ATTACHMENT RWR-1

RICHARD W. RIETHMILLER, PE

Summary

Mr. Riethmiller served as a Water/Wastewater Engineer and Staff Consultant for Burgess & Niple from 1963-2004. He currently practices as an Independent Consultant for municipal engineering, water and wastewater design, utility valuation, and rates, and water resources engineering. Mr. Riethmiller serves as company-wide advisor due to his extensive experience in the utilities field. His experience incorporates all types of civil engineering projects, and mechanical and industrial projects that require expertise in fluids handling. He has served as project engineer for investigative and planning studies of water and wastewater systems

Mr. Riethmiller has prepared economic reports for merger and operational purposes for major utilities, and has prepared valuation studies of water and wastewater utilities for repair/ replacement, acquisition, and rate purposes. He has testified before courts and commissions with regard to valuations, rates, in water resource disputes, and in civil cases involving conduit failure and damage from fluid surges. Mr. Riethmiller is an experienced troubleshooter of water and wastewater system problems, including treatment; pipe, pump, and other equipment failure; unaccounted-for water investigations; emergency leak and outage problems; corrosion; distribution and surge analyses; and water system malfunctions, including contamination.

Education

The Ohio State University -
BS, Civil Engineering
1962

Registration

Professional Engineer-
California
Kentucky
Michigan
Ohio
Pennsylvania
New Hampshire
Illinois

Relevant Background

Planning - Prepared and supervised the preparation of planning studies for water and wastewater utilities. Representative projects include:

- Water Treatment Process Planning, Numerous Plants, Five-state Area
- Year 2000 Planning Study, Columbus, Ohio
- Multi-company merger study for two-county area, Pittsburgh, Pennsylvania
- Water System Planning Study, Canton, Ohio
- Water System Planning Study, Akron, Ohio
- Water Distribution Study, Pittsburgh, Pennsylvania
- Water Transmission Study, Delaware Valley, New Jersey
- Development Plans for State of Ohio (Water/Wastewater)
- Water Distribution Study, Alexandria, Virginia
- Water Transmission Study, Peoria, Arizona

Valuation - Prepared and supervised the preparation of valuation studies of water and wastewater utility property for voluntary purchase, condemnation, and rates; in Ohio, Pennsylvania, Indiana, California, Virginia, Illinois, Missouri, and Tennessee. Representative projects include:

- Condemnation Valuation Study, Fairfax County, Virginia
- Valuation of Water and Wastewater Properties for four Company Utility, Columbus, Ohio
- Condemnation Valuation, San Diego County, California

- Condemnation Valuation, Peoria, Illinois
- Condemnation Valuation, Prince William County, Virginia
- Condemnation Valuation, Chattanooga, Tennessee
- Valuation for Purchase of Water/Wastewater Property, Summit County, Ohio
- Valuation for Rates for 25 Utilities in Midwestern Area
- Valuation for Purchase of Collector Wells and Pumping Facilities, Charlestown, Indiana

Design - Designed, reviewed design, or supervised the design of all types of water/wastewater utility property. Representative projects include:

- Numerous Water Treatment Plants, Five-state Area
- Gravity Sewer Design for numerous communities in Ohio
- Potable Water Booster Stations – five ranging in size from 5 to 18 mgd, Butler County, Ohio
- Clearwell (4 MGal) and Pumping Station (20 mgd), Westerville, Ohio
- River Intake and Raw Water Pumping Station of 12 mgd Capacity, Butler, Pennsylvania
- Wastewater Treatment Plants, Columbus, Ohio
- 30-inch Water Transmission Main – 15 Miles, Washington, Pennsylvania
- Potable Water Pumping Stations – 13 and 15 mgd, Pittsburgh, Pennsylvania
- Sewage Force Main Design – numerous in Ohio, Kentucky, and West Virginia
- Steam Condensate Transmission Main, Morgantown, West Virginia
- 48-inch Potable Water Transmission Mains, Akron, Ohio

Fluid Surge - Prepared and supervised preparation of analyses of fluid surge in all types of conveyance systems. Representative projects include:

- 48th Street Water Pumping Station – 292 mgd, Phoenix, Arizona
- Evergreen Water Pumping Station – 50 mgd, Phoenix, Arizona
- Cooling Water Transmission Line – 16 mgd, Southern Alabama
- Shire Oaks Water Pumping Station – 60 mgd, Pittsburgh, Pennsylvania
- Washington Water Pumping Station – 15 mgd, Washington, Pennsylvania
- Cooling Water Transmission Line – 12 mgd, Central Illinois
- Sugar Creek Water Transmission Facilities – 30 mgd, Canton, Ohio
- Sewage Force Mains – Various sizes, Lubeck, West Virginia
- Raw Water Transmission Facilities – 13 mgd, Butler, Pennsylvania

Water Resources Studies and Economic Plans – Prepared and supervised the preparation of water resources studies for Water Utilities in the Midwest. These studies and plans typically involve cost estimates and evaluation of benefits, as well as identification of sources of funds and documentations of potential value of improvements. Representative projects include:

- Monongahela River Withdrawal Allocation Study, Pittsburgh, Pennsylvania

- Water Resources Study, Indiana, Pennsylvania
- Reservoir No. 4, Urbanization Impact Study, Lexington, Kentucky
- Water Resource Investigation, Butler, Pennsylvania
- Water Resource Planning Study, Westerville, Ohio
- Reservoir Yield Analyses for Numerous Communities, Ohio Area
- Statewide Water Resource Development Plans, Ohio (Water and Wastewater)
- Multi-company merger study for two-county area, Pittsburgh, Pennsylvania
- Water Distribution Studies, 17 Utilities, Western Pennsylvania
- Wastewater Collection Studies for Westerville, Upper Arlington, and Grandview Heights, Ohio
- Water System Planning Studies for Eastern Cleveland Suburbs, Ohio
- Water Distribution Study, Butler County, Ohio
- Economic Analysis of Water Utility Merger, Lake County, Ohio
- Water Planning Study, Delaware, Ohio

Investigations and Emergency – Representative projects include:

- 72-inch Potable Water Pipeline Failure, San Juan, Puerto Rico
- 42-inch Potable Water Pipeline Failure, Pittsburgh, Pennsylvania
- Robot Welder Cooling Water Inadequacy, Honda Motor Co., Marysville, Ohio
- Corrosion Investigation of 36-inch and 48-inch Potable Water Transmission Mains, Akron, Ohio
- Sludge Force Main Failure, Cleveland, Ohio
- 42-inch Transmission Main Failure, Canton, Ohio
- River Contamination/Potable Water Plant Outage Incident, Pittsburgh, Pennsylvania
- Potable Water Contamination Incident, Akron, Ohio
- Potable Water Outage Incident, Delaware, Ohio
- Potable Water Outage Incident, Gambier, Ohio
- Copper Pipe-Pinhole Corrosion Study, Wadsworth, Ohio
- Copper Corrosion Study, Lake Choctaw, Ohio
- Lead Service Identification and Testing, Columbus, Ohio
- Source Water Contamination/Water Plant Outage Incident, Westerville, Ohio
- Transmission Main Rehabilitation, Delaware, Ohio
- Large System Valve Rehabilitation, Canton, Ohio
- Wash Water Pipe Failure, Mesa, Arizona
- Chlorine Dioxide Bleaching Incident, Mt. Vernon, Ohio
- Cooling Tower Corrosion Studies, Columbus, Ohio

Submerged Pipeline Designs – Representative projects include:

- Two 42-inch Potable Water Transmission Mains, Tuscarawas River, Canton, Ohio
- 24-inch Potable Water Transmission Main, Little Miami River (Scenic River), Clinton County, Ohio
- 36-inch Raw Water Intake Main, James River, Canton, Virginia
- 30-inch Raw Water Intake Main, Lake Eufaula, Kiamichi, Oklahoma
- 24-inch Raw Water Intake Main, Lake Erie, Avon Lake, Ohio
- 24-inch Raw Water Intake Main, Allegheny River, Butler, Pennsylvania
- 24-inch Water Intake Main Lake Erie, Madison, Ohio
- 60-inch Raw Water Intake, Lake Erie, Mentor, Ohio
- 36-inch Gravity Trunk Sewer, Reservoir No.4, Lexington, Kentucky
- 30-inch Raw Water Intake, Illinois River, Kendall County, Illinois
- 26-inch Raw Water Intake, Illinois River, Nelson, Illinois
- 30-inch Raw Water Intake, Mobile River, Mobile, Alabama

Instruction

Conducted 1-day Seminars on Selection and Maintenance of Pumping Machinery
Conducted 1-day Seminars on Fluid Surges in Closed Conduit Systems

Conference Addresses

"The Unaccounted-for Water Dilemma," American Water Works Association Ohio Conference, 1989.

"Water Line Rehabilitation – Is It Worth It?," American Public Works Association Ohio Conference, 1986.

"Leak Detection," West Virginia Public Service Districts Conference, 1986.

Memberships, Affiliations and Honors

National Society of Professional Engineers
Ohio Society of Professional Engineers
American Water Works Association
National Association of Water Companies
American Water Works Specifications Committees
Committee on Composite Water Storage Tanks
Committee on Vertical and Horizontal Pumps

ATTACHMENT RWR-2

Pipe Sample Results

Sample No. 1- Ledge Street
Unlined Cast Iron Pipe

A sample of unlined cast iron pipe was taken in Ledge Street in mid July, 2005, which is in Central Nashua north of West Hollis. The sample is 8 inch diameter and 13 inches long. It was taken prior to the arrival of the engineer. Conditions, i.e., depth of cover, soils, type and testing is not available.

The exterior of this sample is in very good condition. There are no measurable pits. The interior is moderately tuberculated with the shallow pits beneath. Estimated loss of carrying capacity is approximately 50%.

The pipe is pit cast, class "C," which is the third heaviest of the four classes available when it was installed in 1927. This pipe could be cleaned and lined depending on the need of additional capacity.

Sample No. 2- Hatch Street
Unlined Cast Iron Pipe

This sample was taken in Hatch Street on August 29, 2005 and is of unlined cast iron. The sample site is in south central Nashua, west of Main Street and north of Robinson Road. The sample is 8 inches in diameter and 2 feet long and has a depth of cover of 60 inches. Soil type was dry sand.

The exterior had several measurable pits, the deepest at 0.101 inches. Pits are well scattered and do not compromise structural condition. The interior was moderately tuberculated and is in fair condition. However, it could be cleaned and cement lined.

Soil was taken from near the pipe for testing. Tests showed that the soils are not corrosive to cast iron pipe, primarily due to the lack of moisture in the well drained sands.

The pipe is pit cast, class "C" and was installed in 1925, making it 80 years old.

Sample No. 3- Ayer Street
Unlined Cast Iron Pipe

The Ayer Street sample was taken on August 30, 2005 and is unlined cast iron. The sample site is in north central Nashua, north of Amherst Street and just west of Concord Street. The sample is 6 inches in diameter and 2 feet long. The depth of cover is 69 inches and the soil was slightly damp.

The exterior had several pits, the deepest measured at 0.125 inches relative to a 0.50 inch pipe wall thickness. The interior is moderately tuberculated with a hydraulic capacity reduced to approximately half of new capacity.

A soil sample from near the pipe was taken and results indicate that the soils are not very corrosive to cast iron as evidenced by the pits few that were observed.

The pipe is pit cast class "C" and was installed in 1926, making it 79 years old.

Sample No. 4- Manatee Avenue
Unlined Cast Iron Pipe

This sample was taken on Manatee Avenue on August 31, 2005 and is of unlined cast iron. The sample site is in central Nashua, west of Main Street. The sample is 6 inches in diameter by 2 feet long, and has a depth cover of 51 inches. Soil type was dry sand.

The exterior had eight pits, all along the bottom of the pipe and well spaced that measured from 0.085 to 0.158 inches relative to a pipe wall of about 0.60 inches. The sample included a joint sealed with "lead substitute" material that was in excellent condition. There were two deep pits in the face of the bell that measured 0.234 and 0.168. The interior was moderately tuberculated and therefore in fair condition.

The pipe is pit cast class "D" and was installed in 1926.

The soil sample taken from near the pipe was tested and indicates that the soil is not very corrosive to cast iron.

Sample No. 5- Merrimack Street
Unlined Cast Iron Pipe

This sample was taken on Merrimack Street on September 1, 2005 and is of unlined cast iron. The site of the sample is in north central Nashua, just north of Amherst Street. The sample is 6 inches in diameter and is about two feet long. It has a depth cover of 50 inches. The soil type is dry, coarse sand and cobbles.

The sample included a joint. It was of caulked lead and was in excellent condition with no seepage. There were numerous shallow pits on the exterior of the pipe. Most were along the bottom, but two on the top. There were shallow pits at the edge of the lead interface with the iron which is due to dissimilar metal corrosion over a long period of time. The deepest of the pipe pits was 0.150 inches relative to a pipe wall thickness at 0.60 inches. The interior had moderate to heavy tuberculation with a capacity loss of about 60 to 70%.

The soil sample indicated that the soils might be corrosive to cast iron except for the lack of soil moisture. The pipe is pit cast class "D" and was installed in 1919, making it 86 years old.

Sample No. 6- "C" Street
Unlined Cast Iron Pipe

This sample was taken in "C" Street on September 2, 2005 and is of unlined cast iron. The site of the sample is in northeast Nashua, south of Bridge Street near the Merrimack River. The sample is of 10 inch unlined cast iron pipe and about two feet long. It had a depth of cover of 66 inches and the soil type was dry sand.

The exterior is in good condition. Several scattered pits measured from 0.106 to 0.178 relative to a pipe wall of about 0.60 inches thick. The interior was moderately tuberculated with estimated loss of hydraulic capacity of about 30 to 40%. This pipe could be cleaned and cement lined if the capacity is needed. Soil was taken from near the pipe for testing. Tests indicate that the soil is not corrosive to cast iron.

The pipe is pit cast, class "C." It was installed in 1931, and is therefore 74 years old.

Sample No. 7- Twilight Drive
Ductile Iron Pipe

This sample was taken in Twilight Drive on September 7, 2005 and is of cement lined ductile iron. The sample site is in southwest Nashua, west of Main Dunstable Road. The sample is 8 inches in diameter by about 2 feet long. It has a depth of cover of 80 inches, 48 inches of which is fill material. The soil type in the vicinity of the pipe is slightly damp sand and cobbles.

The sample included a joint. It was of rubber roll type and was in excellent condition. The exterior exhibited some very minor pits, not measurable and well scattered. The exterior was in very good to excellent condition.

The interior was double cement lined and included a thin dark film and was in excellent condition.

Soil sample tests indicated that the soils were slightly corrosive to iron. The pipe is class 52 installed in 1978 and is in good to excellent condition.

Sample No. 8- Sagamore Road
Ductile Iron Pipe

This sample was taken in Sagamore Road on September 8, 2005 and is of cement lined ductile iron. The sample site is in southwest Nashua, east of Main Dunstable Road. The sample is 8 inches in diameter by about 2 feet long. It has a depth of cover of 60 inches and the soil type in the vicinity of the pipe is slightly damp sand with cobbles.

The exterior had very slight corrosion but with no measurable pits and is in excellent condition. The interior was cement lined and has a slight dusting of corrosion inhibitor. The interior is also in excellent condition.

Soil sample tests indicated that the soil is not corrosive to iron pipe. The pipe is class 52 and was installed in 1976, making it 29 years old.

Sample No. 9- Briarwood Drive
Lined Cast Iron Pipe

This sample was taken in Briarwood Drive on September 9, 2005 and is of cement lined cast iron. The sample site is located in west central Nashua, north of Broad Street and west of Everett Turnpike. The sample is 8 inches in diameter and 25 inches long and had a depth of cover of 73 inches. Soil type is medium to fine dry sand.

The exterior showed no corrosion and is in excellent condition. The interior is double cement lined but uneven. The interior is in excellent condition. The pipe is class 23 or 24 which is the heaviest of the "spun" cast iron pipe.

Soil samples taken from the vicinity were tested and showed that the soil could be very corrosive to cast iron. However, the pipe is in excellent condition, likely due to the very dry, well drained sands. The pipe was installed in 1961 and is therefore about 44 years old.

Sample No. 10- Wood Street
Unlined Cast Iron Pipe

This sample was listed as lined cast iron, but was unlined. The installation date was near the time of the switchover to lined pipe. The sample was taken in Wood Street on September 12, 2005. The sample site is located in northeast Nashua, west of Concord Street. The sample is 8 inches in diameter and about 2 feet long and had a depth of cover of 63 inches. Soil type is dry fine sand.

The exterior is in very good condition. Three pits were measured, the deepest at 0.105 inches, relative to a pipe wall of about 0.490 inches thick. The interior is moderately tuberculated and uneven with an estimated loss in carrying capacity of about 40%.

The pipe is class 24 and was installed in 1940. A soil sample taken from the vicinity of the pipe shows that the soil is not corrosive to cast iron.

Sample No. 11- Wethersfield Road
Asbestos Cement Pipe

This sample was taken in Wethersfield Road on September 13, 2005 and is of asbestos cement. The sample site is located in south central Nashua, west of New Searles Road. The sample is 8 inches in diameter and 25 inches long. The depth of cover is 67 inches and the soil type is dry sand and cobbles with some boulders.

The exterior is in very good condition. However, there was a very slight softening along the bottom of the pipe. The interior is hard and smooth with a dark thin film of corrosive inhibitor.

The pipe is class 200 which is a medium/heavy pipe wall thickness. Soils were not tested at this site but are likely somewhat acidic due to the slight softness along the bottom of this sample.

The pipe was installed in 1963, making it about 42 years old.

Sample No. 12- Reservoir Street
Ductile Iron Pipe

This sample was taken in Reservoir Street on September 16, 2005 and is of cement lined ductile iron. The sample site is located in north central Nashua, west of Concord Street and north of Amherst Street. The sample is of 16 inch nominal diameter and is 37 inches long. It had a depth of cover of 96 inches. Soil type is dry sand.

The exterior had several pits. The deepest measured 0.068 inches compared to a pipe wall thickness of 0.490 inches. There is a light general corrosion but the exterior is in good condition. The interior is double cement lined with about an eighth of an inch of sediment on the bottom, but is in excellent condition.

The pipe is class 56 which is the heaviest ductile pipe wall thickness available. The soil sample indicated that the soils are not generally corrosive to iron but could be if there was more moisture. The pipe was installed in 2000.

Sample No. 13- Greenfield Drive
Asbestos Cement Pipe

This sample was taken in Greenfield Drive on September 16, 2005 and is of asbestos cement. The sample site is in north Nashua just north of the intersection of Henri Bique Highway and Amherst Road.

The sample is 8 inches in diameter and 27 inches long. It had a depth of cover of 60 inches and the soil type is dry sand.

The exterior exhibited a slight softening along the bottom of the pipe barrel, but otherwise is in excellent condition. The interior is hard with a dark film of corrosion inhibitor and is in excellent condition.

The pipe is class 150 which is a medium pipe wall thickness. Soil tests indicate that the soils in the vicinity of the pipe are not corrosive to this or any type of pipe. This pipe was installed in 1963, making it 42 years old.

Sample No. 14- Rowley Street
Asbestos Cement Pipe

This sample was taken in Rowley Street on September 19, 2005 and is of asbestos cement. The sample site is located on the west side of Nashua, south of Broad Street near the Nashua River. The pipe is 8 inches in diameter and 16 inches long. It had a depth of cover of 54 inches and the soil type is slightly damp coarse sand and cobbles. The sample included a coupling and two spigot end pipes. The joints are in excellent condition.

The exterior of the pipe is hard and in excellent condition. The interior is also hard with a slight coating of corrosion inhibitor and is also in excellent condition.

The soil tests indicated that the soils in the vicinity of the pipe are not corrosive to this type or any other type of pipe material. The pipe is class 200 and was installed in 1963 and is therefore about 42 years old.

Sample No. 15- Biscayne Parkway
Asbestos Cement Pipe

This sample was taken in Biscayne Parkway on September 20, 2005 and is an asbestos cement material. The sample site is located in the north part of Nashua, north of Henri Bargue Highway and west of Manchester Street. The pipe is 8 inches in diameter and about 2 feet long. It had a depth cover of 70 inches. The soil type was sand with broken ledge rock, but the pipe itself was well bedded in sand.

The exterior is hard and in excellent condition. The sample included a joint or coupling which also is in excellent condition. The interior is smooth and hard with a slight dark film of corrosive inhibitor. The interior is also in excellent condition.

Pipe class is 150 and soils take from the vicinity of the pipe indicated that these soils are not corrosive to this or any other type of pipe material. The pipe was installed in 1970.

Sample No. 16- Middle Street
Asbestos Cement Pipe

This sample was taken in Middle Street on September 23, 2005 and is of asbestos cement material. The sample site is in the center of Amherst. The sample is 4 inches in diameter and 26 inches long. It had a depth of cover of 69 inches. The soil type is dry sand. The sample included a joint or coupling that includes two rubber joints. The pipe was deflected to the limit but was tight and undamaged.

The exterior exhibited a slight softening over the entire barrel but is in good condition. The interior also has a slight to moderate softening but is in good condition. There was a dark stained corrosive inhibitor.

The soil sample taken from the vicinity of the pipe was tested. The results indicated that the soils are not very corrosive to this type of pipe. The pipe class is 100 and was installed prior to 1980.

Sample No. 17- Ferns Terrace
Polyvinyl Chloride Pipe

This sample was taken in Ferns Terrace on September 28, 2005 and is of polyvinyl chloride or PCV material. The sample site is in north Bedford. The pipe is 3 inches in diameter and 18 inches long. It had a depth of cover of 76 inches and the soil type is dry sand and cobbles with some broken ledge rock.

The exterior is in excellent condition. The interior is also in excellent condition with a light coating of corrosion inhibitor. There was no joint visible at this location.

The pipe is class 250 or SDR 17, a very heavy pipe wall. A soil sample taken from the vicinity indicated that the soils are not corrosive to any of the common pipe materials and there was no odor of gas or gasoline that might be injurious to this material. The pipe was installed in 2002.

Sample No. 18- Donovan Drive
Polyvinyl Chloride Pipe

This sample was taken in Donovan Drive on September 30, 2005. It is of polyvinyl chloride material or PVC. The sample site is in north Derry.

The pipe is 6 inches in diameter and 18 inches long. It had a depth of cover of 48 inches and the soil type is damp sand and cobbles. As can be seen in the pictures, the pipe is in excellent condition. There was no joint visible at this location.

The pipe is C-900, class 150. Soils were not tested at this location, but there was no odor of gas or other hydrocarbons that might be injurious to the pipe wall or rubber joints. This pipe was installed prior to 1990. The exact date is not recorded.

ATTACHMENT RWR-3

Inspection of Dams, River Intakes, Wells, Booster/Pumping Stations and Storage Tanks

The dams, the river intakes, wells, pumping stations and the system storage tanks were inspected over a three day period the week of July 11, 2005. I was accompanied by an experienced operator who was very familiar with the facilities and equipment. He operated all of the pumps and other equipment, with a few exceptions, where the equipment was under repair or where its operation might cause system problems. He was questioned often during the tour as to operation of the facilities and any lack of function or usefulness.

The following describes the facilities and their condition. The order of the following descriptions is the order in which the inspections were made.

Harris Dam

This is a small earthen dam located upstream of the treatment plant and the supply pond. The earthwork is in very good condition, and is well maintained. The spillway and training walls are of a similar ashular masonry, well pointed and also in very good condition. The sluice gates that control outflow from the dam are well maintained and in excellent condition. Deicer piping is in very good condition. The chain link fence that surrounds the reservoir is in very good condition.

There are two wooden structures at the site. One is an old gate house that is no longer used. The other structure houses an air compressor and a valve operator on the seventy two inch inlet/outlet pipe. The structure is of clap board siding with gabled roof and storm king shingles. The structure is in good condition.

The compressor feeds air to submerged piping in reservoir for manganese control. The compressor is in good condition and the piping and underwater lines are operating properly. There is also a floating boom in the reservoir for algae control. It is in good condition. A separate chain link fence surrounds the wooden structure, and it is in good condition.

Wash Water Lagoons

There are two diked lagoons that receive the waste discharge from the super pulsators. The earthen dikes are well maintained and in excellent condition. The piping appears to be in very good condition. A wooden walkway extends to the outlet controls of each lagoon and is in good condition. A chain link fence surrounds the two lagoons. It appears to be new and in excellent condition.

Supply Pond

This reservoir is adjacent to the treatment plant. It is of earthen embankment and the central spillway portion and training walls are of ashular masonry. All is in very good condition. There is an old round brick gate house that is no longer used. The deicer piping along the spillway is in very good condition. There are crest gates on the spillway that break away in flood. They appear to be in very good condition. There is a wooden walkway across the spillway that is in very good condition. There is a boathouse. It is of brick and partially founded on the stone training wall. The structure and flat roof are in good condition. The building is currently used for storage.

Pump Structure at the Supply Pond

This structure has an ashular stone foundation with multi layered brick walls and a gabled roof with slate shingles and metal trim. The walls, foundation, and roof are in good condition. There is a black top roadway to the building that is in poor condition. The pump building houses old steam pumps and a water turbine with gear and pump.

The steam pumps are no longer used but the turbine/gear pump is used for four to five months a year, utilizing excess water to pump water into the high service system. This machinery is in good condition. There is a bypass and control valve on the penstock to the turbine that discharges to the downstream channel. The valve was closed but was leaking slightly. The basement walls of the structure are in good condition as is the wooden floor. Overall the structure and equipment are in very good condition considering its age, but the structure is much larger than needed for the operational machinery.

Merrimack River Intake

This is a side channel intake and pumping station that takes water when available from the Merrimack River and discharges to Bowers Pond. The intake is concrete and is in very good condition. The ashular stone river walls are also in very good condition. The concrete steps and railings leading to the intake are in very good condition.

The pump building is of poured concrete with pre cast concrete roof panels and is in good condition. Interior walls are in need of paint. The structure, overall, is in good condition. The building houses two sluice gates that are operated annually and are in good condition. There is a course screen and a travelling screen both in good condition.

There are two pumps both vertical turbines with tilting disc check valves. The No. 1 pump operated very smoothly and is in very good condition. The No. 2 pump had a worn upper bearing but was otherwise in good condition.

There is also a chlorine building at this facility. The structure houses sodium hypochlorite facilities. It is not currently in use.

The structure is of poured concrete foundation and concrete block walls with wood truss and plank gabled roof. The building and grounds are in good condition. The driveway is in good condition. The fiberglass chlorine tank is in excellent condition but is not connected. Overall this facility is in good condition but not used currently.

Atherton Commons Booster Station

Formally this station utilized two wells but they are no longer used. The facility pumps from a standpipe system to pressurize a small area. There are two horizontal steel tanks; the larger receiving tank is no longer used. The smaller tank functions as a hydro-pneumatic tank supplying water to the Atherton Commons area. The structure is of poured concrete walls and flat roof and is in good condition. The floor is very wet probably due to condensation. The tanks are mostly buried. They are of heavy wall steel. There are two multi-stage vertical turbine pumps both operated very smoothly and are in very good condition. Overall this station is in good condition.

Bowers Pond and Dam

This is an earth fill dam. The slopes are even; it is well maintained and is in very good condition. The spillway is of concrete, appears new, and is in excellent condition. There is a steel control gate operating platform which is in good condition. The control gates are in very good condition. There is also a concrete slab bridge over the spillway which is in excellent condition. The training walls are fenced with chain link and barbed wire which is in good condition. There is a safety boom that extends across the spillway. It is in good condition.

There is a small structure of poured concrete foundation and walls with flat roof. It is used to store the stop logs. The stop logs are used to control the pond level. The structure also houses a level gage which is in very good condition...

Hold Pond and Dam

This is an earth fill dam. The side slopes are even. It is well maintained and it is in very good condition. The concrete spillway and training walls appear new and are in excellent condition. Control of this pond is provided by stop logs in a side channel. Slope rip rap is local stone of 6-10 inch size and in good condition. There is a 6 foot high chain link fence that is in excellent condition.

Kessler Farm Tank

This is a 4.5 million gallon steel ground tank. The tank has been recently painted. The exterior paint is in excellent condition. The footer wall has also been cement coated and in excellent condition. The grout fill is intact and in excellent condition. The driveway is black top and is in fair condition. The site is well drained, a culvert pipe in good condition. The site is surrounded by a 6 foot chain link fence with barbed wire. Fence and gate are in average to good condition.

Kessler Farm Booster Station

This structure is of poured concrete foundation and lower walls, wooden upper walls and low ridge roof, and with steel doors. All is in good to very good condition. There are two pumps with "Peerless" hydraulic variable speed drives and one smaller "Jockey" pump. The No. 1 pump (Peerless drive) was slightly noisy. The No. 2 (Peerless Drive) was very smooth. The jockey unit was very smooth. Overall the station is in very good condition.

Milford Booster Station

This is an in-ground prefabricated steel pumping station. There are two pumps. They are utilized when Milford's supply is shut down. This occurs two to three times a week but was not the case during the inspection and therefore the pumps could not be started. Overall the station is in good to very good condition.

Souhegan Booster Station

This structure is of poured concrete foundation and lower walls with concrete block upper walls. They contained much graffiti, but are in good condition. The roof is flat with pre-cast panels and is in very good condition. There are two end suction pumps. Both pumps operated smoothly and are in excellent condition. Both also had "soft starts" that were in very good condition. There is a partial fence that is in fair condition. Overall the station is in good to very good condition.

Souhegan Woods Booster Station

This facility has three wells. Two are not used and one is usable. There are four steel tanks. Two are completely buried and not in service, and two partially buried but with only the face of the tanks visible. They are heavy wall and visibly in good condition.

One of the in service tanks is receiving (non pressurized) and the other is a hydro-pneumatic tank. The floor was very wet from condensation but the electric controls were dry and in good condition.

The structure is of concrete block on a poured concrete foundation, all in good condition. The roof is of wood with asphalt shingles in good condition. The exterior is a vinyl sided and in good condition. This station adds chlorine and pH control and corrosion inhibitor. The feed pumps and controls are in good condition.

There are three pumps all were in operation. The number one pump was very smooth; the other two were slightly noisy. Site work includes the embankment covering the tanks, a retaining wall and gravel drive, all in good condition. The site is fenced with six foot chain link and barbed wire which is in good condition.

AVD Storage Tank

This tank replaced the original 200,000 gallon steel tank that was constructed by the Amherst Village District around 1950. The current tank is a bolted steel and glass coated tank.

It is on a poured concrete ring wall. The tank and ring wall are nearly new and in excellent condition. Site work and grounds including rip rap for tank overflow are in excellent condition.

AVD Booster Station

There is a single well at this facility that provides water to the lower system. The pump station is of concrete block on a poured concrete foundation with poured concrete flat roof. Overall it is in average condition. The chlorine equipment has been removed and the station is not in use, however the well at this facility is in service. However, since the booster is not in service it was not included in the RCNLD analysis. The well was included separately.

Badger Hill Facility

This is a "stand alone" (self supplied) system. There are three wells all in service. The structure is of concrete block on poured concrete foundation. Exterior is vinyl siding and interior is finished plaster board. The building has a gambrel roof of wood trusses. The structure is nearly new and in excellent condition. Site work, including black top drive is in excellent condition.

The building contains four multi-stage vertical turbine pumps and an emergency generator. The number one pump was slightly noisy; the other three were very smooth. All the pumps have variable frequency drives, all in excellent condition. The station also includes two steel raw water filters, and facilities for feeding chlorine and corrosion inhibitor. These appear to be in very good condition.

The generator started quickly and ran well. The air louvers operated properly. This unit is nearly new and in excellent condition. Overall, this station is in very good to excellent condition.

Badger Hill Tank

This is a post stressed concrete ground tank. It is adjacent to the Badger Hill Facility and serves as the filtered water receiving tank. The tank is nearly new and is in excellent condition.

Great Brook Booster Station

This facility consists of a well and small pumping station. It was not in service, was not visited, and was not included in the RCNLD analysis.

Ashley Commons Booster Station

This is also a stand alone facility with a single well. The pump house has poured concrete foundation and walls. Interior walls are covered with insulation panels, unfinished, all in good condition. There is a wall furnace also in good condition. There are two end suction pumps. Pump number one operated very smoothly. Pump number two was slightly noisy. The building also houses an ion exchanged softener and chlorine feed equipment, all in good condition.

There are two steel tanks, partially buried. One functions as a receiving tank and is not pressurized, and the other is a hydro-pneumatic tank. Observed portions are in fair condition.

There is also a small wooden pre-fabricated structure on a concrete slab. This building serves as salt storage. The structure and slab are in good condition.

Bon Terrain Booster Station

There is a single well at this facility that pumps into the distribution system. It runs continuously and is of high capacity. The pump is a vertical turbine unit. The pump and motor were very smooth. It has a Golden Anderson type electric check valve that was leaking at the stem. Main piping is in need of paint. The pump has an auxiliary generator with six cylinder gasoline engine and right angle drive. The unit started quickly and ran well. The pump and auxiliary drive are in very good condition.

The pump house structure is of split face concrete block painted on the inside and on a poured concrete foundation with concrete roof. All are in very good condition. The steel door is in excellent condition. The wood trim and asphalt shingles are in very good condition. The propane heater is in good condition. The structure also houses four tanks for pH control (caustic). The tanks and feed pumps are in very good condition. Site work includes a seven foot chain link fence with barbed wire, in good condition. Overall the station and equipment are in good to very good condition.

Bon Terrain Tank

This is a 900,000 gallon standpipe. It is being sand-blasted inside and out. The inside and inside bottom are in good condition. The outside is peeling badly and is pitted. A seven foot chain link fence with barbed wire surrounds the tank, all in good condition. As of September 2005 this tank had been totally rehabilitated with a complete sand blasting to a near white steel on both the inside and outside prior to repainting. Any pits in the steel that existed were filled prior to painting.

Standish Way/Pilgrim Pumping Station

This is a pre cast concrete vault completely buried except for the roof slab and with "Bilco" door, all in very good condition. The interior walls are in very good condition. The structure houses three small pumps remotely controlled. There was some water on the vault floor. The running pump was smooth.

Merrimack Village Dam on the Souhegan River

This dam is of arch/gravity section about two hundred feet long. There was much spillage but the dam appears to be of ashular stone masonry. The training walls are of ashular stone masonry with concrete cap all in average to good condition. There is a side channel release with a sluice gate. A downstream collector slab appears to be stone and concrete.

There is some erosion of the dam crest and spalling of the concrete steps. Steel railing is in fair condition. The sluice operator is well maintained. Training walls are in good condition. There was a considerable amount of sand in the gated spillway. The overall condition is good. Pennichuck is working with the New Hampshire Department of Environmental Services and other interested parties to remove this dam from the river. The cost of removal is estimated at $1,000,000.

Bedford Water Facility

This is a partially below ground booster station supplied by two wells. The structure is of poured concrete foundation walls with concrete block walls above all in good to very good condition. The roof is of wood with asphalt shingles, in fair to good condition. The exterior wooden siding is in good condition. The building is surrounded by a six foot chain link fence with barbed wire and is in excellent condition.

There are two receiving steel tanks – (not pressurized) and one hydro-pneumatic tank. The tanks are mostly buried. The exposed portions are in fair to good condition. There are two "trash" type pumps. Pump number one was slightly noisy and pump number two quiet. The structure also houses chlorine and corrosion inhibitor equipment which is in good to very good condition. Plastic piping is in good condition but ductile iron piping is in fair condition. Overall condition of the station is in fair to good.

Bedford Water Remote Well No. 4

This is a submersible well with underground valve pit drawing water from a naturally developed gravel well. Pit and valving are in good condition.

Cabot Pressure Booster Station

There are five wells at this facility, but they have been abandoned as a source of supply in favor of a purchased water supply from the Merrimack Village District. The facility has

been converted to boosting from the main system. The structure is of poured concrete foundation, walls and roof. It has a partial Gambrel wood roof with asphalt shingles for esthetics, and with a steel door. The building is in excellent condition.

There are two small and two large booster pumps, all are multi stage vertical turbines. Pump No. 1 is slightly noisy; pumps Nos. 2, 3 and 4 were very smooth. There is also an emergency generator. It started up immediately and ran smoothly. It is in very good condition. Overall the station and equipment are in excellent condition.

Hawk Drive Pressure Regulation Station

This is a small entirely below ground vault made of precast manhole sections and with poured top and bottom slabs and a Bilco door. The vault is in good condition. There are two regulating valves that appear to be in good condition and both are in operation.

Powder Hill Booster Station

This is a larger booster station which houses five pumps and has an auxiliary generator outside of the structure. The structure is of poured foundation and floor with concrete block walls all in good condition. The exterior walls have vinyl siding which is in excellent condition and with steel door. The roof is wood with asphalt shingles and is in excellent condition.

There are two large steel receiving tanks, partially buried, and a steel hydro-pneumatic tank. They appear to be in very good condition. The pumps are end suction. All five were very smooth and in excellent condition.

The generator set started quickly and ran smoothly. The unit is in excellent condition. Site work includes the embankment over the receiving tanks, which is in excellent condition. The site is fenced with six foot chain link and barbed wire. Fence and gates are in excellent condition. Overall this station is in excellent condition.

Powder Hill Storage Tank

This is a 150,000 gallon "Natgun" precast, prestressed concrete tank. The gunnite coating is cracked, but the cracks are tight and it is not serious. The tension ring is not affected. The tank is partially buried. Overall the exterior is in good to very good condition.

Barr Farm Booster Station

This is a small booster station with three pumps. The structure is of poured concrete foundation and floor. Walls are concrete block, all in excellent condition. The roof is wood with asphalt shingles and in excellent condition. The exterior is vinyl sided and there is a steel door in excellent condition. There is no fence.

The three pumps are small end suction units all with variable frequency drives. Pump No. 1 was smooth, pump No. 2 slightly noisy and pump No. 3 smooth.

Donald Street Booster Station

This is a medium size booster with two pumps. The structure is of poured concrete foundation and floor with split concrete block walls, all in excellent condition. The roof is of wood with asphalt shingles and steel door. All is in excellent condition. There is a blacktop drive which is in very good condition.

The pumps are end suction and both were running. Pump No. 1 was noisy and vibrating due to a bad rear bearing. Pump No. 2 also was vibrating. There is no generator set at this facility and no fence. Overall the facility is in very good condition.

English Woods Booster Station

This is a small partially buried booster station supplied by two wells with submersible pumps. The structure is of poured concrete foundation and slab floor with concrete walls above. Exterior is vinyl siding. All in excellent condition. Roof is wood and asphalt shingles and is in very good condition.

There are two small end suction pumps. Pump No. 1 is noisy; pump No. 2 smooth. Both wells were in use.

There is a partially buried steel receiving tank in fair to good condition and a hydro-pneumatic tank wholly within the structure and in very good condition. There are two fiberglass tanks for iron/manganese removal (green sand) both in excellent condition. Overall the facility is in very good condition.

High Pines Booster Station

This is a large booster station. The structure is brick and block on concrete foundation and with wooden flat roof, all in excellent condition. The structure has steel doors also in excellent condition. Site work includes blacktop drive and concrete curbs in very good condition.

There are three end suction pumps well maintained. Pump No. 1 – very smooth. Pump No. 2 slight bearing noise in the pump bearing and pump No. 3 has a slight motor bearing noise. All of the pumps have variable frequency drives. There are no chemicals at this facility. Over all condition very good to excellent.

Coburn Avenue Tank

This is a 300,000 gallon split underground cast in place concrete tank. The embankments are even but the grass in not cut and it appears that there is little maintenance. There is

check valve in a vault constructed of concrete manhole sections with concrete slab top and bottom in average condition.

Coburn Avenue Pumping Station

This is a small underground vault of pre-cast concrete with concrete slab top, and Bilco door all in very good condition. The vault contains two small pumps. Overall condition very good.

Main Dunstable Booster Station

This is a medium size booster station. The structure is of split concrete block and concrete foundation with interior below floor concrete vault for flow gage connections. It has a wooden ridged roof with asphalt shingles and a steel door, all in excellent condition.

There are two split case pumps well maintained and room for a third. The check valves do not work and are to be replaced. The pumps operate on variable frequency drives. The operator did not want to start the pumps due to "riling" the system; however he said that they run on an as needed basis in response to the pressure in the area. Overall the station is in very good condition.

Timberline Booster Station

This is a large booster with three pumps. One larger unit and two small pumps. The structure is of split face concrete block on a poured concrete foundation and concrete slab. Roof is of wood, peaked with asphalt shingles. Block foundation and wooden roof in very good condition. The blacktop drive is in good condition.

The pumps are split case. The larger No. 3 pump was running and was smooth. The small pumps were not started but appear to be in good condition. However all three pumps have Parco check valve operators which do not work. There were packing leaks on the two smaller units. All three pumps start and stop through "soft starts". Overall this station is in good to very good condition.

Shakespeare Tanks and Booster Station

These are two "Natgun" type precast, prestressed concrete ground tanks. One has crazing of the exterior gunnite coating, but tight. The other tank has more serious cracking that is curing. Grading and site work in good condition.

The booster is small with three pumps. The structure is of precast wall and roof panels, on a poured concrete foundation. The wall panels are gunnite inside with washed exposed gravel on the exterior, and a steel door, all in very good condition. Site work includes a blacktop drive in good condition and 6 foot chain link fence in very good

condition. The pumps are end suction. All three operated smoothly. Overall the facility is in very good condition.

Sky Meadow Booster Pumps

The Company only owns two pumps at this facility. The structure, the other pumps and a generator set are owned by a golf course.

The two pumps are end suction units. Pump No. 1 was slightly noisy, pump No. 2 smooth. Piping and electrical are in good condition, in contrast to golf course's equipment. Overall the pumps are in good condition.

Orchard Avenue Booster Station

This is a small booster station. The structure is of split face concrete block and a poured concrete foundation and slab, all in very good condition. It has a wooden ridged roof and asphalt shingles both in very good condition. The steel door is in good condition. There are two end suction pumps both with variable frequency drives. Pump No. 1 had motor bearing noise. Pump No. 2 very quiet. Overall this facility is in very good to excellent condition.

Fifield Tanks

There are two ground storage tanks at this location. The steel tank has a capacity of 5.0 million gallons. The concrete tank has a capacity of 6.6 million gallons. The older tank is welded steel and although it is currently in service it is slated to be removed and replaced with a precast, prestressed concrete tank due to the cost of painting it. The exterior paint is spalling badly. It is estimated that the salvage value of the steel will cover the cost of demolition.

The new tank is a "Natgun" precast, pretensioned concrete ground tank. This tank is nearly new and in excellent condition. The older check valve and concrete vault are to be retained. They are in average condition. The old altitude valve will be abandoned. Site work including grading and rip rap, is in very good condition. A 7 foot chain link fence with barbed wire surrounds the property and is in excellent condition.

Taylor Falls Booster Station

This facility is utilized to pump water from the Nashua system to Hudson. The structure is of split face concrete block on a concrete foundation and slab, all in excellent condition. It has a wooden ridged roof and asphalt shingles both in excellent condition. The steel doors are in fair to good condition.

The station contains a single end suction pump; it has a plug check electric motor operator. The mechanical equipment is in excellent condition. Overall this station is in excellent condition.

Woodlands Booster Station

This facility has two wells with submersible pumps and a pumping station with two pumps. The structure consists of poured concrete foundation, walls and floor all in good condition. The roof is ridged wood with asphalt shingles, both in good condition. There are two partially buried steel tanks. One functions as a receiving tank and is non pressurized and the other is a hydro-pneumatic. The visible portion of these tanks is in fair to good condition.

There are two end suction pumps, both very quiet. Galvanized piping is in fair condition. Electric equipment is in very good condition. A 6 foot chain link fence with barbed wire surrounds the station. It is in excellent condition. Overall the facility is in good to very good condition.

Great Bay Pumping Station

This is a stand alone facility. There are two submersible wells and the station houses two pumps. The structure is of poured concrete foundation, walls and slab are all in very good condition. The shed roof of wood is in very good condition. The shingles are in good condition and the steel door in very good condition. The embankment over the tanks is in good condition. The retaining wall and ties are in very good condition. There is a 6 foot chain link fence that is in excellent condition. There are two steel partially buried receiving tanks and a partially buried steel hydro-pneumatic tank. The tanks appear to be in good condition. There are two end suction pumps. The No. 1 pump has a noisy bearing. The No. 2 pump was quiet. Overall this facility is in very good condition.

Sweet Hill Pumping Station

This facility has one well and a small pumping structure with two pumps. The structure is of poured concrete foundation with concrete block upper walls, vinyl sided on the exterior. All in excellent condition. Roof is wood with asphalt shingles in excellent condition. The steel doors are in excellent condition. The embankment over the tanks is in excellent condition. The blacktop driveway is in very good to excellent condition. There is no fence at this facility.

There are two non pressurized partially buried steel receiving tanks that appear to be in very good condition. There is one hydro-pneumatic tank wholly within the structure that appears to be in excellent condition. There are two end suction pumps both units ran very smoothly. Electric equipment was in excellent condition. The chlorine equipment is in very good condition. Overall this facility is in very good to excellent condition.

Valley Fields Pumping Station

This facility has two wells with submersible pumps and a pumping structure with two pumps. The structure is of poured concrete foundation and slab with concrete blocks

above, all in very good condition. The block is painted on the inside and vinyl sided on the outside, also in very good condition. The roof is of wood in very good condition and asphalt shingles are in good condition... There is a steel door in very good condition. The blacktop drive is in good condition. The embankment over the tanks is in very good condition. There is no fence at this facility.

There are two steel receiving tanks and one hydro-pneumatic tank, all partially buried; all appear to be in good condition. The pumps are end suction, both are very quiet and in very good condition. Chemical treatment includes, radon removal, manganese removal (green sand filters) in 3 fiberglass tanks and chlorine and pH adjustment. The chemical equipment is in good to very good condition.

Twin Ridge Pumping Station

There are four wells with submersible pumps and a pumping structure containing two pumps. The structure consists of poured concrete foundation, walls and slab, all in excellent condition. There are split face concrete block upper walls, also in excellent condition. There is a wooden shed roof with asphalt shingles both in very good condition. The door is steel in excellent condition. Site work includes a split block revetment and a 6 foot chain link fence with barbed wire, also in excellent condition.

There is a large steel receiving tank partially buried and a hydro-pneumatic tank also partially buried. Both appear to be in good condition. There are two end suction pumps both slightly noisy. There is an exterior generator set. It started quickly and ran well. This unit is in excellent condition. Chemical equipment includes manganese removal utilizing three tanks (green sand) and chlorination equipment, all in very good condition.

Autumn Woods Pumping Station

There are three wells only two of which are in service. There are two large and two small final pumps and room for a third large pump.

The structure is of poured foundation lower walls and slab, all in very good condition. The upper walls are of split concrete block with wooden ridged roof and asphalt shingles, all in very good condition. The doors are of steel and in very good condition. Site work includes the embankment over the tank which is in good condition, and split face block revetment in very good condition. There is no fence at this facility.

There are two large steel tanks. One is an atmospheric tank which is partially buried which appears to be in good condition, and an additional atmospheric tank which is completely buried. The two small pumps were very quiet. The No. 1 large pump was slightly noisy and the No. 2 large pump quiet. There is an emergency generator set that started easily and ran well. Chemical equipment includes chlorine feed and corrosion inhibitor all in very good condition. Overall this facility is in very good condition.

The High and Lo Pumping Station

There are three wells at this facility but only one is in service. There are two final pumps in the station.

The structure is of poured concrete foundation, walls and floor, all in good condition. There is a wood roof with asphalt shingles and a steel door, all in very good condition. The exterior walls have vinyl siding also in very good condition. Site work includes a hand placed stone revetment in excellent condition, embankment over the tanks, which is in good condition and a six foot chain link fence which is in excellent condition.

There is one steel receiving tank and one steel hydro-pneumatic tank, both partially buried. These tanks appear to be in fair to good condition. There are two "trash type" end suction pumps, both operated quietly. There is a generator set that started quickly and ran smoothly. Chemical equipment includes manganese removal (green sand) with galvanized steel tanks that appear to be in good condition, chlorine feed and corrosion inhibitors all in good condition. Overall this facility is in very good condition.

Hubbard Hill Pumping Station

There are two wells at this facility but only one is in service. There are two pumps in this station.

The structure is of poured concrete foundation with gravel floor and concrete block walls. The foundation and walls are in good condition the floor fair. The shed roof is of wood with asphalt shingles in fair to good condition. The external walls are unfinished but painted on the inside. Site work includes a stone revetment in good condition, embankment over the tanks in good condition, and a six foot chain link fence with barbed wire in excellent condition.

There is one steel receiving tank and one steel hydro-pneumatic tank, both partially buried. They appear to be in fair to good condition. There are two multi stage vertical turbine pumps. The No. 1 pump is slightly noisy and the No. 2 pump is quite. Chemical equipment includes chlorine feed only. It is in good condition. Overall this station is in good condition.

Redfield Pumping Station - Lower

At the lower site there are two wells and a pipeline to a second source. The lower structure contains well head piping and chlorine feed,

The structure is of poured concrete foundation, walls and floor, all in good condition. Upper walls are concrete block, painted on the exterior with bare insulation panels on the interior walls in fair condition. The roof is of wood with asphalt roll roofing in good and very good condition. Piping and chlorine feed equipment in good condition.

Redfield Pumping Station -Upper

The upper facility houses the tanks and final pumps. The structure is of poured concrete foundation, walls and floor in good condition, with upper walls of concrete block painted on the outside and with bare insulation panels on the inside, upper walls in fair condition. It has a wooden shed roof with asphalt roll roofing. The building houses a steel receiving tank and a steel hydro-pneumatic tank that appear to be in fair condition.

There are two end suction pumps. Both had noisy motor bearings. Overall condition of this facility is good.

Glen Ridge Booster Station

This station has two wells, but one of the wells is temporarily out of service until uranium treatment equipment can be installed to treat the water from this well. There are also two small final pumps. This station is slated to be added on to and internal piping and electrical upgraded to accommodate newly required uranium and radon removal treatment systems.

The structure is of poured concrete foundation and gravel floor in good condition. Walls are of painted concrete block, in fair condition. The structure has a wooden ridged roof the roof is steel panel in excellent condition in good condition. Site work includes a stone revetment which is in good condition.

There is a large steel receiving tank, partially buried; it appears to be in fair to good condition. There are two small bladder type pressure tank in good condition and two small pumps that charge these tanks. Pump No. 1 runs quietly, pump No. 2 has a noisy pump bearing. Chemical feed equipment includes chlorine feed only which is in good condition. Overall the facility is in fair to good condition.

Maple Haven Booster Station

This facility has three wells, all in service. There are two final pumps in the structure.

The structure is of poured concrete foundation, and lower walls and the floor is gravel in excellent condition. Upper walls are of concrete block painted on the interior and vinyl sided on the exterior, walls in excellent condition. The roof is of wood with asphalt shingles and with steel door all in very good condition. The embankment over the tanks is in good condition.

There is a large steel receiving tank and a smaller steel hydro-pneumatic tank, both partially buried and appear to be in fair condition. There are two end suction pumps. Pump No. 1 is slightly noisy. Pump No. 2 is smooth. Overall the facility is in very good condition.

Richardson Booster Station

There is one well at this facility with submersible pump and two pumps in the station.

The structure is of poured concrete foundation and floor in very good condition, with concrete block walls painted inside and out and in fair condition. It has a wooden shed roof, in very good condition, with asphalt shingles in fair to good condition. There are bare insulation panels on the inside walls in good condition. There is a stone revetment in good condition.

There is one steel receiving tank which appears to be in fair condition and one steel hydro-pneumatic tank that appears to be in good condition. There are two end suction pumps. The No. 1 pump has a noisy motor bearing, and the No. 2 pump is smooth. Overall the station is in fair to good condition.

Drew Woods Pumping Station

This is a larger facility with six wells all in service and with a pump station with three large pumps.

The structure is of poured concrete foundation, walls and floor, all in excellent condition. The building has a wooden ridged roof with asphalt shingles both in excellent condition. Site work includes a wooden revetment in good condition.

There is a precast, prestressed 250,000 gallon "Natgun" concrete receiving tank that appears to be in excellent condition. The wells pump through an aeration system to the concrete tank and there is a steel hydro-pneumatic tank partially buried. It appears to be in very good condition. The aeration and tank are in very good condition.

There are three end suction pumps. No. 1 is quiet and the No. 2 pump has a slightly noisy motor bearing. There is an emergency generator set outside the stricture. It started easily and ran well and is in very good condition. Chemical equipment consists of liquid chlorine and corrosion inhibitor, both in very good condition. Overall this facility is in very good to excellent condition.

Souhegan MVD Meter Pit

This consists of a meter and pressure regulator valve in precast concrete pit. The concrete man hole sections appear to be in very good condition. The pre cast cover is in good condition. There is a Bilco access door which is in very good condition.

The vault contains a single four inch pressure regulating valve and meter, both in very good condition.

ATTACHMENT RWR-4

Service Sample Results

Service Sample No. 1- 223 Harris Road
Copper Tubing

This sample was taken in Harris Road on September 6, 2005. The sample is a ¾ inch copper tube type "K," and 24 inches long. The sample site is on the south side of Nashua. Soil type is damp sand and cobbles, and the depth of cover is 62 inches.

The exterior has very slight pitting but is in excellent condition. The interior is stained with copper chloride and covered with a thin film of corrosion inhibitor and is in excellent condition.

Service Sample No. 2- 61 Elgin Street
Copper Tubing

This sample was taken in Elgin Street on September 10, 2005. The site is located in the southeastern part of Nashua. The sample is ¾ inches by 25 inches long, and is "K" type. Soil type at the site was uniform damp sand, and depth of bury was 64 inches.

The exterior showed a very slight pitting caused by sand adhering to the pipe wall but is in excellent condition. The interior is also in excellent condition with slight film of rust inhibitor over copper chloride staining. Nearly all of the copper services exhibited this internal coating. A soil sample was taken at each of the service locations, but were not tested due to the information gained from the tests done for the mains, and nothing was found that would be injurious to the exterior of the copper pipe. The exterior is very slightly pitted but in excellent condition. The interior is also in excellent condition with a thin inhibitor coating.

Service Sample No. 3- 31 Viekis Drive
Copper Tubing

This sample was taken in Viekis Drive on September 20, 2005. The site is in the south central part of Nashua. It is ¾ inch copper "K" type and 30 inches long. The soils at the site are dry sand and cobbles.

The exterior had very slight pitting but is in excellent condition. The interior was also in excellent condition. The sample includes a flared connection or joint which was also in excellent condition.

Service Sample No. 4- 18 Dunloggin Road

This sample was taken in Dunloggin Road on September 10, 2005. The site is in the northwestern portion of Nashua. The sample is 3/4 inch copper type "K" and is 12 inches long. Soils at the site consist of slightly damp sands. The depth of cover was 66 inches.

The exterior is very slightly pitted but in excellent condition. The interior is also in excellent condition with a thin inhibitor coating.

Service Sample No. 5- 16 Linden Street
Copper Tubing

This sample was taken in Linden Street on September 14, 2005. It is 1 inch diameter copper tubing. The sample site is in east central Nashua. The soils at the site are dry fine sands, with depth of cover of 60 inches. The sample includes a flared connection. The exterior is in excellent condition. The interior is also in excellent condition with a slight coating of corrosion inhibitor. The sample was lost in an automobile fire.

Service Sample No. 6- 3 Azalea Lane
Copper Tubing

This sample was taken in Azalea Lane on September 16, 2005. It is a 1 inch diameter copper tubing, type "K." The sample site is in the south central section of Nashua. Soils at the site are damp sand and cobbles. Depth of cover was 74". The exterior was in excellent condition. The interior has a staining of copper chloride but is in excellent condition.

Service Sample No. 7- 46 Dumbarton Drive
Copper Tubing

This sample was taken in Dunbarton Drive on September 17, 2005. It is a ¾ inch copper tube, type "K," and 24 inches long. The site is on the west side of Nashua. The soils are loose ledge rock and dry sand. The depth of cover was 60 inches. The sample includes a flared connection in very good condition.

The exterior had a very slight pitting but is in excellent condition. The interior is in excellent condition with a staining of copper chloride.

Service Sample No. 8- 81 Blossom Street
Copper Tubing

This sample was taken in Blossom Street on September 17, 2005. It is a ¾ inch copper tube, type "K," 23 inches long. The sample site is in central Nashua. The soils at the site are damp sands, and the depth of cover was 34 inches.

The exterior had a very slight pitting but was in excellent condition. The interior was stained with copper chloride with a thin film of corrosion inhibitor and is in very good condition.

Service Sample No. 9- 3 Timberline Drive
Copper Tubing

This sample was taken in Timberline Drive on September 17, 2005. It is a ¾ copper tube, type "K" and is 24 inches long. Sample site is in south central Nashua. Soil type

was dry sand and the depth of cover was 69 inches. The sample included a flared connection in excellent condition.

The exterior had very shallow pitting but was in excellent condition. The interior had a coating of copper chloride covered by a thin coat of corrosive inhibitor, but was in excellent condition.

Service Sample No. 10- 16 Hampton Drive
Copper Tubing

This sample was taken in Hampton Drive on September 17, 2005. It is a ¾ inch copper tube, type "K," and is 19 inches long. The sample site is in west central Nashua. Soil type is dry sand and broken ledge rock. Depth of cover was 84 inches.

The exterior exhibited a very slight pitting, not measurable and is in excellent condition. The interior had a coating of iron oxide and iron staining and was in very good to excellent condition.

Service Sample No. 11- 57 Conant Road
Copper Tubing

This sample was taken in Conant Road on September 21, 2005. It is a ¾ inch copper tube, type "K," and 40 inches long. The sample site is in southwest Nashua. The soil type is damp sand and cobbles with a depth of cover of 62 inches. The sample includes a flared connection in excellent condition. The exterior exhibited a very slight pitting but was in excellent condition. The interior was stained with copper chloride with a corrosion inhibitor.

Service Sample No. 12- 9 Greenlay Street
Galvanized Steel

This sample was taken in Greenlay Street on September 22, 2005. It is a 1 inch galvanized steel pipe, schedule 40 and 29 inches long. The sample site is in north central Nashua. Soil type is dry sand with a depth of cover of 63 inches.

The exterior was nearly corroded and pitted about halfway through the pipe wall. None of the pits were completely through the pipe wall. The interior exhibited a slight general corrosion, was originally cement coated and was stained with a dark film of corrosion inhibitor. The pipe is in poor condition and is consistent with the generally poor condition/performance of galvanized steel pipe.

Service Sample No. 13- 1 Stark Street
Copper Tubing

This sample was taken in Stark Street on September 24, 2005. It is a 2 inch copper tube, type "K," and 23 inches long. The sample site is in the north central portion of Nashua. Soil type is damp sand and cobbles with a depth of cover of 44 inches.

The exterior had very light pitting but is in excellent condition. The interior was stained with copper chloride and had a thin film of corrosion inhibitor and is in excellent condition.

Service Sample No. 14- 100 & 102 Chandler Street
Copper Tubing

This sample was taken in Chandler Street on September 24, 2005. It is a 1 inch copper tube and 18 inches long. The sample site is in the northeastern portion of Nashua. Soil type is damp sand and the depth of cover was 50 inches. The sample included a flared joint that was in excellent condition.

The exterior exhibited a very slight pitting but was in excellent condition. The interior had a slight film of corrosion inhibitor and was in excellent condition. This service sample was destroyed in an automobile fire.

Service Sample No. 15- 8 Bellingrath Place
Copper Tubing

This sample was taken in Bellingrath Place on September 24, 2005. The sample is 1 inch copper tube, type "K," and 12 inches long. The sample site is in northeastern Nashua. The soil type is dry sand and broken ledge rock, with a depth of cover of 74 inches. The sample included a flared connection in good condition.

The exterior had very slight pitting but in is in very good condition. The interior had a staining of copper chloride and was in excellent condition.

Service Sample No. 16- 8 Standish Way
Polyethylene Tubing

This sample was taken in Standish Way on September 24, 2005. The sample is 2 inch polyethylene 100 PSC and 40 inches long. It is coupled in a short piece of 1 inch copper tubing. The site of the sample is in eastern Amherst. The soil type is dry sand and the depth of cover is 60 inches.

The exterior and interior of the sample are in excellent condition. There is also a joint of plain end polyethylene to brass/copper with stainless steel clamps and a flared copper joint, all in excellent condition.

Service Sample No. 17- 8 Fordham Drive
Copper Tube

This sample was taken in Fordham Drive on September 25, 2005. It is a ¾ inch copper tube type "K" and 26 inches long. The sample site is in southwestern Nashua. The soil type is medium damp sand with a depth of coverage of 66 inches. The sample included a flared joint that was in excellent condition.

The exterior exhibited a very slight pitting but was in excellent condition. The interior had a film of corrosion inhibitor rather thick but was in very good condition.

Service Sample No. 18- 5 Carson Circle
Copper Tubing

This sample was taken in Carson Circle on September 27, 2005. It is a ¾ inch copper tube 30 inches long. The site of the sample is in southwestern Nashua. The soil type is dry sand and ledge rock but the pipe is bedded in sand. The depth of cover was 94 inches.

The exterior has very slight pitting but is in excellent condition. The interior has a thin film of corrosion inhibitor but is in excellent condition. This sample was lost in an automobile fire.

Service Sample No. 19- 1 Montgomery Street
Copper Tubing

This sample was taken in Montgomery Street on September 27, 2005. It is a ¾ inch copper tube, type "K" and 32 inches long. The sample site is in downtown Nashua. The soil type is dry sand and cobbles and the depth of cover was 54 inches.

The exterior exhibited slight pitting but is in excellent condition. The interior has a thin film of corrosion inhibitor and is in excellent condition.

Service Sample No. 20- 15 Plymouth Avenue
Copper Tube

This sample was taken in Plymouth Avenue on September 28, 2005. It is a ¾ inch copper tube, type "K" and is 24 inches long. The sample site is in north central Nashua. The soil type is fine sand and cobbles with some broken ledge rock, and with 58 inches of cover. The sample included a flared joint intack and in excellent condition. There is a slight chloride staining.

The exterior of the tube is in excellent condition. The interior had a thin film of dark corrosion inhibitor but in excellent condition. The sample included the curb stop that was slightly corroded.