September 21, 2017

Mr. James A. Quinn
NYS Department of Environmental Conservation
625 Broadway, 11th Floor
Albany, NY 12233-7020
james.quinn@dec.ny.gov

RE: Monitoring Well Decommissioning and Reinstallation Plan
DeLaval Property
202-204 Rinaldi Boulevard, Poughkeepsie, New York
Site No. B00190, CHA Project No. 30114

Dear Mr. Quinn,

Pursuant to previous discussions between the New York State Department of Environmental Conservation (NYSDEC) and CHA Consulting, Inc. (CHA), implementation of the Site Management Plan (SMP) at the DeLaval Property (Site) will require the decommissioning and reinstallation of one monitoring well. The well to be abandoned, well MW-4, is a shallow overburden well, constructed of 2-inch diameter PVC and has been deemed unusable. CHA is providing this Monitoring Well Decommissioning and Reinstallation Plan which describes procedures to be taken at the Site to complete the well decommissioning and replacement.

General Requirements:

- All work will be completed by a well drilling contractor registered in the State of New York, who shall comply with all applicable rules, regulations, and guidelines published by the State of New York regarding performance of the work.

- The Contractor shall clear all underground utilities within the proposed work areas by calling Dig Safely New York, municipal authorities, and public utilities of record prior to commencing all work.

- The Contractor shall be subject to all existing Health and Safety requirements for the DeLaval Property.

Decommissioning Procedure:

All decommissioning activities will be conducted per NYSDEC's CP-43: Groundwater Monitoring Well Decommissioning Policy. The well to be decommissioned and replaced is MW-4 (see Figure 1 for the location of existing well MW-4). The abandoned well will be fully sealed

in a manner appropriate for site specific geologic conditions to prevent contaminant migration through the borehole. The method for well decommissioning is described below.

Grout the well and pull the PVC riser.

Upon mobilizing a drill rig to the well location, the contractor will remove the protective 4-inch PVC casing and rubber gripper plug. A tremie pipe will then be used to grout the well riser and screen from the bottom of the well up to within at least one foot of the ground surface elevation keeping the tip of the tremie pipe submerged beneath the grout level at all times. Equipment used for pumping the grout shall be of the diaphragm, piston, gear, or helical type. The contractor shall be responsible for determining the amount of grout required to plug each well. The tremie pipe will have an inside diameter of at least one-inch to avoid segregation or dilution of the sealing materials. The grout mixture will be a bentonite-cement grout mixture consisting of the following:

- One 94-pound bag of Type 1 Portland cement (ATSM Standard C150)
- 3.9 pounds of sodium-bentonite clay power (finely ground)
- 7.8 gallons of potable water

Following the initial grouting of the PVC well riser and screen, the contractor will cut the PVC riser off approximately 1-foot below ground surface.

A completed Well Decommissioning Record (Figure 3 of NYSDEC's CP-43: Groundwater Monitoring Well Decommissioning Policy) will be completed to document the abandonment of existing well MW-4. The information recorded shall include the well ID, the depth of the well, the name of the driller and drilling company, the date of the decommissioning, type of plugging material used, the volume of materials used, the interval grouted, and the method of placing the plugging material into each well.

Reinstallation:

After the well has been decommissioned, a new well will be placed according to the following procedure.

New well MW-4R will replace well MW-4, approximately 10 ft. east (in direction) from its current location. The new well will be installed using a hollow stem auger rig and will be installed in a similar manner and depth as well MW-4. For additional details on how MW-4 was installed see Figure 2 attached. In general, the well will include:

- 2" Schedule 40 PVC well screen – 10 feet long and 0.010-inch slot.
- A sandpack will be placed around the well screen and a bentonite seal will be placed over the sandpack.
- 2" Schedule 40 solid PVC riser.
- A replacement gripper plug at the top of the riser.
- A temporary 4" casing will be installed over the riser. This will be replaced with a permanent flush-mount casing when the site is redeveloped.

On the day following the well installation, it will be developed by cycles of surging and pumping for up to two hours in attempt to reduce turbidity levels below 50 NTUs.

Decontamination:

After the current well has been decommissioned and the new well is installed, the contractor will decontaminate the equipment used throughout the process according to the following procedure.

1. All down-hole equipment (e.g. tremie pipe, augers, drill rods, etc.) will be thoroughly decontaminated on-site prior to abandoning the well with a high-pressure steam cleaner to minimize the potential to transfer contamination.

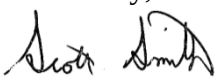
Site Restoration:

1. The Contractor shall restore the Site to a condition that reasonably approaches the original condition of the Site prior to the start of work. After the well is sealed, the work area shall be graded to conform to the existing ground contours.

2. Upon completion of the work, the Contractor will remove all materials, debris, tools, and machinery used to complete the work. The contractor shall dispose of all excess materials, the well protective casings, and PVC well pipe off-site in accordance with all local, State, and Federal regulations. Soil cuttings, if any, will be managed in accordance with the current soil screening and sampling requirements for the project.

Please provide your approval of this well decommissioning and reinstallation plan at your earliest convenience. Should you have any additional questions please contact me at (315) 471-3920.

Sincerely,



Scott M. Smith, P.E.
Principal Engineer VI

Enclosure
SJM/sms
\\cha-llp.com\proj\Projects\ANY\K4\30114\Reports\Work Plan Letter - MW Repair\MW Decommissioning Plan.docx

LEGEND

- APPROXIMATE LIMITS AOCS (EXCAVATION AREA LIMITS)
- PROPERTY BOUNDARY
- SITE BOUNDARY
- BULKHEAD LOCATIONS
- RIP RAP REVETMENT
- MONITORING WELL LOCATION — MW–1

- SOIL COVER IN FUTURE GREEN SPACE AREAS: 6 OZ. NON–WOVEN GEOTEXTILE, 12" MIN. SILT/TOPSOIL
- SOIL COVER OVER FUTURE IMPERVIOUS AREAS: 6 OZ. NON–WOVEN GEOTEXTILE, 12" MIN. ITEM 4
- SOIL COVER ON SOUTH EAST SLOPE: GEOGRID, 6" ITEM 4, 6" TOPSOIL
- SOIL COVER OVER FUTURE IMPERVIOUS AREAS w/ POTENTIAL REMAINING ACM: 6 OZ. NON–WOVEN GEOTEXTILE, 24" MIN. ITEM 4
- SOIL COVER OVER FUTURE PERVIOUS AREAS w/ POTENTIAL REMAINING ACM: 6 OZ. NON–WOVEN GEOTEXTILE, 24" MIN. SILT / TOPSOIL

- SOIL COVER IN FUTURE BUILDING PAD AREAS: 6 OZ. NON–WOVEN GEOTEXTILE, > 24" MIN. ITEM 4
- SOIL COVER AT PUMP STATION (INSTALLED PRIOR TO 2008): 6 OZ. NON–WOVEN GEOTEXTILE, 12" MIN. ITEM 4
- SOIL COVER INSTALLED PRIOR TO 2008: 6 OZ. NON–WOVEN GEOTEXTILE, 12" MIN. ITEM 4 & PAVED w/ ASPHALT, OR CONCRETE
- SOIL COVER INSTALLED PRIOR TO 2008: 6 OZ. NON–WOVEN GEOTEXTILE, 12" MIN. ITEM 4 & TOPSOIL AND/OR MULCH
- NO SOIL COVER INSTALLED

KEY PLAN

HUDSON RIVER

ZONE 1 = 381± L.F.
ANCHORED BULKHEAD
(SOUTHERN 50' ZONE 1 IS REVETMENT ONLY)

ZONE 2 = 848± L.F.
RIPRAP REVETMENT

ZONE 3 = 658± L.F.
CANTILEVERED BULKHEAD

FUTURE LANDS TO BE ACQUIRED BY THE CITY OF POUGHKEEPSIE

SEE DETAIL 3, FIGURE 7 FOR BACKFILL BETWEEN BULKHEAD & DEADMAN

SEE DETAIL 4, FIGURE 7 FOR SOIL COVER AROUND LIGHT POLE BASES

AOC–1

AOC–2/3

MW–1

MW–2

MW–3

MW–4

MW–5

MW–8

SEE DETAIL 1, FIGURE 7

SEE DETAIL 2, FIGURE 7

LOVE/EFFRON PROPERTY

RET. WALL

N/F CONRAIL CORP.

RAILROAD TRACKS

AOC–5

AOC–4A

MATCHLINE FIGURE 6B

ROUTE 9

STATE OF NEW YORK
MICHAEL E. HOLLOWOOD
LICENSED PROFESSIONAL ENGINEER
068351

0 100 200
SCALE IN FEET

CHA
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Main: (315) 471-3920 · www.chacompanies.com

THE DeLAVAL PROPERTY
ENVIRONMENTAL RESTORATION PROGRAM PROJECT
CITY OF POUGHKEEPSIE, NY

SOIL COVER SYSTEM & MONITORING WELL LOCATION MAP

PROJECT NO. 30114

DATE: JULY 2015

FIGURE 2A

WELL CONSTRUCTION LOG

PROJECT & LOCATION:	DeLeval ERP Project, Poughkeepsie, NY
CLIENT:	City of Poughkeepsie
CONTRACTOR:	NYEG Drilling, LLC

BORING NO.

WELL NO. MW-4

PROJECT NO.: 14357.1013.31000

SHEET NO.: 1 OF 1

ELEVATION:

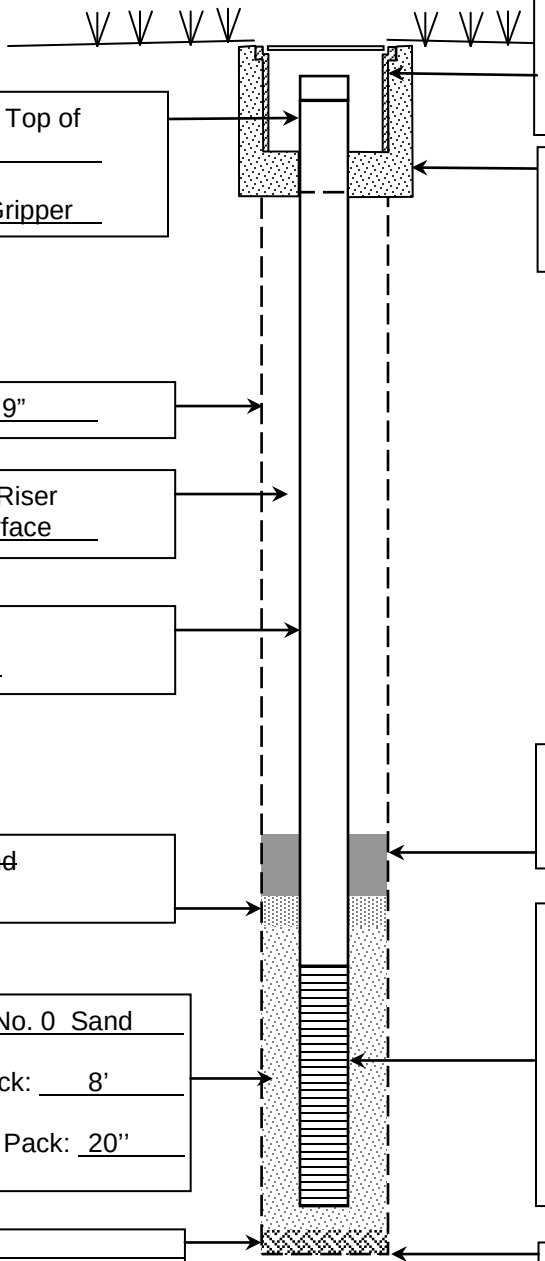
START DATE: 11/9/11 TIME: 3:20pm

FINISH DATE: 11/9/11 TIME: 4:15pm

DRILLER: Doug Thoma

INSPECTOR: J. Herrick

Note: Installed 3'4" – 4" sch. 40 PVC pipe over 2" riser for protection (backfilled with bentonite).



Type of Protective Casing: Flush Mount Curb Box To Be Installed by Site Contractor
Inside Dia. Of Casing: _____

Depth Below Ground of Casing: _____

Depth Above Ground to Top of Riser Pipe: 2'

Type of Cap: Locking Gripper

Type of Surface Seal: Concrete

Thickness of Surface Seal: _____

Diameter Borehole: 9"

Type of Backfill Around Riser Pipe: Bentonite to Surface

Inside Diameter of Riser Pipe: 2" PVC

Type of Bentonite Seal: Chips
Depth to Top of Bentonite Seal: 6'

~~Depth to Top of Fine Sand Choke~~: _____

Type of Screen: Slotted

Screen Diameter: 2"

Screen Slot Size: 0.010"

Depth to Top of Screen: 10'

Depth to Bottom of Screen: 20'

Type of Sand Pack: No. 0 Sand

Depth to Top of Sand Pack: 8'

Depth to Bottom of Sand Pack: 20''

~~Backfill (if any):~~ _____

Depth to Bottom of Borehole: 20'

PROJECT NUMBER: 14357.1013.31000 12/5/11

DeLeval ERP Project
SUBSURFACE LOG
HOLE NUMBER MW-4

LOCATION: City of Poughkeepsie, NY

CLIENT: City of Poughkeepsie

CONTRACTOR: NYEG Drilling, Inc.

DRILLER: D. Thoma INSPECTOR: J. Herrick

START DATE and TIME: 11/9/2011 1:45:00 PM

FINISH DATE and TIME: 11/9/2011 3:20:00 PM

SURFACE ELEV: CHECKED BY: SMS

DRILL FLUID: None

DRILLING METHOD: 4 1/4" HSA

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	11-9-11	3:00 PM	During Drilling	14		20

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S-1	2	0.8	6-7-13-10	20				**SILT**, Some f.c. Gravel, trace organics, brown, m. compact, moist **(FILL)**		Hnu = 0.0 ppm	
S-2	2	1.7	13-13-13-17	26				**SILT**, Some f.c. Gravel, little brick, trace organics, brown/gray, m. compact, moist **(FILL)**		Hnu = 0.0 ppm	
S-3	2	1.8	19-16-14-13	30		5		**SILT**, Some f.c. Gravel, little concrete, little brick, trace f.m.c. sand, brown/black, m. compact, moist **(FILL)**		Hnu = 0.0 ppm	
S-4	2	1.1	13-8-8-7	16				**SILT**, Some f.c. Gravel, little f.m.c. sand, little concrete, trace wood, brown/black, m. compact, moist **(FILL)**		Hnu = 0.0 ppm	
S-5	2	1.3	3-4-4-5	8				becomes loose **(FILL)**		Hnu = 0.0 ppm	
S-6	2	1.2	3-4-6-12	10		10		**SILT**, Some f.c. Gravel, trace f.m.c. sand, trace brick, black, loose, moist **(FILL)** **f.m.c. SAND**, brown, loose, moist **(FILL)**		Hnu = 0.0ppm	
S-7	2	1.6	9-9-11-13	20				becomes m. compact **(FILL)** **SLAG**, black, m. compact, wet **(FILL)** **SILT**, trace f. sand, brown/gray, m. compact, saturated **(FILL)**		Hnu = 0.0ppm	▽
S-8	2	1.2	3-2-2-3	4		15		**SLAG**, trace brick, v. loose, saturated **(FILL)**		Hnu = 0.0ppm	
S-9	2	1.3	3-3-4-10	7				**SLAG**, Some Brick, loose, saturated **(FILL)**		Hnu = 0.0ppm	
S-10	2	1	6-5-6-5	11				**f.m.c. SAND**, trace silt, trace shells, m. compact, saturated **(FILL)** **f. SAND**, Some Silt, m. compact, saturated **(FILL)**		Hnu = 0.0ppm	
						20		End of Boring at 20 ft			

SUBSURFACE LOG 14357.1013 LOGS.GPJ UPDATEDCHA.GDT 12/9/11