



# COMMONWEALTH of VIRGINIA

Cynthia C. Romero, MD, FAAFP  
State Health Commissioner

DEPARTMENT OF HEALTH  
**OFFICE OF DRINKING WATER**  
Danville Field Office

John J. Aulbach II, PE  
Director, Office of Drinking Water

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July 5, 2013

SUBJECT: Franklin County  
Contentment Island  
PWSID No. 5067086

Mr. Gary Robertson, P.E. Executive Director  
Western Virginia Water Authority  
601 South Jefferson Street  
Roanoke, Virginia 24011

Dear Mr. Robertson:

Enclosed please find Waterworks Operation Permit No. 5067086 with an effective date of June 14, 2013 issued by the Commonwealth of Virginia Department of Health, Office of Drinking Water. This permit is your authorization from the State Health Commissioner to operate the subject waterworks located in Franklin County in accordance with the *Waterworks Regulations*. This permit is not transferable. This permit does not suspend, minimize, or otherwise alter this owner's obligation to comply with applicable federal, state, or local laws and regulations or permits.

This permit is an amendment of the previously issued permit dated December 31, 2010, due to the addition of Well No. 4. This revised permit replaces and nullifies the original permit which should be destroyed immediately.

You will note that the permit indicates that this waterworks has a design capacity of 57,600 gpd. This limit is based on the maximum capacity of the system and shall not be exceeded.

We look forward to your continued cooperation in the maintenance and operation of this public waterworks.

Sincerely,

K. Ray Weiland  
District Engineer

KRW:ga  
Enclosures

cc: Franklin County Health Department, Attn: Gordon Green, MD, Director  
Richard E. Huff, II, Franklin County Administrator  
Donald Beard, Building Official, Franklin County  
VDH-ODW, Central Office



Commonwealth of Virginia  
Department of Health  
Office of Drinking Water

## Waterworks Operation Permit

Western Virginia Water Authority is hereby granted permission to operate a Class VI community waterworks having a design capacity of 57,600 gpd at Contentment Island located in Franklin County in accordance with Title 32.1 of the Code of Virginia, and the *Waterworks Regulations* of the Virginia Department of Health (12 VAC 5-590). This permit is issued in accordance with previously issued Operation Permit No. 5067086 dated December 31, 2010, Construction Permit No. 503511 dated December 12, 2011, and with the understanding that this owner will operate the waterworks in accordance with Part II, "Operation Regulations for Waterworks," of the *Waterworks Regulations* of the Virginia Department of Health. This permit does not suspend, minimize, or otherwise alter this owner's obligation to comply with applicable federal, state, or local laws and regulations or permits.

Variances, Exemptions, or Special Permit Requirements issued: ( ☒ ) None ( ☐ ) See Attached

An Engineering Description Sheet is attached dated June 14, 2013

PERMIT NO.: 5067086

EFFECTIVE DATE: June 14, 2013

APPROVED

  
John J. Aulbach II, P.E., Director, Office of Drinking Water  
for the State Health Commissioner pursuant to V.A. Code § 2.2-604

**VIRGINIA DEPARTMENT OF HEALTH  
ENGINEERING DESCRIPTION SHEET**

**DATE:** June 14, 2013

**WATERWORKS NAME** Contentment Island

**WATERWORKS CLASS:** VI

**COUNTY/CITY:** Franklin County

**TYPE:** Community

**LOCATION:** From the Town of Rocky Mount take State Route 40 east (Old Franklin Turnpike) for approximately 13.5 miles. Turn left onto State Route 945 (Kemp Ford Road) and travel for approximately 1.6 miles. Turn right onto State Route 663 (Dillards Hill Road) and travel for approximately 2.9 miles. Waterworks is located on the left-hand side of Summerwind Drive.

**OWNER:** Western Virginia Water Authority  
**Contact:** Mr. Gary Robertson, P.E.  
601 South Jefferson Street  
Roanoke, Virginia 24011  
**Phone:** 540-853-5700

**OPERATOR:** Licensed Class VI Operator Required

**PERMIT NUMBER:** 5067086

**EFFECTIVE DATE:** March 28, 2003  
Amended  
December 31, 2010  
June 14, 2013

**TYPE OF TREATMENT:** Disinfection and Corrosion Control

**SOURCE:** Four Drilled Wells

**DESIGN CAPACITY:** 57,600 gpd

**DESCRIPTION OF THE WATERWORKS**

The waterworks consists of four drilled wells, disinfection treatment, corrosion control treatment, one 36,400-gallon standpipe atmospheric tank and distribution system.



**Well No. 1:** This Class IIB well is located 85 feet west of the Route 957 (Summerwind Drive) in a vinyl-sided building that is provided with a heater, concrete floor and screened floor drain. The well was drilled to a total depth of 400 feet in October 1988 and is cased and grouted to a depth of 69 feet. The well is provided with 6-inch galvanized steel casing. During the yield and drawdown test performed during February 7-9, 1990, the well yielded 10 gpm at a drawdown level of 331 feet. A submersible pump is provided in the well capable of delivering 12 gpm @ 410 feet TDH. The well has the following appurtenances: a sanitary seal, screened case vent, raw water sample tap, air release valve, drawdown gauge, check and gate valves, water meter, pressure gauge and a blow-off line extending outside of the enclosure. Water electrodes in the 26,400-gallon standpipe control the activation of the well pump.

**Well No. 2:** This Class IIB well is located 300 feet north of Well No. 1, and is provided with a 6 ft x 6 ft x 6 inch concrete pad, pitless adapter and well cap with vent. The well was drilled to a total depth of 400 feet in October 1988 and is cased and grouted to a depth of 64 feet. The well is provided with 6-inch galvanized steel casing. During the yield and drawdown test performed during February 7-9, 1990, the well yielded 47 gpm at a drawdown level of 259 feet. A submersible pump is provided in the well capable of delivering 48 gpm @ 375 feet TDH. The well has the following appurtenances located in Well House No. 1: a raw water sample tap, air release valve, check and gate valves, water meter, pressure gauge and a blow-off line. Water electrodes in the 36,400-gallon standpipe control the activation of the well pump.

**Well No. 3:** This Class IIB is located 200 feet west of Well No. 1, and is provided with a 6 ft x 6 ft x 6 inch concrete pad, pitless adapter and well cap with vent. The well was drilled to a total depth of 400 feet in February 1989 and is cased and grouted to a depth of 70 feet. The well is provided with 6-inch galvanized steel casing. During the yield and drawdown test performed during February 7-9, 1990, the well yielded 58 gpm at a drawdown level of 141 feet. A submersible pump is provided in the well capable of delivering 58 gpm @ 285 feet TDH. The well has the following appurtenances located in Well House No. 1: a raw water sample tap, air release valve, check and gate valves, water meter, pressure gauge and a blow-off line. Water electrodes in the 36,400-gallon standpipe control the activation of the well pump.

**Well No. 4:** This Class IIB well is located approximately 130 feet Northwest of Well No. 1. The well was drilled between May 23-28, 2003 to a total depth of 405 feet and is cased and pressure grouted to a depth of 63 feet to rock and provided with 6-inch steel casing. During the yield and drawdown test performed June 2-4, 2003, the well yielded 38 gpm at a drawdown depth of 340 feet. A submersible well pump is provided in the well, capable of delivering 30 gpm at 384 feet TDH. The well is provided with a 6 ft x 6 ft x 6 inch sloped concrete pad. A pitless adapter type unit with vented well cap is provided. The well has the following appurtenances located in Well House No. 1: check valve, water meter, sample tap, pressure gauge, screened blow off and isolation valve. HOA switches are provided for control of the well pump. Water electrodes in the 36,400-gallon standpipe control the activation of the well pump.

**Chlorination and Corrosion Control Treatment:** The treatment equipment is located inside of Well House No. 1. All four wells combine into a manifold located in Well House No. 1 prior to chemical treatment. The sodium hypochlorite solution is fed by a 44 gpd metering pump equipped with a calibration column, a 100 gallon solution tank, a foot valve and anti-siphon valve. The soda ash solution is fed by a 240 gpd metering pump equipped with a calibration column, a 150-gallon solution tank, a foot valve and anti-siphon valve. A sample tap is provided in the well house following treatment and prior to the atmospheric storage tank.

**Atmospheric Tank:** The 36,400-gallon standpipe atmospheric water tank is located adjacent to the treatment building. The standpipe is 12 feet 6 inches in diameter and 40 feet tall. The height to the tank overflow is approximately 39 feet 4 inches (elevation 942.7 feet). The effective storage volume of the standpipe is 28,800 gallons. The standpipe is equipped with the following appurtenances: access ladder, screened drain line, screened overflow line, access manhole (shoe box type), two access manholes at the base of the tank and a water level indicator.

### CAPACITY EVALUATION OF THE WATERWORKS

Design Basis: Commonwealth of Virginia *Waterworks Regulations*  
One Equivalent Residential Connection (ERC) = 400 gpd

Source Capacity:

Well No.	Well Yield (gpm ÷ 0.5 gpm/ERC x 400 gpd/ERC)		Pump Capacity (gpm x 1,440 min/day)		Effective Capacity
	gpm	gpd	Gpm	gpd	gpd
1	10	8,000	12	17,280	8,000
2	47	37,600	48	69,120	37,600
3	58	46,400	58	83,520	46,400
4	38	30,400	30	43,200	30,450
Total					122,400

Storage Capacity: Total Effective Storage = 28,800 gallons  
28,800 gallons/200 gallons/ERC = 144 ERC  
144 ERC x 400 gpd/ERC = 57,600 gpd

### Conclusions:

This waterworks is permitted for a design capacity of 57,600 gpd due to the limited storage capacity described above. This permit does not suspend, minimize, or otherwise alter this owner's obligation to comply with applicable federal, state, or local laws and regulations or permits.

RLP:jk/ga