



The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES



Thomas S. Burack, Commissioner

AMENDED WATER CONSERVATION PLAN APPROVAL

February 3, 2015

Theodore Athas
South Weare Water Assn
54 Hoyt Mill Road
Weare, NH 03281

RE: Weare – So. Weare Water Association (PWS ID: 2452030)

Dear Mr. Athas:

On October 18, 2011, the Department of Environmental Services (“DES”) Drinking Water and Groundwater Bureau approved a Water Conservation Plan for South Weare Water Association (SWWA). On January 11, 2012, DES approved an Amended Water Conservation Plan for SWWA. The purpose of this letter is to approve the Amended Water Conservation Plan (the “Amended WCP”) signed on January 15, 2015 and received on January 14, 2015. The amendments are as follows:

1. Night flow analysis will be conducted at least twice a year six months apart at each pump house. The baseline flow is 0 gpm. If flows are above 0 gpm, steps will be taken to identify a potential leak as described in the Amended WCP.
2. The Amended WCP reflects all recent upgrades to pump house meters and the meter testing and maintenance schedule.

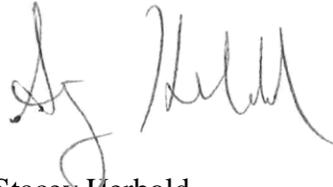
The conditions of the original Water Conservation Plan Approval issued on October 18, 2011 will persist as follows:

1. On **October 18, 2017**, and every three years thereafter, the water system shall submit a detailed and completed compliance report form to DES documenting compliance with the Plan. Required information includes contact information for the water-system owner and for the individual responsible for carrying out plan tasks; dates tasks were performed; and data relating to meter reading, water audits, leak detection, and public outreach. A copy of the *Water Conservation Plan Ongoing Compliance Form* may be located at the DES website, www.des.nh.gov, on the Water Conservation Program homepage.
2. South Weare Water shall continue reporting to the DES Water Use Registration and Reporting Program. The Department has assigned WUID # 20922 to the water system. Monthly water use for each source shall be reported on a quarterly basis.

A copy of the Amended WCP may be located on the DES website. Go to www.des.nh.gov, click on the "A-Z List" at the top right corner of the page, click on "Water Conservation", and then on "Approved Plans" under "Permits".

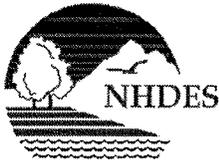
If you have any questions, please feel free to contact me at (603) 271-6989 or via e-mail at stacey.herbold@des.nh.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Stacey Herbold". The signature is written in a cursive style with a large initial "S" and "H".

Stacey Herbold
Water Conservationist
Drinking Water and Groundwater Bureau

cc: Daniel Ducharme, Primary Operator



The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES



Thomas S. Burack, Commissioner

November 13, 2014

Daniel Ducharme
South Weare Water
174/146 South Stark Highway
Weare, NH 03281

Subject: Weare - South Weare Water (PWSID: 2452030)
Water Conservation Compliance

Dear Mr. Ducharme:

On October 18, 2011, the Department of Environmental Services ("DES") Drinking Water and Groundwater Bureau approved a Water Conservation Plan for South Weare Water Association (SWWA). Pursuant to Env-Wq 2101, every three years from the date of the approved water conservation plan, a Water Conservation Ongoing Compliance Report form shall be submitted to DES. On September 26, 2014, DES received the report and DES staff met with you and Ted Athas, SWWA, on site to go over the report and to inspect the meters on site. Based on the report and the inspection, DES determined the following:

1. New source meters, Sensus SRs, were installed on Wells #1, #2, #4, and #5 and new distribution meters, Sensus Omnis, were installed at Well House #1 and #2. Calibration certificates were submitted for two Sensus SR meters and two Omni meters.
2. The Sensus SR meters were installed vertically on Well #2 and Well #4. According to the manufacturer's installation instructions, these meters should be installed horizontally for accuracy.
3. The meters on Well #1 and #3 were installed horizontally, but were angled so as to more easily read the dial.
4. The meter on Well #3 was a Hersey meter. No documentation was submitted verifying the age of the meter or the last calibration date.
5. Outreach materials documented as being distributed to residents were not related to water efficiency, although water efficiency was promoted at association meetings and toilet dye tablets were handed out.
6. A leak detection survey was conducted in 2013, through the DES Leak Detection Program.
7. A night flow analysis was submitted using the distribution meter at Well House #2, which serves the mobile home park. The lowest flow was 0 gpm, to be used as the baseline flow during future analysis.

8. A night flow analysis was not submitted using the distribution meter at Well House #1, which serves the homes in the upper part of the system, along with the apartment building.

In response, by **December 15, 2014**, please complete the following:

1. Submit to DES a testing and calibration certificate for the Hersey meter on Well #3. If a certificate is not available, have the meter tested and calibrated or replaced.
2. Install the meters on Well #2 and #4 horizontally and submit photos to DES.
3. Submit to DES documentation from the manufacturer indicating that the meters on Well #1 and #5 are installed properly, specifically that installing these meters at an angle does not jeopardize accuracy.
4. Conduct a night flow analysis using the distribution meter at Well House #1 and submit results to DES.

Wells #2, #4
↑

If you have any questions, please feel free to contact me at (603) 271-0659 or via e-mail at stacey.herbald@des.nh.gov.

Sincerely,



Stacey Herbold
Water Conservation Program
Drinking Water and Groundwater Bureau

Cc: Ted Athas, South Weare Water

REVISED 1/14/2015

**Amended
WATER CONSERVATION PLAN
SOUTH WEARE WATER ASSOCIATION
WATER SYSTEM**

EPA # 2452030

Weare, New Hampshire 03281

**September 2011
Amended January 10, 2012
Amended January 2015**

System Overview:

The South Weare Water Association (SWWA) operates a joint Community Water System (CWS), formerly being two separate systems. The Hoit Mill and South Weare Mobile Home Park are located north of Route 114 in the Town of Weare. The Water Association's system presently serves 39 mobile homes at South Weare Mobile Home Park and 18 apartment units and 21 single family manufactured homes in Hoit Mill. The water system will not be enlarged beyond the 80 existing units.

SWWA had three (3) active bedrock wells prior to 2011. Well No. 1 is a 1,025 foot deep bedrock well, Well No. 2 is a 1,205 foot deep bedrock well, and Well No. 3 is a 1,105 foot deep bedrock well.

In 2011, SWWA received approval for BRW #4. New Well No. 4 is 1,500 feet in depth.

In 2014, SWWA received approval for BRW #5. Well #5 is 525 ft in depth.

The general water system layout consists of the five bedrock wells, the Hoit Mill Pump House (Well House #1) and distribution system, the South Weare Mobile Home Park Pump House (Well House #2) and distribution system, and the 2-inch PVC transmission main which connects the Hoit Mill distribution system to the South Weare Mobile Home Park Pump House. All well water from Wells 1, 2, 3, & 4 is metered at Well House #1 and Well #5 is metered at Well House #2. Arsenic removal equipment is provided for Well No. 3 and Well No. 4. Water from Well House #1 is stored in a buried 10,800 gallon steel atmospheric storage tank. Water is boosted to the distribution system via twin, 5 h.p. booster pumps. Excess pressurized water is stored in an 1,800 gallon hydropneumatic tank. The system operates on a demand basis. Floats control well pump operation, and pressure controls booster pump cycling.

The 2-inch PVC water main connecting from the 4 inch water distribution main in Hoit Mill is decreased to a 1 “ copper pipe with an 8 gpm restrictor valve and a mechanized ball valve to control flows into the 20,000 gallon buried steel atmospheric storage tank. A mechanized ball valve is also in place to control flows from Well #5, providing 2 gpm to the atmospheric storage tank – a timer is also set to only allow the well to be pumped at a maximum of 9 hours a day as the well is low yield and requires time to recover. Floats in the South Weare MHP Pump House are used to open and close the valves. Water is boosted to the South Weare MHP via twin, 5 h.p. booster pumps. Excess pressurized water is stored in a 2,800 gallon hydropneumatic tank. This system operates on a demand basis. Floats control the mechanized valves, and pressure controls booster pump cycling.

The plan outlined below addresses the requirements of the NHDES Water Conservation Plan.

Project Owner.

Name:	Theodore Athas
Address:	36 Sunset Way, Manchester, NH 03281
Company:	South Weare Water Association
Phone Number:	603-305-2197

Certified Operator

Name:	Daniel Ducharme
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Address: 174/146 S Stark Highway, Weare, NH 03281
 Company: **South Weare Water Association**
 Phone Number: 603-660-0946/486-8076

In accordance to NHDES Administrative Rule EnvWq 2101, Water Conservation rules, South Weare Water Association all community systems seeking new sources of water will implement water conservation plans. SWWA will follow the following conservation measures:

The South Weare Water Association Water System will include four (5) bedrock wells:

- Based on 78 units, total Source Capacity Required under Env-Ws 372.12 is 31,200 gallons (21.7 gpm)
- Average Daily water has been calculated at 23,400 gallons per day (16.3 gpm).

Source and Distribution Meters:

1. Meters will be read every 30 days.
2. Monthly production volumes will continue to be reported quarterly to the DES Water Use Registration and Reporting Program.
3. Water meters will be selected, installed and maintained as described in "Manual of Water Supply Practices, Water Meters Selection, Installation, Testing and Maintenance", document identification number AWWA M6, 1999 as required by (Env-Wq 2101.04 (d)).

Current Meter Information

Source Name	BRW 1	BRW 2	BRW 3	BRW 4	BRW 5 (Rancourt)	Well House #1 Distribution	Well House #2 – Incoming from Well House #1	Well House #2 Distribution
Meter Make	Sensus	Sensus	Sensus	Sensus	Sensus	Sensus	Sensus	Sensus
Meter Model	SR	SR	SR	SR	SR	Omni	SR	Omni
Meter Size	3/4"	3/4"	1"	3/4"	3/4"	2"	3/4"	2"
Meter Age	2014	2014	2014	2014	2014	2013	2013	2013
Accuracy Warranty	15	15	15	15	15	1	15	1

- a. Water meters will be replaced or tested and calibrated based on the below schedule, unless the manufacturer’s accuracy warranty is guaranteed to beyond the scheduled rate, in which case the replacement or testing and calibration rate may be delayed until warranty expiration.

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Meter Size (inches)	Testing Rate (yr)
<1"	10 yrs
1" - 2"	4 yrs
3"	2 yrs
>3"	1 yr

- b. All water meter will be an AWWA certified water meter.
- c. Water meters will be installed per the manufacturer's instructions. More specifically, any requirements for the horizontal or vertical placement of all meters and the amount of straight run of pipe necessary will be followed.

Leak Detection Program:

SWWA is choosing to implement a leak detection program using discharge meters to detect leaks, rather than implementing a metering and water auditing program.

Night Flow Analysis:

SWWA has installed low flow distribution meters to detect very low flows at late night hours indicative of leakage. Initial night flow analysis at Well House #1 and Well House #2 has indicated that baseline flow are 0 gpm, meaning that when flows were observed during late night hours, there were instances that the meters did not capture any flow leaving the pump houses indicating that there is no leakage in the system or at least not large enough leakage for the meters to capture. Moving forward, night flow analysis will continue to be conducted as follows:

1. Night flow analysis will conducted at least twice a year and no sooner or later than 6 months apart.
2. Water usage will be recorded every minute for one hour between 1 am and 3 am using a distribution meter. Prior to the night flow analysis, users of the system will be requested to refrain from using water between 1 am and 3 am on this date.

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3. If flows are above the baseline, then flows will continue to be recorded for an additional hour.
4. If flows are above the baseline, a leak will be suspected. All residents will be asked to check their homes for leaks including running toilets. The previous step will then be repeated again in 3 days.
5. If again flows are above the baseline, a leak on the distribution side of the system will be assumed.
6. If a leak is suspected, the leak will be isolated by closing valves to isolate select portions of the system, while evaluating the change in flow as measured by the distribution meter. For example, when one valve is closed, one person in the field (operating the valves) will then communicate with a second person observing the distribution meter to monitor for a change in the background flow.
7. No later than two weeks from isolating the leak to a certain branch of a system, a sub-contractor skilled in acoustic leak detection will be retained and assist with pinpointing the leak.
8. Records will be maintained of each night flow analysis, including recorded flows and leak detection results.

Any leaks found by the leak detection professional or otherwise will be repaired within 60 days of discovery unless a waiver is obtained in accordance with Env-Wq 2101.09.

Pressure Management:

The water system was designed consistent with water system industry standards and regulation and consistent with other public health and safety considerations in regards to minimum and maximum operating pressures as required by (EnvWq 2101.04 (n)). Pressures in the system range from 50 to 80 psi.

Intentional Water Loss:

The water system does not intentionally allow for water loss using bleeders or the intentional overflow of atmospheric storage tanks.

Educational and Outreach Initiative:

- SWWA will distribute water conservation literature from NHDES and AWWA to its residents at least twice a year. The educational literature will be distributed with bills to the water users.
- SWWA will also post literature regarding water conservation practices at the bulletin board at the mailboxes for the South Weare MHP and the bulletin board at the apartment building laundry room.

Water Use Restrictions:

South Weare Water Association CWS presently has limited water available for uses other than domestic. Water use restrictions have been in place and will continue to be enforced by the SWWA Board of Directors.

1. All water use within the SWWA is monitored and controlled by the SWWA Board of Directors. Fines for illegal water uses will be levied by the SWWA Board of Directors.

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2. Washing of motor vehicles including cars, camper trailers, recreational vehicles, and farm vehicles is not allowed at any time.
3. Sprinkler systems / lawn irrigation is not allowed. Gardens may be watered by hand a maximum of 15 minutes per day.
4. Pressure washing of homes is allowed once a year.
5. Swimming pools may not be filled or replenished using water provided by the SWWA. Homeowners must provide a receipt from a pool water company for all water used to fill or replenish swimming pools.
6. Inspection of each water service entrance is required prior to November of each year for adequate insulation and operation of heat tapes.
7. Homeowners shall monitor and repair leaks and running toilets in their homes to conserve water.

Maintaining Records, Reporting, and Implementation:

1. SWWA will submit a report form supplied by the NHDES once every 3 (three) years documenting how compliance with the requirements of Env-Wq 2101 are being achieved. SWWA will maintain the following records to submit with the report:
 - a. A leak log including the date of all leaks discovered, date of repair, estimated size of leak (gpm), type of leak (ex. hydrant, valve, service, main), and closest address to leak.
 - b. Bi-annual night flow analysis and written statement with the analysis determining if a leak was suspected.
 - c. A log of all water efficiency outreach and educational materials issued and water efficiency promotions executed; and
 - d. Meter testing and calibration certificates.
2. Activities outlined in this water conservation plan will be completed by the South Weare Water Association under the supervision of the water system certified operator.

I certify that I have read this Water Conservation Plan, understand the responsibilities of the water system as referenced in the plan, and that all information provided is complete, accurate, and not misleading.

Owner Name (print): THEODORE S. ATHAS

Owner Signature: *T. S. Athas* Date: 1/15/15