



NORFOLK•RAM

ENGINEERING SOLUTIONS
FOR THE ENVIRONMENT

January 26, 2010

Mr. Craig Weston
Carver Fire Chief
112A Main Street
Carver, Massachusetts 02330

Re: Summary of Site Conditions Update
99 Main Street, Carver, MA
Norfolk Project No. 656.8.4

Dear Mr. Weston:

At your request Norfolk Ram Group, LLC (Norfolk) has prepared this letter update of the site conditions at 99 Main Street with respect to the historical gasoline release and the implications for future site development. You have indicated that the anticipated future use of the site will be the development of the property for use as the new Carver Fire Department.

This site has received \$200,000 in funding for the clean-up through an EPA Brownfield Clean-Up Grant (BF – 97156201 – 0). Norfolk recently submitted an extension request for the Tier IC Permit to the Massachusetts Department of Environmental Protection (MADEP) to cover the site through completion of a Class C Response Action Outcome (RAO).

Norfolk is currently preparing the Class C RAO report which will document site conditions and establish a temporary closure for the site. Since our last update to you in June 2009 Norfolk has completed two (2) quarterly rounds of confirmatory groundwater monitoring, and a soil vapor assessment to evaluate potential indoor air risk for future site use (post development).

The Site is a 6.26-acre parcel of land developed with three buildings, a single-story slab on grade structure, a single-story slab on grade concrete block two-bay garage, and a single-story wood frame shed on elevated wooden piles. All three buildings are used by the Town of Carver Fire Department for training purposes and storage. Remedial activities completed since the grant period started on July 1, 2006 include the design and implementation of the remedial system and six (6) quarterly in-situ chemical oxidation applications. The sixth and final application was completed in December 2008.

As stated above, the assessment of the site for post remedial confirmatory sampling is complete and Norfolk is preparing the Class C RAO. Confirmatory soil sampling and soil vapor assessment indicate that potential exposures to residual gasoline contaminants either from direct contact with soil, or inhalation of potential vapors potentially migrating to indoor air under a future development

ONE ROBERTS ROAD • PLYMOUTH, MA 02360 • 508.747.7900 • 508.747.3785 FAX
25 BIRCH STREET, BUILDING B • MILFORD, MASSACHUSETTS 01757 • 508.478.1276 • 508.478.1498 FAX

WWW.NORFOLKRAM.COM

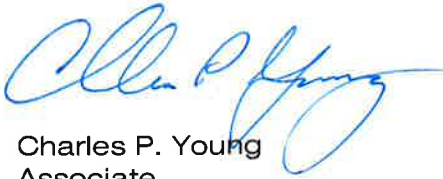
scenario where occupied structures would be present on site, do not pose a significant risk to human health, public welfare, safety, or the environment for unrestricted (i.e., residential) future site use. Exposure to gasoline contaminants in drinking water at abutting properties has also been evaluated following the remedial treatments and no gasoline constituents were detected in surrounding residential or commercial drinking water supply wells.

With the most recent confirmatory assessment data collected, conditions at the site resulting from the historical release of gasoline do not appear to pose any significant restrictions on the future developmental potential for this site as the future Carver Fire Department.

Preparation of a Response Action Outcome (RAO) statement is anticipated in the early spring of 2010. The RAO report will be a five-year Class C temporary solution due to gasoline related contaminants in groundwater *at the site* which remain above the applicable risk standards for drinking water. However, there is no current route of exposure to contaminants in groundwater by ingestion of drinking water because groundwater at the site is not used as a source of drinking water, and future development of the site is not anticipated to utilize groundwater at 99 Main Street for a drinking water supply.

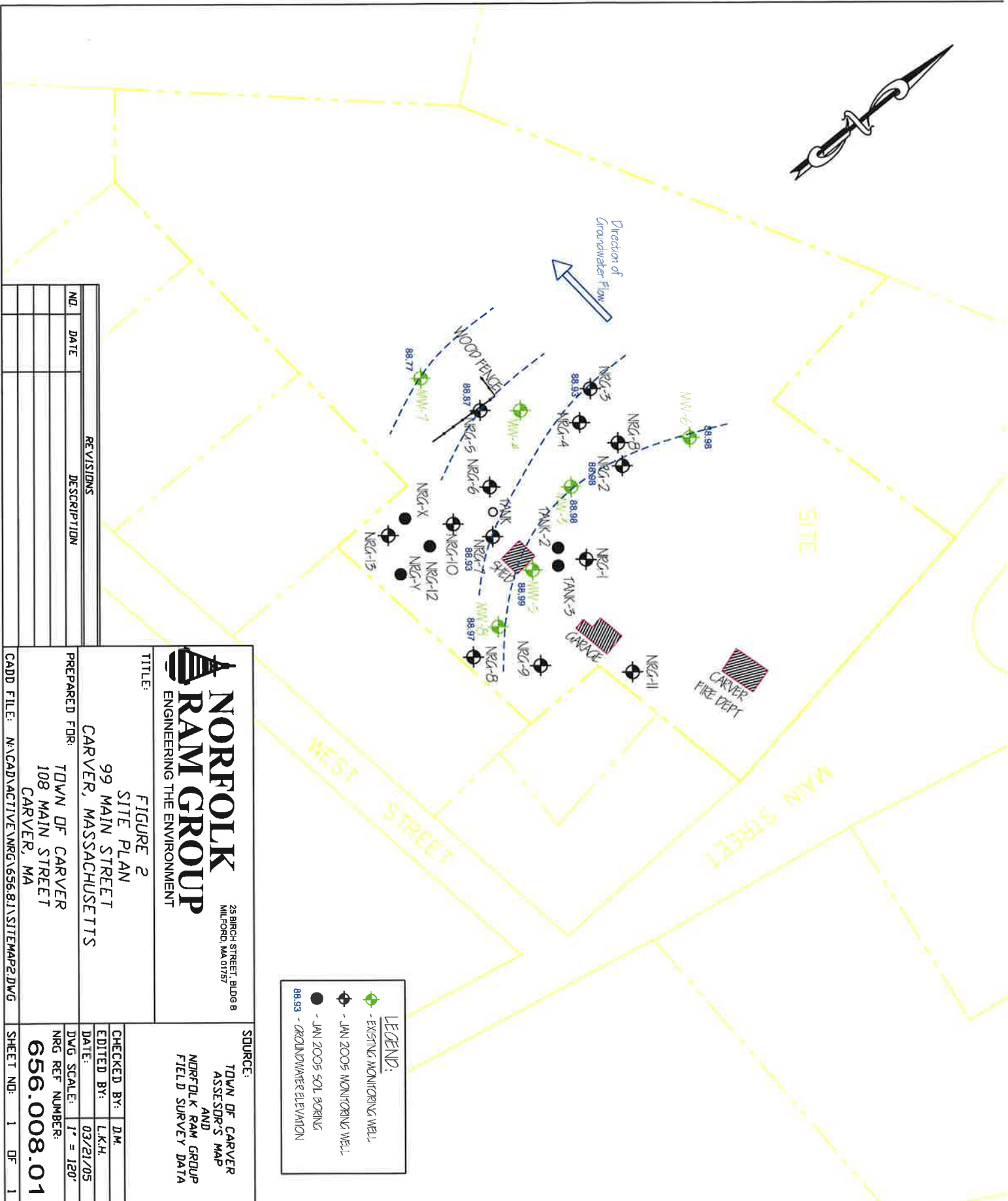
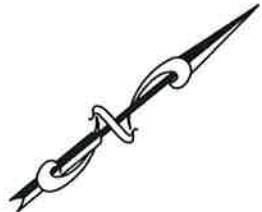
If you have any questions concerning the information presented here, please do not hesitate to call me at 508-478-1276 (x18).

Sincerely,
Norfolk Ram Group, LLC



Charles P. Young
Associate

cc: Rick LaFond, Town Administrator, 108 Main Street, Carver, MA



LEGEND:

- EXISTING MONITORING WELL
- JAN 2005 MONITORING WELL
- JAN 2005 SOL BORING
- 88.93 - GROUNDWATER ELEVATION

NORFOLK RAM GROUP
 ENGINEERING THE ENVIRONMENT

25 BIRCH STREET, BLDG B
 MILFORD, MA 01757

SOURCE:
 TOWN OF CARVER
 ASSESSOR'S MAP
 AND
 NORFOLK RAM GROUP
 FIELD SURVEY DATA

TITLE:	
FIGURE 2 SITE PLAN	
99 MAIN STREET CARVER, MASSACHUSETTS	
PREPARED FOR:	
TOWN OF CARVER 108 MAIN STREET CARVER, MA	
CADD FILE: M:\CADD\ACTIVE\NRG\656.81\SITE\MAP2.DWG	
CHECKED BY:	DM
EDITED BY:	L.K.H.
DATE:	03/21/05
DWG SCALE:	1" = 120'
NRG REF NUMBER:	656.008.01
SHEET NO:	1 OF 1

REVISIONS	
NO.	DATE



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
20 RIVERSIDE DRIVE, LAKEVILLE, MA 02347 508-946-2700

ARGEO PAUL CELLUCCI
Governor

JANE SWIFT
Lieutenant Governor

BOB DURAND
Secretary

LAUREN A. LISS
Commissioner

May 11, 2000

Mr. Gerald Farquharson
Superintendent of Buildings and Grounds
Town Hall
108 Main Street
Carver, Massachusetts 02330

RE: CARVER--Public Water Supply
Sanitary Survey
Carver Municipal Complex
PWS ID #4052061

Dear Mr. Farquharson:

On May 3, 2000, a Sanitary Survey of the above-referenced public water system was conducted by the Department of Environmental Protection (DEP). A sanitary survey is an on-site review of the public water system (sources, distribution system, treatment facilities, operations and maintenance, and administration) for the purpose of assessing the condition of the system and its ability to meet compliance with the regulations for providing safe drinking water.

Any deficiencies which were discovered in the course of this survey with regard to DEP standards, guidelines, and policies or violations of the Drinking Water Regulations are listed in the attached Findings and Inspection Report. The Department would expect you to take the required actions as indicated, for any noted deficiencies. A Notice of Noncompliance (NON) may be issued under separate cover for any violations identified.

If you have any questions concerning the attached findings and inspection report, please contact Terry Martin at this office at (508) 946-2765.

Very truly yours,

Jeffrey E. Gould, Chief
Buzzards Bay Watershed

G/TM/tr

Enclosure: 1) Waiver renewal application, 2) Lead and Copper Rule Sampling Plan Approval

CERTIFIED MAIL # Z 598 884 520
RETURN RECEIPT REQUESTED

cc: Mr. Paul McDonald
Carver High School
60 South Meadow Road
Carver, MA 02330 (w/enclosures)

This information is available in alternate format by calling our ADA Coordinator at (617) 574-6872.

DEP on the World Wide Web: <http://www.magnet.state.ma.us/dep>

Printed on Recycled Paper

FACILITY INFORMATION: CARVER MUNICIPAL COMPLEX
MAIN STREET (ROUTE 58)
CARVER, MASSACHUSETTS

SANITARY SURVEY EVALUATION
FINDINGS AND INSPECTION REPORT

This report is intended to update the Comprehensive Compliance Evaluation (CCE) conducted for the system on December 3, 1997, and to address the current status of the recommendations included in that report. This survey included a review of previous inspection reports and an inspection of the drinking water source and storage facilities.

The following actions have been taken in response to recommendations provided in the previous CCE and/or have been initiated by the Carver Municipal Complex since the previous inspection:

- The system has been reclassified from a non-transient, non-community (NTNC) system to a community (COM) system since the previous inspection. The Carver Housing Authority and South Shore Housing Authority, a previously approved community public water system, has been tied into the source serving the Carver municipal buildings (Library, Town Hall, Police, Fire and DPW), and their wells are now classified as an emergency supply. Paul McDonald is the primary operator for the system and holds a D1 and T1 license. Since the previous inspection, Gerald Farquharson has been certified as a Very Small System (VSS) operator and is the secondary operator for the system. Both Mr. McDonald and Mr. Farquharson were present on the date of this inspection. According to them, the emergency supply wells which formerly served the housing authority are not currently able to support the system. At the time that the housing authority was tied into the current well, the spool piece which allowed the discharge from those wells to be piped to the housing authority was decommissioned. It is necessary to replace this piece to allow those wells to be used in the event of an emergency.
- Treatment for iron and manganese removal via sequestration by sodium hexametaphosphate was approved by the DEP on December 2, 1999, and the treatment system has been operational since April 1, 2000. During the pumping test for the source, it was noted that high concentrations of iron and manganese may require future treatment. Treatment was determined to be necessary due to numerous complaints from residents after the community system was tied in. Flushing was conducted after approximately one (1) month of treatment and since that time there have been no water quality complaints from residents of the Carver or South Shore Housing Authority. A continued flushing program is to be conducted according to the certified operators for the system
- The system is currently operating within its approved volume. DEP records indicate that the system is approved for 10,000 gallons per day, based upon a Zone I of 250 feet. The corresponding Interim Wellhead Protection Area (IWPA) is 622 feet. This figure should be noted on future Annual Statistical Reports. During this inspection, Mark Dakers, of DEP, also conducted a Source Water Assessment Program (SWAP) inspection to identify potential threats to the well within the Zone I and IWPA. A report detailing his inspection will be issued under separate cover, however, no significant land use threats were identified.
- The system had received a waiver from testing for synthetic organic compounds (SOCs) which was effective for the 1996-1998 compliance period. A waiver renewal was then required in order to extend the waiver provision through the 1999-2001 compliance period. The DEP has no record of receipt of the waiver renewal. As a result, the system has been scheduled to test for SOC's during the third quarter of 2001. A waiver renewal has been enclosed with this report and should be completed and forwarded to the Boston office to allow for a reduction in the required monitoring.

- The DEP had issued a letter dated November 30, 1998, which approved the selected sampling locations for Lead and Copper Rule testing. A copy of this letter is enclosed. The letter required that the initial samples be collected by December 31, 1998, and that subsequent sampling should be conducted every six (6) months, as required by 310 CMR 22.06(B). The DEP has no record of receipt of these results. A Notice of Noncompliance (NON) will be issued under separate cover for failure to monitor for lead and copper as required.

Deficiencies or Violations noted:

- Lead and Copper Rule sampling has not been conducted as required in 310 CMR 22.06(B).
- The emergency wells for Carver and South Shore Housing Authority cannot currently be used in the event of an emergency.
- A waiver renewal should be completed to allow for a reduction in SOC monitoring.

Recommended Actions:

- A Notice of Noncompliance will be issued for the Lead and Copper Rule sampling violation noted above.
- Within ninety (90) days of receipt of this report, modifications to the distribution system should be made to allow the emergency wells to be piped to the Carver and South Shore Housing Authority.
- Within thirty (30) days of receipt of this report the enclosed waiver renewal should be completed and submitted to the Boston office.

Notes

- High use is 7500 Gals/Day Average is around 6000 Gals/Day
- Town Hall, EMS, Police Station and Fire Station use about 1000 Gals/Day
- Well puts out 10 @Pm
 - 1000 Gallon water Tank.

SECTION 3

SYSTEM INFORMATION

Keep this basic information readily available for when you need it for emergency responders, repair people, and the news media.

3.1 SYSTEM INFORMATION

Public Water System Identification Number (PWSID #)	4052061
System name and address	Carver Municipal Buildings 108 Main Street Carver, Massachusetts 02330
Basic description and location of system facilities	<p>The Town of Carver has a small municipal water system providing water to the Town Hall, Library, Police, Fire and EMT stations, and the Carver Housing Authority.</p> <p>The facilities are as follows:</p> <p>Supply - Well No.1 - one pump capable of 12 gpm at system head. Well No.2 has been disconnected from the system but is permitted for 12 gpm with the potential to be used as a backup.</p> <p>Treatment - Well No. 1 Pump House includes flow metering, contact and storage tank, chemical feed pump, back-up power propane gas generator with auto-transfer switch, and a propane tank.</p> <p>Storage - Storage is provided inside Well No. 3 Pump House in an 8,000 gallon tank, Sodium Hexametaphosphate is applied for Fe and Mn sequestration, water is pressurized and distributed via a 170 gallon hydropneumatic tank inside the station.</p> <p>System Demand Average Day - 0.01 MGD, Maximum Day - 0.016 MGD</p>
Population served and service connections from Division of Drinking Water records.	Population Served - 100 Service Connections - 2
System Owner (the owner should be listed as a person's name)	Town Manager Richard LaFond - Town Administrator Jack Angley - Selectmen Frank Casey - Selectmen
Name, title, and phone number of person responsible for maintaining and implementing the emergency plan	Don Rugg/Sarian Company Water System Operations Manager Phone: 508-888-7262 Cell: 508-274-3807 Home: 508-420-0810

3.2 SYSTEM DESCRIPTION

3.2.1 Well No. 1

Well No. 1 is an 8" diameter, 250-foot deep bedrock well located on the northern part of the Town complex. The well is located 250 feet northeast of the pump house. The well has a limit of 10,000 gpd due to Zone I regulations. The well pump is a Goulds Model 10GS installed at 208-feet deep and is pumped at 10.4 gpm against a total dynamic head of 245-feet. It is set to pump at 208 feet.

3.2.2 Well No. 2

Well No. 2 has a capacity of 12 gpm. Due to the presence of high concentrations of iron and manganese the well operation has been discontinued.

3.2.3 Distribution

The pump house supplies two distribution systems. One system includes municipal buildings (Town Hall, Library, Police Station, Fire Station, and EMT). The second distribution system serves the Carver Housing Authority housing complex. Each distribution system has a dedicated meter inside the pump house. The meters are calibrated annually. There is a single hydrant on the system for flushing.

3.2.4 Treatment

A pump house is located 250-feet from the well. Water is pumped from the well into a steel cement lined atmospheric storage tank located inside the pump house. The tank capacity is 8,000 gallons. Sodium Hexameta Phosphate is added, as the well water is pumped into the tank, for Iron and Manganese sequestration. The chemical feed system includes one LMI metering pump capable of 1.0 gph maximum flow, and one 55-gallon day tank. Two 20 lb sealed containers of dry chemical are stored inside the station at all times. The pump house includes three booster pumps capable of 70 gpm each. Two pumps can operate simultaneously, based on system

demand and the three are alternated. The booster pumps convey water from the 8,000 gallon tank into a 170 gallon hydropneumatic tank that discharges into the distribution system based on pressure fluctuations. The distribution system pressure is maintained between 40-60 psi. Provisions for emergency chlorination are also provided at the pump station. The facility includes flow metering, a back-up power propane generator with auto-transfer switch located outside the pump house, and a 750-gallon propane storage tank. Additionally, there is one distribution side hydrant. Should the pump station ever become inoperable, a tanker truck would have to be used to supply water to the two distribution systems.

3.2.5 Chemicals Used

Raw water is treated with Sodium Hexameta Phosphate for corrosion control. Chemicals are stored in small quantities at the pump station. The chemical handling, clean-up and safety data for each chemical is included in Appendix I.

3.3 SYSTEM OPERATION

All of the individual water system components noted within the System Description section work together as an integrated system. Their typical and desired normal and emergency modes of operation are described below.

3.3.1 Normal Operation

Under normal operations, the system is supplied by Well No. 1. The well pumps operation (On/Off) is controlled by the water level in the 8,000 gallon storage tank. The well is pumped at a constant rate and Sodium Hexameta Phosphate is metered into the water as it enters the storage tank. Supply to the distribution system is from a tri-plex booster pump system that operates in a lead/lag alternating sequence, based on system pressure in the hydropneumatic tank. The system maintains a pressure of 40-60 psi.

The Operator mixes the phosphate solution and adds a small amount of the chlorine to prevent bacterial growth. Use of the chemical is not critical to the operation of the system as it is only used to sequester iron and manganese, which are secondary water quality problems.

3.3.2 Emergency Operation

There is a propane powered back-up engine/generator located outside of the pump house with an automatic transfer switch to run the station under emergency power in case of a power disruption. During a power loss event, the emergency generator would automatically run the pump station and the operation of the system would then work in the same manner as noted for normal operation. The generator is exercised once a week. There is an alarm for loss of power but not generator "ON".

3.3.3 Critical Components

All of the previously described components of the Carver Municipal Buildings' system are important to its proper operation the well can be out of service for a short period of time (idol) provided that the storage tank is full. The chemical feed system is not critical to the system operation as it only treats for secondary water quality constituents.

3.4 LOCATION OF PERTINENT INFORMATION

The location of pertinent information that would be useful on a routine basis is included within the following table.

**TABLE 3-1
PERTINENT INFORMATION LOCATION SUMMARY**

ITEM	STORAGE LOCATION
Distribution System Map	Town Hall - Administrators Office, Pump House, Contract Operator's Office
Daily Reports	Town Hall - Administrators Office, Pump House, Contract Operator's Office
Permits	Town Hall - Administrators Office, Pump House, Contract Operator's Office
Technical Manuals	Town Hall - Administrators Office, Pump House, Contract Operator's Office
O&M Manual and Plans	Town Hall - Administrators Office, Pump House, Contract Operator's Office

3.5 LOCATION OF EMERGENCY EQUIPMENT

Access to equipment, critical spare parts, etc. is important for the assurance of continued operations during an emergency or interruption of service. The following table lists the primary items and their location.

**TABLE 3-2
EMERGENCY/CRITICAL EQUIPMENT LOCATION SUMMARY**

COMPONENT	COMMENTS	LOCATION
Back-up Power	Propane Powered Generator	Pump House
Critical Spare Parts	Various spare parts	Pump House
Spill Response Materials	Spill kits, etc.	Pump House / Fire Station

In regards to the attainment of additional equipment, services, or spares that are not stocked, the Contract Operator will contact its preferred contacts identified within the Service/Repair Notification List included within Section 4.

4	Screen the vent of the atmospheric storage tank with 24-mesh screen.	7 days
5	The atmospheric storage tank overflow pipe shall be made to open downward and terminate between 12 and 24 inches above the ground surface. Screen the overflow pipe with 24-mesh screen. The overflow pipe shall be of sufficient diameter to permit waste in excess of the filling rate.	7 days
6	Before screening the storage tank vent and overflow pipes (see items #4 and 5 above), insure that these pipes are clear of any obstructions or debris.	7 days
7	Submit to the Department documentation indicating that the above corrective actions have been completed. Submit to: DEP, Attention Dan DiSalvio, 20 Riverside Drive, Lakeville, MA 02347.	30 days

PWS Contact: Gerald Farquharson

Certified Operator: Same as above

License: D1/T1 8256/8255

Person(s) present at sanitary survey: Gerald Farquharson, Dan DiSalvio (DEP)

System Description: The system consists of municipal buildings (town hall, library, police and fire departments) and two residential housing developments (Carver Housing Authority and South Shore Housing Authority). Based on the population served, the public water system is classified as a Community water system.

The system is served by one, 250-foot deep, bedrock well (Source #4052061-01G). The well is located in a wooded area approximately 250 feet northeast of the pump house. The well casing extends above ground and is enclosed inside a locked, fenced area. There are two emergency backup wells (Source ID #4052061-02G and -03G) located approximately 330 feet north of the main well.

Treatment consists of iron and manganese sequestration by the addition of hexametaphosphate.

Administration:

Does system have certified operator? Yes X No
 Has Annual Statistics Form been submitted? Yes X No
 Has Cross Connection Survey been conducted? Yes X No

Zone 1 / IWPA: (for Source #4052061-01G)

Zone 1 radius: 250 feet

IWPA radius: 622 feet

Based on the above Zone 1 and IWPA protective radii, Source #4052061-01G shall not exceed a maximum pumping rate of 10,000 gallons per day.

Activities inside Zone 1: wooded area.

Statement of Zone 1 Compliance: Your system is currently in compliance with Zone 1 requirements. Please be advised that any modifications to the Zone 1 or activities within are subject to Department approval.

Water Quantity:

Is the water supply adequate? Yes No
Is the source(s) metered? Yes No

Water Quality:

Have there been any violations in past 12 months? Yes No
Have they been corrected? Yes No N/A
Does system have a copy of sampling schedule? Yes No
Have GWUDI Forms been completed? Yes No N/A
Is any source Not Exempt from MPA testing? Yes No

Treatment*:

Is there a treatment system? Yes (see system description)
Are Chemical Treatment Forms being submitted? Yes No
Is equipment properly maintained? Yes No
Is there adequate containment? Yes No

*Any water treatment device must be approved by the Department prior to installation.

Distribution:

Storage Tanks: There is one 8,000-gallon atmospheric storage tank located inside the pump house. There is one 120-gallon bladder pressure tank also located in the pump house.

Cross-Connections / Backflow Prevention: There is currently one testable device (RPBP) located on the feed line to the library boiler, and one located on the feed line to the library fire suppression system.

Emergency Plans:

Does system have Emergency Response Plan? Yes No
Are emergency telephone numbers posted? Yes No

Capacity: Capacity is the ability of a public water system to plan for, achieve, and maintain financial, managerial and technical compliance with applicable federal and state drinking water standards for the foreseeable future. Capacity also requires the demonstration of effective controls in all three areas. Carver Municipal Buildings is determined to have Adequate Capacity. This system is currently complying with all National Primary Drinking Water Standards and MA DEP drinking water regulations and is expected to continue this level of compliance well into the