

Day in the Life of the Hudson River 10/05/2023
Piermont Pier, Piermont, NY
RIVER MILE: 25.4
Salt Front: ~ RM 52



Tappan Zee High School-*Brian Newburger*



Clarkstown High School South- *Alexis Dean*

Clarkstown High School North- *Jessica Flanagan & Christine Calisi*
Lamont Doherty Earth Observatory- *Margie Turrin & Marisa Annunziato*
75 students, 11th-12th grade, 14 adults
Latitude 41.043189°N & Longitude -73.895952°W

Location: Piermont Pier, Piermont, Rockland County, NY.

Surrounding Land Use: 80% Urban/Residential & 20% Forested

Sampling Site: Pier, shoreline rip rap, some phragmites along both sides of the pier. Sparkill Creek flows into the Hudson on the south side of pier and Piermont Marsh is directly to the south. At the southern base of the pier sewage outfall piping entering river on the south of sampling site.

Shoreline: NR

Water: Calm

River Bottom: Muddy & Rocky

Plants in the water: Phragmites

*NR = Not read/recorded

<i>ITEM</i>	<i>Time</i>	<i>Reading</i>		<i>Comments</i>
		<i>Physical</i>		
<i>Air Temperature</i>	9:08 AM	26.3°C	79.3°F	
	9:45 AM	25°C	77°F	
	10:45 AM	24.25°C	75.7°F	
	12:12 PM	23°C	73.4°F	

	12:50 PM	26.6°C		79.9°F	
Wind Speed:	9:08 AM 9:45 AM 10:40 AM 12:12 PM 12:50 PM	<i>Anemometer</i> 1.766 mph 0.8 mph 2.75 mph 4.6 mph 3.0 mph		<i>Beaufort</i> 1 1 2 1	<i>Direction</i> South North South South
Weather today	10:40 AM	<25% Cloud Cover		No Rain	
Weather the past 3 days:	Some wind & rain				
Tides-	Time	Rising, Falling, Unchanged		Height (cm)	
Right Side of Pier*	9:41 AM 9:46 AM 12:01 PM 12:45 PM	- Rising Rising		284 cm 209 cm 244 cm 248 cm	LT @ 9:00 AM HT @ 3:12 PM *Something in the collected measurements seems to be off. Right side of pier, expect the 9:41 measurement included a wave or some other influence. **Left side of pier, two last measurements seem to be in a new location, and the tide should be rising throughout.
Left Side of Pier**	9:08 AM 9:46 AM 10:39 AM 12:12 PM 12:50 PM	- Rising Rising Rising Falling*		248 cm 275 cm 288 cm 662 cm 610 cm	
Current-	Time	Cm/sec	Knots	North/South	Ebb/Flood/Slack
*Boat went by at about 12 PM	9:08 AM 9:45 AM 9:46 AM 10:04 AM 10:39 AM 10:40 AM 10:51 AM 12:00 PM 12:12 PM 12:50 PM 1:00 PM	2.77 2.64 13.5 13.5 23.5 17.64 21.2 33 74.1 50.15 20.83	0.055 0.05 0.26 0.26 0.46 0.343 0.4 0.65 1.44 0.97 0.405	North North North North North North North North North North North	Flood Flood Flood Flood Flood Flood Flood Flood Flood Flood Flood
Water Temperature-	9:02 AM 9:50 AM 10:30 AM 12:03 PM 12:50 PM 9:00 AM 9:50 AM 10:35 AM 12:08 PM 12:50 PM	20°C 21°C 21°C 21.7°C 23°C 21°C 22°C 20°C 21°C 22°C		68°F 69.8°F 69.8°F 71°F 73.4°F 69.8°F 71.6°F 68°F 69.8°F 71.6°F	

Turbidity- Long Sight Tube (120 cm)	9:00 AM	43.58 cm	Secchi Disk (cm)	9:00 AM	96 cm
	9:20 AM	32.2 cm		9:20 AM	77 cm
	9:40 AM	57 cm		9:40 AM	59.6 cm
	10:00 AM	59.3 cm		10:00 AM	70.3 cm
	10:30 AM	67 cm		10:30 AM	73.3 cm
	10:40 AM	67.3 cm		10:40 AM	86.3 cm
	11:00 AM	30.2 cm		11:00 AM	62.3 cm
	12:05 PM	27.3 cm		12:05 PM	67.6 cm
	12:15 PM	26 cm		12:15 PM	53.3 cm
	12:30 PM	25.9 cm		12:25 PM	52 cm
	12:35 PM	31 cm		12:30 PM	65.7 cm
	12:45 PM	24.97 cm		12:45 PM	48.3 cm
	12:55 PM	35.5 cm		12:55 PM	41.3 cm

Chemical

Standardized Salinity- High Range Quantabs	9:40 AM	5,138 ppm	5.138 ppt		
Student Salinity-Refractometer	9:02 AM	4,200 ppm	4.2 ppt		
	9:52 AM	6,000 ppm	6 ppt		
	10:30 AM	6,000 ppm	6 ppt		
	12:03 PM	5,600 ppm	5.6 ppt		
	12:50 PM	5,000 ppm	5 ppt		
	9:00 AM	6,000 ppm	6 ppt		
	9:50 AM	7,000 ppm	7 ppt		
	10:25 AM	5,500 ppm	5.5 ppt		
	12:08 PM	6,500 ppm	6.5 ppt		
	12:50 PM	7,000 ppm	7 ppt		
	Hydrometer	9:00 AM	5,500 ppm	5.5 ppt	
		9:52 AM	5,000 ppm	5 ppt	
		10:30 AM	4,660 ppm	4.66 ppt	
		12:03 PM	6,000 ppm	6 ppt	
		12:50 PM	5,000 ppm	5 ppt	
	9:00 AM	6,000 ppm	6 ppt		
	9:50 AM	6,000 ppm	6 ppt		
	10:35 AM	6,000 ppm	6 ppt		
	12:08 PM	6,000 ppm	6 ppt		
	12:50 PM	6,000 ppm	6 ppt		
DO –Hach Drop Count Kit	Time	Temp	ppm DO	% saturation	
	9:02 AM	20°C	9 ppm	100%	
	9:50 AM	21°C	7 ppm	80%	
	10:30 AM	20°C	9 ppm	97%	
	12:15 PM	22°C	8 ppm	90%	
	12:50 PM	23°C	8 ppm	95%	
	9:00 AM	21°C	10 ppm	110%	
	9:50 AM	22°C	10 ppm	110%	
	12:08 PM	20°C	15 ppm	130%	
	12:50 PM	22°C	9 ppm	100%	
pH – Color Match Kit	9:02 AM	7.8	9:00 AM	8	
	9:50 AM	7.8	9:50 AM	8	
	10:30 AM	7.8	10:35 AM	7.5	
	12:03 PM	7.7	10:36 AM	8	
	12:50 PM	8.2	12:08 PM	8.5	
			12:50 PM	7.5	

			12:50 PM	7.5		
<i>Nitrates- Lamotte Kit</i>	9:02 AM 9:50 AM 10:30 AM 12:03 PM 12:50 PM	1.0 ppm 0.9 ppm 0.9 ppm 0.8 ppm 0.7 ppm	9:00 AM 9:50 AM 10:35 AM 12:08 PM 12:50 PM	1 ppm 1 ppm 0.8 ppm 0.4 ppm 0.8 ppm		
<i>Phosphates- Lamotte Kit</i>	9:02 AM 10:05 AM 10:30 AM 12:03 PM 12:50 PM	0.36 ppm 0.645 ppm 0.52 ppm 0.5 ppm 0.34 ppm	9:00 AM 9:50 AM 10:35 AM 12:08 PM 12:50 PM	0.64 ppm 0.7 ppm 0.36 ppm 0.22 ppm 0.3 ppm		
<i>Alkalinity- Lamotte Kit</i>	9:02 AM 10:05 AM 10:30 AM 12:03 PM 12:50 PM	40 ppm 40.5 ppm 63 ppm 72.35 ppm 63.66 ppm	9:00 AM 9:50 AM 10:35 AM 12:08 PM 12:50 PM	83 ppm 84 ppm 80 ppm 67.5 ppm 80 ppm		
Biological						
<i>Fish- Seine (9 Hauls)</i>	<i>Number</i>	<i>Name</i>	<i>Length of longest</i>	<i>Notes</i>		
9:00 AM-12:50 PM	2 1 73 9	Atlantic Menhaden Bay Anchovy Atlantic Silverside Striped Bass				
Fish Totals	TOTAL: 85	Diversity: 4				
<i>Macroinvertebrates</i>	<i>Number</i>	<i>Name</i>	<i>Length of longest</i>			
	4 28 132 3 1	Blue Crab Ctenophore spp. Moon Jellies Palaemonetes Shrimp Crangon Shrimp		2 M & 2 F		
Macroinvertebrate Totals	TOTAL: 168	Diversity: 5				
Plankton	Number Of Samples Found In	Name		Notes		
	3 1 3 1 2 2 3 1 2 2 1 1 2 1	Bosmina longirostris Anabaena Sp. Scenedesmus Sp. Pediastrum Sp. Melosira Sp. Anacystis Sp. Acartia tonsa Coscinodiscus Sp. Phantom Midge Larva Unidentified Green Algae Cyclotella Ankistrodesmus Sp. Ceratum Sp. Prorocentrum Sp.				
Plankton Totals	Total: 25	Diversity: 14				
<i>Sediment Core</i>	<i>Time</i>	<i>Oxid Top</i>	<i>H₂S Smell</i>	<i>Oil</i>	<i>Grain Size</i>	<i>Other Features</i>
20 cm	10:04 AM	No	Yes	No	<i>Abundant:</i> Clay, Mud, Sand, Gravel <i>Common:</i> Pebbles	<i>Rare:</i> Leaves, Oyster Shells, Slag

20 cm	10:00 AM	No	Yes	No	<i>Abundant:</i> Clay, Mud, Sand <i>Common:</i> Gravel, Pebbles	<i>Rare:</i> Wood, Oyster Shells, Slag
15 cm	12:50 PM	No	Yes	No	<i>Abundant:</i> Clay, Mud, Sand, Gravel, Pebbles	<i>Abundant:</i> Living Vegetation <i>Common:</i> Wood, Brick
15 cm	12:50 PM	No	Yes	No	<i>Abundant:</i> Clay, Mud, Gravel, Pebbles <i>Common:</i> Sand	<i>Abundant:</i> Leaves, Wood, Living Vegetation <i>Rare:</i> Brick
7 cm	12:17 PM	No	Yes	Yes	<i>Abundant:</i> Clay, Mud <i>Common:</i> Sand, Gravel, Pebbles	<i>Abundant:</i> Leaves, Living Vegetation <i>Common:</i> Wood
7 cm	12:17 PM	No	Yes	Yes	<i>Abundant:</i> Clay, Mud <i>Common:</i> Gravel, Pebbles <i>Rare:</i> Sand	<i>Common:</i> Living Vegetation
17 cm	10:33 AM			Yes	<i>Abundant:</i> Clay, Mud <i>Common:</i> Pebbles <i>Rare:</i> Sand	<i>Abundant:</i> Oyster Shells, Living Vegetation <i>Rare:</i> Wood, Slag
17 cm	10:33 AM			Yes	<i>Abundant:</i> Clay, Mud, Gravel, Pebbles <i>Common:</i> Sand	<i>Common:</i> Wood, Oyster Shells, Living Vegetation <i>Rare:</i> Slag
6.3 cm	9:11 AM	No	Yes	Yes	<i>Abundant:</i> Clay, Mud <i>Common:</i> Gravel, Pebbles	<i>Rare:</i> Oyster Shells, Brick, Slag
6.3 cm	9:11 AM	No	Yes	Yes	<i>Abundant:</i> Clay, Mud <i>Common:</i> Gravel, Pebbles	<i>Rare:</i> Oyster Shells, Brick, Slag

Boats-NR

Commercial/ Recreational	Time	Name	Color	Southbound/ Northbound	Light/ Loaded

