

Reliable Pump & Well Services, LLC  
Water Well Contracting  
35 West Corbett Road,  
Montgomery, NY 12549  
Phone: (845) 629-8301

October 19, 2020

### Well Testing Plan

#### **Water demand:**

The current proposed test is for All One One All, D'Artagnan Regenerative Farm which is located at 221 Craigville Road (figure 1 topography and satellite views). The facility includes a proposed 100 seat restaurant, farm shop and farm stand in the existing barn structure, along with the existing dwelling, the drip irrigation needed for the 14 acres permaculture orchard and rotational pasture, parking and ancillary facilities. The project septic system is to be served by a revolutionary worm powered system, Bio Filtro. The facility shall be owned and operated by the property owner.

The proposed average water demand for the restaurant is 35 GPD/seat x 100 seats. Flows reduced by 20% utilizing post 1994 fixtures= 2800 Gallons per day. The residence is 110 gallons per day per bedroom x 6 bedrooms=660 Gal/Day. This brings the total water usage to 3460 Gal/Day. The project innovative onsite septic system will reduce consumptive water use through groundwater recharge, assuming that 98 % of water withdrawn will be returned to the groundwater system; hence the consumptive water use for the project based on the average water demand is 70 gpd or 0.05 gpm .

#### **Site Information:**

The 14.5 acres property is located on the Tax Parcel Section 8 Block 1 Lot 6 in the Town of Goshen (figures 1). Nearby properties are residential and agricultural.

#### **Test Well Location :**

The location of the test well is shown on figures 1 and 2. The well is an existing well located outside the existing building on the project site. Prior to pump testing, pulling the existing pump and measuring the well to determine well depth will take place.

#### **Local Recharge/Discharge Estimates :**

A groundwater balance compares the available precipitation recharge to a property with the estimated water-supply usage for an existing or proposed development. This comparison determines if a property is self-sufficient in providing the water that will be required by the proposed development or whether the proposed water demand exceeds the available recharge. For sites with tight water balances, water availability within the watershed becomes important to determine if the proposed demand would oversubscribe the available resource. If onsite recharge meets or exceeds the proposed demand, the water supply should be reliable and not adversely

affect the aquifer in offsite areas. Although water-budget analysis are useful in estimating available groundwater resources, drilling and testing supply wells is the only definitive indicator of groundwater availability from the aquifer source and any potential impacts to neighboring water supplies. Groundwater in a bedrock aquifer is continually being replenished by precipitation on the local watershed. Some of the water infiltrating the soil zone percolates downward to recharge the bedrock. Recharge to till-covered metasedimentary bedrock is approximately 400,000 gpd/sq. mi. or about 8 inches annually (Snively, 1980). This is equal to about 625 gallons per day per acre (gpd/acre) of precipitation recharge. Therefore, the recharge to the 14 acre property would be about 8750 gpd

During drought periods groundwater recharge and available water supply would be reduced. The one-year-in-30 low precipitation (drought) for Orange County is 29.5 inches (LBG, 2003). This precipitation amount is 69% of the annual average precipitation rate of 43 inches annually. Assuming groundwater recharge decreases at the same rate as precipitation during periods of diminished rainfall, the estimated average recharge rate for the property would decrease about 31 percent during a 1-year-in-30 drought. The precipitation recharge estimates significantly exceed the consumptive water demand of 70 gpd for the proposed facility on the project site under normal and drought conditions.

### **Proposed pumping test program:**

The pumping test program is to be conducted on the existing well on the 221 Craigville Road property . Precipitation totals from the Middletown weather station will be provided prior to the start of the testing program, representing the 30 days prior, to insure that the total precipitation meets the Goshen Town requirements of less than 3.7 inches.

During the pumping test, the well will be pumped at rates ranging from 4.0 gpm to 2.0 gpm, which are more than 8 to 12 times the project's average water demand.

### **Monitoring Program**

During the pumping test, water-level measurements will be collected from 3 offsite monitoring wells, Gonzalez and Wezer 3-1-22, Banbury Cross Farm 3-1-23 and Boss 8-1-5.2 to assess the potential for water-level interference effects (figure 1). Water level measurements will be collected using pressure transducers installed in the wells. The pressure transducers will be set to record water-level measurements at one minute intervals. Water-level drawdown, if any occurrence, will be visually monitored at all 3 offsite wells.

### **Weather Station**

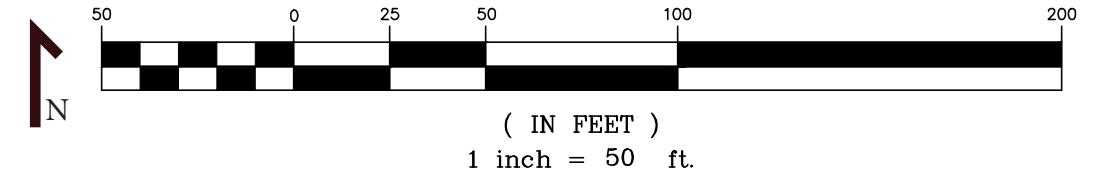
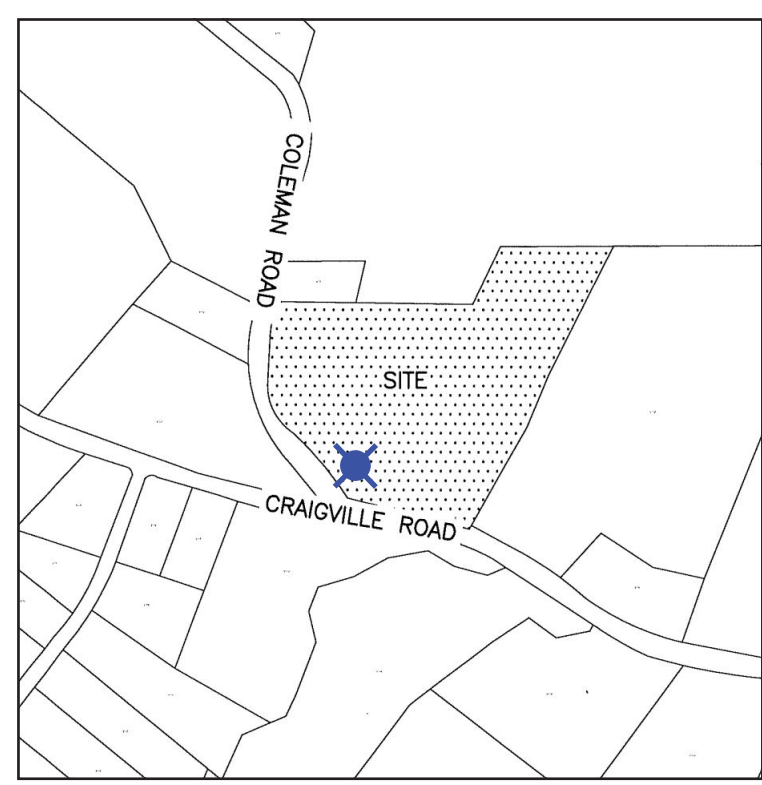
A portable weather station will be erected on the site to collect temperature, barometric pressure and precipitation measurements prior to, during and after the pumping test.

## **Water Quality**

Water samples were collected from the well. The samples were stored on ice for transport and were delivered to OCL Analytical, located at 35 Goshen Turnpike, Bloomingburg NY 12721, on the day of collection. The samples were analyzed for the parameters listed both in the NYSDOH Sanitary Code and the requirements of the Town of Goshen. A copy of the laboratory report is included here. All of the water-quality results for the samples collected met NYSDOH drinking water standard values. Appendix Water Test

Sincerely,

Catherine Emporellis  
Reliable Pump and Well Services, LLC  
Operations Manager



LEGEND
PUMPING WELL
LOCATION FOR TEST DISCHARGE

**NOTES**  
 BASEMAP PROVIDED BY PIETRZAK & PFAU ENGINEERING AND SURVEYING, PLLC.  
 FROM DRAWING ENTITLED EXISTING CONDITIONS DATED 08/06/20 IN DRAWING SET ALL ONE ONE ALL -A D'ARTAGNAN REGENERATIVE FARM

**AQUIFER TEST WELL MONITORING PLAN - FIGURES 1 & 2**  
 ALL ONE ONE ALL SILVOPASTURE REGENERATIVE FARM  
 221 CRAIGVILLE GOSHEN NY 10924

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PROJECT : 10287  
 DATE : 10/19/20  
 SCALE : 1" = 50'  
 SHEET 1 / 1