

Fee: ~~\$-50.00~~ N/A

Check No. _____

WAYLAND BOARD OF HEALTH LOCAL UPGRADE APPROVAL and/or VARIANCE REQUEST FORM

Applicant: Wayland Public Schools
c/o Dr. Gary Burton

Address: 41 Cochituate Road, Wayland, MA 01778
Wayland High School

Location of Property: 264 Old Connecticut Path Wayland, MA

Variance of WBOH regulations requested: 7.10 & 8.20

*regs are
online under
'Health Dept'*

Local upgrade waiver requested _____

7.10 Groundwater Monitoring, installation and number
~~8.20 Local Board of Health Groundwater Monitoring testing~~ requirements.
8.12 Revised data for baseline sampling.

Variances of state regulations requested: NONE

Reasons for variance request and/or local upgrade _____

See Attachment A

Signature: *Anthony E. Martiniello P.E.* *in behalf of*
Martiniello Engineering Associates Inc *Wayland Public Schools*

Date: December 1, 2011

**WAYLAND BOARD OF HEALTH
LOCAL UPGRADE APPROVAL AND/OR VARIANCE REQUEST FORM**

ATTACHMENT A

REASONS FOR VARIANCE REQUEST:

Section 7.10 installation of monitoring wells:

The permittee for the Wayland High School Wastewater Treatment Plant (WWTP) has received a Groundwater Discharge Permit from MA DEP (Permit # 906-0). This permit outlines the number of monitoring wells required for this project to protect the environment and public health. The permit requires upgradient wells (SH-1 & SH-6) and downgradient wells (SH-3, SH-4, and SH-5) as shown on the approved "Revised Ground Watering Monitoring Plan", proposed by Sanborn Head & Associates and dated January 14, 2010.

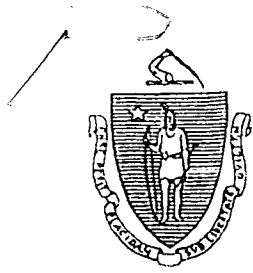
It is our understanding that both DEP and Sanborn Head agree that three (3) clusters for an upgradient or downgradient well, as well as an additional well in the leach field area, as required by the Wayland Board of Health regulations, is not necessary for this project. Installation of these additional wells serves no purpose relative to groundwater monitoring beyond what has already been approved by MA DEP.

Section 8.12

The existing Board of Health regulations require initial sampling analysis sixty (60) days after plant startup. The permittee wishes to complete these required analysis prior to the WWTP startup in order to be consistent with the DEP groundwater discharge requirements.

Section 8.20

The existing DEP discharge permit requires stringent requirements relative to the groundwater testing of the monitoring wells. The existing WWTP will produce a very high quality effluent. The permittee requests that the monitoring well testing outlined in Section 8.20 of the Wayland Board of Health regulations be waived and only the monitoring well testing parameters required by the DEP permit be required. DEP groundwater monitoring wells required testing criteria clearly indicates the proposed treatment including Reverse Osmosis will produce a very high quality effluent not typical of a WWTP in a Zone II environment.



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NORTHEAST REGIONAL OFFICE
205B Lowell Street, Wilmington, MA 01887 • (978) 694-3200

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

IAN A. BOWLES
Secretary

LAURIE BURT
Commissioner

January 29, 2010

Dr. Gary Burton, Superintendent of Schools
Wayland School Department
41 Cochituate Road
Wayland, MA 01778

**RE: Approval of Hydrogeological Evaluation Report
Wayland High School, 264 Old Connecticut Path, Wayland, Massachusetts
Transmittal Number: X231260**

Dear Mr. Burton:

The Massachusetts Department of Environmental Protection (MassDEP) has completed its review of the hydrogeological evaluation report dated December 2009 and submitted on your behalf by Sanborn, Head & Associates, Incorporated (SHA). The report summarizes the results of a hydrogeologic evaluation conducted by SHA to support a future Groundwater Discharge Permit Application for a proposed expansion of Wayland High School. The evaluation was conducted in accordance with the scope-of-work submitted by SHA on July 15, 2009 and approved by MassDEP on August 14, 2009. Notice of the availability of the scope-of-work was published in the Environmental Monitor on July 15, 2009.

The evaluated discharge location is the site of Wayland High School's existing Title 5 soil absorption system. The site lies within the Zone II delineated for two of Wayland's public water supply wells. The wells are located approximately 1,400 feet southwest of the proposed discharge location. Groundwater time of travel from the proposed discharge to the water supply wells is estimated to be approximately 16 months.

Soil tests and borings performed within the foot print of the proposed soil absorption system (SAS) encountered approximately 21 feet of granular fill and stratified sand with discontinuous lenses of silt and silty sand that extend downward to an elevation of 132 feet above sea level. Below this elevation, the materials encountered consist of stratified, fine-to-coarse sand and gravel without restrictive silt lenses. SHA recommends that the area of the proposed SAS be excavated down to elevation 132 feet and backfilled with Title 5 sand.

The proposed subsurface disposal system was evaluated at a design flow of 12,154 gallons per day. Soil evaluation and percolation testing of the proposed site supports a long term application rate of 2.0 gallons/day/square foot. The area required for the discharge is 6077 square feet. The SAS design evaluated by SHA consists of two disposal beds, each measuring 48 feet by 64 feet for a total area of 6144 square feet. A site plan of the proposed SAS entitled "Soil Absorption System Plan" and dated 14 DEC 2009 is included as Figure 7 of the submitted report.

Estimated seasonal high groundwater beneath the proposed SAS is at elevation 126 feet. The bottom of bed elevations of the two proposed disposal beds are 146 feet and 149 feet. These elevations provide more than the required four feet of unsaturated separation between the top of the mounded seasonal high water table and the base of the proposed disposal beds.

On January 14, 2010, SHA submitted a revised Groundwater Monitoring Plan to MassDEP that outlines procedures for the long-term monitoring of groundwater quality in the vicinity of the proposed soil absorption system. The plan proposes a monitoring well network that consists of five monitoring wells; three existing wells (SH-1, SH-3 and SH-4) and two proposed wells (SH-5 and SH-6). Monitoring wells SH-1 and SH-6 will be upgradient/crossgradient wells capable of assessing ambient groundwater conditions at the site. Monitoring wells SH-3, SH-4 and SH-5 are downgradient of the proposed discharge site.

Pursuant to 314 CMR 5.09 (1) (f), MassDEP hereby **approves** the hydrogeologic report submitted by SHA and authorizes the applicant to apply for an **Individual Groundwater Discharge Permit (BRPWP 79)** subject to the following conditions:

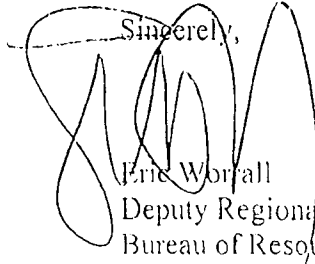
1. The design flow of the proposed groundwater discharge shall not exceed 12,154 gallons per day.
2. The long term application rate to the SAS shall not be greater than 2.0 gallons/day/square foot.
3. Due to the proposed discharge's location within a Zone II and a less than two-year groundwater travel time to a groundwater source of drinking water, the proposed discharge shall at a minimum meet the additional and more stringent water quality based effluent limitations outlined in 314 CMR 5.10 (4A); in particular the Total Organic Carbon limit of 1.0 mg/l.
4. The proposed SAS shall not be constructed until a Groundwater Discharge Permit has been obtained from MassDEP. The proposed SAS shall be constructed within the footprint indicated on Figure 7 of the Wayland High School Hydrogeological Evaluation Report. Figure 7 is entitled "Soil Absorption System Plan" and dated 14 DEC 2009.

5. The proposed disposal bed areas shall be excavated down to elevation 132; removing restrictive silt layers and exposing the top of the sand and gravel deposits. The excavation shall be backfilled with Title 5 fill.
6. The applicant's engineer and hydrogeologic consultant have requested a fifty percent (50%) reduction in reserve area due to the anticipated high level of treatment that will be afforded this discharge and the proposed use of reclaimed water for toilet flushing within the school. MassDEP conditionally approves this reduction. This approval is contingent upon the level of wastewater treatment that will be provided and the volume of effluent that will be diverted for wastewater reclamation/re-use. Final approval of the reduction will be granted upon issuance of a Groundwater Discharge Permit.
7. The applicant's engineer has proposed the use of reclaimed water for toilet flushing. Any use of a reclaimed water system shall comply with the requirements of 314 CMR 20.00; Reclaimed Water Permit Program and Standards.
8. MassDEP approves the monitoring well locations proposed in the revised Groundwater Monitoring Plan. The proposed well locations and the approved monitoring plan will be referenced in the Groundwater Discharge Permit when issued. MassDEP recognizes that proposed locations are somewhat dependent upon final site development (e.g. building and road placement) and may require modification, however changes must be submitted to this office for approval prior to well installation. Final monitoring wells must be installed and sampled for all groundwater quality parameters listed in the issued permit no later than 90 days prior to startup of the wastewater treatment plant and discharge to the SAS.
9. An Initial Groundwater Monitoring Well and Groundwater Quality Report must be submitted to this office prior to any discharge of wastewater. This report must include;
 - a. a final surveyed site plan with the location of the SAS, all monitoring wells and all appropriate elevation data,
 - b. boring logs and well construction details for all monitoring wells, and
 - c. the analytical results of the groundwater samples collected from the final groundwater monitoring wells. These results will establish the baseline groundwater quality for the site.

Please be advised that this approval is not a Groundwater Discharge Permit. It does, however, authorize the project proponent to submit an Individual Groundwater Discharge Permit application for the discharge described at the evaluated location. MassDEP requires that the Individual Groundwater Discharge Permit application (BRPWP 79) be accompanied by a MassDEP Transmittal form and include all required supporting documentation. Included in the supporting documentation shall be a certification from a Massachusetts Registered Professional Engineer that the approved Hydrogeological Report has been reviewed and accurately reflects

site conditions as of the date of the permit application. Information on any changes noted during the review shall be included in the Engineering Report that accompanies the application.

If you have questions regarding the comments and conditions of this approval, please contact Criss Stephens of my staff at 978-694-3241.

Sincerely,

Eric Worfall
Deputy Regional Director
Bureau of Resource Protection

EW/HS/hs

cc: Donald Martinage/Martinage Engineering Associates, Inc.
Vernon Kokoza/Sandborn, Head & Associates, Inc.
Steven Calichman/Wayland Board of Health
Jack Mitchell/Wayland Water Department
David Ferris/Wastewater Management Program Director/MassDEP/Boston

Junghanns, Julia

From: Michael Wegerbauer [mwegerbauer@yahoo.com]
Sent: Wednesday, November 30, 2011 11:45 AM
To: Junghanns, Julia; Bean, Michael J.,M.D.; Thomas Klem
Cc: a.soslow@comcast.net; Neuman, Mark (Emergency Dept)
Subject: Re: WW Treatment Plant testing - New High School

No concerns, it sounds like this is what we discussed and seems to make the most sense.

Best,

Mike

Michael Wegerbauer

mwegerbauer@yahoo.com

From: "Junghanns, Julia" <JJunghanns@wayland.ma.us>

To: "Bean, Michael J.,M.D." <MBEAN@PCHI.PARTNERS.ORG>; Michael Wegerbauer <mwegerbauer@yahoo.com>; Thomas Klem <klemtj@yahoo.com>

Cc: "a.soslow@comcast.net" <a.soslow@comcast.net>; "Neuman, Mark (Emergency Dept)" <Mark.Neuman@childrens.harvard.edu>

Sent: Wednesday, November 30, 2011 10:57 AM

Subject: FW: WW Treatment Plant testing - New High School

We will discuss this at our next BOH meeting and the Board should take an official "vote" on this item, however I do need to get back to the O&M company before our next meeting as he is trying to meet a deadline prior to startup of the WW treatment plant. Please let me know if you have any concerns/feedback on this. Thanks!

Julia Junghanns, R.S.
Director of Public Health
Town of Wayland
Health Department
41 Cochituate Road, 01778

508-358-3617 ph
508-358-3619 fax

email: jjunghanns@wayland.ma.us

From: Junghanns, Julia
Sent: Wednesday, November 30, 2011 10:44 AM
To: 'Bean, Michael J.,M.D.'; Thomas Klem; 'Michael Wegerbauer'
Cc: 'a.soslow@comcast.net'; 'Neuman, Mark (Emergency Dept)'
Subject: FW: WW Treatment Plant testing - New High School

Board members,

As we discussed at the meeting this week I have corresponded with Kevin Brander of Dep (see email trail below) regarding our local Regs and testing requirements for the new WW Treatment Plant at the New High School. Dep agrees that we should have the Operations and Management Company conduct the testing that is in question prior to start-up of the WW plant to establish baseline/ambient conditions and he suggests that we revise our requirements to require pre-start up testing of the wells to establish baseline/ambient conditions. I will be contacting the O&M company to let them know.

Julia Junghanns, R.S.
Director of Public Health
Town of Wayland
Health Department
41 Cochituate Road, 01778

508-358-3617 ph
508-358-3619 fax

email: jjunghanns@wayland.ma.us

From: Brander, Kevin (DEP) [<mailto:kevin.brander@state.ma.us>]
Sent: Tuesday, November 29, 2011 4:04 PM
To: Junghanns, Julia
Cc: Wood, Jennifer (DEP)
Subject: FW: WW Treatment Plant testing - New High School

Julia:

It is our normal practice to require sampling of the GW monitoring wells to establish baseline conditions at least 90 days before the discharge, which was a condition of our approval letter in the case of Wayland High School. I would think that this requirement would serve the purpose of your bylaw requirement also if that is its intention. As you indicate in your email, I don't see the value of trying to capture baseline conditions in the wells after plant startup. The wells may not be affected given the short duration of the discharge at 60 days, but it doesn't make sense to risk skewing the results with any influence from the discharge. I would suggest that you consider revising your requirements to require pre-start up testing of the wells to establish baseline/ambient conditions.

KB

Kevin Brander, P.E.
Section Chief
Wastewater Management Section
DEP/NERO
205B Lowell Street
Wilmington, MA 01887
(978) 694-3236

From: Junghanns, Julia [<mailto:JJunghanns@wayland.ma.us>]
Sent: Tuesday, November 29, 2011 10:26 AM
To: Golden, Claire (DEP)
Subject: WW Treatment Plant testing - New High School

Hi Claire,

We are in communication with Weston & Sampson as they have the O&M contract for the new WW treatment plant at the new high school. They are inquiring about our Wayland BOH Regulations of which I have attached a copy of the section in question, 8. Effluent Limits and Testing Requirements, specifically the paragraph I put a star next to, "all sampling and analyses, except for the daily and weekly frequency tests which will commence at time of plant startup, shall be performed initially at 60 days after plant startup and at the stated frequency thereafter." They are asking if they can do all the testing for the groundwater monitor wells before startup to

get a baseline instead of doing the 60 days after plant startup (they will also be doing the testing as required by Dep). We are questioning why our regulations specify, "60 days after plant startup", and what the intent was when these regs were established (these regs are from 1988 and were updated in 1998). It would make sense to me that they would want to do testing prior to startup. I was wondering if you could provide your professional opinion as to when the best time would be to do this testing.

As always, thanks for helping us out.

Julia Junghanns, R.S.
Director of Public Health
Town of Wayland
Health Department
41 Cochituate Road, 01778

508-358-3617 ph
508-358-3619 fax

email: jjunghanns@wayland.ma.us

From: administrator@wayland.ma.us [mailto:administrator@wayland.ma.us]
Sent: Tuesday, November 29, 2011 9:42 AM
To: Junghanns, Julia
Subject: Message from KMBT_C352

Junghanns, Julia

From: Junghanns, Julia
Sent: Thursday, December 08, 2011 2:31 PM
To: Moynihan, John
Subject: FW: Variance requests for the new High School WWTP-info for BOH meeting

fyi

Julia Junghanns, R.S.
Director of Public Health
Town of Wayland
Health Department
41 Cochituate Road, 01778

508-358-3617 ph
508-358-3619 fax

email: jjunghanns@wayland.ma.us

From: Junghanns, Julia
Sent: Thursday, December 08, 2011 2:31 PM
To: a.soslow@comcast.net; Mark Neuman (Emergency Dept); M.D.Michael J. Bean; Michael Wegerbauer; 'Thomas Klem'
Subject: Variance requests for the new High School WWTP-info for BOH meeting

Board members this is fyi,

As I had mentioned last week, the new High School WWTP will need official BOH approval for the change in testing schedule so we can obtain "baseline" well data prior to start up of the treatment plant.

In addition, there is another variance that they will be requesting. Here is the situation:

Part of our sign off for this project (as outlined in our regs) is to verify the number of monitoring wells that will be used to do testing from, to ensure it complies with our local regs. Last week I was reviewing all the paperwork in preparation of sign off and it came to my attention that there are fewer monitoring wells than what is required in our local regulations. Upon investigation, I was able to find out that the town hired a hydro-geologist, who conducted a hydro-geo evaluation for this project and it was submitted to Dep for their review and approval. On 12/1 I spoke with the Kevin Brander, PE Section Chief of Wastewater Management of MaDep regarding this evaluation report and the number of monitoring wells. He said that they are comfortable and satisfied with the number of monitoring wells for this project and the location of the monitoring wells. He also said that Dep has their own hydro-geologist who did a review for this project, each review is site specific for every individual application. Mr. Brander said the person who reviewed this project is one of the best hydro-geologists that they have. The Dep approved plans we have show 2 up-gradient monitoring wells and 3 down-gradient monitoring wells, Mr. Brander said that this is well in excess of basic requirements (no site typically has more than 1 up-gradient monitoring well). Additionally, Mr. Brander said that this new treatment plant has the highest level of wastewater treatment, maybe the highest of any WW Treatment Plant in the state. He indicated that additional monitoring wells above and beyond what has been approved by Dep would be overkill and not necessary.

The Engineer that was hired by the town for this project will be attending the BOH meeting on 12/12 to request both of these variances. The hydro-geologist that was hired by the town who did the evaluation/study for this project will also be attending the meeting if there are any questions from the Board.

Julia Junghanns, R.S.
Director of Public Health
Town of Wayland
Health Department
41 Cochituate Road, 01778

508-358-3617 ph
508-358-3619 fax

email: jjunghanns@wayland.ma.us

U.S. GOVERNMENT PRINTING OFFICE: 1967 O 300-000
FOR SALE BY THE NATIONAL ARCHIVES
DATE 11-13-67

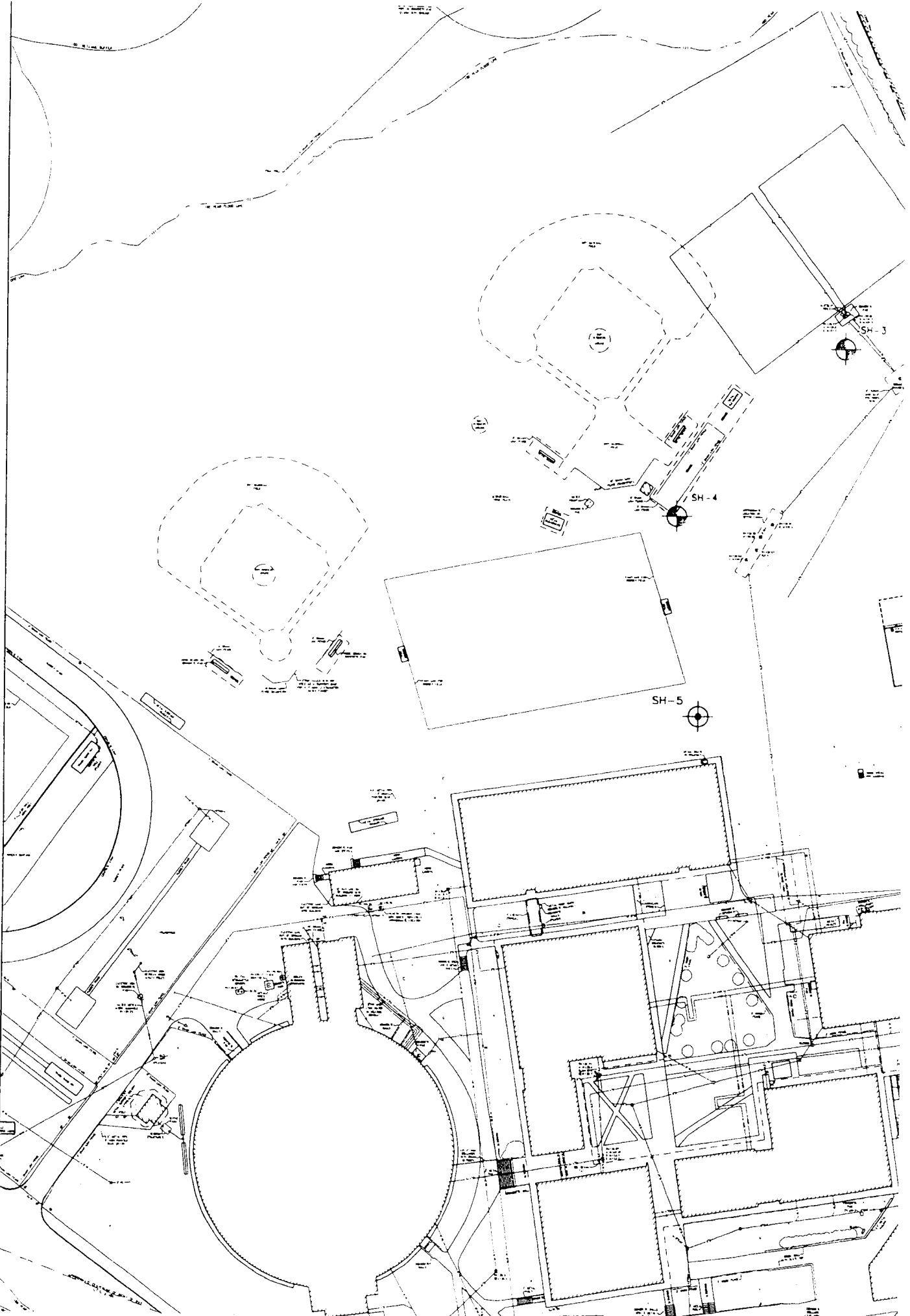


Figure No. F.1
**PROPOSED GROUNDWATER
 MONITORING PLAN**

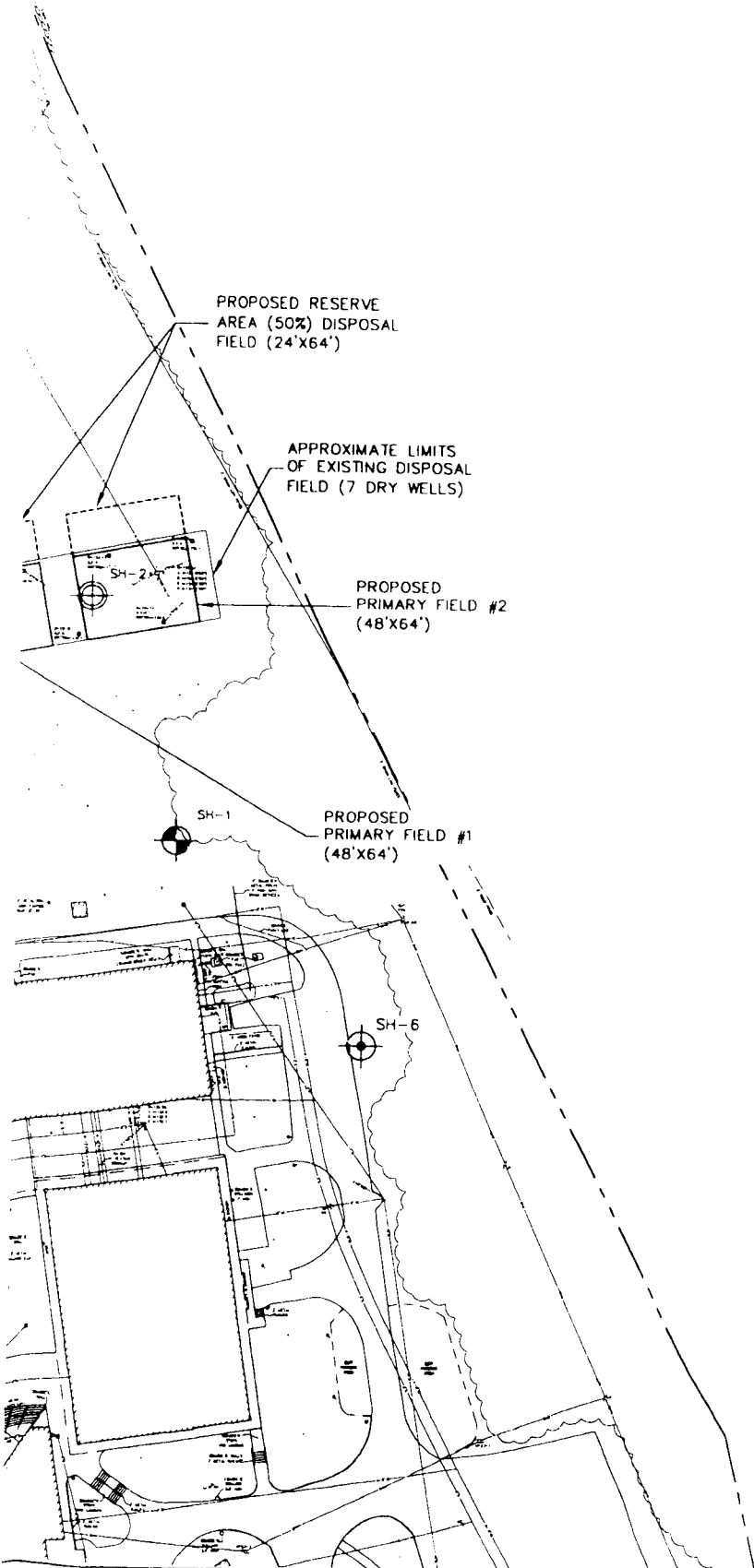
HYDROGEOLOGICAL REPORT

**WAYLAND HIGH SCHOOL
 WAYLAND, MASSACHUSETTS**




Drawn By: RWH
 Designed By: ADC
 Reviewed By: VRK
 Date: DEC 09
 Revised: JANUARY 14, 2010

Figure Narrative

This base plan was drawn from a plan received electronically and entitled "7520_1_Client_07" prepared by Nitsch Engineering, Inc. of Boston, MA dated July 1, 2009 with an original scale of 1"=20'.



Legend

- SH-1  Approximate locations of existing monitoring wells to be used for groundwater monitoring as described in the groundwater monitoring plan
- SH-2  Approximate location of SHA's monitoring well to be decommissioned prior to or during construction
- SH-5  Approximate location of proposed additional wells to be used for groundwater monitoring

PROJECT NO.: 3041.00

