

Earth Tech AECOM

300 Baker Avenue Suite 290, Concord, MA 01742
www.earthtech.aecom.com

December 29, 2008

Wayland Wellhead Protection Committee
c/o Tom Sciacca
31 Rolling Lane
Wayland, MA 01778

Re: Proposal and Consulting Agreement
Phase II Hydrogeological Investigation
Happy Hollow Wells

Dear Tom:

We are enclosing three (3) copies of our proposal/consulting agreement for your consideration.

You will note that the Phase II costs are higher than our original proposal presented to you earlier this year. This is due primarily to the Water Commissioners' interest in expanding the scope to include eight monitoring wells instead of the four monitoring wells originally planned. We have budgeted for a total of 560 linear feet of monitoring wells (8 x 70 ft deep each).

Please keep in mind that this is a "time and materials" agreement (not a lump sum), meaning that we invoice only for the actual time spent and the actual costs incurred for outside services and expenses.

If the Board is in agreement with our proposal, kindly have them sign all three original copies of the agreement, and return two copies to us for our records.

Very truly yours

AECOM Water



Douglas DeNatale
Senior Hydrogeologist/Project Manager

CONSULTING AGREEMENT AND AUTHORIZATION TO PROCEED

This Agreement between AECOM TECHNICAL SERVICES, INC., Inc, a California corporation, ("ATS") with offices at 300 Baker Avenue, Concord, MA 01742 and Board of Water Commissioners, Wayland Town Building, 41 Cochituate Road, Wayland MA 01778-2614, ("CLIENT").

1. ATS agrees to perform the services described in its PROPOSAL dated January 5, 2009, including attachments and amendments ("SERVICES").

2. CLIENT authorizes ATS to perform these SERVICES for the following project and location:

Phase II Hydrogeological Investigation of the Happy Hollow Wells, Wayland, Massachusetts

3. ATS is willing to perform the SERVICES in exchange for the following fee:

— CLIENT will pay on a **time and material basis not to exceed** the sum of \$69,400. This sum includes approximately \$34,000 in subcontracted well drilling and land surveyor services. ATS will invoice up to the stated limit. Upon reaching the limit, ATS will stop performing unless CLIENT authorizes further work in writing.

4. **Billing:** ATS will submit invoices to CLIENT monthly. CLIENT recognizes that timely payment is a material part of this Agreement. Each invoice is due and payable within thirty (30) calendar days of the date of the invoice. CLIENT will pay an additional charge of one and one-half percent per month not to exceed the maximum rate allowed by law for any payment received by ATS more than thirty (30) calendar days from the date of the invoice. CLIENT will pay when due that portion of invoice, if any, not in dispute. If CLIENT fails to pay any undisputed invoiced amounts within thirty (30) calendar days of the date of the invoice, ATS may suspend its performance or terminate this Agreement without incurring any liability to CLIENT and without waiving any other claim against CLIENT.

5. Special Provisions: ATTACHMENT A, Scope of Services

CLIENT confirms reading this document in full (including the terms 6 through 18 on the following page). This Agreement when executed by AECOM Technical Services, Inc. is an offer to perform the services, open for acceptance within 30 days. This Agreement becomes effective on the date CLIENT signs below.

CLIENT

ATS - AECOM TECHNICAL SERVICES, INC.

By: Wayland Board of Water Commissioners

By:  _____

Name: _____

Name: Richard A. Jubinville, PE

Name: _____

Title: Vice President

Name: _____

Date: December 29, 2008

Date: _____

CERTIFICATION OF APPROPRIATION

The undersigned hereby certifies that an appropriation in the amount of this LETTER AGREEMENT is available therefor.

Accountant/Auditor/Treasurer

6. **Standard of Care:** ATS will perform the Services in accordance with the standards of care and diligence normally practiced by consulting firms performing services of a similar nature in the same locale.

7. **Indemnity / limitation of Liability:** Subject to any limitations stated in this Agreement, ATS will indemnify and hold harmless CLIENT, its officers, directors, employees, and subcontractors, from and against all claims and actions, including reasonable attorneys fees, arising out of damages or injuries to persons or tangible property to the extent they are caused by a professionally negligent act, error, or omission of ATS or any of its agents, subcontractors, or employees in the performance of Services under this Agreement. ATS will not be responsible for any loss, damage, or liability arising from any contributing negligent acts by CLIENT, its subcontractors, agents, staff, or consultants. Neither party will be responsible to the other for special, indirect, incidental, consequential or punitive damages including, but not limited to, loss of profit, loss of investment or business interruption. The CLIENT also agrees to seek recourse only against ATS and not against its officers, employees, directors, or shareholders. *The CLIENT agrees to limit ATS's liability due to breach of contract, warranty or negligent acts, errors or omissions of ATS to \$50,000 or the fee paid to ATS under this Agreement, whichever is greater.*

8. **Insurance:** During the period that Services are performed under this Agreement, ATS will maintain the following insurance: (1) Workers' Compensation coverage in accordance with the laws of the place having jurisdiction over its employees engaged in the Services and Employer's Liability Insurance (limit of \$500,000 each occurrence.); (2) Commercial General Liability Policy with a limit of \$1,000,000 per occurrence and a \$2,000,000 aggregate; (3) Commercial Automobile Liability with a limit of \$500,000 per occurrence and a \$1,000,000 aggregate; and (4) Professional Liability coverage with a \$500,000 limit on each claim and a \$1,000,000 aggregate.

9. **Hazardous Substances/Hazardous Waste:** CLIENT represents that if CLIENT knows or has reason to suspect that hazardous substances or pollution may exist at the project site, CLIENT has fully informed ATS. In the event ATS encounters hazardous substances or contamination significantly beyond that originally represented by CLIENT, ATS may suspend its Services and enter into good faith renegotiation of this Agreement. CLIENT acknowledges that ATS has no responsibility as a generator, treater, storer, or disposer of hazardous or toxic substances found or identified at a site and CLIENT agrees to defend, indemnify, and hold harmless ATS, from any claim or liability, arising out of ATS's performance of work under this Agreement and made or brought against ATS for any actual or threatened environmental pollution or contamination except to the extent that ATS has negligently caused or contributed to any such pollution or contamination. This indemnification includes reasonable attorney fees and expenses incurred by ATS in defense of such claim.

10. **Sample Ownership:** All samples cuttings and excavation materials containing hazardous contaminants are the property and responsibility of CLIENT. Removal of cuttings from the project site will remain the obligation of CLIENT. Absent direction from CLIENT, ATS may return all contaminated materials and laboratory byproducts to the CLIENT for proper disposal or treatment.

11. **Buried Utilities:** In those situations where ATS performs subsurface exploration, CLIENT, to the extent of its knowledge, will furnish to ATS information identifying the type and location of utilities and other man-made objects beneath the surface of the project site. ATS will take reasonable precautions to avoid damaging these utilities or objects. Prior to penetrating the site's surface, ATS will furnish CLIENT a plan indicating the locations intended for penetration. CLIENT will approve the location of these penetrations and authorize ATS to proceed.

12. **Documents and Records:** CLIENT acknowledges that ATS's reports, boring logs, field data, field notes, laboratory test data, calculations, estimates and other similar documents ("Records") are instruments of professional service, not products. All data ATS prepares for CLIENT under this Agreement will remain the property of ATS. CLIENT will not use any ATS data or report for any purpose other than its original purpose as defined in the PROPOSAL. CLIENT has no rights to incomplete or partial data. ATS will retain these Records for a period of three (3) years following completion of this project. During this time, ATS will reasonably make available the records to the CLIENT. ATS may charge a reasonable fee in addition to its professional fees for retrieving or copying such records.

13. **Change Orders:** ATS will treat as a change order any written or oral order (including directions, instructions, interpretations or determinations) from CLIENT which request changes in the Services. ATS will give CLIENT notice within ten (10) days of the change order of any resulting increase in fee. Unless Client objects in writing within five (5) days, the change order becomes a part of this Agreement.

14. **Third-Party Rights:** This Agreement does not create any rights or benefits to parties other than CLIENT and ATS.

15. **Assignment/ Status:** The CLIENT will not delegate, assign, sublet, or transfer any interest in this Agreement without the written consent of ATS. ATS is an independent consultant and not the agent or employee of CLIENT.

16. **Termination:** Either party may terminate the Services with or without cause upon ten (10) days advance written notice. If Client terminates without cause, CLIENT will pay ATS costs incurred, non-cancelable commitments, and fees earned to the date of termination and through demobilization, including any cancellation charges of vendors and subcontractors.

17. **Dispute Resolution & Governing Law:** Any controversy or claim arising out of or related to this Agreement or the breach thereof, that cannot be resolved by the parties, shall be settled by binding arbitration administered by the American Arbitration Association under its Construction Industry Arbitration Rules using the office nearest to the place of performance. Judgment on the award rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof. The parties agree that California law governs the interpretation of this Agreement and any dispute involving this Agreement.

18. **Complete Agreement:** The Parties acknowledge this Agreement, including the Proposal and any Attachments which are specifically identified in this Agreement or are initialed and dated by both parties, constitute the entire Agreement between them. Unless stated otherwise in this Agreement, this Agreement may not be modified except in a writing signed by both parties.

Board of Water Commissioners, Town of Wayland, MA
Attachment A, Scope of Services, Phase II Hydrogeological Investigation, Happy Hollow Wells
January 5, 2009

Background and Purpose of Investigation

The Town of Wayland has relied on the Happy Hollow Wells for water supply for 60 years. When the wells were first built, the Town was undergoing a transition from a rural, agricultural community to a suburban community. This was well before there was widespread recognition of the vulnerabilities of groundwater supplies and the need for wellhead protection. And so, development around the wells proceeded relatively unchecked, without due consideration of the possible effects on well water quality.

Mapping studies completed by the U.S. Geological Survey and others have shed considerable light on the general geologic conditions around the Happy Hollow wells. Yet, relatively little is known about the underground conditions in the aquifer that feeds the Happy Hollow Wells. The major unanswered questions are:

- How thick is the aquifer?
- Where does the aquifer become thicker?
- Where does the aquifer become thinner?
- How is the aquifer layered, i.e., where are the clay layers and where are the sandy or gravelly layers?
- How does groundwater move through the aquifer when the wells are pumped?
- How does groundwater move through the aquifer when the wells are not pumped?
- How do activities at the Wayland High School and other activities, such as drainage, affect water quality?

Just as effective care of the human body requires an understanding of its internal structure and functions, effective wellhead protection relies on knowledge of the underground aquifer structure and how the aquifer functions in transmitting groundwater. The proposed investigation is intended as the next step in examining this underground structure and groundwater movement, so that the Town can make intelligent, cogent decisions about wellhead protection. The monitoring wells installed under this project could be used at a later date to monitor groundwater quality.

Proposed Scope of Services

AECOM Technical Services, Inc. (ATS) will provide the following services:

1. Research the availability of existing, historical aerial photography from government and private suppliers. Purchase up to three sets of aerial photography. Use the photography to examine the original drainage patterns around the Happy Hollow Wells as an indicator of groundwater and surface-water flow.
2. Collect and review pertinent additional data on the Happy Hollow wells available from the Water Department, including hydrogeological and water-quality data.
3. Prepare a final layout of monitoring well locations. These well locations will be based on those discussed at the Water Commissioners' monthly meeting of December 10, 2008. Stake the proposed well locations in the field with the assistance and approval of the Town of Wayland.
4. Provide the services of a well-drilling contractor to install up to eight (8) monitoring wells to the depth of refusal (presumed to be 70 feet) at the locations staked in the field. The wells will be installed using a cable-tool drilling rig and will be finished as 1.5-inch diameter PVC or 2.5-inch diameter steel, depending on subsurface conditions encountered. Each well will be fitted at the ground surface with a 2.5-inch diameter steel protective pipe. The well drilling contractor will

Board of Water Commissioners, Town of Wayland, MA
Attachment A, Scope of Services, Phase II Hydrogeological Investigation, Happy Hollow Wells
January 5, 2009

- also install three (3) shallow 1.25-inch diameter well points by hand to a depth of no more than 10 feet. At the conclusion of each installation, the well drilling contractor will pump and develop each newly installed well and well point. The well drilling contractor will check the condition of the existing monitoring wells installed by others in earlier years for proper functioning
5. Observe the installation of monitoring wells and well points on a full-time basis. Determine the final monitoring well design, and log the soils and groundwater conditions encountered in each borehole.
 6. Provide the services of a professional land surveyor to establish the elevations of pre-existing and newly installed monitoring wells and well points to the nearest 0.01 foot. Establish well locations by a GPS survey.
 7. Create a map of well locations on a topographic or aerial photograph base.
 8. Create two to three geologic cross sections of the Happy Hollow area to depict existing subsurface conditions.
 9. With the assistance of the Water Department staff, conduct a continuous, five-day pumping test of the Happy Hollow wells. In the first three days of the test, only one of the wells will be operated. During the second test, both wells will be operated. This will require that the Happy Hollow wells be out of operation for a period of three to five days in advance, and that wells be pumped into the distribution system for five consecutive days. Obtain three sets of static water level measurements (before pumping commences). Install water level transducers in up to five wells to record drawdown and recovery automatically. With the assistance of the Water Department, measure water levels manually in all wells twice daily for the duration of the pumping test.
 10. Analyze water-level drawdown data and determine aquifer hydraulic characteristics, namely transmissivity and storage coefficient.
 11. Create a groundwater elevation contour map under static (non-pumping) conditions, and a separate contour map under pumping conditions to delineate the capture zone around the wells, with special reference to activities at the Wayland High School.
 12. Prepare a letter report summarizing the investigation and its findings together with geologic logs and monitoring well records, aquifer hydraulic analysis, pumping test records and groundwater elevation contour maps. The report will discuss the nature of the aquifer and groundwater flow with particular emphasis on the relationship between the High School and the Happy Hollow wells.
 13. Meet with the Water Department on two separate occasions: once to report on progress and the second occasion to report our findings. The first meeting will be held prior to well installation, and the second meeting will be held upon delivery of the summary letter report.

CLIENT is expected to:

1. Provide utility clearance before installation of the monitoring wells.
2. Provide access and permission to install wells on Wayland High School property.
3. Assist ATS in the final selection of proposed monitoring wells.
4. Make water-quality, geologic and other Water Department records available to ATS.
5. Provide specific information regarding activities at the High School that might affect groundwater quality.
6. Measure water levels in monitoring wells during the pumping test on a daily basis.
7. Provide assistance in measuring the flow and drawdown in the Happy Hollow Wells.
8. Provide other logistical support for the pumping test.

Board of Water Commissioners, Town of Wayland, MA
Attachment A, Scope of Services, Phase II Hydrogeological Investigation, Happy Hollow Wells
January 5, 2009

The following services are not included as part of this PROJECT. Should the CLIENT desire so, ATS can provide these services for additional compensation:

1. Environmental permits with the Conservation Commission or other local/state authorities, such as may be required for work in buffer zones or wetlands.
2. Groundwater sampling and laboratory testing of groundwater samples.