.13.6 Cross-Connection Prohibits
- 2.3.13.7 Cross Connection Control Regulations adopted
 by reference
- 2.3.13.8. Enforcement Authority
- 2.3.13.9 Backflow assemblies and installation
- 2.3.13.10. Inspections of new construction
- 2.3.13.11. Inspection of existing Construction
- 2.3.13.12. Inspections, Access
- 2.3.13.13. Records
- 2.3.13.14. Penalty

2.3.13.3

Purpose

The purpose of this policy is to protect the health of water consumers and the potability of the public water system by assuring: (1) The inspection and regulation of plumbing in existing and proposed piping networks: and (2) the proper installation and surveillance of backflow prevention assemblies when actual or potential cross-connections exist and cannot be eliminated. This policy complies with State of Washington Rules and Regulations contained in WAC’s 246-290-490. Any and all cross connections that can be eliminated, shall be eliminated.

2.3.13.4

Application

This document applies throughout all customers that receive water service from the water system of Desert Aire Owner’s Association. This is to include all premises, owners and occupants supplied, and applies to all systems installed prior to enactment of this document as well as any future additions.

2.3.13.5

Definitions

- A. The definitions set forth in Washington Administrative code section 246-290-490 as the same exists or as may hereafter be amended, are hereby adopted by this reference.
 - 1. Contamination / contaminant, 246-290-010
 - 2. Cross Connection, 246-290-010
 - 3. Department, 246-290-010
 - 4. Public Water System. 246-290-020
 - 5. Purveyor, 246-290-010
 - 6. Service, 246-290-010

AWWA- Refers to the American Water Works Association.

BOARD- The elected body that governs Desert Aire Owners Association, makes policy and conducts the affairs of the overall operation of the Association.

COMMERCIAL- Any property that is developed with the sole intent of providing a service to others. This includes any existing property that is converted from its original intended purpose which now can or does provide said service.

COMMITTEE- A group of individuals organized by the Board to oversee the operations of different departments and areas of concern. They may make recommendations to the Board based on findings and reports by the Department heads.

CONSERVATION- The practice of using only what is necessary with no waste. As it applies to water consumption, in order to keep the need down of having to develop new sources of water, programs and policies will be enforced to ensure that our water resource is not being wasted.

CROSS CONNECTION- The point at which the delivery of water through the pipes exits the meter assembly and joins the customers system. Also a cross connection is considered to exist, anywhere that a potential or real source of contamination is created, on a piece of property not owned by the Association , due to a condition known as back flow allows that contamination to enter the distribution system.

CUSTOMER- Refers to the person(s) or group that is requesting or receiving water service.

DEPARTMENT- Refers to the Water Department of Desert Aire.

DOE- Refers to the Washington State Department of Ecology.

DOH- Refers to the Washington State Department of Health.

EPA- Refers to the United States Environmental Protection Agency.

EXEMPT- A title given to something, property, in which the rules do not apply against or for.

FEE- Moneys that must be paid out to secure services that you need and or require. These moneys are paid to the owner of the service or his appointee's. Included are both rent and lease.

LEASE- An agreement between the owner of a piece of property and one whom wishes to use said property for a period of time, or through such an agreement, intends on gaining legal ownership of said property, through an option to buy.

OWNER- The person or persons, that hold the legal title to the property in question.

PREMISES- The lot and or property that an individual, or group, or company owns or occupies.

RENTER- Any person or group in which make payments to another individual in order to secure the use of property, and or goods. The other individual being the legal owner or his appointee.

RESPONSIBLE- The person whom owns the property, or his appointee, whom is in charge of collecting fee's, administers the property, takes care of complaints and is generally held accountable for any problems concerning said property.

SERVICE- Property, goods and specially trained persons that must be brought in for a fee or a fee is charged in order for the person requesting the use of to secure them to fill his need.

SERVICE CONNECTION- your connection to the water meter assembly. Each lot, shall be serviced by one connection and that connection shall only service that lot.

SPECIFICATIONS- design criteria and materials to which services are build. This includes the customer's connection to the meter assembly.

SYSTEM- The distribution system, of pipes, valves and controls necessary to supply and deliver water to a customer.

VARIANCE- A change in a requirement or regulation that affects you that may be granted by the Board for reasons including but not limited to, hardship, selling of property, change in ownership etc. The variance may be granted by the Board if sufficient reasons can be given to warrant said variance. Variance may only be granted for a specified period of time, and must be reviewed again by the Board in order to have it renewed.

WATER AVAILABILITY FEE- A charge placed on a lot that is payable in full at the time of request for water or may be paid over an agreed period of time as set by the Board plus interest, that ensures that funds are generated to cover the expenses of increasing the water delivery system's capacity and size to meet the needs created by the additional growth.

WATER CONSUMPTION- The measures water, in cubic feet, that flows through the water service meter onto a specific piece of property. This is the amount of water that was required to fill the needs and is what the water billing is based on.

WATER SERVICE- The availability of water delivered to a customer at appoint at which a water meter assembly is installed to service a specific piece of property. This includes all metered services whether water is used or not.

2.3.13.6 Cross Connection Prohibited.

- A. The installation or maintenance of any actual or potential cross connection , which could endanger or pose a health hazard to the purveyor's public

water system is prohibited. Any such cross connection now existing or hereafter installed is hereby declared unlawful and shall be removed immediately. Service to the premises shall be terminated until the cross connection has properly been removed or a proper protection assembly has been installed and tested, as specified by the Cross Connection Control Director.

- B. Water service to any customer shall be contingent upon the customer providing cross connection control in a manner approved by the purveyor.
- C. The use of any garden hose connected spray applicator device is strictly prohibited unless an approved vacuum breaker assembly is properly installed to the connection. This includes car wash and wax sprayers, pesticide, and fertilizer sprayers, and any other type of unit that utilizes water from such a connection to mix and dispense any chemical that poses any potential or real health hazard. Further the leaving of garden hoses or any other hose submerged in a basin of water such as a sink, or Swimming pools poses the same type of potential health threat.

**2.3.13.7 Cross Connection Control
Regulations adopted by reference**

- A. The control and/or elimination of cross connections, shall be in accordance with Washington Administrative Code, section 246-290-490 which is hereby adopted by reference, as it now exists or as it may hereafter be amended.
- B. The most recent published edition of the manual titled, “ Accepted Procedures and Practices in Cross-Connection Control “ Pacific Northwest Section of the American Waterworks Association, shall be used by the director to establish policies, procedures and criteria for determining appropriate levels of cross-connection control protection.

2.3.13.8 Enforcement Authority

The director shall be responsible for enforcement of the rules and regulations promulgated to this policy.

2.3.13.9 Backflow Assemblies and Installation Per WAC 246-290-490 (2)

- A. Backflow assemblies required to be installed shall be models approved by the department according to the current listing published by the DOH and shall be tested once per year, upon installation and after any move or repair.
- B. Backflow prevention assemblies shall be installed at the service connection or within any premises where in the judgment of a certified cross connection specialist the nature and extent of activity on the

premises, or the materials used in connection with the activities, or materials stored on the premises would present an immediate and dangerous hazard to health should a cross connection occur, even though such cross connection does not exist at the time the backflow device prevention device is required to be installed. This provision shall apply to the following:

1. Premises with an auxiliary water supply.
2. Premises with internal cross connections that are not correctable, or intricate plumbing arrangements which make it impractical to ascertain whether or not a cross connection exists.
3. Premises where entry is restricted so that inspections for cross connections cannot be made with sufficient frequency or at short notice to assure that cross connections do not exist.
4. Premises with a history of cross connections being established or re-established.
5. Premises on which any substance is handled under pressure so as to permit entry into the public water system, or where a cross connection could reasonably be expected to occur. This includes the handling of process waters and cooling waters.
6. Premises where materials of toxic or hazardous nature are handled such that if back siphonage should occur, a serious health hazard may result.
7. The following types of facilities.
 - a. Hospitals, mortuaries, clinics
 - b. Laboratories
 - c. Piers and docks
 - d. Sewer Treatment plants
 - e. Food and or beverage processing plants
 - f. Chemical plants using a water process
 - g. Metal plating industries
 - h. Petroleum processing or storage plants.
 - I. Radioactive material processing plants or reactors
 - j. Car washes
 - k. Others specified by the certified cross connection Specialist.
8. Additionally, underground irrigation systems shall be subject to the installation of a minimum of an pressure vacuum breaker assembly or Air Vacuum Breaker, mounted in accordance with recommended procedures. This type of device shall conform with the uniform plumbing codes and the State of Washington Department of Health.

2.3.13.10

Inspections of new construction.

- A. Plans for new construction or enlargement of existing services

shall be reviewed by the director in order to eliminate actual and potential cross connections.

- B. The director shall inspect the actual construction performed for compliance with the rules and regulations promulgated pursuant to this section.
- C. The director may issue a certificate of compliance upon finding that the service complies with all such rules and regulations.

2.3.13.11 Inspection of existing construction.

- A. The director shall inspect existing service connections at least once per year for compliance with the rules and regulations as promulgated pursuant to this section if cross connections have existed in the past.
- B. The director may only issue a certificate of compliance upon finding that the service complies with all such rules and regulations.

2.3.13.12 Inspections and Access

- A. The director, with proper identification, will have free access at reasonable hours of the day to all parts of any premises to which water is supplied. Water service may be refused or terminated to any customer for failure to allow necessary inspections.

2.3.13.13 Records.

- A. The director shall maintain records of inspections of new and existing construction, certificates of compliance and customers who are not in compliance, and any records necessary to document findings and information.

2.3.13.14 Penalty

- A. Service to any premises receiving water from the Desert Aire Water System shall be contingent upon compliance with all rules and regulations of the department and the purveyor. Service shall be discontinued to any premises for failure to comply with the rules and regulations of the department and the purveyor.
 - 1. Service shall only be restored by the following:
 - a. Complete compliance with the regulations
 - b. Full payment of any fines assessed by the Board of Directors.
- B. Every customer, owner or occupant of any premises covered by this section is responsible for compliance with the terms of this chapter and

shall be strictly liable for all damages, including but not limited to Costs and expenses of the Owner's Association, incurred as a result of failure to comply with the express terms and provisions contained herein. Desert Aire Owners Association, nor its employees and or agents, shall not be held liable for any damaged caused by termination of water service due to compliance requirements of this policy and the State Of Washington WAC's.

1. Additional fines, penalties and legal action may be placed on the violation at the discretion of the Board of Director's

2.3.14.0 Water Conservation Policy

2.3.14.1 Determination of how much we are loosing each quarter.

- A. Perform water audits every quarter to determine losses.
- B. Have flow meters calibrated at regularly scheduled times
- C. Continue the current, active meter replacement program.
- D. Monitor fire and construction uses on the system, estimate and log use.
- E. Maintain and continue the aggressive leak detection and repair program.
- F. Install additional valves on the system to enable better isolation of breaks.
- G. Take daily readings on wells to determine a sudden change in production

2.3.14.2 Fix leaks as they are found, and make recommendations on needed major repairs.

- A. Keep a supply of common repair parts on hand at all times.
- B. Monitor activities that many cause breaks in the system.
- C. Become pro-active in the decision process and review of the Architectural committee process.
- D. Active regular valve excising program along with flushing.
- E. Daily scan of the utility right of ways to spot possible problems.
- F. Check out all calls for possible leaks as soon as possible.
- G. Test and or replace any defective or questionable meters

2.3.14.3 Keep Records of Activities.

- A. Utilize work orders to keep track of projects
- B. Log findings and estimates of leak rates on fixes.
- C. Look for patterns in leaks with records created.
 1. May indicate a bigger leak
 2. May indicate an ongoing activity that is causing the problem.
- D. Check out reports of low pressure in an area.
- E. Check out reports of dirt or colored water

2.3.14.4 Public Education

- A. As available, get fliers out to the public on the topic.
- B. Plan to give tours, talks and programs to the public
- C. Talk to people when they have a problem concerning their bills etc.
- D. Publish articles in the Associations News Letter.

2.3.14.5 Conservation Rates Structuring.

- A. Build in a price factor that makes people aware of excessive use.
- B. Work with the public to help them locate their leaks and give advice.
- C. Have a list of resources they can contact for specific problems and solutions.
- D. Develop a rate structure that meets expenses and is fair to all.
- E. Implementation of a step rate system of billing with in the next few years, or as soon as development dictates that we need to soon start looking for ways to conserve or obtain additional water rights.

Sample Water Bills Under New Proposal Step Rate Proposal				
Customer	Use/Qt.	Overage @ .80/100	New Billing	Current Billing
	Cubic Feet	Cubic Feet		
A	0	0	\$15.00	\$30.00
B	3000	0	\$33.00	\$ 30.00
C	12000	10000	\$106.00	\$ 84.00
D	60000	55000	\$490.00	\$ 372.00
E	5000	0	\$45.00	\$ 42.00
F	125	0	\$15.75	\$ 30.00
Base Rate @.70/100 up to 5000ft./quarter.				
\$5.00 per month Water Availability Fee				

2.3.14.6 Carefully Monitor and Maintain Source.

- A. Keep accurate daily records
 - 1. Run times
 - 2. Volume pumped
 - 3. Air column readings
 - 4. Visually inspect for leakage
 - a. Adjust packing

- b. Tighten loose fittings
 - 5. Listen for abnormal sounds from the pump
 - 6. Keep well houses clean and neat
- B. Look for potential contamination sources in the well head zones.
- C. Keep watch for vandalism
- D. Make sure that all facilities are secure and fully operational.

2.3.14.7 Enforcement.

- A. Water department personnel have the authority to terminate services
 - 1. By authorization of the Board of Directors
 - 2. By orders from the Department of Health, State and County
 - 3. By direct indications of repeat gross violation following notification
 - 4. Actions by individuals that will result in losses and illegal connections
 - 5. Establishment of penalties and fines schedules for violations.

2.3.14.8 What Constitutes a Violation

- A. General violation
 - 1. Any continued abusive use when notice has been sent advising customer of the over use.
 - a. Abusive use, any time water is used to the extent that it runs down the street, forms large standing puddles or is running and providing no beneficial use when an alternate method could be used to reduce the need for the wasted water.
 - 2. Failure of the customer to make repairs on their system in a timely manner after notification.
 - 3. Any time an individual lot, zoned residential, shows excessive use through the meter reads and no signs of benefit are visible, and it is proven that the occupancy load of the residence is higher than normally accepted standards.
 - 4. The a- fore mentioned violations may only be enforced until 30 days after written notification has been sent to the customer.
- B. Emergency orders and requests violations
 - 1. When an extended power outage develops customers shall shut down irrigation systems.
 - 2. When customer fails to curb water use activities after being notified by department personnel due to a break or problem that has the potential to create a larger problem.
 - 3. Any time a natural disaster has occurred that can cause damage to the system, All unnecessary use shall stop until notice has been received from the Department personnel.

2.3.14.9 Penalties.

- A. Penalties shall result in the form of fines, termination of service or notice being sent.
- B. Penalties shall be assigned by the Board of Directors of Desert Aire Owner's Association on a case by case basis.
- C. A penalty policy shall be created maintained and enforced by the Desert Aire Board of Directors or their designee.

2.3.14.10 Authorization

- A. Authorization for this plan has been granted by the State Department of Health and the Department of Ecology.
- B. Authorization needs to be given by the Board of Directors to the Department
 - 1. Enable personnel to intercede on potential problems
 - 2. Give personnel authority in many cases to terminate services without prior Board Authorization.
 - a. Provided it is warranted and documented
 - b. Provided notice has been given to owner warning of violation
 - c. Provided Board is notified as soon as possible with necessary documentation.

2.3.14.11 Planning

- A. Monitor peak demands and seasonal demands on the system.
- B. Find ways to produce more from existing sources.
- C. Keep pumps in top condition
- D. Budget for line replacement as sections become unreliable.
- E. Continuing education
- F. Work with all agencies and resources of information to get a better ideal of what can be done and how.
- G. Compare notes with other Departments to get ideas.
- H. Continue to build on Public Education and involvement.
- I. Continue all elements as described above.
- J. Utilize records to make future projections.

Desert Aire Community Water system

Wellhead Protection Plan

Section 2.3.15.0
Department Service Manual

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Groundwater Technician
Evergreen Rural Water of Washington

Steve Mitchell and Art Hammer
Water Operators
Desert Aire Owners Association

1999

2.3.15.0
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INTRODUCTION

Background

Congress enacted the Safe Drinking Water Act (SDWA) in 1974 with the goal of providing safe drinking water to all users of public water supplies. The SDWA gave the U.S. Environmental Protection Agency (EPA) the authority to develop a uniform national drinking water program, and to establish national standards for known or suspected drinking water contaminants. The 1986 SDWA amendments authorized two new provisions for groundwater protection. One of these was the Wellhead Protection (WHP) program. The SDWA allows each state to design its own WHP program in order to maximize program effectiveness at the local level. Each state's WHP activities are designed to assist local communities in protecting land areas surrounding public water supply wells in order to prevent groundwater contamination.

The state of Washington requires that all Group A water systems (those serving fifteen or more connections or twenty-five or more people) develop wellhead protection plans, as stated in the Washington Administrative Code (WAC 246-290). The Washington Department of Health (DOH) has established requirements, guidelines and materials to aid water systems in the development of their WHP plans. In order to help systems comply with the requirements, Evergreen Rural Water of Washington provides on-site assistance to small water systems. This assistance is provided at no cost to systems through funding provided by the DOH and EPA.

Purpose

The purpose of WHP is to provide an organized approach to effectively protect drinking water supplies from contamination. The program seeks to identify and manage potential contaminant sources near public water supply wells in order to prevent future pollution problems. WHP safeguards the health of community residents and avoids negative financial impacts associated with contamination. The costs of contamination typically include the investigation of sites, installing treatment facilities, and/or locating new water sources, to name just a few. In fact, Washington State's health officials have identified nearly twenty different direct and indirect costs associated with well

Well System

An aquifer can be described as any earth material capable of transmitting measurable quantities of water to a well. In Desert Aire's vicinity groundwater is readily obtained from the alluvial (sand and gravel) deposits, which are at least 75 ft. thick and from fractured basalt flows lying below the alluvium. Groundwater flow in an (unconfined) alluvial aquifer is generally expected to mimic the topography of the area. It follows that groundwater flow would be expected to follow the south-southwesterly drainage of the Columbia River valley. Desert Aire relies upon 3 wells (SO-2, SO-3 and SO-6) to supply the water to 541 residential and 289 non-residential connections, serving approximately 1,600 residents, many of which are occupied for only a few months of the year. All wells appear to have annular seals in place. SO-2 is located on the north west corner of the development, off Desert Aire drive. The well was constructed in 1975 to a total depth of 165 feet, with perforations from 41 feet to the casing terminus at 90 feet. The open interval for the Calculated Fixed Radius (CFR) calculation for this well is 49 feet. SO-3 is located between Grant Street and Washington Place neat the Columbia River. The well was constructed in 1975 to a total depth of 93 feet. 91 feet of casing was installed with perforations from 86 to 91 feet. The open interval for the CFR calculation for this well is 5 feet. SO-6 is located on the West End of the Desert Aire airfield, near the north 3rd of the development. This well was constructed in 1990 to a total depth of 163 feet. The well has 146t feet of casing with perforations from 120 to 145 feet. The open interval for the CFR calculations for this well is 25 feet. This well receives water from the basalt formations in the area. Well reports for two of the wells are available (Appendix A). SO-2 for which no well report is available was video taped in October 1997. The video revealed the construction details, such as perforations and casing depth.

The water system uses approximately 153,000,000 gallons per year or about 470 acre feet per year. The wells have the capacity to produce between 450 gallons per minute (SO-3) and 1,100 gallons per minute (SO-6). SO-2 is the primary source for the development and produces 500 gallons per minute.

Aquifer Susceptibility

Susceptibility is determined by conditions that affect the movement of groundwater, and thus contaminants, from the land surface into an aquifer. Susceptibility is a qualitative measure of how quickly and how far groundwater must travel to reach a water source (well or spring). Confining units are critical to susceptibility determinations. In general, a confining unit is any earth material that does not readily transmit water. Typically layers of clay or shale may act as confining units, depending upon their thickness and lateral extent. When confining layers are present, wells are less susceptible to contamination because they impede the movement of contaminants from the land surface into underlying aquifers.

Desert Aire's well report for SO-6 indicates that confining materials were identified at the 84ft. level. Hard gray basalt was encountered at this depth and water is drawn from 120 feet below the surface. This indicates a confining layer of approximately 34 feet. The other two wells do not draw water from below the basalt, and no confining layer is evidenced in the well log. The wells construction can be expected to provide a

significant level of protection from contaminants originating at the land surface near the well. Based upon information provided in the Ground Water Contamination Susceptibility Assessment Survey Form (Appendix B), the State has classified the wells as having moderate (SO-2) and low (SO-3 and SO-6) susceptibility ratings.

The Susceptibility Assessment is also used to classify the vulnerability of each water source. Vulnerability is composed of two factors: the physical susceptibility (as noted above) and the source's risk of exposure to contaminants. The risk of exposure to contaminants is determined by whether or not contaminants were used in the area, or detected in the water supply. The DOH has issued a moderate vulnerability rating for these sources.

IDENTIFICATION OF THE WELLHEAD PROTECTION AREAS (WHPA's)

Background

Recharge of aquifers occurs through infiltration of precipitation in areas where the aquifer lies at or near the surface, or where confining units are absent or thin enough to allow groundwater to 'leak' through the confining layer into the aquifer. Ideally, all land areas that contribute recharge to the aquifer would be targeted for WHP. Unfortunately, the identification of precise recharge areas for wells is a technical and time-consuming process. Further, once identified, they are often cover vast amounts of land, and therefore become difficult to manage. To remedy these problems, the WHP program focuses protection efforts near the wellhead.

Methods

Several different methods may be used to determine the WHP area. The most straightforward method accepted by the state is a calculated fixed radius (CFR). This method is also used within the Susceptibility Assessment, which is used to grant source water monitoring waivers. The CFR serves as a good 'first cut' WHP zone delineation because it is easy to apply and inexpensive. Unfortunately, the CFR can over-simplify groundwater flow conditions and may or may not be very accurate depending upon site-specific conditions. Therefore, other more complex delineation methods such as computer modeling and hydrogeologic mapping are encouraged, but not usually required for small and medium systems.

Regardless of the method used, the state requires that the WHP areas include the one, five, and ten year time of travel zones for groundwater. 'Time of travel' refers to the amount of time it would take for a particle of groundwater entering the aquifer at the boundary of the zone to reach the well after one, five, or ten years of pumping.

Results

The WHP areas were determined by combining the volumetric flow equation in combination with hydrogeologic mapping. The volumetric flow equation is as follows:

$$r = \sqrt{Qt / \Pi n H}$$

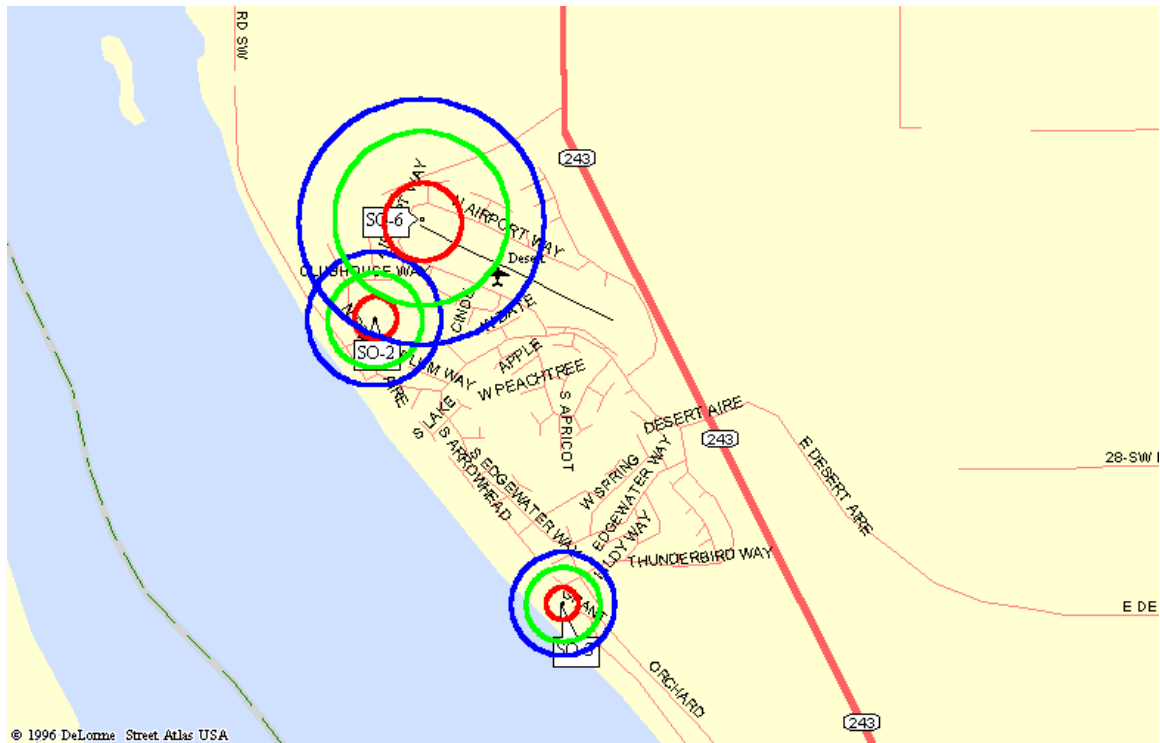
Where:

Parameter	S02
r = calculated radius of protection zone (ft)	
	six months: 242
	1 year: 340
	5 year: 760
	10 year: 1075
t = time of travel (years)	1,5,10
$\Pi = \text{Pi}$	3.14
n = estimated porosity	0.30
H= Open interval or length of well screen (ft)	49

Parameter	S03
r = calculated radius of protection zone (ft)	six month: 186
	1 year: 260
	5 year: 600
	10 year: 835
Q = pumping rate of well (cu. ft./year)	5,981,000
t = time of travel (years)	1,5,10
$\Pi = \text{Pi}$	3.14
n = estimated porosity	0.30
H= Open interval or length of well screen (ft)	91

Parameter	S06
r = calculated radius of protection zone (ft)	six month:444
	1 year: 625
	5 year: 1400
	10 year: 1975
Q = pumping rate of well (cu. ft./year)	9,158,300
t = time of travel (years)	1,5,10
$\Pi = \text{Pi}$	3.14
n = estimated porosity	0.30
H= Open interval or length of well screen (ft)	25

The porosity was estimated by utilizing a standardized value for sand and gravel. The Columbia River, being a major surface water source, is likely to act as a hydrogeologic boundary for groundwater in the local unconfined alluvial aquifer. That is to say, groundwater is not likely to travel beneath the River in order to contribute to Desert Aire's wells. Therefore, areas beyond (southwest) of the river will not be considered for WHP purposes.



Using the information above, the one, five, and ten-year time of travel radiuses were calculated, and the corresponding WHP zones appear on fig. 2. Once again, it is important to emphasize that the WHP areas demonstrated here are useful planning tools, but do not represent precise groundwater capture zones for the wells. A more accurate WHP area depiction would require more information and resources than are currently available. Furthermore, developing an awareness of the system's contamination potential is a higher priority at this time.

POTENTIAL CONTAMINANT SOURCE INVENTORY

Methods

Field surveys were conducted in order to inventory potential sources of contamination and identify land use activities that may pose threats to groundwater quality. Windshield and walk-through surveys were completed to examine land use activities within the entire Desert Aire service area. The water system operators conducted the surveys with assistance from Evergreen's groundwater technician. The type and location of all potential sources of groundwater contamination was recorded on base maps of the community (fig. 3).

Results

The surveys indicate that the community is subject to a limited number of land use activities. The wells are situated in predominately residential areas. SO-6 has the largest defined wellhead protection area. It covers a majority of the airfield and golf course. There are storage tanks for petroleum products located within the WHPA, but they are small (500 gallons or less). An above ground tank is located next to the shop facility, it

Last but not least, certain contamination pathways may exist that could threaten the quality of local groundwater. The most direct pathway would be through surface water seepage along well casings. Poorly sealed wells and those with deteriorated (rusted and/or cracked) casings can allow surface water to migrate into pristine aquifers below. This is caused by inadequate well construction and pertains to both abandoned wells and wells currently in use. Proper maintenance and periodic inspection of the well can minimize this threat. Additionally, the existence and location of abandoned wells are poorly documented, which makes this aspect difficult to address. If an abandoned well is located, DOE's Central Regional Office will be contacted for information about proper closure options.

MANAGEMENT STRATEGY

Sanitary Control Area

Of primary concern are impacts from activities within the sanitary control areas. There is no activity presently allowed within the defined sanitary control areas, and the owners association has legal control over them. Fences are present around all wells.

Wellhead Protection Areas

Desert Aire's water system is in an excellent position to be able to continue providing quality drinking water to residents, based on past and present land uses. It appears the most common potential threat of contamination stems from improper use or neglect of residential septic systems. Because residents ultimately have control over such systems, it is important that they realize they may have a direct impact upon the quality of local groundwater. To accomplish this, a public education campaign was initiated to convey the importance of proper use and maintenance of septic systems.

The goal of the educational campaign was to provide the necessary background of the WHP plan, followed with ways residents can protect their groundwater supply. To accomplish this, a WHP brochure (Appendix E) was designed specifically for the Desert Aire service area. The brochure contained: 1) A description of the WHP program; 2) An explanation of general groundwater principles; 3) Why residents should protect groundwater; 4) Information about Desert Aire's water system; 5) A map of WHP areas with well location; and 6) A list of local potential contaminant sources. Additionally, residents were encouraged to report potential contamination sources for inclusion in the WHP plan.

Secondly, an explanatory letter (Appendix E) was distributed along with the WHP brochure. The letter contained tips on how to properly maintain individual septic systems, and how to properly dispose of household hazardous wastes.

The final element was to publicly communicate the sensitive nature of the WHP zones in a more permanent manner. To accomplish this, high quality 'WATER SUPPLY PROTECTION AREA' metal signs were installed near the well. The signs help foster greater awareness of groundwater protection needs within the immediate vicinity of the wellhead.

CONTINGENCY PLANNING

Alternative Supply

A contingency plan is needed in the event that a contamination event or natural disaster results in the temporary or permanent loss of one or both of the wells. The contingency plan identifies the amount of water required to sustain the community, alternative sources of supply (inter-connects with other water systems, purchase, and delivery of water), and future sources of drinking water. Desert Aire is not a large community, but it has 1.2 million gallons of storage capacity built into the system. If the water source fails for any reason, at typical usage of 500,000-900,000 gallons per day, the utility (without water conservation in effect) can last for nearly 2 days on storage alone. The association's board of directors has the legal authority to require water conservation when needed. In the past the community has faced prolonged power outages during times of high usage. After more than 18 hours without power in July, there was still a large quantity of water in the reservoirs.

The nearest potable drinking water supply outside the association is the city of Mattawa, 5 miles north. The community has corresponded with the US Army in Yakima, WA. The Army would be willing to provide tank trucks for potable water if ordered by their superiors. The community would contact the Grant County emergency management office in Ephrata to start the emergency water supply process.

Emergency Preparedness

As the ground in the WHP areas is very permeable, any spilled liquids would probably be absorbed quickly. During a hazardous spill event, a backhoe from the association could be used to help remove the contaminated material. As correlated with the local fire district (Grant County Fire District 8), they would respond and if appropriate, use absorbent materials, or if they could not handle the spill they would contact Grant County for the nearest Haz-Mat responder. Grant County DOH, and Washington DOE would also be contacted. A list of people and agencies to be contacted in the event of an emergency is included as Appendix D.

A hazardous spill response notice (Appendix E) was sent local emergency responders and local emergency planning agencies to inform them of the sensitive nature of the WHP areas. The agencies can use this information to evaluate whether changes in hazardous spill response measures are needed to protect the water supply. The water system has also implemented an Emergency Response management Plan to evaluate the degree of hazard for a situation. The plan is included as Appendix G.

Concluding Remarks

Desert Aire's water system is in a good position to continue providing a safe and reliable drinking water supply. The community recognizes that the most effective way to protect the groundwater supply is to prevent contamination. The utility has had an impressive record of public education. There have been many occasions where a **gentle reminder to local property owners was needed to emphasize the importance of ground water protection.** An example of this effort is included as Appendix F. The utility has been conscious of the need for WHP for many years. They are unique for small systems

in the state of Washington. This plan serves the public interest by protecting the drinking water supply at minimal cost to consumers, while maintaining compliance with current drinking water regulations. With the continued dedication of the water operators, and efforts to educate the public, Desert Aire will have a clean, reliable water supply far into the future.

APPENDICES

Appendix A: Well Report (Log)

Appendix B: Susceptibility Assessment

Appendix C: Potential Contaminant Source and Notification List

Appendix D: Resource Contacts

Appendix E: Letters of notification and Educational Brochure

Appendix F: Other Community Correspondences

Appendix G: Water System Emergency Management Outline

Appendix C
Potential Contaminant Source and Notification List

This information has been sent to the following agencies:

Grant County Emergency Management
Grant County Fire District #8

Appendix E

RESOURCE CONTACTS

Grant County Department of Health

Charlotte Blanchard

**Ephrata, WA 98
(509)-754-6060**

Washington Department of Health

Wellhead Protection Program

David Jennings

PO Box 47822

Olympia, WA 98504-7822

(360) 586-9041

District Engineer

Scott Torpie

Spokane, WA

(509) 456-3115

Washington Department of Ecology

Central Regional Office

Yakima, WA 9

(509) -

U.S. Environmental Protection Agency

Mary Ann Helferty

Source Water Protection

1200 Sixth Avenue

Seattle, WA 98101

(206) 553-1901

American Water Works Association

Small Systems Department

6666 West Quincy Ave.

Denver, CO 80235

(303) 794-7711

Washington Dept. of Natural Resources

Emergency (hazardous spill) Response:

(515) 28

Evergreen Rural Water of Washington

738 Cascade Way

Ellensburg, WA 98926

(509) 962-6326

Appendix E

Notification Letters and Brochures

Appendix E

Community Educational Letters

Appendix E

Emergency Management Response Plan

Emergency Contact Listings

Personnel Call-outs

Chris Guillen	830-4332
James Curdy	932-4466

Equipment Operators

Ray Brothers	932-4530	Tex's Construction	932-4820
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Suppliers

H D Fowler	248-8400	National water works	1800-422-0057
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Emergency Support

ALL EMERGENCY SERVICES	911
Dispatch (non emergency)	888-431-9911

State Department of Health	456-3115
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Emergency after hours DOH Hot Line	877-481-4901
Evergreen Rural Water	962-6326

Grant County Emergency Management	762-1462
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Grant County Fire Dist. 8	932-4777
Grant County Sheriff	800-572-0119

Grant County Health Department	754-6060
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American Red Cross	783-6195
	457-1690

Appendix E

Appendix A. Misc. Users

- A. The Largest group in this class is the Shopping Center Owners Association.
- B. Other individuals and groups under agreements with Desert Aire Owners Association for water service.

The following is a listing of individuals and or groups that were invited to join and be included in Desert Aire Owners Association's water service boundary area, and are included in planning and allowed water service when the need arises.

These individuals and groups will be paying their CUCF assessments and will receive water service when so desired under the terms of their agreements with the Owners Association. Their water rates shall be set according to the terms of the same agreements.

The following individuals have signed recorded agreements with the Owners Association for water service.

Marge Taylor Lot 608 Div. 8
James Enbody Lot 606 Div. 8
Steve Miller Airport Lot West End of Div. 7
Riverside Presbyterian Church
Grant County Fire District 8, Desert Aire Station
Desert Aire Motel and Mini Mart
Bob Buhler Lot 612 Div. 8
Gus Carlson Lot 610 Div. 8
Desert Aire Senior Center

Included see copy of a sample agreement that was used in negotiation with individuals.

The following individuals are not under the agreement and are not included in future planning and are not paying CUCF assessments.

Bruce Eskildsen
Holmberger's Mini Storage
(See copy of attached notice that was sent out.)

Appendix E

Desert Aire

Owner's Association

WATER DEPARTMENT
215 Desert Aire Drive North
Desert Aire, WA 99349
Telephone: (509) 932-5202
Facsimile (509) 932-5844

July, 25, 1997

RE: Final disposition of individuals who have not responded to the request to join the CUCF program.

Holmberger's Mini Storage
Bruce Eskildsen, Airport Hanger

As of this date, only two individuals had not responded. Numerous phone calls were made in an effort to extend to them a last chance to join. With no response, it is the position of the Water Department and the Water Committee of Desert Aire Owners Association, that these two properties shall not be included in any future water and or sewer planning that may take place. Further, in the future if they should need to have water delivery from the water system of Desert Aire, and the water system is capable of servicing them, they can only do so as an outside user, with non-platted water rates, and installation fee's. They also shall have to enter into an interruptible water service agreement as part of being able to receive water service. Water shall only be delivered as spelled out by the terms of the agreement. No guarantees shall be made as to the available fire flows for these individual properties since they are not part of the planned community development.

Steven L. Mitchell

Water Department Manager
Desert Aire Owners Association

cc: Grant County Building Department
Grant County Planning Department
Grant county Fire Marshall
Desert Aire Board of Directors
Architectural Committee.