Groundwater
& Environmental Services, Inc.

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March 27, 2014

Mr. Gregory Sutton
NYSDEC Region 9
270 Michigan Avenue
Buffalo, New York 14203

Re: Supplemental Site Characterization Work Plan
Former Nash Road Landfill
Town of Wheatfield
Niagara County, New York
NYSDEC Site #932054

Dear Mr. Sutton:

Groundwater & Environmental Services, Inc. (GES) has prepared this *Supplemental Site Characterization Work Plan* for the Former Nash Road Landfill located in the Town of Wheatfield in Niagara County, New York. The purpose of this work plan is to further characterize and delineate the extent of the waste in the western section of the landfill and to clarify several anomalies that were detected during previous site characterization activities. The scope of work will involves a site walk over, the installation of additional soil borings and monitoring wells, and groundwater sampling. A site map illustrating the site layout has been included in **Figure 1**.

Work Plan

Site Walkover

GES will perform a site walkover to identify and map major site features and the final locations of the new soil borings and monitoring wells. As was performed in the 2013 Site Characterization, GES will utilize a GPS locator to collect GPS coordinates of the site features and sample locations. The GPS data will be incorporated into available aerial maps, which will be used for future reference and reports.

Soil Borings and Additional Well Installation

GES will conduct a subsurface investigation, focused primarily in the western area of the site, though some investigation work is being conducted in the southeast area of the site. Additional details are described below:

- A public utility mark-out will be conducted prior to drilling.

- 22 soil borings will be completed using a direct push Geoprobe rig with capability of advancing 4 ¼" hollow stem augers at the locations shown on **Figure 1**. Soil boring locations will be located in areas of waste. If during the drilling process it is found that these locations fall outside of waste burial areas (native soils), they will be halted and relocated to areas of suspected waste burial.

- During drilling, soil samples will be collected in approximately 2-foot intervals via macro-core sampling. Soil samples will be logged by GES personnel for color, moisture content, grain size, and visual evidence of hydrocarbon impact. The samples will be placed in plastic bags and screened for

organic vapors using a photo-ionization detector (PID) equipped with a 10.6eV lamp and calibrated to 100 parts per million by volume (ppmv) isobutylene standard.

- The soil sample from each soil boring exhibiting the highest PID measurement will be selected for laboratory analysis in accordance with the sampling matrix provided in **Table 1**. If no elevated PID readings are observed, the soil sample from the vadose zone/saturated zone interface will be analyzed. Samples will be placed in laboratory-supplied glassware, stored on ice, and shipped under chain of custody to Test America Laboratories, Inc. in Amherst, New York. Additional samples may need to be collected from select soil borings if field conditions warrant such collection.

- Installation of five 2-inch diameter monitoring wells at the locations shown on **Figure 1**. These locations will initially be completed as part of the 22 soil borings. The wells will be constructed with 2" ID PVC flush-threaded pipe. The wells will be installed to approximately 10-12 feet below grade in the sandy water-bearing zone identified in the previous Phase II reports. The screen openings will be 0.01 inch machine slotted, and no greater than 5 feet of screen. The wells will be completed with a sand filter pack surrounding the wells annulus to a height of 6-12" above the top of the screen, followed by a 2 foot bentonite seal. The remaining well annulus will be sealed with a bentonite-portland cement grout to near grade. The wells will have a stick up of approximately 2-3 feet and completed with stick up protective casings.

- All soil borings and monitoring wells will be staked, and GPS coordinates will be collected for use on the site map and for future locating.

- Soil cuttings may be drummed and sampled for landfill disposal. Due to the isolated and terrain on-site, a skid steer will be utilized to transport the drums to a suitable staging location for later disposal, as well as to clear brush and trees for access to the proposed locations.

Groundwater Sampling of Proposed Shallow Monitoring Wells

Prior to sampling, the new monitoring wells will be developed. The wells will be surged and pumped. A Horiba U-52 will be used to monitor groundwater chemistry to determine when the wells have been sufficiently developed. GES will gauge, and sample the proposed new shallow monitoring wells (OW-26 through OW-30) as well as existing shallow monitoring well OW-16 using low flow methods to mitigate potential interferences from turbidity, more so specifically at the newly installed wells. Purge water will be treated through carbon and discharged to the surface.

Reporting

A report documenting the results of the fieldwork, laboratory analytical results, and recommendations for further action will be submitted to the NYSDEC following completion of the fieldwork and receipt of analytical results. Laboratory analytical data will be uploaded into NYSDEC's EQuIS database.

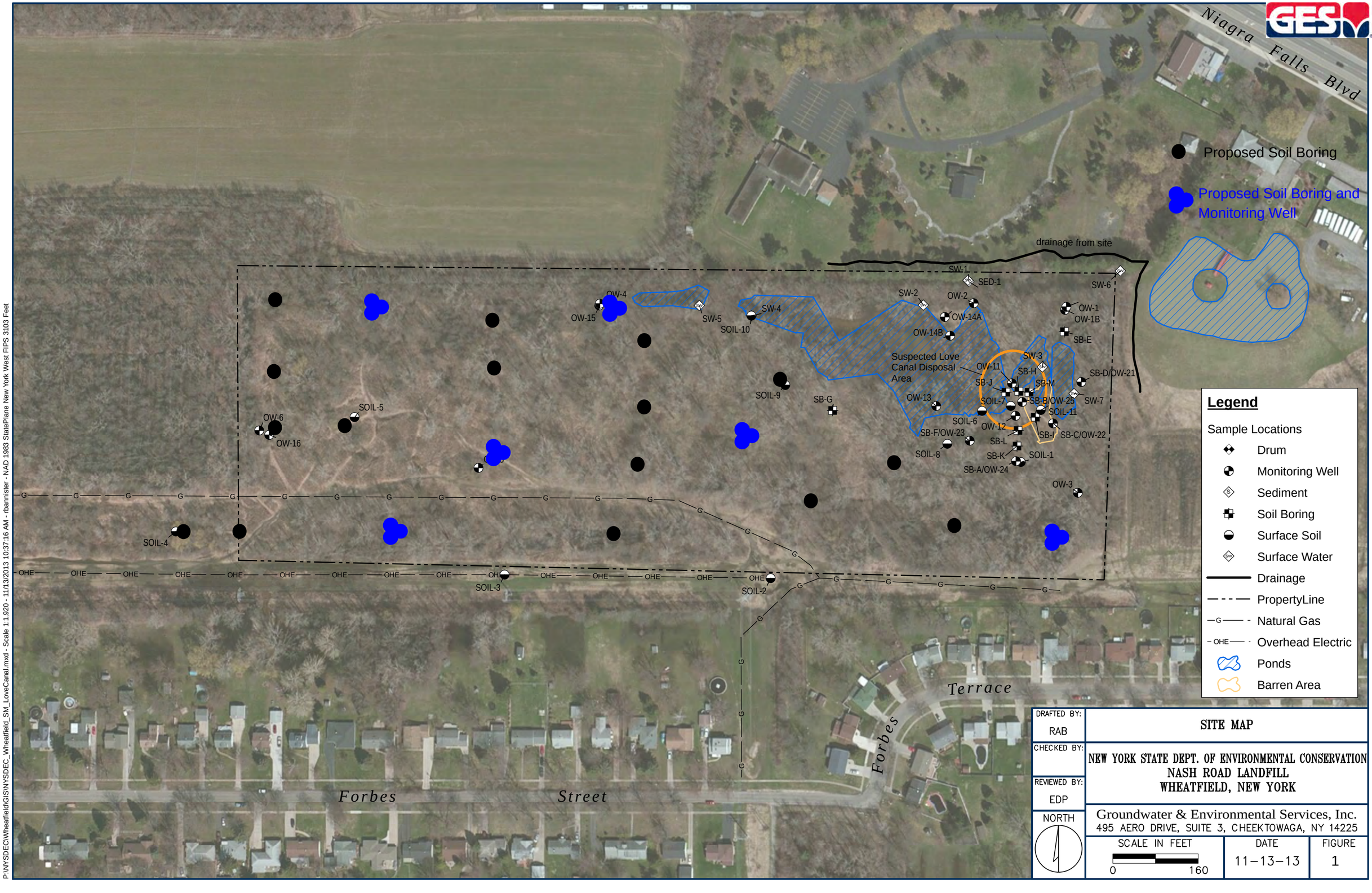
If you have any questions or comments, please contact GES at your convenience.

Sincerely,
GROUNDWATER & ENVIRONMENTAL SERVICES, INC.

Eric D. Popken
Project Manager

Attachments

Figure 1 – Site Map
Table 1 – Sample Matrix



DRAFTED BY: RAB

CHECKED BY:

REVIEWED BY: EDP

NORTH

SITE MAP

NEW YORK STATE DEPT. OF ENVIRONMENTAL CONSERVATION
NASH ROAD LANDFILL
WHEATFIELD, NEW YORK

Groundwater & Environmental Services, Inc.
495 AERO DRIVE, SUITE 3, CHEEKTOWAGA, NY 14225

SCALE IN FEET: 0 160

DATE: 11-13-13

FIGURE: 1

P:\NYSDEC\Wheatfield\GIS\NYSDEC_Wheatfield_SM_LoveCanal.mxd - Scale 1:1,920 - 11/13/2013 10:37:16 AM - rbannister - NAD 1983 StatePlane New York West FIPS 3103 Feet

Nash Road Landfill
NYSDEC Site #932054
Town of Wheatfield, NY

Table 1
Sample Matrix

Sample Media	Purpose	Quantity	Analysis	Method
Subsurface Soil - grab sample	Characterization of any subsurface impacts from the former landfill. One sample from each soil boring, however some borings may warrant a second sample at different depths.	22-25	SVOCs	8270
			VOCs	8260
			RCRA-8 Metals	6010B
			Pesticides	8081
			Herbicides	8151
Groundwater	Collect groundwater samples from OW-16 at same time as the new wells for direct temporal comparison.	1	SVOCs	8270
			VOCs	8260
			RCRA-8 Metals	6010B
			Pesticides	8081
			Herbicides	8151
	Collect groundwater samples from newley installed shallow monitoring wells to evaluate current potential impact of the dumping activities to groundwater on-site.	6	SVOCs	8270
			VOCs	8260
			RCRA-8 Metals	6010B
			Pesticides	8081
			Herbicides	8151