



MEMORANDUM

TO: Suzanne Kennedy, Interim Town Administrator
FROM: Betsy Frederick, Project Manager
DATE: February 1, 2017
SUBJECT: **DRAFT Norfolk Proposed Wells Impact and New Source Development Evaluation**

1 BACKGROUND

The Town of Norfolk, MA has entered into a Purchase and Sale Agreement with Leo C. Braun for several parcels of land, one of which is within Town of Millis borders. Based on information provided by the Town of Millis, this property is enrolled in a Chapter 61A program which applies certain constraints relative to land use and conveyance. Chapter 61 programs offer a property tax break for landowners willing to commit to keeping some or all of their land undeveloped for a specified period of time. The program also gives the Town of Millis a first refusal option that is triggered if the land use is converted to a non-chapter use (e.g. residential, commercial, or industrial) whether by the current owner or by a new owner if the property is sold. Kleinfelder is not providing any legal opinion or basis specific to Chapter 61A conditions. This evaluation is conducted upon request by the Town of Millis to evaluate potential impacts to the Town of Millis potable water system (specifically groundwater wells in the vicinity of the parcel) based on the proposed use of the contiguous parcels for the development of potable water wells (or wellfield) to be owned and operated by the Town of Norfolk.

2 STATUS OF TOWN OF NORFOLK PLANS

Information related to a proposed use for the combined parcels was provided by the Town of Norfolk (Town Administrator and Department of Public Works Director) and their consulting engineers (Environmental Partners Group or "EPG"). As detailed by these representatives, a program of exploration and potential development of a well field on these parcels has recently been initiated. A "Request for Site Exam" was submitted to Massachusetts Department of Environmental Protection the week of 1/23/17. (A brief description of the regulatory process relative to New Source Approval is provided in Section 3 below).

The Town of Norfolk currently operates two groundwater wells which provide all of the public water supply in the Town. Operating history of the system suggests that there are stressors on the underlying aquifer which has lowered static water levels specifically in their Spruce Street well. They were already concerned about lack of redundancy in their system, as taking one well off-line for maintenance purposes does not leave them with adequate capacity to meet peak flow demands. However, this additional evidence of a potential loss in resiliency of the system (particularly during drought conditions) was the catalyst for the current new source exploration.



This background has been provided as anecdotal information and Kleinfelder has not confirmed these conditions.

The Town of Norfolk provided the site locus plan (Figure 1) as representative of the general area in which exploratory wells and evaluation will be undertaken this spring. It is Norfolk's expressed intent not to request additional withdrawal volume above baseline in their existing Water Management Act Permit as an element of this project. The wellfield is intended to provide greater operational flexibility and reduce demand on the Spruce Street Well. The decision not to seek additional volume is reportedly due, in part, to their desire to streamline the permitting and construction process to allow the wellfield to come on-line as soon as possible. EPG acknowledged that there are evolving economic development plans on-going in the community and it is not clear that additional volume may not be sought in the future.

The Town of Norfolk intends the wells/wellfield to lie entirely within their town boundaries and at this time does not intend any activity or future development to take place on the portion of the property within the Town of Millis.

As presented in Figure 2, the Norfolk wells are situated in two different Sustainable Water Management Initiative (SWMI) sub-basins of the Charles River. The Spruce Road well, the one which has seen diminished operational capacity according to Town of Norfolk representatives, is sited in sub-basin #21166, Stop River to Davis Brook. The proposed wellfield would be in the Chicken Brook to Stop River #21133 sub-basin. This is the same sub-basin as the existing Town of Norfolk Gold Street well and the Town of Millis wells No. 5 & 6. These Millis wells have the highest combined permitted daily withdrawal among the Town's six wells. However, the operation of wells 5 & 6 is restricted in summer months by the flow of the Charles River, as specified in their Water Management Act permit. The subject property for which the Norfolk wellfield is proposed is located within approximately 1.5 miles of the Town of Millis' wells 5 & 6 (see Figure 2). The Town of Millis expressed specific concerns about potential impacts of a new supply well or wellfield proximate to these sources. Both sub-basins are already stressed at maximally impacted levels (Groundwater Withdrawal Category 5) according to the Water Management Act Regulations (310 CMR 36.00).

3 NEW SOURCE APPROVAL PROCESS

The development of a public groundwater source is governed by *Chapter 4 Groundwater Supply Development and the Source Approval Process* (the Regulations) of the Massachusetts Drinking Water Regulations (310 CMR 22.21). As outlined in the regulations, the Source Approval process applies to:

1. A new public water supply source or well (includes existing private wells converted to public water supply use);
2. An increase in the approved yield of an existing public water supply source, or an exceedance of the approved yield;
3. The reactivation of a public water supply source that has been off-line per order of MassDEP or has not been in use for the last 5 years;
4. The Source Final Report Approval permit application package has not been submitted within 3 years of MassDEP approval of the Request of Site Exam/Pumping Test Proposal permit application;
5. The pumping test is not conducted within 2 years of MassDEP approval of BRP WS 13 or 17;



6. An approved source that was not developed and used within 5 years of the date of approval and for which the Zone I is not owned or controlled and wellhead protection requirements have not been met; and
7. The installation of a replacement well including satellite wells.

The Source Approval process differs for wells with yields less than 100,000 gpd and wells with yields great than 100,000 gpd. In addition, the process is different for sources developed in a bedrock aquifer, confined sand and gravel aquifer, unconfined sand and gravel aquifer, or spring. Throughout the process, the MassDEP reviews impacts to natural resources, and solicits comments and/or recommendations from other state environmental agencies, the public, and stakeholders within the community. The following sections summarize the Source Approval Process for sources not including springs with a planned yield of 100,000 gpd or more, and the applicable sections of the Regulations. However, certain hydrogeological, geological, or logistical situations may exist that cause the MassDEP to require activities during the Source Approval Process that may exceed the requirements identified in this summary. To date, Kleinfelder does not have technical information regarding intended yields or nature of the existing aquifer in the vicinity of the proposed Norfolk well/wellfield.

1. Groundwater Exploration (Section 4.3.1.1)

Exploratory test well drilling and pumping tests can be conducted without MassDEP approval. However, MassDEP requires that certain constituents be included in analyses at the end of the exploratory phase pumping test. If contaminants are discovered in exploratory wells, the MassDEP should be contacted and the Source Approval process may change depending on the contaminant and concentration.

Beyond the MassDEP Drinking Water Program requirements, permits may need to be obtained from the local conservation commission, MassDEP Wetlands and Waterways Program, and/or Massachusetts Department of Conservation and Recreation (DCR) Special Use Permit.

The Town of Norfolk has reportedly installed several small wells for purposes of groundwater exploration. Results were deemed adequate to pursue more formal testing through subsequent regulatory steps.

2. Site Exam/Pumping Test Proposal (Section 4.3.1.2 and 4.3.1.3)

Site screening allows proponents to evaluate each site under consideration and alternatives for new source development. For new sources with a planned yield of 100,000 gpd or greater, a Site Screening package which includes the following components must be submitted to the MassDEP.

- a. Notification in the Environmental Monitor (EM): The notification indicates the intent to conduct a pumping test, the location of the Site Exam/Pumping Test, and the planned withdrawal volume of the proposed new source. The notification includes a 30-day public comment period for potential issues regarding the proposed source. Issues raised can be incorporated in the pumping test design as needed. As noted earlier, the Town stated that a Request for Site Exam has been submitted to MassDEP within the past several days. Notification of this submittal should be published shortly in the EM. This is the primary public comment period at which Town of Millis concerns should be submitted.

- b. Water Conservation Plan: The Water Conservation Plan must be completed (refer to MassDEP/WMA Program *Guidelines and Policies for Public Water Systems, Volume I*) In addition, the proponent must conduct an analysis of system demand and have a water conservation program in place prior to the development of a new source.
- c. Site Screening Worksheet: Complete the Site Screening Worksheet for Siting a New or Expanding Source of Public Water Supply, which in part includes an evaluation of the impact of proposed withdrawals on stream flow.
- d. Alternatives Analysis: Discussion of alternative analysis used to select potential sites and water sources, which includes public water supply needs, system interconnections, and public health considerations.

3. Site Exam/Pumping Test (Section 4.3.1.3)

The proponent must submit an application for approval to site a source and conduct a pumping test, which includes maps depicting surrounding features and observation wells; planned pumping rate and duration of pumping test; discussion of potential contamination threats; preliminary estimate of the Zone II; and existing and proposed location wellhead protection control measures.

Other requirements may include applications for a wetlands permit under the Massachusetts Wetlands Protection Act, a Massachusetts Endangered Species Act Permit Application, or an Army Corps of Engineers 404 Permit. A wetland permit would likely involve the filing of a Notice of Intent (NOI) and a public hearing.

As part of the approval process for the application to site a source and conduct a pumping test, the MassDEP in conjunction with the proponent, the consultant, and other stakeholders will conduct the site examination. The site examination is conducted following the 30-day public comment period of the notification in the Environmental Monitor.

4. Source Final Report (Section 4.3.1.6)

Following MassDEP approval to site a source and conduct a pumping test, a pumping test is conducted according to the conditions of the MassDEP pumping test approval letter. MassDEP approval is needed in order to terminate the pumping test and recovery readings are measured in accordance with the MassDEP pumping test approval letter following termination of the test.

A Source Final Report, which includes all data collected during the pumping test, aquifer characteristics, water quality analysis, and discussion as to how the proposed pumping schedule will affect the water table and nearby sensitive receptors, is submitted to MassDEP following the pumping test. In addition, the following permits applications and/or reports may need to be filed at the same time the Source Final Report is submitted: a Water Management Act permit, Interbasin Transfer Application to the Department of Conservation and Recreation (DCR), Environmental Notification Form (ENF) to the Massachusetts Environmental Policy Act (MEPA) Program, MassDEP 401 Application, Environmental Impact Report (EIR) and Final EIR to MEPA, and/or 404 Permit Application to Army Corps of Engineers. The filing of an ENF and 401 Application involves a public notice and public comment period.

5. Approval to Construct and Final Source Approval (Section 4.17)

The proponent can submit the application to construct the new source, which includes design plans and specifications, in conjunction with the Source Final Report or following MassDEP approval of the Source Final Report.

The following items must be completed after approval to construct the new source and prior to Final Source Approval:

- a. Prior to the new source going on-line, copies of the approved Zone II delineation and Wellhead Protection Zoning and Non-Zoning Regulations must be provided to local officials.
- b. Submit an NOI, if required, for work associated with installation of a permanent road to the source, construction of a pump house, constriction of the finished well or wellfield, and/or installation of water main.
- c. A site inspection of permanent works will be conducted by MassDEP.

The MassDEP will issue a Final Source Approval after the proponent has received all applicable approvals as identified by the Regulations and MassDEP has determined that the completed pumping facilities are acceptable for use. Following a Final Source Approval, the proponent can bring the new source on-line.

Kleinfelder contacted Susan Connors of the MassDEP Central Regional Office on December 30, 2016 to seek further regulatory insight regarding the permitting process and the means by which Town of Millis interests would be protected, particularly if the new wellfield were to be installed in the same sub-basin as their existing wells, as is proposed. According to Ms. Connor, there should be no operational or other requirement implications on Millis as a result of the proposed Norfolk well. The sub-basin analysis and baseline volumes were set using older usage data (pre-2005) for that reason. There are only restrictions on the supplier requesting new sources or new withdrawals above baseline. Millis' prior claim via their Water Management Act permit ensures that no new conditions would be imposed on their permit due to Town of Norfolk projects. If (in the future) Norfolk proposes to withdraw an amount above its baseline, they would be required to implement Tier 2 Mitigation measures to offset the impact of the additional withdrawal from subbasin 21133.

Ms. Connor noted that Norfolk's application documentation will have to discuss impacts on other sources within ½ mile, however, Millis' nearest wells are greater than that distance away. If Norfolk's wells are adjacent to the Charles River (and EPG has indicated they may be approximately 1,000 feet from the Charles) they will likely be subject to the same streamflow trigger restrictions as Millis. As a conservative measure, Millis may want to consider submitting public comment requesting that MassDEP require Norfolk to assess potential impacts on the Charles River or to impose streamflow triggered restrictions on the new well(s).

4 SUMMARY AND CONCLUSIONS

The Town of Norfolk is proceeding with investigations preparatory to development of a new potable water source within their Town boundaries. The proposed site of the new wellfield source is not currently under Town of Norfolk ownership. A portion of the

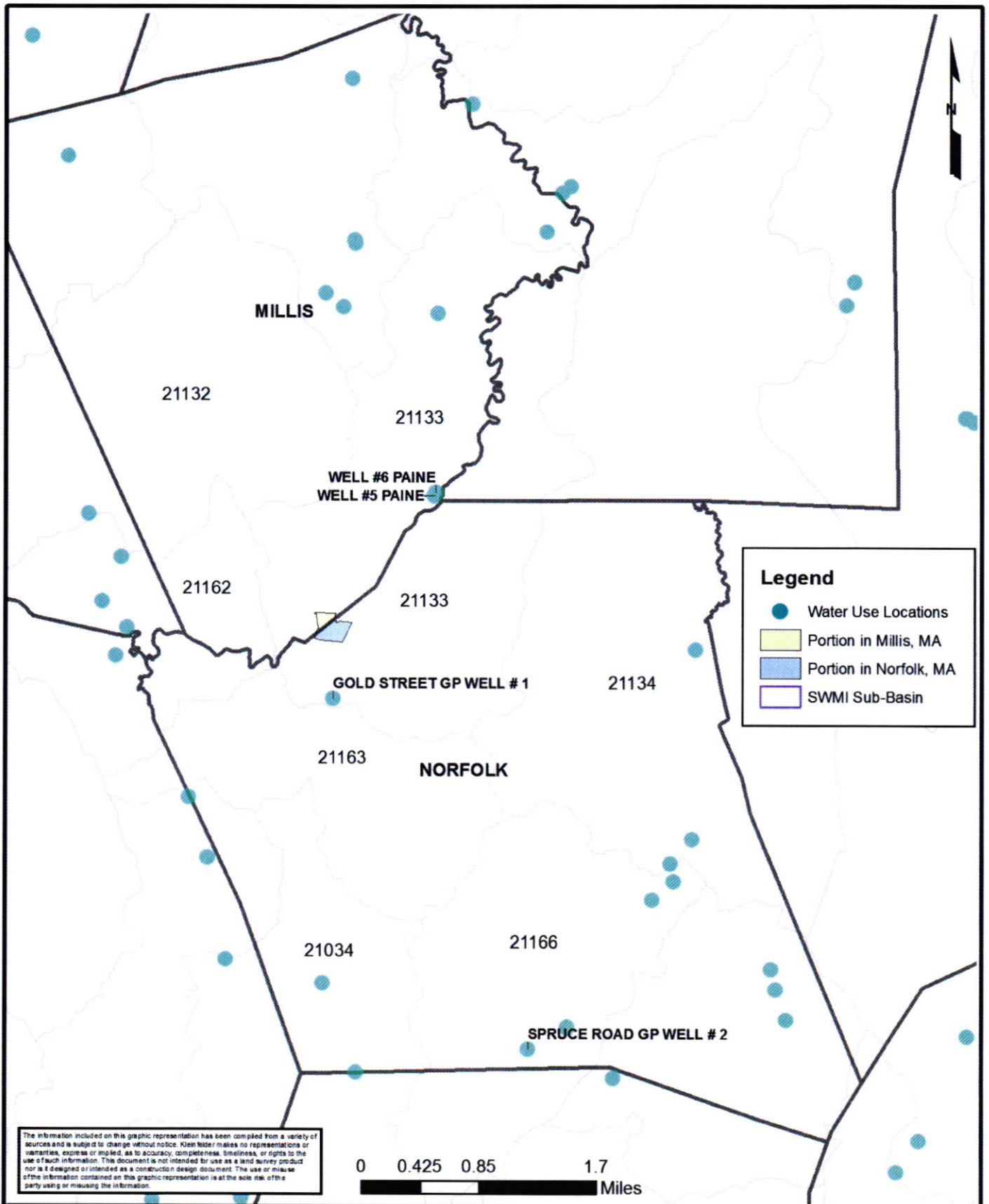



property for which they have entered into a Purchase and Sale agreement crosses the town boundary with the Town of Millis. Because the portion of the property in Millis was enrolled in the Chapter 61A program, Millis is afforded a right of first refusal to purchase that portion of the property within their boundaries.

Based on information provided by Norfolk representatives, they do not currently intend to undertake temporary or permanent improvements upon the land in Millis. It is more a legal rather than a technical matter as to whether there could be future development on that site by the Town of Norfolk, and Kleinfelder is not providing an opinion on that basis. Under current conditions, there does not appear to be any significant advantage gained by the Town of Millis by purchasing the property themselves. It would not have any material impact on Norfolk's right to explore or develop the adjacent properties for the purpose described. In either scenario, the land is likely to remain in its current agricultural use.

MassDEP regulates new public potable water source development and operation. The process is specifically intended to protect environmental resources and the onus for meeting the necessary conditions falls on the project proponent rather than pre-existing permitted providers. There is a public comment period, currently or soon to be underway, during which the Town can specifically identify concerns relating to their own groundwater supplies that may or may not be impacted by a new source near-by. We recommend that the Town submit comments that would then have to be addressed by MassDEP and the project proponent in future phases of the source evaluation.

Based on the limited technical information currently available, it is unlikely that the new wellfield will impact operation or performance of Millis Wells 5 & 6. This can be established with greater confidence after pump test data is available for analysis. The Town of Millis may consider submitting public comment to MassDEP requesting that the Norfolk pump test report include an assessment of potential impact on Millis Wells 5 and 6 and / or that MassDEP require streamflow triggered pumping restrictions for the Norfolk well similar to those imposed on the Millis wells.



 <div>KLEINFELDER <i>Bright People. Right Solutions.</i> www.kleinfelder.com</div>	PROJECT NO.	Town of Millis, MA Proposed Braun-Norfolk Land Purchase Agreement With Respect to 95 Holbrook St	PLATE 2
	DRAWN: 1-31-2017		
	DRAWN BY: A. Goldberg		
	CHECKED BY:		
	FILE NAME:		