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April 26, 2017

Mr. Michael Belveg
Project Manager
NYSDEC Region 7
615 Erie Boulevard West
Syracuse, New York 13204

Re: Pass and Seymour Investigation of Potential Sources in AOC-1

Dear Mr. Belveg,

This workplan describes additional testing proposed in response to your letter dated March 6, 2016 in which you stated that additional testing is required to better define the nature and extent of solvent impact reflected by elevated soil vapor measurement of "primary and secondary" areas of impact within the footprint of AOC-1. The purpose of this workplan is to describe the procedures to be followed in completing a boring and sampling program for better understanding the vertical and horizontal extent of impacted overburden.

Background

As described in previous reports persistent elevated concentrations of Trichloroethene (TCE) and related compounds have been observed in several monitoring wells within AOC-1 installed in bedrock; OW1-1, OW1-2, OW1-3 and BR09-37. Concentrations in groundwater either persist or have rebounded despite the injection of sodium and potassium permanganate in two separate applications.

Free product (solvent) has never been observed either in monitoring wells or during the completion of borings. Nevertheless the persistence and elevated concentrations in some wells within AOC-1 may indicate residual source material that may reside in the interstices of overburden and bedrock within the AOC-1 footprint.

The average depth to bedrock under this portion of the site is roughly 12 feet below ground surface. The bedrock is the Vernon shale and the interface between overburden and bedrock is usually a transition zone within which the rock becomes more competent with depth. The four wells mentioned above (OW1-1, 1-2 and1-3 and BR09-37) are completed to depths between 24 and 28 feet. Water levels in the wells vary seasonally by 4-6 feet. The highest water levels usually occur in the first or fourth quarter and the lowest occur in the second or third quarter. The groundwater level in these four wells is generally at its lowest elevation corresponding to 18 feet below ground surface or greater during the summer months.

Objective of Soil Boring Program

The results of soil vapor testing indicate the probability that residual solvent exists in the subsurface. This material may exist in overburden, weathered rock or competent bedrock. It is likely that a hollow stem auger and split spoons or core barrels could be advanced to a depth of 18 feet. It is proposed that a number of soil borings be completed with the purpose of defining potential source material to a depth of 18 feet or auger refusal whichever is less.

Soil vapor testing results reported in the December 2, 2016 report showed elevated high concentrations in the vicinity of locations 4 and 5, (adjacent to each other), and soil vapor location 11. For reference purposes it should be noted that soil vapor point 4 (SV-4) is 11 feet east of the old building foundation and that soil vapor point 5 (SV-5) is 24 feet due east of SV-4(Figure 1).

Soil Boring Placement

Each boring completed will be to a depth of 18 feet or auger refusal, whichever is less. Continuous split spoons or core samples will be scanned with a Photoionization Detector. All segments exceeding PID readings of 50ppm will be retained and one sample corresponding with the highest PID in each boring will be submitted for lab analysis. Borings will be place as follows; Borings related to SV-4: A boring will be completed in the location of SV-4 followed by four borings each at a five foot distance from SV-4; west, east north and south. Additional borings beyond the initial distance of five feet from SV-4 will be completed at an additional distance of 5 feet east, north and south unless the previous boring completed on that bearing indicated that no soil/overburden had PID readings above 50ppm. No additional borings well be completed further to the west due to the presence of the former industrial building foundation. Borings related to SV-5: As with SV-4 a boring will be completed at this sample location and then borings completed at a distance of 5 feet ; north, west, south and east and additional borings completed at five foot intervals unless the last boring on that bearing showed no PID readings above 50ppm. Borings related to SV-11: As with the previous two locations a boring will be completed at this soil vapor sample location along with borings at five feet distance northeast, south and west. Borings may be completed beyond these if PID readings suggest that contamination may be present.

Number of Soil Borings

The number of soil borings will be a minimum of 15 but the total number necessary must be determined based on field results. For purposes of managing the scope of work it is proposed that an approved maximum of twenty borings be anticipated.

Soil Sampling and Analysis

As noted above all borings will include continuous split spoons or coring. Each length of soil core will be scanned with a field photoionization detector and any soils with PID readings above 50ppm will covered with parafilm to reduce volatilization until the total boring depth is reached.

Once the total boring depth is reached a sample will be extracted from the interval exhibiting the highest PID reading using the Terracore method in accordance with EPA method 5035. Samples will be obtained and submitted to the lab for both high level and low level analysis. Samples will be analyzed according to EPA method 8260 for Volatile Organic Compounds. A total of not more than 20 samples will be collected and analyzed. No sample will be gathered for any borings with no PID readings exceeding 50ppm.

Each boring location will recorded using GPS and tape and compass survey referenced to existing soil vapor and monitoring well locations.

Each borehole will be grouted from 18 to 12 feet and then filled to grade with unimpacted cuttings.

Report of Findings

A summary report of findings will be submitted after lab results are available. The report will discuss the distribution of probable source material in the top 18 feet and any evidence of penetration beyond that depth. Based on existing data the volume of impacted material will be reported and to the extent possible removal methods will be presented. Recommendations for further action will be offered, as appropriate.

Please call me or email me if you have questions or comments.

Very Truly Yours,

David W. Stoner
President

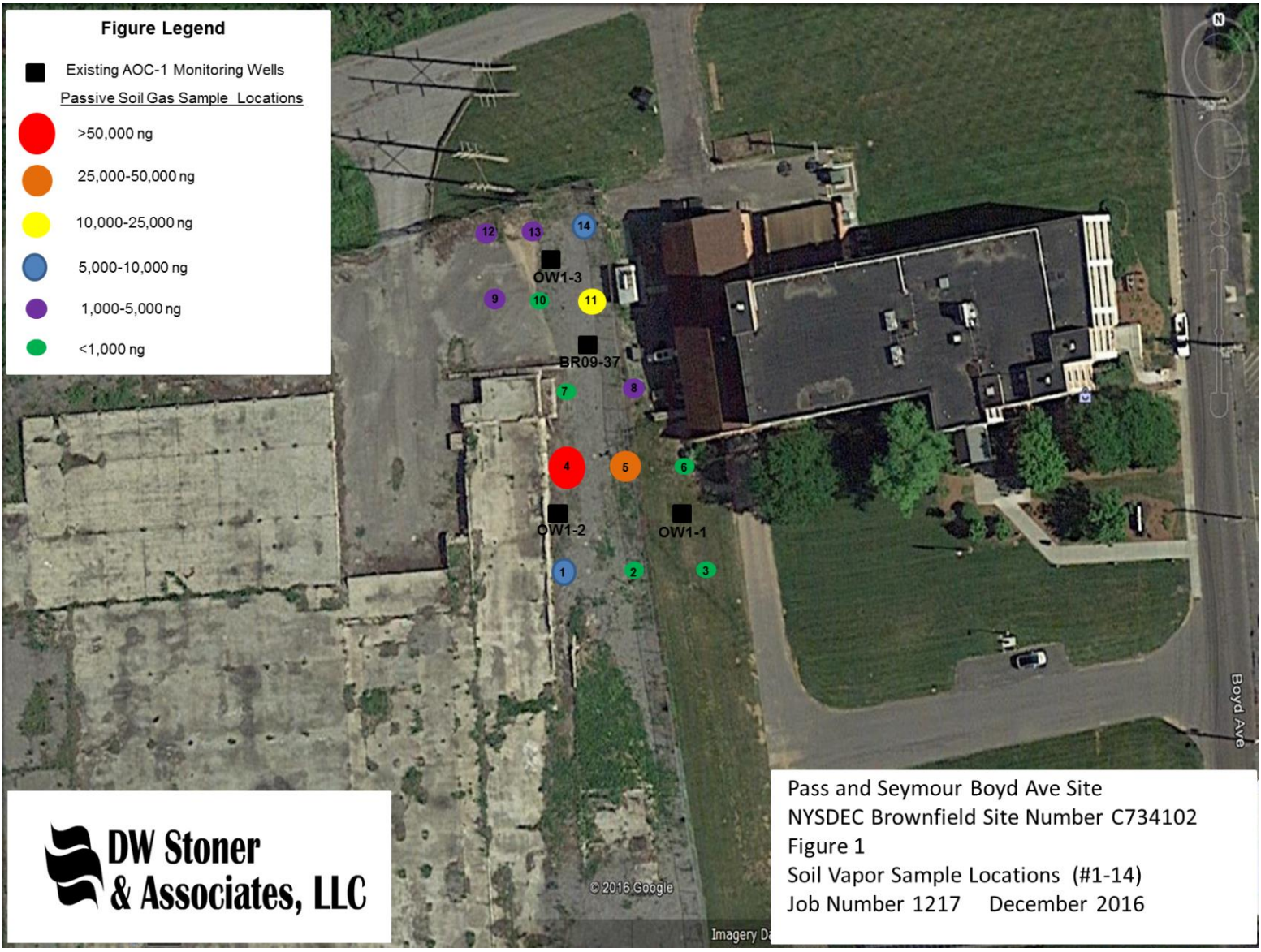
Figure Legend
Existing AOC-1 Monitoring Wells
Passive Soil Gas Sample Locations
>50,000 ng
25,000-50,000 ng
10,000-25,000 ng
5,000-10,000 ng
1,000-5,000 ng
<1,000 ng
OW1-3
BR09-37
OW1-2
OW1-1
1
2
3
4
5
6
7
8
9
10
11
12
13
14
Boyd Ave
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DW Stoner & Associates, LLC
Pass and Seymour Boyd Ave Site
NYSDEC Brownfield Site Number C734102
Figure 1
Soil Vapor Sample Locations (#1-14)
Job Number 1217 December 2016