

Survey Date		02/19/2014																							
Survey Type		V - Vessel Based																							
Construction Activity		PDC - Pile Driving - Zone C				Comments																			
Tide		Flood																							
Source Location		Pier 31																							
Sample Location		Upcurrent (Ambient)												Downcurrent											
Distance to Source		Approx. 500 - 1000 ft ¹												500 ft ²											
Sample ID		021914-P031-F-U												021914-P031-F-D											
Sample Time		12:49												12:16											
Parameter		Total Suspended Solids	Mercury	Nickel	Copper	Lead	Zinc	PCB				Naphthalene	Benzo(a)pyrene	Total Suspended Solids	Mercury	Nickel	Copper	Lead	Zinc	PCB				Naphthalene	Benzo(a)pyrene
								Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260									Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260		
Unit		(ppm)	(ppb)											(ppm)	(ppb)										
Detection Limit ³		Ambient + 100	0.05	--	--	--	--	0.2	0.2	0.2	0.2	--	0.1	Ambient + 100	0.05	--	--	--	--	0.2	0.2	0.2	0.2	--	0.1
Water Quality Standard ³		*	0.0007	8.2	5.6	8.0	66	--	--	--	--	16	0.0006	*	0.0007	8.2	5.6	8.0	66	--	--	--	--	16	0.0006
Analytical Result ⁴	S	16.8	ND	ND	ND	ND	12	ND	ND	ND	ND	ND	ND	85.2	ND	ND	ND	ND	13	ND	ND	ND	ND	ND	ND
	M	62.8	ND	ND	ND	ND	13	ND	ND	ND	ND	ND	ND	96.8	ND	ND	ND	ND	12	ND	ND	ND	ND	ND	ND
	B	73.2	ND	ND	ND	ND	13	ND	ND	ND	ND	ND	ND	104	ND	ND	ND	ND	13	ND	ND	ND	ND	ND	ND

Notes: ¹ Samples collected at a location up current of the source where the water quality effects of the project are no longer discernible

² Samples collected at the edge of the 500 ft mixing zone

³ Based on New York State Department of Environmental Conservation (NYSDEC) Permit Facility ID 3-9903-00043/00012-14

-- No detection limit or water quality standard

* None from sewage, industrial waste or other wastes that will cause deposition or impair the waters for their best usages

ND = Not Detected

NS = Not Sampled due to water depth, pursuant to 8/6/13 modification to Condition 60 of NYSDEC Permit Facility ID 3-9903-00043/00012-14.

⁴ S = Near Surface, M = Mid-Depth, B = Near Bottom

Survey Date		02/20/2014																							
Survey Type		V - Vessel Based																							
Construction Activity		PDC - Pile Driving - Zone C				Comments																			
Tide		Ebb																							
Source Location		Pier 31																							
Sample Location		Upcurrent (Ambient)												Downcurrent											
Distance to Source		Approx. 500 - 1000 ft ¹												500 ft ²											
Sample ID		022014-P031-E-U												022014-P031-E-D											
Sample Time		09:13												08:47											
Parameter		Total Suspended Solids	Mercury	Nickel	Copper	Lead	Zinc	PCB				Naphthalene	Benzo(a)pyrene	Total Suspended Solids	Mercury	Nickel	Copper	Lead	Zinc	PCB				Naphthalene	Benzo(a)pyrene
								Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260									Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260		
Unit		(ppm)	(ppb)											(ppm)	(ppb)										
Detection Limit ³		Ambient + 100	0.05	--	--	--	--	0.2	0.2	0.2	0.2	--	0.1	Ambient + 100	0.05	--	--	--	--	0.2	0.2	0.2	0.2	--	0.1
Water Quality Standard ³		*	0.0007	8.2	5.6	8.0	66	--	--	--	--	16	0.0006	*	0.0007	8.2	5.6	8.0	66	--	--	--	--	16	0.0006
Analytical Result ⁴		S	12.4	ND	ND	ND	ND	16	ND	ND	ND	ND	ND	23.2	ND	ND	ND	ND	15	ND	ND	ND	ND	ND	ND
		M	17.6	ND	ND	ND	ND	19	ND	ND	ND	ND	ND	29.6	ND	ND	ND	ND	15	ND	ND	ND	ND	ND	ND
		B	44.4	ND	ND	ND	ND	17	ND	ND	ND	ND	ND	ND	NV	ND	ND	ND	ND	14	ND	ND	ND	ND	ND

- Notes:
- 1 Samples collected at a location up current of the source where the water quality effects of the project are no longer discernible
 - 2 Samples collected at the edge of the 500 ft mixing zone
 - 3 Based on New York State Department of Environmental Conservation (NYSDEC) Permit Facility ID 3-9903-00043/00012-14
 - No detection limit or water quality standard
 - * None from sewage, industrial waste or other wastes that will cause deposition or impair the waters for their best usages
- ND = Not Detected
 NS = Not Sampled due to water depth, pursuant to 8/6/13 modification to Condition 60 of NYSDEC Permit Facility ID 3-9903-00043/00012-14.
 NV = Not Valid
⁴ S = Near Surface, M = Mid-Depth, B = Near Bottom



Memo

To:	[REDACTED]	
From:	[REDACTED]	Project: The New NY Bridge Project
CC:	[REDACTED]	
Date:	2/28/2014	

RE: Water Quality Sample from Pile Driving Operations Collection 2/20/2014

[REDACTED]

Based on my discussions with the crew chief regarding this event, I have concluded that the TSS result (405 ppm) reported for sample 022014-P031-E-D-B is not representative of the pile driving operation that was occurring at that time and is therefore not a valid sample.

The crew chief observed that the pump had impacted the bottom and that there was a noticeable water/sediment mix in the hose. It is important to note that a bottom sample was not collected at that time.

The crew chief instructed the technician to pull the pump up away from the sediment and to wait to collect the bottom sample until the water in the hose ran clear. At that point, both the crew chief and boat operator concentrated on boat operations and can't confirm now whether the technician had waited long enough for the tubing to flush. The sample was transported to the Nanuet lab and shipped to York Labs without further observations by the field crew.

I will discuss corrective actions with [REDACTED] to ensure that in-field procedures will monitor for these occurrences and respond accordingly.

Please let me know if you need any additional information.

Sincerely,

[REDACTED]

HDR Engineering, Inc.
Laboratory Supervisor
Eastern Region QA/QC Auditor

Survey Date		02/24/2014																									
Survey Type		V - Vessel Based																									
Construction Activity		PDC - Pile Driving - Zone C				Comments																					
Tide		Ebb																									
Source Location		Pier 31																									
Sample Location		Upcurrent (Ambient)												Downcurrent													
Distance to Source		Approx. 500 - 1000 ft ¹												500 ft ²													
Sample ID		022414-P031-E-U												022414-P031-E-D													
Sample Time		09:15												08:51													
Parameter		Total Suspended Solids	Mercury	Nickel	Copper	Lead	Zinc	PCB				Naphthalene	Benzo(a)pyrene	Total Suspended Solids	Mercury	Nickel	Copper	Lead	Zinc	PCB				Naphthalene	Benzo(a)pyrene		
								Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260									Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260				
Unit		(ppm)	(ppb)												(ppm)	(ppb)											
Detection Limit ³		Ambient + 100	0.05	--	--	--	--	0.2	0.2	0.2	0.2	--	0.1	Ambient + 100	0.05	--	--	--	--	0.2	0.2	0.2	0.2	--	0.1		
Water Quality Standard ³		*	0.0007	8.2	5.6	8.0	66	--	--	--	--	16	0.0006	*	0.0007	8.2	5.6	8.0	66	--	--	--	--	16	0.0006		
Analytical Result ⁴	S	19.2	ND	ND	ND	ND	16	ND	ND	ND	ND	ND	ND	16.4	ND	ND	ND	ND	16	ND	ND	ND	ND	ND	ND		
	M	16.8	ND	ND	ND	ND	15	ND	ND	ND	ND	ND	ND	16.4	ND	ND	ND	ND	15	ND	ND	ND	ND	ND	ND		
	B	21.2	ND	ND	ND	ND	16	ND	ND	ND	ND	ND	ND	19.6	ND	ND	ND	ND	19	ND	ND	ND	ND	ND	ND		

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Survey Date		02/28/2014																							
Survey Type		V - Vessel Based																							
Construction Activity		PDC - Pile Driving - Zone C			Comments																				
Tide		Flood																							
Source Location		Pier 32																							
Sample Location		Upcurrent (Ambient)												Downcurrent											
Distance to Source		Approx. 500 - 1000 ft ¹												500 ft ²											
Sample ID		022814-P032-F-U												022814-P032-F-D											
Sample Time		10:13												09:16											
Parameter		Total Suspended Solids	Mercury	Nickel	Copper	Lead	Zinc	PCB				Naphthalene	Benzo(a)pyrene	Total Suspended Solids	Mercury	Nickel	Copper	Lead	Zinc	PCB				Naphthalene	Benzo(a)pyrene
								Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260									Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260		
Unit		(ppm)	(ppb)											(ppm)	(ppb)										
Detection Limit ³		Ambient + 100	0.05	-	-	-	-	0.2	0.2	0.2	0.2	-	0.1	Ambient + 100	0.05	-	-	-	-	0.2	0.2	0.2	0.2	-	0.1
Water Quality Standard ³		*	0.0007	8.2	5.6	8.0	66	--	-	--	-	16	0.0006	*	0.0007	8.2	5.6	8.0	66	--	--	--	--	16	0.0006
Analytical Result ⁴	S	75.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	102	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	M	103	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	132	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B	120	ND	ND	ND	ND	11	ND	ND	ND	ND	ND	ND	122	ND	ND	ND	ND	12	ND	ND	ND	ND	ND	ND

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