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Concord, NH  
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James Wieck, GZA GeoEnvironmental Inc  
Ms Martha Hennessey, NH State Representative, Grafton County  
Ms. Patricia Higgins, NH State Representative, Grafton County  
Ms. Sharon Nordgren, NH State Representative, Grafton County  
David Pierce, State Senator, Grafton County  
Julia Griffin, Town of Hanover, Manager

This is a follow-up to our July 21<sup>st</sup> communication regarding clean-up of the contamination at Rennie Farm.

We have reviewed the recently posted Dartmouth-GZA work plan, and would like to address areas of concern in our recently proposed goals for the Rennie Farm lab waste dump site which do not appear to be included in that plan. Toward that end, we attach a revised statement of goals which we believe should be implemented for the site. We believe that the goals we have offered are fully consistent with those set by the Agency and by US EPA for comparable sites. We hope that these goals can be incorporated into your final work plan for the site to address the total concerns and needs of the impacted neighborhood and community at large.

In the Dartmouth-GZA work plan, there is no provision to excavate all contaminated soils for the entire site affected by the burial of toxic waste in any and all historical laboratory waste burial pits. This should be a foundation requirement for the remediation to assure there are no continued community risks of remaining toxic soils, and other as yet undetected covert buried wastes, such as the collection of bagged experimental animal carcasses discovered on June 23, 2016, in a pit within the area of prior remediation. Such remaining contamination carries with it additional risk of surface water and residential well contamination. Our neighborhood community does not want to be burdened with continued uncertainties of future unwanted surprise discoveries hidden in those soils, and persistent unpredictable threats of future sources of contamination to our underground water supplies and rural environment.

Had Dartmouth removed all tainted soil and waste during the November 2011 excavation, or re-opened the site to complete areas of unfinished excavation during the following Spring of 2012, there is a strong probability that the Higgins' family's well would not have been rendered undrinkable, and that family would not have undergone exposure to carcinogens while they ingested poisoned well water.

We propose that current summer drought conditions might provide an ideal window for excavation to remove all residual contaminated top soil without the complication of high groundwater.

A July 20, 2016, letter from the Dartmouth College Dept of Environmental Health and Safety mailed to numerous Hanover households, reports recent water tests as negative for various chemicals, and testing of the recently discovered “bagged laboratory waste” (i.e., bags of experimental animal carcasses) for which “testing of that waste...did not indicate chemical or radiological contamination”, as scientific proof of the lack of contamination.

The letter did not disclose that the GZA test well of greatest interest, GZA well #14 (which showed 1,4-dioxane levels up to 600 ug/L in the ground at approximately 8 feet depth for three test cycles in February, March and April, 2016), was not re-tested at all this summer because of drought conditions. The letter also did not disclose that the only tests of the bagged animal carcasses discovered on June 23, 2016, involved a surface swipe test of the surrounding plastic bag, and that the experimental animal tissue contents have yet to be shipped to an outside laboratory for complete analysis.

We are concerned that such language, when conveyed to the general non-scientific and trusting public, may mislead some readers into believing that the soils surrounding test wells, and the remaining buried laboratory bagged experimental animal and any associated chemical waste, are not associated with any risk to the health and safety of our neighborhood. We certainly hope that your government offices will give clear sanction and direction for Dartmouth College to ship the bagged animal remains, currently held by the College, to be transferred expeditiously for outside laboratory evaluation, with test report results to be posted on your websites for timely public access.

We do not wish to engage Dartmouth in a parsing of words, but hope that the DES and DHHS offices, the College, and the residents of north Hanover and the community at large can work together with unified purpose to eliminate the unfortunate consequences of a terrible mistake from the past. We, the affected public, are eager to be promptly and fully informed of all official reports and information concerning continued testing of the site and its contents.

Mr. James Wieck of GZA has stated that it will probably be autumn at the earliest, before a pump and treat system for the tainted groundwater can be installed. If the College delays further excavation until after this installation, we could once again be looking at the onset of winter interfering with thorough accomplishment of the clean-up job. We do not want another year to pass during which time residual source chemical and radioactive contaminants continue to spread into the soils and water systems surrounding Rennie Farm.

The dozens of residents who are concerned about this situation are looking to the State of NH to protect our health and property values. We ask you to ensure that Dartmouth's next remediation effort is both thorough and timely.

## **REVISED ON AUGUST 2, 2016**

### Rennie Farm Remediation Plan Requirements; Request from Hanover Residents

As documented in reports and communications posted on the NH DES website, the property known as Rennie Farm, located in Hanover, NH, and owned by Dartmouth College, continues to be a source of groundwater contamination. Dartmouth is undertaking further site investigation and remediation at the direction of the Agency.

Recent testing of monitoring wells has shown high concentration levels of a known carcinogen, 1,4-dioxane reaching 600 times its legal limits (comparable exceedences have been found since 2012). Currently, highest concentrations have been found in test well #14 (February – April 2016 sampling at 8 feet depth where “purple fluid” had been discovered in 2011-- see attachment\*\*\*). As of September 2015, a family’s residential well was found to be contaminated and unusable. The family has brought an action against Dartmouth for toxic exposure and diminution of property value

On June 23, 2016, more bags which contain contaminated laboratory animal waste were discovered in a waste burial pit within the site, notwithstanding Dartmouth’s prior representation that no further remedial measures are required following excavation work in November/December 2011. The discovery of a collection of residual bagged animal waste and possible additional contaminants, and continued high readings of 1,4-dioxane originating from the ground of the source waste burial area (reference: GZ14 test well results, Feb-April 2016) raise concern that the earlier remediation effort was not complete, and that significant persistent sources of contamination remain evident on site.

In order to ensure that the underground contamination does not spread to more residential wells, streams or the Connecticut River, and the health and property values of nearby residents are not endangered, the signatories of this letter request the following actions at Rennie Farm:

1. There must be prompt complete excavation and removal, down to the bedrock level if necessary, of all contents (including all contaminated soils) of the entire dump site area to assure all persistent source contamination removal based on a complete, invasive sub-surface investigation.
2. Complete excavation and removal of all human and animal remains and all associated radioactive and toxic contamination currently buried on site, with testing for both chemical and radioactive contamination, and re-location of all currently buried contents to a secure and properly licensed treatment or disposal facility. Chemical testing should include formaldehyde (which is the typical, and toxic, preservative for anatomy laboratory cadavers), in addition to all other chemicals and radio-nuclides which were documented during the previous 2011 site excavation by CLYM. Full post excavation confirmation testing should be performed on soil and groundwater, including in all down-gradient zones.

3. Complete characterization of contaminated groundwater zones should be performed as soon as possible, including consideration of four season flow regimes and appropriate treatment systems installed to assure against any further impact to all residential areas surrounding the site.

4. Establish a system of perimeter monitoring wells that encompass the entire boundaries of Rennie Farm, for long term monitoring to assure that no further remedial measures are required.

Water flow off the dump site has created an underground chemical plume which Dartmouth's consultant believes to be tracking North/North East. The noted groundwater investigation needs to confirm this assumption, including consideration of flows in shallow and deep zones, and through fractured bedrock. Future monitoring is required as a check on the possible continued presence of contaminated materials and in consideration of the persistent nature of many of the chemical and radionuclide contaminants

5. Establish a robust periodic testing program of all area residential wells for all of the toxic carcinogenic chemicals documented to have been present in the 2011 CLYM excavation including toluene, benzene, naphthalene as well as 1,4-dioxane, and the dangerous radioactive molecules documented at the site, including  $^{14}\text{C}$  (carbon),  $^3\text{H}$ (tritium),  $^{210}\text{Pb}$ (lead),  $^{63}\text{Ni}$  (nickel),  $^{137}\text{Cesium}$ , and any additional long-lived experimental radioactive substances confirmed to have been previously disposed at the site.

Residential wells should be closely monitored as mitigated by the time frame over which the total overall remediation is completed, and continuing as post-remediation monitoring until concentrations of contaminants are maintained below established accepted regulatory limits.

6. We ask that a public meeting be held immediately to discuss plans for the above-noted action, and that a schedule of follow-up public meetings be set to monitor progress. The Agency and Dartmouth need to provide complete and timely transparency on all actions at the site, including establishment of a public repository affording easy access to site investigation/remediation information.

Respectfully,

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Ellen Waitzkin MD

Peter Spiegel MD

Shirley Grainger-Inselburg, Consultant and Certified Water Operator for the State of Vermont