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April 25, 2019

Mr. Matthew Hubicki
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, New York, 12233-7017

Re: Polychrome Research and Development (R&D) Lab Site [Polychrome West (PW) Site]
137-145 Alexander Street, Yonkers, NY 10701
BCP Site: C360099
NAPL Monitoring Well Installation Workplan – Phase II

Dear Mr. Hubicki:

On behalf of Avalon Yonkers Sun Sites, LLC (AVB), AKRF, Inc. (AKRF) has prepared Phase II of the NAPL Monitoring Well Installation and Monitoring Workplan (Workplan) for review and approval by the New York State Department of Environmental Conservation (NYSDEC).

Phase I of the Workplan was submitted to and approved by NYSDEC in December 2018, and included installation of four NAPL monitoring wells. An additional nine dense non-aqueous phase liquid (DNAPL) monitoring wells and six light non-aqueous phase liquid (LNAPL) monitoring wells are proposed for installation outside of the building footprint at the PW Site as part of this Workplan. The preliminary locations were submitted to NYSDEC on April 17, 2019, and the well locations (NW-1 through NW-7, NW-11, NW-12, and MW-A through MW-F) were approved by NYSDEC on April 18, 2019. At that time, NYSDEC requested that one additional LNAPL monitoring well (MW-F) be installed adjacent to DNAPL monitoring well NW-7 (see Figure 1).

DNAPL and LNAPL Monitoring Well Construction Methods and Details

AKRF will subcontract a driller to mobilize a truck mounted drill rig to the PW Site. The driller will utilize an 8-inch hollow stem auger to install the 4-inch DNAPL monitoring wells to the depths specified in the attached Table 1. DNAPL monitoring well construction will be in accordance with the PW Remedial Action Workplan (RAWP) and constructed as follows from bottom (lowest elevation) to top: a 3-foot stainless steel sump, followed by a 10-foot long 40-slot stainless steel screen, followed by stainless steel risers to stick up finishes above the ground surface to accommodate the future grade. Hydrated bentonite or grout will be utilized in the annulus surrounding the sump and from 2 feet above the screen to grade. Pea gravel will be utilized as the filter pack surrounding the screen.

LNAPL monitoring wells will be installed utilizing the same methods discussed above for the DNAPL monitoring wells, but will be constructed of PVC instead of stainless steel, installed with a 10-foot long 20-slot well screen, and the sump will be 1 foot in length as opposed to 3 feet, as summarized in Table 2. Well construction logs will be provided to NYSDEC after installation activities are completed.

The bottom of the stainless steel screen for the DNAPL monitoring wells corresponds to the lowest adjacent elevated TarGOST reading(s) recorded in the pre-design investigation (PDI). Based on confirmation borings from the PDI and observations from the PW RAWP, the deepest elevated TarGOST readings appear to correspond with the interface between the historical fill and native river sediments (confining or semi-confining layer) at the PW Site. During DNAPL well installation drilling activities within the final 5 feet of the proposed well screen depth, the driller will attempt to collect split spoon samples to confirm that the proposed bottom depth of the well screen corresponds to the native river sediments. The screen depths for the LNAPL monitoring wells were chosen in order to span the groundwater table (approximated at 1 foot above mean sea level). No split spoon sampling will be completed for the LNAPL monitoring well installations.

After installation, NAPL monitoring wells will be developed by surging and pumping. Groundwater will be pumped into 55-gallon stainless steel drums for off-site disposal. Following DNAPL and LNAPL monitoring well development, AKRF will gauge the wells on a daily basis for a week to monitor NAPL accumulation. If significant NAPL is observed (up to 1 foot within the screened interval), and once the accumulation of NAPL has stabilized, AKRF will assess the NAPL for transmissivity in general accordance with ASTM E2856-11. AKRF may also elect to collect samples for fingerprint analysis of the NAPL.

Schedule

AKRF requests approval to complete NAPL monitoring well installation activities at the PW Site starting in May 2019. AKRF will notify NYSDEC prior to mobilization to the Site for the well installation work.

If you have any questions, comments or concerns regarding this Workplan, please reach contact me at at (914) 922-2387.

Sincerely,
AKRF Engineering, P.C.

Patrick McHugh, P.E.
Environmental Engineer

Encl.: Figure 1 – Proposed NAPL Monitoring Well Locations
Table 1 – DNAPL Well Construction
Table 2 – LNAPL Well Construction

cc (electronic copy only): Kevin Carpenter – NYSDEC
Aaron Levy – Avalon Bay
Barry White – Avalon Bay
Chris Capece – Avalon Bay
John Fitzpatrick – Avalon Bay
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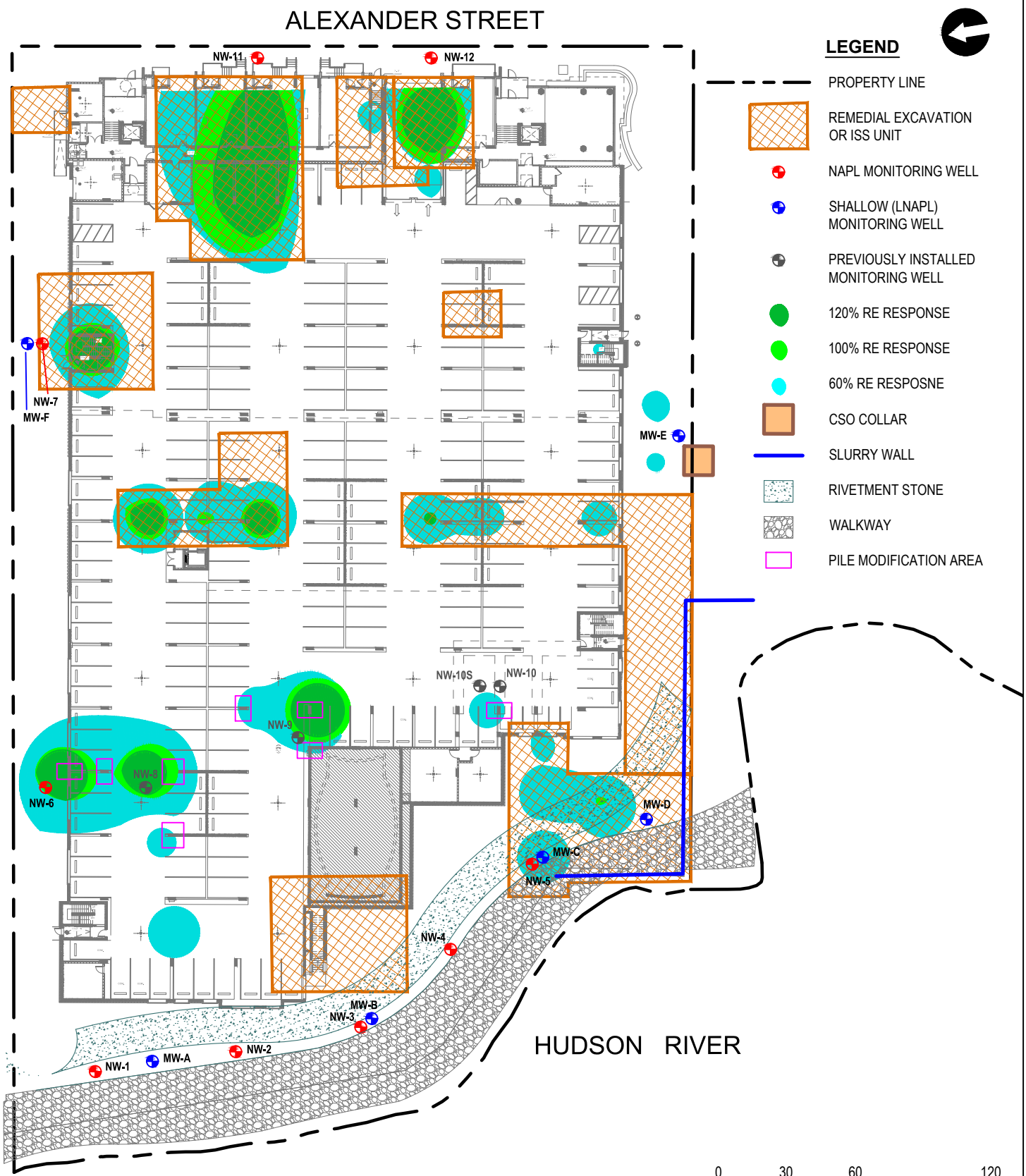

Source:
Drawing comprised of AutoCAD Layers provided by Paulus, Sokolowski and Sartor Engineering, P.C.

AKRF
440 Park Avenue South, New York, NY 10016

Polychrome West
NYSDEC Site
Yonkers, New York

PROPOSED NAPL MONITORING WELL LOCATIONS - PHASE 2

DATE
4/22/2019

PROJECT NO.
180017

FIGURE
1

Table 1
DNAPL Well Construction
PW NAPL Monitoring Well Installation Workplan - Phase II

Table 1 - DNAPL Well Construction										
Well Number	**Nearest TarGOST boring**	**Original Surveyed Ground Surface Elevation**	**Current Estimated Ground Surface Elevation**	**Depth below ground surface of elevated TarGOST Reading**	**Bottom Elevation of Elevated TarGOST reading**	**Proposed Bottom Elevation of 3-foot sump**	**Bottom Elevation of 40-slot screen**	**Top Elevation of 40-slot screen**	**Top Elevation of Riser**	**Well Depth (feet)**
NW-1	TG-106	3	7	26	-23	-26	-23	-13	11	37
NW-2	TG-106	3	7	26	-23	-26	-23	-13	11	37
NW-3	TG-101/TG-106/TG-107	3	7	28.5	-25.5	-28.5	-25.5	-15.5	11	39.5
NW-4	TG-101/TG-106/TG-107	3.5	8	28.5	-25	-28	-25	-15	12	40
NW-5	TG-93/TG-107	3.5	9	27	-23.5	-26.5	-23.5	-13.5	13	39.5
NW-6	TG-103	5	8	29	-24	-27	-24	-14	12	39
NW-7	TG-15	9.5	8	22	-12.5	-15.5	-12.5	-2.5	12	27.5
NW-11	TG-109	7	7	21	-14	-17	-14	-4	11	28
NW-12	TG-2	7	7	23	-16	-19	-16	-6	11	30

Notes:

1. Total Well Depth is inclusive of the 3-foot steel sump
2. 10-foot section of 40-slot stainless steel screen with pea gravel filter pack to be installed at each location
3. Hydrated bentonite chips to be used around the 3-foot sumps
4. All elevations NAVD88 - units in feet
5. Survey performed by PS&S
6. All well materials to be constructed using 4-inch stainless steel

Table 2
LNAPL Well Construction
PW NAPL Monitoring Well Installation Workplan - Phase II

Table 2 - LNAPL Well Construction								
Well Number	**Original Surveyed Ground Surface Elevation**	**Current Estimated Ground Surface Elevation**	**Elevation of Groundwater Table**	**Proposed Bottom Elevation of 1-foot sump**	**Bottom Elevation of 40-slot screen**	**Top Elevation of 40-slot screen**	**Top Elevation of Riser**	**Total Well Depth (feet)**
MW-A	3	7	1.0	-7.0	-6.0	4.0	11	18
MW-B	3	7	1.0	-7.0	-6.0	4.0	11	18
MW-C	3	9	1.0	-7.0	-6.0	4.0	13	20
MW-D	3.5	9	1.0	-7.0	-6.0	4.0	13	20
MW-E	5.5	8	1.0	-7.0	-6.0	4.0	12	19
MW-F	5.7	8	1.0	-7.0	-6.0	4.0	12	19

Notes:

1. Total well depth is inclusive of the 1-foot PVC sump
2. 10-foot section of 20-slot PVC screen with sand filter pack to be installed
3. All elevations NAVD88 - units in feet
4. Survey performed by PS&S
5. Well materials to be constructed using 4-inch PVC