

# Virginia Department of Health Engineering Description Sheet

Date: June 4, 2007

Class: VI

**Waterworks Name:** Cedar Ridge Subdivision      **Type:** Community

**County/City:** Franklin County

**Location:** From Union Hall area at the intersection of State Route 40 and 945, take State Route 945 North one mile to State Route 938; Left on State Route 938 (West), proceed two miles, Cedar Ridge is located on the east side of Route 938.

**Owner:** Petrus Environmental Services, Inc.  
1807 Murry Road, Unit O  
P.O. Box 21173  
Roanoke, VA 24018  
(540) 344-9800

**Operator:** Class VI required

**Permit Number:** 5067069

**Date Issue:** June 30, 1988      Amended  
June 4, 2007

**Type of Treatment:** None

**Source:** One Drilled Well

**Design Capacity:** 17,600 gpd

## Description of System

This waterworks consists of one drilled well, a 38,646 gallon atmospheric-type storage tank and approximately 3,930 feet of water line.

**Well No. 1:** This well is located on the south side of Cedar Ridge Drive in a wood frame building with heat, light, 6 foot by 6 foot concrete slab and floor drain. The well is approximately 55 feet north of the storage tank. The well is drilled to a depth of 260 feet and cased with six inch diameter steel casing to rock at a depth of 50 feet and grouted to a depth of 50 feet. The construction of the well was completed July 7, 1986. The 48-hour yield test of the well performed in August, 1986 resulted in a yield of 32 gpm at a drawdown depth of 232 feet. The well is equipped with a submersible pump rated at 28.5 gpm at 340 feet TDH and driven by a 5.0 HP motor. The well is equipped with a sanitary seal, screened vent, and drawdown gauge. The well discharge pipe is equipped with an air release valve, check valve, sample tap, water meter, gate valves, pressure gauge and blow-off. The well pump is controlled by level-sensing electrodes in the storage tank.

**Atmospheric Type Storage Tank:** The storage tank is a 38,646 gallon standpipe with a diameter of 10.5 feet and a height of 59.7 feet. It is equipped with an access manhole on top with shoebox-type cover, bolted access manhole near the base, screened vent, screened drain with splash block, water level indicator, level sensing electrodes with heater, access ladder with safety device terminated 10 feet above-grade, and a overflow pipe with splash pad. The effective volume of the tank is 8,809 gallons based on the minimum tank level required to maintain 20 psi at all connections (13.6 feet below the overflow level).

### Evaluation of System

Design Basis:

Commonwealth of Virginia Waterworks Regulations  
One Equivalent Residential Connection (ERC) = 400 gpd

Source Capacity:

Well No.	Well Yield (gpm ÷ 0.5gpm/ERCx400gpd/ERC)		Pump Capacity (gpd) (gpm x 1440 min/day)		Effective Capacity (gpd)
1	32 gpm	25,600 gpd	28.5 gpm	41,040 gpd	25,600 gpd
Total Effective					25,600 gpd

One well limited to no more than 49 connections.

Existing Connections:

44 Existing Residential Connections

Existing System Use:

5,867 gpd (Maximum)

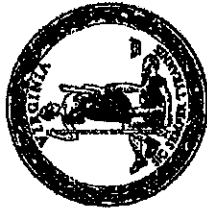
Storage Capacity:

	Gross Volume	Effective Volume
Atmospheric-type Storage Tank	36,646 gals	8,809 gals
8,809 gallons/200 gals/ ERC= 44 ERCs or 17,600 gpd		

Conclusion:

Therefore, this waterworks is permitted for a capacity of 17,600 gpd or 49 connections, whichever is reached first.

RLP/jk



COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF HEALTH  
OFFICE OF DRINKING WATER

WATERWORKS OPERATION PERMIT

Petrus Environmental Services, Inc. is hereby granted permission to operate a Class VI community waterworks having a design capacity of 17,600 gpd or 49 connections whichever is reached first, at Cedar Ridge Subdivision located in Franklin County in accordance with Title 32.1 of the *Code of Virginia*, and 12 VAC 5-590-10 *et seq.* of the *Waterworks Regulations* of the Virginia Department of Health. This permit is issued in accordance with previously issued Operation Permit No. 5067069 dated June 30, 1988 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 and any variances or special requirements noted below.

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

An Engineering Description Sheet is attached dated June 4, 2007

PERMIT NO.: 5067069

EFFECTIVE DATE: June 4, 2007

APPROVED

P.E.

*Phyllis K. Leane*  
Director, Office of Drinking Water

for the State Health Commissioner pursuant to VA Code § 2.2-604