2011-482

ATTACHMENT A

NORTHWEST WATER SYSTEMS

SATELLITE MANAGEMENT AGENCY PLAN

Amended March 24, 2011

NWS
Northwest Water Systems

March 24, 2011

King County UTRC
Attention Steve Hirschey
King Street Center
201 S. Jackson St., Suite 500
Seattle, WA 98104-3855

Subject: Northwest Water Systems, Inc. SMA #119; Satellite Management Agency Plan, ODW Project #07-1201

Dear Steve Hirschey,

In response to the comments you provided to Linda Kildahl of ODW on September 13th, 2010, Northwest Water System's, herein after referred to as NWS, Satellite Management Agency Plan has been altered at the end of Page 16 to clarify the following items:

1. The responsibility for applying and completing franchise agreements as well as Right of Way permits is left in the hands of the water system owner.
2. The responsibility for completing and updating Water System Plans and Small Water System Management Programs is the responsibility of the owner. Education surrounding this responsibility is provided to our managed clients, but NWS does not require water systems we manage to use our engineering and planning services, although they are made available.
3. NWS provides each County we work in with a copy of the contract for management services at the point of origination, as well as in the case of termination. Copies of these contracts are provided within 30 days of signing, and notification of termination is provided to the county within 30 days of the effective termination date, if not sooner.

The final comment contained in the September 13th, 2010 letter was regarding the validity of the idea that no systems NWS has managed have had their permits turn to red or yellow. NWS has managed water systems that have had their operating permits change to yellow or red. The situations under which this has occurred in the past has been unique in each situation. Since October of 2009, when I took over management of NWS, no system in the NW Region has had an operating permit change to yellow or red, and in the SW region the only cases were with strong communication between DOH, NWS and the system, where a choice was being made by the owners that was known to be risky, such as Pebble Ridge choosing to refrain from moving onto continuous disinfection and alternatively choosing to perform two different shock chlorinations over the course of more than 6 months. The first of these chlorinations cleared up a total coliform bacteria contamination problem in one of their wells, and the second failed to successfully eliminate bacteria that had been introduced to the rectangular concrete reservoir. This resulted in 4 confirmed hits in 12 months, which results in a red operating permit. They have entered a BCA since and have had chlorination engineered and installed within the identified timelines.

Short answer, we have had operating permits change colors. The more full answer is that we work very aggressively in these instances before the operating permit colors change, to communicate with everyone involved what is happening. I also think it should be taken into account that we manage over 135 group A water systems that we do not own, and therefore are not in a position to specifically force to take actions. We are not an enforcement agency, and use education and identification of potential consequences both to health and to a systems financial status to bring about action. We have been very effective in eliciting positive change with these methods.

Thank you,

Jon Wiley
President, Northwest Water Systems, Inc.

NORTHWEST WATER SYSTEMS

SATELLITE MANAGEMENT AGENCY PLAN

Amended March 24, 2011

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AUTHORITY

Northwest Water Systems, Inc. (NWS), Satellite Management Agency No. 119, is approved by the Washington State Department of Health (DOH), and operates under the auspices of Chapter 246-295 of the Washington Administrative Code (WAC).

Northwest Water Systems, Inc. is a Subchapter S corporation incorporated in the State of Washington charged by its board of directors to provide management, planning and engineering services in the area of domestic water supply.

STATEMENT OF INTENT

It is the intent of Northwest Water Systems, Inc. to provide Management Only Satellite Management services within our defined service area.

Contract Operator services are offered on a case-by-case basis. Currently, Contract Certified Operator services are offered in our defined service area and Jefferson County.

Planning and Engineering services are offered throughout Washington State.

NWS presently has management contracts with 133 Group A and 286 Group B water systems. NWS does not intend, at this time, to own systems. One Group B water system is owned by the company. NWS intends to divest itself of this asset, when feasible. Should NWS intend to own systems, an addendum to this plan shall be prepared and submitted.

A list of our managed systems is found in Appendix H.

COMPANY OWNERSHIP

Northwest Water Systems is a Subchapter "S" Corporation incorporated in Washington State. Present shareholders are Reg Hearn, Ron Wiley, Jim Wiley and Todd Krause. Jon Wiley is the President and the Chief Executive Officer of the company.

NWS is located at 7245 Bethel-Burley Road, Port Orchard, WA 98367. The mailing address is P. O. Box 123, Port Orchard, WA 98366. The primary telephone number is 888-881-0958.

The primary contact for the corporation is the President/CEO, Jon Wiley. He can be reached through the company office or on his mobile phone (360.340.8058) at all times.

HISTORY

Northwest Water Systems, Inc. was incorporated in 1981. The original purpose of the corporation was to own small community water systems. Up until 1996, NWS acquired, and owned and operated, thirteen small community water systems.

In 1996 it was decided to change the nature of the company from primarily owning water systems to primarily providing contract management. Divestiture of water systems began in 1996 and was completed in 2000.

In 1997 with the introduction of Reg Hearn as the President and Chief Operating Officer, NWS applied for, and was granted, approval as a Satellite Management Agency through the vehicle of an addendum to the Water System Plan. The original request was for approval to provide SMA services in Kitsap and Mason Counties. Subsequent requests, and approvals, included Pierce, Thurston and Grays Harbor counties. In addition, NWS offers Contract Operator services in Jefferson County.

The 2003 addendum to the SMA plan, which included expansion into Thurston and Grays Harbor counties, expressed NWS's intention to provide SMA services throughout western Washington. This addendum also detailed NWS staffing at that time, which had changed considerably since the original approval in 1997. The 2003 expansion was a result of NWS's purchase of Arcadia Utilities SMA contracts. Reg Hearn was replaced by Jon Wiley as President/CEO on October 5th, 2010. Reg moved to a role as Vice President, and actively participates in the business today.

FINANCIAL CAPABILITY

NWS has been in the business of maintaining and operating small water systems for over 25 years. In that time, the company has consistently met its obligations and earned a modest profit.

In 2009, NWS earned total revenues of $719,796.35. Expenses totaled $718,482.00, leaving a profit for the year of $1314.35 from operations. Except for a modest annual distribution to shareholders in order to pay federal taxes, all profits at this time are retained in the corporation. It is envisioned that periodic dividends will be distributed at some time in the future.

As of March 31, 2010, NWS had Current Assets of $203,729.88. Current Liabilities totaled $40,293.04, with a Working Capital of 163,436.84. Financial statements as of the 31st of March 2010 are included in Appendix J.

NWS has debt funding available from shareholders and maintains a line of credit with our primary banking institution with a limit of $30,000, which we have never used. At a time when NWS was contemplating acquiring some water systems we were able to obtain a letter of credit for $1.2 million. The only time that NWS has resorted to debt financing of operations was for a couple of quarters following our acquisition of Arcadia Utilities' contracts when NWS established a line of credit from shareholders and utilized approximately $8,000. The line of credit was retired by the end of the fiscal year. The remainder of NWS's operations and expansions have been financed from operational revenues.

The expansion into additional counties detailed elsewhere will be financed from current reserves and from the line of credit as necessary to meet short term liabilities. It is not expected that debt-financing will be needed to facilitate the expansion with the exception of a vehicle purchases. Vehicle purchases are debt-financed if interest rates favor debt financing over cash purchase, which has been consistently the case in recent years.

NWS currently leases approximately 1,600 square feet of office space. Approximately 800 feet are dedicated to supporting management operations, while the remainder supports engineering/planning activities.

The company operates a computer network that consists of a server and 13 client computers, along with the necessary routers and switch panels. Along with the usual office printers, the network serves two large format printers/plotters.

SERVICE AREA

The present area Northwest Water Systems serves for Satellite Management Services is:

Grays Harbor County
Kitsap County
Mason County
Pierce County
Thurston County

Additionally, we have active Certified Operator contracts in Jefferson County.

With the submittal of this SMA Plan, we are requesting an expansion of NWS's service area. In addition to the currently served counties, we are requesting approval for the following counties:

Clark County
Cowlitz County
King County
Lewis County
Pacific County
Skamania County
Wahkiakum County

The increase in service area will require additions to NWS staff and facilities. NWS is planning to open a satellite office to facilitate services to our Southwest Region. That office will be located in Vancouver Washington.

Design, Engineering and Planning Services are offered State wide.

For organizational purposes, NWS's service area is divided into four regions. Each region is subdivided into numbered areas. The four current regions are North Sound, South Sound, East Sound and Southwest.

North Sound
- Kitsap County
- North Mason County
- West Pierce County

South Sound
- South Mason County
- Jefferson County (Contract Operator only)
- Thurston County
- Grays Harbor County

East Sound
- East Pierce County
- King County

Southwest
- Lewis County
- Pacific County
- Wahkiakum County
- Cowlitz County
- Clark County
- Skamania County

North Sound, East Sound, and South Sound are currently managed out of the Port Orchard office. When the Southwest region is activated, it will be managed out of the satellite office. Should NWS elect to expand further north on the east side of Puget Sound, an additional Satellite Office will probably be necessary.

Assignments to specific regions are subject to change. Areas are number sequentially and once assigned are not generally changed.

CONDITIONS OF SERVICE

Water systems requesting management services from NWS must meet the following criteria:

- Located within NWS's designated and approved service area
- Located outside the claimed service area of a Group A water system
  OR
  Obtain a letter of denial of service from that Group A water system
- No ongoing DOH compliance actions
  OR
  Actively pursuing resolution of compliance actions
  OR
  Seeking NWS assistance in resolving compliance actions
- Community systems demonstrate community consensus to retain NWS
- Contract signed by a duly designated representative

Continued service requires the following:

- Timely payment of all NWS invoices
- Timely payment of all repair provider invoices
- Ongoing compliance with DOH regulations and requirements

POLICIES AND PROCEDURES FOR NON-COMPLIANT SYSTEMS

Part of NWS's services is to provide compliance assistance to systems. We actively seek and market to water systems that have compliance problems.

As outlined in Conditions of Service, a system with compliance issues seeking management services from NWS must be actively engaged in resolving compliance problems. Often, these systems will be under a Bilateral Compliance Agreement (BCA) with the Office of Drinking Water.

"Actively engaged" means that the system has contracted with NWS, or another engineer acceptable to NWS, for engineering/planning services. Further, the system must be actively implementing recommendations from the engineers/planners and any requirements from the Office of Drinking Water. If a BCA is in place, "actively engaged" means working a schedule that will meet the deadlines within the BCA.

NWS can not assist a system that declines to enter into a Bilateral Compliance Agreement or will not work towards the goals specified in an agreement.

Upon application for management services by a system with compliance issues, NWS staff will contact the appropriate Office of Drinking Water regional engineer, or other agency of jurisdiction, and request information regarding the compliance issues and progress made towards resolution.

Engineering shall report regularly to the Operations Supervisor progress towards resolution of compliance issues.

Should progress towards resolution halt or slow to an unacceptable level, NWS shall meet with the system to determine the reasons and to determine courses of action to restart or accelerate the process.

NWS will provide water systems with as much assistance as possible in order to keep progress on track. Assistance may include, but is not limited to, engineering services, moderating community meetings, budgeting and rate setting exercises, construction management services, and searches for alternative funding.

Should a system under management contract fall into non-compliance, NWS will immediately arrange a meeting with the system to determine the nature of the problem, outline immediate tasks, and gauge the water systems determination to resolve the problems.

Any system under management contract unwilling to comply with the regulations will be terminated unless there are extenuating circumstance rendering continued management services desirable. Such circumstance will be discussed with the Office of Drinking Water and

management services can be continued with the knowledge and support of the Office of Drinking Water.

Continued management services to system unable to comply with the regulations will depend on the nature of the compliance issue, the approach of the water system to the issue, and approval by the Office of Drinking Water.

SERVICES

Management

NWS offers management services to water systems conditional on their continued desire to work towards regulatory compliance. In this situation NWS serves as the person in responsible charge of the water system, and acts at the system's designated purveyor.

MANAGEMENT SERVICES, OPERATIONS AND MANAGEMENT

Northwest Water Systems (NWS) shall become acquainted with the managed system's physical facilities including transmission lines, valves, pumps, storage facilities, source(s), controls, treatment equipment and monitoring equipment, etc, as well as their operations and maintenance requirements. NWS shall provide the following Satellite Management and Operations services as described below:

Operation and Maintenance

Daily scheduled operation and maintenance of all managed systems shall be provided in accordance with accepted public health practices. Daily operation and maintenance includes, but is not limited to: taking routine coliform samples as directed by ODW, and interpretation of sample results; source meter readings; and monitor pressure tank and/or reservoir readings. Site visits necessary to perform these services shall be conducted as agreed to by contract or as deemed necessary by NWS.

Scheduled preventative maintenance programs shall be implemented as agreed to by contract. These programs may include, but not limited to: inspecting the water system components for malfunctions, performing minor repairs and/or arranging for major repair; exercising all valves and fire hydrants, and periodically flushing the water mains.

Recorded instrument readings and laboratory tests may be analyzed to determine locations and causes of any malfunctions. Water system components shall be adjusted as needed. Proper records, as required by both the equipment manufacturer and the Office of Drinking Water, shall be maintained.

NWS shall perform, or arrange for, emergency repairs within a reasonable time after notification has been made that repairs are needed. Minor repairs will be performed by NWS. Major repairs will be performed through operating agreements with local drilling, plumbing, or electrical companies. The contract shall spell out approval procedures to be taken prior to the performance of both emergency and routine repairs.

NWS will arrange for the inspection of backflow prevention devices and air gaps. They will also arrange for the annual testing of all backflow assemblies

NWS will arrange for locater services for construction and repair projects. The locater services will be invoiced to the system owner as a project cost.

NWS will implement any Capital Improvement Program for its managed systems.

NWS will respond to informational requests from our system's customers and the press.

Pumphouse Maintenance

Visit all Group "A" Community system pumphouses at least monthly with higher frequencies depending on system size and complexity. Frequency of visitation of Group "A" Transient Non-Community, Group "A" Non-Transient Non-Community, and Group "B" system pumphouses is dependant upon the Contract but is typically quarterly.

Pumphouse Check List

Sweep floor if or as required.
Check Pre-Charged Tanks.
Check Reservoirs, Hatches and Vents.
Check Solution Levels (Chlorine, Aqua-Mag, Salt, Etc.)
Check Pump Operation.
Check Treatment Operation.
Check Filters.
Read source meter(s) and record in log and on Work Order

Look for leaks in pump house or any other problems. (i. e. rodents, insects, holes in walls or ceilings, or anything out of the ordinary) Note on work orders. Use weed wacker to clear vegetation in summer.

Pre-Charged Tanks. If they sound defective, cycle the pump to obtain "on" and "off" pressures. Verify the pressures with your own gauge. It they have a hose bib, attach a hose to the hose bib. Close the shut-off valve to the tank, so that water cannot enter. Open the hose bib, drain the water out of the tank, and close the valve. Check the tank charge. Recharge the tank if necessary with an air-compressor, and set pressure 2-4 psi. below pump cut-in pressure. If no hose bib is available to drain the tank, make a note to that effect on the repair work order.

Pre-charged tanks should be checked as often as possible, but no less than once per year.

Hydro-pneumatic Tanks. If the tank is equipped with a sight glass, the water level should be approximately halfway up the site glass. If the tank is not equipped with a site glass, observe the condensation line on the tank. If conditions are such that there is no

condensation on the tank, open a valve somewhere to get a flow something below full pump capacity. Observe pump cycling. A pump cycle (from pump-on to pump-on) should be no less than six minutes.

If the water level is above the halfway point, or if pump cycling appears short, the tank is low on air. If the tank is equipped with a compressor, drop tank pressure and see if the compressor comes on. If it does not, the repair provider will need to be contacted.

If the compressor does not come on, check the compressor pump-on setting to ensure that it is equal to or below system cut-in pressure. Adjust if necessary.

If the tank is not equipped with a compressor or other means of recharge, you will need to re-charge the tank. Turn off the pump(s) feeding the tank and close the tank's outlet valve. Open the tank's drain valve and drain the tank. Close the drain valve and charge the tank, using the compressor in the van, to approximately 5 psi below system cut-in pressure. Turn on the pump(s). When the tank pressure reaches system cut-off pressure and the pump(s) stops, open the outlet valve.

Reservoirs. Make sure that the hatch is on and secure with a lock (if applicable). Make sure that all vents have screens so birds or other creatures cannot get in. Check for leaks or cracks in the reservoirs, clean (sweep) off top, and spray with a chlorine mixture to remove any moss.

Solutions. Mix Chlorine to concentration on the work order. (Use Mult-Clor and wear gloves as mixture will bleach clothing.) Ensure that mix is noted in the pumphouse. Discard and replace all chlorine solutions over 60 days old.

Aqua-Mag. Mix to concentration listed on work order. (It comes in barrels. Pump into containers for transport in the vehicle.)

Salt. Make sure that tanks are full. Check to see if it needs rust remover or not.

Clocks/Timers. Some systems have them. Check to make sure that time is correct. (behind black lid on top of system)

Chlorine Residuals. Check them. If they are too high or low, adjust the injector pump. If the injector pump is defective, repair or replace it.

Filters. Bleed off pressure line. (little red button on most) Use wrench to remove casing. Check filter; Replace if necessary. Put Vasoline around edge (where gasket is), and hand tighten. (Do not use wrench to tighten)

Static Water Levels. Depending upon the well, there are two options:

1) If there is a vent pipe, you can remove it and take the static water level by pointing the sonic sounder down the opening.

2) If there is no vent pipe, and the well is not sealed, you can un-bolt the top and take off the cap. Take the static water level and replace the cap. Make certain that all gaskets are in place, and then re-tighten the nuts.

Static Water Levels must be taken after the well pump has been off long enough to ensure recovery from pumping levels.

Water Sampling

Northwest Water Systems, Inc. has an ongoing relationship with Twiss Analytical Laboraties. NWS functions as a sample drop-off location for Twiss with a refrigerator serving as the drop point for all samples.

Twiss picks up samples no later than 8:15AM Tuesday through Friday mornings.

Types of Samples:

Arsenic	
Coliform	
Gross Alpha	Total number of Alpha Particles measured
HAA5/TTHM	Haloacetic Acids 5/Trihalomethanes
Lead/Copper	
IOC	Inorganic Chemical Analysis
Nitrates	
Radionuclides	
SOC	Synthetic Organic Chemical
TOC	Total Organic Carbon
VOC	Volatile Organic Chemical

Instructions are available On-Line at WWW.TWISSLABS.COM, and are also listed in Appendix C. Also included is a Bottle List.

IOC's	(2) Cube Containers; as close to source as possible (see copy from Twiss for detailed instructions).
SOC's	Special containers from the lab. There are (3) methods, 525.2, 515.1, and 531, taken before distribution but after treatment. (See copy from Twiss for detailed instructions.)
VOC's	Special containers from the lab. Highly sensitive; cannot touch inside of lid, no air-bubbles bigger than a pea. (preferably none) (2) 40ml bottles with acid – (1) field blank. Don't do anything with field blank. Collect after

	treatment but before distribution. (See copy from Twiss for detailed instructions.)
Coliform (Bacteria)	Bacteria bottles. Taken within distribution system. Take off screens, hoses, aerators, etc. Spray sample site with disinfectant. Let water run for a couple of minutes (or longer if outlet is not used frequently). Open bottle and fill. Very sensitive. Do not touch inside of lid. (See form from Twiss or pamphlet from ODW)
Nitrates	(1) Cubatainer. Take as close to the source as possible. Run water for 2 or 3 minutes . Fill Container. (See form from Twiss for detailed instructions).
Lead/Copper	Make arrangements with water system contacts for dropping off containers. Usually (5) Cube Containers are required, but this can vary. The sample is to be taken from the inside of the house with water sitting in the lines for at least 6 hours, but no more than 12 hours. The first thing in the morning usually works best. Do not run water before taking sample. (See form from Twiss for detailed instructions).
Radionuclides/Gross Alphas	Use special containers from the lab. Sample is to be taken as close to the source as possible. Run water for 2 to 3 minutes. Fill Bottle. (See form from Twiss for detailed instructions).
Arsenic	Use (1) Cubatainer from outlet as close to the source as possible. Run water for 2 to 3 minutes. Fill Bottle. (See form from Twiss for detailed instructions).
HAA5/TTHM	Use special containers from the lab. (See form from Twiss for detailed instructions).

Administrative

NWS will serve as the designated Purveyor for all systems that it manages unless otherwise specified by contract, and as acceptable to the ODW.

NWS will read source and service meters, if requested, on a schedule acceptable to Office of Drinking Water and the system owner. NWS will prepare, and deliver, utility bills to system customers every other month, unless otherwise stipulated in the contract. Receipts will be deposited in the system's checking account. The Owner will be provided with periodic accounts receivable statements.

All system files will be maintained by NWS, with copies forwarded to Owner or Owner's representative.

NWS will meet public notification requirements in the event of a sampling failure or a backflow incident in any of its systems. Sample public notification forms are included in Appendix E. In addition, current forms are available in MicroSoft Word format in the Plate file folder.

NWS will represent the Systems it manages during Sanitary Surveys.

NWS will subscribe the systems it manages to a One-Call Locate service, in accordance with RCW 19.122.030 unless otherwise specified by contract with the system (some systems already handle this responsibility).

NWS will supervise the ordering of materials and parts for the operation and maintenance of its systems.

NWS will revise the Water Facilities Inventories (WFI's) for its managed systems and submit them to Office of Drinking Water.

NWS will provide emergency telephone response numbers for all of its managed systems.

The water system retains the responsibility for applying and completing franchise agreements and Right of Way permits.

As part of our SMA service, we do not require water systems to change over to using our engineering and planning services for WSP or SWSMP document creation and updates. These are services we educate the systems we work with about, including when said documents are required and why. After this education, if the water system would like to have our organization engage this work, it is done so through an outside contract with our Engineering/Planning Department

NWS will provide the County a water system is managed in with a copy of the contact for management as well as notification in the case that a management contract is terminated within 30 days of termination.

MANDATED MANAGEMENT PROGRAMS

Coliform Monitoring

All coliform monitoring will be conducted in accordance with the Coliform Monitoring Plan (CMP) for the specific system. CMP's are developed from information in the system's Water Quality Monitoring Report (WQMR), and/or the Water Facilities Inventory Form (WFI). Copies of the CMP, WQMR and WFI can all be found in the system's management file.

All field technicians shall have a notebook in their vehicles containing copies of the CMP for each system to which they are assigned. Should it be necessary to revise a CMP, the field technician must ensure the revisions appear in all three copies of the CMP (one in the management file, one in the master CMP notebook, and one in the field technician's notebook).

Group B coliform monitoring will be conducted on the schedule outlined on the WFI. Group B compliance samples must be taken from the distribution system unless otherwise instructed.

Specific procedures for failures and notifications are located in the Appendices.

Water Quality Monitoring

Water Quality Monitoring includes monitoring systems for Inorganic Chemicals, Volatile Organic Chemicals, Synthetic Organic Chemicals and Radionucleides. Monitoring schedules vary from system to system depending on the size of the system, nature of the system and the existence of any monitoring waivers.

Water Quality Monitoring is conducted in accordance with the schedules and locations detailed in the annual Water Quality Monitoring Report distributed by the Office of Drinking Water. The WQMR is usually issued within the first quarter of the year to which it applies.

NWS maintains a separate record of required monitoring for each water system. This record is identified as the Water Quality Monitoring Form. This form is updated following each monitoring cycle for the water system.

Unless otherwise required by the agency of jurisdiction, the only Water Quality Monitoring required of Group B water systems is an initial Inorganic Chemical analysis and a Nitrate sample every three years.

Lead/Copper (Corrosion Control) Monitoring

Group A Community water systems and Group A Non-Transient Non-Community water systems are required to conduct Lead/Copper Monitoring in order to determine the corrosivity of the delivered water.

Lead/Copper samples must be collected from customers inside taps after the water has sat for no less than 6 hours and no more than 12 hours. Monitoring frequency depends on the size of the system and previous Lead/Copper results. Frequency for each system is detailed in the annual Water Quality Monitoring Report.

Disinfection By-Products Monitoring

Water systems that disinfect with chlorine are required to monitor for Haloacetic Acids and Trihalomethanes. Water systems that disinfect with ozone are required to test for bromide-based by-products. NWS does not, currently, manage any systems with ozone disinfection.

A Disinfection By-Product monitoring plan must be prepared for each water system that disinfects with chlorine. Detailed requirements for the plan are included in the Office of Drinking Water's plan form and in NWS's in-house form. Prepare the plan in accordance with the instructions included on the plan. A sample DBP form is included in Appendix E.

Disinfection By-Product samples must be taken in accordance with the plan. Frequency of testing is detailed in the annual Water Quality Monitoring Report.

Public Notification

Either failure to comply with mandated monitoring or analysis results that exceed the Maximum Contaminant Levels (MCL) trigger requirements to notify the users of the system.

The various types of monitoring have differing Public Notification requirements. Notification requirements can be found in the appropriate section of WAC 246-290. As soon as a failure to monitor or analysis exceeding the MCL occurs, contact the appropriate person at the Office of Drinking Water to notify them of the failure and to agree upon the appropriate notification.

"Occurrence" of a monitoring or MCL violation will deem to have taken place upon receipt of notification from the laboratory or from the Office of Drinking Water.

Preparation of the required notification is the responsibility of the Operations Supervisor who can either prepare the notification, or delegate preparation to office staff. Delegation of the preparation does not relieve the Operations Supervisor of responsibility for the accuracy and timeliness of the notification.

Notifications will generally be mailed to the system customers as soon after the occurrence as possible. Generally, notifications must be delivered between 30 days and a year following the occurrence, though some, like Acute Coliform Failures, have much shorter time frames. In any circumstance, it is NWS policy to deliver the notifications as soon as possible.

The exception to mailed notifications is the occurrence of an Acute Coliform Failure. An Acute Coliform Failure is an Unsatisfactory Coliform analysis that indicates the presence of Fecal

Coliform or E. Coli. In the event of an Acute Coliform Failure, notifications will be hand delivered to system customers. Every attempt will be made to deliver the notice face-to-face. If face-to-face cannot be accomplished, the notification may be hung on the main entry door.

Consumer Confidence Reports

Consumer Confidence Reports are due to the systems' customers no later than July 1st of each year. While some systems elect to prepare their own, NWS prepares the bulk of CCR's for the systems we manage.

Preparation of CCR's begins in late January and usually continues into the first week in June. It is the responsibility of the Operations Supervisor to prepare each CCR. Office staff then duplicates, stuffs and mails the completed CCR's. Office staff prepares the certification of delivery for the Operations Supervisor's signature.

The CCR offers a good opportunity to include other public education materials to system customers, such as cross-connection control and conservation information.

Consumer Confidence Reports must contain specific information. Details on the information required can be found in WAC 246-290-72003 through 72010. In outline, the CCR must contain the following information:

Source Water Information
Definition of specific terms
Information on detected contaminants
Information on Cryptosporidium, Radon and other contaminants
Compliance with National Primary Drinking Water Regulations
Variances and exemptions
Additional pertinent information

Generally, NWS utilizes preparation assistance available on the Federal Environmental Protection Agency website.

Cross-Connection Control

The Cross-Connection Control Program (CCCP) is mandated by section 246-290-490 of the Washington Administrative Code (WAC). Its purpose is to protect public water systems from contamination via cross-connections to non-potable (or contaminated) water.

The Satellite Management Agency (SMA), will use good engineering practices in the development and management of the program, relying upon publications listed in the references to this document for guidance. The SMA will coordinate with the Local Administrative Authorities (LAA) in the various counties and municipalities in which our water systems are

located. The coordination will consist of notification of the LAA when the SMA takes over management of the particular water system.

The SMA will develop a CCCP when required as part of a Water System Plan (WSP) or Small Water System Management Program (SWSMP). A CCCP may also be developed for a water system separate from the WSP or SWSMP requirements. The SMA will manage the CCCP as part of the SMA contract. The SMA can also manage a CCCP separately from an SMA contract using a CCCP contract. Samples of these contracts are included in the Appendices.

The CCCP shall consist of a Cross-Connection Control Policy document, a Cross-Connection Control Program document, and a Cross-Connection Control Survey document. The Policy document is a legal document signed by the water system representative. It lays out the rules used for enforcing the management of the water system. The Program documents the physical rules used with the program. The Survey document is filled out by the water system customers to detail any possible cross-connection hazards that they might have within their individual water services. Samples of these documents may be found in the Appendices.

In the case of small Transient Non-Community (TNC) and Non-Transient Non-Community systems, WAC 290-490 (1) (b) allows that if these systems take care of their hazards, they will be deemed to be "in compliance" without formal CCCP documents. In that case, the SMA need only send out CCCP Survey documents, field inspect for hazards, and take action on those hazards. This paragraph is also applicable to Class "B" water systems.

Other aspects of Cross-Connection Control services include conducting a Cross-Connection Control Field Inspection, Hazard Evaluation, Recommendations and Follow-up. Ongoing items including Hazard Elimination and Control, Annual Reports and Record Keeping, Backflow Assembly Quality Assurance Program, and CCCP Public Education Program may also be provided. Backflow Incidence Response, and Backflow Assembly Testing can also be included.

Water Use Efficiency Rule

The Washington State Legislature passed the Municipal Water Supply – Efficiency Requirements Act of 2003 known as the Municipal Water Law. One of the obligations of this law is to comply with the Water Use Efficiency Rule (WUER). This rule, effective January 22, 2007, affects all Group A water systems with 15 or more connections that use water in a residential manner.

The Key Elements of the WUER are Water Use Efficiency Planning Requirements, a Distribution Leakage Standard, and Water Use Efficiency Goal-Setting and Performance Reporting.

Planning Requirements The Satellite Management Agency will collect ground-water extraction figures for all of its systems. This will be done through the source meters installed at all ground water supplies (wells). Where source meters are not installed, these figures will be estimated from well run times or estimates based on usages for similar, but metered, systems.

Source meters shall be installed as soon as finances allow. The figures obtained shall be compared to the water rights for the wells. Over-pumping wells will be adjusted by installation of flow restrictors. Flow figures will be analyzed for evidence of excessive usage or possible system leakage. Flow data will be reported to the Office of Drinking Water annually.

Distribution Leakage Standard The rule requires that all water systems maintain their distribution system leakage below 10 percent of their production, and report leakage as a percentage, and also a volume. All un-metered water, except for estimated amounts for flushing, fire protection, and other un-metered uses, will be considered leakage. The prime method for measuring leakage is the use of source and service meters. Leakage information is reported in planning documents and annually in performance reports.

Goal setting and Performance Reporting All Municipal Water Systems managed by Northwest Water Systems will set their initial WUER goals following determination by the courts of Washington on what is required and by whom. The goals are re-evaluated every six years. Annual Performance Reports will be submitted to Office of Drinking Water starting with when the State of Washington determines they need to be, and annually thereafter. They include:

Annual production total
Annual leakage information
Progress toward meter installation
Water use efficiency goals/Progress toward achievement

Metering Requirements Northwest Water Systems is working towards the installation of source and service meters on all connections required by Office of Drinking Water. Installation schedules for the systems to be metered will be provided when required. Installation of meters on existing connections will be accomplished when required. Installation of meters on new connections is presently required.

EMERGENCY RESPONSE

Business Hours
All emergency calls are directed to NWS office phone system. During business hours, which are 8:00 AM to 5:00 PM Monday through Friday except the holidays detailed in the Employee Manual, phones at NWS are answered by a live person.

If a water system emergency is indicated, the call is routed to the Operations Supervisor. If the Operations Supervisor is not in the office, he/she is contacted on his/her cell phone and informed of the emergency.

If the emergency requires an on-site presence by NWS, the Field Technician for the region will be contacted by the Operations Supervisor. The technician will then proceed to the site to evaluate the situation and determine a course of action. The Field Technician will contact the Operations Supervisor or the water system owner and communicate the recommended action.

If the Field Technician has not communicated with the water system owner, the Operations Supervisor will contact the owner and request approval for the recommended course of action. Given the nature of an emergency situation, NWS will take action, per our updated contracts, as necessary to protect the health of the residents on the water system experiencing the emergency.

The problem may be such that the best course of action is for the Operations Supervisor to contact the Repair Provider and request that they be the first responder.

After Hours
After hours responses are the same as those during normal business hours except the beginning of the communication process.

All customers served by all systems are provided NWS's office number. After hours calls are directed to a voice mail system. Contained within the voice mail system is a mail box for emergency calls.

An NWS staff member carries a pager at all times. That staff member is either the Operations Supervisor or a designated Certified Operator. In addition, that staff member carries a database, either electronic or paper, that lists all of the water systems' contacts and all of the contact information for the repair providers.

The Operations Supervisor, the President, the Satellite Office Supervisor, and designated Certified Operators all carry cell phones that are active 24 hours a day, seven days a week.

When a call is placed in the emergency response mail box, a page is sent. The page will start the emergency response process. Pager procedures can be found in Appendix B.

Satellite Office
Communication with the proposed satellite office will initially be through a cell phone that will be available via the certified operator carrying it, or voicemail at all times.

If the Operations Supervisor receives a call for an emergency on a system located within the Southwest Region, he/she shall contact the Satellite Office Supervisor. The Satellite Office Supervisor shall coordinate the reaction based on the procedures detailed above.

The Satellite Office computer system will be networked to the main office server. The Satellite Office Supervisor will have the same access to system data as the Operations Supervisor via a Virtual Private Network (VPN).

The Operations Supervisor may contact the President, at his discretion. The President will always be informed immediately of emergencies involving an Acute Coliform failure, or other serious public health risk, or emergencies that may result in personal injury or extensive property damage. Reports and updates of other emergency situations shall be provided to the President at convenient and appropriate times.

Notifying Regulators
NWS is required to notify appropriate regulators when drinking water emergencies occur. Generally, the first call should be to the Washington State Office of Drinking Water. This should be the first call even for Group B water systems. We have noted that many of the local health jurisdictions do not have after-hours emergency response numbers. ODW can assist in determining the proper notification process for each county.

If the emergency involves environmental hazards that are impacting the water system, such as hazard chemical spills, the local emergency services office should be contacted first.

See the following quick reference phone list for the appropriate telephone numbers.

EMERGENCY RESPONSE QUICK REFERENCE

Emergency Contact	Phone Number	Emergency Contact	Phone Number
Fire/Police/Medical	911	Pump/Pipe/Electric	See List
Emergency Services	911	NWS Pager	360-478-1782
Environmental Health	See County List	SMA: Northwest Water	888-881-0958
DOE Spill Response Team	360-407-6300	Engineer: Northwest Water	888-881-0958
King/Kitsap Spill Response	425-649-7000	Media Contact: NWS	888-881-0958
DOH Emergency 24-hour	877-481-4901	NWS 24-hr Emergency #	888-881-0958
Call before you dig	800-424-5555	Sandy Brentlinger SW Coliform Carol Stucky NWS Coliform	360-236-3044 253-395-6775
Power	See List	Operations Supervisor Cell Phone	360-801-1326
WSDOH SWRO WSDOH NWRO	360-236-3030 253-395-6750	President Cell Phone	360-340-8058

a) Power Outage See List

b) Well Pump Failure See List

c) A break in the distribution lines or transmission mains See List

d) Electrical problem See List

e) Coliform MCL Violations See Procedures. Contact Operations Supervisor

QUICK REFERENCE TELEPHONE NUMBERS

COUNTY HEALTH DISTRICTS

Clark County	360-397-8428
Cowlitz County	360-414-5599
Grays Harbor County	360-249-4413
King County	206-296-4932
Kitsap County	360-337-5235
Lewis County	360-740-2691
Mason County	360-427-9670 ext, 293
Pacific County	360-875-9356
Pierce County	253-798-6470
Skamania County	509-427-3870
Thurston County	360-704-2740
Wahkiakum County	360-795-6207

REPAIR PROVIDERS

Repair providers for each water system are listed in the NWS database for each system. However, if in doubt about who to call in an emergency, refer to this list.

North half of North Sound:		
Duckworth Pump & Well Drilling:	Well/Pump	360-779-9355
Levengood Construction:	Underground	360-697-1180
South half of North Sound:		
Nicholson Drilling	Well/Pump/Underground	360-876-4421
South Sound		
American Pump	Well/Pump/Underground	360-501-1000
Arcadia Well Drilling	Well/Pump/Underground	360-426-3395
Grays Harbor County:		
American Pump	Well/Pump/Underground	360-501-1000
Grays Harbor Equipment	Pump	800-574-8643
Rockey's Construction	Underground	877-289-2215
East Sound		
American Pump	Well/Pump/Underground	360-501-1000
Valley Pump	Well/Pump	425-562-1429
North Half of Southwest:		
American Pump	Well/Pump/Underground	360-501-1000
South Half of Southwest		
Mather & Sons	Well/Pump	360-256-1310

POWER COMPANIES

Clark County Public Utilities	360-992-3000
Cowlitz County PUD	360-423-2210
Lewis County PUD 1	800-562-5612
Mason County PUD 1	360-877-5249
Mason County PUD 3	360-426-8255
Pacific County PUD 2	360-942-5949
Puget Sound Energy	888-225-5773
Skamania County PUD 1	509-427-5126
Wahkiamkum PUD 1	360-795-3266

ENGINEERING SERVICES

Design and Analysis

Design Philosophy
Our desire is to provide our clients with the best water system designs possible by balancing regulatory requirements, cost, reliability, O&M, public health and safety, system desires, and future needs.

We believe that engineering is the art of developing simple and effective solutions to difficult and complex problems.

In general, the fewer components and processes involved, the more functional and reliable a system becomes. In making design decisions, the following criteria are used in order of importance:

1. The design must be ethical.
2. The design must be functional (it has to work).
3. The design must meet regulatory requirements.
4. The design must meet the client's needs.
5. The design must meet the client's desires.

Often times it is easier to specify equipment or develop a design from "stock plans", rather than customizing the design for a specific situation. This has the advantage of requiring less effort for the engineer and less hassle in submittal to regulatory agencies because the plans were already approved though a previous project. The obvious disadvantage to this approach is that unique circumstances found in each water system can result in designs from stock plans creating difficulties in installation, operation, and/or maintenance of the system. Therefore, we believe strongly in applying the above design principals rather than engineering around our convenience.

In addition, we believe that it is important to work closely with the contractors and operators who do the actual installation, operation and maintenance on water systems. It is much better to listen to their perspective than dictate what must be done. If a conflict arises, the issue must be researched and discussed until all parties are in agreement. Whenever the issue at hand is a matter of preference only, our policy is to always defer to the party who will be using or installing the system. We believe that we must take ultimate responsibility for whatever decisions are made.

Summary of Engineering Services
We provide full engineering and design services for all aspects of small water systems. This includes:

Group B Workbooks
Water System Plans
Small Water System Management Programs
Capacity Analysis Reports
Treatment Plant Designs

Reservoir Designs
Distribution System Projects
Booster Station Designs
Susceptibility Assessments
Cost/Financial Analyses
Source Approval Reports

Project Life Cycle

A project goes through the following steps (in order):

1. Initial contact and proposal (keep information in "pending" file)
2. Receive proposal and retainer
3. Open project
    a. assign project number (usually the contract date)
    b. open project in accounting software/ deposit retainer
    c. open project in NWS project database
    d. create file folder
    e. assign project to appropriate staff member
4. Project manager completes or oversees project
5. Project is submitted and invoiced to client (payment before release may be required).
    At minimum, copies will made and distributed as follows:
    a. regulator
    b. client
    c. contractor
    d. manager
    e. engineering files
    f. others as requested
6. Project is placed into the "To Be Reviewed" files.
7. Receive and respond to comment letter.
8. Return project to "To Be Reviewed" files.
9. Receive project approval, move to "To Be Constructed" files.
10. Do final inspection, comment and follow up or submit completion report
11. Receive final approval and file project in the "Archives".

Engineering Resources

The primary resource used in the design process is the Washington State Department of Health Water System Design Manual along with a multitude of guidance documents provided by the WSDOH. In addition, several EPA, AWWA, and other published references are available in the library.

Manufacturer's literature including pump curves, equipment capabilities, and performance claims are available in the library and on the internet and provide an invaluable source of information for component sizing. While manufacturer's claims are considered to be reliable, it is generally better to keep operating points away from the extremes of the recommended ranges, unless there is a specific reason to do otherwise. Some manufacturer's claims tend to be less reliable the further the actual operating point is from the optimal point.

One of the greatest resources we possess is other people. The experience of other engineers, contractors, and operators cannot be replaced by equations, "book learning", or cut sheet claims.

The internet is another valuable research tool; however, information found on the internet must always be verified independently since there is no other way to confirm the reliability of information posted.

Water System Planning

General

Water System Planning is generally accomplished by one of three means:

1. Water System Plan (WSP)
2. Small Water System Management Program (SWSMP)
3. Group B Workbook
4. Informal Planning

Water System Plans

WSP's are required for all new and significantly expanding Group A Water Systems. The WSDOH regional engineer can assist in determining which planning document is most appropriate.

The WSP was created primarily for larger water systems. The most important function of a WSP is to demonstrate where and how a system will grow. The WAC and WSDOH guidance provide the general structure and scope of the plan. Usually a pre-planning meeting with the WSDOH regional engineer and planner is very helpful in deciding on the specific scope and level of detail needed for the plan.

Small Water System Management Programs

The SWSMP is a living document that summarizes the information about a water system and identifies the system's primary current and future needs as well as how those needs will be met. Typically, SWSMP's do not need to be submitted to the WSDOH for review. However, if a system has significant technical or compliance difficulties, submittal may be required. The plans are composed of 18 elements, the heart of which (from a planning perspective) are Elements 15 and 16, System Assessment and Improvement Schedule, respectively.

Group B Workbook

The Group B Workbook was developed as a simplified means of providing some level of planning and a construction project report for Group B water systems.

The objective of the simplified document is to allow the design of Group B water systems to be accomplished by Water System Designers certified as such by the Local Health Jurisdictions (LHJ), without the involvement of a registered Professional Engineer.

While the Group B Workbook has proven to be useful towards the construction and initial compliance of Group B water systems, it has minimal use as a planning document.

Informal Planning

All water systems should, although many do not, have some sort of plan. Most Group B Water Systems have only a Group B Workbook, causing difficulties when major components fail, or other serious problems arise. Fortunately, through this SMA Plan and our in-house policies and procedures, all water systems we manage have some degree of de-facto planning.

However, all systems should have a specific plan for their system in writing identifying the existing and future needs of their system, how they will pay for major system repairs and upgrades, and how they will respond to an emergency.

The old axiom "No plan is a plan to fail" definitely rings true for all water systems.

Capital Improvement Programs

Capital improvement programs are vital for the ongoing viability of water systems. Unfortunately, many water systems fail to plan adequately for capital improvements.

In preparing WSP's and SWSMP's, NWS works with each water system to identify important components and estimate remaining useful life. Planning for capital improvements is a major part of rate setting.

Challenges faced by NWS in the area of capital improvement planning includes water systems that are not interested in considering future expenses, water systems that have previously failed to appreciate upcoming or existing equipment failures and have insufficient funds, the variability of life-cycle costs, and the lack of a planning requirement for Group B water systems.

NWS also faces the challenge that we can only recommend courses of action to water systems. Requirements on the part of NWS can only be enforced through contract termination.

CONSULTING SERVICES

Formal Consulting Services

For information regarding formal consulting services, please refer to the section on "Engineering Services."

Informal Consulting Services

We provide a wide range of informal consulting services. This area often has significant overlap with other areas, but deserves some discussion. These services can be divided into the following categories:

1. Technical Consulting
2. Sanitary Survey
3. Pro-Active System Review
4. Non-Technical Consulting (community or legal issues)

Technical Consulting

A technical consultation often leads to more formal engineering services. Therefore, we typically do not charge for such consulting. Technical consultations include (but are not limited to):

Informal Capacity Analysis
Treatment Strategies
Pump Sizing
Control Strategies
Cost Analysis

None of these are presented as formal designs, but rather as options or likely requirements.

Sanitary Survey

Sanitary Surveys are initiated for several reasons. Most of the initiative for sanitary surveys comes from either the Office of Drinking Water or the Local Health Jurisdiction, though there are circumstances in which NWS will initiate a sanitary survey.

ODW or the LHJ will initiate a sanitary survey for one of the following reasons:

- The routine survey required of all systems every 5 years.
- A Special Purpose Investigation (SPI) usually triggered by a system problem.

NWS may initiate a sanitary survey (conducted by NWS) for one of the following reasons:

- Upon first contracting with a system.
- A "pre-survey" prior to a routine ODW survey.

- Upon a coliform failure.
- A physical survey as a part of a routine site visit.

Since NWS retains all system files and is usually the primary contact (as listed on the system's WFI) a representative from NWS will be present for all ODW/LHJ sanitary surveys.

NWS has a Qualified Sanitary Surveyor on staff and most NWS sanitary surveys will be conducted by the QSS. However, the routine examination of physical plant will usually be conducted by the field technician assigned to the particular water system.

Pro-Active System Review

Occasionally, a system will request a review of their facilities to determine what, if anything, would improve the efficiency, O&M, or reliability of their system. When a system requests such a service one of the engineering staff visits the system and meets with the system's representative(s) to evaluate their facilities. After the visit, a report is generated summarizing our findings and listing recommendations for the system to consider. This service is typically charged on a time and materials basis.

Non-Technical Consulting

Non-technical consulting tasks usually fall into categories: assisting systems in understanding the regulation, and community relations.

We often find that, particularly community-owned systems, the community and their representative board does not know or understand the regulations and how they apply to their particular water system. NWS sits down with the board, or participates in community meetings, and engages in what amounts to educational exercises. We find these sessions very valuable and can make our job much easier.

The second most common non-technical consulting task involves efforts to mitigate conflicts or misunderstandings within communities or community organizations. Very often the operation of a water system is hampered by disagreements within the community. NWS often functions as a disinterested third party to hear the various "sides" and attempt to come to resolution.

It is not uncommon for a single meeting to involve both aspects of non-technical consulting.

PROFESSIONAL RELATIONSHIPS

NWS's relationships within the profession are an important and integral part of our ability to provide services to our clients. NWS can not be, nor does it attempt to be, all things to all clients. There are important aspects of small water system management and operation that NWS chooses not to directly include in our range of expertise and services.

REPAIR PROVIDERS

NWS has chosen not to provide repair services to our client water systems. There are a variety of reasons for this choice. Those reasons are:

- There are already plenty of companies available.
- It would be difficult to realize a return on investment.
- It makes no sense to invest in a repair capability and send repair people, and vehicles, to read meters and take water samples.
- Repair providers are a valuable source of referrals for management and engineering.
- We can establish relationships with repair providers located close to the specific water systems.
- Some repair providers specialize in specific types of equipment and we can utilize that specialization to the benefit of our customers.
- Since NWS does not profit from repair work, we can offer unbiased recommendations regarding who can provide the best service.
- NWS does not need to "farm" the systems for repair work.

The first reason is that there are well established businesses engaged in water system repair services. These include well drilling companies, pump service companies, and underground utility contractors. For NWS to enter this already crowded business environment would be redundant.

The second reason is that our business planning has indicated that repair services would have to be offered outside of our management contracts in order to justify the capital investment. The purchase and equipping of a pump service truck is a major investment, approaching $100,000 at this writing. There is not sufficient repair work in a substantial management client list to justify such a large investment. NWS would have the option of offering services outside our management contracts, in competition with existing companies, or utilizing the equipment and personnel to read meters, take samples, and perform other purely operational tasks. We do not view this use of the asset as economically feasible. Having repair crews would also tempt NWS to "farm" the water systems for repair work, unnecessarily raising operating costs.

The third reason is that repair providers are most in contact with water systems and are a valuable source of referrals. NWS makes a point of ensuring, to the extent possible, that work on a water system referred to us by a repair provider is assigned to that repair provider. The service providers know that they can refer systems to NWS without the danger of loosing future repair work.

The most important reason for this policy is that we can refer repair work to providers close to the specific water systems. This greatly increases NWS's ability to respond quickly to emergency situations, particularly to systems located furthest from our offices.

Though we work with just about all repair providers within our service areas, we have carefully developed relationships with those repair providers we have found to be most reliable and to provide the highest quality workmanship within our service areas. Each water system is assigned a primary repair provider who is familiar, or becomes familiar, with the water system. In the event of an emergency, the assigned repair provider is usually the first contact from NWS. This arrangement gives NWS far more flexibility in responding to emergency situations than if we were dispatching crews from one central location. It really leverages our capabilities in the event of regional occurances, such as wind storms. There is no practical way for NWS to be staffed to offer the kind of response possible by having relationships with multiple independent repair providers.

Repair work can very costly, and the water systems are sensitive to those costs. NWS can be unbiased in our recommendations and consultations because we do not benefit financially from the repair work.

In addition to rapidly changing technologies available to small water systems, there are often size-specific appropriate technologies. What works well, and is economically feasible for a six-connection Group B may not work well for a 200-connection water system. Repair providers tend to specialize in the equipment they market and the services they provide. By referring repair work out, NWS is able to recommend the repair provider with the most appropriate capabilities for the problem.

LABORATORIES

NWS's primary relationship for water quality testing services is with Twiss Analytical Laboratories in Poulsbo. This is a relationship that has developed over many years, with each of us working on our internal processes and procedures in order to continuously improve our combined services to NWS's client water systems and to the general public.

NWS is a pick-up and drop-off point for Twiss Labs. NWS Field Technicians need only bring collected samples to our offices. We have a dedicated pick-up facility (a refrigerator) for Twiss. This not only increases the efficient use of Field Technician time, it improves the record keeping for both NWS and Twiss.

The pick-up point arrangement also functions as a service to the general public. NWS maintains an inventory of sampling supplies, provided by Twiss, and anyone can come to our office and pick up supplies and drop-off samples.

The two companies are also in a position to leverage each others' expertise. This occurs in two ways. The first is cross-referrals. When one of our systems, or the general public, has a question about water chemistry within Twiss staff expertise, we can refer that person to Twiss,

or, we can query Twiss on behalf of our client. Conversely, when a Twiss client has questions about treatment techniques, or other subjects within NWS expertise, Twiss will refer to NWS.

The second path of expertise leveraging occurs with cross-training. On occasion, Twiss staff have offered mini-seminars to NWS staff, and NWS staff has presented training opportunities to Twiss staff. This makes it possible for NWS to keep Twiss informed on management issues that will impact their business, and for Twiss to keep NWS up to speed on water quality analysis issues.

NWS and Twiss must pass a substantial amount of data back and forth. The two companies continuously work to improve the accuracy and efficiency with which data transfers occur. This process not only improves communications between the companies, but impacts the quality of each firm's internal data management processes.

ENGINEERS

NWS maintains relationships with select engineering firms involved in small water system design issues. These relationships help NWS stay abreast of new technical develops, innovative processes, and professional standards. In addition, other engineering firms are excellent sources for referrals for management services.

An excellent example of the value of these relationships is the peer review exercise that NWS undertook with Whiteley Engineering. This process was invaluable in improving the quality NWS's engineering products.

We also refer client systems to other engineers in the event that the system wishes to, or is required to, obtain multiple responses to Requests for Proposals. It is important to us that we understand those engineering firm's familiarity with small water system issues, and that we can work with the firm from our management side.

Moving in the other direction, we provide sub-consulting services to engineering firms that do not have water utility expertise. Small water system engineering and regulation requires that engineering firms involved in that work be engaged in it on a daily basis. Many firms that are involved in development work or other aspects of civil engineering are not regularly working on water utility projects and prefer to sub-contract that work out. Since NWS is not involved in other types of work, firms are comfortable working with NWS without being concerned that we might compromise their relationship with the client.

EVERGREEN RURAL WATER OF WASHINGTON

While our relationship with professional organizations all have immense value, the relationship we value highest is that with ERWOW. We have found that most professional organizations related to the community water industry are geared to the larger water systems. ERWOW has a distinct commitment to the small community water systems, which NWS considers its primary market.

NWS maintains a relationship with the various circuit riders in our areas of operation, both through informal visits, and through referral of systems we manage to ERWOW services. ERWOW services are quite instrumental in assisting NWS in meeting our charge to assist systems to remain financially viable.

While ERWOW is a source of referrals, we find the greatest contribution to NWS's mission to be the training offered through ERWOW. NWS is dedicated to the continuing professional growth of our staff, and ERWOW's excellent, and reasonably priced training opportunities make a major contribution toward meeting our training goals.

MANUFACTURERS' REPRESENTATIVES

For many years the technologies applied to the smaller community water systems remained fairly stable. With the exception of some highly creative (and usually not terribly effective) solutions to local problems, the range of technologies encountered, and available, was limited.

That situation has changed. New technologies are being applied to small water systems, both as a result of the development of new technologies, and as a result of increasing regulation.

In order to keep track of these emerging technologies, to learn how they work, and to evaluate appropriate applications, we keep open communications with the various manufacturers' representatives, as well as those manufacturers' technical support and engineering departments.

REGULATORS

Nothing is more central to our business than our relationships with the various regulatory agencies, principally, the Office of Drinking Water, the local health jurisdictions, and the Department of Ecology.

It is absolutely essential to our mission that we maintain open communication with the regulators. Central to our philosophy and corporate culture, is that NWS, the water systems, and the regulators are involved in a team effort to ensure the provision of safe, reliable and sufficient drinking water to the customers served by each water system. To that end, we strive to be in constant communication with the regulators, and work to ensure that the appropriate regulator has the information they need to understand what is happening with the various water systems. To that end, trust and openness are absolutely essential. It is company policy that the regulators be appropriately informed of all situations, that all information be shared with the appropriate

regulators, and that any question asked by a regulator be answered fully and in a straightforward fashion. We have always encouraged regulators to drop in for a visit, examine our facilities, meet the staff, and get to know NWS faces behind the phone voices and emails. NWS staff are encouraged to meet with regulators in their offices, as well.

Our attempts to implement the team concept creates an interesting dichotomy for us, in that we function within what amounts to a dual agency relationship. We find that communications work best if we consider ourselves the regulatory agencies' representative to the water systems, and the water systems' representative to the regulatory agencies.

In practice, we will listen to the water system's case (perhaps making suggestions to improve that case) and present the case to the appropriate regulatory agency. We can take the regulatory agency's response, and make the agency's case to the water system.

This process is particularly interesting when dealing with the water systems that view NWS and the Department of Health (particularly DOH) as necessary evils, and, sometimes, as unnecessary evils. By utilizing a gradual and gentle educational process, we are often able to change water system owner's attitudes, especially as they come to fully understand the extent of their responsibilities in protecting and furthering public health and that it is a team effort, with NWS and DOH available to the water system owners' in discharging their responsibilities.

NWS also utilizes the regulatory agencies, particularly the Office of Drinking Water, as a major resource. There is a tremendous amount of expertise within ODW that is invaluable to NWS in troubleshooting problems and obtaining ideas and suggestions for moving systems towards compliance.

NWS uses all of the communication tools available to be in contact with the regulators, including the telephone, mail, email and formal and informal meetings. We find that face-to-face meetings, whenever possible, are the most productive communication tools.

NWS PERSONNEL

Jon Wiley is the acting President and CEO, providing management and direction within NWS. The Operations Supervisor function is filled by Kelly Alsin, WDM-2. Ms. Alsin has a degree in Earth Sciences and has worked in an operational role with NWS for over three years. Reg Hearn is a Vice President and is working with NWS' two largest clients, including managing their independent staffs. Reg is a WDM-2, CCS, and QSS.

The engineering staff is comprised of Todd Krause, Bill Bernier, and Jester Purtteman. Mr. Krause is a principal of the firm and serves as the Lead Engineer. He is a PE, licensed in Washington State with reciprocity in Oregon, and has more than 6 years experience in small water system engineering and operation. He is also a Water Distribution Manager 2 (WDM-2) and a Basic Treatment Plant Operator (BTO). Mr. Bernier is a Computer Aided Drafting (CAD) Operator, Certified Water System Designer and Engineering Technician with a background in

mechanical and electrical systems. He is also a CCS and BAT. Jester Purtteman has a master's in engineering, and is working as an EIT under Todd Krause, P.E.

The office staff is comprised of Carolyn Kennedy, Lynné Curtiss and Linda Martin. Mrs. Kennedy has had 20 years of office management and bookkeeping experience, and is skilled in the administration of water systems and serves as the Office Manager. Ms. Curtiss has 14 years of office management experience and works with water quality monitoring, scheduling, and work orders. Linda Martin works on new project implementation. By having a person dedicated to temporary projects, NWS is able to identify problems that need to be solved both with water systems, and with systems within NWS before they grow into insurmountable challenges. This process of overstaffing is intentional, with the goal being the rapid correction of any deficiencies in NWS and its business practices. Linda has a background working on creative project implementation at a local community college before coming to NWS.

The field staff is comprised of Tony Norris, Bill Coultas, and Donald Bell. Mr. Norris has an engineering and military background. He is a Water Distribution Manager 1 (WDM-2), a Certified Cross-Connection Control Specialist (CCS), and has experience in running a small water system. Bill Coultas is scheduled to work through WDM training and then take his WDM-1 in the next four months.

Donald Bell is submitting his WDM-1 IT application and will be taking his exam in upon authorization. He has taken WDM training, and has been intimately involved in a variety of challenging water system problems, and their resolution. Although brief, Donald's experience has been intense, with exposure to over 100 group A systems, and the variety of daily challenges they present. Donald's degree is in engineering with a background in construction. He has been hired to fill the role of Branch Manager at the proposed Satellite Office to be located in Vancouver Washington.

When the workload extends beyond Bill Bernier's available time resources and finances of the business permit, a role specific candidate will be hired to perform CCS duties, and if deemed appropriate, fulfill a BAT role.

Personnel resumes are located in the Appendices. The NWS Employee Handbook is included in the Appendices.

In summary, staff assignments as of this writing are as follows:

President	Jon Wiley
Operations Supervisor/Designated WDM-2	Kelly Alsin/Reg Hearn (temp)
Satellite Office Manager	Donald Bell
Field Technician, North Sound	Kelly Alsin
Field Technician, South Sound/Coast	William Coultas
Field Technician, East Sound	Tony Norris
Field Technician, Southwest	Donald Bell
Office Manager/Bookkeeper	Carolyn Kennedy
Office Staff, WQMR/WFI/Scheduling	Lynné Curtisss

Office Staff, Project Implementation	Linda Martin
CCCS/BAT	William Bernier
Lead Engineer	Todd Krause, P.E.
Staff Engineer	Jester Purtteman EIT
Engineering Technician	William Bernier

Staff Utilization

Effective management of staff utilization is a critical element of a well run organization. At NWS a least common denominator approach is used to evaluate adding staff. Indicators exist, which act as triggers to review an employee's ability to complete their assigned work. No indicator singularly mandates the hiring of additional staff, as the manager responsible is the final authority charged with ensuring the work assigned to them and their staff is being performed at or above our performance standards. When work is not being performed as required, these managers are the primary decision-makers as to the necessity of hiring more staff to meet the needs of the business. There are two systems in place that provide transparency as to when required workload is not sustainably being addressed. When work is not being performed, NWS uses the first of two triggers to mandate a review. The first is Hours Worked; the second is a Key Performance Indicator system (KPI).

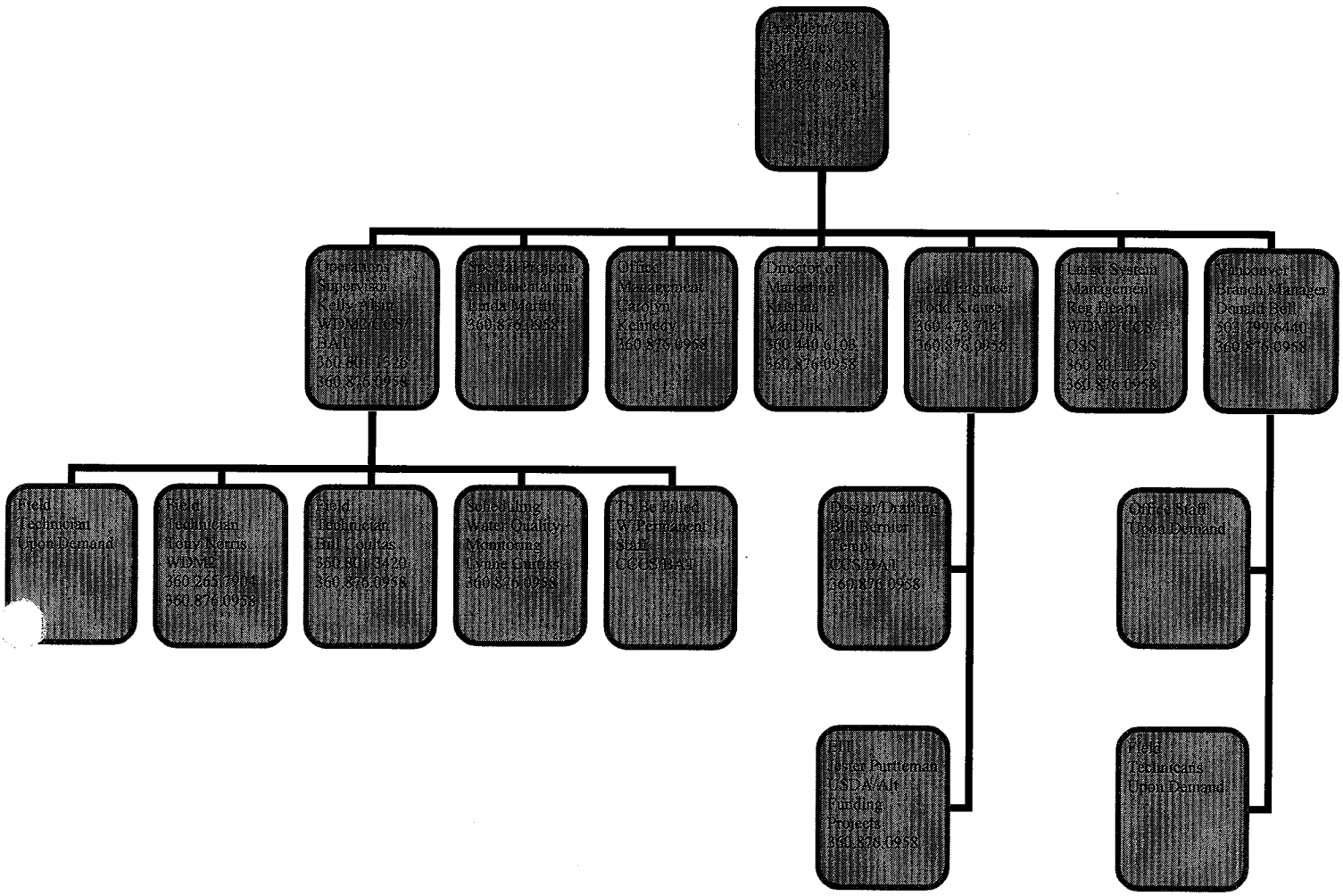
- The clearest indicator that the staffing level is insufficient is visible by reviewing hours worked. If an employee is working overtime more than 3 weeks in a row, a review of what their workload is, and whether some activities can be shifted to another employee or whether the staffing level needs to be increased occurs.
- Alternatively if required work is not being performed, a Key Performance Indicator system is used. The KPI system relies on identifiers that provide a transparent view of whether the critical duties assigned to an individual (tech, bookkeeper, branch manager) are being completed as expected. KPI's can be identified in a binary form, via 'yes/no' on whether work was completed, but are often framed numerically to depict performance on a scale. Examples:
    1. The operations manager is expected to have taken action, directly or through delegation that has been followed through on within one week of receiving regulatory correspondence. (yes/no and if no, what was the time frame as compared to legal requirement, and was the regulatory requirement violated?)
    2. The director of marketing is expected to increase the dollars of recurring basic monthly income by $1500 in the month of April, directly or via delegation that is followed through on. (yes/no and if no, what was the level achieved)
    3. The branch manager of Vancouver is expected to: bring on one new group A NTNC contract and one Community Group A contract per two week period; meet the operational management duties in their entirety until the monthly basic revenue of the office meets 60% of the cost of the office's expenses.

KPI's reveal whether staff are completing the work necessary to meet the demands of the business, including the regulations involved and the customer's needs. Further, KPI's create clear identifiers of what recurring or one-time tasks are required, and allow managers and their employees to make corrections to process problems, by having relative data available to measure their performance against the expectations as set forth by NWS' management.

KPI's are altered as necessary to meet the needs of the business and improve the efficiency with which we operate, but all metrics are fundamentally based on meeting the provisions of our State Reviewed and approved management contracts, which address the regulatory requirements relevant to the size and type of the systems being worked on. To be very specific, all KPI's are based on meeting the legal requirements of the Washington Administrative Code, the Revised Code of Washington, and the other legal requirements or rules referenced therein.

Key Performance Indicators assist management in making good decisions. These indicators do not replace the critical thinking of NWS' management team. The KPI's do keep the management team accountable for their actions, and provide a framework to look back over failures and review where an operational procedure failed. This facilitates the correction of failing process, or can assist in identifying a person that is not contributing as required.

NORTHWEST WATER SYSTEMS
ORGANIZATIONAL CHART



JOB DESCRIPTIONS

PRESIDENT

Responsible for performance of NWS in all capacities, including but not limited to management of staff, vision of company, contract approval, participation in business development practices, on-going client satisfaction and response, regulatory interface, policy/process/procedure decision making, human resources, financial officer responsibilities, on-going financial performance and sustained viability as well as growth.

OPERATIONS SUPERVISOR

Person in responsible charge of water systems in going-forward basis upon approval of this plan. Familiar with all of the managed systems, their requirements and needs, their contact people, treatment plants and whatever else is relevant to each system. Coordinate Field Technicians schedules and activities. Manage the generation of work orders for field technicians. Coordinate with service repair providers to service water systems. Manage the tracking and keep current sampling schedules on all water systems. Evaluate work orders and identify solutions to issues on systems requiring resolution, beyond field technician's first attempts. Back up field technicians as necessary. Backup may include taking samples, reading meters, conducting site investigations. Manages the process of keeping water systems informed regarding sampling schedules, including being involved to whatever degree necessary. This usually occurs once a year, but also includes informing systems when repeat and follow-up samples are necessary. In consultation with President, determine courses of action following confirmed Non-acute Coliform failures and Acute Coliform failures. Attend homeowner association meetings as requested. Primary for resolution of client problems/conflicts. Primary information/advice resource for managed systems. Management of Applications for Determination of Adequacy. Determines courses of action in the event of water quality violations

The Operations Supervisor is required to have at least WDM-2 and CCCS certifications.

LARGE SYSTEM MANAGEMENT

Manage water systems with independent staff.

First responder for after-hours problems

Receives first call when problems occur
Carries the pager
Determines general nature and degree of problem
Makes first site-call, if appropriate
Determines course of action required
Determines level of assistance required

Contacts appropriate repair providers
Provides "hand holding" services to system ownership during resolution
Responds to after-hours status requests

The Operations Supervisor is required to have at least WDM-2 and CCCS certifications.

FIELD TECHNICIAN

Serve as the primary contact between NWS and the water systems. Take water samples. Read source and service meters. Perform general maintenance including, but not limited to: weed-wacking around pumphouses, wells, reservoirs; sweeping pumphouses; cleaning tops of reservoirs. Inspect system components and observe operations. Record on-site data. Change filters. Perform minor repairs, including, but not limited to: replacing minor components such as pressure gauges, peristaltic tubes, and injectors, tightening leaky joints, installing service meters in existing setters. Flush water mains. Monitor and replenish salt and solutions. As appropriate, respond to trouble calls. Certified field technicians may relieve Operations Supervisor of the pager on occasion and assist with other duties. Complete required paperwork such as work orders, lab slips, and on-site logs.

Field Technicians are required to begin training immediately following their probationary period and to take the Water Distribution Manager test at the first opportunity. Maintaining at least a WDM-1 certification is a requirement. Field Technicians are encouraged to seek WDM-2 and CCCS certifications.

LEAD ENGINEER

Manages day-to-day engineering operations

Primary marketing coordinator for engineering and consulting services

Prepares contracts for engineering and consulting services

Responsible for tracking projects through to completion

Sets standards for engineering documents

Supervises engineering/consulting staff

Responsible for producing designs/engineered product/water system plans/etc.

Provides engineering advice to management problems

The Lead Engineer must be a Professional Engineer registered in the State of Washington

STAFF ENGINEER

Prepares engineering documents under the supervision of the Lead Engineer.

Provides engineering expertise to management problems.

Must be a Professional Engineer registered in the State of Washington.

ENGINEERING TECHNICIAN

Assists engineers in the preparation of engineering documents.

Prepares standard details under the supervision of engineering staff.

Prepares Group B workbooks.

Functions as the primary CAD technician.

Must be a certified Water System Designer in the counties within which we work.

CROSS-CONNECTION CONTROL SPECIALIST/BACKFLOW ASSEMBLY TESTER

Provides CCC planning services
- Contacts systems requiring CCC plans or coordinates with engineering staff during preparation of Water System Plans or Small Water System Management Programs
- Prepares necessary CCC documents
- Assists systems in determining authority, building policies and completing plans
- Tracks and updates CCC plans as necessary

Conducts CCC field surveys
- Conducts initial survey at plan implementation
- Available for specific site surveys

Tracks assembly testing schedules
- Determines scheduling periods for each system
- Provides reminders to homeowners
- Schedule assembly testing
- Maintains testing records

Performs Backflow Assembly Testing
- Provides records to ODW
- Ensures accurate internal record keeping
- Responsible for maintenance and calibration of BAT equipment

The CCCS/BAT must be a certified Cross-Connection Control Specialist and Backflow Assembly Tester.

OFFICE MANAGER/BOOKKEEPER

Keeps NWS's books, including Accounts Receivable, Accounts Payable, Payroll and General Ledger

- Prepares bi-weekly payroll
- Prepares Accounts Payable payments
- Prepares and delivers NWS invoices
- Receives and records invoice payments
- Prepares monthly financial statements
- Reconciles accounts
- Coordinates year-end activities with accountant
- Prepares year-end financial statements

Handles Utility Billing for managed systems

- Schedules and coordinates service meter reading
- Enters service meter readings into Utility Billing system
- Prepares and delivers utility bills
- Tracks receipt of utility payments and individual system accounts receivable
- Makes or arranges deposits to systems' bank accounts
- Prepares and delivers periodic receivables reports to systems
- Prepares and delivers late notices and shut-off notices

Maintains cash records for systems for whom we keep checkbooks

- Receives payments and deposits into bank accounts
- Maintains checking account records
- Reconciles checking accounts
- Prepares periodic statements of account

Handles various office tasks

- Answers phones
- Tracks and orders office supplies
- Handles or oversees filing
- Opens files and records for new managed systems
- Opens new projects
- Handles the mail

Supervises Administrative Staff

OFFICE STAFF

Answers phones

Maintains files

Records data
- Completed Workorders
- Site Visit Reports
- Source meter readings

Maintains routine client communications

Duplicates and binds reports

Assists the Office Manager
- Tracking office supplies
- Opening new projects
- Tracking project status

Provides administrative support
- Copying/duplicating
- Research
- Notification calling
- Duties as assigned

Assists the Operations Supervisors
- Preparation of work orders
- Records Site Visits
- Tracks Non-Acute Coliform Failures
- Tracks Water Quality Monitoring Requirements
- Tracks Trouble Reports
- Tracks Repair Work Orders
- Orders sampling and field supplies

SATELLITE OFFICE SUPERVISOR

Manages all satellite office functions

Supervises satellite office staff

Performs most of the Operations Supervisor's tasks for the Region served by the Satellite Office

Supervises Field Technicians working in the satellite office service area

Primary marketing person for the satellite office service area

Primary emergency responder for the satellite office service area

Provides periodic performance reports to the main office

Satellite office supervisor must actively be acquiring WDM-2 and CCCS certifications

Planning and Operations with Existing and New Water Systems

NWS' management of new and existing water systems is constantly reviewed in an ongoing effort to better serve our customers. This internal review has manifested itself currently as an internal initiative to create a planning partnership with the water systems we manage. This planning partnership is an evaluation of the water system, with the owner and/or governing body to clarify goals addressing regulations, the owner's/user's desires. The end-state of the first phase of this program is to develop a plan both parties can mutually agree to move forward with.

All new management contracts are being worked through this program. At this time, NWS' approach has been to prioritize our existing systems by implementing with our largest systems first, and moving to the smallest. The program is actively being implemented.

This process starts by discussing the systems planning goals addressing topics including, but not limited to:

- Regulations
  1. current
  2. upcoming
- System and/or User Desires
  1. minimization of outages
  2. life extension of equipment
  3. improvements to delivered water
  4. pressure and volume
  5. operating permit/building permits/home loans
  6. expansion

The specific topics vary, but the over-arching emphasis is to address the technical, managerial, and financial capacity of the system to meet the requirements of the state and the desires of the system's controlling body (owner or board).

This process requires clarifying what is to be achieved, how success is measured (binary- yes/no or quantitative), mile-markers , and a timeline. After working through these details the plan must be acknowledge by both parties to be achievable and then be mutually agreed to.

This self-evaluation, and goal-setting process clarifies what is desired by the systems we manage, and enables us to meet their needs while addressing the related regulatory requirements. It also identifies if systems we manage are willing to take the actions necessary to move towards compliance.

The water boards or owners that have participated in this planning process have gained a first hand understanding of what financial needs exist on their water systems. The boards and owners make better decisions when they understand what needs to be paid for, and why. This is critical because most water systems experiencing regulatory problems don't have the necessary financial capacity to take corrective action. Assisting systems in solving this problem is a big step in assisting systems in solving all of their regulatory issues.

The complexity of the plans developed depend on the needs of the system, and their willingness to be involved. In some cases minimalistic plans, or none at all, are able to be developed. In these situations the process acts as a tool to clarify if our current management clients are systems that want to work with us, and whom we want to work with in an ongoing manner. NWS will not retain clients that are not willing to move towards regulatory compliance, unless directed to do so by DOH.

Satellite Office Service Area

At all times, whether expanding or not, we as a management company must keep our focus on the customers needs, and we as an organization believe the service provided to customers is always moving either negatively or positively. Our emphasis is today, and will continue to be, on improving the services we provide to systems and their customers.

In a fully committed manner, NWS is addressing the issue of servicing new clients in Clark, Cowlitz, Skamania, Wahkiakum, Pacific, and Lewis counties by hiring separate staff to manage these water systems. Donald Bell will be the branch manager of the anticipated Vancouver Office and will handle all responsibilities associated with newly acquired systems. More staff will be brought on as the workload increases to the degree that Key Performance Indicators (metrics defined Staff Utilization, in the NWS Personnel section) are no longer met satisfactorily. The branch manager of the proposed Vancouver Office is available to handle contracting new water systems, and to assist them in the process of getting into compliance, and then staying there (this process is defined in the Planning Partnership Initiative). Water systems of a complexity beyond Donald's expertise are to be brought on only as NWS is able to provide the necessary support from additional staff of the appropriately certified level.

General Corporate Performance

At the Port Orchard office additional staff has been brought on in all sections of NWS to improve management of our existing clients, and move into a proactive handling of problems as compared to a reactive one. This already has tangible results in an absence of Red Operating permits, and collaborative work with ODW staff to identify issues on the water systems we manage that had fallen through cracks historically.

Regarding improved levels of certified staff, Tony Norris recently passed his WDM-2 exam, bringing NWS' current number of WDM-2's to 4. Bill Bernier is scheduled to take his WDM-2 April 20, 2010. Three more staff members are preparing for WDM certifications, and are expected to have completed exams by the end of summer 2010. Kelly Alsin, our Operations Supervisor has been approved for her WDM-3 exam, and will be testing by the first week of August 2010.

CHARGES FOR SERVICES

A set up fee is required upon execution of the satellite management contract. The set up fee covers familiarization with the system, setting up necessary system files, set up fees to our software vendor, and keying customers into NWS data base. A monthly fee is due at the beginning of each month for performance of services as noted in the contract. Laboratory fees are invoiced as reimbursable expenses.

Subscription to the One-Call Locate service is charged on an hourly basis as "Other Services". The annual subscription fee is charged as a reimbursable expense.

Repairs are billed at current rates noted in the contract. Estimates will be provided for planned repairs prior to commencement of work. Repair invoices are due upon completion of the work.

First time connection charges are invoiced for all initial service connections, which will include Water Availability Letter, Service Meter, and Service Meter installation into an existing meter setter. Fees will also be made for Transfer of connection and Reconnection. Connection charges are due at the time connection is requested. If a meter setter is not installed, installation of the meter setter will be invoiced on a time-and-materials basis.

There is no charge for disconnections. If a disconnection occurs due to non-payment, all past water bills, penalties and interest must be paid, in addition to the reconnection fee, prior to reconnection.

All remaining services are classed as Other Services and are charged on a Time-and-Materials basis. Time is invoiced at the hourly rate noted in the contract in ten-minute increments. Materials are invoiced according to NWS standard price list less 10%. Reimbursable expenses are invoiced at cost plus 15%. Reimbursable expenses include such items as laboratory fees, copying and reproduction expenses, postage (not including postage for water bills) and other similar incidental expenses. Proposals will be presented to Owner prior to commencement of Other Services. Other Services invoices dated prior to the end of the month shall be due by the 10th of the following month.

Whenever practical, charges for such services as engineering, construction, and similar services, will be billed directly to the water system by the service provider.

Operation and Maintenance Charges

Basic Group B Monthly Service (Typical)	$40-$85
Basic Group B Monthly Service with Billing	$65
Small Group A (TNC) Monthly Service	$85
Community Group A Monthly Service (Typical)	$5-$8/Connection

Operation and Maintenance charges may vary due to system location, size, complexity or condition

Engineering Service Charges

Group B Workbook	$2000
Group B Workbook with Water Treatment	$3500
Small Water System Management Program (SWSMP)	$2500
Engineering Charges	$100/man-hour
Clerical/Office Services Charge	$30/man-hour

Consulting Service Charges

Engineering Charges	$100/man-hour
Engineering Technician Charges	$85.00/man-hour
Clerical/Office Services Charge	$30/man-hour

APPPENDICES

Appendix A Contract Documents

Appendix B Standard Procedures

Appendix C Sampling Procedures

Appendix D Employee Manual

Appendix E Forms

Appendix F Cross-Connection Control Documents

Appendix G Employee Resumes

Appendix H List of Managed Systems

Appendix I Standard Details

Appendix J Recent Financial Statements

Appendix K References

Appendix A

Contract Documents

Title

Contract for Management and Operation of a Group "A" Satellite Water System

Contract for Management and Operation of a Group "B" Satellite Water System

Contract for Management and Operation of a Cross-Connection Control Program for Community/Non-Community Water Systems

Standard Provisions

CONTRACT FOR MANAGEMENT AND OPERATION OF A GROUP "A" SATELLITE WATER SYSTEM

This agreement is made and entered into this ___ day of _____, 20___, by and between Northwest Water Systems, Inc., (hereinafter known as NWS), a Washington Corporation and _____ (hereinafter known as "Owner").

Whereas Owner owns and operates a public water system known as _____, and such water system is identified by the Washington State Department of Health under identification number _____ and is a Group A water system.

Whereas NWS is in the business of maintaining and operating public water systems: and

Whereas Owner wants to contract with NWS to obtain management services, and NWS wants to contract with Owner to provide management services:

Now, therefore, the parties hereby agree as follows:

1. PARTIES

NWS, whose address is P.O. Box 123, Port Orchard, WA 98366, is the Satellite Management Agency authorized to provide Management and Operations Services to the _____ (hereinafter known as "System").

Owner's Principal Contact: _____.

Owner's Billing Address: _____, **WA 98____.**

Contact Telephone Number: _____.

2. Effective Date

The effective beginning date of this contract is __/__/___.

3. Water System Location

System (Pumphouse) address: _____, **WA 98____.**

1/4, 1/4, Section, Township, Range: **___ 1/4, ___ 1/4, Section ___, Township ___N, Range ____ W.M.**

County:_____

4. Services

NWS shall become acquainted with the System including all physical facilities (transmission lines, valves, pumps, storage facilities, source(s), controls, treatment equipment and monitoring equipment, etc.) and operations and maintenance requirements. The acquaintance services are covered by the setup fee. NWS shall provide the following Satellite Management and Operations services:

Operations and Maintenance

Provide daily scheduled operation and maintenance of the System in accordance with accepted public health practices. Daily operation and maintenance includes, but is not limited to: taking routine coliform and nitrate samples, and interpretation of sample results; master well meter readings; and monitor pressure tank and/or reservoir readings. Site visits necessary to perform these services shall be conducted twice during each calendar month.

Implement scheduled preventative maintenance programs including, but not limited to: inspect water system components for malfunctions and perform minor repairs and arrange for major repair; exercise all valves and fire hydrants and periodically flush the water mains once annually.

Analyze recording instrument readings and laboratory tests; determine sites and causes of any malfunctions; adjust any water system components as needed; insure that the proper records are maintained; and determine remedial actions in emergencies.

Perform, or arrange for, emergency repairs within a reasonable time after NWS has been notified that repairs are needed. Minor repairs will be performed by NWS. Major repairs will be performed through an operating agreement with _____ Drilling. Unless the system contact person is unavailable, verbal approval from the system contact person will be sought prior to performance of repairs.

Arrange for the inspection and testing of backflow prevention devices.

Arrange for Locates. The Locater services will be invoiced to Owner as a reimbursable expense.

Implement the System's Capital Improvement Program.

Administrative

Serve as the System's designated Purveyor.

Read service meters and prepare, and deliver, utility bills to system customers every other month. Deposit receipts in the system's checking account and provide Owner with periodic accounts receivable statements.

All system files will be maintained by NWS with copies forwarded to Owner or Owner's representative.

Meet public notification requirements in the event of a sampling failure.

Represent the System during Sanitary Surveys.

Subscribe the system to a One-Call Locate service, in accordance with RCW 19.122.030.

Service connections/disconnections.

Supervise ordering materials and parts for the operation and maintenance of the System.

Planning and Technical Assistance

Develop and implement a coliform monitoring program, if not already in place.

Develop a Small Water System Management Program or Water System Plan, if not already in place.

Update Water System Plan or Small Water System Management Program, as needed.

Develop a Cross-Connection Control Program if not included in the Water System Plan or Small Water System Management Program.

Design annual maintenance strategies.

Respond to informational requests from System customers.

Respond to the press.

Keep up and maintain as-builts of the System as required by new construction or other modifications to the System.

Revise the System's WFI and submit to OFFICE OF DRINKING WATER.

Provide an emergency response telephone number.

5. Charges for Services

A set up fee of $\$$_____ is required upon execution of this contract. The set up fee covers familiarization with the system, setting up necessary system files and set up fees

to our software vendor, and keying customers into NWS data base. A monthly fee of $_____ is due at the beginning of each month for performance of services in *Italics*. Laboratory fees will be invoiced as reimbursable expenses.

Subscription to the One-Call Locate service will be charged on an hourly basis as "Other Services". The annual subscription fee will be charged as a reimbursable expense.

Repairs will be billed at the current _____ Drilling rates. Estimates will be provided for planned repairs prior to commencement of work. Repair invoices are due upon completion of the work.

First time connection charges of **$240.00** will be charged for all first-time connections, which will include Water Availability Letter, Service Meter, and Service Meter installation into an existing meter setter. Transfer of connection will be charged at **$30.00.** Reconnections will be charged at **$60.00** each. Connection charges are due at the time connection is requested. If a meter setter is not installed, installation of the meter setter will be invoiced on a time-and-materials basis.

There is no charge for disconnections. If a disconnection occurs due to non-payment, all past water bills, penalties and interest must be paid, in addition to the reconnection fee, prior to reconnection.

All remaining services are classed as Other Services and will be charged on a Time-and-Materials basis. Time will be invoiced at the rate of **$85.00** per hour in ten-minute increments. Materials will be invoiced according to NWS standard price list less 10%. Reimbursable expenses will be invoiced at cost plus 15%. Reimbursable expenses include such items as laboratory fees, copying and reproduction expenses, postage (not including postage for water bills) and other similar incidental expenses. Proposals will be presented to Owner prior to commencement of Other Services. Other Services invoices dated prior to the end of the month shall be due by the 10th of the following month.

Whenever practical, charges for such services as engineering, construction, and similar services, will be billed directly to the water system from the contractor.

6. Terms and Conditions

This Contract includes all of the terms and conditions of Northwest Water Systems. Inc,'s Water System Plan and as amended in the future.
Without limiting the foregoing, it is agreed as follows:

- NWS does not own the water system. NWS's responsibility is limited to the services set forth above.
- NWS has no responsibility in the event that the water system's source is interrupted, the volume thereof is reduced, or the water is contaminated.

- The Owner hereby grants NWS an irrevocable license to enter the well site and properties in performance of NWS's responsibilities under this contract, and to inspect the System.

7. Repairs and Improvements

Prior to the effective date of this contract, the following repairs and/or improvements shall be completed at Owner's expense: **None**

8. Duration

This contract shall remain in effect for a period of one year. The contract will renew automatically with no action on the part of either party. Either party may initiate review of the contract terms not earlier than three months, nor later than one month, prior to the end of any contract period. Modifications to the terms of the contract must be agreed upon prior to the expiration of the current contract period. NWS may initiate review of fees annually. Proposed changes in the fee shall be transmitted to Owner not later than two months prior to contract anniversary. Fee increases within any contract period shall not exceed the annual inflation rate as published by the Federal Government.

The contract may be terminated by NWS due to non-payment of agreed upon fees and charges by Owner. Owner may terminate contract due to non-performance by NWS. The contract may also be terminated upon mutual agreement by all parties. Contract may be terminated by either party without cause at the end of any contract period. NWS may also terminate the contract if the System is unable, or unwilling, to comply with applicable government regulations. Termination notice must be in writing.

NWS shall provide the local health district and the Department of Health written notification should the contract be terminated.

9. Integration

This Contract constitutes the entire agreement between the parties. There are no other verbal or written agreements or representations which modify or affect this contract.

Amendments to this contract shall be in writing and shall be signed by the responsible person from each party.

10. Indemnification

The Owner shall assume the risk of, be liable for, and pay all damages, loss, cost and expense of any party arising out of the performance of this Contract unless such damage, loss, cost or expense is caused solely by the gross negligence or willful misconduct of NWS. The Owner shall indemnify and hold NWS harmless from all claims, losses, suits, actions, costs, counsel fees, litigation, litigation costs, expenses, damages, judgements, or

decrees by reason of damage to any property or business and/or death, injury or disability to any person or party arising out of or suffered directly or indirectly by reason of or in connection with the performance of this Contract or any action, error or omission of the Owner, Owner's employees, agents or subcontractors, whether by negligence or otherwise. Both parties will agree on liability via arbitration or mediation.

Northwest Water Systems, Inc.	Water System
By_____	By:_____
Title: _____	Title: _____
Date: _____	Date: _____

CONTRACT FOR MANAGEMENT AND OPERATION OF A GROUP "B" SATELLITE WATER SYSTEM

This agreement is made and entered into this ___ day of _____, 20___, by and between Northwest Water Systems, Inc., (hereinafter known as NWS), a Washington Corporation and _____ (hereinafter known as "Owner").

Whereas Owner owns and operates a public water system known as _____, and such water system is identified by the Washington State Department of Health under identification number _____ and is a Group B water system.

Whereas NWS is in the business of maintaining and operating public water systems: and

Whereas Owner wants to contract with NWS to obtain management services, and NWS wants to contract with Owner to provide management services:

Now, therefore, the parties hereby agree as follows:

1. PARTIES

NWS, whose address is P.O. Box 123, Port Orchard, WA 98366, is the Satellite Management Agency authorized to provide Management and Operations Services to the _____ (hereinafter known as "System").

Owner's Principal Contact: _____.

Owner's Billing Address: _____, **WA 98____.**

Contact Telephone Number: _____.

2. Effective Date

The effective beginning date of this contract is __/__/___.

3. Water System Location

System (Pumphouse) address: _____, **WA 98____.**

1/4, 1/4, Section, Township, Range: **___ 1/4, ___ 1/4, Section ___, Township ___N, Range ____ W.M.** County: _____

4. Services

NWS shall become acquainted with the System including all physical facilities (transmission lines, valves, pumps, storage facilities, source(s), controls, treatment equipment and monitoring equipment, etc.) and operations and maintenance requirements. The acquaintance services are covered by the setup fee. NWS shall provide the following Satellite Management and Operations services:

Operations and Maintenance

Provide daily scheduled operation and maintenance of the System in accordance with accepted public health practices. Daily operation and maintenance includes, but is not limited to: taking routine and follow-up coliform and nitrate samples, and interpretation of sample results; master well meter readings; and monitor pressure tank and/or reservoir readings. Site visits necessary to perform these services shall be conducted once during each calendar quarter.

Implement scheduled preventative maintenance programs including, but not limited to: inspect water system components for malfunctions and perform minor repairs and arrange for major repair; exercise all valves and fire hydrants and flush the water mains once annually.

Analyze recording instrument readings and laboratory tests; determine sites and causes of any malfunctions; adjust any water system components as needed; insure that the proper records are maintained; and determine remedial actions in emergencies.

Perform, or arrange for, emergency repairs within a reasonable time after NWS has been notified that repairs are needed. Minor repairs will be performed by NWS. Major repairs will be performed through an operating agreement with _____ Drilling. Unless the system contact person is unavailable, verbal approval from the system contact person will be sought prior to performance of repairs.

Arrange for the inspection and testing of backflow prevention devices.

Arrange for Locates. The Locater services will be invoiced to Owner as a reimbursable expense.

Implement the System's Capital Improvement Program.

Administrative

Serve as the System's designated Purveyor.

Calculate, prepare and deliver water bills to the system customers based on a flat rate. Receive payment for water bills and deposit funds in the system's checking account.

All system files will be maintained by NWS with copies of documents and correspondence going to the Owner.

Meet public notification requirements in the event of a sampling failure.

Subscribe the system to a One-Call Locate service, in accordance with RCW 19.122.030.

Service connections/disconnections.

Supervise ordering materials and parts for the operation and maintenance of the System.

Planning and Technical Assistance

Develop and implement a coliform monitoring program, if not already in place.

Develop a Cross-Connection Control Program, if required.

Design annual maintenance strategies.

Respond to informational requests from System customers.

Respond to the press.

Keep up and maintain as-builts of the System as required by new construction or other modifications to the System.

Revise the System's WFI and submit to OFFICE OF DRINKING WATER.

Provide an emergency response telephone number.

5. Charges for Services

A set up fee of **$150.00** is required upon execution of this contract. The set up fee covers familiarization with the system, setting up necessary system files, set up fees to our software vendor, and keying system customers into the billing system. A monthly fee of **$65.00** is due at the beginning of each month for performance of services in *Italics*. Laboratory fees will be invoiced as reimbursable expenses.

Until such time as there are three active connections on the system, water bills are not issued and the monthly fee is not charged.

Subscription to the One-Call Locate service will be charged on an hourly basis as "Other Services". The annual subscription fee will be charged as a reimbursable expense.

Repairs will be billed at the current _____ Drilling rates. Estimates will be provided for planned repairs prior to commencement of work. Repair invoices are due upon completion of the work.

First time connection charges of **$75.00** will be charged for all first-time connections, which will include Water Availability Letter and entry into the data system. Transfer of connection will be charged at **$30.00.** Reconnections will be charged at **$60.00** each. Connection charges are due at the time connection is requested.

There is no charge for disconnections. If a disconnection occurs due to non-payment, all past water bills, penalties and interest must be paid, in addition to the reconnection fee, prior to reconnection.

All remaining services are classed as Other Services and will be charged on a Time-and-Materials basis. Time will be invoiced at the rate of **$85.00** per hour in ten-minute increments. Materials will be invoiced according to NWS standard price list less 10%. Reimbursable expenses will be invoiced at cost plus 15%. Reimbursable expenses include such items as laboratory fees, copying and reproduction expenses, postage (not including postage for water bills) and other similar incidental expenses. Proposals will be presented to Owner prior to commencement of Other Services. Other Services invoices dated prior to the end of the month shall be due by the 10th of the following month.

Whenever practical, charges for such services as engineering, construction, and similar services, will be billed directly to the water system from the contractor.

6. Terms and Conditions

This Contract includes all of the terms and conditions of Northwest Water Systems. Inc,'s Water System Plan and as amended in the future.

Without limiting the foregoing, it is agreed as follows:

- NWS does not own the water system. NWS's responsibility is limited to the services set forth above.
- NWS has no responsibility in the event that the water system's source is interrupted, the volume thereof is reduced, or the water is contaminated.
- The Owner hereby grants NWS an irrevocable license to enter the well site and properties in performance of NWS's responsibilities under this contract, and to inspect the System.

7. Repairs and Improvements

Prior to the effective date of this contract, the following repairs and/or improvements shall be completed at Owner's expense: **None**

8. Duration

This contract shall remain in effect for a period of five years. The contract will renew automatically with no action on the part of either party. Either party may initiate review of the contract terms not earlier than three months, nor later than one month, prior to the end of any contract period. Modifications to the terms of the contract must be agreed upon prior to the expiration of the current contract period. NWS may initiate review of fees annually. Proposed changes in the fee shall be transmitted to Owner not later than two months prior to contract anniversary. Fee increases within any contract period shall not exceed the annual inflation rate as published by the Federal Government.

The contract may be terminated by NWS due to non-payment of agreed upon fees and charges by Owner. Owner may terminate contract due to non-performance by NWS. The contract may also be terminated upon mutual agreement by all parties. Contract may be terminated by either party without cause at the end of any contract period. NWS may also terminate the contract if the System is unable, or unwilling, to comply with applicable government regulations. Termination notice must be in writing.

NWS shall provide the local health district and the Department of Health written notification should the contract be terminated.

9. Integration

This Contract constitutes the entire agreement between the parties. There are no other verbal or written agreements or representations which modify or affect this contract.

Amendments to this contract shall be in writing and shall be signed by the responsible person from each party.

10. Indemnification

The System shall assume the risk of, be liable for, and pay all damages, loss, cost and expense of any party arising out of the performance of this Contract unless such damage, loss, cost or expense is caused solely by the gross negligence or willful misconduct of NWS. The original owner shall indemnify and hold harmless from all claims, losses, suits, actions, costs, counsel fees, litigation, litigation costs, expenses, damages, judgements, or decrees by reason of damage to any property or business and/or death, injury or disability to any person or party arising out of or suffered directly or indirectly by reason of or in connection with the performance of this Contract or any action, error or omission of the System, System's employees, agents or subcontractors, whether by negligence or otherwise. Both parties will agree on liability via arbitration or mediation.

Northwest Water Systems, Inc.	Water System
By_____	By:_____
Title: _____	Title: _____
Date: _____	Date: _____

CONTRACT FOR MANAGEMENT AND OPERATION OF A CROSS-CONNECTION CONTROL PROGRAM

COMMUNITY/NON-COMMUNITY WATER SYSTEMS

This agreement is made and entered into this ___ day of _____, 20___, by and between Northwest Water Systems, Inc., (hereinafter known as NWS), a Washington Corporation and _____ (hereinafter known as "Owner").

Whereas Owner owns and operates a public water system known as _____, and such water system is identified by the Washington State Department of Health under identification number _____ and is a Group A water system.

Whereas Washington State drinking water regulations, WAC 246-290-490, require public water systems to develop and implement cross-connection control programs (CCCP).

Whereas NWS is in the business of and has certified staff for generating and managing cross-connection control programs and policies: and

Whereas Owner wants to contract with NWS to obtain cross-connection control services, and NWS wants to contract with Owner to provide said services:

Now, therefore, the parties hereby agree as follows:

1. PARTIES

NWS, whose address is P.O. Box 123, Port Orchard, WA 98366, is the Satellite Management Agency certified in Cross-Connection Control Capability authorized to provide Cross-Connection Control Management and Operations Services to the _____ (hereinafter known as "System").

Owner's Principal Contact: _____.

Owner's Billing Address: _____, **WA 98____.**

Contact Telephone Number: _____.

2. Effective Date

The effective beginning date of this contract is __/__/___.

3. Water System Location

1/4, 1/4, Section, Township, Range: **___ 1/4, ___ 1/4, Section ___, Township ___N, Range ____ W.M.**

County: _____

4. Services included in the contract price

Familiarization with system
NWS shall become acquainted with the System including the types, locations, and particular cross-connection hazards of all of its structures, the topography and hydraulic characteristics of the system, and any treatment facilities in the system

Document Generation

The following documents shall be generated to Introduce, Manage, Operate and Maintain the Cross-Connection Control Program. These documents shall follow the guidelines set forth by, and be acceptable to the Washington State Department of Health (OFFICE OF DRINKING WATER).

Cross-Connection Control Policy – This document is an ordinance, resolution, code, policy, or other legal instrument that establishes the water system's legal authority to implement a Cross-Connection Control Program.

Cross-Connection Control Program – This document describes the technical provisions, administrative procedures, corrective actions, and normal and emergency procedures for operation of the Program.

Cross-Connection Control Survey – This form is sent out to all customer(s) on the system to fill out and return to the Cross-Connection Control Specialist (CCS). It helps to determine the extent and severity of any cross-connections which might exist on the premises.

Field Survey

An initial **Field Inspection Survey** is required on the premises to determine if any cross-connections exist. Any existing backflow assemblies found will be put on a testing schedule (unless they are already being tested).

5. Additional Management Services

Operational

Additional surveys are required for new structures. OFFICE OF DRINKING WATER requires periodic surveys (usually biennially) on the system to allow for

changed conditions. Additionally, an inspection is required if there is a Backflow Incident.

The CCS will assist in recommending the correct type of backflow assembly and suggesting a qualified mechanic to install it. The CCS will also assist in getting the backflow assembly on an annual testing schedule and arrange to have a licensed Backflow Assembly Tester (BAT) test it.

In the event of a **Backflow Incident**, immediately follow the procedures outlined in the **Backflow Incident Report** to find and correct the problem, and restore system integrity.

Administrative

Ensure that all **Backflow Assemblies** are tested at least annually, but also as otherwise required by DOH. Ensure that the testers are DOH certified Backflow Assembly Testers (BAT)s, and that their certification as well as that of their testing equipment is up to date.

Maintain records of all Backflow Assemblies tested. Maintain records of all Air-Gaps and Atmospheric Vacuum-Breakers inspected. Maintain BAT certifications, and their testing equipment calibrations.

Implement a CCCP **education program.**

Generate, maintain, and forward as required all **reports** as required by DOH and other government agencies.

Generate documentation required and administer program required if **reclaimed water** is to be used by the water system.

6. Charges for Services

Initial Costs

An **Initial fee** of $_____ is required upon execution of this contract. This initial fee covers **familiarization** with the system, **setting up** necessary Cross-Connection Control **files, keying** customers **into** NWS **data base,** generation of Cross- Connection Control **Policy, Program,** and **Survey** documents, and an initial **Field Survey.** It also covers basic **administration** of the Cross-Connection Control Program.

Additional Services

Prior to the performance of any **Additional Service**, the **Owner** shall be contacted and informed of the need for the service, as well as its estimated cost. Additional Services will be charged at the rate of **$85.00** per hour as listed below, and cover the following:

Additional Field Surveys

Hazard Elimination & Control

Annual Health Department Reports & Record Keeping

Backflow Assembly Quality Assurance Program

CCCP Education Program

Backflow Incident Response

The Owner will only be charged for actual time spent on the specific task performed. Time will be invoiced at the rate of **$85.00** per hour in ten-minute increments. Reimbursable expenses will be invoiced at cost plus 15%. Reimbursable expenses include such items as laboratory fees, copying and reproduction expenses, postage, and other similar incidental expenses. Services invoices dated prior to the end of the month shall be due by the 10th of the following month.

Backflow Assembly costs are actual costs charged by the independent BAT who performs testing and repair on the assemblies.

6. Terms and Conditions

This Contract includes all of the terms and conditions of Northwest Water Systems. Inc,'s Cross-Connection Control Program and as amended in the future.

Without limiting the foregoing, it is agreed as follows:

- NWS does not own the water system. NWS's responsibility is limited to the services set forth above.
- NWS has no responsibility in the event that the water system's source is interrupted, the volume thereof is reduced, or the water is contaminated.
- The Owner hereby grants NWS an irrevocable license to enter the System properties in performance of NWS's responsibilities under this contract, and to inspect the System.

7. Repairs and Improvements

Prior to the effective date of this contract, the following repairs and/or improvements shall be completed at Owner's expense: **None**

8. Duration

This contract shall remain in effect for a period of one year. The contract will renew automatically with no action on the part of either party. Either party may initiate review of the contract terms not earlier than three months, nor later than one month, prior to the end of any contract period. Modifications to the terms of the contract must be agreed upon prior to the expiration of the current contract period. NWS may initiate review of fees annually. Proposed changes in the fee shall be transmitted to Owner not later than two months prior to contract anniversary. Fee increases within any contract period shall not exceed the annual inflation rate as published by the Federal Government.

The contract may be terminated by NWS due to non-payment of agreed upon fees and charges by Owner. Owner may terminate contract due to non-performance by NWS. The contract may also be terminated upon mutual agreement by all parties. Contract may be terminated by either party without cause at the end of any contract period. NWS may also terminate the contract if the System is unable, or unwilling, to comply with applicable government regulations. Termination notice must be in writing.

NWS shall provide the local health district and the Department of Health written notification should the contract be terminated.

9. Integration

This Contract constitutes the entire agreement between the parties. There are no other verbal or written agreements or representations which modify or affect this contract.

Amendments to this contract shall be in writing and shall be signed by the responsible person from each party.

10. Indemnification

The Owner shall assume the risk of, be liable for, and pay all damages, loss, cost and expense of any party arising out of the performance of this Contract unless such damage, loss, cost or expense is caused solely by the gross negligence or willful misconduct of NWS. The Owner shall indemnify and hold NWS harmless from all claims, losses, suits, actions, costs, counsel fees, litigation, litigation costs, expenses, damages, judgements, or decrees by reason of damage to any property or business and/or death, injury or disability to any person or party arising out of or suffered directly or indirectly by reason of or in connection with the performance of this Contract or any action, error or omission of the

Owner, Owner's employees, agents or subcontractors, whether by negligence or otherwise. Both parties will agree on liability via arbitration or mediation.

Northwest Water Systems, Inc.	Water System
By_____	By:_____
Title: _____	Title: _____
Date: _____	Date: _____

STANDARD PROVISIONS

A. Payment

Payment is due as specified in the Contract to which these Standard Provisions are attached. Signing of the Contract by all parties signifies agreement with the payment schedule.

Northwest Water Systems, Inc. expenses related to those costs incurred for the client's project including, but not limited to, necessary transportation costs, laboratory tests and analyses, sub-consultant services, printing, copying and binding charges shall be invoiced as reimbursable expenses. Reimbursement for these expenses shall be on the basis of 1.15 times actual charges when furnished by commercial sources and on the basis of usual commercial charges when furnished by Northwest Water Systems, Inc. Unless otherwise provided for in the contract, Reimbursable Expenses are in addition to the estimated fee.

The parties acknowledge and agree that any estimate of a total fee may not reflect the ultimate charges of Northwest Water Systems, Inc. Each party recognizes the inherent difficulty in any predetermination of the amount of services required for a particular project. All changes to the Scope of Work or to the Fee shall be accomplished through numbered Change Orders signed by all parties. If a retainer is received, it will be credited to the final invoice unless prior arrangement has been made between client and Northwest Water Systems, Inc.

All past due invoices are subject to a 1.5% per month late charge calculated and applied the day following the due date. Subsequent late charges are calculated based on the invoice amount plus any previous late charges.

B. Time of Beginning

Signing of the Contract is authorization by the client for Northwest Water Systems, Inc., to proceed with the scope of work.

C. Professional Standards

Northwest Water Systems, Inc., shall be responsible to the level of competency presently maintained by other practicing professionals in the same type of work in the community, for the professional and technical soundness, accuracy and adequacy of all designs, drawings, specifications, and other work and materials furnished under the attached Contract.

D. Governing Law

Unless otherwise provided, the attached Contract shall be governed by the laws of the State of Washington. Unless otherwise agreed, venue by any action shall be Kitsap County, Washington.

E. Safety and Construction

Northwest Water Systems, Inc., shall not be responsible for construction means, methods, techniques, sequences of procedures, or for safety precautions and programs in connection with the work performed by the Contractor(s) and any subContractors.

F. Legal Relations

Any dispute, controversy or claim arising out of or relating to the attached Contract, or the breach, termination or invalidity thereof, shall be submitted for mediation prior to the commencement of other adjudicatory procedures. The dispute resolution procedure shall be implemented in any matter by written notice given by any party to the other party or parties to the attached Contract. The notice shall contain a statement of the nature of the dispute and the remedy sought. The parties shall make their principals available for a period of two (2) consecutive days during the thirty (30) days following the giving of notice of intent to mediate with the other parties on the dispute.

Unless agreed upon otherwise by the parties signatory to the attached Contract, the location of the mediation shall be Port Orchard, Washington.

If settlement is agreed upon through mediation, the parties may agree that the settlement be reduced to writing and that the mediator shall be deemed to be arbitrator for the sole purpose of signing that written settlement agreement which shall then have the same force and effect as an arbitral award.

In the event mediation fails, and legal action is brought by the client or Northwest Water Systems, Inc., against the other to enforce any of the obligations hereunder or arising out of any dispute concerning the terms and conditions hereby created, then the prevailing party shall be entitled to reasonable attorney's fees, costs and expenses incurred in any action brought by either party under the terms of the attached Contract.

The client agrees to limit Northwest Water Systems, Inc., liability to the client and his assigns due to Northwest Water Systems, Inc., professional negligent acts, errors or omissions such that the total aggregate liability of Northwest Water Systems, Inc., to all those named shall not exceed 50 percent of Northwest Water Systems, Inc.'s total fee for services rendered on this project, or Two Thousand ($2,000) whichever is greater.

G. Cost Estimates

Any cost estimates provided by Northwest Water Systems, Inc., will be on a basis of experience and judgement, but since it has no control over market conditions or bidding procedures, Northwest Water Systems, Inc., cannot warrant that bids or ultimate construction costs will not vary from these cost estimates.

H. Deliverables

All deliverables, such as reports, construction documents, plans, etc., become the property of the Client and may not be released to any third parties without the express approval of the Client. All templates, "boilerplate", standard details, and automated processes used in, or developed during, the production of deliverables remain the property of Northwest Water Systems, Inc.

I. Termination

Contract may be terminated by mutual agreement between both parties. Contract may be terminated by Client if Northwest Water Systems, Inc. deliverables do not meet the standards required for approval by the Washington State Department of Health or if contract schedule is exceeded.

Northwest Water Systems, Inc. may terminate the contract for non-payment of issued invoices in accordance with these Standard Provisions or the provisions of the contract, if Client is unable or unwilling to provide necessary information or access to facilities, or if Client is unable or unwilling to conform to the rules and regulations of the Washington State Department of Health or other agencies of jurisdiction.

J. Severability

If any term, condition or provision of the attached Contract or these Standard Provisions, or the application to any circumstances is determined to be invalid or unenforceable to any extend, the remaining provisions of the attached Contract and these Standard Provisions shall not be affected, but shall remain valid and enforceable.

K. Complete Agreement

The attached Contract and these Standard Provisions supercede all verbal and other written understandings and agreements and constitutes the complete and final understanding between client and Northwest Water Systems, Inc.

Appendix B

Standard Procedures

Title

Set-up System Management

Generate Monthly Work Orders

Routine Work Order Completion

Site Visit Processing

Trouble Report Generation

Approved Trouble Report Processing

Complaint Handling

Coliform Failure, Non-Acute

Coliform Failure, Acute

Coliform Failure Troubleshooting

Pressure Loss

Water Service Request

Water System Billing Procedures

Data Entry Conventions

Filing System

Lab-Slip – Task Path

Pager – Emergency Response

Tech Board

STANDARD PROCEDURES

The center of NWS's operations is a Microsoft Access-based database. This database contains the vast majority of the data NWS uses to effectively maintain and operate the systems under management. In the following section, any time the term "database" is used, it is referring to this master database. In addition, some data is kept in various Microsoft Excel spreadsheets. These spreadsheets will be referred to by their function followed by the term "spreadsheet". For example "Welldata Spreadsheet" refers to the spreadsheet kept for each system that records source meter data and overall system water usage.

The following outlines simply list the steps necessary in the procedures. It does not detail which staff position accomplishes which step. This is also not an exhaustive list of procedures used by NWS. For further details on procedures, refer to the procedures notebook kept by the Office Manager or to the Employee Handbook.

Set-up System Management

- Receive signed contract
- Confirm receipt of set-up fee
- Create ledger page in the Systems Ledger
- Update Water Facilities Inventory Form
- Enter client data in database
- Enter system data in database
- Determine service area number and enter in database
- Assign field technician
- Request copy of Water Quality Monitoring Report from ODW
- Review water quality history from the Sentry website
- Set up Welldata spreadsheet
- Set up Water Quality Monitoring Form (WQMF)
- Enter work order data in database
- Generate any necessary work orders
- Enter client into NWS accounting system
- Enter system customers into utility billing program
- Create Managed System File and Folder
- Create Utility Billing binder
- Send the information request letter to the owner's representative
- Send a copy of the contract to the local health jurisdiction (if appropriate)
- Send a copy of the contract to the Office of Drinking Water
- Send a copy of the contract to the owner's representative
- Determine pumphouse access and enter in database. If a key is necessary, issue a workorder to install the lockbox.

Generate Monthly Work Orders

- Print System Checklist from database
- Enter the Add/Update Work Orders from the Work Order navigator in the database
- Using the System Checklist and the Work Order Data form in the database, complete the necessary information for each work order
- Print the Work Order by Tech report for each Field Technician
- Compare the Work Order by Tech reports and the System Checklist and correct any errors or omissions
- Print the work orders
- Compare the printed work orders to the ledger pages in the Systems Ledger
- Complete lab slips for each sample required in each work order
- Distribute work orders/lab slips to field technicians.

Routine Work Order Completion

- Review work order before leaving the premises so that you understand the tasks to be completed and ensure that all tools and materials are on board your vehicle
- Record Start Time and Start Mileage on the work order
- Proceed to the work site
- Upon entering the pumphouse, record the source meter reading on the work order and in the system log
- Take the Static Water Level, if required and note the reading on the work order and in the log
- Complete the routine tasks listed on the work order
- Complete tasks listed in Special Instructions, including any required sampling
- Record any special work done or any comments on the work order
- Record End Time and End Miles on the work order
- Record any Items Sold on the work order
- Initial the work order and record the date completed
- Upon return to the office place the work order in box provided
- Place any samples taken in the refrigerator

Site Visit Processing

- Retrieve work orders from the box
- Enter the Add/Update Site Visit form in the Site Visit navigator in the database
- Enter the work order data as requested in the Add/Update Site Visit form
- Enter the well data in the Welldata Spreadsheet
- Update the WQMF as necessary
- Prepare any necessary Trouble Reports (see Trouble Report procedures)
- Enter any items sold in the accounting system
- Enter time spent in the field technicians' time record in the accounting system
- Place the work order in filing bin

Trouble Report Generation

- Upon determining a site visit has identified a problem requiring attention, make a copy of the work order. Return the original work order to the work order stream
- Retrieve a blank Trouble Report from the Templates folder in Shared Documents and save to system's file in the Managed Systems folder in Shared Documents. The Trouble Report should be named using NWS's standard naming convention preceeded by the letters "TR". For example, the first Trouble Report for a particular system issued on June 11, 2007 would be named TR07061101.
- If possible, obtain an estimate from the system's repair provider
- Fill in the information required on the Trouble Report
- Make a copy of the Trouble Report and attach (staple) the copy of the work order and a copy of the estimate, if any, to the Trouble Report

- Two-hole punch the Trouble Report copy and hang on the Trouble Report clip board
- Mail the original Trouble Report, along with the estimate if one was obtained, to the owner's representative

Approved Trouble Report Processing

- Upon receipt of a Trouble Report approved by the owner's representative, remove the Trouble Report copy from the clip board
- Retrieve a Repair Work Order from the Templates folder and save in the system's Managed Systems folder. The Work Order should be named using NWS's standard naming convention preceded by the letters "WO". For example, a repair work order generated on July 19, 2007 would be named WO07071901, if it was the first work order on that day for that system
- Fill in the necessary information on the Repair Work Order
- Make a copy of the Repair Work Order
- Attach the copy of the Trouble Report, along with any attachments, to the original Repair Work Order
- Send the original Repair Work Order to the repair provider
- Attach the original Trouble Report, along with any attachments, to the copy of the Repair Work Order
- Two-hole punch the copy of the Repair Work Order and hang on the Work Order clip board
- Upon notification that the repair has been completed, remove the copy of the Repair Work Order from the Work Order clip board and place in the filing bin

Complaint Handling

- As soon as a call is identified as a complaint, begin taking notes, either on a complaint form, or on a pad
- Be sure to ascertain caller name and telephone number and the name of the system
- Note the nature of the complaint in as coherent a fashion possible
- Upon completion of the call generate a Work Order or Trouble Report to address the complaint
- Handle the Work Order/Trouble Report as outlined elsewhere
- Attach a copy of the complaint form or your notes to the copy of the Work Order/Trouble Report

Coliform Failure, Non-Acute

- Non-Acute Coliform Failure notification will come from the lab by telephone
- Upon receiving the call, enter the Add/Update Coliform form in the Coliform navigator in the database
- Fill in the information requested on the form
- Generate a Work Order to take the Repeat samples
- Generate a Work Order for the additional Routine samples for the following month

- Notify ODW if a sample failure constitutes confirmation of a previous Routine sample
- Complete the necessary lab slips
- Notify the field technician of the failure
- Notify the owner's representative of the failure
- Place the Work Order/Lab Slips in the field technician's box
- If the failure constitutes confirmation of a previous sample, prepare the required notification and mail to the system's users

Coliform Failure, Acute

- This procedure is the same as for Non-Acute down to notification of ODW. Notification of ODW will be by telephone and will take place for any Acute Coliform failure including the failure of a single Routine sample
- IMMEDIATELY notify the President, the field technician and the owner's representative, by telephone
- Prepare the lab slips for the Repeat samples. Repeat samples will be taken the same day as notification if at all possible. Request that the lab prepare for an after-hours delivery, if necessary
- Prepare system user notification as directed by ODW
- System user notifications will be delivered by hand to each system user

Coliform Failure Troubleshooting

Coliform bacteria are present everywhere. They are used as an indicator organism because if they can gain access to the water system, then other, disease-causing organisms can too.

The result is that it is often difficult to impossible to determine a source for a coliform infestation. The best approach to troubleshooting is to examine the entire water system in a systematic fashion.

Prior to examining the system, an investigation should be undertaken to ensure there have been no unusual occurrences that could lead to entry of bacteria into the system. Typically, unusual circumstances most often encountered center around failures within the system or repair work to the system. System failures could include a pump failure resulting in a pressure loss, or a line break that not only results in a pressure loss, but opens the system to contamination from the surrounding environment. System repairs might include meter installation, valve replacement or pulling a well pump. Other unusual circumstances could include openings into the system, such as opening a reservoir hatch.

Once unusual circumstances have been eliminated, the system should be examined as follows:

Step 1: Examine the wellhead. You are looking for openings exploitable by bacteria. Look for the following:

- Casing vent. No casing vent means that make-up air sources are uncontrolled and the air could be coming from anywhere, including electrical conduit that leads underground or is infested with insects (cockroaches love electrical boxes). If a casing vent is installed, ensure that it is in good repair and all screens are present and intact.
- Wire entry point. The point at which the pump wires enter the well casing should be well-sealed. In the case of a well seal, either the compression fitting must be installed and good repair, or the area around the entry point sealed with food-grade silicon. For well caps, the conduit should be properly attached to the underside of the cap.
- Junction box. If a junction box is installed on top of the well seal, ensure that all conduit entrances are properly installed and secured and that the cover of the junction box is properly and securely installed.
- Well cap/Well Seal. Examine the well cap/well seal and determine if it is the appropriate type. Most well seals are of the type that compress a rubber gasket between two metal plates. Well caps can be either a properly sealed variety or a "splash cap". Splash caps are typically characterized by set screws that hold the cap in place with no gasket between the cap and the well casing. An appropriate well cap will have a compressible gasket of some type. Ensure that the well cap or well seal is properly installed and in good repair.
- Some well casings are equipped with monitoring ports. Ensure that the monitoring port cap is in good repair and thoroughly screwed down.
- Examine the entire wellhead for openings.

Step 2: Examine the reservoir.

- Examine the reservoir hatch to ensure that secures the opening from any outside intrusion. For concrete and steel reservoirs there will usually be a metal hatch. The hatch should be thoroughly gasketed between the hatch and the edge of the hatch combing. A good gasket will preclude moisture entry into the reservoir.
- Examine the outside of the reservoir. On concrete reservoirs, minor seepage can be expected, but substantial leaks are suspect. Be sure the top of the reservoir is clean and free of moss.
- Look inside the reservoir. The hatch combing inside the gasket should be free of insects and spider webs. The floor of the reservoir should have no more than a light layer of sediment. There should be no objects on the reservoir floor, nor should there not be anything floating in the water. Look for evidence of leakage from the roof. The water should be clear, not murky, with nothing floating in it.
- Examine the reservoir vent. The vent(s) should be inverted with the opening several inches above the top of the reservoir. The opening should be thoroughly screened with fine mesh non-corrosive screen.
- Look at the overflow. The overflow should point down and the opening should be thoroughly screened with fine mesh non-corrosive screen.

Step 3: Inspect the booster pumps. There should be no leaks around the pumps or the associated manifold plumbing. On many pumps, a small drip may be expected, and is even necessary, from around the packing gland. This is normal.

Step 4: Investigate the pressure tank(s).

- If the system is equipped with a hydropneumatic tank, make sure that whatever means of recharge does not present the possibility of the introduction of contaminants. A typical problem is a compressor that draws air from a confined, insect infested corner. If the tank is equipped with a means of vigorous flushing (and it should), flush the tank. All but the very first short burst should be clear. An extended period of brown water indicates flushing was past due.
- If the system is equipped with bladder tanks, tap each tank with a light hard object (I use a ring). All tanks should sound the same. If they do not, a technician should be contacted to check the pre-charge in each tank and each tank's capability to hold a pre-charge.

Step 5: Check any solution tanks. Solution tanks should have a tight fitting lid with any entry points properly sealed. The interior of the tank should be clean and free of debris.

Step 6: Observe the general condition of the pumphouse. Pumphouses should be in good repair, with no openings for vermin, clean and well maintained.

Step 7: Examine the distribution system.

- Look for leaks.
- Look for cross-connections.
- Evaluate flushing station locations and numbers.

Step 8: Examine System Records

- Water usage
  - High water usage could indicate a leak
  - Low water usage could indicate stagnate water
- Flushing frequency
  - Regular flushing improves water quality
- General water quality
  - Turbidity provides habitat for bacteria.
  - High mineral content can cause sediment that provides habitat for bacteria.

If a detailed examination of the system does not reveal any possible sources of contamination, or, following repair of sources found, shock chlorinate the system and flush.

Pressure Loss

System pressure loss may be caused by a number of factors. The most common are power failures, pump control failures and water line breaks. In all cases, the procedure is the same.

- If time permits, issue a Boil Water Advisory to all system users.
- Once pressure is restored the system should at least be flushed. If the pressure loss is due to a water line break, the system must be shock chlorinated.
- Take an investigative coliform sample.
- Upon return of a Satisfactory result from the coliform analysis, lift the Boil Water Advisory.

If the pressure loss is due to a regional power failure there may not be time to complete all tasks. In view of that possibility, NWS issues an advisory in the fall to all system users detailing the steps they should take in the event of a system pressure loss. Every effort should be made to shock chlorinate or flush systems, however, in the event that the power outage is extensive, this may not be possible.

NWS distributes a general brochure detailing what customers should do in the event of a pressure loss. The first such brochure is going to customers in the fall of 2007. In subsequent years, the brochure will be distributed with the annual Consumer Confidence Report.

Water Service Request

Water Service Requests typically come through a request for an Application for Determination of Water Adequacy (ADA). The following is a procedure that staff can use to complete routine application requests. Any unusual requests should be referred to the Operations Supervisor.

NWS maintains a spreadsheet list of the available and committed services for each water system. That spreadsheet is referred to as WAL spreadsheet because at the time it was originally invented, Water Availability Letters were the standard, rather than Applications for Determination of Adequacy.

- Check for the WAL spreadsheet in the system's electronic file. If one does not exist, refer the request for ADA to the Operations Supervisor.

- Check County website:
    - Accurate Tax Parcel Number
    - Ownership
    - If there is a discrepancy, refer to the Operations Supervisor.

- Retrieve Application for Determination of Adequacy (ADA) from either electronic or paper, as appropriate.

- Fill out the ADA. If you have questions, refer to the Operations Supervisor.

- Check with the owner's representative to ensure that the property has all assessments paid.

- Add the connection to the WAL spreadsheet in the system's electronic file.

- Update the number of active connections in NWS database.

- Update the number of connections on the WFI.

- Place the ADA and the WFI on the Operations Supervisor's desk for signature.

EXCEPTIONS

Shorecrest:

Shorecrest does not have a WAL spreadsheet. To prepare an ADA for Shorecrest, copy the latest appropriate ADA from the WAL electronic file. The ADA's are numbered by connection. So 418 is the 418th ADA. The copy you make should be named for the next consecutive number.

A file name followed by a letter (ie 418A) is an ADA for an application that is a change of use and does not add to the total connection count. Check the request from Shorecrest to see if the particular request adds a connection. If it does not, copy the latest ADA followed by a letter. For instance, if the request keeps the count at 418, and there is a 418A, copy the 418A and rename as 418B. If there is no 418A, but there is a 417A, copy the 417A and rename 418A.

This becomes much clearer when you examine the WAL electronic file for Shorecrest and look at the ADA's.

Pierce County:

The Pierce County ADA is somewhat abstruse. Refer Pierce County requests to the Operations Supervisor.

Water System Billing Procedures

NWS recommends that water systems issue utility bills every other month. The bulk of the systems for which we handle the utility billing issue every other month, with a handful of systems issuing water bills monthly.

The following procedures are abbreviated and do not address steps specific to the particular billing software NWS is using.

Utility Bills

Metered Systems

- As a part of routine work order preparation, work orders directing field personnel to read service meters are generated by the Operations Supervisor or staff working at his/her direction.
- Operations Supervisor, or staff working at his/her direction, requests route sheets from the bookkeeper.
- Route sheets are attached to the work orders and delivered to field staff.
- Field staff reads the service meters and records readings on the route sheets. Source meters must also be read at the time service meters are read. Source meter readings are recorded on the site log, the work order, and the route sheet.
- Completed work orders/route sheets are returned to the Operations Supervisor or his/her designee.
- Route sheets are separated from the work orders and delivered to the bookkeeper.
- Bookkeeper enters readings in utility billing software.
- Bookkeeper generates utility bills and mails to system customers.
- Bookkeeper generates appropriate Accounts Receivable reports and files as appropriate.

Non-Metered Systems

- Bookkeeper generates utility bills in accordance with each system's billing schedule.
- Bookkeeper mails utility bills to system customers.
- Bookkeeper generates appropriate Accounts Receivable reports and files as appropriate.

Receipt of Payment

System-Held Checkbook

- Received checks are copied and copies filed in the system's billing notebook.
- Receipts are recorded in the utility billing software.
- Accounts Receivable reports are generated.
- Accounts Receivable reports are copied.
- Copy of A/R reports are delivered to the system
- Original A/R reports are filed in the system's billing notebook.
- Deposits are prepared and deposited in the system's checking account.

NWS-Held Checkbook

- Received checks are copied and copies filed in the system's billing notebook.
- Receipts are recorded in the utility billing software.
- Accounts Receivable reports are generated.
- Original A/R reports are filed in the system's billing notebook.
- Deposits are prepared and deposited in the system's checking account.
- A/R reports are delivered to the system on request.

The procedures for receiving and banking utility payments is subject to change. NWS is in the process of establishing a transfer account with our bank, eliminating individual deposits and bank trips.

New procedures will be established once the transfer account has been opened.

Past Due Collections

The following procedures are general in nature. All collection activities are conducted as instructed by the water systems.

- Account balance reports are generated at the end of each utility billing cycle for each system.
- Past due accounts are identified.
- An account due reminder, usually in the form of a post card, is generated for each system customer account that is aged up to ½ billing cycle. The notice is mailed.
- A past due notice, usually in the form of a post card, is generated for each system customer account that is aged between ½ and one billing cycle. The notice is mailed.
- In some cases, NWS will establish payment arrangements for past due accounts.
- A provisionary shut-off notice, in the form of a letter, is generated for each system customer past due more than one billing cycle. The notice is mailed.
- If payment is not received from accounts issued provisionary shut-off notices by the date specified on the notice, a shut-off notice, in the form of a letter, is issued. A shut-off notice will usually have a 24-hour due date and will be hung on the main entrance to the residence.
- If payment is not received from customers issued shut-off notices, water service is shut-off. Generally, payment for past due accounts having reached shut-off notice stage must be paid in-hand and in cash at NWS's office.
- Any customer who is under a payment arrangement is deemed to be under provisionary shut-off notice. If a scheduled payment is missed, the shut-off notice will be issued.
- When a shut-off account is paid in full, or in accordance with a payment arrangement, service shall be restored within 24 hours. Most systems have penalties and costs in place for customers who reach shut-off and require all penalties and fees be paid in full prior to service restoration.
- If a shut-off notice is issued to a customer whose connection does not have a shut-off provision, generally, NWS will install a shut-off provision. For most systems, the customer is responsible for the cost of installing the shut-off provision.

Data Entry Conventions

Computers are brainless animals. They do not have the power to think and reason. All they can do is store and retrieve data in various formats. In order for a computer database to function properly, the data must be entered in a particular format, using specific conventions, in order to ensure that it can be retrieved.

GENERAL CONVENTIONS

1. We know that we are dealing with water systems. In general, we do not need to add "water system" or "W.S." after a water system's name. The same for "Home Owners Association" or "HOA".

2. Double check spelling. If something is not spelled correctly, it will never be found.

3. When there are multiple systems, use just the number, do not use the "#" symbol. For instance "Deer Haven 2", NOT "Deer Haven #2".

4. Do not use apostrophes in water system names.

5. Be sure all related data is input. For instance, when inputting a new system, be sure that all the client data and repair provider data are also either input or already present.

6. The attempt has been made to include buttons on the data entry forms that bring up related data that you may need. For instance, a button marked "Customer List" will bring up a list of customers so that you can confirm presence and spelling. A button marked "Systems" will bring up a list of systems. ANY NEW ENTRIES MUST BE SPELLED AND FORMATED EXACTLY LIKE THE EXISTING ENTRY.

SPECIFIC FORMS

The following are observations on some of the more critical fields in specific forms. If a field has not been discussed, it is because it is self explanatory.

Add/Update Projects

1. Be sure that you understand the project numbering convention and enter the Project Number accurately.
2. The Project Name must begin with the system's name. For instance "Ignatz". Do not include "Water System".
3. The Descr. field should describe the project. For instance "Group B Design".
4. One of the four status boxes should be checked unless the project is in some kind of limbo. It is the Project Manager's responsibility to ensure these boxes are up to date.

Add/Update Systems

1. Be sure and follow the general conventions regarding system names as outlined above. A "Systems List" button has been added to the form.
2. Be sure the Customer Number is correct. You can refer to the Customer List. If you have to add a new Customer (Client, the words are interchangeable), refer to the information regarding the "Client Add/Update" form information below.
3. The "Repair Contact" field MUST be filled in. Use the "ID" for the repair provider, as found in the "Repair Provider List". A button has been added that brings up the Repair Provider List.

Client Add/Update

1. The customer number is sequential. If you have doubts about what that number should be, just hit the "Last Record" button and it will take you to the last record. A new record will simply be the next number.
2. Before adding a new client, be sure and punch the "Customer List" button and check the list. If you highlight any field, you can search for contents by pressing Control F which will bring up a little search box.
3. Be exquisitely precise in your spelling.
4. Once entered, never change a client number. If a system or project changes ownership, enter a new client with a new number and change the client number in the System or Project Add/Update form.

Add/Update Repair Providers

1. The ID field is extremely important. This should be a one-word identifier for the repair provider. For instance, Nicholson for Nicholson Drilling.
2. Always check the Repair Provider list before adding a new one. Duplicates here can be a real headache.
3. The Company Name should be the full and correct name of the company.

Add/Update Employees

1. The employee number functions just like the client number.
2. We want full legal first and last names, not the nick names or middle names used as first names, etc.
3. The "Commonly Used Name" should be just that. An example would be Jane Wiley, whom we all know as Jane, which is her middle name. Gloria is her first name.
4. The initials are critical. Typically, we will use the initials of their name. For example, my initials are RJH. Some future employee may want to use something else, or, we may get two employees with the same initials, in which case something will have to be invented.

Add/Update Event

1. It is imperative that the initials in the "Assigned" field match the official initials. For instance, Tony Norris's initials are JAN, not TN. A button will bring up a short employee list, with initials.
2. The "System" field must exactly match the system name in the Systems List. There is a button for your convenience.
3. The Event Number is added automatically. DON'T CHANGE IT.

If you have any questions, please ask. The current IT person is the President.

Filing System (Paper)

The biggest challenge faced by NWS is data handling. We handle large amounts of information to which we must have almost instant access. While the computer is a big help in managing that data, information on paper must still be stored in such a fashion as to be readily accessible.

To that end, a very formal filing system has been established. All NWS employees SHALL handle all information on paper in accordance with the filing system.

The center of the filing system is a file naming convention that consists of three layers of information, each more specific than the one above it.

The first layer is the general subject of the file. First tier file names consist of the following categories:

- Administration
- Accounting
- Management
- Managed Systems
- Marketing
- Personnel
- Projects

First Layer categories are firmly established. New categories may be added, but only with the approval of the President.

Second layer categories further describe the nature of the file. An example of a second layer category might be "Accounts Payable" within the first layer category "Accounting".

The third layer describes the specific contents of the file. For instance, invoices from Twiss Labs would be found in "Twiss Labs Payables" under "Accounting", "Accounts Payable". The file label would appear as follows:

ACCOUNTING
ACCOUNTS PAYABLE
TWISS LABS PAYABLES

A blank Application for Determination of Adequacy for Mason County would be found in the following file:

ADMINISTRATION
FORMS
MASON COUNTY ADA

Managed Systems and Projects files differ from this format slightly. The Managed Systems files are differentiated by the nature of the file folder. The Managed Systems files use a heavier, color

coded, multi-section file folder. Group B folders are brown, Group A folders are green. In addition, the first layer category is assumed on the label. A typical Managed System file label contains the system name and ID number, as appears follows:

JORSTAD CREEK
ID#37035W

Projects folders have three categories, but are somewhat different than the general files. The first layer (line) consists of the word "Projects" followed by the specific project number (see following). The second line consists of the project name, and the third line consists of the client's name.

PROJECTS 04071301
PONDEROSA APTS.
BRYANT, EVELYN

All projects will have a distinct project number conforming to NWS's standard project number convention. While the number looks complicated at first glance, the system is quite simple. The project number consists of eight numbers. The following breaks down the project number used the example above to demonstrate the convention:

04	=	The year the project was opened
07	=	The month the project was opened
13	=	The day the project was opened
01	=	The sequential number of the project

The sequential number is the only number that is not completely self-explanatory. It is simply the next project for that day. The Ponderosa Apts. project was the first project opened on July 13, 2004. The second project on that day would be numbered "04071302".

Archiving and Retention

The contents of the working managed systems files shall be reviewed annually. Most contents of the files over one year old can be moved to the archives. Exceptions include information needed for the current year Consumer Confidence Report, the contract, the current Water Facilities Inventory Form and any basic water system information, such as site plans, contact lists. Etc. The following documents shall be retained the specified time, either in the working files or the archives:

Bacteriological	5 years
Turbidity	5 years
Daily Source Meter Readings	10 years
Other Operations Records	3 years
Actions to correct Primary Standards Violations	3 years
Sanitary Surveys, SPI's	10 years
Project Reports	Life

Construction Documents	Life
Daily Chlorine Residuals	3 years
Treatment Plant Ops Records	3 years
Public Notifications	3 years
Client Correspondence	Life
Client Invoices	3 years

When a system goes out of existence, files shall be removed from the archives and destroyed, subject to the above time lines. Files may be given to the system owner if requested.

When a contract is terminated, files shall be archived. Copies of files may be made for the system owner or for another operator upon request.

Filing System (Electronic)

The filing system for electronics files corresponds almost exactly to the paper system. The layered categories in the paper system correspond to folders in the electronic system. As an example, if a scanned copy of a Twiss invoice were to be filed, it would be found in the Twiss folder, which in turn would be in the Accounts Payable folder, which would be in the Accounting folder.

The first layer folders (categories) for all of the company's files is located in "Shared Docs" on the server. Everyone's computer should have a shortcut to that location.

An important aspect of the electronic files is the naming convention for specific files. Certain types of files will all have the same name. For instance, all of the well data files for all of the systems are named "Welldata.xls" (.xls because they are all Excel spreadsheets). So the well data for the Sandy Hook Park water system can be found in the following location:

Managed
Sandy Hook Park
Welldata

A compiled list of standard file names can be found in the Procedures notebook.

Not all files have specified names. Some files have specified formats. These formats include letters, work orders, fax covers and trouble reports. The format for letters is the foundation for all the others, and it is essentially identical to the project number format. For instance, the first letter written today ("today" being 10/10/07) to Sandy Hook Park would have the file name 07101001.

07	=	The year the letter was written
10	=	The month the letter was written
10	=	The day the letter was written
01	=	The first letter of the day to Sandy Hook Park

If you were to go looking for the letter in the electronics files, you would find it in the following location:

Managed
Sandy Hook Park
07101001

Likewise, if you went looking for the hard copy of the letter, you would find it in the correspondence section of the following green managed system file:

SANDY HOOK PARK
ID#759500

The formats for the other file types simply adds a file type identifier to the front of the number. The identifiers are:

Fax Cover	F
Work Order	WO
Trouble Report	TR

So the file name for the first Trouble Report issued today to a specific system would be, TR07101001.

It is expected that most files will reside on the server. Exceptions include files that relate to a specific person's duties or files of a confidential nature, such as accounting and personnel information. It is further expected that files kept on individual computers will conform to the filing conventions.

- **LAB SLIP – TASK PATH**

1. Blank Lab Slip provided with Work Order
2. Lab Slip filled out at time of sample
3. Lab Slip attached to sample
4. Tech logs sample

LAB SLIP RETURNS - SATISFACTORY

1. Lab Slip logged in
2. Lab Slip copied
3. Copy and original filed
4. Copy included in periodic invoice to client

LAB SLIP RETURNS – UNSATISFACTORY

1. Lab Slip logged in

2. Unsatisfactory result logged in Coliform Hit List

3. Work Order generated for Follow Up samples (See Work Order – Task Path)

4. Change number of Coliform to 5 for the next month in the MWO

LAB SLIPS RETURN – UNSATISFACTORY

Continue loop until Satisfactory results are received

LAB SLIPS RETURN – SATISFACTORY

1. Lab Slips logged in

2. Copy Lab Slips

3. File Lab Slips

PAGER

The pager is the primary contact for emergency response. It will always be in the possession of the Operations Supervisor or delegated to another Certified Operator.

The pager is set on buzz. Please do not change that.

When it buzzes, press the green button and the latest page will be displayed. A page from the answering service will be 881-0958.

To access the emergency voice mail, call the office and wait for the message to start.

When the message starts, press #6*600. You will get the emergency voice mail system. The system will direct you with voice prompts.

Call whomever is reporting the emergency and find out what they think is going on.
Contact the primary contact for the system, if that is not who placed the original call, and get authorization to take the necessary actions.

If you KNOW that you can fix the problem, go to the water system and fix the problem.

If you are in ANY DOUBT about your ability to fix the problem, with authorization from the primary contact, call the repair provider. Some systems like to do things themselves and they may want to fix the problem. That is OK.

If you are unable to reach the primary contact, and the system is either out of water or the situation will result in personal or property damage, take action.

Follow up with the primary contact to inform them about what is going on.

Fill out a Work Order giving the details of the problem and actions taken. Record any time you spend on the problem.

If you are in any doubt about the necessary action, call Operations Supervisor on his cell phone.

TECH BOARD

Field technicians are to note the general geographic area in which they will be working in on the white board in the field tech office.

The top row is for this week. The bottom row is for next week. A brief note as to general area of operations is all that is required, and to the best of your knowledge.

If you are working a particular day, but do not yet know where you will be, make a note. If your plans change, correct the board.

Appendix C

Water Sampling Instructions

Title

Inorganic Chemical

Synthetic Organic Chemical

Volatile Organic Chemical

Bacteria

Nitrate

Lead and Copper

Radionuclide

Haloacetic Acids

Bottle List

WATER SAMPLING INSTRUCTIONS

SAMPLING INSTRUCTIONS FOR **INORGANIC CHEMICAL** ANALYSIS OF DRINKING WATER SAMPLES

- The sample should be taken as close to the source (well, river, etc.) as possible. If there is a spigot in the well house, use that rather than a tap in a residence on the distribution system.

- Disconnect any garden hose or appliance that may be connected to the spigot.

NOTE: BE SURE TO EXPAND THE SAMPLE CONTAINER BEFORE TAKING THE SAMPLE, IF IT IS THE COLLAPSIBLE TYPE, BY GENTLY BLOWING INTO THE MOUTH OF THE CONTAINER. FILL TWO CONTAINERS IF METALS ARE TO BE PART OF THE ANALYSIS REQUESTED.

- Open the spigot or tap and allow the water to run freely for 2 to 3 minutes before filling the sample container.

- Write the required information (time of sampling, date of sampling, sample location, system name, source number, etc.) on the label attached to the sample container (This information should match the corresponding information on the request form.

- Fill the sample container to the shoulder of the bottle. DO NOT FILL TO OVERFLOWING.

- Complete the accompanying form (Public water systems **must** include the system ID number, system name, source number, whether Group A or B and the date and time of sampling if the sample is to be used to meet compliance requirements).

- Deliver the water sample and the analysis request form to the laboratory within 24 hours of sampling.

- Please contact Twiss Analytical Labs at (360) 779-5141 if you have any questions.

SYNTHETIC ORGANIC CHEMICALS (SOC's)

(EPA Methods 515.1, 525.2, 531)

Herbicides, Pesticides, Adipate, PAH's, Carbamates, Glyphosate, Paraquat & Diquat

INSTRUCTIONS FOR SAMPLE COLLECTION

COLLECTION POINT

- Samples must be collected in the proper number, at the appropriate time and location, and of the proper volume in order to satisfy the requirements of the Phase II and Phase V rules. Samples that fulfill these criteria are called compliance monitoring samples. Groundwater and surface water systems should be representative of the source water following treatment (See figure on the back of this sheet). Systems that draw water from more than one source and that combine these sources prior to distribution must sample during periods of normal operating conditions. Samples must be collected at the same sampling point each cycle unless conditions make another sampling point more representative. Generally, samples should be taken at the tap on the pipeline before the treated water is sent to the distribution system. If the water system is treating for any organic compounds (i.e. packed tower aeration, granular activated carbon, oxidation, etc.) contact your regional Drinking Water Specialist to locate the proper collection point. You will find the name and telephone number on the back of this sheet.

- **Bottles must NOT be filled near gasoline cans, gasoline-powered motors, paint cans, lighter fluid, paint strippers, pesticide bottles or exhaust fumes from running engines. Fumes and vapors may contaminate the samples.**

If you have any questions about sampling locations, remember to call your Washington State Drinking Water Specialist:

- SW Regional Office - Belle Fuchs: (360) 586-5179
- NW Region Office - Steve Hulsman: (206) 464-7962
- Eastern Regional Office - Scott Fink: (509) 456-2475

SAMPLE COLLECTION

1) 1) If water taps are to be used for sampling, all aerators, strainers and hose attachments need to be removed. Open the tap and allow the system to flush for about ten minutes or until the water temperature has stabilized. Adjust the flow to about the thickness of a pencil. Position the container under the tap and collect the sample. Introduce the water very gently to reduce agitation and to avoid introducing air bubbles. Fill the bottle so that little or no air space will remain in the bottle after the cap is secured.

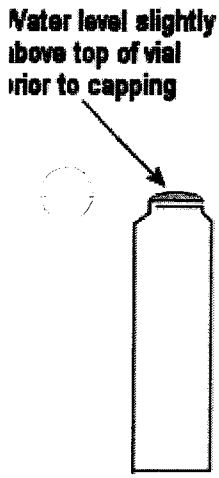
2) 2) Collect __2___ one-liter bottle(s) at each collection point for method 525.2
Collect __2___ 500 mL bottle(s) at each collection point for method 515.2

Collect __1___ 250 mL bottle(s) at each collection point for method 531

IMPORTANT: Be careful not to touch or otherwise contaminate the inside of the lid or the lip of the bottle during sampling.

3) 3) All samples need to be kept cold. If the samples are to be held for a day or longer prior to shipping, place the bottles in a refrigerator. Once samples are ready to be shipped, add a bag of ice to the cooler. Samples must be received at Twiss Analytical Laboratories, Inc. within two (2) days of sampling.
4) 4) Insert the completed sample information form (WSI) into a plastic bag and place in the cooler along with the samples.

Please contact Twiss Analytical Labs at (360) 779-5141 if you have any questions.



VOC Sampling Instructions

Please read the following instructions carefully before sampling. Improperly collected samples will result in increased cost to the water system.

Sample Kit Contents

- • 1 refrigerant pack
- • 1 40-mL vial labeled "Field Blank" and dated (The field blank serves as an indicator of contamination which may occur during sample transport or storage. Therefore, this vial **must not** be opened and must always travel with the samples.)
- • 2 40 mL vials for each source to be samples (These vials each contain 25 mg of ascorbic acid the **must not** be rinsed out during sample collection.)
- • 2 red-capped 2 mL vials containing inserts filled with 2 drops of 1:1 Hydrochloric Acid (HCl). **CAUTION: Hydrochloric acid is corrosive. If spilled on skin or clothes rinse with large quantities of water immediately. Handle with care and wash hands when finished collecting samples.**
- • Water sample Information form for each source to be collected

Sample Collection: (FREEZE REFRIGERANT PACK BEFORE COLLECTING SAMPLES)

5) 1) All samples should be collected after treatment and before the distribution system (representative of the overall source)
6) 2) Use the same collection point each time you sample
7) 3) Remove any potentially contaminating devices such as filters, screens, aerators and vacuum breakers from the sampling tap.
8) 4) Open the tap and allow water to run (at least 3 minutes) until it reaches a constant temperature.
9) 5) Reduce the flow to a thin steady stream (the thickness of a pencil)
10) 6) Fill 2 vials from each source at the same time and under the same conditions. Avoid agitation of the sample whiled filling. Allow the stream of water to gently flow into the vial just to overflowing.
11)

DO NOT LET THE VIALS TOUCH THE FAUCET OR SPIGOT AS THE SAMPLE MAY BECOME CONTAMINATED.

12) 7) After filling, transfer the complete contents, including insert, of one of the red-capped 2 mL vialss into each 40-mL vial.
13) 8) If necessary, gently add more water so that the sample vial looks like the illustration to the right.
14) 9) Carefully place the cap onto the vial. The shiny side of the Teflon cap liner should be face down in contact with the water sample. Tighten down the cap securely.

15) 10) Check for trapped air by inverting the vial and looking to see if any air bubbles are present. If any air bubbles are present, gently add more water and repeat step 9. When you are sure the vial is properly filled, shake vigorously.
16) 11) Label each vial with the DOH source number and your name for that source. EXAMPLE: S01, Well #1

After Sample Collection:

1) 1) Place vials in the shipping container with the frozen refrigerant pack and the field blank. Place the insulating material between the vials and the refrigerant pack. Put the red-capped vials back into the container. If you are not going to return the sample to the laboratory immediately upon returning from the collection site, place your samples in a refrigerator and the refrigerant pack back in a freezer.
2) 2) Complete the Water Sample Information form for each source collected. Indicate the exact time, date, and location where the sample was collected.
3) 3) Write the correct System ID number, Group type (A or B) and DOH source number in the spaces provided on the Water Sample Information form.

Shipping:

When the forms are completed and you are ready to ship, follow the instructions above to again place samples in the cooler and then ship to the laboratory. Twiss Analytical Laboratories, Inc. courier or UPS is satisfactory for shipping. **(Call to arrange courier service). ALL SAMPLES MUST BE RECEIVED AT THE LABORATORY PRIOR TO 4:00 P.M. ON FRIDAY OF THE WEEK IN WHICH YOU SAMPLED.**

Questions you have regarding drinking water regulations, system monitoring requirements or your particular system ID number and source numbers should be directed to the regional contacts listed on the Water Sample Information form. Please contact Twiss Analytical Labs at (360) 779-5141 if you have any questions.

BACTERIA SAMPLING INSTRUCTIONS FOR DRINKING WATER

Drinking water samples taken or microbiological analysis need to be representative of the water in the distribution system. **The location and type of faucet used can cause erroneous sampling results.**

- Swivel type faucets should be avoided because they can collect debris under the neck. A swivel faucet in a kitchen increases the risk of contamination on or around the faucet because of exposure to food daily. A dirty faucet can be the cause of a dirty sample.
- Another situation to avoid is using a sample site that is less than 12 inches from the ground. It increases the likelihood of water back splashing into the sample bottle.

Outside spigots are considered quite sanitary, with the exception of Frost Free faucets. Outside spigots are generally more than 12 inches from the ground, are easy to to access, are not swivel type, and are not exposed to debris and food. They can also be easily disinfected.

1. The powder in the bottle is meant to be there and will not contaminate your sample. DO NOT rinse the bottle out.

2. Remove any screens, hoses, or aerators from the end of the faucet.

3. Disinfect the sample site by spraying down or wiping area with bleach or a propane torch (take care that the faucet does not have plastic parts).

4. Make sure your hands are clean. Avoid touching the facet as much as possible. Turn on the cold water and then let the water run for about 5 minutes or longer if they are used infrequently.

5. Once the site is flushed turn the flow rated down to the diameter of a pencil. Break the seal on the lid and remove the cap, making sure not to set it down or turn it upside down while holding it. Fill your sample to the 100ml line and immediately cap the bottle.

- Fill out all the paperwork and return it to Twiss Analytical Laboratories within 24 hours of sampling. **The sample needs to be kept cold** until it arrives.

- Please contact Twiss Analytical Labs at (360) 779-5141 if you have any questions.

SAMPLING INSTRUCTIONS FOR NITRATE ANALYSIS OF DRINKING WATER SAMPLES

- • The samples should be taken as close to the source as possible. If there is a spigot in the well house, use that rather than a tap in a residence on the distribution system.

- • Disconnect any garden hose or appliance that may be connected to the spigot.

- • From the spigot or tap, run the water 2 to 3 minutes before taking the sample.

- • Write the necessary information (time, date, location, etc.) on the label attached to the bottle (this information should match the corresponding information on the request form)

- • Fill the sample container to the shoulder of the bottle

- • Complete the accompanying form (Public water systems must include the system ID number, the system name, the source number, whether group A or B and the date and time of sampling if the sample is to be used for compliance purposes).

- • Deliver the water sample and the analysis request form to the laboratory within 24 hours of sampling.

Please contact Twiss Analytical Labs at (360) 779-5141 if you have any questions.

Lead and Copper Sampling Instructions

Lead and Copper sampling is required for all community and non-transient non-community water systems. Unlike other sampling, lead and copper samples must be taken from inside the home. The number of samples that a system must collect is based on the system population. There are specific guidelines for selecting homes to be sampled.

SAMPLE COLLECTION

1. Make arrangements with the homeowners to coordinate sample collection and discuss sampling procedures or arrange to be allowed into their homes to take the samples.
2. There must be a six-hour period (but no more than a twelve-hour period) during which there is no water use through-out the residence prior to sampling. Either early morning or evenings are the best sampling times to insure that stagnant water conditions exist.
3. The sample must be collected from a kitchen or bathroom cold water faucet. **Do not run any water prior to sampling.** The object is to get the "first draw" of the water that has sat stagnant in the line. Make sure that the water does not go through a hose or filter before it reaches the sample container.
4. If you have a sample container that is the collapsible type, **before** taking the sample, inflate the container by gently blowing into the bottle.
5. Place the open bottle below the faucet and gently open the cold water tap. Fill the sample bottle to the shoulder of the bottle and turn the water off. Tightly cap the sample bottle.

AFTER SAMPLE COLLECTION

1. All samples must be kept **cold**. Bottles must be labeled with address of sample, date collected, and analysis requested.
2. Complete Sample Information form (WSI). The following information must be completed:

    - System ID number
    - System name
    - County
    - Group A or B
    - Sample location (must be address of home from which sample was taken)
    - Collection Date and time

TWISS ANALYTICAL LABORATORIES, INC.

26276 Twelve Trees Lane, Suite C ▲ Poulsbo, WA 98370 ▲ (360-779-5141 ▲ Fax: (360) 779-5150

WATER SAMPLE INFORMATION FOR RADIONUCLIDE ANALYSIS

Lab/Sample No:

System ID No:	System Name:	
Group (circle): **A** **B**	County:	DOH Source No:
Multiple Sources:	Sample Type (circle): Before Treatment After Treatment	
Date Received:	Date/Time Collected:	Collected By:
Sample Location:		
Send Report To: Phone Number:	Bill To:	

ANALYSES REQUESTED (PLEASE CHECK)

EPA REGULATED

- ☐ Gross Alpha
- ☐ Gross Beta
- ☐ Gross Alpha & Beta
- ☐ Radium 226
- ☐ Tritium
- ☐ Strontium
- ☐ Cesium 134
- ☐ Iodine 131

☐ Radium 228

EPA UNREGULATED

☐ Uranium

☐ Radon

SAMPLING INSTRUCTIONS FOR RADIONUCLIDE ANALYSIS

The sample should be taken as close to the source as possible, before distribution

From the spigot or tap, run the water 2 to 3 minutes before taking the sample.

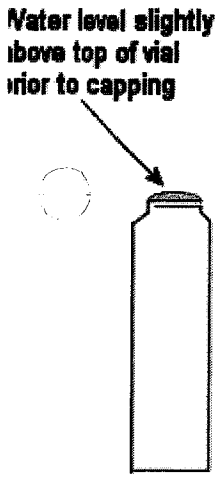
Fill the sample container to the shoulder of the bottle.

All samples must be kept **cold**. Bottles must be labeled with location of sample, date collected, and analysis requested.

Complete Sample Information form (WSI). The following information must be completed:

System ID Number
System Name
Collection Date and Time
DOH Source Number
Sample Type
County
Group A or B
Sample Location

Deliver the sample and form to the laboratory **within 24 hours of sampling.**



HALOACETIC ACIDS (HAA5)/TOTAL TRIHALOMETHANE (TTHM)

INTERIM ENHANCED SURFACE WATER TREATMENT RULE SAMPLE

COLLECTION INSTRUCTIONS

COLLECTION POINT

- • **ONE** sample should be collected from a location within the distribution system that reflects maximum residence time of water in the system.

- • **THREE** samples should be taken at representative locations within the distribution system taking into account the number of people, different sources, and different treatment methods. Systems may wish to collect representative samples at locations representing at least average residence time.

HAA5 and TTHMS should be collected from the same locations and preferably at the same time. If these are not collected at the same time, they should be collected during the same quarter. The location should stay the same for each of the four (4) quarters. Systems on reduced TTHM monitoring may continue to collect one sample per quarter per treatment plant from the point of maximum residence time.

If you have questions about sample collection points contact the Department of Health/Chris McMeen 206-389-2767.

SAMPLE COLLECTION

1) 1) If water taps are to be used for sampling all aerators, strainers, and hose attachments need to be removed. Open the tap and allow the system to flush until the water temperature stabilizes. Adjust the flow to about the thickness of a pencil. When no air bubbles are visibly detected collect the sample from the flowing system. Fill the sample bottles to just overflowing but **take care not to flush out the sample preservative**. After collecting the sample seal the bottle and agitate by hand for 1 minute.
2) 2) Collect 1 250 ml bottle at each collection point for Method 552.1

IMPORTANT: Be careful not to touch or otherwise contaminate the inside lid or the lip of the bottle during sampling.

3) 3) All samples need to be kept cold. If the samples are to be held for a day prior to transporting to the lab, place the bottles in a refrigerator. Once samples are ready to be transported to the lab, add a bag of ice to the cooler. Samples must be received at Twiss Analytical Laboratories, Inc. within 48 hours of sampling.

4) 4) Insert the complete sample information (WSI) form into a plastic bag and place in the cooler. Please contact Twiss Analytical Labs at (360) 779-5141 if you have any questions.

Bottle List

Tests Used For	Bottle Type
Drinking water nitrate, nutrients (ammonia, nitrate, orthophosphate, total Kjeldahl nitrogen, total phosphate)	125 mL Boston Round, Amber, HDPE (High Density Polyethylene)
Synthetic Organic Compounds, Full (SOCs) (Methods 525.2, 515.2, 531)	2 x 1 Liter Boston Round, Amber, glass, Teflon lined cap 2 x 500 mL Boston Round, Amber, glass, Teflon lined cap 1 x 250 mL Boston Round, Amber, glass, Teflon lined cap
Synthetic Organic Compounds (SOCs) method 525.2	2 x 1 Liter Boston Round, Amber, glass
Synthetic Organic Compounds (SOCs) method 515.2	2 x 500 mL Boston Round, Amber, glass
Synthetic Organic Compounds (SOCs) method 531	250 mL Boston Round, Amber, glass
Nitrate	125 mL Boston Round, Amber, HPDE (High Density Polyethylene)
Volatile Organic Contaminants, (VOCs) Water Soil	 2 x 40 mL VOC vial, septa cap plus one (1) laboratory reagent water blank. 8 oz Jar, wide mouth, septa cap, amber, glass
Drinking water inorganic chemical, heavy metals, environmental inorganic parameters	1 Liter Cylinder Round, HDPE 1 Liter Cubitaner
Drinking water bacteria, environmental bacteria samples	125 mL Cylinder Round, clear, colorless, polycarbonate, sterile
Heavy metals, organic contaminants in solids, semi-solids	4 oz Jar, wide mouth, Teflon lined cap, clear, glass
Soils for volatile organic contaminants	8 oz Jar, wide mouth, Septa cap, amber, glass
Trihalomethanes (THM)	2 x 40 mL VOC vial plus lab reagent water blank
Haloacetic Acids (HAA5)	250 mL Boston Round, Amber, glass
Oil and Grease / TPH	1 Liter Boston Round, Amber, glass
NWTPH-Dx	1 Liter Boston Round, Amber, glass
Coliform Bacteria	125 mL Sterile, Polycarbonate

Appendix D

Employee Manual

Title

Employee Manual

Northwest Water Systems

EMPLOYEE MANUAL

Printed 3/24/2011

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SECTION 1

INTRODUCTION

This Manual is designed to acquaint you with Northwest Water Systems and provide you with information about working conditions, benefits, and policies affecting your employment.

The information contained in this Manual applies to all employees of Northwest Water Systems. Following the policies described in this Manual is considered a condition of continued employment. However, nothing in this Manual alters an employee's status. The contents of this Manual shall not constitute nor be construed as a promise of employment or as a contract between the Company and any of its employees. The Manual is a summary of our policies, which are presented here only as a matter of information.

You are responsible for reading, understanding, and complying with the provisions of this Manual. Our objective is to provide you with a work environment that is constructive to both personal and professional growth.

It is the objective of Northwest Water Systems to provide our customers the best service possible and to foster a positive attitude among the staff and to encourage a pleasant working environment.

To that end, the Company strives to maintain an "open door" policy among all staff. This policy includes access to supervisors and management personnel for all employees up to and including the president of the Company. It also includes access to the contents of employees' desk and working spaces, while respecting individuals personal possessions and methods of organization. Within the offices there are designated files and other storage areas that are generally confidential and remain locked, such as personnel files and sensitive corporate information. Aside from these designated areas, it is expected that all other workspaces are open and accessible to all employees.

1.1 CHANGES IN POLICY

This Manual supersedes all previous employee manuals and memos that may have been issued from time to time on subjects covered in this Manual.

Since our business and organization are subject to change, we reserve the right to interpret, change, suspend, cancel, or dispute with or without notice all or any part of our policies, procedures, and benefits at any time. We will notify all employees of these changes. Changes will be effective on the dates determined by the Company, and after those dates all superseded policies will be null.

No individual supervisor or manager has the authority to change policies at any time. If you are uncertain about any policy or procedure, speak with your direct supervisor.

1.2 EMPLOYMENT APPLICATIONS

We rely upon the accuracy of information contained in the employment application and the accuracy of other data presented throughout the hiring process and employment. Any misrepresentations, falsifications, or material omissions in any of this information or data may result in exclusion of the individual from further consideration for employment or, if the person has been hired, termination of employment.

1.3 EMPLOYMENT RELATIONSHIP

Northwest Water Systems is an "at-will" employer. You enter into employment voluntarily, and you are free to resign at any time for any reason or no reason. Similarly, Northwest Water Systems is free to conclude its relationship with any employee at any time for any reason or no reason.

SECTION 2

DEFINITIONS OF EMPLOYEES STATUS

2.1 "EMPLOYEES" DEFINED

An "employee" of Northwest Water Systems is a person who regularly works for Northwest Water Systems on a wage or salary basis. "Employees" may include exempt, non-exempt, regular full-time, regular part-time, and temporary persons, and others employed with the Company who are subject to the control and direction of Northwest Water Systems in the performance of their duties.

2.2 EXEMPT

Employees whose positions meet specific criteria established by the Fair Labor Standards Act (FLSA) and who are exempt from overtime pay requirements. Exempt employees typically fill professional positions, such as engineers, and are generally paid on a salary basis.

2.3 NON-EXEMPT

Employees whose positions do not meet FLSA criteria and who are paid one and one-half their regular rate of pay for hours worked in excess of 40 hours per week. Non-exempt employees include office staff and field technicians and are typically paid on an hourly basis.

2.4 REGULAR FULL-TIME

Employees who have completed the 90-day orientation period and who are regularly scheduled to work 35 or more hours per week.

2.5 REGULAR PART-TIME

Employees who have completed the 90-day orientation period and who are regularly scheduled to work less than 35 hours per week.

2.6 TEMPORARY (FULL-TIME or PART-TIME)

Those whose performance is being evaluated to determine whether further employment in a specific position with the Company is appropriate or individuals who are hired as interim replacements to assist in the completion of a specific project or for vacation relief. Employment beyond any initially stated period does not in any way imply a change in employment status. Temporary employees retain that status until they are notified of a change in writing.

SECTION 3

EMPLOYMENT POLICIES

3.1 NON-DISCRIMINATION

In order to provide equal employment and advancement opportunities to all individuals, employment decisions at Northwest Water Systems will be based on merit, qualifications, and abilities. Northwest Water Systems does not discriminate in employment opportunities or practices because of race, color, religion, sex, national origin, age or disability.

Northwest Water Systems will make reasonable accommodations for qualified individuals with known disabilities unless doing so would result in an undue hardship. This policy governs all aspects of employment, including selection, job assignment, compensation, discipline, termination, and access to benefits and training.

Employees with questions or concerns about discrimination in the workplace are encouraged to bring these issues to the attention of their supervisor. Employees can raise concerns and make reports without fear of reprisal. Anyone found to be engaging in unlawful discrimination will be subject to disciplinary action, including termination of employment.

3.2 NON-DISCLOSURE/CONFIDENTIALITY

The protection of confidential business information and trade secrets is vital to the interests and success of Northwest Water Systems. Such confidential information includes, but is not limited to, the following examples:

- Compensation data,
- Financial information,
- Marketing strategies,
- Pending projects and proposals,
- Personnel/Payroll records, and
- Conversations between any persons associated with the Company.

Employees who improperly use or disclose trade secrets or confidential business information will be subject to disciplinary action, including termination of employment and legal action, even if they do not actually benefit from the disclosed information.

3.3 PROFESSIONALISM

Presenting a professional image is a vital part of the Company operations. All employees, in dealing with clients, the general public, regulators, and each other, shall strive to present a professional image.

Part of professional image is being willing to say "I don't know" when one is unsure of facts or information.

3.4 NEW EMPLOYEE ORIENTATION

Orientation is a formal welcoming process that is designed to make the new employee feel comfortable, informed about the Company, and prepared for their position. New employee orientation includes an overview of the Company history, an explanation of the Company core values, vision, and mission; and Company goals and objectives. In addition, the new employee will be given an overview of benefits, tax, and legal issues, and complete any necessary paperwork.

The orientation period also acquaints the new employee with the nature and extent of their duties and provides instruction and practice in the tasks and procedures they will be expected to complete.

Employees are presented with all codes, keys, and procedures needed to navigate within the workplace. The new employee's supervisor introduces the new hire to staff throughout the Company, reviews their job description and scope of position, explains the Company's evaluation procedures, and helps the new employee get started on specific functions.

The orientation period for regular full-time and regular part-time employees lasts up to 90 days from date of hire. Elements of the orientation may be presented in either a formal or informal setting.

3.5 OFFICE HOURS

Northwest Water Systems' office is open for business from 8:00 AM to 5:00 PM Monday through Friday, except for Holidays (See Section 6.2, Holidays).

The standard workweek is 40 hours of work (see Section 5.3, Overtime). In the computation of various employee benefits, the employee workweek is considered to begin on Monday (starting at 12:01 a.m.) through Sunday (ending at 12:00 a.m.), unless a supervisor makes prior other arrangement with the employee.

Northwest Water System's duties to its clients extends beyond normal working hours. The nature of our business is such that we must be accessible to clients on a 24-hour basis. To that

end, some employees may be requested to work shifted hours or days, or employees may be asked to be "on-call". An employee's workweek may not necessarily coincide with office hours.

3.6 LUNCH PERIODS

Employees are allowed a one-hour lunch break. Lunch breaks generally are taken between the hours of 11:00 a.m. and 2:00 p.m. on a staggered schedule so that your absence does not create a problem for co-workers or clients.

3.7 BREAK PERIODS

Employees are expected to take breaks as provided by law and in order to maintain a high level of productivity. Breaks should be arranged to ensure that phones and the lobby area are covered at all times during normal working hours. Each employee is responsible to coordinate with co-workers and their supervisor to schedule breaks.

If employees have personal business to take care of during normal working hours, they must notify their direct supervisor to discuss time away from work and make provisions as necessary. Personal business should be conducted on the employee's own time.

3.8 PERSONNEL FILES

Employee personnel files include the following: job application, job description, résumé, records of participation in training events, salary history, records of disciplinary action and documents related to employee performance reviews, coaching, and mentoring.

Personnel files are the property of Northwest Water Systems, and access to the information is restricted. Management personnel of Northwest Water Systems who have a legitimate reason to review the file are allowed to do so.

Employees who wish to review their own file should contact their supervisor. With reasonable advance notice, the employee may review his/her personnel file in Company's office.

3.9 PERSONNEL DATA CHANGES

It is the responsibility of each employee to promptly notify their supervisor of any changes in personnel data such as:

- Mailing address,
- Telephone numbers,
- Name and number of dependents, and

- Individuals to be contacted in the event of an emergency.

An employee's personnel data should be accurate and current at all times.

3.10 INCLEMENT WEATHER/EMERGENCY CLOSINGS

Nothing Northwest Water Systems does is so time-sensitive that employees should unduly risk property damage or injury to travel to the office in the event of severe weather or extreme natural or manmade catastrophe. Duties shall be resumed as soon as travel can be accomplished without risks in excess of those normally encountered in a routine commuting environment.

At times, emergencies such as severe weather, fires, power failures, or civil unrest or disturbance can disrupt Company operations. The decision to close the office or curtail Company operations will be made by the President.

When the decision is made to close the office, employees will receive official notification from their supervisors. During curtailments or closures, some employees may be requested to conduct business outside the office. Non-exempt employees are expected to record such time on their official time record.

Time off from scheduled work due to emergency closings will be unpaid for all non-exempt employees, except those who have been requested to conduct business outside the office.

3.11 EMPLOYEE PERFORMANCE REVIEW AND PLANNING SESSIONS

Supervisors will conduct performance reviews and planning sessions with all regular full-time and regular part-time employees at the end of the orientation period and each 12 months of service thereafter. Supervisors may conduct additional performance reviews and planning sessions more often if they choose.

Performance reviews and planning sessions are designed for the supervisor and the employee to discuss his/her current job tasks, encourage and recognize attributes, and discuss positive, purposeful approaches for meeting work-related goals. Together, employee and supervisor discuss ways in which the employee can accomplish goals or learn new skills. The planning sessions are designed for the employee and his/her supervisor to make and agree on new goals, skills, and areas for improvement.

Northwest Water Systems directly links wage and salary increases with performance. Your performance review and planning sessions will have a direct effect on any changes in your compensation. For this reason among others, it is important to prepare for these reviews carefully, and participate in them fully.

New employees will be reviewed at the end of their orientation periods (see Section 3.4, Orientation Period for New Employees). After the initial review, the employee will be reviewed according to the regular schedule.

3.12 OUTSIDE EMPLOYMENT

Employees may hold outside jobs in non-related businesses or professions as long as the employee meets the performance standards of their job description with Northwest Water Systems. Unless an alternative work schedule has been approved by Northwest Water Systems, employees will be subject to the Company's scheduling demands, regardless of any outside work assignments.

Northwest Water Systems' office space, equipment, and materials are not to be used for outside employment.

Employees may operate parttime businesses not associated with Northwest Water Systems. Operation of such businesses are allowed as long as the employee meets the performance standards of their job description with Northwest Water Systems.

Employees operating parttime businesses may not conduct any part of those businesses on Northwest Water Systems' time, on Northwest Water Systems' premises, or use Northwest Water Systems' equipment and supplies. Employees operating parttime businesses may not solicit Northwest Water Systems' employees or clients without specific, written approval from their supervisor.

3.13 CORRECTIVE ACTION

Northwest Water Systems holds each of its employees to certain work rules and standards of conduct (see Section 4). When an employee deviates from these rules and standards, Northwest Water Systems expects the employee's supervisor to take corrective action.

Corrective action at Northwest Water Systems may or may not be progressive, at the Company's discretion. That is, the action taken in response to a rule infraction or violation of standards may follow a pattern increasing in seriousness until the infraction or violation is corrected, or the Company may elect to terminate the relationship with the employee immediately.

Northwest Water Systems considers certain rule infractions and violations of standards as grounds for immediate termination of employment. These include but are not limited to: theft in any form, insubordinate behavior, vandalism or destruction of Company property, the use of Company equipment and/or Company vehicles without prior authorization by the Company, untruthfulness about personal work history, skills, or training, divulging Company business practices, behavior reflecting poorly on the Company, and misrepresentations of Northwest Water Systems to a customer, a prospective customer, the general public, a regulator, or another employee.

3.14 EMPLOYMENT TERMINATION

Termination of employment is an inevitable part of personnel activity within any organization, and many of the reasons for termination are routine. Below are a few examples of some of the most common circumstances under which employment is terminated:

- **Resignation** – voluntary employment termination initiated by an employee.
- **Termination** – involuntary employment termination initiated by Northwest Water Systems.
- **Layoff** – involuntary employment termination initiated by Northwest Water Systems due to workload or business reasons. Layoffs may be permanent or temporary.

When a non-exempt employee intends to terminate his/her employment with Northwest Water Systems, he/she shall give Northwest Water Systems at least two (2) weeks written notice. Exempt employees shall give at least four (4) weeks written notice.

In the event of resignation, Northwest Water Systems may elect to release the employee upon notification, in which case, the employee will be granted compensation equaling the notification period, minus any adjustments as covered below.

Since employment with Northwest Water Systems is based on mutual consent, both the employee and Northwest Water Systems have the right to terminate employment at will, with or without cause. Termination or Layoff by Northwest Water Systems may be effective upon notification with no compensation due beyond the time worked and uncompensated to the point of termination or layoff.

Any employee who ceases to be employed by Northwest Water Systems shall return all files, records, keys, credit cards, and any other materials that are property of Northwest Water Systems. No final settlement of an employee's pay will be made until all items are returned in appropriate condition. The cost of replacing non-returned items will be deducted from the employee's final paycheck. Furthermore, any outstanding financial obligations owed to Northwest Water Systems will also be deducted from the employee's final check.

Persons whose employment by Northwest Water Systems has ceased may not remove, copy, duplicate or transmit any files, information, software, templates, plans, forms, drawings, reports, policies or guidelines from the premises that belong to Northwest Water Systems or were developed or acquired in the course of the employee's tenure with Northwest Water Systems.

3.15 SAFETY

Northwest Water Systems provides information to employees about workplace safety and health issues through regular internal communication such as:

- Training sessions
- Staff Meetings
- Team meetings
- Bulletin board postings
- Memorandums
- Other written communications

All Material Safety Data Sheets for all chemicals used by Northwest Water Systems in the course of doing business are posted at a convenient location. MSDS sheets shall be reviewed by each employee on a periodic basis to ensure that the employee is aware of the risks involved with the chemicals they handle and the handling procedures necessary to maintain their safety.

Northwest Water Systems shall provide each employee the safety equipment appropriate to the tasks they are expected to perform.

Each employee is expected to obey safety rules and exercise caution and common sense in all work activities. Employees must immediately report any unsafe conditions to their supervisor. Employees who violate safety standards, cause hazardous or dangerous situations, or fail to report, or where appropriate, remedy such situations, may be subject to disciplinary action including termination of employment.

If an employee is unsure of safe practices and procedures, observes a potentially dangerous situation, or believes that they may require additional safety training and/or equipment, they should discuss the situation with their supervisor at the earliest opportunity.

In the case of an accident that results in injury, regardless of how insignificant the injury may appear, employees should notify their supervisor (See Section 3.17, Employee Requiring Medical Attention).

3.16 HEALTH-RELATED ISSUES

Employees who become aware of any health-related issue, including pregnancy, should notify their supervisor of health status. This policy has been instituted strictly to protect the employee.

A written "permission to work" from the employee's doctor is required at the time or shortly after notice has been given. The doctor's note should specify whether the employee is able to perform regular duties as outlined in his/her job description.

A leave of absence may be granted on a case-by-case basis or as provided in state and federal regulations.

3.17 EMPLOYEE REQUIRING MEDICAL ATTENTION

In the event an employee requires medical attention, whether injured or becoming ill while at work, the employee's personal physician must be notified immediately. If it is necessary for the employee to be seen by the doctor or go to the hospital, a family member will be called to transport the employee to the appropriate facility. If an emergency arises requiring Emergency Medical Services to evaluate the injury/illness of an employee on-site, the employee will be responsible for any transportation charges, unless the illness or accident is work-related and is covered by the rules and regulations of the Washington State Department of Labor and Industries. Furthermore, Northwest Water Systems' employees will not be responsible for transportation of another employee due to liabilities that may occur.

All work-related injuries shall be reported to the Washington State Department of Labor and Industries.

A physician's "return to work" notice may be required.

3.18 BUILDING SECURITY

All employees who are issued keys to the office are responsible for their safekeeping. Company keys may not be duplicated for any reason. The last employee, or a designated employee, who leaves the office at the end of the business day assumes the responsibility to ensure that all doors and windows are securely locked, thermostats are set on appropriate evening and/or weekend setting, and all appliances and lights are turned off with exception of the lights normally left on for security purposes.

If an employee needs to access the building outside of normal business hours, they must notify their supervisor beforehand as to the reason the access is necessary and the approximate time at which it will occur.

See Section 9.1.2

3.19 INSURANCE ON PERSONAL EFFECTS

All employees should be sure that their own personal insurance policies cover the loss of anything occasionally left at the office. Northwest Water Systems assumes no risk for any loss or damage to personal property.

3.20 SUPPLIES; EXPENDITURES; OBLIGATING THE COMPANY

Only authorized persons may purchase supplies in the name of Northwest Water Systems. No employee whose regular duties do not include purchasing shall incur any expense on behalf of Northwest Water Systems or bind Northwest Water Systems by any promise or representation without written approval.

3.20.1 Company Credit Cards

In order to efficiently perform their duties, certain employees are issued Company credit cards. Company credit cards shall only be used for the purposes issued. Typical purposes may include:

Fuel for Company Vehicles
Repairs and Maintenance for Company Vehicles
Necessary Tools (Prior approval required)
Office Supplies (Prior approval required)

Other credit card expenditures may be allowed on a case-by-case basis. Personal use of company credit cards is strictly prohibited. Receipts for credit card purchases shall be turned in to the bookkeeper.

3.20.2 Expense Reimubursement

Expenses incurred by an employee must have prior approval by a supervisor. The reimbursement request will be processed like an invoice. All completed reimbursement request forms shall be turned in to the bookkeeper.

3.20.3 Air Miles, Rewards, etc.

In the course of conducting company business, employees may encounter situations in which air miles may be earned or "rewards" from retailers may be granted.

Generally these incentives may be used by the employee if the incentives were earned under the employee's name.

In no circumstances shall decisions regarding vendors be made based on rewards or incentives unless the incentive is retained by Northwest Water Systems and increases the value, to Northwest Water Systems, of the service or product provided.

If the incentive decreases the direct cost of the goods or services provided, the incentive shall accrue to Northwest Water Systems. If you are in doubt as to whether the incentive may be retained by yourself, or it should accrue to Northwest Water Systems, discuss the situation with your supervisor.

3.21 PARKING

Employees must park their cars in areas indicated and provided by the Company.

3.22 COMPANY VEHICLES

Specific employees are allowed the use of Company vehicles for a variety of reasons. Generally, Company vehicles must only be used for Company business. Exceptions may include stopping for personal business in the regular course of Company business.

Employees may be encouraged to park Company vehicles at home. This may be done for security reasons, so that employees can proceed directly to work sites from home, or for use in the event of an emergency response.

Emergency responders may need to use vehicles for personal travel so that necessary communications, tools or equipment are immediately available in the event of an emergency.

Except as noted above, Company vehicles may only be put to personal use with prior approval from the employee's supervisor. Any direct expenses associated with personal use, such as fuel, shall be the responsibility of the employee.

Company vehicles may function in a pool arrangement, or individual employees may be assigned the use of specific vehicles.

If an employee is assigned the use of a specific vehicle, that employee is responsible for ensuring the cleanliness of the vehicle, and that all scheduled maintenance on the vehicle is performed on time.

3.23 IMMIGRATION LAW COMPLIANCE

Northwest Water Systems employs only United States citizens and those non-U.S. citizens authorized to work in the United States in compliance with the Immigration Reform and Control Act of 1986.

Each new employee, as a condition of employment, must complete the Employment Eligibility Verification Form I-9 and present documentation establishing identity and employment eligibility. Former employees who are rehired must also complete the form if they have not completed an I-9 with Northwest Water Systems within the past three years or if their previous I-9 is no longer retained or valid.

SECTION 4

STANDARDS OF CONDUCT

The work rules and standards of conduct for Northwest Water Systems are important, and the Company regards them seriously. All employees are urged to become familiar with these rules and standards. In addition, employees are expected to follow the rules and standards faithfully in doing their own jobs and conducting the Company's business. Please note that any employee who deviates from these rules and standards will be subject to corrective action, up to and including termination of employment (see Section 3.13, Corrective Action).

4.1 BEHAVIOR

While not intended to list all the forms of behavior that are considered unacceptable in the workplace, the following are examples of rule infractions or misconduct that may result in disciplinary action, including termination of employment.

- Theft or inappropriate removal or possession of property;
- Falsification of timekeeping records or workorders (See Section 5.2, Timekeeping);
- Working under the influence of alcohol or illegal drugs (See Section 4.7, Substance Abuse);
- Possession, distribution, sale, transfer, or use of illegal drugs in the workplace (See Section 4.7, Substance Abuse);
- Fighting or threatening violence in the workplace;
- Boisterous or disruptive activity in the workplace;
- Negligence or improper conduct leading to damage of Company-owned or customer-owned property;
- Insubordination or other disrespectful conduct;
- Violation of safety or health rules;
- Sexual or other unlawful or unwelcome harassment (See Section 4.4, Harassment, Including Sexual Harassment);
- Excessive absenteeism or any absence without notice (See also, Section 4.2 Attendance/Punctuality and 4.3, Absence without Notice);
- Unauthorized use of Company-owned equipment (See Section 4.5, Telephone Use);
- Using Company equipment for purposes other than business without prior approval;
- Unauthorized disclosure of business "secrets" or confidential information;
- Violation of personnel policies; and
- Unsatisfactory performance or conduct.

4.2 ATTENDANCE/PUNCTUALITY

The Company expects that every employee will be regular and punctual in attendance. This means being in the office, ready to work, at their starting time each day. Absenteeism and tardiness places a burden on other employees and on the Company.

If you are unable to report for work for any reason, notify your supervisor before regular starting time. You are responsible for speaking directly with your supervisor about your absence. It is not acceptable to leave a message on a supervisor's voice mail, except in extreme emergencies. In the case of leaving a voice-mail message, a follow-up call must be made later that day. The Company phone number is 360-876-0958.

Should undue tardiness become apparent, disciplinary action may be required.

If there comes a time when you see that you will need to work some hours other than those that make up your usual work week, notify your supervisor 24-hours in advance. Each request for special work hours will be considered separately, in light of the employee's needs and the needs of the Company. Such requests may or may not be granted.

Certain exempt employees are subject to revenue expectations that carry more weight than attendance expectations. The revenue and attendance expectations for these employees are included in agreements with Company management. It is expected that non-exempt employees will be present in the office sufficient to ensure efficient communication with clients and effective interaction with fellow employees.

Certain exempt employees may wish to perform some of their work at home. This can be accommodated subject to agreement with management regarding hours, communication protocols, and the provision of equipment and materials.

4.3 ABSENCE WITHOUT NOTICE

When you are unable to work owing to illness or an accident, please notify your supervisor. This will allow the Company to arrange for temporary coverage of your duties, and helps other employees to continue work in your absence. If you do not report for work and the Company is not notified of your status, and is unable to reach you, it will be assumed after two consecutive days of absence that you have resigned, and you will be removed from the payroll.

If you become ill while at work or must leave the office for some other reason before the end of the workday, be sure to inform your supervisor of the situation.

4.4 HARASSMENT, INCLUDING SEXUAL HARASSMENT

Northwest Water Systems is committed to providing a work environment that is free of discrimination and unlawful harassment. Actions, words, jokes, or comments based on an individual's sex, race, ethnicity, age, religion, or any other legally protected characteristic will not be tolerated.

If you believe you have been the victim of harassment, or know of another employee who has, report it immediately. Employees can raise concerns and make reports without fear of reprisal.

Any supervisor who becomes aware of possible harassment should promptly advise their supervisor who will handle the matter in a timely and confidential manner.

Respect for individuals extends beyond the office to our clients, vendors, the general public and regulators. While on Company business, all employees will treat those with whom they have contact politely and with respect.

4.5 TELEPHONE USE

Northwest Water System's telephones are intended for the use of serving our customers and in conducting the Company's business.

All personal telephone calls should be kept brief to avoid congestion on the telephone lines.

Certain employees are issued Company cellular phones. Personal calls on Company cellular phones should be limited in number and duration. The number of minutes assigned to each employee's phone have been calculated to be sufficient for the employee to conduct Company business. Under no circumstances should an employee use more than the assigned number of minutes. If an employee finds that the assigned number of minutes is insufficient for Company purposes, they should discuss the situation with their supervisor.

It is recognized that community involvement by Northwest Water Systems' employees benefits the employees, Northwest Water Systems, and the community. Use of Company phones for organizational purposes is acceptable provided the usage is not for the purpose of promoting events, programs or products.

4.6 PUBLIC IMAGE

A professional appearance is important anytime that you come in contact with customers or potential customers. Though Northwest Water Systems maintains a casual atmosphere, employees should be well groomed and dressed appropriately for our business and for their position in particular.

The following items are considered inappropriate working attire for Northwest Water Systems:

- Spaghetti-strapped shirts
- Tank tops or revealing shirts
- Short mini skirts
- Sheer clothing
- T-shirts, or other clothing, with inappropriate or offensive gestures or advertising
- Torn clothing or clothing showing excessive wear.

Field personnel shall wear appropriate work clothing kept clean and in good condition. While it is recognized that working with chlorine and other chemicals result in certain levels of staining, dirty and tattered clothing is not acceptable.

Professionals meeting with clients should be dressed appropriate to the setting, which may depend on whether the meeting is located in an office setting or in the field.

4.7 SUBSTANCE ABUSE

The Company is committed to providing a safe and productive workplace for its employees. In keeping with this commitment, the following rules regarding alcohol and drugs of abuse have been established for all staff members, regardless of rank or position, including both regular and temporary employees. The rules apply to all employees of the Company while they are on Company premises, operating Company vehicles, during working hours or otherwise clearly identifiable as employees of Northwest Water Systems, or anywhere while on Company business.

> The manufacture, distribution, possession, sale, or purchase of controlled substances of abuse, or paraphernalia associated with such abuse is prohibited.
>
> Being under the influence of illegal drugs, alcohol, or substances of abuse on Company property or while conducting Company business is prohibited.
>
> Working while under the influence of prescription drugs that impair performance is prohibited.

So that there is no question about what these rules signify, please note the following definitions:

> Company property: All Company owned or leased property used by employees, including Company vehicles.
>
> Controlled substance of abuse: Any substance listed in Schedules I-V of Section 202 of the Controlled Substance Act, as amended.
>
> Drug: Any chemical substance that produces physical, mental, emotional, or behavioral change in the user.

Drug paraphernalia: Equipment, a product, or material that is used or intended for use in concealing an illegal drug, or otherwise introducing into the human body an illegal drug or controlled substance.

Illegal drug:
a. Any drug or derivative thereof whose use, possession, sale, transfer, attempted sale or transfer, manufacture, or storage is illegal or regulated under any federal, state, or local law or regulation.

b. Any drug, including – but not limited to – a prescription drug, used for any reason other than that prescribed by a physician.

c. Inhalants used illegally.

Under the influence: A state of not having the normal use of mental or physical faculties resulting from the voluntary introduction into the body of an alcoholic beverage, drug, or substance of abuse.

Consistent with the rules listed above, any of the following actions constitutes a violation of the Company's policy on drugs and may subject an employee to disciplinary action, up to and including immediate termination.

Using, selling, purchasing, transferring, manufacturing, or storing an illegal drug or drug paraphernalia, or attempting to or assisting another to do so.

Working or reporting to work, conducting Company business or being on Company property, in a Company vehicle, or while identifiable as a Company employee while under the influence of an illegal drug or alcohol, or in an impaired condition.

Under no circumstances shall Northwest Water Systems employees operate Company vehicles within eight hours of consuming an alcoholic beverage.

4.8 TOBACCO PRODUCTS

The use of tobacco products is not permitted anywhere on the Company's premises, including Company vehicles, except in the parking and yard areas clear of doorways and windows.

Employees shall refrain from tobacco use while in the presence of clients or on client premises. Employees shall not leave debris associated with tobacco use, such as cigarette butts, on Company or client property.

4.9 INTERNET USE

Northwest Water Systems employees are allowed use of the Internet and e-mail when necessary to serve our customers and conduct the Company's business.

Employees may use the Internet when appropriate to access information needed to conduct business of the Company. Employees may use e-mail when appropriate for Company business correspondence. Personal use of the internet and personal email messages are acceptable provided they do not interfere with the conduct of Company business and are of an appropriate nature.

Use of the Internet must not disrupt operation of the Company computer network. Use of the Internet must not interfere with an employee's productivity. Employees are responsible for using the Internet in a manner that is ethical and lawful.

Internet messages are public and not private. Northwest Water Systems reserves the right to access and monitor all files and messages on its systems.

SECTION 5

WAGE AND SALARY POLICIES

5.1 WAGE OR SALARY INCREASES

Each employee's hourly wage or annual salary will be reviewed at least once each year. The employee's review date will usually be conducted on or about the anniversary date of employment or the date of the previous compensation review. Such reviews may be conducted more frequently for a newly created position, or based on a recent promotion.

Increases will be determined on the basis of performance, adherence to Company policies and procedures, and ability to meet or exceed duties per job description and achieve performance goals (See Section 3.11, Performance Review/Planning Sessions).

Although the Company's salary ranges and hourly wage schedules will be adjusted on an ongoing basis, Northwest Water Systems does not grant "cost of living" increases. Performance is the key to wage increases in the Company.

Wage and salary structures and levels are entirely at the discretion of Northwest Water Systems. The Company may elect to institute a structured wage and salary schedule, or it may choose to individually tailor each employee's compensation package, subject to state and federal employment laws and regulations.

Northwest Water Systems' base wage and salary levels are based on the value of the position to the Company, as perceived by the Company. Base wage and salary levels are not subject to comparison between employees or with the compensation levels of other organizations.

5.2 TIMEKEEPING

Accurately recording time worked is the responsibility of every non-exempt employee. Time worked is the time actually spent on a job(s) performing assigned duties.

Northwest Water Systems does not pay for extended breaks or time spent on personal matters.

Northwest Water Systems tracks non-exempt time in two places. All work time is to be recorded on the provided time cards. In addition, work specific to a client or project is recorded on work orders. All work performed by non-exempt employees for specific clients or projects must be recorded on a work order or engineering timesheet, as well as on a time card.

Authorized personnel will review time records each week. Any changes to an employee's time record must be approved by his/her supervisor. Questions regarding the timekeeping system or time cards should be directed to their supervisor.

Time Cards – Non-exempt employees will be issued a time card on their first day of employment. The employee will be given thorough instructions on usage and instructions on what to do should a problem occur.

Exempt employees are required to maintain time records for project billing purposes. Time records for each project are located in the project files. All time expended on that project shall be recorded on the project's time record.

5.3 OVERTIME

Northwest Water Systems office is open for business 45 hours per week and operations are conducted 24-hours per day, seven days per week. Overtime compensation is paid to non-exempt employees in accordance with federal and state wage and hour restrictions. Overtime is payable for all hours worked over 40 per week at a rate of one and one-half times the non-exempt employee's regular hourly rate. Time off on personal time, holidays, or any leave of absence will not be considered hours worked when calculating overtime.

All overtime compensation shall appear on regular paychecks. Northwest Water Systems does not grant compensatory time off.

All overtime work performed by an hourly employee must receive the supervisor's prior written authorization. Authorization shall include the amount of overtime allowed and when the work shall be performed. Overtime worked without prior authorization from the supervisor may result in disciplinary action.

5.4 PAYDAYS

All employees are paid every other week. Payday is on Friday, though the Company may elect to pay on another day of the week. Payment on any day prior to Friday in any pay week does constitute a change in the pay cycle. In the event that a regularly scheduled payday falls on a weekend or holiday, employees will receive pay either the business day previous or the business day immediately after the weekend or holiday, whichever is closer to the normal payday.

The Company may also elect to disburse paychecks on a day other than payday. In which case, checks shall be dated for the payday, and the disbursement does not constitute a change in payday. In no case should employees expect disbursement of paychecks on any other day than the official payday.

If a regular payday falls during an employee's vacation, the employee's paycheck will be available upon his/her return from vacation.

If the employee is not at work when paychecks are distributed and does not receive the paycheck, the paycheck will be kept with the bookkeeper through the rest of the payday. If an employee is unable to pick up his or her check on payday, he or she will need to see the Company Bookkeeper.

Paychecks will not, under any circumstances, be given to any person other than the employee without written authorization. Paychecks may also be mailed to the employee's address if the employee is not present on payday.

SECTION 6

BENEFITS AND SERVICES

Northwest Water Systems does not, at this time, offer a benefits package.

6.1 VACATION

Northwest Water Systems does not offer paid vacation to non-exempt employees. The value of vacation time is calculated in the hourly compensation offered to employees. When compensation packages are calculated, it is assumed that employees will take two weeks vacation per year.

Exempt employees do not have specific vacation provisions included in their compensation. It is expected that exempt employees will plan the time and extent of their vacations based on workload and progress towards revenue expectations. Taking more than two weeks of vacation at a time may result in a reduction in compensation.

Northwest Water Systems encourages all employees to make the most of their vacation time. Regular breaks from daily work make everyone more productive.

The Company maintains a central calendar in order to coordinate vacation and leave times. All anticipated time off must be recorded on the calendar. In order to maintain Company operations, it may be necessary to coordinate leave times between critical employees. In the absence of a mutually accepted compromise, the employee who first requested a particular period shall have precedence.

6.2 HOLIDAYS

Northwest Water Systems observes the following paid holidays for all non-exempt employees:

New Year's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

The Company may elect to observe additional holidays. The addition of a holiday does constitute an addition to the above list for subsequent years.

6.3 JURY DUTY/MILITARY LEAVE

Employees will be granted time off to serve on a jury or military leave without pay. However, all regular employees, both full-time or part-time, will be kept on the active payroll until their civic duties have been completed. A copy of the jury duty summons and all other associated paperwork are required for the personnel file. Employees are entitled to whatever compensation is offered by the court system or military service.

6.4 TRAINING AND PROFESSIONAL DEVELOPMENT

Many of the Company's positions require certifications, registrations or other specialized knowledge. Northwest Water Systems requires that all employees maintain their professional credentials, upgrade credentials as they relate to Northwest Water Systems' services, and continually improve professional expertise as it relates to the Company's services.

Northwest Water Systems will pay for all professional development, approved in advance, that relates to the Company's services and the individual employee's duties and certifications. The Company will also pay for, or reimburse employees, for travel and lodging expenses, provided necessary and approved training is not available within daily commuting distance.

Northwest Water Systems will pay for certifications and registrations that are directly related to the Company's services and each employee's specific duties, such as Certified Water System Operator, Certified Designer, and Registered Professional Engineer.

Non-exempt employees will receive compensation for all Company approved or mandated training that occurs during normal business hours at their normal hourly rate. Time spent in training may not count toward overtime.

Northwest Water Systems reserves the right to disapprove or require educational opportunities at its discretion.

6.5 COMMUNITY/PROFESSIONAL ORGANIZATIONS

It is beneficial for certain employees to be involved in professional or community organizations. Memberships may contribute to professional growth of the employee, provide valuable information to Northwest Water Systems, or may present marketing opportunities to Northwest Water Systems. Northwest Water Systems may require specific employees participate in organization activities, in which case, Northwest Water Systems will reimburse the employee for organizational expenses and compensate non-exempt employees for time spent on organizational activities.

All involvement in organizational activities for which an employee expects to be reimbursed must be pre-approved in writing by the employee's supervisor.

SECTION 7

EMPLOYEE COMMUNICATIONS

7.1 STAFF MEETINGS

Periodic staff meetings will be held as announced. These meetings allow employees to be informed on recent Company activities, changes in the workplace and employee recognition. It is also an opportunity for employees to share information, experiences and insights with the rest of the staff. It is expected that all employees will make every effort to attend the weekly meetings, subject to job demands. Absences from staff meetings must be arranged in advance.

Some meetings may be particularly important, in which case attendance will be mandatory. Staff will be notified in advance of required meetings.

The Company may elect to change the meeting day and/or time at its discretion.

7.2 BULLETIN BOARDS

Bulletin boards provide employees access to important posted information and announcements. The employee is responsible for reading necessary information posted on the bulletin boards.

7.3 PROCEDURE FOR HANDLING COMPLAINTS AND CONFLICTS

Under normal working conditions, employees who have a job-related problem, question or complaint should first discuss it with their immediate supervisor. At this level, employees usually reach the simplest, quickest, and most satisfactory solution. If the employee and supervisor do not solve the problem, Northwest Water Systems encourages employees may contact the President. The President's determination is final.

SECTION 8

INTELLECTUAL PROPERTY

8.1 INTELLECTUAL PROPERTY

All intellectual property, such as designs, reports, drawings, studies, papers, manuals, guidelines, software, computer files, and computer programs developed, discovered or acquired during the employee's tenure with Northwest Water Systems that relate to the products, services and operations of Northwest Water Systems are the property of Northwest Water Systems, Inc., unless prior arrangement or agreement is reached between the employee and Northwest Water Systems regarding the ownership status of specific properties.

8.2 INVENTIONS, PATENTS

Any inventions, or resulting patents, developed, discovered or acquired during the employee's tenure with Northwest Water Systems that relate to Northwest Water Systems' products, services or operations are the property of Northwest Water Systems, Inc. unless prior arrangement or agreement is reached between the employee and Northwest Water Systems regarding the ownership status of specific inventions and patents.

8.3 Relinquishment

Relinquishment of sole ownership, or partial ownership, of a property by Northwest Water Systems to an employee does not constitute relinquishment of ownership of other intellectual properties.

SECTION 9

FACILITIES, TOOLS AND EQUIPMENT

9.1 - FACILITIES

Northwest Water Systems facilities are maintained to provide a sufficient work environment for employees and facilities in which to meet clients. It is important that the Company's facilities be maintained in a pleasant and professional condition at all times.

It is expected that employees shall treat Northwest Water Systems' facilities with the same care and respect afforded their own homes.

Northwest Water Systems' facilities are, effectively, the property of Northwest Water Systems. There are no locations within the facilities that are private to specific employees except such areas as may contain Northwest Water Systems information of a confidential nature. Personal information or items to which you do not want general access should not be stored in Company facilities. The exceptions being personal possessions such as purses, wallets and items of clothing, which are considered personal. The Company expects all employees to respect other employees personal possessions.

Northwest Water Systems reserves the right to determine arrangement, content and decoration of all areas within the facility.

Each employee is responsible for the condition of their immediate work area. Work areas shall be kept neat and clean at all times subject to work and projects underway.

Specific employees may be assigned cleaning and maintenance tasks for areas within the Company's facilities.

Photographs, plaques, certificates, etc., may be hung in employees' work areas. Such items shall be secured to the walls with the smallest diameter fasteners practical. Under no circumstances shall obscene, offensive or unprofessional items be displayed within Company facilities. The President has final authority as to what items may, or may not, be displayed.

Some refreshments, such as coffee, may be provided by the Company. The Company may also provide such amenities as a refrigerator, micro-wave, etc. Previous provision of such amenities does not guarantee continued provision.

Items stored in the refrigerator are the property of the employee, unless some item(s) are specifically designated as being for general use. Respect other employees' property and do not help yourself to items in the refrigerator unless you know the item is for general use. This applies to food items stored in the cupboard, as well.

Food items left on Company premises that are past pull date or obviously past safe consumption will be discarded.

If you make a mess, clean it up. If you use Company provided utensils (knife, cup, dish, etc.) wash it and put it away when finished.

It is generally accepted that food items left on the counter in the Field Technicians' office are left there to be generally accessible. If it is not your intention for everyone to partake, put the food item away or take it to your desk. Do not help yourself to food items left on other peoples' desks unless invited to do so.

9.1.1 Keys

Specific employees may be issued keys to the Company's facilities. Issuance of keys is based on an employee's need to open and close the company, or to have access to Company facilities outside of normal working hours. The President will make all determinations regarding who is to be issued keys.

Keys are not to be surrendered to any other person without authorization from the President.

Keys shall not be duplicated for any reason. If an additional key is required, it must be requested through the bookkeeper who may request authorization from the President. A key list is currently maintained by Nicholson Drilling.

If a key is lost, such loss must be reported to your supervisor immediately with full particulars as the circumstances surrounding the loss.

All company keys must be surrendered upon termination of employment or at the request of the President.

9.1.2 Security

All employees should be alert to security problems at all times.

Upon opening the facilities at the beginning of working hours, all common area lights shall be turned on. Individual office lights may be turned on when those individuals arrive.

The last person present at the end of the day who has possession of a key is responsible for ensuring that the facilities are properly secured for the night. Though not an exhaustive list, the following items shall be checked prior to closing the facilities:

All windows closed and latched.
All interior lights turned off.
Shades closed
Coffee pot turned off.
Exterior lights turned on.
Confidential file cabinets secured
Cash box secured

Safe secured

The last person exiting the building shall be a key holder and shall ensure that the entry is properly secured.

If at all possible, two people should be present in the building during normal business hours. If one person is working in the facility after normal business hours, the entrance should remain locked.

In no case shall a person who is not in possession of a key be left alone in the facility after normal working hours.

The Company telephone system features a voice mail system. Anyone working in the facility outside normal business hours should refrain from answering phones.

Any disappearance of Company or personal property should be reported to your supervisor immediately.

9.1.3 Firearms

Northwest Water Systems recognizes the Second Amendment right for all citizens to keep and bear arms. However, Northwest Water Systems reserves the right to limit the possession of firearms on Company property and within Company vehicles and while employees are on Company business.

Firearms may be carried in employee's private vehicles while parked on Company property and not engaged in Company business provided the employee has a valid Concealed Weapons Permit and the firearm is stored in the vehicle in accordance with current regulations. Exceptions to the Concealed Weapons Permit may be made for long guns stored within the employee's vehicle in accordance with current regulations.

Specific employees may be permitted to carry firearms on Company property, in Company vehicles, or while engaged in Company business at the sole discretion of the President. All such permissions shall be granted on a case-by-case basis, and requests for such permission must be made to the President in writing. In such cases, specific justification will be required. In addition, the President may require specific training, inspections or other conditions at his sole discretion. Such permission can expect to be granted only in extraordinary circumstances.

9.2 – TOOLS

Specific employees require various tools. Tools usually include wrenches, hammers, valve keys and other hand tools, most typically required by Field Technician.

It is the policy of NWS to provide the necessary tools for the tasks at hand. A list shall be kept of Company tools issued to each employee. The list shall be updated as new tools are added to the employee's "kit".

Northwest Water Systems will replace any tool worn out in normal use. The employee must turn in the worn out tool to their supervisor, who will arrange for the replacement of that tool at Company expense. Lost tools must be reported to your supervisor as soon as the loss is discovered.

In most cases, tools shall be kept in Company vehicles. Any tools that are not kept in a Company vehicle shall be stored in a Company facility.

All tools shall be operated and maintained in accordance with the manufacturers instructions.

9.3 – EQUIPMENT

"Equipment" generally means office equipment. It is the policy of Northwest Water Systems to provide the office equipment necessary for the tasks at hand.

It is expected that employees will treat Company equipment in a fashion that avoids damage or undue wear and tear.

Generally, Company equipment shall be assigned to a specific work station. It is expected that equipment will remain at the work station to which it is assigned. Equipment may be rearranged as necessary and as determined by the supervisor for the particular work area.

Much of the equipment we use is digital in nature and features installed software, particularly, but not limited to, computers. Employees shall not install unauthorized software on any Company equipment. Software can only be authorized by the person designated to be in charge of Information Technology within the company. That person is currently the President. All software installed on Company computers shall conform to the user or licensing agreements associated with that software. No Company software shall be installed on personal computers for any reason.

Specific employees may be assigned personal equipment, particularly laptop computers, personal digital assistants, cell phones or similar portable equipment. Such equipment shall be used for the benefit of Northwest Water Systems and will be used, transported and stored according to specific instructions issued along with the particular piece of equipment.

Company equipment may be used in the furtherance of activities associated with Company approved involvement in community or professional organizations. Company equipment may also be used for personal projects provided the use does not interfere with Company operations or expend excessive consumables. All but the smallest personal projects must be pre-approved by the employee's supervisor.

All equipment shall be operated and maintained according to the manufacturer's instructions. The employee shall draw the supervisor's attention to any equipment in need of maintenance or repair. Specific employees may be assigned maintenance oversight for specific equipment.

Appendix E

Forms

Title

Work Order
Trouble Report
Repair Work Order
Sample Log
Overhead Multiplier Calculation
Rate Re-Evaluation
Log for Service (Pumphouse Log)
Time Record by Project
Source Meter Log (In-house)
Shock Chlorination Calculation
Water Quality Monitoring Form (In-house)
Transmittal Letter
Coliform Monitoring Plan
Disinfection By-Products Monitoring Plan
Acute Coliform Failure Public Notice (Typical)
Non-Acute Coliform Failure Public Notice (Typical)
Nitrate MCL Violation Public Notice
Notice of Service Suspension (Provisionary)
Notice of Service Suspension
Route Sheet

Appendix F

Cross-Connection Control Documents

Title

Contract for Operation and Management of Cross-Connection Control Program

Cross-Connection Control Policy document (Community Systems)

Cross-Connection Control Policy document (Non-Community Systems)

Cross-Connection Control Program document (Community Systems)

Cross-Connection Control Program document (Non-Community Systems)

Cross-Connection Control Survey form

Cross-Connection Control Program Introduction letter

Cross-Connection Control Document Forwarding letter

CONTRACT FOR MANAGEMENT AND OPERATION OF A CROSS-CONNECTION CONTROL PROGRAM

COMMUNITY/NON-COMMUNITY WATER SYSTEMS

This agreement is made and entered into this ___ day of _____, 20___, by and between Northwest Water Systems, Inc., (hereinafter known as NWS), a Washington Corporation and _____ (hereinafter known as "Owner").

Whereas Owner owns and operates a public water system known as _____, and such water system is identified by the Washington State Department of Health under identification number _____ and is a Group A water system.

Whereas Washington State drinking water regulations, WAC 246-290-490, require public water systems to develop and implement cross-connection control programs (CCCP).

Whereas NWS is in the business of and has certified staff for generating and managing cross-connection control programs and policies: and

Whereas Owner wants to contract with NWS to obtain cross-connection control services, and NWS wants to contract with Owner to provide said services:

Now, therefore, the parties hereby agree as follows:

1. PARTIES

NWS, whose address is P.O. Box 123, Port Orchard, WA 98366, is the Satellite Management Agency certified in Cross-Connection Control Capability authorized to provide Cross-Connection Control Management and Operations Services to the _____ (hereinafter known as "System").

Owner's Principal Contact: _____.

Owner's Billing Address: _____, **WA 98____**.

Contact Telephone Number: _____.

2. Effective Date

The effective beginning date of this contract is __/__/___.

3. **Water System Location**

1/4, 1/4, Section, Township, Range: **___ 1/4, ___ 1/4, Section ___, Township ___N, Range ____ W.M.**

County: _____

4. **Services included in the contract price**

Familiarization with system

NWS shall become acquainted with the System including the types, locations, and particular cross-connection hazards of all of its structures, the topography and hydraulic characteristics of the system, and any treatment facilities in the system

Document Generation

The following documents shall be generated to Introduce, Manage, Operate and Maintain the Cross-Connection Control Program. These documents shall follow the guidelines set forth by, and be acceptable to the Washington State Department of Health (DOH).

Cross-Connection Control Policy – This document is an ordinance, resolution, code, policy, or other legal instrument that establishes the water system's legal authority to implement a Cross-Connection Control Program.

Cross-Connection Control Program – This document describes the technical provisions, administrative procedures, corrective actions, and normal and emergency procedures for operation of the Program.

Cross-Connection Control Survey – This form is sent out to all customer(s) on the system to fill out and return to the Cross-Connection Control Specialist (CCS). It helps to determine the extent and severity of any cross-connections which might exist on the premises.

Field Survey

An initial **Field Inspection Survey** is required on the premises to determine if any cross-connections exist. Any existing backflow assemblies found will be put on a testing schedule (unless they are already being tested).

5. Additional Management Services

Operational

Additional surveys are required for new structures. DOH requires periodic surveys (usually biennially) on the system to allow for changed conditions. Additionally, an inspection is required if there is a Backflow Incident.

The CCS will assist in recommending the correct type of backflow assembly and suggesting a qualified mechanic to install it. The CCS will also assist in getting the backflow assembly on an annual testing schedule and arrange to have a licensed Backflow Assembly Tester (BAT) test it.

In the event of a **Backflow Incident**, immediately follow the procedures outlined in the **Backflow Incident Report** to find and correct the problem, and restore system integrity.

Administrative

Ensure that all **Backflow Assemblies** are tested at least annually, but also as otherwise required by DOH. Ensure that the testers are DOH certified Backflow Assembly Testers (BAT)s, and that their certification as well as that of their testing equipment is up to date.

Maintain records of all Backflow Assemblies tested. Maintain records of all Air-Gaps and Atmospheric Vacuum-Breakers inspected. Maintain BAT certifications, and their testing equipment calibrations.

Implement a CCCP **education program.**

Generate, maintain, and forward as required all **reports** as required by DOH and other government agencies.

Generate documentation required and administer program required if **reclaimed water** is to be used by the water system.

6. Charges for Services

Initial Costs

An **Initial fee** of **$ 425.00** is required upon execution of this contract. This initial fee covers **familiarization** with the system, **setting up** necessary Cross-Connection Control **files, keying** customers **into** NWS **data base,** generation of Cross-Connection Control **Policy, Program,** and **Survey**

documents, and an initial **Field Survey.** It also covers basic **administration** of the Cross-Connection Control Program.

Additional Services

Prior to the performance of any **Additional Service**, the **Owner** shall be contacted and informed of the need for the service, as well as its estimated cost. Additional Services will be charged at the rate of **$85.00** per hour as listed below, and cover the following:

Additional Field Surveys

Hazard Elimination & Control

Annual Health Department Reports & Record Keeping

Backflow Assembly Quality Assurance Program

CCCP Education Program

Backflow Incident Response

The Owner will only be charged for actual time spent on the specific task performed. Time will be invoiced at the rate of **$85.00** per hour in ten-minute increments. Reimbursable expenses will be invoiced at cost plus 15%. Reimbursable expenses include such items as laboratory fees, copying and reproduction expenses, postage, and other similar incidental expenses. Services invoices dated prior to the end of the month shall be due by the 10th of the following month.

Backflow Assembly costs are actual costs charged by the independent BAT who performs testing and repair on the assemblies.

7. Terms and Conditions

This Contract includes all of the terms and conditions of Northwest Water Systems. Inc,'s Cross-Connection Control Program and as amended in the future.

Without limiting the foregoing, it is agreed as follows:

- NWS does not own the water system. NWS's responsibility is limited to the services set forth above.
- NWS has no responsibility in the event that the water system's source is interrupted, the volume thereof is reduced, or the water is contaminated.
- The Owner hereby grants NWS an irrevocable license to enter the System properties in performance of NWS's responsibilities under this contract, and to inspect the System.

8. Repairs and Improvements

Prior to the effective date of this contract, the following repairs and/or improvements shall be completed at Owner's expense: **None**

9. Duration

This contract shall remain in effect for a period of one year. The contract will renew automatically with no action on the part of either party. Either party may initiate review of the contract terms not earlier than three months, nor later than one month, prior to the end of any contract period. Modifications to the terms of the contract must be agreed upon prior to the expiration of the current contract period. NWS may initiate review of fees annually. Proposed changes in the fee shall be transmitted to Owner not later than two months prior to contract anniversary. Fee increases within any contract period shall not exceed the annual inflation rate as published by the Federal Government.

The contract may be terminated by NWS due to non-payment of agreed upon fees and charges by Owner. Owner may terminate contract due to non-performance by NWS. The contract may also be terminated upon mutual agreement by all parties. Contract may be terminated by either party without cause at the end of any contract period. NWS may also terminate the contract if the System is unable, or unwilling, to comply with applicable government regulations. Termination notice must be in writing.

NWS shall provide the local health district and the Department of Health written notification should the contract be terminated.

10. Integration

This Contract constitutes the entire agreement between the parties. There are no other verbal or written agreements or representations which modify or affect this contract.

Amendments to this contract shall be in writing and shall be signed by the responsible person from each party.

11. Indemnification

The Owner shall assume the risk of, be liable for, and pay all damages, loss, cost and expense of any party arising out of the performance of this Contract unless such damage, loss, cost or expense is caused solely by the gross negligence or willful misconduct of NWS. The Owner shall indemnify and hold NWS harmless from all claims, losses, suits, actions, costs, counsel fees, litigation, litigation costs, expenses, damages, judgements, or decrees by reason of damage to any property or business and/or death, injury or disability to any person or party arising out of or suffered directly or indirectly by reason of or in connection with the performance of this Contract or any action, error or omission of the

Owner, Owner's employees, agents or subcontractors, whether by negligence or otherwise. Both parties will agree on liability via arbitration or mediation.

Northwest Water Systems, Inc.	Water System
By_____	By:_____
Title: _____	Title: _____
Date: _____	Date: _____

_____WATER SYSTEM

Cross-Connection Control Policy

Finding of Fact

Whereas it is the responsibility of a water purveyor to provide water to the customer at the meter that meets Washington state water quality standards;

Whereas it is the water purveyor's responsibility to prevent the contamination of the public water system from the source of supply (i.e., to the customer's connection to the service pipe or meter);

Whereas it is a requirement of the Washington State Department of Health (DOH) for the Purveyor to establish a cross connection-control program satisfactory to DOH;

Whereas cross-connections within the customer's plumbing system pose a potential source for the contamination of the public water supply system;

Now be it resolved that **Northwest Water Systems, Inc,** hereinafter referred to as the Purveyor, establishes the following service policy to protect this _____-owned water system from the risk of contamination. For public health and safety, this policy shall apply equally to all new and existing customers.

Definitions

Unless otherwise defined, all terms used in this resolution pertaining to cross-connection control have the same definitions as those contained in WAC 246-290-010 of the Washington State Drinking Water Regulations.

Prevention of Contamination

The customer's plumbing system, starting from the termination of the Purveyor's water service pipe, shall be considered a potential high-health hazard requiring the isolation of the customer's premises by a DOH-approved, customer-installed and maintained reduced-pressure principle backflow assembly (RPBA) or reduced-pressure detector assembly (RPDA). The RPBA or RPDA shall be located at the end of the Purveyor's water service pipe (i.e., immediately downstream of the meter).

Water shall only be supplied to the customer through a DOH-approved, customer-installed and maintained RPBA or RPDA.
Notwithstanding the aforesaid, the Purveyor, upon an assessment of the risk of contamination posed by the customer's plumbing system and use of water, may allow:

- A single-family or duplex residential customer to connect directly to the water service pipe, i.e., without a purveyor-approved DCVA or RPBA.
- Any customer other than a single-family or duplex residential customer, as a minimum, to be supplied through a DOH-approved, customer-installed and maintained double-check valve assembly (DCVA) or double-check detector assembly (DCDA).
- Any customer, other than a single-family or duplex residential customer to connect directly to the water service pipe (i.e., without a purveyor-approved DCVA or RPBA), PROVIDED THAT the customer installs and maintains backflow assemblies, at the point of hazard, that are commensurate with the degree of hazard assessed by the Purveyor.

Conditions for Providing Service

Water service is provided based on the following terms and limitations:

1. The customer agrees to take all measures necessary to prevent the contamination of the plumbing system within his/her premises and the Purveyor's distribution system that may occur from backflow through a cross connection. These measures shall include the prevention of backflow under any backpressure or backsiphonage condition, including the disruption of the water supply from the Purveyor's system that may occur during routine system maintenance or during emergency conditions, such as a water main break.

2. The customer agrees to install, operate, and maintain at all times his plumbing system in compliance with the current edition of the Uniform Plumbing Code having jurisdiction as it pertains to the prevention of contamination and protection from thermal expansion, due to a closed system that could occur with the present or future installation of backflow assemblies on the customer's service and/or at plumbing fixtures.

3. For cross-connection control or other public health-related surveys, the customer agrees to provide for the Purveyor's employees or agents free access to all parts of the premises during reasonable working hours of the day for routine surveys and at all times during emergencies.

4. Where agreement for free access for the Purveyor's survey is denied, the Purveyor may supply water service provided that premises isolation is provided through a DOH- approved reduced-pressure principle backflow assembly (RPBA)

5. The customer agrees to install all backflow prevention assemblies requested by the Purveyor and to maintain those assemblies in good working order. The assemblies shall be of a type, size, and make approved by DOH and acceptable to the Purveyor. The assemblies shall be installed in accordance with the recommendations given in the most recently published

edition of the *Cross Connection Control Manual, Accepted Procedures and Practice,* published by the Pacific Northwest Section, American Water Works Association.

6. The customer agrees to:

   (a) Have all assemblies (e.g., RPBAs and/or DCVAs) that the Purveyor relies upon to protect the public water distribution system tested upon installation, annually thereafter and/or more frequently if requested by the Purveyor, after repair, and after relocation;
   (b) Have all testing done by a purveyor-approved and currently DOH-certified Backflow Assembly Tester (BAT);
   (c) Have the RPBA or DCVA tested in accordance with DOH-approved test procedures; and
   (d) Submit to the Purveyor the results of the test(s) on Purveyor-supplied test report forms within the time period specified by the Purveyor.

7. The customer agrees to bear all costs for the aforementioned installation, testing, repair, maintenance and replacement of the RPBA, RPDA, DCVA or DCDA installed to protect the Purveyor's distribution system.

8. At the time of application for service, if required by the Purveyor, the customer agrees to submit to the Purveyor plumbing plans and/or a cross-connection control survey of the premises conducted by a purveyor-approved and DOH-certified Cross-Connection Control Specialist (CCS).

9. The cross-connection control survey shall assess the cross-connection hazards and list the backflow assemblies provided within the premises. The results of the survey shall be submitted prior to the Purveyor turning on water service to a new customer. The cost of the survey shall be borne by the customer.

10. For classes of customers other than single-family residential, when required by the Purveyor, the customer agrees to periodically submit a cross-connection control re-survey of the premises by a DOH-certified CCS acceptable to the Purveyor. The Purveyor may require the re-survey to be performed in response to changes in the customer's plumbing or water use, or performed periodically (annually or less frequently) where the Purveyor considers the customer's plumbing system to be complex or subject to frequent changes in water use. The cost of the re-survey shall be borne by the customer.

11. Within 30 days of a request by the Purveyor, a residential customer shall agree to complete and submit to the Purveyor a "Cross-Connection Control Survey" form for the purpose of surveying the health hazard posed by the customer's plumbing system on the Purveyor's distribution system. Further, the residential customer agrees to provide within 30 days of a request by the Purveyor an on-site cross-connection control inspection of the premises by the Purveyor's, DOH-certified CCS.

12. The customer agrees to obtain prior approval from the Purveyor for all changes in water use, and alterations and additions to the plumbing system, and shall comply with any additional

requirements imposed by the Purveyor for cross-connection control.

13. The customer agrees to immediately notify the Purveyor and the local health jurisdiction of any backflow incident occurring within the customer's premises (i.e., entry of any contaminant/pollutant into the drinking water) and shall cooperate fully with the Purveyor to determine the reason for the backflow incident.

14. The customer acknowledges the right of the Purveyor to discontinue the water supply within 72 hours of giving notice to the customer, or a lesser period of time if required to protect public health, if the customer fails to cooperate with the Purveyor in the survey of premises, in the installation, maintenance, repair, inspection, or testing of backflow prevention assemblies or air gaps required by the Purveyor, or in the Purveyor's effort to contain a contaminant or pollutant that is detected in the customer's system.

15. Without limiting the generality of the foregoing, in lieu of discontinuing water service, the Purveyor may install an RPBA on the service pipe to provide premises isolation, and recover all costs for the installation and subsequent maintenance and repair of the assembly, appurtenances, and enclosure from the customer as fees and charges for water. The failure of the customer to pay these fees and charges may result in termination of water service in accordance with the Purveyor's water billing policies.

16. The Purveyor will require premises isolation for a customer that is of the high-hazard type or category requiring "Mandatory Premises Isolation" established by the DOH regulations (Table 9, WAC 246-290-490).

17. Where the Purveyor imposes mandatory premises isolation in compliance with DOH regulations, or agrees to the customer's voluntary premises isolation through the installation of a RPBA immediately downstream of the Purveyor's water meter, the customer acknowledges his obligation to comply with the other cross-connection control regulations having jurisdiction (i.e., Uniform Plumbing Code). Although the Purveyor's requirements for installation, testing, and repair of backflow assemblies may be limited to the RPBAs used for premises isolation, the customer agrees to the other terms herein as a condition of allowing a direct connection to the Purveyor's service pipe.

18. The customer agrees to indemnify and hold harmless the Purveyor for all contamination of the customer's plumbing system or the Purveyor's distribution system that results from an unprotected or inadequately protected cross connection within the customer's premises. This indemnification shall pertain to all backflow conditions that may arise from the Purveyor's suspension of water supply or reduction of water pressure, recognizing that the air gap separation otherwise required would require the customer to provide adequate facilities to collect, store, and pump water for his/her premises.

19. The customer agrees that, in the event legal action is required and commenced between the Purveyor and the customer to enforce the terms and conditions herein, the substantially prevailing party shall be entitled to reimbursement of all incurred costs and expenses including, but not limited to, reasonable attorney's fees as determined by the Court.

20. The customer acknowledges that the Purveyor's survey of a customer's premises is for the sole purpose of establishing the Purveyor's minimum requirements for the protection of the public water supply system, commensurate with the Purveyor's assessment of the degree of hazard.

21. It shall not be assumed by the customer or any regulatory agency that the Purveyor's survey, requirements for the installation of backflow prevention assemblies, lack of requirements for the installation of backflow prevention assemblies, or other actions by the Purveyor's personnel constitute an approval of the customer's plumbing system or an assurance to the customer of the absence of cross connections therein.

22. The customer acknowledges the right of the Purveyor, in keeping with changes to Washington State regulations, industry standards, or the Purveyor's risk management policies, to impose retroactive requirements for additional cross-connection control measures.

The Purveyor will record the customer's agreement to the above terms for service on an "Application for Water Service," "Application for Change of Water Service," or other such form prepared by the Purveyor and signed by the customer.

Implementation of the Cross-Connection Control Policy

The Purveyor will engage the services of a DOH-certified CCS to develop, implement and be in responsible charge of the **{Insert PWS name}** Water System's cross-connection control program.

The Purveyor, under the direction of the aforementioned CCS, will prepare a written cross-connection control program plan to implement the requirements of this resolution. The written program shall be consistent with this resolution and shall comply with the requirements of Chapter 246-290 WAC (Group A Drinking Water Regulations).

The Purveyor will use the most recently published editions of the following publications as references and technical aids:

1. *Cross-Connection Control Manual, Accepted Procedures and Practice,* published by the Pacific Northwest Section, American Water Works Association, or latest edition thereof.

2. *Manual of Cross-Connection Control,* published by the Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California, or latest edition thereof.

3. *Cross-Connection Control Guidance Manual for Small Water Systems,* published by the DOH Office of Drinking Water.

The Purveyor will incorporate the written program plan into the Water System Plan ***[Alternative, if WSP is not required:*** *"Small Water System Management Program"]* and will submit the plan to DOH for approval when requested.

The Purveyor, in consultation with the aforementioned CCS, shall have the authority to make reasonable decisions related to cross connections in cases and situations not provided for in the resolution or written program.

If any provision in this resolution, or in the written cross-connection control program is found to be less stringent than or inconsistent with the Drinking Water Regulations (Chapter 246-290 WAC), or other Washington state statutes or rules, the more stringent state statute, rule, or regulation shall apply.

Resolution Passed: _____

Effective Date: _____

Signatures: _____

_____

_____

_____ WATER SYSTEM

Cross-Connection Control Policy

Finding of Fact:

Whereas it is the responsibility of a water purveyor to provide water that meets Washington State water quality standards to all consumers occupying or visiting the Owner's premises;

Whereas it is the water purveyor's responsibility to prevent the contamination of the public water system from the source of supply to the Owner's connection at the service pipe or meter;

Whereas the Purveyor manages the facilities and the plumbing systems for the Owner that delivers the water to the Owner's facility;

Whereas it is a requirement of the Washington State Department of Health for the Purveyor to establish a cross-connection control program satisfactory to DOH;

Now be it resolved that _____, hereinafter referred to as "the Owner(s)" and **Northwest Water Systems, Inc,** hereinafter referred to as "the Purveyor", establish the following policy to protect the Owner's water system and plumbing facilities from the risk of contamination. For public health and safety, this policy shall apply equally to all new and existing facilities.

A. Definitions

Unless otherwise defined, all terms used in this resolution pertaining to cross-connection control have the same definitions as those contained in WAC 246-290-010 of the Washington State Drinking Water Regulations and Chapter 2 of the Uniform Plumbing Code as amended for Washington State (Chapter 51-56 WAC).

B. Administrative Provisions

1. The Purveyor shall engage the services of a Department of Health (DOH) certified cross-connection control specialist (CCS), by employment or by contract, to develop, implement, and be in responsible charge of the _____ **Water System's** CCC program.

2.

3. The Purveyor, under the direction of the CCS as provided for in B-1, shall prepare a written CCC program plan to implement the requirements of this resolution. The written CCC program plan will be consistent with this resolution and shall comply with the requirements of Chapter 246-290 WAC (Group A Drinking Water Regulations) and with Chapter 51-56 WAC (Uniform Plumbing Code as amended for Washington).

4. The Purveyor will use the most recently published editions of the following publications as references and technical aids:

   a. *Manual of Cross-Connection Control,* published by the Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California, or latest edition thereof.

   b. *Cross Connection Control Manual, Accepted Procedures and Practice,* published by the Pacific Northwest Section, American Water Works Association, or latest edition thereof.

   c. *Cross-Connection Control Guidance Manual for Small Water Systems,* published by the Washington State Department of Health, Office of Drinking Water.

5. The Purveyor shall incorporate the written program plan into the Water System Plan or Small Water System Management Program as applicable and shall submit the program to DOH for approval when requested.

C. Technical Provisions

1. The Purveyor's CCS shall perform hazard assessments of all water system and water-using facilities owned by the Purveyor according to a reasonable schedule.

2. The Purveyor shall work with the Owner to eliminate all cross-connections that are discovered by the CCS. Where it is impossible or impractical to eliminate the cross-connections, they shall be protected against by installation of a backflow assembly. The type, location and schedule of installation of the backflow assembly shall be as recommended by the Purveyor's CCS.

3. When a facility or building owned or served by the Owner is of a type included on Table 9 of WAC 246-290-490(4), the building or facility plumbing system shall be isolated from the rest of the water system by installation of a reduced pressure principle backflow assembly (RPBA) or air gap (AG). The premises isolation backflow assembly will be installed at a location recommended by the CCS.

4. Cross-connection hazards found within buildings will be protected against as according to the Uniform Plumbing Code (UPC) as amended for Washington. For cross-connection hazards and/or specific plumbing fixtures that are not address in the UPC, the Purveyor will provide protection in accordance with the fixture protection tables found in the most recently published edition of the PNWS-AWWA *Cross Connection Control Manual.*

5. All backflow assemblies shall be inspected and/or tested in accordance with WAC 246-290-490 at the time of installation, after repair, reinstallation, or relocation, and after a backflow incident. After the initial test, the Purveyor will ensure that Purveyor-owned backflow assemblies are tested at least once annually. The Purveyor will ensure that a purveyor-approved, DOH-certified backflow assembly tester (BAT) tests all assemblies. The Purveyor will reinstall, repair or replace as soon as feasible, any backflow assemblies that fail an inspection and/or a test.

6. The Purveyor shall maintain records of hazard assessments, backflow assemblies, and backflow assemblies tests and inspections. The Purveyor shall make all data concerning the CCC program available to DOH when requested.

7. The Purveyor shall allocate resources as necessary to implement the provisions of this resolution and the CCC program adopted.

D. Other Provisions

If any provisions in this Policy, or in the written CCC Program plan adopted by the Owner, are found to be less stringent than or inconsistent with the Drinking Water Regulations (Chapter 246-290 WAC), the Uniform Plumbing Code (Chapter 51-56 WAC), or any other Washington State statutes or rules, the more stringent statute, rule, or regulations shall apply.

Resolution Passed: _____

Effective Date: _____

Signatures: _____

_____

_____

_____ **WATER SYSTEM**

CROSS CONNECTION CONTROL PROGRAM

Authority: Chapter 246-290-490 of the Washington Administrative Code (WAC) Titled "Cross-Connection Control" requires that the Purveyor, **Northwest Water Systems, Inc.** (Satellite Management Agency # 119) develop and implement a Cross-Connection Control Program (CCCP).

Purpose: The Purpose of this Program is to provide a basis for implementing the State Drinking Water Regulations, enacted to ensure safe drinking. It will protect the system from the possibility of contamination by isolating within its customers' internal distribution system such contaminants which could backflow into the public water supply system. It will promote the elimination or control of existing cross-connections between its customers, non-potable systems, and plumbing fixtures. It will provide for the maintenance of a continuing program of cross-connection control, which will systematically and effectively prevent the contamination of the _____ Water System.

Interpretation: Any interpretations of this document regarding scope, intent, degree of hazard, or type of protection required, will be subject to the current accepted guidelines of the State at the time of the interpretation, and the regulations established therein.

Existing System: The _____ Water System is entirely residential. The system currently has ___ connections, is DOH-approved for___ connections, and has the potential to serve ____ connections with full build-out. At present, there are ____ Backflow Assemblies installed in the system. Cross connection control devices located within the individual homes are presently unknown.

Initial Cross Connection Program: The program to be instituted will generally be educational and request participation by customers. A Cross-Connection Control Survey form will be sent out to customers informing them of possible cross-connections and the resulting hazards that may accompany them. The notice will describe possible home-based cross-connections such as: irrigation systems, filling the family spa or pool with a water hose left below the water line, the presence of a water connection to an in-house photographic development chemical tank, or auxiliary water supplies from private wells that have not been disconnected from the potable water system. The Customers will fill out the Survey forms and return them to the Purveyor's DOH-Certified Cross-Connection Control Specialist (CCS) within 45 days.

The Survey will be followed up with an Inspection by the CCS. Cross-connections that are identified on the Survey or the Inspection will be eliminated or have backflow assemblies installed at the customer's expense. Customers will be supplied with a suggested source of supply for the assemblies, recommendations for installation, and contacts for the required annual testing of the installed device(s). The expense of all required annual testing will also be the responsibility of the customer.

Customer System Open for Inspection: The customer's system shall be open for "Facility Survey" at all reasonable times to the Purveyor to determine whether cross connections or other structural or sanitary hazards exist, including violations of these regulations. If access is denied, the Purveyor shall require the installation of a Reduced Pressure Backflow Assembly (RPBA) in the water service line. Until access is granted, or until an RPBA is installed, the Purveyor's CCS may, depending upon the severity of the presumed hazard, cause the service to the premises to be immediately discontinued or denied by a physical break in the service line. Such service could be resumed when the customer has corrected the condition in conformance with this program.

Definitions: As used in this document, unless the context indicates otherwise, the following shall apply:

Air Gap Separation (AG): The physical, vertical separation between the free flowing discharge end of a potable water supply line and the open or non-pressure receiving vessel.

Approved Backflow (Prevention) Assembly: An assembly which has been approved by the State for preventing backflow.

Atmospheric Vacuum Breaker (AVB): (also known as an anti-siphon valve): A device consisting of a single check valve in the supply line that opens to atmosphere when the pressure in the line drops to atmospheric.

Auxiliary Water Supply: Any supply of water used to augment the supply obtained through the _____ Water System which serves the premises in question.

Backflow: The flow of water or other fluids in the direction opposite to the normal flow.

Backflow Assembly Tester (BAT): An individual who is certified by the Washington State Department of Health (DOH) to test Backflow Prevention Assemblies.

Check Valve: A valve that permits flow in only one direction.

Contaminant: Any physical, chemical, biological, or radiological substance or matter in water which may render the water non-potable according to State regulations.

Cross Connection: Any link or channel between piping which carries potable drinking water and the piping or fixtures which carry non-potable water or other substances.

Cross Connection Control Specialist (CCS): An individual Certified by the DOH to inspect for Cross Connections.

Customer System: All plumbing, piping, and appurtenances on the customer's side of the point of metering or connection.

Double Check Valve Assembly (DCVA): An assembly of two independently-acting check valves with a shut-off valve on each side of the two check valves. The assembly also has test ports for checking the water tightness of each check valve. The assembly must be an approved Backflow Prevention Assembly.

Double Detector Check Valve Assembly (DCDA): Same as a DCVA with the addition of a water meter and an additional DCVA bypassing the main line assembly for the purpose of measuring low or proportional flow. The entire assembly must be an approved Backflow Prevention Assembly.

Facility Survey: An on-site review of the water source, facilities, equipment, operation, and maintenance for the purpose of evaluating the hazards to the drinking water supply.

Premises Isolation: A method of protecting a public water system by installation of approved air gaps or approved backflow prevention assemblies at or near the service connection or alternative location acceptable to the purveyor to isolate the consumer's water system from the purveyor's distribution system.

Pressure Vacuum Breaker Assembly (PVBA): A mechanical assembly consisting of one spring loaded check valve in the supply line and a spring loaded air inlet on the downstream side of the check valve which will open to atmosphere when the pressure in the assembly drops below one pound per square inch. The complete assembly consists of two shut off valves and two test ports for checking water tightness of the check valve. The Assembly must be an approved Backflow Prevention Assembly.

Reduced Pressure Backflow Assembly (RPBA): An assembly for preventing backflow incorporating two check valves, a differential relief valve located between the two check valves, two shut off valves, one on each end of the assembly, and test ports for checking the tightness of the check valves and the operation of the relief valve. The Assembly must be an approved Backflow Prevention Assembly.

Reduced Pressure Detector Assembly (RPDA): Same as an RPBA with the addition of a water meter and an additional RPBA bypassing the main line Assembly for the purpose of measuring low or proportional flow. The complete Assembly must be an approved Backflow Prevention Assembly.

Safe Drinking Water (Potable Water): Water which has sufficiently low concentrations of microbiological, inorganic chemical, organic chemical, radiological, or physical substances so that individuals drinking such water at normal levels of consumption will not be exposed to disease organisms or other substances which may produce harmful physical effects.

Secondary Contaminant: Contaminants which at levels generally found in drinking water do not present unreasonable risk to health, but do adversely affect taste, odor, or color.

Service Connection: The point of delivery of water at or near the property line, generally at the water meter.

Backflow Prevention Requirements: Backflow prevention assemblies shall be installed on each service line of a customer's system at or near the property line or immediately inside the building being served, but in all cases before the first branch line leading off the service line wherever any of the following conditions exist:

1) There is an auxiliary water supply which is, or could be, connected to the potable water piping.

2) There is piping for conveying liquids other than potable water, and where that piping is installed and operated in a manner which could cause a cross-connection.

3) There is intricate plumbing which makes it impractical to ascertain whether or not a cross connection exists.

4) In the case where there has been a history of repeating the same or similar cross connection or backflow hazard, even though these have been removed or disconnected.

5) Where there is a building greater than two stories in height or any plumbing system greater than or equal to thirty feet above the water main.

6) Where fire hydrants or fire systems are connected to the potable or domestic water service within the property being served.

7) Where a single water service is used to supply three or more dwellings.

8) Where the water meter serving the property is one and one-half inch or larger.

9) Where there is a backflow or back-siphonage potential.

10) Where any fixture is subject to being submerged.

11) Where the system is not open for inspection.

For single-service residential service connections, "in premises" (point of hazard) backflow protection may be relied upon in accordance with the Uniform Plumbing Code (UPC) for hazards such as, but not limited to:

1) Irrigation Systems

2) Swimming Pools or Spas

3) Ponds

4) Boilers

Type of Backflow Protection Required: The type of protection required shall be commensurate with the degree of hazard which exists as follows:

1) An approved AG of at least twice the inside diameter of the oncoming supply line, but not less that one inch measured vertically above the top rim of the vessel, or an approved RPBA shall be installed in all high-health cross-connection hazard premises listed on table 9 in WAC 246-290-490 (4) where the substance which could backflow is a "contaminant" or potentially hazardous to health. Examples of premises where these conditions could exist include hospitals, mortuaries, car washes, medical clinics, auxiliary water systems, boilers, sewage piping etc.

2) An approved DCVA shall be installed where the substance which could backflow is a secondary contaminant. Examples would include landscape irrigation systems, multiple dwelling units served by a single water service, etc.

3) An approved PVBA or an AVB shall be installed where the substance which could backflow is objectionable but does not pose a risk to health and where there is no possibility of backpressure in the downstream piping.

4) In the case of all private fire services, an approved Backflow Prevention Assembly installed to the Purveyors construction specifications shall be required. The Purveyor may require a monitoring meter or detection system to detect unauthorized use or leakage within the system. The type of Backflow Prevention Assembly shall be as follows:

a) Low Hazard – Systems with or without a pumper connection but no auxiliary water supplies available, chemicals or additives, or other detectable cross connections require an approved DCVA.

b) High Hazard – Systems with auxiliary water supplies, chemical additives, or other detectable cross connections shall require an approved RPBA.

Approval of Assemblies: All Backflow Prevention Assemblies required under this program shall be of a type approved by the State and this Purveyor.

Follow Up Cross Connection Program. The Purveyor has the following Cross Connection Control Specialists (CCS) on staff who shall manage the Cross Connection Control Program (CCCP).

Name of CCS	Reg Hearn, Northwest Water Systems, Inc.
Address	P. O. Box 123
City, State, Zip	Port Orchard, WA 98366
Telephone Number	(360) 876-0958
CCS Certification Number	7642

Name of CCS	J. Anthony Norris, Northwest Water Systems, Inc.
Address	P. O. Box 123
City, State, Zip	Port Orchard, WA 98366
Telephone Number	(360) 876-0958
CCS Certification Number	8882

The CCS shall develop a schedule for biennial inspection of the system for cross connections. The CCS shall evaluate all service connections to assess their degree of hazard and recommend to the customers corrective actions and time frames necessary for completion.

1) For new services, the CCS will evaluate the design and installation prior to activation of the service.

2) For existing services, the evaluation of the system will be made during the initial inspection.

3) For all services, the evaluation of the system will be made annually as described above or whenever there is a change in the use of the premises.

4) The CCS shall respond to all Cross Connection emergencies and backflow incidents and cause immediate corrective action to be taken.

Backflow Prevention Inspection and Testing Program. The CCS shall also oversee the Backflow Prevention Assembly Testing and Quality Assurance Programs. Using Cross-Connection Control Survey and Inspection Reports as a Guide, the CCS shall determine where Backflow (Prevention) Assemblies are required and make recommendations to the customers accordingly. The Purveyor has a DOH-Certified Backflow Assembly Tester (BAT) under agreement to test all assemblies in the water system. Additional BATs are available should the need arise. The CCS shall make certain that the Backflow Assemblies are inspected and tested by the BATs and that their testing equipment is currently and properly calibrated.

Cross Connection and Backflow Assembly Records: The Purveyor shall maintain the following Cross Connection and Backflow Prevention records for both "premises" and "in-premises" installations:

1) Cross Connection Summary and Incident reports

2) A Master List of service connections with Backflow Assemblies or otherwise having a hazard level above normal.

3) An inventory of including type, location, size, model, etc. of all Backflow Prevention devices.

4) Installation, Test, & Inspection History on all Backflow Assemblies.

Owner's Duty for Inspection: It shall be the duty of the assembly owner of any premise where backflow assemblies are installed to have the assembly tested and certified as working immediately upon installation of the assembly, and at least once a year, or more often for those instances where successive inspections indicate repeated failure. The frequency of these tests or the replacement of the assembly because of repeated failure is at the discretion of the Purveyor. The tests, repairs, and/or replacement of any Backflow (Prevention) Assembly shall be at the expense of the assembly owner and performed by a BAT who is currently certified by the State and approved by the Purveyor. Test, repair and/or replacement shall be performed within thirty days of the test date. The assembly owner is to contact a BAT who can perform the test within the required time period. The Purveyor will notify the owner each year when the assembly is due for testing. The assembly owner shall notify the Purveyor a minimum of forty-eight (48) hours in advance of when a test is to be performed, so that the Purveyor's CCS may witness the test if they so desire. Records of such tests, repairs, and/or replacements shall be submitted to the Purveyor within ten (10) days of such tests, repairs or replacements.

Previously Installed Assemblies: Backflow (Prevention) Assemblies which were approved at the time they were installed but are not on the current list of approved assemblies, shall be permitted to remain in service provided that they are properly maintained, are commensurate with the degree of hazard, are tested at least annually, and perform satisfactorily. When assemblies of this type are moved, or require more than minimal maintenance, they shall be replaced by assemblies which are on the list of assemblies approved by the State and the Purveyor.

Backflow Incident Response: The Purveyor's CCS shall lead a team effort to respond to all Backflow Incidents. The team shall follow the procedures outlined in the "Backflow Incident Response Plan" for the _____ Water System which is included with the program documents.

Customer Education: The Purveyor will distribute with water bills or some other means, at regular intervals, public education brochures to system customers. For residential customers, such brochures will describe the cross-connection hazards in homes and the recommended assemblies or devices that should be installed by the homeowner to reduce the hazard to the public water system. The education program will emphasize the responsibility of the customer in preventing the contamination of the public water supply. The Purveyor's staff will produce the public education brochures or the Purveyor will obtain brochures from:

- PNWS-AWWA;
- Spokane Regional Cross-Connection Control Committee (SRC4);
- Western Washington Cross-Connection Prevention Professionals Group (The Group);
- USC FCCCHR;
- Other national backflow prevention associations, such as the American Backflow Prevention Association (ABPA); and/or
- Other water utilities.

The information distributed by the Purveyor will include, but not be limited to, the following subjects:

- Cross-connection hazards in general;
- Irrigation system hazards and corrective actions;
- Fire sprinkler cross-connection hazards;
- Importance of annual inspection and/or testing of backflow preventers; and
- Thermal expansion in hot water systems when backflow preventers are installed for premises isolation.

The Purveyor will distribute information brochures to all customers every two to three years, and to every new customer at the time the service agreement is signed.

Reclaimed/Reused Water: At this time, the **Water System** does not receive or distribute reclaimed water. Additionally, it is the policy of the Water system to prohibit the intentional return of used water to the distribution system by any customer served by the system.

Technical Resources:

a. Manual of Cross-Connection Control, 9th Edition, 1993, University of Southern California, Foundation for Cross-Connection Control & Hydraulic Research, KAP-200, University Park, MC-2531, Los Angeles, CA 98089-2531 (213) 740-2032.

b. Cross Connection Control Manual, Accepted Procedure and Practice, 6th Edition, 1995 ("Yellow Manual"), Pacific Northwest Section, American Water Works Association, PO Box 2050 Clackamas, OR 97015-2050 (877) 767-2992 (toll-free)

c.Cross-Connection Control for Small Water Systems, March 2004, Revised, Office of Drinking Water, Washington State Department of Health, P. O. Box 47828, Olympia, WA 98504-7828 (360) 236-3164

Coordination With Local Administrative Authority: Both WAC 246-290-490 and the Uniform Plumbing Code (as amended for Washington) require coordination between purveyors and the Local Administrative Authority in all matters concerning cross-connection control.

a. Identification of Local Administrative Authority (LAA) –the LAA that enforces the plumbing code for the premises served by the Purveyor is **_____ County, Department of _____, Att'n: _____, _____ Title, Address _____, Phone _____.**

b. Coordination with Local Administrative Authority - A letter indicating that this cross-connection control program has been implemented has been provided to **(Name) _____ County, Department of _____** on **_____.**

c. Description of Coordination with LAA – The Purveyor coordinates with the LAA as follows: **Coordination consists of information sharing only.** However, the Purveyor requests the opportunity to review any plumbing plans for new or existing connections to the water system when permits are applied for. The Purveyor further agrees to inform the LAA whenever a backflow incident or a shut-off occurs.

d. Delineation of Responsibilities – The Purveyor and the LAA are responsible for the following CCC activities in the **_____ Water System.** LAA reviews new construction drawings; the Purveyor is responsible for all other Cross-Connection Control evaluations, tests, inspections, and record keeping.

Enforcement: The CCS shall cause the water service to the premises to be immediately discontinued or denied by a physical break in the service until the customer has corrected the condition in conformance with this program in any of the following situations:

1) When it becomes known that a condition such as a cross connection, plumbing, structural, sanitary hazard, or other violation of this program is present.

2) In those cases of extreme emergency, and where an immediate threat to life or public health is found to exist.

3) When after a reasonable length of time has been allowed as determined solely by the Purveyor's CCS, the tests, repairs, and/or replacement of the assemblies or any other requirement within this program is not performed in accordance with this program.

Severability: The provisions of this program are severable. If any portion of this program is held by a court of competent jurisdiction to be invalid or unenforceable for any reason, such

determination shall not affect the validity of the remainder of the program or its application to any other program.

_____WATER SYSTEM

CROSS-CONNECTION CONTROL PROGRAM

A. Requirement for Program

The **_____Water System,** System ID No._____, hereinafter referred to as "the Owner", has delegated the responsibility to protect the public water system from contamination due to cross-connections to **Northwest Water Systems, Inc,** Satellite Management Agency (SMA) #119, hereinafter referred to as "the Purveyor". A cross connection may be defined as "*Any actual or potential physical connection between a potable water line and any pipe, vessel, or machine that contains or has a probability of containing a non-potable gas or liquid, such that it is possible for a non-potable gas or liquid to enter the potable water system by backflow.*"

All public water systems are required to develop and implement cross-connection control (CCC) programs. The CCC requirements are contained in WAC 246-290-490 of the Group A Drinking Water Regulations. The minimum required elements of a CCC program are as follows:

1. Establishment of legal authority and program policies;
2. Evaluation of premises for cross-connection hazards;
3. Elimination and/or control of cross connections;
4. Provision of qualified personnel;
5. Inspection and testing of backflow assemblies;
6. Quality control of testing process;
7. Response to backflow incidents;
8. Public education for consumers;
9. Record keeping for CCC program; and
10. Special requirements for reclaimed water use.

Other requirements of a CCC program include:

1. Coordination with the Local Administrative Authority (LAA), i.e. the local building or plumbing official, regarding CCC activities;
2. Inclusion of a written CCC program in a WSP or SWSMP; and
3. Prohibition of the intentional return of used water.

B. Program Objectives

The objectives of the CCC program are to:

1. Reasonably reduce the risk of contamination of the source of supply and water distribution system; and

2. Comply with the applicable plumbing code and other regulations pertaining to the construction and operation of the Owner's facilities.

C. Summary of Program Decisions

The following table summarizes the major policy and program decisions adopted for the **_____ Water System.** Since the Owner and the "customer" are the same entity in a non-community system, only a limited number of program decisions are needed. For each program area, the table shows some available options for decisions that are likely to be required for a non-community system

Summary of Program Decisions for the
_____ Water System

Decision Item	Decision (Check one option per item)
1. Assessment and Re-Assessment of Cross-Connection Hazards (Element 2)	
a. By purveyor's certified CCS	X
b. By consultant CCS on contract to water system	
c. By another agency's CCS (via an inter-agency agreement)	
2. CCS Option - purveyor's CCC Program Management (Element 4)	
a. By purveyor's certified CCS	X
b. By another agency's CCS (via an inter-agency agreement)	
c. By consultant CCS on contract to water system	
3. Testing of Assemblies (Element 5)	
a. By purveyor's staff or purveyor employed certified BAT	
b. By customer employed (contractor) BAT	X
4. **Extent of Coordination with Local Administrative Authority (Other Provisions)** [WAC 246-290-490 (2)(d)	
a. Information exchange	X

Decision Item	Decision (Check one option per item)
b. Interaction	
c. Joint program	
d. Not applicable at this time (no new facilities construction or remodeling)	

D. Required Elements of Program

The following program element descriptions are excerpts from the CCC regulations found in WAC 246-290-490.

Element 1: *Adoption of a written legal instrument authorizing the establishment and implementation of a CCC program.*

Authority - The Purveyor is the operator of all of the Owner's facilities on the premises. By stated policy, the Purveyor is authorized and mandated to protect the water system from contamination via cross connections. A copy of the stated policy or resolution is included as part of this CCC program.

Element 2: *Development and implementation of procedures and schedules for evaluating new and existing service connections to assess the degree of hazard.*

Cross-Connection Hazard Assessments

1. Initial Hazard Assessment

   a. ***Existing*** Facilities/Systems - The Purveyor will ensure that a DOH certified cross-connection control specialist (CCS) conducts an initial cross-connection hazard evaluation of the _____ **Water System** within six months after adoption of this CCC program.

      Program Adoption Date:_____ Initial Hazard Survey Date:_____

   b. ***New*** Facilities/Systems – The Purveyor will ensure that a DOH-certified CCS conducts an initial cross-connection hazard evaluation, *before* water service is provided to any new facilities, irrigation systems etc. served by the water system.

2. Periodic Resurveys – The Purveyor will ensure that a DOH-certified CCS periodically resurveys for cross-connection hazards the _____ **Water System.** Resurveys will be conducted:

   a. Every 3 years after the initial hazard survey; and

b. Upon any changes in use of the premises, plumbing or distribution facilities.

Element 3: *Development and implementation of procedures and schedules for elimination and/or control of cross connections.*

Policy - The following procedures apply to all new and existing buildings or areas of water use in the **_____ Water System:**

1. Mandatory Premises Isolation for High-hazard Buildings, Facilities or Systems – The Purveyor will ensure that water services to all buildings, facilities or systems of the type described in Table 9 of WAC 246-290-490 (i.e., high hazard) are isolated by a DOH-approved reduced pressure backflow assembly (RPBA).

2. Compliance with Uniform Plumbing Code/Additional Premises Isolation Requirements – The Purveyor will ensure that all buildings or areas of water use:

   a. Comply with the current plumbing code (amended for Washington) adopted by the State Building Code Council; and

   b. Be isolated with an approved double check valve assembly (DCVA), where the CCS believes the plumbing code does not provide protection commensurate with the assessed degree of hazard.

3. Plumbing/Water System Design – The Purveyor will ensure that the design of the plumbing and/or water system incorporates DOH-approved backflow prevention assemblies appropriate for the degree of hazard assessed by the Purveyor's CCS. Initial plumbing/water system design and subsequent design modifications will be subject to review by a DOH-certified CCS for cross-connection hazards.

4. Approved Backflow Assemblies - The Purveyor will ensure that DOH-approved backflow prevention assemblies protect the public water system from contamination. DOH-approved assemblies are assemblies that appear on DOH's published list of *Backflow Prevention Assemblies Approved for Installation in Washington State*. The Purveyor will keep on file documentation regarding the approval status of all backflow assemblies installed to protect the public water system.

5. Installation Standards – The Purveyor will ensure that all approved backflow assemblies are installed in:

   - The orientation for which they are approved;
   - A manner and location that facilitates their proper operation, maintenance, and testing or inspection, and in compliance with safety regulations;

- A manner and location that protects them from flooding and freezing; and
- Accordance with the installation standards outlined in the most recently published editions of the PNWS-AWWA *Cross-Connection Control Manual*, or the USC-FCCCHR *Manual Of Cross-Connection Control,* unless the manufacturer's requirements are more stringent.

Element 4: *Provision of qualified personnel, including at least one person certified as a CCS, to develop and implement the cross-connection control program.*

1. Program Administration - The Purveyor or his authorized agent is responsible for administration of the CCC program.

2. DOH-Certified CCS – The Purveyor will employ, or have available on staff, at least one person certified by DOH as a CCS to develop and implement the CCC program. When no staff or employees are qualified, the Purveyor will retain a DOH-certified CCS on contract to provide the necessary expertise and services.

3. CCS Duties – The Purveyor will ensure that a DOH-certified CCS does the following:

   - Performs CCC hazard evaluations;
   - Determines the type of backflow assembly to be installed;
   - Inspects backflow assemblies (to ensure protection is provided commensurate for the degree of hazard, for correct installation and for approval status);
   - Reviews assembly test reports;
   - Reports and investigates backflow incidents; and
   - Completes reports (Annual Activities, Program Summary and Exception Reports) required by WAC 246-290-490 and submits them upon request to DOH.

4. Current CCS Information – The following table(s) shows information related to the CCS(s) currently responsible for development, implementation and oversight of the Purveyor's CCC program:

Name of CCS	Reg Hearn, Northwest Water Systems, Inc.
Address	P. O. Box 123
City, State, Zip	Port Orchard, WA 98366
Telephone Number	(360) 876-0958
CCS Certification Number	7642

Name of CCS	J. Anthony Norris, Northwest Water Systems, Inc.
Address	P. O. Box 123
City, State, Zip	Port Orchard, WA 98366
Telephone Number	(360) 876-0958
CCS Certification Number	8882

Element 5: *Development and implementation of procedures to ensure that approved backflow assemblies are inspected and/or tested (as applicable).*

1. Backflow Assembly Inspection and Testing – The Purveyor will ensure that all backflow assemblies in the **Water System** are inspected and tested in accordance with WAC 246-290-490. The Purveyor will arrange to have all backflow assemblies inspected and tested (if applicable):

   - At the time of installation;
   - Annually after installation (minimum frequency) or more frequently;
   - After a backflow incident; and
   - After an assembly is repaired, reinstalled or relocated (or air gap re-plumbed).

2. DOH-Approved Test Procedures - Per WAC 246-290-490 (7)(d), the Purveyor will ensure that all assemblies protecting the public water system from contamination are tested in accordance with DOH-approved field test procedures.

Element 6: *Development and implementation of a backflow prevention assembly testing quality control assurance program.*

1. DOH-Certified Backflow Assembly Tester (BAT) Required - The Purveyor will ensure that a DOH-certified BAT tests all backflow assemblies that protect the public water system from contamination.

2. BAT Documentation Requirements - Prior to engaging a BAT to test assemblies within the water system, the Purveyor will require the tester to document that he/she:

   a. Is currently certified by DOH as a BAT;
   b. Has appropriate assembly testing equipment (make, model and serial number); and
   c. Has had the testing equipment verified for accuracy and/or calibrated within the past 12 months.

3. The Purveyor will employ one or more DOH-certified BATs. The Purveyor will ensure that the BATs are currently certified, maintain their certifications in good standing, and that all testing equipment is of the appropriate type and is verified for accuracy and calibrated, if needed, at least once annually.

4. Quality Assurance – The Purveyor's CCS will review within 30 days of receipt inspection/test report forms submitted by the BAT and follow-up on any reports that are found to be deficient in any way.

Element 7: *Development and implementation (when appropriate) of procedures for responding to backflow incidents.*

1. Backflow Incident Response Plan - The Purveyor will develop a Backflow Incident Response Plan in consultation with the Purveyor's CCS. It will be included in the CCC Plan.

2. Technical Resources - The Purveyor will use the manual, *Backflow Incident Investigation Procedures*, First Edition, 1996, published by the PNWS-AWWA as a technical resource and/or supplement to the Backflow Incident Response Plan.

Element 8 : *Development and implementation of a cross-connection public education program.*

1. Public Education Program - The Purveyor's public education program for the Purveyor will consist of distribution of CCC-related educational material (handouts) to staff and other water users as appropriate. The education program will emphasize the responsibility of the water users in preventing contamination of the water supply. Information distributed will include, the following subjects (as applicable):

   a. Cross-connection hazards in general;
   b. Cross-connection hazards typical to the Owner's premises;
   c. Irrigation system hazards and corrective actions;
   d. Fire sprinkler cross-connection hazards;
   e. Importance of annual inspection or testing of backflow assemblies; and
   f. Thermal expansion in hot water systems when backflow assemblies are used.

2. Educational Materials - The Purveyor has adapted existing educational materials from organizations such as PNWS-AWWA, ABPA, SRC4 and The Western Washington Cross-Connection Prevention Professionals, so that the contents are applicable and/or relevant to the Owner's water system.

3. Frequency - The Purveyor will distribute, every two to three years, information brochures to new staff, water users, and/or occupants that could inadvertently create cross connections in the Owner's water system.

4. Public Education Implementation – The Purveyor will document who has received public education information in the following table *(describe who the Purveyor has educated, by what means and when).*

Target Audience	Method		Date Provided
	Brochure	Class	

Element 9: *Development and maintenance of cross-connection control records.*

1. Required CCC Records - The Purveyor will maintain records of the following types of information:

   a. CCC hazard evaluation results;
   b. Backflow assemblies required by the CCS to protect the public water system (may include both premises isolation and in-premises assemblies);
   c. Air gap location, installation and inspection dates, inspection results, and name of person conducting inspections;
   d. Backflow assembly location, description (type, manufacturer, make, model, size and serial number), installation, inspection and test dates, test results, and person performing tests; and
   e. Information on Atmospheric Vacuum Breakers (AVBs) used for irrigation system applications, including manufacturer, make, model, size, dates of installation and inspections, and person performing inspections.

2. CCC Reports Required to be Prepared and Submitted - The Purveyor will prepare the following required reports and submit them to DOH as indicated:

   a. **CCC Program Activities Annual Summary Report:** complete for each calendar year and send to DOH when requested.
   b. **CCC Program Summary Information Report:** complete and submit when requested by DOH or when there are significant policy changes to the CCC program.
   c. **Backflow Incident Reports:** complete and submit to DOH with the CCC Program Activities Annual Summary Report unless otherwise requested by DOH. As a courtesy, the Purveyor will submit a copy to the PNWS-AWWA CCC Committee; and
   d. **Exceptions to Mandatory Premises Isolation Report** (if applicable): complete one

report for each exception granted in a calendar (reporting) year and submit to DOH with the CCC Program Activities Annual Summary Report.

3. CCS Review - The Purveyor's CCS will complete and/or review the CCC reports for accuracy.

Element 10: *Additional cross-connection control requirements for reclaimed water.*

At this time, the **_____ Water System** does not receive or distribute reclaimed water. In the event that reclaimed water use is proposed within the System service area, the Purveyor will incorporate into the CCC program and comply with all cross-connection control requirements mandated by the Permitting Authority in accordance with Chapter 90.46 RCW.

E. Other Provisions

1. **Coordination With Local Administrative Authority:** Both WAC 246-290-490 and the Uniform Plumbing Code (as amended for Washington) require coordination between purveyors and the Local Administrative Authority in all matters concerning cross-connection control.

   a. Identification of Local Administrative Authority (LAA) –the LAA that enforces the plumbing code for the premises served by the Purveyor is **_____ County, Department of _____, Att'n: _____, (Title) _____, (Address) _____, (Phone) ____.**

   b. Coordination with Local Administrative Authority - A letter indicating that this cross-connection control program has been implemented has been provided to **County, Department of _____ on ____.**

   c. Description of Coordination with LAA – The Purveyor coordinates with the LAA as follows: **Coordination consists of information sharing only.** However, the Purveyor requests the opportunity to review any plumbing plans for new or existing connections to the water system when permits are applied for. The Purveyor further agrees to inform the LAA whenever a backflow incident or a shut-off occurs.

   d. Delineation of Responsibilities – The Purveyor and the LAA are responsible for the following CCC activities in the **_____ Water System.** LAA reviews new construction drawings; the Purveyor is responsible for all other Cross-Connection Control evaluations, tests, inspections, and record keeping.

2. **Prohibition of Return of Used Water:** The water system must prohibit the intentional return of used water to the Purveyor's distribution system per WAC 246-290-490 (2)(d).

   a. Definition - Used water is defined as water that has left the control of the Purveyor.

   b. Used Water Policies - Since the Owner owns both the water supply facilities and the plumbing systems, the water has not, technically, left the control of the Purveyor. However, for protection of the drinking water quality and the health of the employees/building occupants, the Purveyor will institute the following policies:

      - Plumbing design or changes will not allow water that has been used for such purposes as heating or cooling to be returned to the drinking water system; and

      - Buildings and facilities with two or more water service connections that are internally connected such as to provide a flow–through condition will have each service isolated by either an RPBA or DCVA, depending upon the level of hazard assessed by the Purveyor's CCS.

F. Relationship to Other Planning and Program Operations

The Purveyor will consider the impacts of the CCC program upon the planning and operations requirements of the **Water System.** Such considerations include, but are not limited to, ensuring that:

1. The design of the water distribution system (and plumbing system) provides for expected head losses resulting from installation of backflow assemblies;
2. CCC program personnel are consulted in the design of water and wastewater treatment facilities and when proposals are made to receive or distribute reclaimed water;
3. Operations under normal and abnormal conditions do not result in excessive pressure losses;
4. Cross-connection issues are considered in water quality investigations; and
5. Adequate financial and administrative resources are provided to carry out the CCC program.

_____ **WATER SYSTEM**

Cross-Connection Control Survey

A Cross-Connection is any actual or potential physical connection between the water system and any source of non-potable liquid, solid or gas that could contaminate the potable water supply by backflow (an undesirable reversal of the flow of water). If there were a pressure drop in our public water system due to occurrences such as water line flushing, fire fighting, a broken pipe, or a power outage, backflow could occur. State law requires that the water system survey each member to determine the presence of any connection that has the potential to cause a backflow of contaminants, and work with you to either eliminate the potential for backflow or install a protective device (back-flow preventer).

In general, a cross connection exists any time the potential for backflow exists. This can occur any time a non-potable fluid level could rise to a height in excess of the source of the potable water, or if the source of potable water could be submerged in the non-potable liquid. An example of the first case is an old style bathtub whose water supply is plumbed through the side of the tub below the rim: any time the water level is above the spout, bath water could be drawn into the water supply. An example of the second case is a common stock watering trough fed by a hose: any time the end of the hose is below the water level in the trough, water from the stock tank could be drawn into the water supply.

Please review the following list and check any items that apply to you. If you have any questions about what to include, please call Northwest Water Systems at (360) 876-0958 (or Toll Free (888) 881-0958).
We will advise you within 30 days of receiving your form if we need to conduct a survey at your residence.

Health and Safety:
Dialysis equipment
Fire sprinkler system
Other_____

Plumbing:
Heating system boiler/Solar heating system
Water softener
Old style plumbing fixtures
Other water supply (whether or not connected to plumbing system)

Irrigation System:
In-ground sprinkler system
hose and hose-bib
Prlivate Water Well
Other_____

Miscellaneous:
Hot Tub
Pool (including inflatable pools)
Waterbed
Photo lab or darkroom
Greenhouse
Fertilizer attachment for hose
Animal watering troughs
Decorative pools, fountains, birdbaths
Other water-using devices
Sewage pumping facilities or grey water system
Boat moorage with water supply
Other water-using device
Hobby farm
Home-based business (If Yes, list type/describe)_____
Outdoor
_____
Other_____

Address: _____

Daytime Phone No._____

Name: _____

Date: _____

Signature: _____

Please return this form by _____

Date

Official, Title
Water Company/Association
Address
City/Town, WA Zip Code

Re: Cross-Connection Control Program, _____ Water System

Dear Mr./Mrs./Ms_____:

Washington State drinking water regulations, WAC 246-290-490, require public water systems to develop and implement cross-connection control programs (CCCP). These programs help protect public health by preventing contamination of the drinking water as it is delivered to water system customers. The (10) required elements of any program are as follows:

Element 1 is the adoption of a local ordinance, resolution, code, by-law, policy or other legal instrument that:
Establishes the Purveyor's legal authority to implement a CCCP.
Describes the operating policies and technical provisions of the Purveyor's CCCP.
Describes the corrective actions used to ensure compliance with the Purveyor's CCCP.

Element 2 is the development and implementation of procedures and schedules for evaluating new and existing service connections to assess the degree of hazard.

Element 3 is the development and implementation of procedures for elimination and/or control of cross-connections.

Element 4 is the provision of qualified personnel, including at least one person certified as a Cross-Connection Control Specialist (CCS), to develop and implement the Cross-Connection Control (CCC) program.

Element 5 is the development and implementation of procedures to ensure that approved backflow assemblies are inspected and/or tested.

Element 6 is the development and implementation of a backflow assembly testing quality assurance /quality control program.

Element 7 is the development and implementation of procedures for responding to backflow incidents.

Element 8 is the development and implementation of a CCC public education program.

Element 9 is the development and maintenance of CCC records.

Element 10 covers additional CCC requirements for reclaimed water.

As your Satellite Management Agency (SMA), **Northwest Water Systems** is prepared to assist with updating and managing your Cross-Connection Control Program. Our President, Reg Hearn, is a Certified Cross-Connection Control Specialist (CCS). Our Engineer, Dan Moore, and our Field Technician, Tony Norris are also CCS's. We have access to local Backflow Assembly Testers (BAT's). We are well equipped to handle all phases of the program for which you might require assistance.

The costs for generation and administration of a Cross-Connection Control Program are as follows. The hourly rate for service is $85.00 in accordance with the "Charge for Services" section of your contract with us. These costs would apply to those services which you would have us perform.

Item	Charge
Initial Costs	
Document Generation	
Cross-Connection Control Policy (legal) Document	
Cross-Connection Control Program	
Cross-Connection Control Survey form	$250
Office Survey	
Send out Survey forms, Collect & Evaluate for Hazards	$60
Field Survey	
Conduct Cross-Connection Control Field Inspection, Hazard Evaluation, Recommendation, & follow-up	$65 plus Travel
Ongoing Costs	
Annual Health Department Reports & Record Keeping	$85/man-hour
Backflow Preventer Quality Assurance Program	$85/man-hour
Cross-Connection Control Public Education Program	$85/man-hour
Occasional Costs	
Hazard Elimination and Control	$85/man-hour
Backflow Incident Response	$85/man-hour (2) Hour min; 3 hour with site visit)
Backflow Assemblies	
Testing	$30/assembly
Repair	up to $230/assembly

Please review this letter for applicability to your water system, and notify us of your concurrence with the Cross-Connection Control program by _____. If you have any questions, please contact us at **(360) 876-0958**.

Sincerely,

William Bernier, CCS
Cross-Connection Control Program Manager

Cc: managed/_____ccc/cccintroltr

Date

Water System/Company
c/o System Representative
Address
City, State Zip

Re: Cross-Connection Control Documents, _____ Water system

Dear _____:

Reference is made to our letter of __(date)_____, where we introduced the Cross-Connection Control Program for your water system. Elements 1, 2, & 3 of the letter speak to the adoption of a local ordinance or policy, procedures for evaluation of new and existing services, and procedures for the elimination and/or control of cross-connections.

Accordingly, the following documents have been generated for the _____ Water System:

Cross-Connection Control Policy
Cross-Connection Control Program
Cross-Connection Control Survey

These documents are included as enclosures to this letter. Please review the documents for applicability to your water system. Correct them as necessary and return them to me.

If the **Policy** document is satisfactory, please **sign** it and **return** it to me **by**_____. It becomes the legal instrument which we use for enforcing your cross-connection control program. The **Program** document should only be returned if it needs correcting. It basically lays out your cross-connection control program. Please complete (have your residents complete copies of)the **Survey** form(s) and return it (them)to me also **by**_____. It (they)help(s) me to determine the level of cross-connection control which may be needed for your system.

If you have any questions, please contact me at **(360) 876-0958**.

Sincerely,

Danford A. Moore PE, CCS
Cross-Connection Control Program Manager

Cc: managed/_____ccc/cccdocltr

Appendix G

Employee Resumes

Jon Wiley

Reg Hearn

Todd Krause

William S. Bernier

J. Anthony Norris

Kelly Alsin

Carolyn S. Kennedy

Lynne' M. Curtisss

Donald Bell

Kristina VanDijk

Linda Martin

Jester Purtteman

Bill Coultas

JON WILEY

Experience:

Northwest Water Systems, Inc.,
- Management of Organization
- Strategic Development
- Financial Management
- Human Resources
- Information Technologies
- Sampling
- Flushing
- Public Notification
- Rules and Regulations Updates
- Provide Educational Opportunities

Nicholson Drilling, Inc.
- Strategic Direction
- Financial Planning
- Operations Management
- Business Development
- Well Drilling
- Pump Installation
- Water System Construction

Education:

Seattle University Business Management With Honors
- 3.81 GPA from September 2002 – June 2005

Certifications:

Water Well Drilling License Washington
Electrical Administrator's License 03
Pump and Irrigation License 03
Commercial Driver's License Class A W/Air Brake Endorsement
IGSHPA Installer

REG HEARN

Experience:

Northwest Water Systems, Inc., President
- Business Management
- Personnel Management
- Primary Certified Operator
- Water System Design
- Water System Assessment and Consulting

Arcadia Drilling, Inc., Project Manager
- Water System Project Management
- Water System Construction Management
- Water System Design and Consulting

Reg Hearn & Associates, Principal
- Business Management
- Personnel Management
- Water System Design and Consulting

MAP, Ltd., Business Manager
- Business Management
- Personnel Management
- Financial Management
- General Administration

Summit Technology Consulting Engineers, Business Manager
- Business Management
- Personnel Management
- Financial Management
- General Administration
- Project Administration

Dames & Moore, Project Administration
- Staffing, Organization and Budgets for multi-disciplinary Projects
- Seattle Office Marketing Coordinator
- Executive Assistant to Managing Partner

Education: Bachelor of Arts, History, Seattle Pacific University

Certifications:
Water Distribution Manager 2
Cross-Connection Control Specialist

Qualified Sanitary Surveyor
Certified Water System Designer

TODD KRAUSE, P.E.

Experience:

Northwest Water Systems, Inc., Lead Engineer
- Design of new Group A and B Water Systems
- Development and updates of SWSMP's
- Development and updates of WSP's
- Troubleshooting
- Treatment Plant Designs

Center for Environmental Education, Research Consultant
- Water Quality Reports
- Researching and writing comprehensive River Basin Reports

Washington State University, Faculty
- Instructing 300-Level course on irrigation

Washington State University, Research Assistant
- Designed biological filter to treat off-gasses from dairy waste lagoon

Education:

Washington State University
- Bachelor of Science, Biological Systems Engineering
- Masters of Science, Environmental Engineering

Certifications:

Professional Engineer, State of Washington
Water Distribution Manager II
Basic Treatment Plant Operator
Certified Designer

William S. Bernier

Experience:

Northwest Water Systems, Inc., Design Technician
- Engineering and Design.
- Review of Engineering and Design.
- Incorporation of Regulations and Programs.

Hospital Central Services, Steam Engineer
- Operation and Repair of Package Boiler.
- Operate and Repair Water Reclamation Plant.
- Maintenance and Repair of All Associated Equipment.

United States Navy, Leading Engineering Laboratory Technician
- Drawing, Analyzing, and Reporting Water Samples from Nuclear Power Plants.
- Responsible for Radiological Controls.
- Research and Develop Training Programs.

United States Navy, Engine Room Supervisor
- Operation, maintenance and Repair of Steam Driven Propulsion Plant and Turbine Generator.
- Trained in Casualty Control and Emergency Response.
- Trained in Reactor Theory, Radiation Health, Nuclear Physics, and Turbine Design.

Education:

Naval Nuclear Power School
- 1998 Orlando, Florida

The Ohio State University, Bachelor of Arts (History)
- 1996 Columbus, Ohio

Certifications:

Certified Water System Designer
Licensed City of Seattle Boiler Operator

J. ANTHONY "TONY" NORRIS

Experience:

Northwest Water Systems, Inc.
Field Technician, South Sound

- Routine System Operations and minor maintenance
- Route planning, site visits and supervision
- Client consultation and training
- Source & Distribution Water Sampling
- Treatment Plant operations and minor maintenance
- Chemical replenishment, filter changes, UV system maintenance
- Coordination of Chlorination Report submittals
- Service meter readings
- System flushing and valve exercise
- Chemical Pump servicing/repair/rebuild
- One-Call location services for client systems

Westbridge Estates Water Company, Inc.,
Manager & System Operator 1989-Present

US Navy (Retired)

- Ship Chief Engineer,
  Management, Operations & Maintenance supervision of all shipboard engineering systems and personnel including waste water and potable water generation, treatment and distribution

Education:

Purdue University
Bachelor of Science, Engineering Sciences

Certifications:

Water Distribution Manager 1
Cross Connection Control Specialist

KELLY N. ALSIN

Experience:

Northwest Water Systems, Inc.
- Field Technician
  - Water Quality Sampling
  - Meter Reading
  - Basic Pumphouse Maintenance
  - Distribution Flushing
  - Monitor Chlorine Solution Levels
  - Shock Disinfection
  - Customer Contact

Photo Dynamics
- Customer Assistance
- Photo Processing
- Monitoring and Replenishing Chemicals
- Cash Handling

The Burke Café
- Customer Service
- Cash Management
- Processing Orders

Brockton Equestrian Center
- Horse Care
- Moving Hay and Grain
- Cleaning Stalls

Minuteman Parking Company
- Customer Service
- Parking Cars
- Escorting and Advising Guests

Starbucks
- Customer Service
- Scheduling
- Ordering Supplies
- Processing Orders

Education:

High School Diploma
AA in Arts and Sciences
BA in Earth and Space Sciences

CAROLYN S. KENNEDY

Experience:

Northwest Water Systems, Inc.
- Accounts Receivable
- Accounts Payable
- Payroll
- Tax Preparation
- Water System Utility Billing
- Purchasing
- Work Orders for Managed Systems
- Water Sample Compliance

Action Services Corporation
- Full Charge Bookkeeper
- Tax Preparation
- Receptionist
- Scheduling
- Dispatch
- Work Rosters
- 24 Hour Pager for Emergency Response

South Kitsap School District
- Substitute Lunch Van Driver
- Cafeteria Food Server

Catholic Chore Services and Visiting Home Nurses
- Provided In-home Care for Elderly

McCormick Iron and Fence
- Full Charge Bookkeeper
- Tax Preparation
- Receptionist
- Bid Preparation
- Assisted Walk-in Customers

South Kitsap School District
- Preschool Teacher

Self Employed
- In-home Daycare

Education:

High School Diploma
Olympic College

LYNNE' M. CURTISSS

Experience:

Northwest Water Systems, Inc., Administrative Assistant
- Complete Work Order Process
- Process of Lab Slips
- Miscellaneous office tasks
- Local Water Availability Letters
- Answer the telephones
- Filing

Woodside Animal Hospital, Receptionist
- Answer the telephones
- Filing
- Check clients and patients in
- Scheduled and confirmed appointments
- Prepared medical estimates and prescription labels
- Miscellaneous office tasks

Cox & Lucy, CPA's, Executive Assistant/Payroll
- Process Client Payroll
- Ordering of office supplies
- Processing tax returns
- Answer the telephones
- Filing
- Scheduling and tacking of client appointments
- Greeting clients
- Accounts Payable and miscellaneous accounting
- Maintaining online and hard copy files

The Crow's Nest Yacht & Ship Brokerage, Office Manager
- Responsible for the overall operation of sales and marketing
- Supervision of 8 – 10 sales people.
- Prepared all ad material for magazines and advertising media
- Prepared weekly sales reports
- Made travel arrangements
- Organized all company functions
- DMV agent for registration and transfers
- Prepared all yacht listing files
- Managed and maintained suites in the building

Education: South Kitsap High School

DONALD BELL

730 SW 126th Ave.
Beaverton, OR
97005

EDUCATION

Bachelor of Science in Electrical Engineering
Emphasis in Project Management
DeVry University, Federal Way, WA
GPA: 3.36
Graduation Date: October 2005

NIKON FIELD ENGINEER

- Direct customer interaction and communication.
- Direct interaction and communication with Intel, Nikon Precision's largest customer.
- Shift lead: Manage and lead other Nikon Field Engineers through problem analysis and corrective action.
- Perform employee reviews
- Optical Engineering for KRF Lasers through Projection Lenses.

NIKON TOOL CONTROL

- Volunteer position to organize and inventory tool sets.
- Involved in creation of an online database to communicate inventory and distribution of tool sets throughout the United States.

CHINOOK PROPERTIES

- Lead team of 1 to 6 through various general construction projects.
  - Residential Construction, Commercial Construction, Government Construction

ELECTRONIC ENGINEERING

- Designed and analyzed AC/DC circuitry using Ohm's Law, Kirchhoff's Law, Superposition Theorem, Norton Theorem, and Thevenin Theorem.
- Gained engineering and scientific knowledge in order to design and troubleshoot electronic circuitry.
- Senior Project: SmartHome: Home automation system that was a year long group based project that I lead as the project manager.
  - The project involved a RFID system that transmits data using power line communications (PLC) that controls lights or other devices.
  - Project involving a project management courses involving establishing a Gantt chart and budget.

WORK EXPERIENCE

- Nikon Precision Inc.
  Hillsboro, OR
  Engineer/Shift-Lead
  September 2006 – Present
- Chinook Properties
  Silverdale, WA
  Construction
  September 2003 – April 2008

Kristina K. VanDijk
Present Address
NE 22500 Hwy 3
Belfair, WA 98528

Objective
To acquire a position in business development where I will be able to utilize my experience in sales and account management. To work in a fast paced and dynamic environment where my personal drive, communication skills, and ability to meet and exceed sales quotas can be used to help the company to grow and expand into new markets.

Education
Pepperdine University
Malibu, CA
Bachelor of Science in Business Administration
Date of Graduation: December 2005, Cum Laude
Cumulative GPA: 3.5
Major: Business Administration

Computer Skills
Experienced and knowledgeable in the following: Microsoft Word, Excel, Access, PowerPoint, SalesForce, Prophet, Microsoft CRM

Experience
Steelhead Productions
Silverdale, WA
Business Development and Sales, 01/08-07/09
Identified and cultivated new opportunities and signed them as clients with the use of effective and persistent communication and sales skills. Continuously met weekly, monthly, and quarterly sales goals by making over 200 cold calls per week, identifying profitable and lasting business relationships with corporations across the United States, and worked to create meaningful and beneficial sales proposals. Attended the prestigious SEICA SYSTEMS sales training where I learned how to more effectively communicate with prospects and connect with them on a personal level in order to find the emotional connection to the purchase and increase my close rate. Worked side by side with my supervisor to secure over $3 million in new business in 2008, and earned a close rate of 90% on individual deals in 2009.

MortgageDocs.com **Fresno, CA**
Account Manager and Sales Executive, 01/07-12/07
Worked one on one with clients to ensure that their goals and needs were being met and maintained a positive relationship. Resolved all escalated issues by facilitating effective communication and problem solving between our clients and vendors. Researched prospective clients, created a target list of prospects, placed cold calls, and obtained their business using direct selling techniques.

Linda Martin

Tenacious, results oriented professional with extensive experience in administrative operations management.

- ✓ Expert at developing and maintaining general administrative and project oriented processes.
- ✓ Broad experience in researching industry related regulations and contract compliance requirements.
- ✓ Able to identify goals and priorities and resolve issues at early stages.
- ✓ Proficient in Microsoft Word, Excel, Publisher and Outlook, Microsoft Windows operating system and various accounting and practice management applications. Expert at learning new applications quickly and thoroughly.

Professional Experience

Compensation Consultants, Inc., Port Orchard, WA 04/2007 to 06/2009
Pension Analyst/Trust Accountant Asst.

Olympic College ~ Readiness Response Institute, Bremerton, WA 01/2004 to 04/2007

Administrative Assistant/Program Assistant
Intermountain Physical Therapy & Hand Rehab, Boise, ID 01/2002 to 08/2003

Business Office Manager/Patient Account Representative

Medical Solutions, Inc., Idaho Falls, ID 10/2000 to 12/2001
Billing Specialist

Education

Idaho State University 1989 to 2001
105 semester credit hours completed including:
Lower division – all general education requirements (and then some) for a B.S. degree
Upper division – Corporate Training/Adult Education, Business, Allied Health Professions

Eastern Idaho Technical College 1987
High School Equivalency G. E. D.

JESTER PURTTEMAN

4811 Ashram Lane NW
Olympia, WA 98502

Education

- **Masters of Science, Mechanical Engineering** 08 / 2006
  University of Washington 3.68 GPA
  Seattle, Washington
- **Bachelors of Science, Mechanical Engineering** 05 / 2004
  Washington State University 3.77 GPA
  Pullman, Washington
- **Bachelor of Science, Physics**
  The Evergreen State College
  Olympia, Washington

Experience

- **OptimERA Inc.**
  Product Development / System Administration 08 / 06 - Present
  - Designed, tested, and installed a large system of wireless networks
  - Developed in-house network monitoring and management software
  - Provided voice over IP communications to fishing plants in the Aleutian Islands.
  - Developed innovated PBX management applications for use by seafood processing plant personnel with minimal training in a high turnover rate environment.
  - Designed power transmission systems and assisted in the hardening of remote sites to reduce maintenance requirements under extreme weather conditions.
  - Instrumental in allowing OptimERA to withstand a 50% cut in its earnings season by growing the company into 2 new markets.

- **University of Washington**
  Graduate Research: Development of a novel cell preservation system 01 / 05 – 06 / 06
  - Developed a monitoring system for a reliable, low cost, controlled rate freezer for cryopreserving cells at the U.W.
  - Developed numerical simulation of the freezing process of a multicomponent fluid medium.
  - Integrated freezing models with 3D numerical model including heat transport due to air flow and radiative transfer inside a cryogenic freezer.
  - Built 3D solid models using SolidWORKS, including thermocouples and associated porting interfaces for final device production.
  - Tested and validated the process and devices, results published in master's thesis and journal articles

- **Washington State University**
  NSF Funded Research Experience for Undergraduates 03 / 03 – 06 / 04
  - Developed numerical codes in FORTRAN to perform thermal analysis of micro-channel fluid flow at Washington State University.
  - Assisted in parallelization of existing code base using FORTRAN 90 and MPI

BILL COULTAS

Experience:	Northwest Water Systems, Inc. Field Technician Sampling Flushing Coliform Monitoring Emergency Response Meter Reading Leak Identification Sales Representative Masco Products 1996-2009 Sold Insulation, Garage Doors, Other Related Products
Education:	Redmond High School Diploma

Appendix H

List of Managed Systems

Appendix I

Standard Details

Page Title

Fire Hydrant Detail

Double Check Valve Assembly Detail (In Ground)

Pumphouse Construction Detail (Typical)

Gate Valve Standard Detail

Restraint Blocking Detail

Air/Vac Installation Detail

Anchoring Details

Pressure Reducing Valve Detail

Typical Trench Detail

Blowoff Standard Detail

Service Connection Detail

Appendix J

Recent Financial Statements

Title

Profit & Loss 1/1/2009 to 12/31/2009

Balance Sheet as of 12/31/2009

Profit & Loss 1/1/2010 to 3/31/2010

Balance Sheet as of 3/31/2010

Appendix K

References

No. Title

Satellite System Management Agencies, Chapter 246-295 WAC, 9/6/1994

Satellite Management Planning Handbook, DOH, 10/18/1995

Group A Public Water Systems, Chapter 246-290 WAC, 7/3/2004

Group B Public Water Systems, Chapter 246-291 WAC, 11/1995

Municipal Water Law, DOH Publication #331-256, 3/2004

Water Use Efficiency Rule, DOH, 1/22/2007

Small Water System Management Program Guide, DOH, 1/2000 (revised)

Water Works Operator Certification, Chapter 246-292 WAC, 7/3/2004

Certification Program Guideline, DOH, 9/2004

Water System Planning Handbook, DOH, 4/1997

Water System Design Manual, DOH, 8/2001

Cross-Connection Control Manual, 6th Edition, PNWS-AWWA, 12/1995

Cross-Connection Control for Small Water Systems, DOH, 9/2003

Uniform Plumbing Code, IAPMO/ANSI, 1-2003

Northwest Water Systems, Inc. Employee Handbook

Site Work & Landscape Cost Data, R. S. Means, 2007