

May 23, 2013

Mr. George Connors
Connorstone Engineering, Inc.
10 Southwest Cutoff #7
Northborough, MA 01532

Re: Ford's Hill Estates
Nixon Road
Framingham, Massachusetts

Dear Mr. Connors:

Northeast Geoscience, Inc. (NGI) has reviewed the proposed site plan and an impact statement describing the above project, relative to identifying an adequate source of water to serve the proposed eight lot subdivision, and I offer the following for discussion.

PRIVATE WATER SUPPLY OPTION

According to the Massachusetts Private Well Guidelines over 500,000 people in the Commonwealth rely on private water systems for domestic water. Most of these systems tap groundwater from shallow unconsolidated sediments (dug or driven "gravel" wells) or fractured rock ("bedrock" wells) and many have been in continuous operation for generations. Bedrock wells, though often of lower yield than the typical gravel wells, generally have hundreds of gallons of water stored in the well casing (a.k.a. "casing storage") available for immediate use. The extensive use and long history of these sources, including many throughout the Town of Framingham, support the fact that these types of water sources are both practical and reliable.

The proposed development will consist of a total of eight, four to five bedroom single family homes. According to the Board of Health Minimum Sanitation Standard for Private and Semi-Public Water Supplies the required well yield for a five bedroom home would be 550 gpd or a continuous withdrawal of ~0.4 gpm for a 24 hour period.

It is not possible to guarantee that all of the wells drilled at a site will have sufficient yield, and some wells drilled in the area have limited yields and some have required yield enhancement by hydrofracturing. Therefore, in order to understand the likelihood of success NGI conducted a review of existing private wells in the vicinity of the proposed development. Well logs available from the MassDEP *SearchWell* database were reviewed for average well depths, water levels and well yields along the surrounding roads including: Nixon Road, Parmenter Road, Dartmouth Drive, Wayside Inn Road, Wayside Circle and Doeskin Drive. A total of 73 well logs were obtained (see attached table). Of the wells identified, only four wells had initial yields of 1 gpm or less (~5%) and all of these had casing storage volumes of over 475 gallons. These data suggest it is likely that private wells will be adequate to meet the domestic water needs of the proposed development.

PUBLIC WATER SUPPLY OPTION

An existing Public Water Supply has been permitted by MassDEP at the site. According to MassDEP this bedrock well has been adequately tested and has an approved yield of 8,640 gpd or 6 gpm. The proposed development has a combined water demand of 3,960 gpd or 2.75 gpm. To our knowledge, the only

outstanding local issue with using this source as the water supply for the proposed development is testing of the source during the peak month of August 2008, as initially requested by the Board of Health.

POTENTIAL IMPACTS TO ABUTTERS WELLS

Of the private water supply wells proposed for the project, the well proposed to serve Lot 8 is the closest to an existing well; being approximately 125 feet from the well serving 47 Nixon Road. All of the other proposed wells are greater than 250 feet from existing private wells and would not be expected to impact nearby private wells at the required pumping rates. While no impacts are expected, in order to verify no significant impact, the well at 47 Nixon Road could be monitored during the pump testing of the well at Lot 8.

During the prolonged pumping test on the existing Public Water Supply well NGI monitored the well serving the existing on-site residence (approximately 350 feet away) and the well serving 25 Dartmouth Drive (approximately 850 feet away). No significant influence was observed in the nearby private wells and no other nearby residents reported well issues during the pumping period.

If you have any questions or require additional information, please do not hesitate to contact me.

Sincerely,
NORTHEAST GEOSCIENCE, INC.

A handwritten signature in black ink, appearing to read "Joel Frisch".

Joel Frisch
Hydrogeologist

TABLE 1
Private Water Supply Well Log Summary
MassDEP SearchWell Database
Area Surrounding 45 Nixon Road, Framingham, Massachusetts

WELL_ID	TOWN	STREET_NUMBER	STREET_NAME	DATE_COMPLETE	TOTAL_DEPTH	DEPTH_TO_BEDROCK	WATER_LEVEL	YIELD_GPM
5421	Framingham		Carter Drive	1/19/2000	700	25	120	0.25
267297	Framingham	47	Nixon Road	10/28/2009	525	8	30	0.25
305479	Framingham		Doeskin Drive	6/21/1989	505	6	16	1
305559	Framingham		Nixon Road	7/1/1979	325	5		1
157335	Framingham	34	Nixon Road	5/12/2008	600	5	40	1.5
305549	Framingham		Carter Drive	4/1/1981	505	1		1.5
305536	Framingham		Carter Drive	4/1/1984	905	12		2
305245	Framingham	17	Nixon Road	10/17/1997	545	50	25	3
305540	Framingham		Nixon Road	6/1/1983	300	10	40	3
305541	Framingham		Carter Drive	12/1/1982	765	5		3
305544	Framingham		Carter Drive	7/1/1982	720	10		3
120558	Framingham	36	Wayside Inn Road	5/30/2003	800	20	23	4
305381	Framingham	40	Nixon Road	6/30/1992	600	12	20	4
305487	Framingham	1	Dartmouth Drive	8/21/1987	400	21	12	4
305553	Framingham		Carter Drive	1/1/1981	620	8		4
305554	Framingham		Carter Drive	1/1/1981	470	8		4
305556	Framingham		Carter Drive	12/1/1980	240	6		4
659	Framingham	78	Carter Road	11/8/2000	900	8	20	5
5426	Framingham	16	Nixon Road	10/13/1999	430	56	30	5
5428	Framingham	50	Carter Drive	9/20/1999	605	13	28	5
102968	Framingham		Dartmouth Drive	8/21/2001	555		5	5
126648	Framingham	55	Nixon Road	10/14/2003	500	20	20	5
131656	Framingham	Lot 2	Wayside Circle	10/4/2004	505	2	56	5
305363	Framingham	10	Wayside Inn Road	4/30/1993	325	55	18	5
305442	Framingham	8	Dartmouth Drive	10/13/1990	345	17	10	5
305520	Framingham		Wayside Inn Road	4/29/1985	200	45	15	5
305533	Framingham		Carter Drive	6/14/1984	500	8	35	5
305535	Framingham		Wayside Inn Road	5/5/1984	180	67		5
305537	Framingham		Wayside Inn Road	5/4/1984	180	67	20	5
305209	Framingham		Nixon Road	5/11/1998	385	20	9	6
305283	Framingham	60-A	Nixon Road	11/6/1996	360	25	20	6
305480	Framingham		Doeskin Drive	6/17/1989	405	8	20	6
305539	Framingham		Carter Drive	7/1/1983	600	4		6
305560	Framingham	25	Wayside Inn Road	11/29/1978		4	42	6
114219	Framingham	87	Doeskin Drive	8/2/2003	600	7	70	7
305330	Framingham	64	Nixon Road	11/8/1994	305	6	15	7
305532	Framingham		Parmenter Road	7/14/1984	200	14	6	7
135431	Framingham	81	Carter Drive	10/25/2004	625	6	20	7.5
102967	Framingham		Dartmouth Drive	8/22/2001	455	4	5	8
305531	Framingham		Nixon Road	8/29/1984	225	10	6	8
305534	Framingham		Wayside Inn Road	5/8/1984	180	54	15	8
5525	Framingham	38	Wayside Inn Road	4/12/2000	680	20	10	10
102316	Framingham	39	Wayside Inn Road	5/1/2001	205	0	25	10
131657	Framingham	Lot 6	Wayside Circle	10/2/2004	305	27	20	10
305530	Framingham		Nixon Road	8/30/1984	167	10		10
665	Framingham	11	Dartmouth Drive	11/29/2000	150	9	4	12
120522	Framingham	30	Wayside Inn	5/9/2003	800	10	10	12
131655	Framingham	Lot 1	Wayside Circle	10/3/2004	505	9	20	12
143567	Framingham	4	Wayside Circle	9/16/2005	700	25	20	12
305205	Framingham	95	Parmenter Road	6/9/1998	220	25	5	12
305521	Framingham		Wayside Inn Road	4/28/1985	125	45	20	12
305562	Framingham	25	Wayside Inn Road	3/11/1976	130	13	20	12
5524	Framingham	32	Wayside Inn Road	4/12/2000	280	4	40	13
145572	Framingham	99	Parmenter Street	4/6/2006	300	12	25	13
5528	Framingham	32	Wayside Inn Road	4/12/2000	280	4	40	14
305496	Framingham	22	Parmenter Road	4/12/1986	150	78		15
305545	Framingham		Nixon Road	3/10/1982	200	15	10	15
130815	Framingham	Lot 23	Wayside Inn Road	3/12/2004	275	6	flows over	16
114205	Framingham	421	Wayside Inn Road	7/2/2002	280	5	15	20
114206	Framingham	26	Wayside Inn Road	7/2/2002	280	5	15	20
135310	Framingham	20	Nixon Road	8/22/2005	165	10	30	20
305349	Framingham	14	Doeskin Drive	11/9/1993	500	20	20	20
305350	Framingham		Wayside Inn Road	11/6/1993	205	15	10	20
305351	Framingham		Wayside Inn Road	11/4/1993	185	7	15	20
305490	Framingham		Parmenter Road	11/11/1986	450	0	40	20
305204	Framingham	12	Dartmouth Drive	6/10/1998	360	5	20	25
305210	Framingham		Nixon Road	5/8/1998	245	14	3	25
5419	Framingham	Lot 21	Nixon Road	7/19/2000	240	8	15	30
305546	Framingham		Nixon Road	3/5/1982	200	15	15	30
305495	Framingham		Nixon Road	8/2/1986	125	22		40
305332	Framingham	3	Doeskin Place	10/20/1994	555	5	20	50
305550	Framingham	98	Parmenter Road	3/1/1981	175	12		50
305528	Framingham		Parmenter Road	10/17/1984	100	35	10	60