



**COUNTY OF DUTCHESS**  
DEPARTMENT OF BEHAVIORAL AND COMMUNITY HEALTH  
DIVISION OF ENVIRONMENTAL HEALTH SERVICES

**NOTIFICATION OF APPROVAL**

March 27, 2019

Linda French, Supervisor  
Town of Dover  
126 E Duncan Hill Road  
Dover Plains, New York 12522

Re: Boyce Park Public Water System Modifications (Federal ID 1330041)  
Tax Map No. 04-7160-00-335093  
Route 55 in the Town of Dover

Dear Ms. French,

The plans and engineer's report for the above referenced project were approved on March 27, 2019 as meeting the appropriate and applied technical standards, guidelines, policies and procedures for adding a new well, clarifier, filter, meter, ultraviolet light disinfection and other appurtenances to the existing public water system serving the recreation building and garage building. The approval also calls for the installation of a septic tank and drywell to handle backwash waters from the clarifier and softener.

**This approval has been granted on the following conditions.**

- 1. The non-community public water system modifications and the sewage system for backwash waters shall be installed in complete conformity to the approved plans and report.**
- 2. The water system modifications shall be installed in a manner that allows for a safe and adequate potable water supply at all times.**
- 3. The current well in use as a public water source shall be converted to an irrigation well. The well shall be completely separated from the public water system and designated as a non-potable source.**

This approval is not to be construed in any way as an authorization to operate. Authorization to operate will be granted only after a Certification of Construction

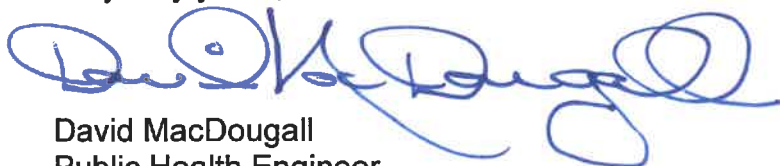
Boyce Park PWS Modifications  
March 27, 2019  
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Compliance and testing results are received from a licensed New York State Professional Engineer (NYSPE). The engineering section of this Department requires notification of construction commencement so that, at its option, an inspection can be made. When all these conditions are complied with, authorization to operate may be requested.

Approval of the plan and engineer's report shall terminate and thereafter be null and void unless construction is undertaken within five (5) years from the date of approval. Re-submission or revised submission of plans and/or associated documents shall be subject to compliance with the technical standards, guidelines, policies and procedures in effect at the time of re-submission.

The approved plan and engineer's report have been given to your engineer, Joseph Berger, P.E.

Very truly yours,



David MacDougall  
Public Health Engineer  
Environmental Health Services

cc: Joseph P. Berger, P.E. (w/plan and report)  
Town of Dover Bldg. Inspector  
DWEF (w/plan and report).  
File (70007) (w/plan and report)

	<p align="center"><b>BERGER ENGINEERING AND SURVEYING</b>  100 Fulton Avenue  Poughkeepsie, New York 12603  Engineering Services: (845) 471-7383  GIS Services: (845) 392-7180  www.BergerEngr.com</p>
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March 26, 2019

Mr. David MacDougall  
Public Health Engineer  
DCDBCH  
85 Civic Center Plaza, Suite 106  
Poughkeepsie, NY 12601

Re: BOYCE PARK  
Town of Dover, Recreation Department  
6420 Rte 55, Wingdale, NY 12594  
Town of Dover, Dutchess County, New York  
Tax Parcel: 132600-7160-00-335093-0000  
PWS: NY1330041  
WATER TREATMENT SYSTEM MODIFICATION

Mr. MacDougall:

**GENERAL**

1. NC vs NTNC

**Response:** The system is a transient non-community system (NC). Per the NYSDOH PWS data base, the system is NC with a population of 30. The design flow of 30 people at 15 gpd/person was to develop a design flow for sizing the new water treatment components. The 30 people are not the same 30 people every day. They are 30 random, varying people.

The following has been added to *Design Flow* on page 3 of the report. "The Recreation Department office is in the recreation building at Boyce Park. There 2 to 3 regular Recreation Department employees year round for all of the Dover parks. The employees do not spend all of their time at the park. They attend meetings and attend to other recreation matters away from the office. The number of employees goes up in the summer to 5 plus 6 day camp counselors. In the summer there are the day camp children and park users. The number fluctuates. The fields are used from spring through fall."

2. NSF 61 parts

**Response:** Small systems are typically not tested as complete units for NSF Certification as NSF Certification testing is very expensive and the systems would have to be tested for each model and change. Instead components are tested for NSF 61, Drinking Water System Components.

The clarifier is proposed to reduce turbidity. It may also remove particulate iron or iron that adheres to turbidity particulates. The entire treatment train is design to reduce the iron and manganese content with the water softener doing the majority of dissolved iron and manganese removal.

3. Softener for Iron Removal

**Response:** Iron and manganese removal is not the specific design purpose of a softener. However, all softeners remove some dissolved iron and manganese through the cation exchange.

The proposed softener has been sized for the additional cation exchange impacts of dissolved iron and manganese. The clarifier and 5 micron filter will remove most of the ferric state iron and suspended manganese.

RO was considered not used as RO wastes a large amount of water which reduces the available for us supply and creates additional backwash. Brim, Greensand and Manganese Oxide filters were considered. These were rejected for their more complex operational requirements, higher backwash requirements and with greensand mixing and disposal of potassium permanganate. Also with UV disinfection the hardness level must be lower than with chlorine so a softener in the treatment train is required. The softener can do double duty.

4. Well location approval

**Response:** Sheets WA 1-2 and WA 2-2 of the new well plans have been revised and added to the report as sheets 2 of 3 and 3 of 3 respectively.

5. Backwash disposal

**Response:** Past experience has revealed the site has gravel loam and a deep water table. A letter has been submitted the DC EHSD to this effect. The deep depth of the water table sand soil characteristics will be confirmed during construction. An alternate shallow chamber field has been shown on the plans should a high ground water table be encountered. A septic tank has been added before the drywell to collect heavy particulates in the backwash.

6. Pressure to garage

**Response:** The proposed water design can provide water to the garage with adequate pressure. The current hydrotank settings provide water to the garage. The proposed hydrotank will be set with a higher pressure range to accommodate the loss through the treatment train.

#### MONITORING

1. Previous lab tests and future lab tests

**Response:** Additional required testing after construction have been added to the plan

2. Previous test results

**Response:** The revised report includes all of the previous new well water quality test results

#### ENGINEER'S REPORT

1. Design flow

**Response:** The equipment has been designed for less than the well capacity. The current needs are less than the well capacity. Larger or additional equipment to treat a higher flow rate is not required.

2. Turbidity level

**Response:** The report has been revised as suggested.

3. Exhibit A – drywell map

**Response:** The drywell location map has been moved from Exhibit A to the plan sheet.

4. Exhibit B – quality test summary

**Response:** The table has been revised accordingly

5. Exhibit C – softener design

**Response:** The spread sheet converts mg/L of hardness (17.1 mg/L/grain), iron and manganese (5 grains/mg/L) to grains per gallon to be removed and then calculates the how often the exchange needs to regenerated for the grain load.

6. NYPE certification  
**Response:** The report and plans have been revised accordingly.
7. Treatment rooms  
**Response:** The report has been revised to include the treatment rooms. The proposed treatment room is next to the current treatment room. The garage is used in the winter as the snow removal equipment is stored there.
8. Old well  
**Response:** The report and plans have been revised for the old well to be disconnected from potable uses and labeled for non-potable.

#### PLANS

1. Proposed water treatment  
**Response:** The double check has been changed to a dual check.

The line from the Harmsco cartridge filter is a drain line from the bottom. The dashed line is a direction to drain rather than a pipe. The line on the plan has been removed.

The check valves have been removed from the clarifiers.

The location for meter is better after the treatment train. When the UV was in the treatment room there was not space for the meter after the treatment. With the UV now in the recreation building, the meter has been moved the end where the UV was before.

Pressure gauges are not required at the cartridge filter. There is a gauge at the beginning of the treatment system and at the end of the treatment system. A change in the difference between the gauges from clean filter condition will alert the staff to change or clean the filter cartridges.

Plan view

**Response:** The door has been added to the plan view.

Cross Sectional View

**Response:** A second backwash line is shown from the softeners. Note that some dual softeners share a single backwash line.

2. System notes – sampling  
**Response:** Additional sampling and quality testing have been added to the plan and report.

3. Seepage pit  
**Response:** The detail for the seepage pit is on the plan. The seepage pit location plan has been moved from a separate exhibit to the plan sheet. Also soil test pit and a septic tank have been added per discussions.

Additional reports, notes and plans changes have been made per meetings with and markups from DC ESHD.

If you have any questions, please contact me.

Sincerely,



Michele Zerfas, P.E.

cc: Town of Dover Supervisor  
Recreation Dept Director