Memo

Date:	April 21, 2016
Project:	BCP Site # C360143
To:	Randy Whitcher, NYSDEC
From:	Michael Musso, HDR (on behalf of the Village of Tuckahoe)
Subject:	Technical Review comments on the draft RAWP (January 26, 2016) 109-125 Marbledale Road Tuckahoe, New York

We appreciate the opportunity to provide you comments on the Draft RAWP for the Marbledale Road BCP site in the Village of Tuckahoe.

The comments provided below are focused on the BCP site itself (on-site), but some allude to potential off-site work that the NYSDEC is evaluating (e.g., the off-site VI assessment that NYSDEC is leading for commercial buildings along Marbledale Road; future off-site soil and groundwater investigations as part of the recent "P" designation).

DATA EVALUATION AND INTERPRETATIONS

- The Draft Remedial Action Work Plan (RAWP; dated January 26, 2016) includes statements that imply that on-site soils as currently assessed meet the NYSDEC Commercial Use Soil Cleanup Objectives (SCOs). A review of the Remedial Investigation (RI) data collected under the BCP indicates that this is not the case; there are several exceedences of the Commercial Use SCOs among the soil samples collected. Based on conversations with NYSDEC, the Commercial Use SCOs appear to be appropriate for site soil evaluations, based on the current zoning and existing land uses in the area and given that no potable wells exist in the area. It is suggested that NYSDEC (or applicant) also review the RI soil data against the Protection of Groundwater SCOs so that the data can be reviewed against a more conservative set of criteria (the RAWP data tables can be updated by the applicant to present these criteria).

- **Soil Vapor**. For data tables that summarize RI soil gas results, HDR recommends that comparison criteria based on NYSDOH's soil vapor intrusion

matrix be added to the tables for those parameters which have target values listed (PCE, TCE, etc.). In addition, USEPA's VISL calculator can be used to generate target values for other VOCs that were present in on-site soil gas samples. These values may allow for better analysis and interpretation of the soil gas data, and can assist the applicant with the design of the sub-slab depressurization system(s) (SSDS) for the on-site development. It is acknowledged that the applicant is only responsible for addressing on-site environmental media (soil, groundwater, soil gas), and that soil vapor intrusion (SVI) studies at off-site locations – and perhaps other off-site assessments - are being conducted by NYSDEC / NYSDOH as a separate 'track'.

EXCAVATION PORTION OF PROPOSED REMEDY

- The proposed remedy (under NYSDEC review) includes excavation of "hot spot" areas as described in the draft RAWP, with remaining soils (post-excavation) to be below the Commercial Use SCOs. The NYSDEC should confirm to the applicant that soils proposed to remain at the site:

    - Must have contaminant concentrations that all fall below the Commercial Use SCOs, as demonstrated by post-excavation confirmatory sampling data; and

    - Will be managed appropriately (i.e., contained below a NYSDEC-approved capping system, and subject to long-term monitoring as part of the project-specific Site Management Plan [SMP]).

It is understood that soils with one or more chemicals that exceed the Commercial Use SCOs – based on the current RI soil data or future endpoint sample data to be collected during remedy implementation – will be disposed of off-site (not eligible for use as fill or grading materials at other portions of the development). All waste classification sample data, documentation of disposal facility(s) acceptance of soil / debris, and final disposal verifications shall be documented by the Engineer and included in the Final Engineering Report (FER). **HDR suggests that contemplated disposal facilities and any changes in proposed truck routes that are shown in the draft RAWP be communicated to NYSDEC and the Village a minimum of two weeks prior to start of work (with any changes to these items communicated in a timely fashion). It is the BCP applicant's responsibility to adhere to all local, State, and Federal rules and regulations pertaining to waste classification, transportation, and disposal**.

For the RAWP, the excavation portion of the remedy should include a detailed plan to track "hot spot" removals. HDR recommends that the RAWP describe in detail the soil removal tracking procedures to be employed during future remedial work, including:

- Documentation of each excavation location at the site (dates of disturbance and sampling; debris / waste material encountered; post-excavation sample locations and data; backfill and restoration). Any debris or waste materials that are encountered during hot-spot or general site development excavation work should be appropriately disposed of off-site (and documented).

- Recording the final depth and dimensions, and total volume of soil and debris removed (by each hot spot or area where soil is excavated). **It is noted that based on post-excavation confirmatory sampling, additional soil removal may be required within and around a "hot spot" area if bottom and/or sidewall samples collected after the initial excavation work do not meet the Commercial Use SCOs for one or more parameter.** It is recommended that NYSDEC confirm the analyte list required for the post-excavation soil sampling (assumed to include VOCs, SVOCs, PCBs, pesticides, and metals). It is suggested that NYSDEC may require testing for additional parameters should field observations of debris, staining, odors, or ash be made in certain locations during "hot spot" or general site development excavation work.

- Stockpile location and stockpile management (covering of piles when not in use, installing and maintaining soil erosion / sediment controls [haybales or silt fencing] around the stockpiles; it is noted that a SWPPP is under development for this project). It is important that the Engineer keep a record of stockpile numbers and origin of excavated soil that is placed in each stockpile, for purposes of sampling the stockpiles to support off-site disposal or on-site reuse decisions (see below). It is anticipated that remedial work could occur simultaneously with site development work (thus, staging of building materials, clean fill soils, and contaminated soils must be appropriately managed).

- Confirmation of the maximum size (height and volume) of the stockpiles. The NYSDEC case manager and NYSDEC DER-10 guidance should be consulted to establish a maximum soil stockpile size that will allow the Engineer to appropriately collect stockpile samples for purposes of characterizing the stockpile(s) for off-site disposal or on-site reuse decisions. To prepare for the scenario where "hot spot"

areas could expand in size based on post-excavation soil sampling results, a phased approach to excavation/stockpiling/sampling may be needed.

- Decision path for (a) re-using soil below capping system with NYSDEC pre-approval and (b) waste classification for off-site disposal should be clearly presented in the RAWP for the review of NYSDEC and NYSDOH. DER-10 guidance should be referenced. It is assumed that all of the soils from the initial "hot spot" digs (prior to endpoint sample collection) are to be appropriately disposed of off-site. If the applicant proposes separation of soils within stockpile areas and/or data evaluations to limit the quantities tagged for off-site disposal, these procedures should be described in the RAWP.

- **Dust suppression during all excavation work** (for remedial and site development purposes) will be important to protect off-site receptors (commercial businesses, residents, visitors to the area), and should be described in the RAWP or in a separate plan (CAMP, see below) for agency and Village review. It is suggested that water mists, foams, and other dust suppression methods be proposed to NYSDEC and be maintained at the site for possible use until all subsurface work is completed.

- **Community Air Monitoring Plan (CAMP), with data reported to the NYSDEC and Village on a weekly basis (or more frequently based on the intensity of the excavation work)**. The number of air monitors, positions, determination of wind patterns, 'action levels' to evaluate dust suppression techniques and to require temporary work stoppages until corrective actions are made, and identification of off-site receptor areas should be detailed before work starts. The Village will be interested in this CAMP and may have comments prior to the start of any remedial work. Given the potential for intensive soil and equipment movements, a kick-off meeting at the site with the developer, NYSDEC, NYSDOH, and Village representatives is recommended prior to the start of any intrusive work for purposes of identifying property lines, and reviewing air monitoring equipment and CAMP requirements, action levels, procedures for dust suppression, and reporting particulate and VOC levels to the agencies. The NYSDEC and NYSDOH should decide if any nearby (off-site) structures or areas could require temporary engineering controls (e.g., sealing of vents or windows) as a contingency or added level of protection.

- In some instances, the CAMP information presented in the RAWP uses passive language such as “Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations” found in the first paragraph on the Particulate Monitoring, Response Levels and Actions section. HDR believes the applicant needs to present stronger and more descriptive language to insure that the community will be protected during remediation and site development. Monitoring for VOCs should be included in the CAMP. The CAMP efforts may be ‘downgraded’ after initial air monitoring data and dust suppression methods are assessed.

GROUNDWATER AND STORMWATER

- The draft RAWP does not propose to directly address the groundwater medium at the site. Based on a review of the site data and proposed remedy, HDR understands that the subsurface contamination at the site will be remedied by excavation of soil “hot spots” (which, as described above, could be expanded in size from what is laid out in the draft RAWP), and that capping is a presumptive remedy for landfill settings. In addition, the site development and capping system proposed in the RAWP should lessen the local infiltration of rain / snow melt (and should reduce the vertical transport of remaining subsurface contamination to the groundwater [shallow groundwater exists at the site at depths of approximately 18 – 20 ft bgs based on the on-site monitoring well data]).

  The applicant’s stormwater engineer has noted that there will only be a very small percentage of the site (landscaped areas) that will allow infiltration to the subsurface; all other stormwater / precipitation will be collected with new on-site infrastructure, retained among a series subsurface Contech detention systems, and ultimately discharged to an existing storm sewer main in Marbledale Road. **It is noted that the Village’s stormwater consultant has been reviewing this information, and additional information from the applicant is still pending. However, The Village and NYSDEC should confirm that the final design for the developed site’s stormwater management system will NOT allow groundwater to infiltrate the system. A review indicates that the depths of the detention chambers (as currently proposed, with design perhaps subject to change) lie above the water table; however, shallow / perched groundwater in the overburden is possible based on test boring data**.

Soil "hot spot" removal and decreasing the permeable surfaces at the site with a new stormwater collection system should have a beneficial effect on the on-site groundwater, but it is recommended that the changes in groundwater elevations and chemical concentrations that could occur during and subsequent to development should be monitored for purposes of evaluating on-site groundwater levels and flow regimes, contaminant levels in groundwater, and geochemistry. We note that a comparison of the organic data collected at MW-8 between the applicant's data and NYSDEC's data shows a difference of 1 order of magnitude of VOCs detected in groundwater.

Based on the above, HDR recommends that a series of on-site monitoring wells (perhaps 6-8, including along the perimeters of the site) be retained or installed for purposes of groundwater monitoring. It is recommended that groundwater monitoring be included as part of the remedial alternatives in the RAWP, with proposed monitoring well locations, construction (stainless or PVC; 2" or 4" diameter), depths, and screened intervals described for NYSDEC review. One new well each along the northern and southern BCP site boundaries should also be installed to depths confirmed to reach below the bottom of the former quarry (with screening at the bottom 10 ft. and at a shallower interval). HDR suggests that NYSDEC / NYSDOH consider a periodic monitoring plan for on-site groundwater (perhaps quarterly for a minimum of 1 year), with an option to decrease or increase the frequency of monitoring based on data collected. It is also recommended that monitoring wells installed for this purpose be constructed (flush mount with surface or 'stick-ups') so that the NYSDEC can sample in the future at its discretion. Considering the recent "P" designation by NYSDEC and in anticipation of off-site work to be led by the NYSDEC, it is understood that the number and location of such on-site wells will be determined by the agency.

SOIL VAPOR INTRUSION

- Section 8.3.2.1 of the draft RAWP (Off-site Commercial Occupants Section) - This section states, "off-Site occupants will be better protected from any potential exposures by drawing the vapors back onto the Site through the active, negative pressure SSDS." HDR suggests that without SSDS design information (and pilot testing that includes radius of influence determination), this statement cannot be supported. Predicting actual soil vapor pathways in the subsurface before an active system is operating is difficult. However, based on the RAWP statements, it is understood that SSD systems will be designed and maintained to (a) be protective of future on-site occupants and (b) provide a sort of control for vapors

near the BCP boundaries. The design and sizing of SSDS components (subsurface piping below proposed on-site buildings, blowers, vent piping, manometer/pressure gauges) needs to include field communication pressure testing in determining the influence of SSDS at the site**. It is recommended that NYSDEC and NYSDOH review the draft RAWP to insure sufficient information / detail on the proposed SSDS' is included for this stage of the project. For instance, NYSDEC may opine on Westchester County DOH permit needs**. It is understood that the future FER will provide necessary detail of the SSDS design, construction, operations, and maintenance.

SITE MANAGEMENT PLAN

- It is understood that a detailed SMP will be required for the approved remedy, and will likely include information on:
    - Periodic inspections (capping system)
    - Operation, Maintenance & Monitoring (OM&M) of the SSDS components
    - Documentation of other engineering controls
    - Groundwater monitoring needs
    - Procedures for future soil / cap disturbances and repairs
    - Institutional Control (such as environmental easement and deed restriction)
    - Other items as required by NYSDEC or NYSDOH
    - Reporting to the agencies

The SMP may be submitted for agency review as part of the FER (or as a separate document). It is recommended that the NYSDEC and NYSDOH review the draft RAWP to determine if any further detail on the SMP needs to be included at this stage of the project. Please let me know if you would like to discuss these comments submitted on behalf of the Village.

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