

September 22, 2021

Mr. Sean Hoffman, Town Designated Engineer  
Town of Goshen  
41 Webster Avenue  
Goshen, NY 10924

Submitted via email: [shoffman@h2m.com](mailto:shoffman@h2m.com)

*Re: Kamp 3-lot Subdivision  
591 Craigville Road, Goshen  
Chazen Project Number 42152.00*

Dear Mr. Hoffman,

The Chazen Companies, a LaBella Company, have been retained by Mr. Richard Kamp to manage the hydrogeology review and well testing needed for a 3-lot subdivision at 591 Craigville Road, Goshen, section and block# is 4-1-10.1. We are working in conjunction with Mr. James Dillin, PLS, who is handling all other design and associated project communications. We understand that the project has received a Negative Declaration under the SEQRA review process, which requires that a well test be performed to confirm the ability to provide adequate water to serve the project

In this communication Chazen is recommending a hydrogeologic well testing protocol we believe is substantively responsive to Goshen's Zoning Section 97 Attachment 3 Appendix C Water Testing Protocol. A site map is attached showing existing wells on Lot #2 and Lot #3 and the proposed new Lot #1, with a single additional well. We understand that stabilized yield confirmed from either of these two existing may allow completion of the 3-lot subdivision process including creation of Lot #1.

Typical residential demand for water (in this case groundwater) is not more than 400 gpd, so the three-lot sub-division will collectively withdraw in the range of 1,200 gallons each day from the local fractured shale bedrock aquifer, equivalent to less than 1 gpm when averaged over a full day (1,440 minutes). The three properties are proposed for on-site septic wastewater management so a majority of the pumped water will be returned on site, reducing net project water consumption to substantially less than 1 gpm.

Two of the wells servicing the proposed 3-lot subdivision are already in residential use, seemingly without troublesome influence to each other or offsite wells, so this application is essentially confirming the ability for the +16 acre property to support one more domestic well. The average parcel size for the proposed 3 new lots is 5.417 acres, allowing significant opportunity for local on-site aquifer recharge.

#### **Water Testing Protocol:**

The Town's Water Testing Protocols include Section A requirements for private well installations/subdivisions. Chazen would be pleased to discuss this proposed protocol with the Town's Building Inspector, review engineer, and/or the Town's reviewing hydrogeologist. The information below is responsive to content requested on Attachment 1 of the Water Testing Protocol:

**New York:** Hudson Valley • Capital District • North Country • Westchester  
**Tennessee:** Nashville • Chattanooga **Oregon:** Portland

- Well Location and Property/Owner Information: Two existing domestic wells are shown on the attached map previously submitted by Mr. Kamp. The project name is the Kamp Subdivision, with Section/Block/Lot noted above. Property Owner and Applicant information is all indicated in materials previously submitted by Mr. Kamp.
- Diversion Request: The requested Allocation is for approximately 1,200 gpd of groundwater (average day), equivalent to 0.037 MG in a 31-day month, and equivalent to less than 1 gpm as an average net routine pumping rate collectively from the 3 domestic wells. Doubling these rates might conservatively represent an approximate maximum withdrawal diversion. The Diversion is to be used for potable water supply.
- Ground water sources: Two domestic private wells are already in service and are proposed for use to conduct a pumping test to allow completion of the subdivision process. The well log for the well on Lot #2 is provided. The well on Lot #3 predates Mr. Kamp's property ownership and no well log is readily available but is known to be 240 feet deep with a pump set at 210 feet.

Considering Test and Observation well locations, two site wells already exist and can be used to support the test needed to explore capacity suited to supply the third proposed well, for Lot #1. The likelihood of groundwater contamination is judged low by Chazen on the basis of surrounding low-density residential, woodland, and agricultural land uses, all considered low-risk for any significant groundwater quality defects. Groundwater consumption of less than 1 gpm will not deplete streams, wetlands, or cause interference with other private wells. The two existing site wells are the nearest wells to the proposed new well on Lot #1.

The most suitable well(s) to use for testing and observing involve the two existing domestic wells. We are currently planning to conduct the aquifer test by pumping water from the Lot #3 well and the Lot #2 well as an observation well but may reverse them based on ease of data loggers entry and pump controls. The two are approximately 100 feet apart making them suitably sensitive to any potential influence which might extend to greater distances.

Based on an average daily use of 1,200 gpd, at maximum reasonable withdrawal rate from the three proposed lots might be up to 2 gpm, equivalent to 2x the average estimated daily rate (1,200 gpd x 2 / 1440 minutes). The Applicant is pleased to conduct a test at between 4 and 5 gpm, both to satisfy the Town's requirement to conduct tests at 200% of maximum day flow, to satisfy OCDOH, and as an enticement to request permission from the Town to conduct this test regardless of precipitation falling in coming 30 days. This is a somewhat urgent request since the Town's approval for completion of this project reportedly expires on October 29, 2021.

Test well drawdown will be monitored using data loggers installed in the existing wells on Lot #2 and Lot #3. The data loggers will be programmed to collect data at 1 minute intervals. If unvented data loggers are used, a barologger will be used to site barometric pressure so pressure corrections can be applied. Manually-collected water level will also be collected periodically during daylight hours. Test water will be conveyed to the site pond which is considered an infinite source (e.g. a perennial source containing more water volume than the pumping well volumes). Precipitation will be recorded locally as well as confirming local weather station precipitation prior to, during, and following the test. A staff gage and data logger will be placed in the site pond. All background condition elements (existing groundwater levels in the two site domestic wells and the pond) will be recorded for at least 48 hours prior to starting of pumping. No effort will be made to curtail routine domestic use of the wells on Parcels #2 or #3 prior to initiating the pumping test.

Data loggers will record water levels in decimal feet with an accuracy of 0.05 feet. All water level data analyses will be relative to their pre-test static water levels. Backup manual monitoring data will be collected periodically during daylight hours. Test well discharge in gpm will be recorded periodically.

Permission is requested to conduct the test for 24 hours rather than 72 or more hours. Justification for this request includes the average proposed parcel size of more than 5 acres, the existing presence of two domestic wells in apparently suitable service such that this test simply seeks data suitable to install one additional new well. The 24-hour test, if granted by the Town, would also minimize any service interruption to well being tested, for which discharge may be temporarily dedicated to satisfying a continuous discharge objective. With this request for a 24-hour test comes a commitment to nonetheless extend the test as needed, up to 72 hours, if substantial stabilization is not observed in the first 24 hours.

Water level recovery upon completion of the test will be recorded for not less than 48 hours, or at least 95% of the test drawdown is recovered. During the final hours of the test, any water quality samples desired by the Town, OCDOH, or the Applicant will be collected by Chazen. Chazen has been told this that this sampling requirement has been satisfied previously, but if not, the parameters listed in the NYSDOH Individual Water Supply Wells – Fact Sheet #3 can be considered.

Upon completion of the test, Chazen would prepare a simple Hydrogeologic report following the outline of Attachment 3 of the Town's water test program will be provided. Much of the report format would be substantially streamlined, so that hydrogeologic analysis can focus simply on the sustainable capacity of the test well and any suggestion that a test radius of influence might unduly affect other wells. We would include a simple water budget considering the ability of recharge of ~5 acre sites to support the three lots. Fractured bedrock aquifers fail "homogenous" criteria for analytical review and the full depth of the fractured bedrock aquifer is not confidently known, so no Transmissivity or Storage values will be calculated, nor do we believe they would contribute much more site understanding than empirical test data. No monitoring of off-site residential wells is proposed.

I would be pleased to discuss this test scope with any appropriate representative of the Town of Goshen and will attempt to follow up with you in the next week. Please email or call me anytime at [rum@chazencompanies.com](mailto:rum@chazencompanies.com) or 914 456-1095 (cell).

Sincerely,



Russell Urban-Mead, PG  
NYS PG 000412/Senior Hydrogeologist / VP Environmental Services

Enclosure: Well log, Site Plan

cc: Richard Kamp; Jim Dillin; file

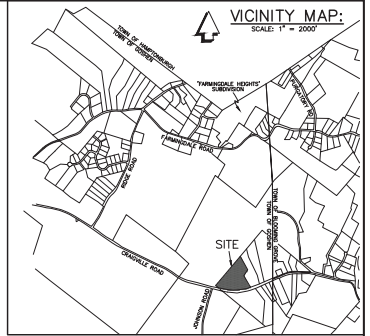
**ENVIRONMENTAL CONTROL FORMULA**

LOT #1	SOL. TYPE	GROUP	SITE AREA IN SOL. GROUP	X	FACTOR	=	TOTAL
LOT #1	ESB	VI	0.68	X	0.33	=	0.22
	MAD	VI	0.87	X	0.33	=	0.29
	MNE	VI	0.30	X	0.17	=	0.05
	ESB	VI	0.38	X	0.33	=	0.13
	TOTAL					=	1.24
LOT #2	SOL. TYPE	GROUP	SITE AREA IN SOL. GROUP	X	FACTOR	=	TOTAL
LOT #2	MIB	IV	2.50	X	0.71	=	2.52
	MAD	VI	0.72	X	0.33	=	0.24
	MNE	VI	0.30	X	0.17	=	0.10
	MSE	VI	0.72	X	0.17	=	0.12
	ESB	VI	0.13	X	0.33	=	0.04
TOTAL					=	5.09	
LOT #3	SOL. TYPE	GROUP	SITE AREA IN SOL. GROUP	X	FACTOR	=	TOTAL
LOT #3	MNE	VI	1.92	X	0.71	=	1.36
	MNE	VI	1.14	X	0.17	=	0.22
	ESB	VI	1.31	X	0.33	=	0.43
TOTAL					=	1.81	

**ZONE: RU RURAL AQ-3 OVERLAY DISTRICT**  
SCENIC ROAD CORRIDOR OVERLAY

	REQUIRED	LOT 1	LOT 2	LOT 3
SINGLE FAMILY DWELLING PERMITTED	AQ-3			
MINIMUM LOT AREA	3 ACRES	3,207 ACRES	9,176 ACRES	3,868 ACRES
MINIMUM ROAD FRONTAGE	150 FT.	500.42 FT.	202.57 FT.	510.88 FT.
MINIMUM FRONT YARD COUNTY RD.	50 FT.	250.4 FT.	488 FT.	351.5 FT.
MINIMUM SIDE YARD	20 FT. *	43.5 FT.	35.7 FT.	84.9 FT.
MINIMUM REAR YARD	30 FT. *	82.2 FT.	349.4 FT.	38.5 FT.
MAXIMUM IMPERVIOUS SURFACE COVERAGE	15 %	PROP. 6.4 %	4.1 %	5.5 %
MAXIMUM BUILDING HEIGHT	35 FT.	<35 FT.	<35 FT.	<35 FT.

\* MINIMUM SETBACKS SIDE AND REAR YARD FOR LOT #2 SHALL BE 30 FEET [897-19F(3)]

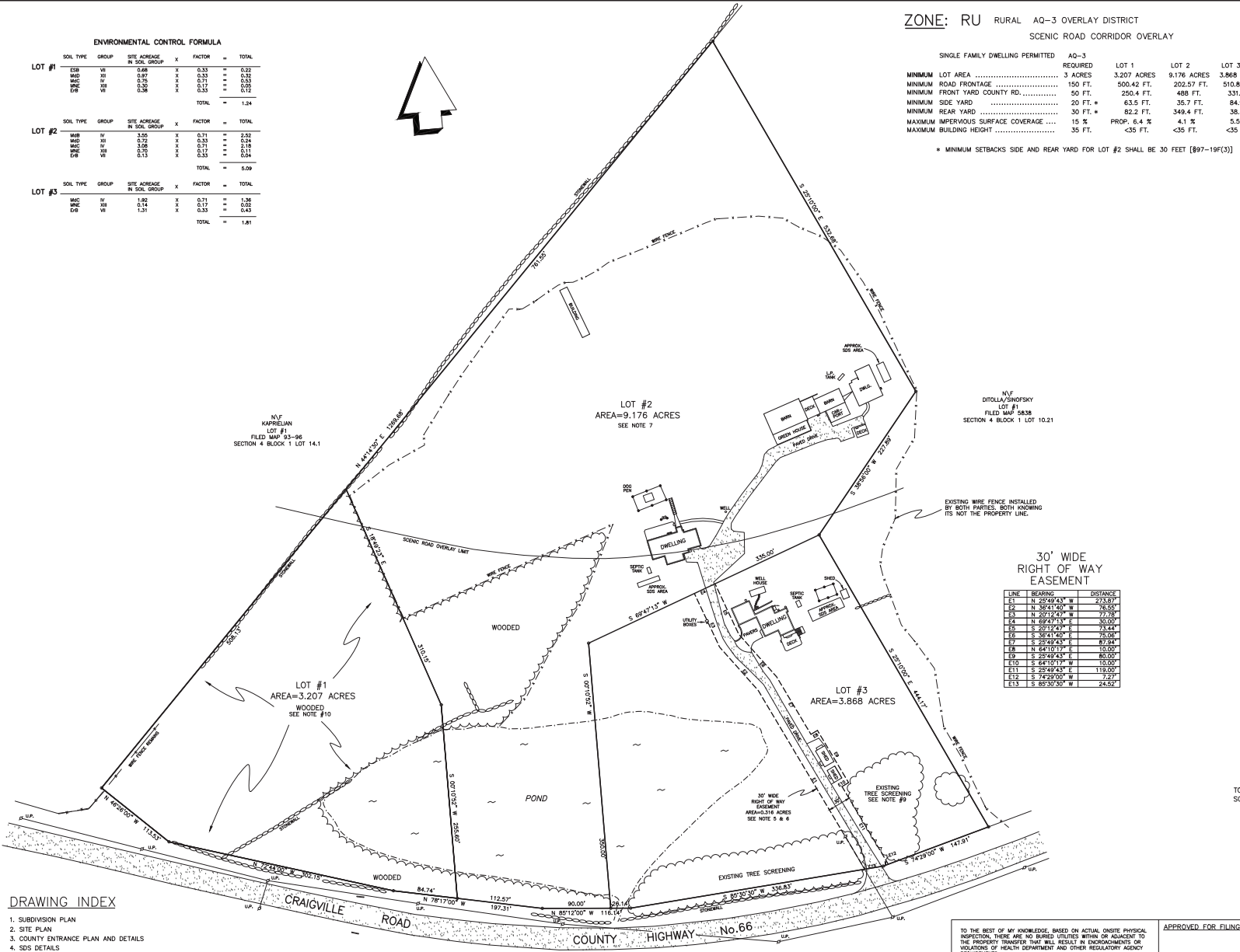


**OWNER/APPLICANT:**

RICHARD KAMP, CLAIRE KAMP & ANDRE FRITZ  
591 CRAIGVILLE ROAD  
CHESTER, NEW YORK 10918

**NOTES:**

- TAX MAP DESIGNATION: TOWN OF GOSHEN SECTION 4 BLOCK 1 LOT 10.1
- WATER SUPPLY: EXISTING PRIVATE SUBSURFACE/PROPOSED WELL LOT #1
- SEWAGE DISPOSAL: EXISTING PRIVATE SUBSURFACE/PROPOSED SPS LOT #1
- REFERENCE: MAP ENTITLED "SUBDIVISION OF LANDS OF JAMES MARP" FILED IN THE O.C.C.O. ON JANUARY 8, 1979 AS MAP NO.4796.
- 30' WIDE RIGHT OF WAY EASEMENT TO BE IN FAVOR OF LOT #2 OVER LOT #3
- MAINTENANCE AGREEMENT FOR THE 30' WIDE R.O.W. EASEMENT, WHICH SHALL BE SUBJECT TO THE APPROVAL OF THE PLANNING BOARD ATTORNEY, AND FILED WITH THE ORANGE COUNTY CLERK'S OFFICE. PROOF OF SUCH FILING SHALL BE PROVIDED FOR EACH LOT.
- MULTIPLE RESIDENCES ON LOT #2, AS PER §97-12 C.
- SUBDIVISION IS SUBDIVIDED AS PER §97-19 STANDARDS FOR SMALL-SCALE DEVELOPMENT NO MORE THAN FOUR LOTS MAY BE CREATED BY SMALL-SCALE DEVELOPMENT AND ANY FUTURE SUBDIVISION BEYOND FOUR (4) LOTS WILL BE SUBJECT TO THE OPEN SPACE DEVELOPMENT STANDARDS AND REVIEWED UNDER THE PROVISIONS OF §97-20 [897-19(A)(3) & 897-19(D)].
- LOT 2 AND 3 ARE EXISTING WITH NO PROPOSED IMPROVEMENTS, EXISTING TREE SCREENING SHOWN WILL REMAIN TO KEEP A CONTINUOUS BUFFER ALONG CRAIGVILLE ROAD.
- LOT #1 IS A TOTALLY WOODED PARCEL TO CONFORM TO THE SCENIC ROAD CORRIDOR REGULATIONS, TREE REMOVAL WILL BE ALLOWED IN THE CLEARING LIMITS ONLY, THUS LEAVING A NATURAL WOODED BUFFER ALONG CRAIGVILLE ROAD. ANY ADDITIONAL TREE CLEARING WILL NEED PLANNING BOARD APPROVAL.
- DUE TO POTENTIAL HABITAT FOR THE LONG EARED INDIANA BAT, TREE CUTTING SHALL BE LIMITED TO NOVEMBER 15TH THROUGH MARCH 31ST



**30' WIDE RIGHT OF WAY EASEMENT**

LINE	BEARING	DISTANCE
E1	S 25°49'43" W	223.57'
E2	N 32°41'40" W	76.50'
E3	N 20°12'29" W	77.58'
E4	N 69°29'13" W	50.00'
E5	S 20°12'29" E	73.44'
E6	S 36°41'40" E	75.06'
E7	S 25°49'43" E	87.94'
E8	N 64°10'17" E	103.00'
E9	S 25°49'43" E	80.00'
E10	S 64°10'17" W	103.00'
E11	S 25°49'43" E	119.00'
E12	S 74°29'00" W	73.27'
E13	S 65°30'50" W	24.52'

SUBDIVISION OF PROPERTY FOR  
**KAMP**  
TOWN OF GOSHEN, ORANGE COUNTY, N.Y.  
SCALE: 1"=60'  
TOTAL AREA= 16,251 ± ACRES  
OCTOBER 1, 2020  
REVISED: FEBRUARY 1, 2021  
REVISED: MARCH 30, 2021  
**GRAPHIC SCALE**  
1 inch = 60 ft.

**DRAWING INDEX**

- SUBDIVISION PLAN
- SITE PLAN
- COUNTY ENTRANCE PLAN AND DETAILS
- SPS DETAILS

UNAUTHORIZED ALTERATION OF THIS DOCUMENT, IN ANY WAY, CONSTITUTES A VIOLATION OF THE STATE OF NEW YORK EDUCATION LAW SECTION 7209 (2).

TO THE BEST OF MY KNOWLEDGE, BASED ON ACTUAL ON-SITE PHYSICAL INSPECTION, THERE ARE NO BURIED UTILITIES WITHIN OR ADJACENT TO THE PROPERTY TRANSFER THAT WILL RESULT IN ENCROACHMENTS OR VIOLATIONS OF HEALTH DEPARTMENT AND OTHER REGULATORY AGENCY REQUIREMENTS.

JAMES A. DILLIN, PLS.

APPROVED FOR FILING  
OWNER SECTION 4 BLOCK 1 LOT 10.1

STATE OF NEW YORK  
JAMES A. DILLIN, PLS.  
PROFESSIONAL LAND SURVEYOR  
GOSHEN, NEW YORK  
LIC.49087

(1) COUNTY Orange  
 (2) TOWN Goshen town



DEPARTMENT OF ENVIRONMENTAL CONSERVATION

(3) DEC Well Number  
 O-12027

**WATER WELL COMPLETION REPORT**

(4) OWNER <b>Elisa Fritz</b> <input type="checkbox"/> Same as owner address			
(5) ADDRESS <b>591 Craigville Rd. Goshen, NY 10924</b>			
(6) LOCATION OF WELL (See Instructions on Reverse) <b>591 Craigville Rd. Goshen, NY</b>			
(7) LATITUDE, LONGITUDE AND METHOD USED <input type="checkbox"/> GPS <input type="checkbox"/> Map Lat: Long:		(8) TAX MAP NO.	
(9) DEPTH OF WELL BELOW LAND SURFACE (feet) <b>300</b>	(10) DEPTH TO GROUNDWATER LAND SURFACE (feet) <b>195</b>	DATE MEASURED <b>7/7/2020</b>	(12) FLOWING? <b>NO</b>
<b>CASINGS</b>			
(13) DIAMETER <b>6</b> in.   in.   in.   in.			
(14) LENGTH <b>170</b> ft.   ft.   ft.   ft.			
(15) GROUT TYPE / SEALING <b>Clay</b>		(16) GROUT / SEALING INTERVAL (feet) <b>170 5</b>	
<b>SCREENS</b>			
(17) MAKE & MATERIAL		(18) SLOT SIZE	
(19) DIAMETER in.   in.   in.   in.			
(20) LENGTH ft.   ft.   ft.   ft.			
(21) DEPTH TO TOP OF SCREEN, FROM TOP OF CASING (Feet)			
<b>YIELD TEST</b>			
(22) DATE <b>7/7/2020</b>		(23) DURATION OF TEST <b>4Hr 0 Min</b>	
(24) LIFT METHOD <input checked="" type="checkbox"/> Pump <input checked="" type="checkbox"/> Air Lift <input type="checkbox"/> Bail		(25) STABILIZED DISCHARGE (GPM) <b>15</b>	
(26) STATIC LEVEL PRIOR TO TEST <b>105</b>		(27) MAXIMUM DRAWDOWN (Stabilized)	
(28) RECOVERY (Time in Hours/minutes) <b>24Hr 0 Min</b>		(29) Was the water produced during the test discharged away from the immediate area? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	
<b>DRILLER INFORMATION</b>			
(30) METHOD OF DRILLING <input checked="" type="checkbox"/> Rotary <input type="checkbox"/> Cable Tool <input type="checkbox"/> Other		(31) USE OF WATER <b>Residential</b>	
(32) DATE DRILLING WORK STARTED <b>7/7/2020</b>		(33) DATE DRILLING WORK COMPLETED <b>7/7/2020</b>	
(34) DATE REPORT FILED <b>10/13/2020</b>	(35) REGISTERED COMPANY <b>Roarke Well Drilling, Inc.</b>	(35) DEC REGISTRATION NO. <b>NYRD 10012</b>	
(37) REGISTERED COMPANY ADDRESS <b>431 Scotchtown Ave. Goshen NY 10924</b>			
(38) CERTIFIED DRILLER (Print name) <b>Charles W. Crover</b>		(44) CERTIFIED DRILLER SIGNATURE* 	
<b>PUMP INSTALLATION</b>			
(40) PUMP INSTALLED Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		(41) DATE <b>7/23/2020</b>	
(42) TYPE <b>Submersible</b>	(43) MAKE <b>FRANKLIN</b>	(44) MODEL <b>FE1010</b>	
(45) MAXIMUM CAPACITY (GPM)	(46) PUMP INSTALLATION LEVEL FROM TOP OF CASING (Feet) <b>225</b>		
(47) DATE REPORT FILED <b>10/13/2020</b>	(48) REGISTERED COMPANY <b>Roarke Well Drilling, Inc.</b>	(49) DEC REGISTRATION NO. <b>NYRD 10012</b>	
(37) REGISTERED COMPANY ADDRESS <b>431 Scotchtown Ave. Goshen NY 10924</b>			
(51) CERTIFIED PUMP INSTALLER (Print name) <b>Charles W. Crover</b>		(52) CERTIFIED PUMP INSTALLER SIGNATURE* 	

**WELL LOG**  
 DEPTH TO BEDROCK **152**  
 ft. below land surface  
 GROUND ELEVATION  
 ft. above sea level  
 TOP OF CASING  
 ft. above (+) or below (-) ground surface

**TOP OF WELL**

0	21	Medium Clay & Gravel
21	152	Medium Clay & Cobbles
152	195	Medium Shale
195	220	Fractured Shale 15 GPM
220	300	Medium Shale

**BOTTOM OF HOLE**

\*By signing this document I hereby affirm that: (1) I am certified to supervise water well drilling activities as defined by the Environmental Conservation Law 15-1502; (2) this water well was constructed in accordance with water well standards promulgated by the New York State Department of Health; (3) under the penalty of perjury the information provided in this Well Completion Report is true, accurate and complete, and I understand that any false statement made herein is punishable as a Class A Misdemeanor under Penal Law §210.45.

**NYSDEC COPY**

LOCATION SKETCH- Indicate north