

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E24																		
Clamshell Dredging																		
Land Ex																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Prepare for Toe Dike / Construct Dike (1st Lift)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Fill within Dike																		
Clamshell Dredging																		
Remaining Dike Lifts																		
Rock Placement, Push Off & Tub & Orange Peels																		
Remaining Fill Lifts																		
Clamshell Dredging																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Construct South Mooring Dolphin																		
Drive 24-In Octagonal Piles - Water																		
Wick Drains																		
Wick Drains																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	<i>Mar</i>		<i>Apr</i>		<i>May</i>		<i>Jun</i>		<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>	
	<i>1st</i>	<i>2nd</i>														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water		0.23														
Wick Drains																
Wick Drains																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2012		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E24																		
Clamshell Dredging																		
Land Ex																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Prepare for Toe Dike / Construct Dike (1st Lift)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Fill within Dike																		
Clamshell Dredging																		
Remaining Dike Lifts																		
Rock Placement, Push Off & Tub & Orange Peels																		
Remaining Fill Lifts																		
Clamshell Dredging																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Construct South Mooring Dolphin																		
Drive 24-In Octagonal Piles - Water																		
Wick Drains																		
Wick Drains																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2012		2013		2013		2013		
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>						
	<i>1st</i>	<i>2nd</i>																			
Ph 1-1 Demolish Existing Facilities																					
Wharf Demolition Landside																					
Wharf Demolition Marine																					
Sheet Pile Bulkhead Demolition																					
Construct New Bulkhead																					
Retaining Bulkhead Construction																					
Excavation Fronting E24																					
Clamshell Dredging																					
Land Ex																					
Construct New Armor Slope																					
Rock Placement, Push Off & Tub & Orange Peels																					
Wharf Construction																					
Drive 24-In Octagonal Piles - Land																					
Drive 24-In Octagonal Piles - Water																					
Drive Piles - Misc Activities																					
Reinforced Concrete Wharf																					
Retaining Bulkhead Construction																					
Utility Construction																					
New Container Yard Utilities																					
Paving																					
New Container Yard Construction - Paving																					
Lighting, Striping, Crane Power																					
New Container Yard Construction - Electrical																					
Prepare for Toe Dike / Construct Dike (1st Lift)																					
Rock Placement, Push Off & Tub & Orange Peels																					
Fill within Dike																					
Clamshell Dredging																					
Remaining Dike Lifts																					
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Remaining Fill Lifts																					
Clamshell Dredging																					
Wharf Construction																					
Drive 24-In Octagonal Piles - Land																					
Drive 24-In Octagonal Piles - Water																					
Drive Piles - Misc Activities																					
Reinforced Concrete Wharf																					
Retaining Bulkhead Construction																					
Construct South Mooring Dolphin																					
Drive 24-In Octagonal Piles - Water																					
Wick Drains																					
Wick Drains																					

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
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Wharf Construction																
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Retaining Bulkhead Construction																
Utility Construction																
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Paving																
New Container Yard Construction - Paving																
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New Container Yard Construction - Electrical																
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Rock Placement, Push Off & Tub & Orange Peels																
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Rock Placement, Push Off & Tub & Orange Peels																
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Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
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Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
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Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
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Clamshell Dredging																
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Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E24																		
Clamshell Dredging																		
Land Ex																		
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Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
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Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
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Rock Placement, Push Off & Tub & Orange Peels																		
Fill within Dike																		
Clamshell Dredging																		
Remaining Dike Lifts																		
Rock Placement, Push Off & Tub & Orange Peels																		
Remaining Fill Lifts																		
Clamshell Dredging																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Construct South Mooring Dolphin																		
Drive 24-In Octagonal Piles - Water																		
Wick Drains																		
Wick Drains																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2016		2017		2017	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E24																		
Clamshell Dredging																		
Land Ex																		
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Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Prepare for Toe Dike / Construct Dike (1st Lift)																		
Rock Placement, Push Off & Tub & Orange Peels																		
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Clamshell Dredging																		
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Remaining Fill Lifts																		
Clamshell Dredging																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Construct South Mooring Dolphin																		
Drive 24-In Octagonal Piles - Water																		
Wick Drains																		
Wick Drains																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
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Rock Placement, Push Off & Tub & Orange Peels																
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Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
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Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
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Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
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Paving																
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Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019		2019		
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb						
	1st	2nd																			
Ph 1-1 Demolish Existing Facilities																					
Wharf Demolition Landside																					
Wharf Demolition Marine																					
Sheet Pile Bulkhead Demolition																					
Construct New Bulkhead																					
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Paving																					
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Reinforced Concrete Wharf																					
Retaining Bulkhead Construction																					
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Drive 24-In Octagonal Piles - Water																					
Wick Drains																					
Wick Drains																					

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
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Drive Piles - Misc Activities																
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Retaining Bulkhead Construction																
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Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities				
Wharf Demolition Landside				
Wharf Demolition Marine				
Sheet Pile Bulkhead Demolition				
Construct New Bulkhead				
Retaining Bulkhead Construction				
Excavation Fronting E24				
Clamshell Dredging				
Land Ex				
Construct New Armor Slope				
Rock Placement, Push Off & Tub & Orange Peels				
Wharf Construction				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
Retaining Bulkhead Construction				
Utility Construction				
New Container Yard Utilities				
Paving				
New Container Yard Construction - Paving				
Lighting, Striping, Crane Power				
New Container Yard Construction - Electrical				
Prepare for Toe Dike / Construct Dike (1st Lift)				
Rock Placement, Push Off & Tub & Orange Peels				
Fill within Dike				
Clamshell Dredging				
Remaining Dike Lifts				
Rock Placement, Push Off & Tub & Orange Peels				
Remaining Fill Lifts				
Clamshell Dredging				
Wharf Construction				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
Retaining Bulkhead Construction				
Construct South Mooring Dolphin				
Drive 24-In Octagonal Piles - Water				
Wick Drains				
Wick Drains				

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd										
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																		
Roll Surcharge																		
<b>Remove Surcharge to Slip 1 Fill Site</b>																		
Roll Surcharge																		
<b>Utility Construction</b>																		
New Container Yard Utilities																		
<b>Paving</b>																		
New Container Yard Construction - Paving																		
<b>Lighting, Fence, Striping, Crane Power</b>																		
New Container Yard Construction - Electrical																		
<b>Construct Retaining Structure at Pier D Oil Area</b>																		
Retaining Bulkhead Construction												0.20						
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																		
Land Ex																		
<b>Excavate Material Fronting Pier D</b>																		
Land Ex																		
Clamshell Dredging																		
<b>Remove Cellular Sheetpile</b>																		
Sheet Pile Bulkhead Demolition																		
<b>Rock Revetment</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																		
Clamshell Dredging																		
<b>Ground Improvements Pier D</b>																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
<b>Demo - E12-13 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Lift #1 (- -30)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		4.59
<b>Lift #2 (- -15)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #3 (- -0)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #4 (- +15)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Initial Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>2nd Surcharge and Wick Drains</b>																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2011		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																		
Roll Surcharge												0.68						
<b>Remove Surcharge to Slip 1 Fill Site</b>																		
Roll Surcharge																		
<b>Utility Construction</b>																		
New Container Yard Utilities																		
<b>Paving</b>																		
New Container Yard Construction - Paving																		
<b>Lighting, Fence, Striping, Crane Power</b>																		
New Container Yard Construction - Electrical																		
<b>Construct Retaining Structure at Pier D Oil Area</b>																		
Retaining Bulkhead Construction																		
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																		
Land Ex									0.40									
<b>Excavate Material Fronting Pier D</b>																		
Land Ex									0.64									
Clamshell Dredging									4.33									
<b>Remove Cellular Sheetpile</b>																		
Sheet Pile Bulkhead Demolition												1.20						
<b>Rock Revetment</b>																		
Rock Placement, Push Off & Tub & Orange Peels													5.93			2.22		
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																		
Clamshell Dredging									1.20									
<b>Ground Improvements Pier D</b>																		
Stone Column Installation Eq													1.91					1.91
Marine Rock Delivery Eq													1.53					1.53
<b>Demo - E12-13 Wharf</b>																		
Wharf Demolition Landside								1.97										
Wharf Demolition Marine								3.62										
<b>Lift #1 (- -30)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #2 (- -15)</b>																		
Rock Placement, Push Off & Tub & Orange Peels									2.72									
<b>Lift #3 (- 0)</b>																		
Rock Placement, Push Off & Tub & Orange Peels													1.59		0.79			
<b>Lift #4 (- +15)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Initial Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>2nd Surcharge and Wick Drains</b>																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge				0.34												
Utility Construction																
New Container Yard Utilities			0.00													
Paving																
New Container Yard Construction - Paving								0.49								
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical												0.00				
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels				2.04												
Initial Surcharge and Wick Drains																
Wick Drains						0.04										
Roll Surcharge						1.03										
2nd Surcharge and Wick Drains																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd																		
Surcharge (Initial Pump, Plus Clamshell or Truck)																				
Roll Surcharge																				
Remove Surcharge to Slip 1 Fill Site																				
Roll Surcharge																				
Utility Construction																				
New Container Yard Utilities																				
Paving																				
New Container Yard Construction - Paving																				
Lighting, Fence, Striping, Crane Power																				
New Container Yard Construction - Electrical																				
Construct Retaining Structure at Pier D Oil Area																				
Retaining Bulkhead Construction																				
Excavate & Truck Material in Cell Bulkhead																				
Land Ex																				
Excavate Material Fronting Pier D																				
Land Ex																				
Clamshell Dredging																				
Remove Cellular Sheetpile																				
Sheet Pile Bulkhead Demolition																				
Rock Revetment																				
Rock Placement, Push Off & Tub & Orange Peels																				
Hydraulic or Clamshell Dredge to -55 ft																				
Clamshell Dredging																				
Ground Improvements Pier D																				
Stone Column Installation Eq																				
Marine Rock Delivery Eq																				
Demo - E12-13 Wharf																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				
Lift #1 (- -30)																				
Rock Placement, Push Off & Tub & Orange Peels																				
Lift #2 (- -15)																				
Rock Placement, Push Off & Tub & Orange Peels																				
Lift #3 (- 0)																				
Rock Placement, Push Off & Tub & Orange Peels																				
Lift #4 (- +15)																				
Rock Placement, Push Off & Tub & Orange Peels																				
Initial Surcharge and Wick Drains																				
Wick Drains																				
Roll Surcharge																				
2nd Surcharge and Wick Drains																				

Table A-4-A11-143 Total Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2012		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Surcharge (Initial Pump, Plus Clamshell or Truck)																		
Roll Surcharge																		
Remove Surcharge to Slip 1 Fill Site																		
Roll Surcharge																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Fence, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Construct Retaining Structure at Pier D Oil Area																		
Retaining Bulkhead Construction																		
Excavate & Truck Material in Cell Bulkhead																		
Land Ex																		
Excavate Material Fronting Pier D																		
Land Ex																		
Clamshell Dredging																		
Remove Cellular Sheetpile																		
Sheet Pile Bulkhead Demolition																		
Rock Revetment																		
Rock Placement, Push Off & Tub & Orange Peels																		
Hydraulic or Clamshell Dredge to -55 ft																		
Clamshell Dredging																		
Ground Improvements Pier D																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
Demo - E12-13 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Lift #1 (- -30)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #2 (- -15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #3 (- 0)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #4 (- +15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Initial Surcharge and Wick Drains																		
Wick Drains																		
Roll Surcharge																		
2nd Surcharge and Wick Drains																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																
Roll Surcharge																
<b>Remove Surcharge to Slip 1 Fill Site</b>																
Roll Surcharge																
<b>Utility Construction</b>																
New Container Yard Utilities																
<b>Paving</b>																
New Container Yard Construction - Paving																
<b>Lighting, Fence, Striping, Crane Power</b>																
New Container Yard Construction - Electrical																
<b>Construct Retaining Structure at Pier D Oil Area</b>																
Retaining Bulkhead Construction																
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																
Land Ex																
<b>Excavate Material Fronting Pier D</b>																
Land Ex																
Clamshell Dredging																
<b>Remove Cellular Sheetpile</b>																
Sheet Pile Bulkhead Demolition																
<b>Rock Revetment</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ground Improvements Pier D</b>																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
<b>Demo - E12-13 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Lift #1 (- -30)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #2 (- -15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #3 (- -0)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #4 (- +15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Initial Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>2nd Surcharge and Wick Drains</b>																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Surcharge (Initial Pump, Plus Clamshell or Truck)																		
Roll Surcharge																		
Remove Surcharge to Slip 1 Fill Site																		
Roll Surcharge																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Fence, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Construct Retaining Structure at Pier D Oil Area																		
Retaining Bulkhead Construction																		
Excavate & Truck Material in Cell Bulkhead																		
Land Ex																		
Excavate Material Fronting Pier D																		
Land Ex																		
Clamshell Dredging																		
Remove Cellular Sheetpile																		
Sheet Pile Bulkhead Demolition																		
Rock Revetment																		
Rock Placement, Push Off & Tub & Orange Peels																		
Hydraulic or Clamshell Dredge to -55 ft																		
Clamshell Dredging																		
Ground Improvements Pier D																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
Demo - E12-13 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Lift #1 (- -30)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #2 (- -15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #3 (- 0)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #4 (- +15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Initial Surcharge and Wick Drains																		
Wick Drains																		
Roll Surcharge																		
2nd Surcharge and Wick Drains																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2016		2017		2017	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Surcharge (Initial Pump, Plus Clamshell or Truck)																		
Roll Surcharge																		
Remove Surcharge to Slip 1 Fill Site																		
Roll Surcharge																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Fence, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Construct Retaining Structure at Pier D Oil Area																		
Retaining Bulkhead Construction																		
Excavate & Truck Material in Cell Bulkhead																		
Land Ex																		
Excavate Material Fronting Pier D																		
Land Ex																		
Clamshell Dredging																		
Remove Cellular Sheetpile																		
Sheet Pile Bulkhead Demolition																		
Rock Revetment																		
Rock Placement, Push Off & Tub & Orange Peels																		
Hydraulic or Clamshell Dredge to -55 ft																		
Clamshell Dredging																		
Ground Improvements Pier D																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
Demo - E12-13 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Lift #1 (- -30)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #2 (- -15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #3 (- 0)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #4 (- +15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Initial Surcharge and Wick Drains																		
Wick Drains																		
Roll Surcharge																		
2nd Surcharge and Wick Drains																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Surcharge (Initial Pump, Plus Clamshell or Truck)																		
Roll Surcharge																		
Remove Surcharge to Slip 1 Fill Site																		
Roll Surcharge																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Fence, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Construct Retaining Structure at Pier D Oil Area																		
Retaining Bulkhead Construction																		
Excavate & Truck Material in Cell Bulkhead																		
Land Ex																		
Excavate Material Fronting Pier D																		
Land Ex																		
Clamshell Dredging																		
Remove Cellular Sheetpile																		
Sheet Pile Bulkhead Demolition																		
Rock Revetment																		
Rock Placement, Push Off & Tub & Orange Peels																		
Hydraulic or Clamshell Dredge to -55 ft																		
Clamshell Dredging																		
Ground Improvements Pier D																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
Demo - E12-13 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Lift #1 (- -30)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #2 (- -15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #3 (- 0)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #4 (- +15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Initial Surcharge and Wick Drains																		
Wick Drains																		
Roll Surcharge																		
2nd Surcharge and Wick Drains																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>				
Roll Surcharge				
<b>Remove Surcharge to Slip 1 Fill Site</b>				
Roll Surcharge				
<b>Utility Construction</b>				
New Container Yard Utilities				
<b>Paving</b>				
New Container Yard Construction - Paving				
<b>Lighting, Fence, Striping, Crane Power</b>				
New Container Yard Construction - Electrical				
<b>Construct Retaining Structure at Pier D Oil Area</b>				
Retaining Bulkhead Construction				
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>				
Land Ex				
<b>Excavate Material Fronting Pier D</b>				
Land Ex				
<b>Clamshell Dredging</b>				
<b>Remove Cellular Sheetpile</b>				
Sheet Pile Bulkhead Demolition				
<b>Rock Revetment</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Hydraulic or Clamshell Dredge to -55 ft</b>				
Clamshell Dredging				
<b>Ground Improvements Pier D</b>				
Stone Column Installation Eq				
Marine Rock Delivery Eq				
<b>Demo - E12-13 Wharf</b>				
Wharf Demolition Landside				
Wharf Demolition Marine				
<b>Lift #1 (- -30)</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Lift #2 (- -15)</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Lift #3 (- 0)</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Lift #4 (- +15)</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Initial Surcharge and Wick Drains</b>				
Wick Drains				
Roll Surcharge				
<b>2nd Surcharge and Wick Drains</b>				

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Ph 1-1 Triple Track Miscellaneous Eq																
Ph 1-2 <b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Ph 1-2 Clamshell Dredging																
Ph 1-3 Demolish Existing Facilities																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wick Drains								0.10								
Roll Surcharge							1.54									
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains									0.10							
Roll Surcharge									2							
<b>4th Surcharge and Wick Drains</b>																
Wick Drains													0.09			
Roll Surcharge													3.84			
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq														0.00		
Triple Track Utility Relocation Eq															0.00	
Triple Track Grading Eq																0.00
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Ph 1-2																
Clamshell Dredging																
Ph 1-3																
<b>Demolish Existing Facilities</b>																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2012		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq		0.00																
Triple Track Trackwork Eq				0.00								0.00						
Triple Track Miscellaneous Eq				0.00								0.00						
<b>Ph 1-1</b>																		
<b>Ph 1-2</b>																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition				0.92		0.18												
Wharf Demolition Landside				0.90		0.18												
Wharf Demolition Marine				1.66		0.33												
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction				0.11														
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging				1.60		0.40												
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels												4.68						
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging								1.33										
<b>Ph 1-3</b>																		
<b>Demolish Existing Facilities</b>																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2012		2013		2013		2013		
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb						
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	
Wick Drains																					
Roll Surcharge																					
<b>3rd Surcharge and Wick Drains</b>																					
Wick Drains																					
Roll Surcharge																					
<b>4th Surcharge and Wick Drains</b>																					
Wick Drains																					
Roll Surcharge																					
<b>Remove Surcharge</b>																					
Roll Surcharge		3.08																			
<b>Container Yard Development</b>																					
New Container Yard Utilities													0.00								
New Container Yard Construction - Paving													1.83								
New Container Yard Construction - Electrical													0.00								
<b>POLB Ocean Blvd Track Reconfiguration</b>																					
Triple Track Installation Demo Eq																					
Triple Track Utility Relocation Eq																					
Triple Track Grading Eq																					
Triple Track Retaining Wall Eq																					
Triple Track Trackwork Eq																					
Triple Track Miscellaneous Eq																					
Ph 1-1																					
Ph 1-2																					
<b>Demolish Existing Facilities</b>																					
Sheet Pile Bulkhead Demolition																					
Wharf Demolition Landside																					
Wharf Demolition Marine																					
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																					
Retaining Bulkhead Construction																					
<b>Excavation Fronting E25 and Dispose Slip 1</b>																					
Clamshell Dredging																					
<b>Construct New Armor Slope</b>																					
Rock Placement, Push Off & Tub & Orange Peels																					
<b>Wharf Construction</b>																					
Drive 24-In Octagonal Piles - Land									0.06												
Drive 24-In Octagonal Piles - Water									0.09												
Drive Piles - Misc Activities									0.16												
Reinforced Concrete Wharf									0.41												
<b>CY Development</b>																					
New Container Yard Construction - Paving													0.16								
<b>Dredge to -55 ft</b>																					
Clamshell Dredging																					
Ph 1-2																					
Ph 1-3																					
<b>Demolish Existing Facilities</b>																					

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities								0.00								
New Container Yard Construction - Paving								1.83								
New Container Yard Construction - Electrical								0.00								
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving													0.19			
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Ph 1-1 Triple Track Miscellaneous Eq																
Ph 1-2 <b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Ph 1-2 Clamshell Dredging																
Ph 1-3 Demolish Existing Facilities																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2016		2017		2017	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
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<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
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New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
Wick Drains				
Roll Surcharge				
<b>3rd Surcharge and Wick Drains</b>				
Wick Drains				
Roll Surcharge				
<b>4th Surcharge and Wick Drains</b>				
Wick Drains				
Roll Surcharge				
<b>Remove Surcharge</b>				
Roll Surcharge				
<b>Container Yard Development</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
New Container Yard Construction - Electrical				
<b>POLB Ocean Blvd Track Reconfiguration</b>				
Triple Track Installation Demo Eq				
Triple Track Utility Relocation Eq				
Triple Track Grading Eq				
Triple Track Retaining Wall Eq				
Triple Track Trackwork Eq				
Triple Track Miscellaneous Eq				
Ph 1-1				
Ph 1-2				
<b>Demolish Existing Facilities</b>				
Sheet Pile Bulkhead Demolition				
Wharf Demolition Landside				
Wharf Demolition Marine				
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>				
Retaining Bulkhead Construction				
<b>Excavation Fronting E25 and Dispose Slip 1</b>				
Clamshell Dredging				
<b>Construct New Armor Slope</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Wharf Construction</b>				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
<b>CY Development</b>				
New Container Yard Construction - Paving				
<b>Dredge to -55 ft</b>				
Clamshell Dredging				
Ph 1-2				
Ph 1-3				
<b>Demolish Existing Facilities</b>				

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd																
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E26 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Construct E27 Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>CY Development</b>																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
<b>Hydraulic Dredge to -55ft</b>																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 <b>Construction</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 <b>Demolition</b>																		
Wharf Demolition Landside																		
<b>Railyard</b>																		
Intermodal Yard Construction																		
<b>Container Yard Development (F1 - F4)</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>Demo Existing F1-4, F6 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E26 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Construct E27 Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>CY Development</b>																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
<b>Hydraulic Dredge to -55ft</b>																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 <b>Construction</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 <b>Demolition</b>																		
Wharf Demolition Landside																		
<b>Railyard</b>																		
Intermodal Yard Construction																		
<b>Container Yard Development (F1 - F4)</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>Demo Existing F1-4, F6 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-A11-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Ph 1-3 Clamshell Dredging																
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-4 New Container Yard Construction - Electrical																
Ph 1-5 <b>Construction</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-5 New Container Yard Construction - Electrical																
Ph 2-1 <b>Demolition</b>																
Wharf Demolition Landside																
<b>Railyard</b>																
Intermodal Yard Construction																
<b>Container Yard Development (F1 - F4)</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd																		
Wharf Demolition Landside																				
Wharf Demolition Marine																				
Sheet Pile Bulkhead Demolition																				
<b>Construct New Bulkhead</b>																				
Retaining Bulkhead Construction																				
<b>Excavation Fronting E26 and Dispose Slip 1</b>																				
Clamshell Dredging																				
<b>Construct New Armor Slope</b>																				
Rock Placement, Push Off & Tub & Orange Peels																				
<b>Wharf Construction</b>																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
<b>Construct E27 Bulkhead</b>																				
Retaining Bulkhead Construction																				
<b>CY Development</b>																				
Vibratory Hammer & Power Pack																				
Flatbed Truck																				
Welding Machine																				
<b>Hydraulic Dredge to -55ft</b>																				
Ph 1-3 Clamshell Dredging																				
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																				
New Container Yard Utilities																				
New Container Yard Construction - Paving																				
Ph 1-4 New Container Yard Construction - Electrical																				
Ph 1-5 <b>Construction</b>																				
New Container Yard Utilities																				
New Container Yard Construction - Paving																				
Ph 1-5 New Container Yard Construction - Electrical																				
Ph 2-1 <b>Demolition</b>																				
Wharf Demolition Landside																				
<b>Railyard</b>																				
Intermodal Yard Construction																				
<b>Container Yard Development (F1 - F4)</b>																				
New Container Yard Utilities																				
New Container Yard Construction - Paving																				
New Container Yard Construction - Electrical																				
<b>Demo Existing F1-4, F6 Wharf</b>																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				

Table A-4-A11-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2012		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E26 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Construct E27 Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>CY Development</b>																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
<b>Hydraulic Dredge to -55ft</b>																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 <b>Construction</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 <b>Demolition</b>																		
Wharf Demolition Landside																		
<b>Railyard</b>																		
Intermodal Yard Construction																		
<b>Container Yard Development (F1 - F4)</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>Demo Existing F1-4, F6 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-A11-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013		2013		
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct				
	1st	2nd																	
Wharf Demolition Landside																			0.15
Wharf Demolition Marine																			0.26
Sheet Pile Bulkhead Demolition																			0.16
<b>Construct New Bulkhead</b>																			
Retaining Bulkhead Construction																			
<b>Excavation Fronting E26 and Dispose Slip 1</b>																			
Clamshell Dredging																			
<b>Construct New Armor Slope</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Wharf Construction</b>																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
<b>Construct E27 Bulkhead</b>																			
Retaining Bulkhead Construction																			
<b>CY Development</b>																			
Vibratory Hammer & Power Pack																			
Flatbed Truck																			
Welding Machine																			
<b>Hydraulic Dredge to -55ft</b>																			
Ph 1-3 Clamshell Dredging																			
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
Ph 1-4 New Container Yard Construction - Electrical																			
Ph 1-5 <b>Construction</b>																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
Ph 1-5 New Container Yard Construction - Electrical																			
Ph 2-1 <b>Demolition</b>																			
Wharf Demolition Landside																			
<b>Railyard</b>																			
Intermodal Yard Construction																			
<b>Container Yard Development (F1 - F4)</b>																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
New Container Yard Construction - Electrical																			
<b>Demo Existing F1-4, F6 Wharf</b>																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2014		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction			0.15															
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging				0.22								1.57						
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Construct E27 Bulkhead																		
Retaining Bulkhead Construction				0.17		0.33												
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction				0.00														
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels				15.29														
Wharf Construction																		
Drive 24-In Octagonal Piles - Land													0.72					
Drive 24-In Octagonal Piles - Water													1.52					
Drive Piles - Misc Activities													1.53					
Reinforced Concrete Wharf													4.56					
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging								2.00										
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction				0.00														
Container Yard Development (F1 - F4)																		
New Container Yard Utilities													0.00	0.00				
New Container Yard Construction - Paving													1.64	0.20				
New Container Yard Construction - Electrical													0.36	0.04				
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land				0.72														
Drive 24-In Octagonal Piles - Water				1.52														
Drive Piles - Misc Activities				1.53														
Reinforced Concrete Wharf				4.56														
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction																		
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack		0.00																
Flatbed Truck		0.12																
Welding Machine		0.00																
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities				0.00														
New Container Yard Construction - Paving				0.00														
Ph 1-5 New Container Yard Construction - Electrical				0.00														
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction																		
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside				2.73			0.55											
Wharf Demolition Marine				5.02			1.00											

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2016		2017		2017	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd	1st	2nd														
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities														0.00				
New Container Yard Construction - Paving														0.00				
Ph 1-4 New Container Yard Construction - Electrical														0.00				
Ph 1-5 Construction																		
New Container Yard Utilities														0.00				
New Container Yard Construction - Paving														0.00				
Ph 1-5 New Container Yard Construction - Electrical														0.00				
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction																		
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd																
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities																		0.00
New Container Yard Construction - Paving																		0.00
Ph 1-5 New Container Yard Construction - Electrical																		0.00
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction																		
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E26 and Dispose Slip 1																
Clamshell Dredging																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Construct E27 Bulkhead																
Retaining Bulkhead Construction																
CY Development																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
Hydraulic Dredge to -55ft																
Ph 1-3 Clamshell Dredging																
Ph 1-4 Seaside Railyard Area Redevelopment																
New Container Yard Utilities				0.00				0.00								
New Container Yard Construction - Paving				0.00				0.00								
Ph 1-4 New Container Yard Construction - Electrical				0.00				0.00								
Ph 1-5 Construction																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-5 New Container Yard Construction - Electrical																
Ph 2-1 Demolition																
Wharf Demolition Landside																
Railyard																
Intermodal Yard Construction																
Container Yard Development (F1 - F4)																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
Demo Existing F1-4, F6 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction																		
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019		2019	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd																
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction																		
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
Wharf Demolition Landside				
Wharf Demolition Marine				
Sheet Pile Bulkhead Demolition				
<b>Construct New Bulkhead</b>				
Retaining Bulkhead Construction				
<b>Excavation Fronting E26 and Dispose Slip 1</b>				
Clamshell Dredging				
<b>Construct New Armor Slope</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Wharf Construction</b>				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
<b>Construct E27 Bulkhead</b>				
Retaining Bulkhead Construction				
<b>CY Development</b>				
Vibratory Hammer & Power Pack				
Flatbed Truck				
Welding Machine				
<b>Hydraulic Dredge to -55ft</b>				
Ph 1-3 Clamshell Dredging				
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
Ph 1-4 New Container Yard Construction - Electrical				
Ph 1-5 <b>Construction</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
Ph 1-5 New Container Yard Construction - Electrical				
Ph 2-1 <b>Demolition</b>				
Wharf Demolition Landside				
<b>Railyard</b>				
Intermodal Yard Construction				
<b>Container Yard Development (F1 - F4)</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
New Container Yard Construction - Electrical				
<b>Demo Existing F1-4, F6 Wharf</b>				
Wharf Demolition Landside				
Wharf Demolition Marine				

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010		2010		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun				
	1st	2nd																	
<b>Construct East Basin Retaining Dike</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Slip/Basin Fill &amp; Surcharge East</b>																			
Cutter Suction Dredging- Spill Barge (No Booster)																			
Cutter Suction Dredging- Land Disposal (No Booster)																			
Wick Drains																			
<b>Roll Surcharge</b>																			
Roll Surcharge																			
<b>Ph 2-1</b>																			
<b>Construction - New Terminal Buildings</b>																			
Building Construction																			
<b>Dredge and Excavate at Quay Wall</b>																			
Clamshell Dredging																			
<b>Demo Existing F8-10 Wharf</b>																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			
<b>Construct Wharf, Armor, Fill</b>																			
Land Ex																			
Rock Placement, Push Off & Tub & Orange Peels																			
Retaining Bulkhead Construction																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
<b>Basin Fill and Surcharge West</b>																			
Cutter Suction Dredging- Spill Barge (No Booster)																			
Cutter Suction Dredging- Land Disposal (No Booster)																			
Wick Drains																			
<b>Settlement Period</b>																			
Roll Surcharge																			
<b>Ph 2-2</b>																			
<b>Remove Surcharge</b>																			
Roll Surcharge																			
<b>CY Development</b>																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
<b>Ph 2-3</b>																			
New Container Yard Construction - Electrical																			
<b>Activity Total Tons</b>	0	0	0	5	0	0	0	8	3	0	0	0	1	10	0	5			
<b>Yearly Total (Tons)</b>					5														

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2010		2011		2011		2011		
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>						
	<i>1st</i>	<i>2nd</i>																			
<b>Construct East Basin Retaining Dike</b>																					
Rock Placement, Push Off & Tub & Orange Peels																					
<b>Slip/Basin Fill &amp; Surcharge East</b>																					
Cutter Suction Dredging- Spill Barge (No Booster)																					
Cutter Suction Dredging- Land Disposal (No Booster)																					
Wick Drains																					
<b>Roll Surcharge</b>																					
Roll Surcharge																					
<b>Ph 2-1</b>																					
<b>Ph 2-2</b>																					
<b>Construction - New Terminal Buildings</b>																					
Building Construction																					
<b>Dredge and Excavate at Quay Wall</b>																					
Clamshell Dredging																					
<b>Demo Existing F8-10 Wharf</b>																					
Wharf Demolition Landside																					
Wharf Demolition Marine																					
<b>Construct Wharf, Armor, Fill</b>																					
Land Ex																					
Rock Placement, Push Off & Tub & Orange Peels																					
Retaining Bulkhead Construction																					
Drive 24-In Octagonal Piles - Land																					
Drive 24-In Octagonal Piles - Water																					
Drive Piles - Misc Activities																					
Reinforced Concrete Wharf																					
<b>Basin Fill and Surcharge West</b>																					
Cutter Suction Dredging- Spill Barge (No Booster)																					
Cutter Suction Dredging- Land Disposal (No Booster)																					
Wick Drains																					
<b>Settlement Period</b>																					
Roll Surcharge																					
<b>Ph 2-2</b>																					
<b>Ph 2-3</b>																					
<b>Remove Surcharge</b>																					
Roll Surcharge																					
<b>CY Development</b>																					
New Container Yard Utilities																					
New Container Yard Construction - Paving																					
<b>Ph 2-3</b>																					
New Container Yard Construction - Electrical																					
<b>Activity Total Tons</b>	0	0	10	0	6	17	5	4	0	0	1	18	0	3	2	3					
<b>Yearly Total (Tons)</b>														89							

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd																
<b>Construct East Basin Retaining Dike</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Slip/Basin Fill &amp; Surcharge East</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Roll Surcharge</b>																		
Roll Surcharge																		
<b>Ph 2-1</b>																		
<b>Ph 2-2</b>																		
<b>Construction - New Terminal Buildings</b>																		
Building Construction																		
<b>Dredge and Excavate at Quay Wall</b>																		
Clamshell Dredging																		
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Basin Fill and Surcharge West</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Settlement Period</b>																		
Roll Surcharge																		
<b>Ph 2-2</b>																		
<b>Ph 2-3</b>																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>CY Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
<b>Ph 2-3</b>																		
New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	0	0	2	1	0	2	0	2	0	0	0	4	0	0	0	0	
<b>Yearly Total (Tons)</b>																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2012		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 2-1	Construct East Basin Retaining Dike																	
	Rock Placement, Push Off & Tub & Orange Peels																	
	Slip/Basin Fill & Surcharge East																	
	Cutter Suction Dredging- Spill Barge (No Booster)																	
	Cutter Suction Dredging- Land Disposal (No Booster)																	
	Wick Drains																	
	Roll Surcharge																	
Ph 2-1	Roll Surcharge																	
Ph 2-2	Construction - New Terminal Buildings																	
	Building Construction																	
	Dredge and Excavate at Quay Wall																	
	Clamshell Dredging																	
	Demo Existing F8-10 Wharf																	
	Wharf Demolition Landside																	
	Wharf Demolition Marine																	
	Construct Wharf, Armor, Fill																	
	Land Ex																	
	Rock Placement, Push Off & Tub & Orange Peels																	
	Retaining Bulkhead Construction																	
	Drive 24-In Octagonal Piles - Land																	
	Drive 24-In Octagonal Piles - Water																	
	Drive Piles - Misc Activities																	
	Reinforced Concrete Wharf																	
	Basin Fill and Surcharge West																	
	Cutter Suction Dredging- Spill Barge (No Booster)																	
	Cutter Suction Dredging- Land Disposal (No Booster)																	
	Wick Drains																	
	Settlement Period																	
Ph 2-2	Roll Surcharge																	
Ph 2-3	Remove Surcharge																	
	Roll Surcharge																	
	CY Development																	
	New Container Yard Utilities																	
	New Container Yard Construction - Paving																	
Ph 2-3	New Container Yard Construction - Electrical																	
	Activity Total Tons		0	0	0	5	1	0	1	0	0	0	5	0	0	0	0	0
	Yearly Total (Tons)				26													

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2012		2013		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb					
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 2-1	Construct East Basin Retaining Dike																			
	Rock Placement, Push Off & Tub & Orange Peels																			
	Slip/Basin Fill & Surcharge East																			
	Cutter Suction Dredging- Spill Barge (No Booster)																			
	Cutter Suction Dredging- Land Disposal (No Booster)																			
	Wick Drains																			
	Roll Surcharge																			
Ph 2-1	Roll Surcharge																			
Ph 2-2	Construction - New Terminal Buildings																			
	Building Construction																			
	Dredge and Excavate at Quay Wall																			
	Clamshell Dredging																			
	Demo Existing F8-10 Wharf																			
	Wharf Demolition Landside																			
	Wharf Demolition Marine																			
	Construct Wharf, Armor, Fill																			
	Land Ex																			
	Rock Placement, Push Off & Tub & Orange Peels																			
	Retaining Bulkhead Construction																			
	Drive 24-In Octagonal Piles - Land																			
	Drive 24-In Octagonal Piles - Water																			
	Drive Piles - Misc Activities																			
	Reinforced Concrete Wharf																			
	Basin Fill and Surcharge West																			
	Cutter Suction Dredging- Spill Barge (No Booster)																			
	Cutter Suction Dredging- Land Disposal (No Booster)																			
	Wick Drains																			
	Settlement Period																			
Ph 2-2	Roll Surcharge																			
Ph 2-3	Remove Surcharge																			
	Roll Surcharge																			
	CY Development																			
	New Container Yard Utilities																			
	New Container Yard Construction - Paving																			
Ph 2-3	New Container Yard Construction - Electrical																			
	Activity Total Tons		0	3	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0
	Yearly Total (Tons)														13					

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd																
<b>Construct East Basin Retaining Dike</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Slip/Basin Fill &amp; Surcharge East</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Roll Surcharge</b>																		
Roll Surcharge																		
<b>Ph 2-1</b>																		
<b>Ph 2-2</b>																		
<b>Construction - New Terminal Buildings</b>																		
Building Construction																		
<b>Dredge and Excavate at Quay Wall</b>																		
Clamshell Dredging																		
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Basin Fill and Surcharge West</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Settlement Period</b>																		
Roll Surcharge																		
<b>Ph 2-2</b>																		
<b>Ph 2-3</b>																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>CY Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
<b>Ph 2-3</b>																		
New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	0	0	0	0	2	0	0	0	0	0	0	0	1	15	3	0	
<b>Yearly Total (Tons)</b>																		

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2014		2014		2014		2014		2014		2014		2014		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun				
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	
<b>Construct East Basin Retaining Dike</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Slip/Basin Fill &amp; Surcharge East</b>																			
Cutter Suction Dredging- Spill Barge (No Booster)				0.48															
Cutter Suction Dredging- Land Disposal (No Booster)				0.62															
Wick Drains				0.09															
<b>Roll Surcharge</b>																			
Roll Surcharge																			
<b>Ph 2-1</b>																			
<b>Ph 2-2</b>																			
<b>Construction - New Terminal Buildings</b>																			
Building Construction																			
<b>Dredge and Excavate at Quay Wall</b>																			
Clamshell Dredging																			
<b>Demo Existing F8-10 Wharf</b>																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			
<b>Construct Wharf, Armor, Fill</b>																			
Land Ex																			
Rock Placement, Push Off & Tub & Orange Peels																			
Retaining Bulkhead Construction																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
<b>Basin Fill and Surcharge West</b>																			
Cutter Suction Dredging- Spill Barge (No Booster)																			
Cutter Suction Dredging- Land Disposal (No Booster)																			
Wick Drains																			
<b>Settlement Period</b>																			
Roll Surcharge																			
<b>Ph 2-2</b>																			
<b>Ph 2-3</b>																			
<b>Remove Surcharge</b>																			
Roll Surcharge																			
<b>CY Development</b>																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
<b>Ph 2-3</b>																			
New Container Yard Construction - Electrical																			
<b>Activity Total Tons</b>	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	
<b>Yearly Total (Tons)</b>					22														

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015		
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb				
	1st	2nd																	
<b>Construct East Basin Retaining Dike</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Slip/Basin Fill &amp; Surcharge East</b>																			
Cutter Suction Dredging- Spill Barge (No Booster)													1.92		0.16				
Cutter Suction Dredging- Land Disposal (No Booster)													2.50		0.21				
Wick Drains													0.35		0.03				
<b>Roll Surcharge</b>																			
Roll Surcharge																			
<b>Ph 2-1</b>																			
<b>Ph 2-2</b>																			
<b>Construction - New Terminal Buildings</b>																			
Building Construction																			
<b>Dredge and Excavate at Quay Wall</b>																			
Clamshell Dredging																			
<b>Demo Existing F8-10 Wharf</b>																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			
<b>Construct Wharf, Armor, Fill</b>																			
Land Ex																			
Rock Placement, Push Off & Tub & Orange Peels																			
Retaining Bulkhead Construction																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
<b>Basin Fill and Surcharge West</b>																			
Cutter Suction Dredging- Spill Barge (No Booster)																			
Cutter Suction Dredging- Land Disposal (No Booster)																			
Wick Drains																			
<b>Settlement Period</b>																			
Roll Surcharge																			
<b>Ph 2-2</b>																			
<b>Ph 2-3</b>																			
<b>Remove Surcharge</b>																			
Roll Surcharge																			
<b>CY Development</b>																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
<b>Ph 2-3</b>																			
New Container Yard Construction - Electrical																			
<b>Activity Total Tons</b>	0	0	0	15	0	0	2	0	0	0	0	15	0	0	0	0			
<b>Yearly Total (Tons)</b>													34						

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd								
<b>Construct East Basin Retaining Dike</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Slip/Basin Fill &amp; Surcharge East</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Roll Surcharge</b>																
Roll Surcharge										3.59						
<b>Ph 2-1</b>																
<b>Ph 2-2</b>																
<b>Construction - New Terminal Buildings</b>																
Building Construction																
<b>Dredge and Excavate at Quay Wall</b>																
Clamshell Dredging																
<b>Demo Existing F8-10 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct Wharf, Armor, Fill</b>																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Basin Fill and Surcharge West</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Settlement Period</b>																
Roll Surcharge																
<b>Ph 2-2</b>																
<b>Ph 2-3</b>																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>CY Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
<b>Ph 2-3</b>																
New Container Yard Construction - Electrical																
<b>Activity Total Tons</b>	0	0	0	8	0	0	0	0	0	4	0	0	0	0	0	0
<b>Yearly Total (Tons)</b>																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016		2016			
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd																		
Construct East Basin Retaining Dike																				
Rock Placement, Push Off & Tub & Orange Peels																				
Slip/Basin Fill & Surcharge East																				
Cutter Suction Dredging- Spill Barge (No Booster)																				
Cutter Suction Dredging- Land Disposal (No Booster)																				
Wick Drains																				
Roll Surcharge																				
Ph 2-1 Roll Surcharge																				
Ph 2-2 Construction - New Terminal Buildings																				
Building Construction																				
Dredge and Excavate at Quay Wall																				
Clamshell Dredging																				
Demo Existing F8-10 Wharf																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				
Construct Wharf, Armor, Fill																				
Land Ex																				
Rock Placement, Push Off & Tub & Orange Peels																				
Retaining Bulkhead Construction																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
Basin Fill and Surcharge West																				
Cutter Suction Dredging- Spill Barge (No Booster)																				
Cutter Suction Dredging- Land Disposal (No Booster)																				
Wick Drains																				
Settlement Period																				
Ph 2-2 Roll Surcharge																				
Ph 2-3 Remove Surcharge																				
Roll Surcharge																				
CY Development																				
New Container Yard Utilities																				
New Container Yard Construction - Paving																				
Ph 2-3 New Container Yard Construction - Electrical																				
Activity Total Tons	0	0	0	8	0	2	0	0	0	0	0	0	0	0	0	0	0	0		
Yearly Total (Tons)					20															

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2017		2017		2017	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd	1st	2nd	1st	2nd												
<b>Construct East Basin Retaining Dike</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Slip/Basin Fill &amp; Surcharge East</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Roll Surcharge</b>																		
Roll Surcharge																		
<b>Ph 2-1</b>																		
<b>Ph 2-2</b>																		
<b>Construction - New Terminal Buildings</b>																		
Building Construction													0.00					
<b>Dredge and Excavate at Quay Wall</b>																		
Clamshell Dredging													4.30	1.23				
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Basin Fill and Surcharge West</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Settlement Period</b>																		
Roll Surcharge																		
<b>Ph 2-2</b>																		
<b>Ph 2-3</b>																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>CY Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
<b>Ph 2-3</b>																		
New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0
<b>Yearly Total (Tons)</b>														6				

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>Construct East Basin Retaining Dike</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Slip/Basin Fill &amp; Surcharge East</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Roll Surcharge</b>																
Roll Surcharge																
<b>Ph 2-1</b>																
<b>Ph 2-2</b>																
<b>Construction - New Terminal Buildings</b>																
Building Construction																
<b>Dredge and Excavate at Quay Wall</b>																
Clamshell Dredging																
<b>Demo Existing F8-10 Wharf</b>																
Wharf Demolition Landside											0.23					
Wharf Demolition Marine											0.40					
<b>Construct Wharf, Armor, Fill</b>																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Basin Fill and Surcharge West</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Settlement Period</b>																
Roll Surcharge																
<b>Ph 2-2</b>																
<b>Ph 2-3</b>																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>CY Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
<b>Ph 2-3</b>																
New Container Yard Construction - Electrical																
<b>Activity Total Tons</b>	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
<b>Yearly Total (Tons)</b>																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Construct East Basin Retaining Dike																
Rock Placement, Push Off & Tub & Orange Peels																
Slip/Basin Fill & Surcharge East																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Roll Surcharge																
Ph 2-1 Roll Surcharge																
Ph 2-2 Construction - New Terminal Buildings																
Building Construction				0.00									0.00			
Dredge and Excavate at Quay Wall																
Clamshell Dredging																
Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex				0.99												
Rock Placement, Push Off & Tub & Orange Peels				10.02												
Retaining Bulkhead Construction				0.74												
Drive 24-In Octagonal Piles - Land				0.97												
Drive 24-In Octagonal Piles - Water				1.77												
Drive Piles - Misc Activities				0.56												
Reinforced Concrete Wharf				1.13												
Basin Fill and Surcharge West																
Cutter Suction Dredging- Spill Barge (No Booster)				1.42												4.25
Cutter Suction Dredging- Land Disposal (No Booster)				1.55												4.66
Wick Drains				0.19												0.58
Settlement Period																
Ph 2-2 Roll Surcharge																
Ph 2-3 Remove Surcharge																
Roll Surcharge																
CY Development																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 2-3 New Container Yard Construction - Electrical																
Activity Total Tons	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	9
Yearly Total (Tons)					21											

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2019		2019	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
<b>Construct East Basin Retaining Dike</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Slip/Basin Fill &amp; Surcharge East</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Roll Surcharge</b>																
Roll Surcharge																
<b>Ph 2-1</b>																
<b>Ph 2-2</b>																
<b>Construction - New Terminal Buildings</b>																
Building Construction																
<b>Dredge and Excavate at Quay Wall</b>																
Clamshell Dredging																
<b>Demo Existing F8-10 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct Wharf, Armor, Fill</b>																
Land Ex							1.79									
Rock Placement, Push Off & Tub & Orange Peels							18.04									
Retaining Bulkhead Construction							1.34									
Drive 24-In Octagonal Piles - Land							1.75									
Drive 24-In Octagonal Piles - Water							3.18									
Drive Piles - Misc Activities							1.01									
Reinforced Concrete Wharf							2.03									
<b>Basin Fill and Surcharge West</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Settlement Period</b>																
Roll Surcharge													15.5			
<b>Ph 2-2</b>																
<b>Ph 2-3</b>																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>CY Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
<b>Ph 2-3</b>																
New Container Yard Construction - Electrical																
<b>Activity Total Tons</b>	0	0	0	0	0	29	0	0	0	0	0	16	0	0	0	0
<b>Yearly Total (Tons)</b>													54			

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
<b>Construct East Basin Retaining Dike</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Slip/Basin Fill &amp; Surcharge East</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Roll Surcharge</b>																
Roll Surcharge																
<b>Ph 2-1</b>																
<b>Ph 2-2</b>																
<b>Construction - New Terminal Buildings</b>																
Building Construction																
<b>Dredge and Excavate at Quay Wall</b>																
Clamshell Dredging																
<b>Demo Existing F8-10 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct Wharf, Armor, Fill</b>																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Basin Fill and Surcharge West</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Settlement Period</b>																
Roll Surcharge																
<b>Ph 2-2</b>																
<b>Ph 2-3</b>																
<b>Remove Surcharge</b>																
Roll Surcharge								7.77								
<b>CY Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
<b>Ph 2-3</b>																
New Container Yard Construction - Electrical																
<b>Activity Total Tons</b>	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0
<b>Yearly Total (Tons)</b>																

Table A-4-AIT1-143 Total Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
<b>Construct East Basin Retaining Dike</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Slip/Basin Fill &amp; Surcharge East</b>				
Cutter Suction Dredging- Spill Barge (No Booster)				
Cutter Suction Dredging- Land Disposal (No Booster)				
Wick Drains				
<b>Roll Surcharge</b>				
Roll Surcharge				
<b>Ph 2-1</b>				
<b>Ph 2-2</b>				
<b>Construction - New Terminal Buildings</b>				
Building Construction				
<b>Dredge and Excavate at Quay Wall</b>				
Clamshell Dredging				
<b>Demo Existing F8-10 Wharf</b>				
Wharf Demolition Landside				
Wharf Demolition Marine				
<b>Construct Wharf, Armor, Fill</b>				
Land Ex				
Rock Placement, Push Off & Tub & Orange Peels				
Retaining Bulkhead Construction				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
<b>Basin Fill and Surcharge West</b>				
Cutter Suction Dredging- Spill Barge (No Booster)				
Cutter Suction Dredging- Land Disposal (No Booster)				
Wick Drains				
<b>Settlement Period</b>				
Roll Surcharge				
<b>Ph 2-2</b>				
<b>Ph 2-3</b>				
<b>Remove Surcharge</b>				
Roll Surcharge				
<b>CY Development</b>				
New Container Yard Utilities		0.00		
New Container Yard Construction - Paving		0.74		
Ph 2-3 New Container Yard Construction - Electrical		0.00		
<b>Activity Total Tons</b>	0	1		
<b>Yearly Total (Tons)</b>				9

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside				0.27					0.34							
Wharf Demolition Marine				0.59					0.74							
Sheet Pile Bulkhead Demolition				0.62					0.78							
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction							0.16									
<b>Excavation Fronting E24</b>																
Clamshell Dredging														0.06		
Land Ex														0.62		
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels														0.78		
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
<b>Utility Construction</b>																
New Container Yard Utilities																
<b>Paving</b>																
New Container Yard Construction - Paving																
<b>Lighting, Striping, Crane Power</b>																
New Container Yard Construction - Electrical																
<b>Prepare for Toe Dike / Construct Dike (1st Lift)</b>																
Rock Placement, Push Off & Tub & Orange Peels				0.19				0.75								
<b>Fill within Dike</b>																
Clamshell Dredging														0.02		
<b>Remaining Dike Lifts</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Remaining Fill Lifts</b>																
Clamshell Dredging																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
<b>Construct South Mooring Dolphin</b>																
Drive 24-In Octagonal Piles - Water																
<b>Wick Drains</b>																
Wick Drains																
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																
Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land						0.63										
Drive 24-In Octagonal Piles - Water						0.57										
Drive Piles - Misc Activities						2.19										
Reinforced Concrete Wharf						3.15										
Retaining Bulkhead Construction						0.96										
Utility Construction																
New Container Yard Utilities							0.00									
Paving																
New Container Yard Construction - Paving									0.08							
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical											0.00		0.00			
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels			0.93													
Remaining Fill Lifts																
Clamshell Dredging						0.06										
Wharf Construction																
Drive 24-In Octagonal Piles - Land											0.40		0.13			
Drive 24-In Octagonal Piles - Water											0.36		0.12			
Drive Piles - Misc Activities											1.18		0.39			
Reinforced Concrete Wharf											1.52		0.51			
Retaining Bulkhead Construction											0.31		0.10			
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains									0.03							
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge												0.58				

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E24</b>																
Clamshell Dredging																
Land Ex																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
<b>Utility Construction</b>																
New Container Yard Utilities																
<b>Paving</b>																
New Container Yard Construction - Paving																
<b>Lighting, Striping, Crane Power</b>																
New Container Yard Construction - Electrical																
<b>Prepare for Toe Dike / Construct Dike (1st Lift)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Fill within Dike</b>																
Clamshell Dredging																
<b>Remaining Dike Lifts</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Remaining Fill Lifts</b>																
Clamshell Dredging																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
<b>Construct South Mooring Dolphin</b>																
Drive 24-In Octagonal Piles - Water	0.07															
<b>Wick Drains</b>																
Wick Drains																
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																
Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2013		2013	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>	
	<i>1st</i>	<i>2nd</i>														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	<i>Mar</i>		<i>Apr</i>		<i>May</i>		<i>Jun</i>		<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>	
	<i>1st</i>	<i>2nd</i>														
Ph 1-1 <b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E24</b>																
Clamshell Dredging																
Land Ex																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
<b>Utility Construction</b>																
New Container Yard Utilities																
<b>Paving</b>																
New Container Yard Construction - Paving																
<b>Lighting, Striping, Crane Power</b>																
New Container Yard Construction - Electrical																
<b>Prepare for Toe Dike / Construct Dike (1st Lift)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Fill within Dike</b>																
Clamshell Dredging																
<b>Remaining Dike Lifts</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Remaining Fill Lifts</b>																
Clamshell Dredging																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
<b>Construct South Mooring Dolphin</b>																
Drive 24-In Octagonal Piles - Water																
<b>Wick Drains</b>																
Wick Drains																
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																
Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2013		2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E24</b>																		
Clamshell Dredging																		
Land Ex																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
<b>Utility Construction</b>																		
New Container Yard Utilities																		
<b>Paving</b>																		
New Container Yard Construction - Paving																		
<b>Lighting, Striping, Crane Power</b>																		
New Container Yard Construction - Electrical																		
<b>Prepare for Toe Dike / Construct Dike (1st Lift)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Fill within Dike</b>																		
Clamshell Dredging																		
<b>Remaining Dike Lifts</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Remaining Fill Lifts</b>																		
Clamshell Dredging																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
<b>Construct South Mooring Dolphin</b>																		
Drive 24-In Octagonal Piles - Water																		
<b>Wick Drains</b>																		
Wick Drains																		
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																		
Roll Surcharge																		

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																

Table A-4-A11-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																

Table A-4-A11-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2017		2017	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																

Table A-4-A11-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2019		2019	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																

Table A-4-A11-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities				
Wharf Demolition Landside				
Wharf Demolition Marine				
Sheet Pile Bulkhead Demolition				
<b>Construct New Bulkhead</b>				
Retaining Bulkhead Construction				
<b>Excavation Fronting E24</b>				
Clamshell Dredging				
Land Ex				
<b>Construct New Armor Slope</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Wharf Construction</b>				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
Retaining Bulkhead Construction				
<b>Utility Construction</b>				
New Container Yard Utilities				
<b>Paving</b>				
New Container Yard Construction - Paving				
<b>Lighting, Striping, Crane Power</b>				
New Container Yard Construction - Electrical				
<b>Prepare for Toe Dike / Construct Dike (1st Lift)</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Fill within Dike</b>				
Clamshell Dredging				
<b>Remaining Dike Lifts</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Remaining Fill Lifts</b>				
Clamshell Dredging				
<b>Wharf Construction</b>				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
Retaining Bulkhead Construction				
<b>Construct South Mooring Dolphin</b>				
Drive 24-In Octagonal Piles - Water				
<b>Wick Drains</b>				
Wick Drains				
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>				
Roll Surcharge				

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction											0.18					
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																0.42
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
3rd Surcharge and Wick Drains																
Wick Drains																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2011		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Remove Surcharge to Slip 1 Fill Site																		
Roll Surcharge																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Fence, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Construct Retaining Structure at Pier D Oil Area																		
Retaining Bulkhead Construction																		
Excavate & Truck Material in Cell Bulkhead																		
Land Ex									0.21									
Excavate Material Fronting Pier D																		
Land Ex									0.35									
Clamshell Dredging									0.06									
Remove Cellular Sheetpile																		
Sheet Pile Bulkhead Demolition												1.11						
Rock Revetment																		
Rock Placement, Push Off & Tub & Orange Peels													0.54			0.20		
Hydraulic or Clamshell Dredge to -55 ft																		
Clamshell Dredging									0.02									
Ground Improvements Pier D																		
Stone Column Installation Eq													1.65					1.65
Marine Rock Delivery Eq													0.21					0.21
Demo - E12-13 Wharf																		
Wharf Demolition Landside								0.81										
Wharf Demolition Marine								1.77										
Lift #1 (- -30)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #2 (- -15)																		
Rock Placement, Push Off & Tub & Orange Peels									0.25									
Lift #3 (- 0)																		
Rock Placement, Push Off & Tub & Orange Peels													0.15			0.07		
Lift #4 (- +15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Initial Surcharge and Wick Drains																		
Wick Drains																		
Roll Surcharge																		
2nd Surcharge and Wick Drains																		
Wick Drains																		
Roll Surcharge																		
3rd Surcharge and Wick Drains																		
Wick Drains																		

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
<b>Remove Surcharge to Slip 1 Fill Site</b>																
Roll Surcharge				0.29												
<b>Utility Construction</b>																
New Container Yard Utilities			0.00													
<b>Paving</b>																
New Container Yard Construction - Paving								0.39								
<b>Lighting, Fence, Striping, Crane Power</b>																
New Container Yard Construction - Electrical											0.00					
<b>Construct Retaining Structure at Pier D Oil Area</b>																
Retaining Bulkhead Construction																
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																
Land Ex																
<b>Excavate Material Fronting Pier D</b>																
Land Ex																
Clamshell Dredging																
<b>Remove Cellular Sheetpile</b>																
Sheet Pile Bulkhead Demolition																
<b>Rock Revetment</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ground Improvements Pier D</b>																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
<b>Demo - E12-13 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Lift #1 (- -30)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #2 (- -15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #3 (- 0)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #4 (- +15)</b>																
Rock Placement, Push Off & Tub & Orange Peels				0.19												
<b>Initial Surcharge and Wick Drains</b>																
Wick Drains						0.04										
Roll Surcharge						0.86										
<b>2nd Surcharge and Wick Drains</b>																
Wick Drains								0.10								
Roll Surcharge								1.30								
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains											0.10					

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
3rd Surcharge and Wick Drains																
Wick Drains																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
3rd Surcharge and Wick Drains																
Wick Drains																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
<b>Utility Construction</b>																
New Container Yard Utilities																
<b>Paving</b>																
New Container Yard Construction - Paving																
<b>Lighting, Fence, Striping, Crane Power</b>																
New Container Yard Construction - Electrical																
<b>Construct Retaining Structure at Pier D Oil Area</b>																
Retaining Bulkhead Construction																
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																
Land Ex																
<b>Excavate Material Fronting Pier D</b>																
Land Ex																
Clamshell Dredging																
<b>Remove Cellular Sheetpile</b>																
Sheet Pile Bulkhead Demolition																
<b>Rock Revetment</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ground Improvements Pier D</b>																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
<b>Demo - E12-13 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Lift #1 (- -30)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #2 (- -15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #3 (- 0)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #4 (- +15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Initial Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>2nd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2013		2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd																
Remove Surcharge to Slip 1 Fill Site																		
Roll Surcharge																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Fence, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Construct Retaining Structure at Pier D Oil Area																		
Retaining Bulkhead Construction																		
Excavate & Truck Material in Cell Bulkhead																		
Land Ex																		
Excavate Material Fronting Pier D																		
Land Ex																		
Clamshell Dredging																		
Remove Cellular Sheetpile																		
Sheet Pile Bulkhead Demolition																		
Rock Revetment																		
Rock Placement, Push Off & Tub & Orange Peels																		
Hydraulic or Clamshell Dredge to -55 ft																		
Clamshell Dredging																		
Ground Improvements Pier D																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
Demo - E12-13 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Lift #1 (- -30)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #2 (- -15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #3 (- 0)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #4 (- +15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Initial Surcharge and Wick Drains																		
Wick Drains																		
Roll Surcharge																		
2nd Surcharge and Wick Drains																		
Wick Drains																		
Roll Surcharge																		
3rd Surcharge and Wick Drains																		
Wick Drains																		

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvments Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
3rd Surcharge and Wick Drains																
Wick Drains																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvments Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
3rd Surcharge and Wick Drains																
Wick Drains																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvments Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
3rd Surcharge and Wick Drains																
Wick Drains																

Table A-4-A11-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2017		2017	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvments Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
3rd Surcharge and Wick Drains																
Wick Drains																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvments Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
3rd Surcharge and Wick Drains																
Wick Drains																

Table A-4-A11-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvments Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
3rd Surcharge and Wick Drains																
Wick Drains																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2018	2018	2018	2018	2018	2018	2018	2018	2018	2018	2018	2018	2019	2019	2019	2019
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvments Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
3rd Surcharge and Wick Drains																
Wick Drains																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvments Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
3rd Surcharge and Wick Drains																
Wick Drains																

Table A-4-A11-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
<b>Remove Surcharge to Slip 1 Fill Site</b>				
Roll Surcharge				
<b>Utility Construction</b>				
New Container Yard Utilities				
<b>Paving</b>				
New Container Yard Construction - Paving				
<b>Lighting, Fence, Striping, Crane Power</b>				
New Container Yard Construction - Electrical				
<b>Construct Retaining Structure at Pier D Oil Area</b>				
Retaining Bulkhead Construction				
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>				
Land Ex				
<b>Excavate Material Fronting Pier D</b>				
Land Ex				
Clamshell Dredging				
<b>Remove Cellular Sheetpile</b>				
Sheet Pile Bulkhead Demolition				
<b>Rock Revetment</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Hydraulic or Clamshell Dredge to -55 ft</b>				
Clamshell Dredging				
<b>Ground Improvements Pier D</b>				
Stone Column Installation Eq				
Marine Rock Delivery Eq				
<b>Demo - E12-13 Wharf</b>				
Wharf Demolition Landside				
Wharf Demolition Marine				
<b>Lift #1 (- -30)</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Lift #2 (- -15)</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Lift #3 (- 0)</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Lift #4 (- +15)</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Initial Surcharge and Wick Drains</b>				
Wick Drains				
Roll Surcharge				
<b>2nd Surcharge and Wick Drains</b>				
Wick Drains				
Roll Surcharge				
<b>3rd Surcharge and Wick Drains</b>				
Wick Drains				

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2011		2011	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>	
	1st	2nd														
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Roll Surcharge									1.73							
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																0.09
Roll Surcharge																3.24
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																0.00
Triple Track Utility Relocation Eq																0.00
Triple Track Grading Eq																0.00
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
Dredge to -55 ft																
Ph 1-2																
Clamshell Dredging																
Ph 1-3																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2011		2011		2012		2012		2012		2012		2012		2012	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun								
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd		
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq	0.00															
Triple Track Trackwork Eq				0.00						0.00						
Triple Track Miscellaneous Eq				0.00						0.00						
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition				0.85		0.17										
Wharf Demolition Landside				0.37		0.07										
Wharf Demolition Marine				0.81		0.16										
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction				0.10												
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging				0.02		0.01										
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels										0.93						
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
Dredge to -55 ft																
<b>Ph 1-2</b>																
Clamshell Dredging							0.02									
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																

Table A-4-A11-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge		2.59														
<b>Container Yard Development</b>																
New Container Yard Utilities												0.00				
New Container Yard Construction - Paving												1.45				
New Container Yard Construction - Electrical												0.00				
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land									0.04							
Drive 24-In Octagonal Piles - Water									0.04							
Drive Piles - Misc Activities									0.16							
Reinforced Concrete Wharf									0.20							
<b>CY Development</b>																
New Container Yard Construction - Paving												0.13				
Dredge to -55 ft																
Ph 1-2																
Clamshell Dredging																
Ph 1-3																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities						0.00										
New Container Yard Construction - Paving						1.45										
New Container Yard Construction - Electrical						0.00										
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving		0.15														
Dredge to -55 ft																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside															0.06	
Wharf Demolition Marine															0.14	
Sheet Pile Bulkhead Demolition															0.15	
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																

Table A-4-A11-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction				0.13												
<b>Excavation Fronting E26 and Dispose Slip 1</b>																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E26 and Dispose Slip 1</b>																		

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2017		2017	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																

Table A-4-A11-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>			
	1st	2nd																
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E26 and Dispose Slip 1</b>																		

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
Roll Surcharge				
<b>4th Surcharge and Wick Drains</b>				
Wick Drains				
Roll Surcharge				
<b>Remove Surcharge</b>				
Roll Surcharge				
<b>Container Yard Development</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
New Container Yard Construction - Electrical				
<b>POLB Ocean Blvd Track Reconfiguration</b>				
Triple Track Installation Demo Eq				
Triple Track Utility Relocation Eq				
Triple Track Grading Eq				
Triple Track Retaining Wall Eq				
Triple Track Trackwork Eq				
Triple Track Miscellaneous Eq				
Ph 1-1				
Ph 1-2				
<b>Demolish Existing Facilities</b>				
Sheet Pile Bulkhead Demolition				
Wharf Demolition Landside				
Wharf Demolition Marine				
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>				
Retaining Bulkhead Construction				
<b>Excavation Fronting E25 and Dispose Slip 1</b>				
Clamshell Dredging				
<b>Construct New Armor Slope</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Wharf Construction</b>				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
<b>CY Development</b>				
New Container Yard Construction - Paving				
<b>Dredge to -55 ft</b>				
Clamshell Dredging				
Ph 1-2				
Ph 1-3				
<b>Demolish Existing Facilities</b>				
Wharf Demolition Landside				
Wharf Demolition Marine				
Sheet Pile Bulkhead Demolition				
<b>Construct New Bulkhead</b>				
Retaining Bulkhead Construction				
<b>Excavation Fronting E26 and Dispose Slip 1</b>				

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Ph 1-3 Clamshell Dredging																
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-4 New Container Yard Construction - Electrical																
Ph 1-5 <b>Construction</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-5 New Container Yard Construction - Electrical																
Ph 2-1 <b>Demolition</b>																
Wharf Demolition Landside																
<b>Railyard</b>																
Intermodal Yard Construction																
<b>Container Yard Development (F1 - F4)</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct East Basin Retaining Dike</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Slip/Basin Fill &amp; Surcharge East</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Roll Surcharge</b>																
Ph 2-1 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2011		2011	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>	
	1st	2nd														
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Ph 1-3 Clamshell Dredging																
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-4 New Container Yard Construction - Electrical																
Ph 1-5 <b>Construction</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-5 New Container Yard Construction - Electrical																
Ph 2-1 <b>Demolition</b>																
Wharf Demolition Landside																
<b>Railyard</b>																
Intermodal Yard Construction																
<b>Container Yard Development (F1 - F4)</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct East Basin Retaining Dike</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Slip/Basin Fill &amp; Surcharge East</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Roll Surcharge</b>																
Ph 2-1 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Ph 1-3 Clamshell Dredging																
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-4 New Container Yard Construction - Electrical																
Ph 1-5 <b>Construction</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-5 New Container Yard Construction - Electrical																
Ph 2-1 <b>Demolition</b>																
Wharf Demolition Landside																
<b>Railyard</b>																
Intermodal Yard Construction																
<b>Container Yard Development (F1 - F4)</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct East Basin Retaining Dike</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Slip/Basin Fill &amp; Surcharge East</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Roll Surcharge</b>																
Ph 2-1 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Ph 1-3 Clamshell Dredging																
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-4 New Container Yard Construction - Electrical																
Ph 1-5 <b>Construction</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-5 New Container Yard Construction - Electrical																
Ph 2-1 <b>Demolition</b>																
Wharf Demolition Landside																
<b>Railyard</b>																
Intermodal Yard Construction																
<b>Container Yard Development (F1 - F4)</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct East Basin Retaining Dike</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Slip/Basin Fill &amp; Surcharge East</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Roll Surcharge</b>																
Ph 2-1 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2013		2013	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>	
	1st	2nd														
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Clamshell Dredging																
Ph 1-3																
Ph 1-4																
<b>Seaside Railyard Area Redevelopment</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-4																
New Container Yard Construction - Electrical																
Ph 1-5																
<b>Construction</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-5																
New Container Yard Construction - Electrical																
Ph 2-1																
<b>Demolition</b>																
Wharf Demolition Landside																
<b>Railyard</b>																
Intermodal Yard Construction																
<b>Container Yard Development (F1 - F4)</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct East Basin Retaining Dike</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Slip/Basin Fill &amp; Surcharge East</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Roll Surcharge</b>																
Ph 2-1																
Roll Surcharge																

Table A-4-A11-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Ph 1-3 Clamshell Dredging																
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-4 New Container Yard Construction - Electrical																
Ph 1-5 <b>Construction</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-5 New Container Yard Construction - Electrical																
Ph 2-1 <b>Demolition</b>																
Wharf Demolition Landside																
Railyard																
Intermodal Yard Construction																
<b>Container Yard Development (F1 - F4)</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct East Basin Retaining Dike</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Slip/Basin Fill &amp; Surcharge East</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Roll Surcharge</b>																
Ph 2-1 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2013		2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Clamshell Dredging				0.00									0.02					
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Construct E27 Bulkhead																		
Retaining Bulkhead Construction				0.15			0.29											
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction				0.00														
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Construct East Basin Retaining Dike																		
Rock Placement, Push Off & Tub & Orange Peels																		
Slip/Basin Fill & Surcharge East																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains				0.13														
Roll Surcharge				0.32														
Ph 2-1 Roll Surcharge				0.09														

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2015		2015		2015		
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb				
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	
Clamshell Dredging																			
Construct New Armor Slope																			
Rock Placement, Push Off & Tub & Orange Peels				1.40															
Wharf Construction																			
Drive 24-In Octagonal Piles - Land													0.54						
Drive 24-In Octagonal Piles - Water													0.48						
Drive Piles - Misc Activities													1.53						
Reinforced Concrete Wharf													1.97						
Construct E27 Bulkhead																			
Retaining Bulkhead Construction																			
CY Development																			
Vibratory Hammer & Power Pack																			
Flatbed Truck																			
Welding Machine																			
Hydraulic Dredge to -55ft																			
Ph 1-3 Clamshell Dredging								0.03											
Ph 1-4 Seaside Railyard Area Redevelopment																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
Ph 1-4 New Container Yard Construction - Electrical																			
Ph 1-5 Construction																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
Ph 1-5 New Container Yard Construction - Electrical																			
Ph 2-1 Demolition																			
Wharf Demolition Landside																			
Railyard																			
Intermodal Yard Construction				0.00															
Container Yard Development (F1 - F4)																			
New Container Yard Utilities													0.00	0.00					
New Container Yard Construction - Paving													1.29	0.16					
New Container Yard Construction - Electrical													0.22	0.03					
Demo Existing F1-4, F6 Wharf																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			
Construct East Basin Retaining Dike																			
Rock Placement, Push Off & Tub & Orange Peels																			
Slip/Basin Fill & Surcharge East																			
Cutter Suction Dredging- Spill Barge (No Booster)													0.50	0.04					
Cutter Suction Dredging- Land Disposal (No Booster)													1.28	0.11					
Wick Drains													0.35	0.03					
Roll Surcharge																			
Ph 2-1 Roll Surcharge																			

Table A-4-A11-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Clamshell Dredging																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land				0.54												
Drive 24-In Octagonal Piles - Water				0.48												
Drive Piles - Misc Activities				1.53												
Reinforced Concrete Wharf				1.97												
Construct E27 Bulkhead																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
Hydraulic Dredge to -55ft																
Ph 1-3 Clamshell Dredging																
Ph 1-4 Seaside Railyard Area Redevelopment																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-4 New Container Yard Construction - Electrical																
Ph 1-5 Construction																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-5 New Container Yard Construction - Electrical																
Ph 2-1 Demolition																
Wharf Demolition Landside																
Railyard																
Intermodal Yard Construction																
Container Yard Development (F1 - F4)																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
Demo Existing F1-4, F6 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct East Basin Retaining Dike																
Rock Placement, Push Off & Tub & Orange Peels																
Slip/Basin Fill & Surcharge East																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Roll Surcharge																
Ph 2-1 Roll Surcharge																3.03

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Clamshell Dredging																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Construct E27 Bulkhead																
Retaining Bulkhead Construction																
CY Development																
Vibratory Hammer & Power Pack		0.00														
Flatbed Truck		0.10														
Welding Machine		0.00														
Hydraulic Dredge to -55ft																
Ph 1-3 Clamshell Dredging																
Ph 1-4 Seaside Railyard Area Redevelopment																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-4 New Container Yard Construction - Electrical																
Ph 1-5 Construction																
New Container Yard Utilities				0.00												
New Container Yard Construction - Paving				0.00												
Ph 1-5 New Container Yard Construction - Electrical				0.00												
Ph 2-1 Demolition																
Wharf Demolition Landside																
Railyard																
Intermodal Yard Construction																
Container Yard Development (F1 - F4)																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
Demo Existing F1-4, F6 Wharf																
Wharf Demolition Landside				1.12			0.22									
Wharf Demolition Marine				2.46			0.49									
Construct East Basin Retaining Dike																
Rock Placement, Push Off & Tub & Orange Peels																
Slip/Basin Fill & Surcharge East																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Roll Surcharge																
Ph 2-1 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2017		2017	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Clamshell Dredging																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Construct E27 Bulkhead																
Retaining Bulkhead Construction																
CY Development																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
Hydraulic Dredge to -55ft																
Ph 1-3 Clamshell Dredging																
Ph 1-4 Seaside Railyard Area Redevelopment																
New Container Yard Utilities													0.00			
New Container Yard Construction - Paving													0.00			
Ph 1-4 New Container Yard Construction - Electrical													0.00			
Ph 1-5 Construction																
New Container Yard Utilities													0.00			
New Container Yard Construction - Paving													0.00			
Ph 1-5 New Container Yard Construction - Electrical													0.00			
Ph 2-1 Demolition																
Wharf Demolition Landside																
Railyard																
Intermodal Yard Construction																
Container Yard Development (F1 - F4)																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
Demo Existing F1-4, F6 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct East Basin Retaining Dike																
Rock Placement, Push Off & Tub & Orange Peels																
Slip/Basin Fill & Surcharge East																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Roll Surcharge																
Ph 2-1 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Clamshell Dredging																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Construct E27 Bulkhead																
Retaining Bulkhead Construction																
CY Development																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
Hydraulic Dredge to -55ft																
Ph 1-3 Clamshell Dredging																
Ph 1-4 Seaside Railyard Area Redevelopment																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-4 New Container Yard Construction - Electrical																
Ph 1-5 Construction																
New Container Yard Utilities													0.00			
New Container Yard Construction - Paving													0.00			
Ph 1-5 New Container Yard Construction - Electrical													0.00			
Ph 2-1 Demolition																
Wharf Demolition Landside																
Railyard																
Intermodal Yard Construction																
Container Yard Development (F1 - F4)																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
Demo Existing F1-4, F6 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct East Basin Retaining Dike																
Rock Placement, Push Off & Tub & Orange Peels																
Slip/Basin Fill & Surcharge East																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Roll Surcharge																
Ph 2-1 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Clamshell Dredging																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Construct E27 Bulkhead																
Retaining Bulkhead Construction																
CY Development																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
Hydraulic Dredge to -55ft																
Ph 1-3 Clamshell Dredging																
Ph 1-4 Seaside Railyard Area Redevelopment																
New Container Yard Utilities				0.00				0.00								
New Container Yard Construction - Paving				0.00				0.00								
Ph 1-4 New Container Yard Construction - Electrical				0.00				0.00								
Ph 1-5 Construction																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-5 New Container Yard Construction - Electrical																
Ph 2-1 Demolition																
Wharf Demolition Landside																
Railyard																
Intermodal Yard Construction																
Container Yard Development (F1 - F4)																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
Demo Existing F1-4, F6 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct East Basin Retaining Dike																
Rock Placement, Push Off & Tub & Orange Peels																
Slip/Basin Fill & Surcharge East																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Roll Surcharge																
Ph 2-1 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction																		
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Construct East Basin Retaining Dike																		
Rock Placement, Push Off & Tub & Orange Peels																		
Slip/Basin Fill & Surcharge East																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
Roll Surcharge																		
Ph 2-1 Roll Surcharge																		

Table A-4-A11-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Clamshell Dredging																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Construct E27 Bulkhead																
Retaining Bulkhead Construction																
CY Development																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
Hydraulic Dredge to -55ft																
Ph 1-3 Clamshell Dredging																
Ph 1-4 Seaside Railyard Area Redevelopment																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-4 New Container Yard Construction - Electrical																
Ph 1-5 Construction																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-5 New Container Yard Construction - Electrical																
Ph 2-1 Demolition																
Wharf Demolition Landside																
Railyard																
Intermodal Yard Construction																
Container Yard Development (F1 - F4)																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
Demo Existing F1-4, F6 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct East Basin Retaining Dike																
Rock Placement, Push Off & Tub & Orange Peels																
Slip/Basin Fill & Surcharge East																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Roll Surcharge																
Ph 2-1 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
Clamshell Dredging				
<b>Construct New Armor Slope</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Wharf Construction</b>				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
<b>Construct E27 Bulkhead</b>				
Retaining Bulkhead Construction				
<b>CY Development</b>				
Vibratory Hammer & Power Pack				
Flatbed Truck				
Welding Machine				
<b>Hydraulic Dredge to -55ft</b>				
Ph 1-3 Clamshell Dredging				
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
Ph 1-4 New Container Yard Construction - Electrical				
Ph 1-5 <b>Construction</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
Ph 1-5 New Container Yard Construction - Electrical				
Ph 2-1 <b>Demolition</b>				
Wharf Demolition Landside				
<b>Railyard</b>				
Intermodal Yard Construction				
<b>Container Yard Development (F1 - F4)</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
New Container Yard Construction - Electrical				
<b>Demo Existing F1-4, F6 Wharf</b>				
Wharf Demolition Landside				
Wharf Demolition Marine				
<b>Construct East Basin Retaining Dike</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Slip/Basin Fill &amp; Surcharge East</b>				
Cutter Suction Dredging- Spill Barge (No Booster)				
Cutter Suction Dredging- Land Disposal (No Booster)				
Wick Drains				
<b>Roll Surcharge</b>				
Ph 2-1 Roll Surcharge				

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 2-2 Construction - New Terminal Buildings																
Building Construction																
Dredge and Excavate at Quay Wall																
Clamshell Dredging																
Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Basin Fill and Surcharge West																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Settlement Period																
Ph 2-2 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2011		2011	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>	
	<i>1st</i>	<i>2nd</i>														
Ph 2-2 Construction - New Terminal Buildings																
Building Construction																
Dredge and Excavate at Quay Wall																
Clamshell Dredging																
Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Basin Fill and Surcharge West																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Settlement Period																
Ph 2-2 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	<i>Mar</i>		<i>Apr</i>		<i>May</i>		<i>Jun</i>		<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>	
	<i>1st</i>	<i>2nd</i>														
Ph 2-2 Construction - New Terminal Buildings																
Building Construction																
Dredge and Excavate at Quay Wall																
Clamshell Dredging																
Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Basin Fill and Surcharge West																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Settlement Period																
Ph 2-2 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2011		2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd																
Ph 2-2 Construction - New Terminal Buildings																		
Building Construction																		
Dredge and Excavate at Quay Wall																		
Clamshell Dredging																		
Demo Existing F8-10 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Construct Wharf, Armor, Fill																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Basin Fill and Surcharge West																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
Settlement Period																		
Ph 2-2 Roll Surcharge																		

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2013		2013	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>	
	<i>1st</i>	<i>2nd</i>														
Ph 2-2 Construction - New Terminal Buildings																
Building Construction																
Dredge and Excavate at Quay Wall																
Clamshell Dredging																
Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Basin Fill and Surcharge West																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Settlement Period																
Ph 2-2 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	<i>Mar</i>		<i>Apr</i>		<i>May</i>		<i>Jun</i>		<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>	
	<i>1st</i>	<i>2nd</i>														
Ph 2-2 Construction - New Terminal Buildings																
Building Construction																
Dredge and Excavate at Quay Wall																
Clamshell Dredging																
Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Basin Fill and Surcharge West																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Settlement Period																
Ph 2-2 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2013		2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd																
Ph 2-2 Construction - New Terminal Buildings																		
Building Construction																		
Dredge and Excavate at Quay Wall																		
Clamshell Dredging																		
Demo Existing F8-10 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Construct Wharf, Armor, Fill																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Basin Fill and Surcharge West																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
Settlement Period																		
Ph 2-2 Roll Surcharge																		

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2015		2015	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>	
	<i>1st</i>	<i>2nd</i>														
Ph 2-2 Construction - New Terminal Buildings																
Building Construction																
Dredge and Excavate at Quay Wall																
Clamshell Dredging																
Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Basin Fill and Surcharge West																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Settlement Period																
Ph 2-2 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	<i>Mar</i>		<i>Apr</i>		<i>May</i>		<i>Jun</i>		<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>	
	<i>1st</i>	<i>2nd</i>														
Ph 2-2 Construction - New Terminal Buildings																
Building Construction																
Dredge and Excavate at Quay Wall																
Clamshell Dredging																
Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Basin Fill and Surcharge West																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Settlement Period																
Ph 2-2 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 2-2 Construction - New Terminal Buildings																
Building Construction																
Dredge and Excavate at Quay Wall																
Clamshell Dredging																
Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Basin Fill and Surcharge West																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Settlement Period																
Ph 2-2 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2017		2017	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>	
	<i>1st</i>	<i>2nd</i>														
Ph 2-2 Construction - New Terminal Buildings																
Building Construction												0.00				
Dredge and Excavate at Quay Wall																
Clamshell Dredging												0.06		0.02		
Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Basin Fill and Surcharge West																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Settlement Period																
Ph 2-2 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd								
Ph 2-2 Construction - New Terminal Buildings																
Building Construction																
Dredge and Excavate at Quay Wall																
Clamshell Dredging																
Demo Existing F8-10 Wharf																
Wharf Demolition Landside										0.10						
Wharf Demolition Marine										0.21						
Construct Wharf, Armor, Fill																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Basin Fill and Surcharge West																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Settlement Period																
Ph 2-2 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 2-2 Construction - New Terminal Buildings																
Building Construction				0.00								0.00				
Dredge and Excavate at Quay Wall																
Clamshell Dredging																
Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex				0.53												
Rock Placement, Push Off & Tub & Orange Peels				0.93												
Retaining Bulkhead Construction				0.66												
Drive 24-In Octagonal Piles - Land				0.72												
Drive 24-In Octagonal Piles - Water				0.57												
Drive Piles - Misc Activities				0.56												
Reinforced Concrete Wharf				0.15												
Basin Fill and Surcharge West																
Cutter Suction Dredging- Spill Barge (No Booster)				0.36												1.08
Cutter Suction Dredging- Land Disposal (No Booster)				0.64												1.93
Wick Drains				0.19												0.58
Settlement Period																
Ph 2-2 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
Federal Action Component of POLB Middle Harbor  
Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2019		2019	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>	
	<i>1st</i>	<i>2nd</i>														
Ph 2-2 Construction - New Terminal Buildings																
Building Construction																
Dredge and Excavate at Quay Wall																
Clamshell Dredging																
Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex						0.96										
Rock Placement, Push Off & Tub & Orange Peels						1.68										
Retaining Bulkhead Construction						1.19										
Drive 24-In Octagonal Piles - Land						1.30										
Drive 24-In Octagonal Piles - Water						1.02										
Drive Piles - Misc Activities						1.01										
Reinforced Concrete Wharf						0.26										
Basin Fill and Surcharge West																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Settlement Period																
Ph 2-2 Roll Surcharge																13.1

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019	
	<i>Mar</i>		<i>Apr</i>		<i>May</i>		<i>Jun</i>		<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>	
	<i>1st</i>	<i>2nd</i>														
Ph 2-2 Construction - New Terminal Buildings																
Building Construction																
Dredge and Excavate at Quay Wall																
Clamshell Dredging																
Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Basin Fill and Surcharge West																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Settlement Period																
Ph 2-2 Roll Surcharge																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

	Activity	2019		2019	
		Nov		Dec	
		1st	2nd	1st	2nd
Ph 2-2	<b>Construction - New Terminal Buildings</b>				
	Building Construction				
	<b>Dredge and Excavate at Quay Wall</b>				
	Clamshell Dredging				
	<b>Demo Existing F8-10 Wharf</b>				
	Wharf Demolition Landside				
	Wharf Demolition Marine				
	<b>Construct Wharf, Armor, Fill</b>				
	Land Ex				
	Rock Placement, Push Off & Tub & Orange Peels				
	Retaining Bulkhead Construction				
	Drive 24-In Octagonal Piles - Land				
	Drive 24-In Octagonal Piles - Water				
	Drive Piles - Misc Activities				
	Reinforced Concrete Wharf				
	<b>Basin Fill and Surcharge West</b>				
	Cutter Suction Dredging- Spill Barge (No Booster)				
	Cutter Suction Dredging- Land Disposal (No Booster)				
	Wick Drains				
<b>Settlement Period</b>					
Roll Surcharge					

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 2-3 Remove Surcharge																
Roll Surcharge																
CY Development																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 2-3 New Container Yard Construction - Electrical																
<b>Activity Total Tons</b>	0	0	0	2	0	0	0	1	2	0	0	0	0	1	0	0
<b>Yearly Total (Tons)</b>	2															

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2010		2011		2011	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>			
	<i>1st</i>	<i>2nd</i>																
Ph 2-3 Remove Surcharge																		
Roll Surcharge																		
CY Development																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 2-3 New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	0	1	0	3	8	1	0	0	0	1	7	0	1	0	2		
<b>Yearly Total (Tons)</b>	26																	

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	<i>Mar</i>		<i>Apr</i>		<i>May</i>		<i>Jun</i>		<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>	
	<i>1st</i>	<i>2nd</i>														
Ph 2-3 Remove Surcharge																
Roll Surcharge																
CY Development																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 2-3 New Container Yard Construction - Electrical																
<b>Activity Total Tons</b>	0	0	0	0	1	0	1	0	2	0	0	0	3	0	0	0
<b>Yearly Total (Tons)</b>																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2011		2011		2011		2012		2012		2012		2012		2012		2012		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun				
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	
Ph 2-3	Remove Surcharge																		
	Roll Surcharge																		
	CY Development																		
	New Container Yard Utilities																		
	New Container Yard Construction - Paving																		
Ph 2-3	New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
<b>Yearly Total (Tons)</b>	14																		

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2012		2013		2013	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>			
	<i>1st</i>	<i>2nd</i>																
Ph 2-3 Remove Surcharge																		
Roll Surcharge																		
CY Development																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 2-3 New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	3	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	
<b>Yearly Total (Tons)</b>	6																	

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	<i>Mar</i>		<i>Apr</i>		<i>May</i>		<i>Jun</i>		<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>	
	<i>1st</i>	<i>2nd</i>														
Ph 2-3 Remove Surcharge																
Roll Surcharge																
CY Development																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 2-3 New Container Yard Construction - Electrical																
<b>Activity Total Tons</b>	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0
<b>Yearly Total (Tons)</b>																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2013		2013		2013		2014		2014		2014		2014		2014		2014		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun				
	1st	2nd																	
Ph 2-3 Remove Surcharge																			
Roll Surcharge																			
CY Development																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
Ph 2-3 New Container Yard Construction - Electrical																			
<b>Activity Total Tons</b>	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Yearly Total (Tons)</b>	5																		

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>			
	<i>1st</i>	<i>2nd</i>																
Ph 2-3 Remove Surcharge																		
Roll Surcharge																		
CY Development																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 2-3 New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	0	0	1	0	0	0	0	0	0	0	0	8	0	0	0	0	
<b>Yearly Total (Tons)</b>													10					

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 2-3 Remove Surcharge																
Roll Surcharge																
CY Development																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 2-3 New Container Yard Construction - Electrical																
<b>Activity Total Tons</b>	0	0	0	5	0	0	0	0	0	3	0	0	0	0	0	0
<b>Yearly Total (Tons)</b>																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 2-3 Remove Surcharge																
Roll Surcharge																
CY Development																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 2-3 New Container Yard Construction - Electrical																
<b>Activity Total Tons</b>	0	0	0	4	0	1	0	0	0	0	0	0	0	0	0	0
<b>Yearly Total (Tons)</b>	12															

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2016		2017		2017	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>			
	<i>1st</i>	<i>2nd</i>																
Ph 2-3 Remove Surcharge																		
Roll Surcharge																		
CY Development																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 2-3 New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Yearly Total (Tons)</b>														1				

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 2-3 Remove Surcharge																
Roll Surcharge																
CY Development																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 2-3 New Container Yard Construction - Electrical																
<b>Activity Total Tons</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Yearly Total (Tons)</b>																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2017		2017		2017		2017		2018		2018		2018		2018		2018		2018		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun						
	1st	2nd																			
Ph 2-3 Remove Surcharge																					
Roll Surcharge																					
CY Development																					
New Container Yard Utilities																					
New Container Yard Construction - Paving																					
Ph 2-3 New Container Yard Construction - Electrical																					
<b>Activity Total Tons</b>	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
<b>Yearly Total (Tons)</b>	6																				

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>			
	<i>1st</i>	<i>2nd</i>																
Ph 2-3 Remove Surcharge																		
Roll Surcharge																		
CY Development																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 2-3 New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	0	0	0	0	7	0	0	0	0	0	13	0	0	0	0		
<b>Yearly Total (Tons)</b>	24																	

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019	
	<i>Mar</i>		<i>Apr</i>		<i>May</i>		<i>Jun</i>		<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>	
	<i>1st</i>	<i>2nd</i>														
Ph 2-3 Remove Surcharge																
Roll Surcharge								6.56								
CY Development																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 2-3 New Container Yard Construction - Electrical																
<b>Activity Total Tons</b>	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0
<b>Yearly Total (Tons)</b>																

Table A-4-Alt1-144 ConstEquip Annual NOx Emissions -  
 Federal Action Component of POLB Middle Harbor  
 Alternative 1

<i>Activity</i>	2019		2019	
	<i>Nov</i>		<i>Dec</i>	
	<i>1st</i>	<i>2nd</i>	<i>1st</i>	<i>2nd</i>
Ph 2-3 Remove Surcharge				
Roll Surcharge				
CY Development				
New Container Yard Utilities		0.00		
New Container Yard Construction - Paving		0.59		
Ph 2-3 New Container Yard Construction - Electrical		0.00		
<b>Activity Total Tons</b>	0	1		
<b>Yearly Total (Tons)</b>				7

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside				0.39					0.48							
Wharf Demolition Marine				0.30					0.38							
Sheet Pile Bulkhead Demolition				0.05					0.06							
Construct New Bulkhead																
Retaining Bulkhead Construction						0.02										
Excavation Fronting E24																
Clamshell Dredging														0.00		
Land Ex														0.54		
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels														0.00		
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels				0.00				0.00								
Fill within Dike																
Clamshell Dredging													0.00			
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E24																		
Clamshell Dredging																		
Land Ex																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Prepare for Toe Dike / Construct Dike (1st Lift)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Fill within Dike																		
Clamshell Dredging																		
Remaining Dike Lifts																		
Rock Placement, Push Off & Tub & Orange Peels																		
Remaining Fill Lifts																		
Clamshell Dredging																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Construct South Mooring Dolphin																		
Drive 24-In Octagonal Piles - Water																		
Wick Drains																		
Wick Drains																		

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water		0.02														
Wick Drains																
Wick Drains																

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2011		2011		2012		2012		2012		2012		2012		2012		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun						
	1st	2nd																			
Ph 1-1 Demolish Existing Facilities																					
Wharf Demolition Landside																					
Wharf Demolition Marine																					
Sheet Pile Bulkhead Demolition																					
Construct New Bulkhead																					
Retaining Bulkhead Construction																					
Excavation Fronting E24																					
Clamshell Dredging																					
Land Ex																					
Construct New Armor Slope																					
Rock Placement, Push Off & Tub & Orange Peels																					
Wharf Construction																					
Drive 24-In Octagonal Piles - Land																					
Drive 24-In Octagonal Piles - Water																					
Drive Piles - Misc Activities																					
Reinforced Concrete Wharf																					
Retaining Bulkhead Construction																					
Utility Construction																					
New Container Yard Utilities																					
Paving																					
New Container Yard Construction - Paving																					
Lighting, Striping, Crane Power																					
New Container Yard Construction - Electrical																					
Prepare for Toe Dike / Construct Dike (1st Lift)																					
Rock Placement, Push Off & Tub & Orange Peels																					
Fill within Dike																					
Clamshell Dredging																					
Remaining Dike Lifts																					
Rock Placement, Push Off & Tub & Orange Peels																					
Remaining Fill Lifts																					
Clamshell Dredging																					
Wharf Construction																					
Drive 24-In Octagonal Piles - Land																					
Drive 24-In Octagonal Piles - Water																					
Drive Piles - Misc Activities																					
Reinforced Concrete Wharf																					
Retaining Bulkhead Construction																					
Construct South Mooring Dolphin																					
Drive 24-In Octagonal Piles - Water																					
Wick Drains																					
Wick Drains																					

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2012		2013		2013	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>			
	<i>1st</i>	<i>2nd</i>																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E24</b>																		
Clamshell Dredging																		
Land Ex																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
<b>Utility Construction</b>																		
New Container Yard Utilities																		
<b>Paving</b>																		
New Container Yard Construction - Paving																		
<b>Lighting, Striping, Crane Power</b>																		
New Container Yard Construction - Electrical																		
<b>Prepare for Toe Dike / Construct Dike (1st Lift)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Fill within Dike</b>																		
Clamshell Dredging																		
<b>Remaining Dike Lifts</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Remaining Fill Lifts</b>																		
Clamshell Dredging																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
<b>Construct South Mooring Dolphin</b>																		
Drive 24-In Octagonal Piles - Water																		
<b>Wick Drains</b>																		
Wick Drains																		

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E24</b>																
Clamshell Dredging																
Land Ex																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
<b>Utility Construction</b>																
New Container Yard Utilities																
<b>Paving</b>																
New Container Yard Construction - Paving																
<b>Lighting, Striping, Crane Power</b>																
New Container Yard Construction - Electrical																
<b>Prepare for Toe Dike / Construct Dike (1st Lift)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Fill within Dike</b>																
Clamshell Dredging																
<b>Remaining Dike Lifts</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Remaining Fill Lifts</b>																
Clamshell Dredging																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
<b>Construct South Mooring Dolphin</b>																
Drive 24-In Octagonal Piles - Water																
<b>Wick Drains</b>																
Wick Drains																

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2014	2014	2014	2014	2014	2014	2014	2014	2014	2014	2014	2014	2015	2015	2015	2015
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2017		2017	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>			
	1st	2nd																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E24																		
Clamshell Dredging																		
Land Ex																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Prepare for Toe Dike / Construct Dike (1st Lift)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Fill within Dike																		
Clamshell Dredging																		
Remaining Dike Lifts																		
Rock Placement, Push Off & Tub & Orange Peels																		
Remaining Fill Lifts																		
Clamshell Dredging																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Construct South Mooring Dolphin																		
Drive 24-In Octagonal Piles - Water																		
Wick Drains																		
Wick Drains																		

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-AH1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

	Activity	2019		2019	
		Nov		Dec	
		1st	2nd	1st	2nd
Ph 1-1	<b>Demolish Existing Facilities</b>				
	Wharf Demolition Landside				
	Wharf Demolition Marine				
	Sheet Pile Bulkhead Demolition				
	<b>Construct New Bulkhead</b>				
	Retaining Bulkhead Construction				
	<b>Excavation Fronting E24</b>				
	Clamshell Dredging				
	Land Ex				
	<b>Construct New Armor Slope</b>				
	Rock Placement, Push Off & Tub & Orange Peels				
	<b>Wharf Construction</b>				
	Drive 24-In Octagonal Piles - Land				
	Drive 24-In Octagonal Piles - Water				
	Drive Piles - Misc Activities				
	Reinforced Concrete Wharf				
	Retaining Bulkhead Construction				
	<b>Utility Construction</b>				
	New Container Yard Utilities				
	<b>Paving</b>				
	New Container Yard Construction - Paving				
	<b>Lighting, Striping, Crane Power</b>				
	New Container Yard Construction - Electrical				
	<b>Prepare for Toe Dike / Construct Dike (1st Lift)</b>				
	Rock Placement, Push Off & Tub & Orange Peels				
	<b>Fill within Dike</b>				
	Clamshell Dredging				
	<b>Remaining Dike Lifts</b>				
	Rock Placement, Push Off & Tub & Orange Peels				
	<b>Remaining Fill Lifts</b>				
	Clamshell Dredging				
	<b>Wharf Construction</b>				
	Drive 24-In Octagonal Piles - Land				
	Drive 24-In Octagonal Piles - Water				
	Drive Piles - Misc Activities				
	Reinforced Concrete Wharf				
	Retaining Bulkhead Construction				
	<b>Construct South Mooring Dolphin</b>				
	Drive 24-In Octagonal Piles - Water				
	<b>Wick Drains</b>				
Wick Drains					

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010		2010		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun				
	1st	2nd																	
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																			
Roll Surcharge																			
<b>Remove Surcharge to Slip 1 Fill Site</b>																			
Roll Surcharge																			
<b>Utility Construction</b>																			
New Container Yard Utilities																			
<b>Paving</b>																			
New Container Yard Construction - Paving																			
<b>Lighting, Fence, Striping, Crane Power</b>																			
New Container Yard Construction - Electrical																			
<b>Construct Retaining Structure at Pier D Oil Area</b>																			
Retaining Bulkhead Construction													0.02						
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																			
Land Ex																			
<b>Excavate Material Fronting Pier D</b>																			
Land Ex																			
Clamshell Dredging																			
<b>Remove Cellular Sheetpile</b>																			
Sheet Pile Bulkhead Demolition																			
<b>Rock Revetment</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																			
Clamshell Dredging																			
<b>Ground Improvements Pier D</b>																			
Stone Column Installation Eq																			
Marine Rock Delivery Eq																			
<b>Demo - E12-13 Wharf</b>																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			
<b>Lift #1 (- -30)</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Lift #2 (- -15)</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Lift #3 (- 0)</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Lift #4 (- +15)</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Initial Surcharge and Wick Drains</b>																			
Wick Drains																			
Roll Surcharge																			
<b>2nd Surcharge and Wick Drains</b>																			

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2011		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd										
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																		
Roll Surcharge												0.11						
<b>Remove Surcharge to Slip 1 Fill Site</b>																		
Roll Surcharge																		
<b>Utility Construction</b>																		
New Container Yard Utilities																		
<b>Paving</b>																		
New Container Yard Construction - Paving																		
<b>Lighting, Fence, Striping, Crane Power</b>																		
New Container Yard Construction - Electrical																		
<b>Construct Retaining Structure at Pier D Oil Area</b>																		
Retaining Bulkhead Construction																		
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																		
Land Ex									0.18									
<b>Excavate Material Fronting Pier D</b>																		
Land Ex									0.30									
Clamshell Dredging									0.00									
<b>Remove Cellular Sheetpile</b>																		
Sheet Pile Bulkhead Demolition												0.09						
<b>Rock Revetment</b>																		
Rock Placement, Push Off & Tub & Orange Peels																	0.00	
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																		
Clamshell Dredging									0.00									
<b>Ground Improvements Pier D</b>																		
Stone Column Installation Eq													0.26					0.26
Marine Rock Delivery Eq													0.00					0.00
<b>Demo - E12-13 Wharf</b>																		
Wharf Demolition Landside							1.16											
Wharf Demolition Marine							0.91											
<b>Lift #1 (- -30)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #2 (- -15)</b>																		
Rock Placement, Push Off & Tub & Orange Peels									0.00									
<b>Lift #3 (- 0)</b>																		
Rock Placement, Push Off & Tub & Orange Peels													0.00			0.00		
<b>Lift #4 (- +15)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Initial Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>2nd Surcharge and Wick Drains</b>																		

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																
Roll Surcharge																
<b>Remove Surcharge to Slip 1 Fill Site</b>																
Roll Surcharge				0.05												
<b>Utility Construction</b>																
New Container Yard Utilities			0.00													
<b>Paving</b>																
New Container Yard Construction - Paving								0.10								
<b>Lighting, Fence, Striping, Crane Power</b>																
New Container Yard Construction - Electrical												0.00				
<b>Construct Retaining Structure at Pier D Oil Area</b>																
Retaining Bulkhead Construction																
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																
Land Ex																
<b>Excavate Material Fronting Pier D</b>																
Land Ex																
<b>Clamshell Dredging</b>																
<b>Remove Cellular Sheetpile</b>																
Sheet Pile Bulkhead Demolition																
<b>Rock Revetment</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ground Improvements Pier D</b>																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
<b>Demo - E12-13 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Lift #1 (- -30)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #2 (- -15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #3 (- 0)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #4 (- +15)</b>																
Rock Placement, Push Off & Tub & Orange Peels				0.00												
<b>Initial Surcharge and Wick Drains</b>																
Wick Drains						0.00										
Roll Surcharge						0.16										
<b>2nd Surcharge and Wick Drains</b>																

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd																		
Surcharge (Initial Pump, Plus Clamshell or Truck)																				
Roll Surcharge																				
Remove Surcharge to Slip 1 Fill Site																				
Roll Surcharge																				
Utility Construction																				
New Container Yard Utilities																				
Paving																				
New Container Yard Construction - Paving																				
Lighting, Fence, Striping, Crane Power																				
New Container Yard Construction - Electrical																				
Construct Retaining Structure at Pier D Oil Area																				
Retaining Bulkhead Construction																				
Excavate & Truck Material in Cell Bulkhead																				
Land Ex																				
Excavate Material Fronting Pier D																				
Land Ex																				
Clamshell Dredging																				
Remove Cellular Sheetpile																				
Sheet Pile Bulkhead Demolition																				
Rock Revetment																				
Rock Placement, Push Off & Tub & Orange Peels																				
Hydraulic or Clamshell Dredge to -55 ft																				
Clamshell Dredging																				
Ground Improvements Pier D																				
Stone Column Installation Eq																				
Marine Rock Delivery Eq																				
Demo - E12-13 Wharf																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				
Lift #1 (- -30)																				
Rock Placement, Push Off & Tub & Orange Peels																				
Lift #2 (- -15)																				
Rock Placement, Push Off & Tub & Orange Peels																				
Lift #3 (- 0)																				
Rock Placement, Push Off & Tub & Orange Peels																				
Lift #4 (- +15)																				
Rock Placement, Push Off & Tub & Orange Peels																				
Initial Surcharge and Wick Drains																				
Wick Drains																				
Roll Surcharge																				
2nd Surcharge and Wick Drains																				

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2012		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Surcharge (Initial Pump, Plus Clamshell or Truck)																		
Roll Surcharge																		
Remove Surcharge to Slip 1 Fill Site																		
Roll Surcharge																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Fence, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Construct Retaining Structure at Pier D Oil Area																		
Retaining Bulkhead Construction																		
Excavate & Truck Material in Cell Bulkhead																		
Land Ex																		
Excavate Material Fronting Pier D																		
Land Ex																		
Clamshell Dredging																		
Remove Cellular Sheetpile																		
Sheet Pile Bulkhead Demolition																		
Rock Revetment																		
Rock Placement, Push Off & Tub & Orange Peels																		
Hydraulic or Clamshell Dredge to -55 ft																		
Clamshell Dredging																		
Ground Improvements Pier D																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
Demo - E12-13 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Lift #1 (- -30)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #2 (- -15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #3 (- 0)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #4 (- +15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Initial Surcharge and Wick Drains																		
Wick Drains																		
Roll Surcharge																		
2nd Surcharge and Wick Drains																		

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Surcharge (Initial Pump, Plus Clamshell or Truck)																		
Roll Surcharge																		
Remove Surcharge to Slip 1 Fill Site																		
Roll Surcharge																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Fence, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Construct Retaining Structure at Pier D Oil Area																		
Retaining Bulkhead Construction																		
Excavate & Truck Material in Cell Bulkhead																		
Land Ex																		
Excavate Material Fronting Pier D																		
Land Ex																		
Clamshell Dredging																		
Remove Cellular Sheetpile																		
Sheet Pile Bulkhead Demolition																		
Rock Revetment																		
Rock Placement, Push Off & Tub & Orange Peels																		
Hydraulic or Clamshell Dredge to -55 ft																		
Clamshell Dredging																		
Ground Improvements Pier D																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
Demo - E12-13 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Lift #1 (- -30)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #2 (- -15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #3 (- 0)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #4 (- +15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Initial Surcharge and Wick Drains																		
Wick Drains																		
Roll Surcharge																		
2nd Surcharge and Wick Drains																		

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2015		2015		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd																
Surcharge (Initial Pump, Plus Clamshell or Truck)																		
Roll Surcharge																		
Remove Surcharge to Slip 1 Fill Site																		
Roll Surcharge																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Fence, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Construct Retaining Structure at Pier D Oil Area																		
Retaining Bulkhead Construction																		
Excavate & Truck Material in Cell Bulkhead																		
Land Ex																		
Excavate Material Fronting Pier D																		
Land Ex																		
Clamshell Dredging																		
Remove Cellular Sheetpile																		
Sheet Pile Bulkhead Demolition																		
Rock Revetment																		
Rock Placement, Push Off & Tub & Orange Peels																		
Hydraulic or Clamshell Dredge to -55 ft																		
Clamshell Dredging																		
Ground Improvements Pier D																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
Demo - E12-13 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Lift #1 (- -30)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #2 (- -15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #3 (- 0)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #4 (- +15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Initial Surcharge and Wick Drains																		
Wick Drains																		
Roll Surcharge																		
2nd Surcharge and Wick Drains																		

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2017		2017	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Surcharge (Initial Pump, Plus Clamshell or Truck)																		
Roll Surcharge																		
Remove Surcharge to Slip 1 Fill Site																		
Roll Surcharge																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Fence, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Construct Retaining Structure at Pier D Oil Area																		
Retaining Bulkhead Construction																		
Excavate & Truck Material in Cell Bulkhead																		
Land Ex																		
Excavate Material Fronting Pier D																		
Land Ex																		
Clamshell Dredging																		
Remove Cellular Sheetpile																		
Sheet Pile Bulkhead Demolition																		
Rock Revetment																		
Rock Placement, Push Off & Tub & Orange Peels																		
Hydraulic or Clamshell Dredge to -55 ft																		
Clamshell Dredging																		
Ground Improvements Pier D																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
Demo - E12-13 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Lift #1 (- -30)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #2 (- -15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #3 (- 0)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #4 (- +15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Initial Surcharge and Wick Drains																		
Wick Drains																		
Roll Surcharge																		
2nd Surcharge and Wick Drains																		

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
Surcharge (Initial Pump, Plus Clamshell or Truck)				
Roll Surcharge				
Remove Surcharge to Slip 1 Fill Site				
Roll Surcharge				
Utility Construction				
New Container Yard Utilities				
Paving				
New Container Yard Construction - Paving				
Lighting, Fence, Striping, Crane Power				
New Container Yard Construction - Electrical				
Construct Retaining Structure at Pier D Oil Area				
Retaining Bulkhead Construction				
Excavate & Truck Material in Cell Bulkhead				
Land Ex				
Excavate Material Fronting Pier D				
Land Ex				
Clamshell Dredging				
Remove Cellular Sheetpile				
Sheet Pile Bulkhead Demolition				
Rock Revetment				
Rock Placement, Push Off & Tub & Orange Peels				
Hydraulic or Clamshell Dredge to -55 ft				
Clamshell Dredging				
Ground Improvements Pier D				
Stone Column Installation Eq				
Marine Rock Delivery Eq				
Demo - E12-13 Wharf				
Wharf Demolition Landside				
Wharf Demolition Marine				
Lift #1 (- -30)				
Rock Placement, Push Off & Tub & Orange Peels				
Lift #2 (- -15)				
Rock Placement, Push Off & Tub & Orange Peels				
Lift #3 (- 0)				
Rock Placement, Push Off & Tub & Orange Peels				
Lift #4 (- +15)				
Rock Placement, Push Off & Tub & Orange Peels				
Initial Surcharge and Wick Drains				
Wick Drains				
Roll Surcharge				
2nd Surcharge and Wick Drains				

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2009	2009	2009	2009	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2010		2011		2011	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wick Drains								0.00										
Roll Surcharge							0.24											
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-AIt1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq		0.00														
Triple Track Trackwork Eq				0.00							0.00					
Triple Track Miscellaneous Eq				0.00							0.00					
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition				0.07		0.01										
Wharf Demolition Landside				0.53		0.11										
Wharf Demolition Marine				0.42		0.08										
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction				0.01												
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging				0.00		0.00										
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels											0.00					
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging							0.00									
Ph 1-3																
<b>Demolish Existing Facilities</b>																

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2012		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd		
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge		0.48																
<b>Container Yard Development</b>																		
New Container Yard Utilities													0.00					
New Container Yard Construction - Paving													0.38					
New Container Yard Construction - Electrical													0.00					
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Ph 1-1 Triple Track Miscellaneous Eq																		
<b>Ph 1-2 Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land									0.01									
Drive 24-In Octagonal Piles - Water									0.01									
Drive Piles - Misc Activities									0.00									
Reinforced Concrete Wharf									0.14									
<b>CY Development</b>																		
New Container Yard Construction - Paving													0.03					
<b>Dredge to -55 ft</b>																		
Ph 1-2 Clamshell Dredging																		
<b>Ph 1-3 Demolish Existing Facilities</b>																		

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities								0.00								
New Container Yard Construction - Paving								0.38								
New Container Yard Construction - Electrical								0.00								
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Ph 1-1 Triple Track Miscellaneous Eq																
<b>Ph 1-2 Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving		0.04														
<b>Dredge to -55 ft</b>																
Ph 1-2 Clamshell Dredging																
<b>Ph 1-3 Demolish Existing Facilities</b>																

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Ph 1-1 Triple Track Miscellaneous Eq																
Ph 1-2 <b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Ph 1-2 Clamshell Dredging																
Ph 1-3 <b>Demolish Existing Facilities</b>																

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Ph 1-1 Triple Track Miscellaneous Eq																
Ph 1-2 <b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Ph 1-2 Clamshell Dredging																
Ph 1-3 Demolish Existing Facilities																

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2016		2017		2017	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Ph 1-1 Triple Track Miscellaneous Eq																
Ph 1-2 <b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Ph 1-2 Clamshell Dredging																
Ph 1-3 Demolish Existing Facilities																

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019		2019		
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb						
	1st	2nd																			
Wick Drains																					
Roll Surcharge																					
<b>3rd Surcharge and Wick Drains</b>																					
Wick Drains																					
Roll Surcharge																					
<b>4th Surcharge and Wick Drains</b>																					
Wick Drains																					
Roll Surcharge																					
<b>Remove Surcharge</b>																					
Roll Surcharge																					
<b>Container Yard Development</b>																					
New Container Yard Utilities																					
New Container Yard Construction - Paving																					
New Container Yard Construction - Electrical																					
<b>POLB Ocean Blvd Track Reconfiguration</b>																					
Triple Track Installation Demo Eq																					
Triple Track Utility Relocation Eq																					
Triple Track Grading Eq																					
Triple Track Retaining Wall Eq																					
Triple Track Trackwork Eq																					
Triple Track Miscellaneous Eq																					
Ph 1-1																					
Ph 1-2																					
<b>Demolish Existing Facilities</b>																					
Sheet Pile Bulkhead Demolition																					
Wharf Demolition Landside																					
Wharf Demolition Marine																					
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																					
Retaining Bulkhead Construction																					
<b>Excavation Fronting E25 and Dispose Slip 1</b>																					
Clamshell Dredging																					
<b>Construct New Armor Slope</b>																					
Rock Placement, Push Off & Tub & Orange Peels																					
<b>Wharf Construction</b>																					
Drive 24-In Octagonal Piles - Land																					
Drive 24-In Octagonal Piles - Water																					
Drive Piles - Misc Activities																					
Reinforced Concrete Wharf																					
<b>CY Development</b>																					
New Container Yard Construction - Paving																					
<b>Dredge to -55 ft</b>																					
Clamshell Dredging																					
Ph 1-2																					
Ph 1-3																					
<b>Demolish Existing Facilities</b>																					

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
Wick Drains				
Roll Surcharge				
<b>3rd Surcharge and Wick Drains</b>				
Wick Drains				
Roll Surcharge				
<b>4th Surcharge and Wick Drains</b>				
Wick Drains				
Roll Surcharge				
<b>Remove Surcharge</b>				
Roll Surcharge				
<b>Container Yard Development</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
New Container Yard Construction - Electrical				
<b>POLB Ocean Blvd Track Reconfiguration</b>				
Triple Track Installation Demo Eq				
Triple Track Utility Relocation Eq				
Triple Track Grading Eq				
Triple Track Retaining Wall Eq				
Triple Track Trackwork Eq				
Ph 1-1 Triple Track Miscellaneous Eq				
<b>Ph 1-2 Demolish Existing Facilities</b>				
Sheet Pile Bulkhead Demolition				
Wharf Demolition Landside				
Wharf Demolition Marine				
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>				
Retaining Bulkhead Construction				
<b>Excavation Fronting E25 and Dispose Slip 1</b>				
Clamshell Dredging				
<b>Construct New Armor Slope</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Wharf Construction</b>				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
<b>CY Development</b>				
New Container Yard Construction - Paving				
<b>Dredge to -55 ft</b>				
Ph 1-2 Clamshell Dredging				
<b>Ph 1-3 Demolish Existing Facilities</b>				

Table A-4-AH1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2009	2009	2009	2009	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E26 and Dispose Slip 1																
Clamshell Dredging																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Construct E27 Bulkhead																
Retaining Bulkhead Construction																
CY Development																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
Hydraulic Dredge to -55ft																
Ph 1-3 Clamshell Dredging																
Ph 1-4 Seaside Railyard Area Redevelopment																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-4 New Container Yard Construction - Electrical																
Ph 1-5 Construction																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-5 New Container Yard Construction - Electrical																
Ph 2-1 Demolition																
Wharf Demolition Landside																
Railyard																
Intermodal Yard Construction																
Container Yard Development (F1 - F4)																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
Demo Existing F1-4, F6 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2011		2011	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>	
	1st	2nd														
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E26 and Dispose Slip 1																
Clamshell Dredging																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Construct E27 Bulkhead																
Retaining Bulkhead Construction																
CY Development																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
Hydraulic Dredge to -55ft																
Ph 1-3 Clamshell Dredging																
Ph 1-4 Seaside Railyard Area Redevelopment																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-4 New Container Yard Construction - Electrical																
Ph 1-5 Construction																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-5 New Container Yard Construction - Electrical																
Ph 2-1 Demolition																
Wharf Demolition Landside																
Railyard																
Intermodal Yard Construction																
Container Yard Development (F1 - F4)																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
Demo Existing F1-4, F6 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																

Table A-4-AH1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Ph 1-3 Clamshell Dredging																
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-4 New Container Yard Construction - Electrical																
Ph 1-5 <b>Construction</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-5 New Container Yard Construction - Electrical																
Ph 2-1 <b>Demolition</b>																
Wharf Demolition Landside																
<b>Railyard</b>																
Intermodal Yard Construction																
<b>Container Yard Development (F1 - F4)</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																

Table A-4-AH1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd																		
Wharf Demolition Landside																				
Wharf Demolition Marine																				
Sheet Pile Bulkhead Demolition																				
Construct New Bulkhead																				
Retaining Bulkhead Construction																				
Excavation Fronting E26 and Dispose Slip 1																				
Clamshell Dredging																				
Construct New Armor Slope																				
Rock Placement, Push Off & Tub & Orange Peels																				
Wharf Construction																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
Construct E27 Bulkhead																				
Retaining Bulkhead Construction																				
CY Development																				
Vibratory Hammer & Power Pack																				
Flatbed Truck																				
Welding Machine																				
Hydraulic Dredge to -55ft																				
Ph 1-3 Clamshell Dredging																				
Ph 1-4 Seaside Railyard Area Redevelopment																				
New Container Yard Utilities																				
New Container Yard Construction - Paving																				
Ph 1-4 New Container Yard Construction - Electrical																				
Ph 1-5 Construction																				
New Container Yard Utilities																				
New Container Yard Construction - Paving																				
Ph 1-5 New Container Yard Construction - Electrical																				
Ph 2-1 Demolition																				
Wharf Demolition Landside																				
Railyard																				
Intermodal Yard Construction																				
Container Yard Development (F1 - F4)																				
New Container Yard Utilities																				
New Container Yard Construction - Paving																				
New Container Yard Construction - Electrical																				
Demo Existing F1-4, F6 Wharf																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				

Table A-4-AH1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2013		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E26 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Construct E27 Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>CY Development</b>																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
<b>Hydraulic Dredge to -55ft</b>																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 <b>Construction</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 <b>Demolition</b>																		
Wharf Demolition Landside																		
<b>Railyard</b>																		
Intermodal Yard Construction																		
<b>Container Yard Development (F1 - F4)</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>Demo Existing F1-4, F6 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-AH1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013		2013		
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct				
	1st	2nd																	
Wharf Demolition Landside																			0.09
Wharf Demolition Marine																			0.07
Sheet Pile Bulkhead Demolition																			0.01
<b>Construct New Bulkhead</b>																			
Retaining Bulkhead Construction																			
<b>Excavation Fronting E26 and Dispose Slip 1</b>																			
Clamshell Dredging																			
<b>Construct New Armor Slope</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Wharf Construction</b>																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
<b>Construct E27 Bulkhead</b>																			
Retaining Bulkhead Construction																			
<b>CY Development</b>																			
Vibratory Hammer & Power Pack																			
Flatbed Truck																			
Welding Machine																			
<b>Hydraulic Dredge to -55ft</b>																			
Ph 1-3 Clamshell Dredging																			
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
Ph 1-4 New Container Yard Construction - Electrical																			
Ph 1-5 <b>Construction</b>																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
Ph 1-5 New Container Yard Construction - Electrical																			
Ph 2-1 <b>Demolition</b>																			
Wharf Demolition Landside																			
Railyard																			1.48
Intermodal Yard Construction																			
<b>Container Yard Development (F1 - F4)</b>																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
New Container Yard Construction - Electrical																			
<b>Demo Existing F1-4, F6 Wharf</b>																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wharf Demolition Landside																				
Wharf Demolition Marine																				
Sheet Pile Bulkhead Demolition																				
Construct New Bulkhead																				
Retaining Bulkhead Construction			0.02																	
Excavation Fronting E26 and Dispose Slip 1																				
Clamshell Dredging				0.00								0.00								
Construct New Armor Slope																				
Rock Placement, Push Off & Tub & Orange Peels																				
Wharf Construction																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
Construct E27 Bulkhead																				
Retaining Bulkhead Construction				0.02		0.04														
CY Development																				
Vibratory Hammer & Power Pack																				
Flatbed Truck																				
Welding Machine																				
Hydraulic Dredge to -55ft																				
Ph 1-3 Clamshell Dredging																				
Ph 1-4 Seaside Railyard Area Redevelopment																				
New Container Yard Utilities																				
New Container Yard Construction - Paving																				
Ph 1-4 New Container Yard Construction - Electrical																				
Ph 1-5 Construction																				
New Container Yard Utilities																				
New Container Yard Construction - Paving																				
Ph 1-5 New Container Yard Construction - Electrical																				
Ph 2-1 Demolition																				
Wharf Demolition Landside																				
Railyard																				
Intermodal Yard Construction				0.00																
Container Yard Development (F1 - F4)																				
New Container Yard Utilities																				
New Container Yard Construction - Paving																				
New Container Yard Construction - Electrical																				
Demo Existing F1-4, F6 Wharf																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				

Table A-4-AH1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels				0.00														
Wharf Construction																		
Drive 24-In Octagonal Piles - Land													0.18					
Drive 24-In Octagonal Piles - Water													0.13					
Drive Piles - Misc Activities													0.00					
Reinforced Concrete Wharf													1.36					
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging								0.00										
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction				0.00														
Container Yard Development (F1 - F4)																		
New Container Yard Utilities													0.00	0.00				
New Container Yard Construction - Paving													0.34	0.04				
New Container Yard Construction - Electrical													0.14	0.02				
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land				0.18														
Drive 24-In Octagonal Piles - Water				0.13														
Drive Piles - Misc Activities				0.00														
Reinforced Concrete Wharf				1.36														
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction																		
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-AH1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack		0.00																
Flatbed Truck		0.03																
Welding Machine		0.00																
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities				0.00														
New Container Yard Construction - Paving				0.00														
Ph 1-5 New Container Yard Construction - Electrical				0.00														
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction																		
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside				1.61			0.32											
Wharf Demolition Marine				1.26			0.25											

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2017		2017	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E26 and Dispose Slip 1																
Clamshell Dredging																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Construct E27 Bulkhead																
Retaining Bulkhead Construction																
CY Development																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
Hydraulic Dredge to -55ft																
Ph 1-3 Clamshell Dredging																
Ph 1-4 Seaside Railyard Area Redevelopment																
New Container Yard Utilities													0.00			
New Container Yard Construction - Paving													0.00			
Ph 1-4 New Container Yard Construction - Electrical													0.00			
Ph 1-5 Construction																
New Container Yard Utilities													0.00			
New Container Yard Construction - Paving													0.00			
Ph 1-5 New Container Yard Construction - Electrical													0.00			
Ph 2-1 Demolition																
Wharf Demolition Landside																
Railyard																
Intermodal Yard Construction																
Container Yard Development (F1 - F4)																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
Demo Existing F1-4, F6 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E26 and Dispose Slip 1																
Clamshell Dredging																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Construct E27 Bulkhead																
Retaining Bulkhead Construction																
CY Development																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
Hydraulic Dredge to -55ft																
Ph 1-3 Clamshell Dredging																
Ph 1-4 Seaside Railyard Area Redevelopment																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-4 New Container Yard Construction - Electrical																
Ph 1-5 Construction																
New Container Yard Utilities													0.00			
New Container Yard Construction - Paving													0.00			
Ph 1-5 New Container Yard Construction - Electrical													0.00			
Ph 2-1 Demolition																
Wharf Demolition Landside																
Railyard																
Intermodal Yard Construction																
Container Yard Development (F1 - F4)																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
Demo Existing F1-4, F6 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																

Table A-4-AH1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E26 and Dispose Slip 1																
Clamshell Dredging																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Construct E27 Bulkhead																
Retaining Bulkhead Construction																
CY Development																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
Hydraulic Dredge to -55ft																
Ph 1-3 Clamshell Dredging																
Ph 1-4 Seaside Railyard Area Redevelopment																
New Container Yard Utilities				0.00				0.00								
New Container Yard Construction - Paving				0.00				0.00								
Ph 1-4 New Container Yard Construction - Electrical				0.00				0.00								
Ph 1-5 Construction																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-5 New Container Yard Construction - Electrical																
Ph 2-1 Demolition																
Wharf Demolition Landside																
Railyard																
Intermodal Yard Construction																
Container Yard Development (F1 - F4)																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
Demo Existing F1-4, F6 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction																		
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E26 and Dispose Slip 1																
Clamshell Dredging																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Construct E27 Bulkhead																
Retaining Bulkhead Construction																
CY Development																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
Hydraulic Dredge to -55ft																
Ph 1-3 Clamshell Dredging																
Ph 1-4 Seaside Railyard Area Redevelopment																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-4 New Container Yard Construction - Electrical																
Ph 1-5 Construction																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-5 New Container Yard Construction - Electrical																
Ph 2-1 Demolition																
Wharf Demolition Landside																
Railyard																
Intermodal Yard Construction																
Container Yard Development (F1 - F4)																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
Demo Existing F1-4, F6 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																

Table A-4-AH1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
Wharf Demolition Landside				
Wharf Demolition Marine				
Sheet Pile Bulkhead Demolition				
<b>Construct New Bulkhead</b>				
Retaining Bulkhead Construction				
<b>Excavation Fronting E26 and Dispose Slip 1</b>				
Clamshell Dredging				
<b>Construct New Armor Slope</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Wharf Construction</b>				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
<b>Construct E27 Bulkhead</b>				
Retaining Bulkhead Construction				
<b>CY Development</b>				
Vibratory Hammer & Power Pack				
Flatbed Truck				
Welding Machine				
<b>Hydraulic Dredge to -55ft</b>				
Ph 1-3 Clamshell Dredging				
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
Ph 1-4 New Container Yard Construction - Electrical				
Ph 1-5 <b>Construction</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
Ph 1-5 New Container Yard Construction - Electrical				
Ph 2-1 <b>Demolition</b>				
Wharf Demolition Landside				
<b>Railyard</b>				
Intermodal Yard Construction				
<b>Container Yard Development (F1 - F4)</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
New Container Yard Construction - Electrical				
<b>Demo Existing F1-4, F6 Wharf</b>				
Wharf Demolition Landside				
Wharf Demolition Marine				

Table A-4-AH1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010		2010		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun				
	1st	2nd																	
Construct East Basin Retaining Dike																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Slip/Basin Fill &amp; Surcharge East</b>																			
Cutter Suction Dredging- Spill Barge (No Booster)																			
Cutter Suction Dredging- Land Disposal (No Booster)																			
Wick Drains																			
<b>Roll Surcharge</b>																			
Ph 2-1 Roll Surcharge																			
<b>Construction - New Terminal Buildings</b>																			
Building Construction																			
<b>Dredge and Excavate at Quay Wall</b>																			
Clamshell Dredging																			
<b>Demo Existing F8-10 Wharf</b>																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			
<b>Construct Wharf, Armor, Fill</b>																			
Land Ex																			
Rock Placement, Push Off & Tub & Orange Peels																			
Retaining Bulkhead Construction																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
<b>Basin Fill and Surcharge West</b>																			
Cutter Suction Dredging- Spill Barge (No Booster)																			
Cutter Suction Dredging- Land Disposal (No Booster)																			
Wick Drains																			
<b>Settlement Period</b>																			
Ph 2-2 Roll Surcharge																			
<b>Remove Surcharge</b>																			
Ph 2-3 Roll Surcharge																			
<b>CY Development</b>																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
Ph 2-3 New Container Yard Construction - Electrical																			
<b>Activity Total Tons</b>	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0			
<b>Yearly Total (Tons)</b>					1														

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2010		2011		2011	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>			
	1st	2nd																
Construct East Basin Retaining Dike																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Slip/Basin Fill &amp; Surcharge East</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Roll Surcharge</b>																		
Ph 2-1 Roll Surcharge																		
<b>Construction - New Terminal Buildings</b>																		
Building Construction																		
<b>Dredge and Excavate at Quay Wall</b>																		
Clamshell Dredging																		
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Basin Fill and Surcharge West</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Settlement Period</b>																		
Ph 2-2 Roll Surcharge																		
<b>Remove Surcharge</b>																		
Ph 2-3 Roll Surcharge																		
<b>CY Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 2-3 New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	0	0	0	2	1	0	0	0	0	0	2	0	0	0	0	0	
<b>Yearly Total (Tons)</b>														7				

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2011	2011	2011	2011	2011	2011	2011	2011	2011	2011	2011	2011	2011	2011	2011	2011
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Construct East Basin Retaining Dike																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Slip/Basin Fill &amp; Surcharge East</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Roll Surcharge</b>																
Ph 2-1 Roll Surcharge																
<b>Construction - New Terminal Buildings</b>																
Building Construction																
<b>Dredge and Excavate at Quay Wall</b>																
Clamshell Dredging																
<b>Demo Existing F8-10 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct Wharf, Armor, Fill</b>																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Basin Fill and Surcharge West</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Settlement Period</b>																
Ph 2-2 Roll Surcharge																
<b>Remove Surcharge</b>																
Ph 2-3 Roll Surcharge																
<b>CY Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 2-3 New Container Yard Construction - Electrical																
<b>Activity Total Tons</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
<b>Yearly Total (Tons)</b>																

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2012		2012		2012		2012		2012		2012		2012		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun				
	1st	2nd																	
Construct East Basin Retaining Dike																			
Rock Placement, Push Off & Tub & Orange Peels																			
Slip/Basin Fill & Surcharge East																			
Cutter Suction Dredging- Spill Barge (No Booster)																			
Cutter Suction Dredging- Land Disposal (No Booster)																			
Wick Drains																			
Roll Surcharge																			
Ph 2-1 Roll Surcharge																			
Ph 2-2 Construction - New Terminal Buildings																			
Building Construction																			
Dredge and Excavate at Quay Wall																			
Clamshell Dredging																			
Demo Existing F8-10 Wharf																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			
Construct Wharf, Armor, Fill																			
Land Ex																			
Rock Placement, Push Off & Tub & Orange Peels																			
Retaining Bulkhead Construction																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
Basin Fill and Surcharge West																			
Cutter Suction Dredging- Spill Barge (No Booster)																			
Cutter Suction Dredging- Land Disposal (No Booster)																			
Wick Drains																			
Settlement Period																			
Ph 2-2 Roll Surcharge																			
Ph 2-3 Remove Surcharge																			
Roll Surcharge																			
CY Development																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
Ph 2-3 New Container Yard Construction - Electrical																			
Activity Total Tons	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Yearly Total (Tons)					3														

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2012		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd		
Ph 2-1	Construct East Basin Retaining Dike																	
	Rock Placement, Push Off & Tub & Orange Peels																	
	Slip/Basin Fill & Surcharge East																	
	Cutter Suction Dredging- Spill Barge (No Booster)																	
	Cutter Suction Dredging- Land Disposal (No Booster)																	
	Wick Drains																	
	Roll Surcharge																	
Ph 2-1	Roll Surcharge																	
Ph 2-2	Construction - New Terminal Buildings																	
	Building Construction																	
	Dredge and Excavate at Quay Wall																	
	Clamshell Dredging																	
	Demo Existing F8-10 Wharf																	
	Wharf Demolition Landside																	
	Wharf Demolition Marine																	
	Construct Wharf, Armor, Fill																	
	Land Ex																	
	Rock Placement, Push Off & Tub & Orange Peels																	
	Retaining Bulkhead Construction																	
	Drive 24-In Octagonal Piles - Land																	
	Drive 24-In Octagonal Piles - Water																	
	Drive Piles - Misc Activities																	
	Reinforced Concrete Wharf																	
	Basin Fill and Surcharge West																	
	Cutter Suction Dredging- Spill Barge (No Booster)																	
	Cutter Suction Dredging- Land Disposal (No Booster)																	
	Wick Drains																	
	Settlement Period																	
Ph 2-2	Roll Surcharge																	
Ph 2-3	Remove Surcharge																	
	Roll Surcharge																	
	CY Development																	
	New Container Yard Utilities																	
	New Container Yard Construction - Paving																	
Ph 2-3	New Container Yard Construction - Electrical																	
	Activity Total Tons		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Yearly Total (Tons)													1				

Table A-4-A11-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Construct East Basin Retaining Dike																
Rock Placement, Push Off & Tub & Orange Peels																0.00
Slip/Basin Fill & Surcharge East																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Roll Surcharge																
Ph 2-1 Roll Surcharge																
Ph 2-2 Construction - New Terminal Buildings																
Building Construction																
Dredge and Excavate at Quay Wall																
Clamshell Dredging																
Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Basin Fill and Surcharge West																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Settlement Period																
Ph 2-2 Roll Surcharge																
Ph 2-3 Remove Surcharge																
Roll Surcharge																
CY Development																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 2-3 New Container Yard Construction - Electrical																
Activity Total Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Yearly Total (Tons)																

Table A-4-AH1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2014		2014		2014		2014		2014		2014		2014		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun				
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	
Construct East Basin Retaining Dike																			
Rock Placement, Push Off & Tub & Orange Peels																			
Slip/Basin Fill & Surcharge East																			
Cutter Suction Dredging- Spill Barge (No Booster)				0.00															
Cutter Suction Dredging- Land Disposal (No Booster)				0.00															
Wick Drains				0.00															
Roll Surcharge																			
Ph 2-1 Roll Surcharge																			
Ph 2-2 Construction - New Terminal Buildings																			
Building Construction																			
Dredge and Excavate at Quay Wall																			
Clamshell Dredging																			
Demo Existing F8-10 Wharf																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			
Construct Wharf, Armor, Fill																			
Land Ex																			
Rock Placement, Push Off & Tub & Orange Peels																			
Retaining Bulkhead Construction																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
Basin Fill and Surcharge West																			
Cutter Suction Dredging- Spill Barge (No Booster)																			
Cutter Suction Dredging- Land Disposal (No Booster)																			
Wick Drains																			
Settlement Period																			
Ph 2-2 Roll Surcharge																			
Ph 2-3 Remove Surcharge																			
Roll Surcharge																			
CY Development																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
Ph 2-3 New Container Yard Construction - Electrical																			
Activity Total Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Yearly Total (Tons)					2														

Table A-4-AH1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Construct East Basin Retaining Dike																		
Rock Placement, Push Off & Tub & Orange Peels																		
Slip/Basin Fill & Surcharge East																		
Cutter Suction Dredging- Spill Barge (No Booster)													0.00		0.00			
Cutter Suction Dredging- Land Disposal (No Booster)													0.00		0.00			
Wick Drains													0.00		0.00			
Roll Surcharge																		
Ph 2-1 Roll Surcharge																		
Ph 2-2 Construction - New Terminal Buildings																		
Building Construction																		
Dredge and Excavate at Quay Wall																		
Clamshell Dredging																		
Demo Existing F8-10 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Construct Wharf, Armor, Fill																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Basin Fill and Surcharge West																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
Settlement Period																		
Ph 2-2 Roll Surcharge																		
Ph 2-3 Remove Surcharge																		
Roll Surcharge																		
CY Development																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 2-3 New Container Yard Construction - Electrical																		
Activity Total Tons	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
Yearly Total (Tons)														2				

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Construct East Basin Retaining Dike																
Rock Placement, Push Off & Tub & Orange Peels																
Slip/Basin Fill & Surcharge East																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Roll Surcharge																
Ph 2-1 Roll Surcharge										0.56						
Ph 2-2 Construction - New Terminal Buildings																
Building Construction																
Dredge and Excavate at Quay Wall																
Clamshell Dredging																
Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Basin Fill and Surcharge West																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Settlement Period																
Ph 2-2 Roll Surcharge																
Ph 2-3 Remove Surcharge																
Roll Surcharge																
CY Development																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 2-3 New Container Yard Construction - Electrical																
Activity Total Tons	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0
Yearly Total (Tons)																

Table A-4-AH1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016		2016		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun				
	1st	2nd																	
Construct East Basin Retaining Dike																			
Rock Placement, Push Off & Tub & Orange Peels																			
Slip/Basin Fill & Surcharge East																			
Cutter Suction Dredging- Spill Barge (No Booster)																			
Cutter Suction Dredging- Land Disposal (No Booster)																			
Wick Drains																			
Roll Surcharge																			
Ph 2-1 Roll Surcharge																			
Ph 2-2 Construction - New Terminal Buildings																			
Building Construction																			
Dredge and Excavate at Quay Wall																			
Clamshell Dredging																			
Demo Existing F8-10 Wharf																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			
Construct Wharf, Armor, Fill																			
Land Ex																			
Rock Placement, Push Off & Tub & Orange Peels																			
Retaining Bulkhead Construction																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
Basin Fill and Surcharge West																			
Cutter Suction Dredging- Spill Barge (No Booster)																			
Cutter Suction Dredging- Land Disposal (No Booster)																			
Wick Drains																			
Settlement Period																			
Ph 2-2 Roll Surcharge																			
Ph 2-3 Remove Surcharge																			
Roll Surcharge																			
CY Development																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
Ph 2-3 New Container Yard Construction - Electrical																			
Activity Total Tons	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
Yearly Total (Tons)					5														

Table A-4-AH1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2017		2017		
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb		
	1st	2nd	1st	2nd	1st	2nd											
Construct East Basin Retaining Dike																	
Rock Placement, Push Off & Tub & Orange Peels																	
Slip/Basin Fill & Surcharge East																	
Cutter Suction Dredging- Spill Barge (No Booster)																	
Cutter Suction Dredging- Land Disposal (No Booster)																	
Wick Drains																	
Roll Surcharge																	
Ph 2-1 Roll Surcharge																	
Ph 2-2 Construction - New Terminal Buildings																	
Building Construction												0.00					
Dredge and Excavate at Quay Wall																	
Clamshell Dredging												0.00		0.00			
Demo Existing F8-10 Wharf																	
Wharf Demolition Landside																	
Wharf Demolition Marine																	
Construct Wharf, Armor, Fill																	
Land Ex																	
Rock Placement, Push Off & Tub & Orange Peels																	
Retaining Bulkhead Construction																	
Drive 24-In Octagonal Piles - Land																	
Drive 24-In Octagonal Piles - Water																	
Drive Piles - Misc Activities																	
Reinforced Concrete Wharf																	
Basin Fill and Surcharge West																	
Cutter Suction Dredging- Spill Barge (No Booster)																	
Cutter Suction Dredging- Land Disposal (No Booster)																	
Wick Drains																	
Settlement Period																	
Ph 2-2 Roll Surcharge																	
Ph 2-3 Remove Surcharge																	
Roll Surcharge																	
CY Development																	
New Container Yard Utilities																	
New Container Yard Construction - Paving																	
Ph 2-3 New Container Yard Construction - Electrical																	
<b>Activity Total Tons</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Yearly Total (Tons)</b>													1				

Table A-4-AH1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Construct East Basin Retaining Dike																
Rock Placement, Push Off & Tub & Orange Peels																
Slip/Basin Fill & Surcharge East																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Roll Surcharge																
Ph 2-1 Roll Surcharge																
Ph 2-2 Construction - New Terminal Buildings																
Building Construction																
Dredge and Excavate at Quay Wall																
Clamshell Dredging																
Demo Existing F8-10 Wharf																
Wharf Demolition Landside											0.14					
Wharf Demolition Marine											0.11					
Construct Wharf, Armor, Fill																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Basin Fill and Surcharge West																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Settlement Period																
Ph 2-2 Roll Surcharge																
Ph 2-3 Remove Surcharge																
Roll Surcharge																
CY Development																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 2-3 New Container Yard Construction - Electrical																
Activity Total Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yearly Total (Tons)																

Table A-4-AH1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Construct East Basin Retaining Dike																		
Rock Placement, Push Off & Tub & Orange Peels																		
Slip/Basin Fill & Surcharge East																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
Roll Surcharge																		
Ph 2-1 Roll Surcharge																		
Ph 2-2 Construction - New Terminal Buildings																		
Building Construction				0.00									0.00					
Dredge and Excavate at Quay Wall																		
Clamshell Dredging																		
Demo Existing F8-10 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Construct Wharf, Armor, Fill																		
Land Ex				0.46														
Rock Placement, Push Off & Tub & Orange Peels				0.00														
Retaining Bulkhead Construction				0.09														
Drive 24-In Octagonal Piles - Land				0.25														
Drive 24-In Octagonal Piles - Water				0.15														
Drive Piles - Misc Activities				0.00														
Reinforced Concrete Wharf				0.24														
Basin Fill and Surcharge West																		
Cutter Suction Dredging- Spill Barge (No Booster)				0.00														0.00
Cutter Suction Dredging- Land Disposal (No Booster)				0.00														0.00
Wick Drains				0.00														0.00
Settlement Period																		
Ph 2-2 Roll Surcharge																		
Ph 2-3 Remove Surcharge																		
Roll Surcharge																		
CY Development																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 2-3 New Container Yard Construction - Electrical																		
Activity Total Tons	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yearly Total (Tons)				1														

Table A-4-AH1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Construct East Basin Retaining Dike																		
Rock Placement, Push Off & Tub & Orange Peels																		
Slip/Basin Fill & Surcharge East																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
Roll Surcharge																		
Ph 2-1 Roll Surcharge																		
Ph 2-2 Construction - New Terminal Buildings																		
Building Construction																		
Dredge and Excavate at Quay Wall																		
Clamshell Dredging																		
Demo Existing F8-10 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Construct Wharf, Armor, Fill																		
Land Ex							0.83											
Rock Placement, Push Off & Tub & Orange Peels							0.00											
Retaining Bulkhead Construction							0.15											
Drive 24-In Octagonal Piles - Land							0.45											
Drive 24-In Octagonal Piles - Water							0.27											
Drive Piles - Misc Activities							0.00											
Reinforced Concrete Wharf							0.43											
Basin Fill and Surcharge West																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
Settlement Period																		
Ph 2-2 Roll Surcharge													2.4					
Ph 2-3 Remove Surcharge																		
Roll Surcharge																		
CY Development																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 2-3 New Container Yard Construction - Electrical																		
Activity Total Tons	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0
Yearly Total (Tons)														5				

Table A-4-AI1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Construct East Basin Retaining Dike																
Rock Placement, Push Off & Tub & Orange Peels																
Slip/Basin Fill & Surcharge East																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Roll Surcharge																
Ph 2-1 Roll Surcharge																
Ph 2-2 Construction - New Terminal Buildings																
Building Construction																
Dredge and Excavate at Quay Wall																
Clamshell Dredging																
Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Basin Fill and Surcharge West																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Settlement Period																
Ph 2-2 Roll Surcharge																
Ph 2-3 Remove Surcharge																
Roll Surcharge									1.22							
CY Development																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 2-3 New Container Yard Construction - Electrical																
Activity Total Tons	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Yearly Total (Tons)																

Table A-4-AH1-145 Trucks Annual NOx Emissions – Federal  
Action Component of POLB Middle Harbor Alternative 1

Activity	2019	2019	2019	2019
	Nov		Dec	
	1st	2nd	1st	2nd
Construct East Basin Retaining Dike				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Slip/Basin Fill &amp; Surcharge East</b>				
Cutter Suction Dredging- Spill Barge (No Booster)				
Cutter Suction Dredging- Land Disposal (No Booster)				
Wick Drains				
<b>Roll Surcharge</b>				
Ph 2-1 Roll Surcharge				
<b>Construction - New Terminal Buildings</b>				
Building Construction				
<b>Dredge and Excavate at Quay Wall</b>				
Clamshell Dredging				
<b>Demo Existing F8-10 Wharf</b>				
Wharf Demolition Landside				
Wharf Demolition Marine				
<b>Construct Wharf, Armor, Fill</b>				
Land Ex				
Rock Placement, Push Off & Tub & Orange Peels				
Retaining Bulkhead Construction				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
<b>Basin Fill and Surcharge West</b>				
Cutter Suction Dredging- Spill Barge (No Booster)				
Cutter Suction Dredging- Land Disposal (No Booster)				
Wick Drains				
<b>Settlement Period</b>				
Ph 2-2 Roll Surcharge				
<b>Remove Surcharge</b>				
Roll Surcharge				
<b>CY Development</b>				
New Container Yard Utilities		0.00		
New Container Yard Construction - Paving		0.16		
Ph 2-3 New Container Yard Construction - Electrical		0.00		
<b>Activity Total Tons</b>	0	0		
<b>Yearly Total (Tons)</b>				1

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside				-					-							
Wharf Demolition Marine				0.31					0.39							
Sheet Pile Bulkhead Demolition				-					-							
Construct New Bulkhead																
Retaining Bulkhead Construction							0.00									
Excavation Fronting E24																
Clamshell Dredging														4.60		
Land Ex														0.00		
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels														1.77		
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels				0.78				3.12								
Fill within Dike																
Clamshell Dredging														1.18		
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-ALT1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water		0.13														
Wick Drains																
Wick Drains																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2013		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E24</b>																		
Clamshell Dredging																		
Land Ex																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
<b>Utility Construction</b>																		
New Container Yard Utilities																		
<b>Paving</b>																		
New Container Yard Construction - Paving																		
<b>Lighting, Striping, Crane Power</b>																		
New Container Yard Construction - Electrical																		
<b>Prepare for Toe Dike / Construct Dike (1st Lift)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Fill within Dike</b>																		
Clamshell Dredging																		
<b>Remaining Dike Lifts</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Remaining Fill Lifts</b>																		
Clamshell Dredging																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
<b>Construct South Mooring Dolphin</b>																		
Drive 24-In Octagonal Piles - Water																		
<b>Wick Drains</b>																		
Wick Drains																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>			
	<i>1st</i>	<i>2nd</i>																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E24																		
Clamshell Dredging																		
Land Ex																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Prepare for Toe Dike / Construct Dike (1st Lift)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Fill within Dike																		
Clamshell Dredging																		
Remaining Dike Lifts																		
Rock Placement, Push Off & Tub & Orange Peels																		
Remaining Fill Lifts																		
Clamshell Dredging																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Construct South Mooring Dolphin																		
Drive 24-In Octagonal Piles - Water																		
Wick Drains																		
Wick Drains																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-ALT1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2016		2017		2017	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E24																		
Clamshell Dredging																		
Land Ex																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Prepare for Toe Dike / Construct Dike (1st Lift)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Fill within Dike																		
Clamshell Dredging																		
Remaining Dike Lifts																		
Rock Placement, Push Off & Tub & Orange Peels																		
Remaining Fill Lifts																		
Clamshell Dredging																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Construct South Mooring Dolphin																		
Drive 24-In Octagonal Piles - Water																		
Wick Drains																		
Wick Drains																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
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Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-ALT1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
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Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>			
	<i>1st</i>	<i>2nd</i>																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E24																		
Clamshell Dredging																		
Land Ex																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
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Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Prepare for Toe Dike / Construct Dike (1st Lift)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Fill within Dike																		
Clamshell Dredging																		
Remaining Dike Lifts																		
Rock Placement, Push Off & Tub & Orange Peels																		
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Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Construct South Mooring Dolphin																		
Drive 24-In Octagonal Piles - Water																		
Wick Drains																		
Wick Drains																		

Table A-4-ALT1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities				
Wharf Demolition Landside				
Wharf Demolition Marine				
Sheet Pile Bulkhead Demolition				
Construct New Bulkhead				
Retaining Bulkhead Construction				
Excavation Fronting E24				
Clamshell Dredging				
Land Ex				
Construct New Armor Slope				
Rock Placement, Push Off & Tub & Orange Peels				
Wharf Construction				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
Retaining Bulkhead Construction				
Utility Construction				
New Container Yard Utilities				
Paving				
New Container Yard Construction - Paving				
Lighting, Striping, Crane Power				
New Container Yard Construction - Electrical				
Prepare for Toe Dike / Construct Dike (1st Lift)				
Rock Placement, Push Off & Tub & Orange Peels				
Fill within Dike				
Clamshell Dredging				
Remaining Dike Lifts				
Rock Placement, Push Off & Tub & Orange Peels				
Remaining Fill Lifts				
Clamshell Dredging				
Wharf Construction				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
Retaining Bulkhead Construction				
Construct South Mooring Dolphin				
Drive 24-In Octagonal Piles - Water				
Wick Drains				
Wick Drains				

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd										
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																
Roll Surcharge																
<b>Remove Surcharge to Slip 1 Fill Site</b>																
Roll Surcharge																
<b>Utility Construction</b>																
New Container Yard Utilities																
<b>Paving</b>																
New Container Yard Construction - Paving																
<b>Lighting, Fence, Striping, Crane Power</b>																
New Container Yard Construction - Electrical																
<b>Construct Retaining Structure at Pier D Oil Area</b>																
Retaining Bulkhead Construction												0.00				
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																
Land Ex																
<b>Excavate Material Fronting Pier D</b>																
Land Ex																
Clamshell Dredging																
<b>Remove Cellular Sheetpile</b>																
Sheet Pile Bulkhead Demolition																
<b>Rock Revetment</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ground Improvements Pier D</b>																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
<b>Demo - E12-13 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Lift #1 (- -30)</b>																
Rock Placement, Push Off & Tub & Orange Peels																1.75
<b>Lift #2 (- -15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #3 (- 0)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #4 (- +15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Initial Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>2nd Surcharge and Wick Drains</b>																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2011		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd								
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																		
Roll Surcharge												0.00						
<b>Remove Surcharge to Slip 1 Fill Site</b>																		
Roll Surcharge																		
<b>Utility Construction</b>																		
New Container Yard Utilities																		
<b>Paving</b>																		
New Container Yard Construction - Paving																		
<b>Lighting, Fence, Striping, Crane Power</b>																		
New Container Yard Construction - Electrical																		
<b>Construct Retaining Structure at Pier D Oil Area</b>																		
Retaining Bulkhead Construction																		
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																		
Land Ex									0.00									
<b>Excavate Material Fronting Pier D</b>																		
Land Ex									0.00									
Clamshell Dredging									4.27									
<b>Remove Cellular Sheetpile</b>																		
Sheet Pile Bulkhead Demolition												0.00						
<b>Rock Revetment</b>																		
Rock Placement, Push Off & Tub & Orange Peels													2.27				0.85	
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																		
Clamshell Dredging									1.18									
<b>Ground Improvements Pier D</b>																		
Stone Column Installation Eq													0.00					0.00
Marine Rock Delivery Eq													1.32					1.32
<b>Demo - E12-13 Wharf</b>																		
Wharf Demolition Landside							0.00											
Wharf Demolition Marine							0.93											
<b>Lift #1 (- -30)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #2 (- -15)</b>																		
Rock Placement, Push Off & Tub & Orange Peels										1.04								
<b>Lift #3 (- 0)</b>																		
Rock Placement, Push Off & Tub & Orange Peels													0.60			0.30		
<b>Lift #4 (- +15)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Initial Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>2nd Surcharge and Wick Drains</b>																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																
Roll Surcharge																
<b>Remove Surcharge to Slip 1 Fill Site</b>																
Roll Surcharge				0.00												
<b>Utility Construction</b>																
New Container Yard Utilities			0.00													
<b>Paving</b>																
New Container Yard Construction - Paving								0.00								
<b>Lighting, Fence, Striping, Crane Power</b>																
New Container Yard Construction - Electrical												0.00				
<b>Construct Retaining Structure at Pier D Oil Area</b>																
Retaining Bulkhead Construction																
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																
Land Ex																
<b>Excavate Material Fronting Pier D</b>																
Land Ex																
Clamshell Dredging																
<b>Remove Cellular Sheetpile</b>																
Sheet Pile Bulkhead Demolition																
<b>Rock Revetment</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ground Improvements Pier D</b>																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
<b>Demo - E12-13 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Lift #1 (- -30)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #2 (- -15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #3 (- 0)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #4 (- +15)</b>																
Rock Placement, Push Off & Tub & Orange Peels				0.78												
<b>Initial Surcharge and Wick Drains</b>																
Wick Drains						0.00										
Roll Surcharge						0.00										
<b>2nd Surcharge and Wick Drains</b>																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2011		2011		2012		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd																
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																		
Roll Surcharge																		
<b>Remove Surcharge to Slip 1 Fill Site</b>																		
Roll Surcharge																		
<b>Utility Construction</b>																		
New Container Yard Utilities																		
<b>Paving</b>																		
New Container Yard Construction - Paving																		
<b>Lighting, Fence, Striping, Crane Power</b>																		
New Container Yard Construction - Electrical																		
<b>Construct Retaining Structure at Pier D Oil Area</b>																		
Retaining Bulkhead Construction																		
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																		
Land Ex																		
<b>Excavate Material Fronting Pier D</b>																		
Land Ex																		
Clamshell Dredging																		
<b>Remove Cellular Sheetpile</b>																		
Sheet Pile Bulkhead Demolition																		
<b>Rock Revetment</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																		
Clamshell Dredging																		
<b>Ground Improvements Pier D</b>																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
<b>Demo - E12-13 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Lift #1 (- -30)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #2 (- -15)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #3 (- 0)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #4 (- +15)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Initial Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>2nd Surcharge and Wick Drains</b>																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2013		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																		
Roll Surcharge																		
<b>Remove Surcharge to Slip 1 Fill Site</b>																		
Roll Surcharge																		
<b>Utility Construction</b>																		
New Container Yard Utilities																		
<b>Paving</b>																		
New Container Yard Construction - Paving																		
<b>Lighting, Fence, Striping, Crane Power</b>																		
New Container Yard Construction - Electrical																		
<b>Construct Retaining Structure at Pier D Oil Area</b>																		
Retaining Bulkhead Construction																		
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																		
Land Ex																		
<b>Excavate Material Fronting Pier D</b>																		
Land Ex																		
Clamshell Dredging																		
<b>Remove Cellular Sheetpile</b>																		
Sheet Pile Bulkhead Demolition																		
<b>Rock Revetment</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																		
Clamshell Dredging																		
<b>Ground Improvements Pier D</b>																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
<b>Demo - E12-13 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Lift #1 (- -30)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #2 (- -15)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #3 (- 0)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #4 (- +15)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Initial Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>2nd Surcharge and Wick Drains</b>																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																
Roll Surcharge																
<b>Remove Surcharge to Slip 1 Fill Site</b>																
Roll Surcharge																
<b>Utility Construction</b>																
New Container Yard Utilities																
<b>Paving</b>																
New Container Yard Construction - Paving																
<b>Lighting, Fence, Striping, Crane Power</b>																
New Container Yard Construction - Electrical																
<b>Construct Retaining Structure at Pier D Oil Area</b>																
Retaining Bulkhead Construction																
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																
Land Ex																
<b>Excavate Material Fronting Pier D</b>																
Land Ex																
Clamshell Dredging																
<b>Remove Cellular Sheetpile</b>																
Sheet Pile Bulkhead Demolition																
<b>Rock Revetment</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ground Improvements Pier D</b>																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
<b>Demo - E12-13 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Lift #1 (- -30)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #2 (- -15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #3 (- 0)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #4 (- +15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Initial Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>2nd Surcharge and Wick Drains</b>																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2013		2013		2014		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd																
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																		
Roll Surcharge																		
<b>Remove Surcharge to Slip 1 Fill Site</b>																		
Roll Surcharge																		
<b>Utility Construction</b>																		
New Container Yard Utilities																		
<b>Paving</b>																		
New Container Yard Construction - Paving																		
<b>Lighting, Fence, Striping, Crane Power</b>																		
New Container Yard Construction - Electrical																		
<b>Construct Retaining Structure at Pier D Oil Area</b>																		
Retaining Bulkhead Construction																		
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																		
Land Ex																		
<b>Excavate Material Fronting Pier D</b>																		
Land Ex																		
Clamshell Dredging																		
<b>Remove Cellular Sheetpile</b>																		
Sheet Pile Bulkhead Demolition																		
<b>Rock Revetment</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																		
Clamshell Dredging																		
<b>Ground Improvements Pier D</b>																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
<b>Demo - E12-13 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Lift #1 (- -30)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #2 (- -15)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #3 (- 0)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #4 (- +15)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Initial Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>2nd Surcharge and Wick Drains</b>																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																		
Roll Surcharge																		
<b>Remove Surcharge to Slip 1 Fill Site</b>																		
Roll Surcharge																		
<b>Utility Construction</b>																		
New Container Yard Utilities																		
<b>Paving</b>																		
New Container Yard Construction - Paving																		
<b>Lighting, Fence, Striping, Crane Power</b>																		
New Container Yard Construction - Electrical																		
<b>Construct Retaining Structure at Pier D Oil Area</b>																		
Retaining Bulkhead Construction																		
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																		
Land Ex																		
<b>Excavate Material Fronting Pier D</b>																		
Land Ex																		
Clamshell Dredging																		
<b>Remove Cellular Sheetpile</b>																		
Sheet Pile Bulkhead Demolition																		
<b>Rock Revetment</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																		
Clamshell Dredging																		
<b>Ground Improvements Pier D</b>																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
<b>Demo - E12-13 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Lift #1 (- -30)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #2 (- -15)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #3 (- 0)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #4 (- +15)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Initial Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>2nd Surcharge and Wick Drains</b>																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2016		2017		2017	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Surcharge (Initial Pump, Plus Clamshell or Truck)																		
Roll Surcharge																		
Remove Surcharge to Slip 1 Fill Site																		
Roll Surcharge																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Fence, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Construct Retaining Structure at Pier D Oil Area																		
Retaining Bulkhead Construction																		
Excavate & Truck Material in Cell Bulkhead																		
Land Ex																		
Excavate Material Fronting Pier D																		
Land Ex																		
Clamshell Dredging																		
Remove Cellular Sheetpile																		
Sheet Pile Bulkhead Demolition																		
Rock Revetment																		
Rock Placement, Push Off & Tub & Orange Peels																		
Hydraulic or Clamshell Dredge to -55 ft																		
Clamshell Dredging																		
Ground Improvements Pier D																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
Demo - E12-13 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Lift #1 (- -30)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #2 (- -15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #3 (- 0)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #4 (- +15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Initial Surcharge and Wick Drains																		
Wick Drains																		
Roll Surcharge																		
2nd Surcharge and Wick Drains																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																
Roll Surcharge																
<b>Remove Surcharge to Slip 1 Fill Site</b>																
Roll Surcharge																
<b>Utility Construction</b>																
New Container Yard Utilities																
<b>Paving</b>																
New Container Yard Construction - Paving																
<b>Lighting, Fence, Striping, Crane Power</b>																
New Container Yard Construction - Electrical																
<b>Construct Retaining Structure at Pier D Oil Area</b>																
Retaining Bulkhead Construction																
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																
Land Ex																
<b>Excavate Material Fronting Pier D</b>																
Land Ex																
Clamshell Dredging																
<b>Remove Cellular Sheetpile</b>																
Sheet Pile Bulkhead Demolition																
<b>Rock Revetment</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ground Improvements Pier D</b>																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
<b>Demo - E12-13 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Lift #1 (- -30)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #2 (- -15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #3 (- 0)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #4 (- +15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Initial Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>2nd Surcharge and Wick Drains</b>																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																		
Roll Surcharge																		
<b>Remove Surcharge to Slip 1 Fill Site</b>																		
Roll Surcharge																		
<b>Utility Construction</b>																		
New Container Yard Utilities																		
<b>Paving</b>																		
New Container Yard Construction - Paving																		
<b>Lighting, Fence, Striping, Crane Power</b>																		
New Container Yard Construction - Electrical																		
<b>Construct Retaining Structure at Pier D Oil Area</b>																		
Retaining Bulkhead Construction																		
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																		
Land Ex																		
<b>Excavate Material Fronting Pier D</b>																		
Land Ex																		
Clamshell Dredging																		
<b>Remove Cellular Sheetpile</b>																		
Sheet Pile Bulkhead Demolition																		
<b>Rock Revetment</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																		
Clamshell Dredging																		
<b>Ground Improvements Pier D</b>																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
<b>Demo - E12-13 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Lift #1 (- -30)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #2 (- -15)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #3 (- 0)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #4 (- +15)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Initial Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>2nd Surcharge and Wick Drains</b>																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>				
Roll Surcharge				
<b>Remove Surcharge to Slip 1 Fill Site</b>				
Roll Surcharge				
<b>Utility Construction</b>				
New Container Yard Utilities				
<b>Paving</b>				
New Container Yard Construction - Paving				
<b>Lighting, Fence, Striping, Crane Power</b>				
New Container Yard Construction - Electrical				
<b>Construct Retaining Structure at Pier D Oil Area</b>				
Retaining Bulkhead Construction				
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>				
Land Ex				
<b>Excavate Material Fronting Pier D</b>				
Land Ex				
Clamshell Dredging				
<b>Remove Cellular Sheetpile</b>				
Sheet Pile Bulkhead Demolition				
<b>Rock Revetment</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Hydraulic or Clamshell Dredge to -55 ft</b>				
Clamshell Dredging				
<b>Ground Improvements Pier D</b>				
Stone Column Installation Eq				
Marine Rock Delivery Eq				
<b>Demo - E12-13 Wharf</b>				
Wharf Demolition Landside				
Wharf Demolition Marine				
<b>Lift #1 (- -30)</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Lift #2 (- -15)</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Lift #3 (- 0)</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Lift #4 (- +15)</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Initial Surcharge and Wick Drains</b>				
Wick Drains				
Roll Surcharge				
<b>2nd Surcharge and Wick Drains</b>				

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wick Drains								0.00								
Roll Surcharge							0.00									
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																0.00
Roll Surcharge																0.00
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																0.00
Triple Track Utility Relocation Eq																0.00
Triple Track Grading Eq																0.00
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Ph 1-2																
Clamshell Dredging																
Ph 1-3																
<b>Demolish Existing Facilities</b>																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2011		2011		2012		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq		0.00																
Triple Track Trackwork Eq				0.00								0.00						
Triple Track Miscellaneous Eq				0.00								0.00						
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition				0.00		0.00												
Wharf Demolition Landside				0.00		0.00												
Wharf Demolition Marine				0.43		0.09												
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction				0.00														
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging				1.58		0.39												
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels												2.12						
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Ph 1-2																		
Clamshell Dredging								1.31										
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2012		2013		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb					
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wick Drains																				
Roll Surcharge																				
<b>3rd Surcharge and Wick Drains</b>																				
Wick Drains																				
Roll Surcharge																				
<b>4th Surcharge and Wick Drains</b>																				
Wick Drains																				
Roll Surcharge																				
<b>Remove Surcharge</b>																				
Roll Surcharge		0.00																		
<b>Container Yard Development</b>																				
New Container Yard Utilities													0.00							
New Container Yard Construction - Paving													0.00							
New Container Yard Construction - Electrical													0.00							
<b>POLB Ocean Blvd Track Reconfiguration</b>																				
Triple Track Installation Demo Eq																				
Triple Track Utility Relocation Eq																				
Triple Track Grading Eq																				
Triple Track Retaining Wall Eq																				
Triple Track Trackwork Eq																				
Triple Track Miscellaneous Eq																				
Ph 1-1																				
Ph 1-2																				
<b>Demolish Existing Facilities</b>																				
Sheet Pile Bulkhead Demolition																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																				
Retaining Bulkhead Construction																				
<b>Excavation Fronting E25 and Dispose Slip 1</b>																				
Clamshell Dredging																				
<b>Construct New Armor Slope</b>																				
Rock Placement, Push Off & Tub & Orange Peels																				
<b>Wharf Construction</b>																				
Drive 24-In Octagonal Piles - Land									0.00											
Drive 24-In Octagonal Piles - Water									0.04											
Drive Piles - Misc Activities									0.00											
Reinforced Concrete Wharf									0.07											
<b>CY Development</b>																				
New Container Yard Construction - Paving													0.00							
Dredge to -55 ft																				
Ph 1-2																				
Clamshell Dredging																				
Ph 1-3																				
Demolish Existing Facilities																				

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities								0.00								
New Container Yard Construction - Paving								0.00								
New Container Yard Construction - Electrical								0.00								
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																0.00
Dredge to -55 ft																
Ph 1-2																
Clamshell Dredging																
Ph 1-3																
Demolish Existing Facilities																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2013		2013		2014		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2016		2017		2017	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
Wick Drains				
Roll Surcharge				
<b>3rd Surcharge and Wick Drains</b>				
Wick Drains				
Roll Surcharge				
<b>4th Surcharge and Wick Drains</b>				
Wick Drains				
Roll Surcharge				
<b>Remove Surcharge</b>				
Roll Surcharge				
<b>Container Yard Development</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
New Container Yard Construction - Electrical				
<b>POLB Ocean Blvd Track Reconfiguration</b>				
Triple Track Installation Demo Eq				
Triple Track Utility Relocation Eq				
Triple Track Grading Eq				
Triple Track Retaining Wall Eq				
Triple Track Trackwork Eq				
Triple Track Miscellaneous Eq				
Ph 1-1				
Ph 1-2				
<b>Demolish Existing Facilities</b>				
Sheet Pile Bulkhead Demolition				
Wharf Demolition Landside				
Wharf Demolition Marine				
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>				
Retaining Bulkhead Construction				
<b>Excavation Fronting E25 and Dispose Slip 1</b>				
Clamshell Dredging				
<b>Construct New Armor Slope</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Wharf Construction</b>				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
<b>CY Development</b>				
New Container Yard Construction - Paving				
<b>Dredge to -55 ft</b>				
Clamshell Dredging				
Ph 1-2				
Ph 1-3				
<b>Demolish Existing Facilities</b>				

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd																
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E26 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Construct E27 Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>CY Development</b>																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
<b>Hydraulic Dredge to -55ft</b>																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 <b>Construction</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 <b>Demolition</b>																		
Wharf Demolition Landside																		
<b>Railyard</b>																		
Intermodal Yard Construction																		
<b>Container Yard Development (F1 - F4)</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>Demo Existing F1-4, F6 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2010		2011		2011		2011		
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb						
	1st	2nd																			
Wharf Demolition Landside																					
Wharf Demolition Marine																					
Sheet Pile Bulkhead Demolition																					
<b>Construct New Bulkhead</b>																					
Retaining Bulkhead Construction																					
<b>Excavation Fronting E26 and Dispose Slip 1</b>																					
Clamshell Dredging																					
<b>Construct New Armor Slope</b>																					
Rock Placement, Push Off & Tub & Orange Peels																					
<b>Wharf Construction</b>																					
Drive 24-In Octagonal Piles - Land																					
Drive 24-In Octagonal Piles - Water																					
Drive Piles - Misc Activities																					
Reinforced Concrete Wharf																					
<b>Construct E27 Bulkhead</b>																					
Retaining Bulkhead Construction																					
<b>CY Development</b>																					
Vibratory Hammer & Power Pack																					
Flatbed Truck																					
Welding Machine																					
<b>Hydraulic Dredge to -55ft</b>																					
Ph 1-3 Clamshell Dredging																					
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																					
New Container Yard Utilities																					
New Container Yard Construction - Paving																					
Ph 1-4 New Container Yard Construction - Electrical																					
Ph 1-5 <b>Construction</b>																					
New Container Yard Utilities																					
New Container Yard Construction - Paving																					
Ph 1-5 New Container Yard Construction - Electrical																					
Ph 2-1 <b>Demolition</b>																					
Wharf Demolition Landside																					
<b>Railyard</b>																					
Intermodal Yard Construction																					
<b>Container Yard Development (F1 - F4)</b>																					
New Container Yard Utilities																					
New Container Yard Construction - Paving																					
New Container Yard Construction - Electrical																					
<b>Demo Existing F1-4, F6 Wharf</b>																					
Wharf Demolition Landside																					
Wharf Demolition Marine																					

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Ph 1-3 Clamshell Dredging																
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-4 New Container Yard Construction - Electrical																
Ph 1-5 <b>Construction</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-5 New Container Yard Construction - Electrical																
Ph 2-1 <b>Demolition</b>																
Wharf Demolition Landside																
<b>Railyard</b>																
Intermodal Yard Construction																
<b>Container Yard Development (F1 - F4)</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2011		2011		2012		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd																
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Construct E27 Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>CY Development</b>																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
<b>Hydraulic Dredge to -55ft</b>																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 <b>Construction</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 <b>Demolition</b>																		
Wharf Demolition Landside																		
<b>Railyard</b>																		
Intermodal Yard Construction																		
<b>Container Yard Development (F1 - F4)</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>Demo Existing F1-4, F6 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2012		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E26 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Construct E27 Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>CY Development</b>																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
<b>Hydraulic Dredge to -55ft</b>																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 <b>Construction</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 <b>Demolition</b>																		
Wharf Demolition Landside																		
<b>Railyard</b>																		
Intermodal Yard Construction																		
<b>Container Yard Development (F1 - F4)</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>Demo Existing F1-4, F6 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Wharf Demolition Landside																0.00
Wharf Demolition Marine																0.05
Sheet Pile Bulkhead Demolition																0.00
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Ph 1-3 Clamshell Dredging																
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-4 New Container Yard Construction - Electrical																
Ph 1-5 <b>Construction</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-5 New Container Yard Construction - Electrical																
Ph 2-1 <b>Demolition</b>																
Wharf Demolition Landside																
<b>Railyard</b>																
Intermodal Yard Construction																
<b>Container Yard Development (F1 - F4)</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2013		2013		2014		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction			0.00															
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging				0.22								1.55						
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Construct E27 Bulkhead</b>																		
Retaining Bulkhead Construction				0.00		0.00												
<b>CY Development</b>																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 <b>Construction</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 <b>Demolition</b>																		
Wharf Demolition Landside																		
<b>Railyard</b>																		
Intermodal Yard Construction				0.00														
<b>Container Yard Development (F1 - F4)</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels				5.85														
Wharf Construction																		
Drive 24-In Octagonal Piles - Land													0.00					
Drive 24-In Octagonal Piles - Water													0.91					
Drive Piles - Misc Activities													0.00					
Reinforced Concrete Wharf													1.24					
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging								1.98										
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction				0.00														
Container Yard Development (F1 - F4)																		
New Container Yard Utilities													0.00	0.00				
New Container Yard Construction - Paving													0.00	0.00				
New Container Yard Construction - Electrical													0.00	0.00				
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land				0.00														
Drive 24-In Octagonal Piles - Water				0.91														
Drive Piles - Misc Activities				0.00														
Reinforced Concrete Wharf				1.24														
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction																		
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E26 and Dispose Slip 1																
Clamshell Dredging																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Construct E27 Bulkhead																
Retaining Bulkhead Construction																
CY Development																
Vibratory Hammer & Power Pack		0.00														
Flatbed Truck		0.00														
Welding Machine		0.00														
Hydraulic Dredge to -55ft																
Ph 1-3 Clamshell Dredging																
Ph 1-4 Seaside Railyard Area Redevelopment																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-4 New Container Yard Construction - Electrical																
Ph 1-5 Construction																
New Container Yard Utilities				0.00												
New Container Yard Construction - Paving				0.00												
Ph 1-5 New Container Yard Construction - Electrical				0.00												
Ph 2-1 Demolition																
Wharf Demolition Landside																
Railyard																
Intermodal Yard Construction																
Container Yard Development (F1 - F4)																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
Demo Existing F1-4, F6 Wharf																
Wharf Demolition Landside				0.00		0.00										
Wharf Demolition Marine				1.30		0.26										

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2017		2017		2017	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities													0.00					
New Container Yard Construction - Paving													0.00					
Ph 1-4 New Container Yard Construction - Electrical													0.00					
Ph 1-5 Construction																		
New Container Yard Utilities													0.00					
New Container Yard Construction - Paving													0.00					
Ph 1-5 New Container Yard Construction - Electrical													0.00					
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction																		
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd																
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities																		0.00
New Container Yard Construction - Paving																		0.00
Ph 1-5 New Container Yard Construction - Electrical																		0.00
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction																		
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E26 and Dispose Slip 1																
Clamshell Dredging																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Construct E27 Bulkhead																
Retaining Bulkhead Construction																
CY Development																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
Hydraulic Dredge to -55ft																
Ph 1-3 Clamshell Dredging																
Ph 1-4 Seaside Railyard Area Redevelopment																
New Container Yard Utilities				0.00				0.00								
New Container Yard Construction - Paving				0.00				0.00								
Ph 1-4 New Container Yard Construction - Electrical				0.00				0.00								
Ph 1-5 Construction																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-5 New Container Yard Construction - Electrical																
Ph 2-1 Demolition																
Wharf Demolition Landside																
Railyard																
Intermodal Yard Construction																
Container Yard Development (F1 - F4)																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
Demo Existing F1-4, F6 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E26 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Construct E27 Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>CY Development</b>																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
<b>Hydraulic Dredge to -55ft</b>																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 <b>Construction</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 <b>Demolition</b>																		
Wharf Demolition Landside																		
<b>Railyard</b>																		
Intermodal Yard Construction																		
<b>Container Yard Development (F1 - F4)</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>Demo Existing F1-4, F6 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
Excavation Fronting E26 and Dispose Slip 1																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Ph 1-3 Clamshell Dredging																
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-4 New Container Yard Construction - Electrical																
Ph 1-5 <b>Construction</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-5 New Container Yard Construction - Electrical																
Ph 2-1 <b>Demolition</b>																
Wharf Demolition Landside																
<b>Railyard</b>																
Intermodal Yard Construction																
<b>Container Yard Development (F1 - F4)</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
Wharf Demolition Landside				
Wharf Demolition Marine				
Sheet Pile Bulkhead Demolition				
<b>Construct New Bulkhead</b>				
Retaining Bulkhead Construction				
<b>Excavation Fronting E26 and Dispose Slip 1</b>				
Clamshell Dredging				
<b>Construct New Armor Slope</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Wharf Construction</b>				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
<b>Construct E27 Bulkhead</b>				
Retaining Bulkhead Construction				
<b>CY Development</b>				
Vibratory Hammer & Power Pack				
Flatbed Truck				
Welding Machine				
<b>Hydraulic Dredge to -55ft</b>				
Ph 1-3 Clamshell Dredging				
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
Ph 1-4 New Container Yard Construction - Electrical				
Ph 1-5 <b>Construction</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
Ph 1-5 New Container Yard Construction - Electrical				
Ph 2-1 <b>Demolition</b>				
Wharf Demolition Landside				
<b>Railyard</b>				
Intermodal Yard Construction				
<b>Container Yard Development (F1 - F4)</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
New Container Yard Construction - Electrical				
<b>Demo Existing F1-4, F6 Wharf</b>				
Wharf Demolition Landside				
Wharf Demolition Marine				

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010		2010		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun				
	1st	2nd																	
<b>Construct East Basin Retaining Dike</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Slip/Basin Fill &amp; Surcharge East</b>																			
Cutter Suction Dredging- Spill Barge (No Booster)																			
Cutter Suction Dredging- Land Disposal (No Booster)																			
Wick Drains																			
<b>Roll Surcharge</b>																			
Roll Surcharge																			
Ph 2-1																			
<b>Construction - New Terminal Buildings</b>																			
Building Construction																			
<b>Dredge and Excavate at Quay Wall</b>																			
Clamshell Dredging																			
<b>Demo Existing F8-10 Wharf</b>																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			
<b>Construct Wharf, Armor, Fill</b>																			
Land Ex																			
Rock Placement, Push Off & Tub & Orange Peels																			
Retaining Bulkhead Construction																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
<b>Basin Fill and Surcharge West</b>																			
Cutter Suction Dredging- Spill Barge (No Booster)																			
Cutter Suction Dredging- Land Disposal (No Booster)																			
Wick Drains																			
<b>Settlement Period</b>																			
Roll Surcharge																			
Ph 2-2																			
<b>Remove Surcharge</b>																			
Roll Surcharge																			
<b>CY Development</b>																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
Ph 2-3																			
New Container Yard Construction - Electrical																			
<b>Activity Total Tons</b>	0	0	0	1	0	0	0	3	0	0	0	0	1	6	0	2			
<b>Yearly Total (Tons)</b>					1														

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2010		2011		2011		2011		
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb						
	1st	2nd																			
<b>Construct East Basin Retaining Dike</b>																					
Rock Placement, Push Off & Tub & Orange Peels																					
<b>Slip/Basin Fill &amp; Surcharge East</b>																					
Cutter Suction Dredging- Spill Barge (No Booster)																					
Cutter Suction Dredging- Land Disposal (No Booster)																					
Wick Drains																					
<b>Roll Surcharge</b>																					
Roll Surcharge																					
<b>Ph 2-1</b>																					
<b>Ph 2-2</b>																					
<b>Construction - New Terminal Buildings</b>																					
Building Construction																					
<b>Dredge and Excavate at Quay Wall</b>																					
Clamshell Dredging																					
<b>Demo Existing F8-10 Wharf</b>																					
Wharf Demolition Landside																					
Wharf Demolition Marine																					
<b>Construct Wharf, Armor, Fill</b>																					
Land Ex																					
Rock Placement, Push Off & Tub & Orange Peels																					
Retaining Bulkhead Construction																					
Drive 24-In Octagonal Piles - Land																					
Drive 24-In Octagonal Piles - Water																					
Drive Piles - Misc Activities																					
Reinforced Concrete Wharf																					
<b>Basin Fill and Surcharge West</b>																					
Cutter Suction Dredging- Spill Barge (No Booster)																					
Cutter Suction Dredging- Land Disposal (No Booster)																					
Wick Drains																					
<b>Settlement Period</b>																					
Roll Surcharge																					
<b>Ph 2-2</b>																					
<b>Ph 2-3</b>																					
<b>Remove Surcharge</b>																					
Roll Surcharge																					
<b>CY Development</b>																					
New Container Yard Utilities																					
New Container Yard Construction - Paving																					
<b>Ph 2-3</b>																					
New Container Yard Construction - Electrical																					
<b>Activity Total Tons</b>	0	0	4	0	1	7	4	2	0	0	0	6	0	1	1	1					
<b>Yearly Total (Tons)</b>														37							

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>Construct East Basin Retaining Dike</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Slip/Basin Fill &amp; Surcharge East</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Roll Surcharge</b>																
Roll Surcharge																
<b>Ph 2-1</b>																
<b>Ph 2-2</b>																
<b>Construction - New Terminal Buildings</b>																
Building Construction																
<b>Dredge and Excavate at Quay Wall</b>																
Clamshell Dredging																
<b>Demo Existing F8-10 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct Wharf, Armor, Fill</b>																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Basin Fill and Surcharge West</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Settlement Period</b>																
Roll Surcharge																
<b>Ph 2-2</b>																
<b>Ph 2-3</b>																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>CY Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
<b>Ph 2-3</b>																
New Container Yard Construction - Electrical																
<b>Activity Total Tons</b>	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
<b>Yearly Total (Tons)</b>																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2011		2011		2012		2012		2012		2012		2012		2012		2012			
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd																		
<b>Construct East Basin Retaining Dike</b>																				
Rock Placement, Push Off & Tub & Orange Peels																				
<b>Slip/Basin Fill &amp; Surcharge East</b>																				
Cutter Suction Dredging- Spill Barge (No Booster)																				
Cutter Suction Dredging- Land Disposal (No Booster)																				
Wick Drains																				
<b>Roll Surcharge</b>																				
Roll Surcharge																				
<b>Ph 2-1</b>																				
<b>Ph 2-2</b>																				
<b>Construction - New Terminal Buildings</b>																				
Building Construction																				
<b>Dredge and Excavate at Quay Wall</b>																				
Clamshell Dredging																				
<b>Demo Existing F8-10 Wharf</b>																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				
<b>Construct Wharf, Armor, Fill</b>																				
Land Ex																				
Rock Placement, Push Off & Tub & Orange Peels																				
Retaining Bulkhead Construction																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
<b>Basin Fill and Surcharge West</b>																				
Cutter Suction Dredging- Spill Barge (No Booster)																				
Cutter Suction Dredging- Land Disposal (No Booster)																				
Wick Drains																				
<b>Settlement Period</b>																				
Roll Surcharge																				
<b>Ph 2-2</b>																				
<b>Ph 2-3</b>																				
<b>Remove Surcharge</b>																				
Roll Surcharge																				
<b>CY Development</b>																				
New Container Yard Utilities																				
New Container Yard Construction - Paving																				
<b>Ph 2-3</b>																				
New Container Yard Construction - Electrical																				
<b>Activity Total Tons</b>	0	0	0	2	0	0	1	0	0	0	2	0	0	0	0	0	0	0		
<b>Yearly Total (Tons)</b>	6																			

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2012		2013		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb					
	1st	2nd																		
<b>Construct East Basin Retaining Dike</b>																				
Rock Placement, Push Off & Tub & Orange Peels																				
<b>Slip/Basin Fill &amp; Surcharge East</b>																				
Cutter Suction Dredging- Spill Barge (No Booster)																				
Cutter Suction Dredging- Land Disposal (No Booster)																				
Wick Drains																				
<b>Roll Surcharge</b>																				
Roll Surcharge																				
<b>Ph 2-1</b>																				
<b>Ph 2-2</b>																				
<b>Construction - New Terminal Buildings</b>																				
Building Construction																				
<b>Dredge and Excavate at Quay Wall</b>																				
Clamshell Dredging																				
<b>Demo Existing F8-10 Wharf</b>																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				
<b>Construct Wharf, Armor, Fill</b>																				
Land Ex																				
Rock Placement, Push Off & Tub & Orange Peels																				
Retaining Bulkhead Construction																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
<b>Basin Fill and Surcharge West</b>																				
Cutter Suction Dredging- Spill Barge (No Booster)																				
Cutter Suction Dredging- Land Disposal (No Booster)																				
Wick Drains																				
<b>Settlement Period</b>																				
Roll Surcharge																				
<b>Ph 2-2</b>																				
<b>Ph 2-3</b>																				
<b>Remove Surcharge</b>																				
Roll Surcharge																				
<b>CY Development</b>																				
New Container Yard Utilities																				
New Container Yard Construction - Paving																				
<b>Ph 2-3</b>																				
New Container Yard Construction - Electrical																				
<b>Activity Total Tons</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Yearly Total (Tons)</b>															4					

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd																
<b>Construct East Basin Retaining Dike</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Slip/Basin Fill &amp; Surcharge East</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Roll Surcharge</b>																		
Ph 2-1 Roll Surcharge																		
<b>Ph 2-2 Construction - New Terminal Buildings</b>																		
Building Construction																		
<b>Dredge and Excavate at Quay Wall</b>																		
Clamshell Dredging																		
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Basin Fill and Surcharge West</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Settlement Period</b>																		
Ph 2-2 Roll Surcharge																		
<b>Ph 2-3 Remove Surcharge</b>																		
Roll Surcharge																		
<b>CY Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 2-3 New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0
<b>Yearly Total (Tons)</b>																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2013		2013		2014		2014		2014		2014		2014		2014		2014		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun				
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	
<b>Construct East Basin Retaining Dike</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Slip/Basin Fill &amp; Surcharge East</b>																			
Cutter Suction Dredging- Spill Barge (No Booster)				0.35															
Cutter Suction Dredging- Land Disposal (No Booster)				0.30															
Wick Drains				0.00															
<b>Roll Surcharge</b>																			
Ph 2-1 Roll Surcharge																			
<b>Ph 2-2 Construction - New Terminal Buildings</b>																			
Building Construction																			
<b>Dredge and Excavate at Quay Wall</b>																			
Clamshell Dredging																			
<b>Demo Existing F8-10 Wharf</b>																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			
<b>Construct Wharf, Armor, Fill</b>																			
Land Ex																			
Rock Placement, Push Off & Tub & Orange Peels																			
Retaining Bulkhead Construction																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
<b>Basin Fill and Surcharge West</b>																			
Cutter Suction Dredging- Spill Barge (No Booster)																			
Cutter Suction Dredging- Land Disposal (No Booster)																			
Wick Drains																			
<b>Settlement Period</b>																			
Ph 2-2 Roll Surcharge																			
<b>Ph 2-3 Remove Surcharge</b>																			
Roll Surcharge																			
<b>CY Development</b>																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
Ph 2-3 New Container Yard Construction - Electrical																			
<b>Activity Total Tons</b>	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	
<b>Yearly Total (Tons)</b>					7														

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd	1st	2nd														
<b>Construct East Basin Retaining Dike</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Slip/Basin Fill &amp; Surcharge East</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)													1.42			0.12		
Cutter Suction Dredging- Land Disposal (No Booster)													1.21			0.10		
Wick Drains													0.00			0.00		
<b>Roll Surcharge</b>																		
Ph 2-1 Roll Surcharge																		
<b>Ph 2-2 Construction - New Terminal Buildings</b>																		
Building Construction																		
Dredge and Excavate at Quay Wall																		
Clamshell Dredging																		
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Basin Fill and Surcharge West</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Settlement Period</b>																		
Ph 2-2 Roll Surcharge																		
<b>Ph 2-3 Remove Surcharge</b>																		
Roll Surcharge																		
<b>CY Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 2-3 New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	0	0	6	0	0	2	0	0	0	0	0	5	0	0	0	0	0
<b>Yearly Total (Tons)</b>														14				

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd								
<b>Construct East Basin Retaining Dike</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Slip/Basin Fill &amp; Surcharge East</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Roll Surcharge</b>																
Ph 2-1 Roll Surcharge										0.00						
<b>Ph 2-2 Construction - New Terminal Buildings</b>																
Building Construction																
<b>Dredge and Excavate at Quay Wall</b>																
Clamshell Dredging																
<b>Demo Existing F8-10 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct Wharf, Armor, Fill</b>																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Basin Fill and Surcharge West</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Settlement Period</b>																
Ph 2-2 Roll Surcharge																
<b>Ph 2-3 Remove Surcharge</b>																
Roll Surcharge																
<b>CY Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 2-3 New Container Yard Construction - Electrical																
<b>Activity Total Tons</b>	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
<b>Yearly Total (Tons)</b>																

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016		2016		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun				
	1st	2nd																	
<b>Construct East Basin Retaining Dike</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Slip/Basin Fill &amp; Surcharge East</b>																			
Cutter Suction Dredging- Spill Barge (No Booster)																			
Cutter Suction Dredging- Land Disposal (No Booster)																			
Wick Drains																			
<b>Roll Surcharge</b>																			
Roll Surcharge																			
<b>Ph 2-1</b>																			
<b>Ph 2-2</b>																			
<b>Construction - New Terminal Buildings</b>																			
Building Construction																			
<b>Dredge and Excavate at Quay Wall</b>																			
Clamshell Dredging																			
<b>Demo Existing F8-10 Wharf</b>																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			
<b>Construct Wharf, Armor, Fill</b>																			
Land Ex																			
Rock Placement, Push Off & Tub & Orange Peels																			
Retaining Bulkhead Construction																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
<b>Basin Fill and Surcharge West</b>																			
Cutter Suction Dredging- Spill Barge (No Booster)																			
Cutter Suction Dredging- Land Disposal (No Booster)																			
Wick Drains																			
<b>Settlement Period</b>																			
Roll Surcharge																			
<b>Ph 2-2</b>																			
<b>Ph 2-3</b>																			
<b>Remove Surcharge</b>																			
Roll Surcharge																			
<b>CY Development</b>																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
<b>Ph 2-3</b>																			
New Container Yard Construction - Electrical																			
<b>Activity Total Tons</b>	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Yearly Total (Tons)</b>					4														

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2016		2017		2017	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
<b>Construct East Basin Retaining Dike</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Slip/Basin Fill &amp; Surcharge East</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Roll Surcharge</b>																		
Roll Surcharge																		
<b>Ph 2-1</b>																		
<b>Ph 2-2</b>																		
<b>Construction - New Terminal Buildings</b>																		
Building Construction													0.00					
Dredge and Excavate at Quay Wall																		
Clamshell Dredging													4.24		1.21			
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Basin Fill and Surcharge West</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Settlement Period</b>																		
Roll Surcharge																		
<b>Ph 2-2</b>																		
<b>Ph 2-3</b>																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>CY Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
<b>Ph 2-3</b>																		
New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0
<b>Yearly Total (Tons)</b>														5				

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd										
<b>Construct East Basin Retaining Dike</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Slip/Basin Fill &amp; Surcharge East</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Roll Surcharge</b>																		
Roll Surcharge																		
Ph 2-1																		
<b>Construction - New Terminal Buildings</b>																		
Building Construction																		
Dredge and Excavate at Quay Wall																		
Clamshell Dredging																		
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside												0.00						
Wharf Demolition Marine												0.08						
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Basin Fill and Surcharge West</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Settlement Period</b>																		
Roll Surcharge																		
Ph 2-2																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>CY Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 2-3																		
New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Yearly Total (Tons)</b>																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
<b>Construct East Basin Retaining Dike</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Slip/Basin Fill &amp; Surcharge East</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Roll Surcharge</b>																
Roll Surcharge																
<b>Ph 2-1</b>																
<b>Ph 2-2</b>																
<b>Construction - New Terminal Buildings</b>																
Building Construction				0.00								0.00				
Dredge and Excavate at Quay Wall																
Clamshell Dredging																
<b>Demo Existing F8-10 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct Wharf, Armor, Fill</b>																
Land Ex				0.00												
Rock Placement, Push Off & Tub & Orange Peels				3.83												
Retaining Bulkhead Construction				0.00												
Drive 24-In Octagonal Piles - Land				0.00												
Drive 24-In Octagonal Piles - Water				1.05												
Drive Piles - Misc Activities				0.00												
Reinforced Concrete Wharf				0.74												
<b>Basin Fill and Surcharge West</b>																
Cutter Suction Dredging- Spill Barge (No Booster)				1.06												3.17
Cutter Suction Dredging- Land Disposal (No Booster)				0.91												2.73
Wick Drains				0.00												0.00
<b>Settlement Period</b>																
Roll Surcharge																
<b>Ph 2-2</b>																
<b>Ph 2-3</b>																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>CY Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
<b>Ph 2-3</b>																
New Container Yard Construction - Electrical																
<b>Activity Total Tons</b>	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	6
<b>Yearly Total (Tons)</b>	9															

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
<b>Construct East Basin Retaining Dike</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Slip/Basin Fill &amp; Surcharge East</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Roll Surcharge</b>																		
Roll Surcharge																		
<b>Ph 2-1</b>																		
<b>Ph 2-2</b>																		
<b>Construction - New Terminal Buildings</b>																		
Building Construction																		
<b>Dredge and Excavate at Quay Wall</b>																		
Clamshell Dredging																		
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex							0.00											
Rock Placement, Push Off & Tub & Orange Peels							6.90											
Retaining Bulkhead Construction							0.00											
Drive 24-In Octagonal Piles - Land							0.00											
Drive 24-In Octagonal Piles - Water							1.89											
Drive Piles - Misc Activities							0.00											
Reinforced Concrete Wharf							1.34											
<b>Basin Fill and Surcharge West</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Settlement Period</b>																		
Roll Surcharge													0.0					
<b>Ph 2-3</b>																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>CY Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
<b>Ph 2-3</b>																		
New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0
<b>Yearly Total (Tons)</b>														16				

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 – Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019		2019	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd																
<b>Construct East Basin Retaining Dike</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Slip/Basin Fill &amp; Surcharge East</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Roll Surcharge</b>																		
Roll Surcharge																		
Ph 2-1																		
<b>Construction - New Terminal Buildings</b>																		
Building Construction																		
<b>Dredge and Excavate at Quay Wall</b>																		
Clamshell Dredging																		
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Basin Fill and Surcharge West</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Settlement Period</b>																		
Roll Surcharge																		
Ph 2-2																		
<b>Remove Surcharge</b>																		
Roll Surcharge									0.00									
<b>CY Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 2-3																		
New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Yearly Total (Tons)</b>																		

Table A-4-Alt1-146 Tugs-within3nm Annual NOx Emissions  
 - Federal Action Component of POLB Middle Harbor  
 Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
<b>Construct East Basin Retaining Dike</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Slip/Basin Fill &amp; Surcharge East</b>				
Cutter Suction Dredging- Spill Barge (No Booster)				
Cutter Suction Dredging- Land Disposal (No Booster)				
Wick Drains				
<b>Roll Surcharge</b>				
Ph 2-1 Roll Surcharge				
<b>Ph 2-2 Construction - New Terminal Buildings</b>				
Building Construction				
<b>Dredge and Excavate at Quay Wall</b>				
Clamshell Dredging				
<b>Demo Existing F8-10 Wharf</b>				
Wharf Demolition Landside				
Wharf Demolition Marine				
<b>Construct Wharf, Armor, Fill</b>				
Land Ex				
Rock Placement, Push Off & Tub & Orange Peels				
Retaining Bulkhead Construction				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
<b>Basin Fill and Surcharge West</b>				
Cutter Suction Dredging- Spill Barge (No Booster)				
Cutter Suction Dredging- Land Disposal (No Booster)				
Wick Drains				
<b>Settlement Period</b>				
Ph 2-2 Roll Surcharge				
<b>Ph 2-3 Remove Surcharge</b>				
Roll Surcharge				
<b>CY Development</b>				
New Container Yard Utilities		0.00		
New Container Yard Construction - Paving		0.00		
Ph 2-3 New Container Yard Construction - Electrical		0.00		
<b>Activity Total Tons</b>	0	0		
<b>Yearly Total (Tons)</b>	0			

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside				-												
Wharf Demolition Marine				-												
Sheet Pile Bulkhead Demolition				-												
Construct New Bulkhead																
Retaining Bulkhead Construction							0.00									
Excavation Fronting E24																
Clamshell Dredging															0.00	
Land Ex															0.00	
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels															1.36	
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels				1.07				4.29								
Fill within Dike																
Clamshell Dredging															0.00	
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E24																		
Clamshell Dredging																		
Land Ex																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Prepare for Toe Dike / Construct Dike (1st Lift)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Fill within Dike																		
Clamshell Dredging																		
Remaining Dike Lifts																		
Rock Placement, Push Off & Tub & Orange Peels																		
Remaining Fill Lifts																		
Clamshell Dredging																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Construct South Mooring Dolphin																		
Drive 24-In Octagonal Piles - Water																		
Wick Drains																		
Wick Drains																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011		2011		
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct				
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	
Ph 1-1 Demolish Existing Facilities																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			
Sheet Pile Bulkhead Demolition																			
Construct New Bulkhead																			
Retaining Bulkhead Construction																			
Excavation Fronting E24																			
Clamshell Dredging																			
Land Ex																			
Construct New Armor Slope																			
Rock Placement, Push Off & Tub & Orange Peels																			
Wharf Construction																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
Retaining Bulkhead Construction																			
Utility Construction																			
New Container Yard Utilities																			
Paving																			
New Container Yard Construction - Paving																			
Lighting, Striping, Crane Power																			
New Container Yard Construction - Electrical																			
Prepare for Toe Dike / Construct Dike (1st Lift)																			
Rock Placement, Push Off & Tub & Orange Peels																			
Fill within Dike																			
Clamshell Dredging																			
Remaining Dike Lifts																			
Rock Placement, Push Off & Tub & Orange Peels																			
Remaining Fill Lifts																			
Clamshell Dredging																			
Wharf Construction																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
Retaining Bulkhead Construction																			
Construct South Mooring Dolphin																			
Drive 24-In Octagonal Piles - Water		0.00																	
Wick Drains																			
Wick Drains																			

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2012		2012		2012		2012		2012		2012		2012		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun				
	1st	2nd																	
Ph 1-1 Demolish Existing Facilities																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			
Sheet Pile Bulkhead Demolition																			
Construct New Bulkhead																			
Retaining Bulkhead Construction																			
Excavation Fronting E24																			
Clamshell Dredging																			
Land Ex																			
Construct New Armor Slope																			
Rock Placement, Push Off & Tub & Orange Peels																			
Wharf Construction																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
Retaining Bulkhead Construction																			
Utility Construction																			
New Container Yard Utilities																			
Paving																			
New Container Yard Construction - Paving																			
Lighting, Striping, Crane Power																			
New Container Yard Construction - Electrical																			
Prepare for Toe Dike / Construct Dike (1st Lift)																			
Rock Placement, Push Off & Tub & Orange Peels																			
Fill within Dike																			
Clamshell Dredging																			
Remaining Dike Lifts																			
Rock Placement, Push Off & Tub & Orange Peels																			
Remaining Fill Lifts																			
Clamshell Dredging																			
Wharf Construction																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
Retaining Bulkhead Construction																			
Construct South Mooring Dolphin																			
Drive 24-In Octagonal Piles - Water																			
Wick Drains																			
Wick Drains																			

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2012		2013		2013	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>			
	<i>1st</i>	<i>2nd</i>																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E24																		
Clamshell Dredging																		
Land Ex																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Prepare for Toe Dike / Construct Dike (1st Lift)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Fill within Dike																		
Clamshell Dredging																		
Remaining Dike Lifts																		
Rock Placement, Push Off & Tub & Orange Peels																		
Remaining Fill Lifts																		
Clamshell Dredging																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Construct South Mooring Dolphin																		
Drive 24-In Octagonal Piles - Water																		
Wick Drains																		
Wick Drains																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>			
	<i>1st</i>	<i>2nd</i>																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E24																		
Clamshell Dredging																		
Land Ex																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Prepare for Toe Dike / Construct Dike (1st Lift)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Fill within Dike																		
Clamshell Dredging																		
Remaining Dike Lifts																		
Rock Placement, Push Off & Tub & Orange Peels																		
Remaining Fill Lifts																		
Clamshell Dredging																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Construct South Mooring Dolphin																		
Drive 24-In Octagonal Piles - Water																		
Wick Drains																		
Wick Drains																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E24																		
Clamshell Dredging																		
Land Ex																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Prepare for Toe Dike / Construct Dike (1st Lift)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Fill within Dike																		
Clamshell Dredging																		
Remaining Dike Lifts																		
Rock Placement, Push Off & Tub & Orange Peels																		
Remaining Fill Lifts																		
Clamshell Dredging																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Construct South Mooring Dolphin																		
Drive 24-In Octagonal Piles - Water																		
Wick Drains																		
Wick Drains																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2016		2017		2017	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E24																		
Clamshell Dredging																		
Land Ex																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Prepare for Toe Dike / Construct Dike (1st Lift)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Fill within Dike																		
Clamshell Dredging																		
Remaining Dike Lifts																		
Rock Placement, Push Off & Tub & Orange Peels																		
Remaining Fill Lifts																		
Clamshell Dredging																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Construct South Mooring Dolphin																		
Drive 24-In Octagonal Piles - Water																		
Wick Drains																		
Wick Drains																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>			
	<i>1st</i>	<i>2nd</i>																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E24																		
Clamshell Dredging																		
Land Ex																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Prepare for Toe Dike / Construct Dike (1st Lift)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Fill within Dike																		
Clamshell Dredging																		
Remaining Dike Lifts																		
Rock Placement, Push Off & Tub & Orange Peels																		
Remaining Fill Lifts																		
Clamshell Dredging																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Construct South Mooring Dolphin																		
Drive 24-In Octagonal Piles - Water																		
Wick Drains																		
Wick Drains																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities				
Wharf Demolition Landside				
Wharf Demolition Marine				
Sheet Pile Bulkhead Demolition				
Construct New Bulkhead				
Retaining Bulkhead Construction				
Excavation Fronting E24				
Clamshell Dredging				
Land Ex				
Construct New Armor Slope				
Rock Placement, Push Off & Tub & Orange Peels				
Wharf Construction				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
Retaining Bulkhead Construction				
Utility Construction				
New Container Yard Utilities				
Paving				
New Container Yard Construction - Paving				
Lighting, Striping, Crane Power				
New Container Yard Construction - Electrical				
Prepare for Toe Dike / Construct Dike (1st Lift)				
Rock Placement, Push Off & Tub & Orange Peels				
Fill within Dike				
Clamshell Dredging				
Remaining Dike Lifts				
Rock Placement, Push Off & Tub & Orange Peels				
Remaining Fill Lifts				
Clamshell Dredging				
Wharf Construction				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
Retaining Bulkhead Construction				
Construct South Mooring Dolphin				
Drive 24-In Octagonal Piles - Water				
Wick Drains				
Wick Drains				

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010		2010		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun				
	1st	2nd																	
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																			
Roll Surcharge																			
<b>Remove Surcharge to Slip 1 Fill Site</b>																			
Roll Surcharge																			
<b>Utility Construction</b>																			
New Container Yard Utilities																			
<b>Paving</b>																			
New Container Yard Construction - Paving																			
<b>Lighting, Fence, Striping, Crane Power</b>																			
New Container Yard Construction - Electrical																			
<b>Construct Retaining Structure at Pier D Oil Area</b>																			
Retaining Bulkhead Construction													0.00						
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																			
Land Ex																			
<b>Excavate Material Fronting Pier D</b>																			
Land Ex																			
Clamshell Dredging																			
<b>Remove Cellular Sheetpile</b>																			
Sheet Pile Bulkhead Demolition																			
<b>Rock Revetment</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																			
Clamshell Dredging																			
<b>Ground Improvements Pier D</b>																			
Stone Column Installation Eq																			
Marine Rock Delivery Eq																			
<b>Demo - E12-13 Wharf</b>																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			
<b>Lift #1 (- -30)</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Lift #2 (- -15)</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Lift #3 (- 0)</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Lift #4 (- +15)</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Initial Surcharge and Wick Drains</b>																			
Wick Drains																			
Roll Surcharge																			
<b>2nd Surcharge and Wick Drains</b>																			

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2011		2011		2011		
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb				
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																			
Roll Surcharge												0.00							
<b>Remove Surcharge to Slip 1 Fill Site</b>																			
Roll Surcharge																			
<b>Utility Construction</b>																			
New Container Yard Utilities																			
<b>Paving</b>																			
New Container Yard Construction - Paving																			
<b>Lighting, Fence, Striping, Crane Power</b>																			
New Container Yard Construction - Electrical																			
<b>Construct Retaining Structure at Pier D Oil Area</b>																			
Retaining Bulkhead Construction																			
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																			
Land Ex									0.00										
<b>Excavate Material Fronting Pier D</b>																			
Land Ex									0.00										
Clamshell Dredging									0.00										
<b>Remove Cellular Sheetpile</b>																			
Sheet Pile Bulkhead Demolition													0.00						
<b>Rock Revetment</b>																			
Rock Placement, Push Off & Tub & Orange Peels														3.12				1.17	
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																			
Clamshell Dredging									0.00										
<b>Ground Improvements Pier D</b>																			
Stone Column Installation Eq														0.00					0.00
Marine Rock Delivery Eq														0.00					0.00
<b>Demo - E12-13 Wharf</b>																			
Wharf Demolition Landside								0.00											
Wharf Demolition Marine								0.00											
<b>Lift #1 (- -30)</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Lift #2 (- -15)</b>																			
Rock Placement, Push Off & Tub & Orange Peels										1.43									
<b>Lift #3 (- 0)</b>																			
Rock Placement, Push Off & Tub & Orange Peels														0.83				0.42	
<b>Lift #4 (- +15)</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Initial Surcharge and Wick Drains</b>																			
Wick Drains																			
Roll Surcharge																			
<b>2nd Surcharge and Wick Drains</b>																			

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Surcharge (Initial Pump, Plus Clamshell or Truck)																		
Roll Surcharge																		
Remove Surcharge to Slip 1 Fill Site																		
Roll Surcharge				0.00														
Utility Construction																		
New Container Yard Utilities			0.00															
Paving																		
New Container Yard Construction - Paving									0.00									
Lighting, Fence, Striping, Crane Power																		
New Container Yard Construction - Electrical													0.00					
Construct Retaining Structure at Pier D Oil Area																		
Retaining Bulkhead Construction																		
Excavate & Truck Material in Cell Bulkhead																		
Land Ex																		
Excavate Material Fronting Pier D																		
Land Ex																		
Clamshell Dredging																		
Remove Cellular Sheetpile																		
Sheet Pile Bulkhead Demolition																		
Rock Revetment																		
Rock Placement, Push Off & Tub & Orange Peels																		
Hydraulic or Clamshell Dredge to -55 ft																		
Clamshell Dredging																		
Ground Improvements Pier D																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
Demo - E12-13 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Lift #1 (- -30)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #2 (- -15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #3 (- 0)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #4 (- +15)																		
Rock Placement, Push Off & Tub & Orange Peels				1.07														
Initial Surcharge and Wick Drains																		
Wick Drains							0.00											
Roll Surcharge							0.00											
2nd Surcharge and Wick Drains																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd																		
Surcharge (Initial Pump, Plus Clamshell or Truck)																				
Roll Surcharge																				
Remove Surcharge to Slip 1 Fill Site																				
Roll Surcharge																				
Utility Construction																				
New Container Yard Utilities																				
Paving																				
New Container Yard Construction - Paving																				
Lighting, Fence, Striping, Crane Power																				
New Container Yard Construction - Electrical																				
Construct Retaining Structure at Pier D Oil Area																				
Retaining Bulkhead Construction																				
Excavate & Truck Material in Cell Bulkhead																				
Land Ex																				
Excavate Material Fronting Pier D																				
Land Ex																				
Clamshell Dredging																				
Remove Cellular Sheetpile																				
Sheet Pile Bulkhead Demolition																				
Rock Revetment																				
Rock Placement, Push Off & Tub & Orange Peels																				
Hydraulic or Clamshell Dredge to -55 ft																				
Clamshell Dredging																				
Ground Improvements Pier D																				
Stone Column Installation Eq																				
Marine Rock Delivery Eq																				
Demo - E12-13 Wharf																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				
Lift #1 (- -30)																				
Rock Placement, Push Off & Tub & Orange Peels																				
Lift #2 (- -15)																				
Rock Placement, Push Off & Tub & Orange Peels																				
Lift #3 (- 0)																				
Rock Placement, Push Off & Tub & Orange Peels																				
Lift #4 (- +15)																				
Rock Placement, Push Off & Tub & Orange Peels																				
Initial Surcharge and Wick Drains																				
Wick Drains																				
Roll Surcharge																				
2nd Surcharge and Wick Drains																				

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2012		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Surcharge (Initial Pump, Plus Clamshell or Truck)																		
Roll Surcharge																		
Remove Surcharge to Slip 1 Fill Site																		
Roll Surcharge																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Fence, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Construct Retaining Structure at Pier D Oil Area																		
Retaining Bulkhead Construction																		
Excavate & Truck Material in Cell Bulkhead																		
Land Ex																		
Excavate Material Fronting Pier D																		
Land Ex																		
Clamshell Dredging																		
Remove Cellular Sheetpile																		
Sheet Pile Bulkhead Demolition																		
Rock Revetment																		
Rock Placement, Push Off & Tub & Orange Peels																		
Hydraulic or Clamshell Dredge to -55 ft																		
Clamshell Dredging																		
Ground Improvements Pier D																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
Demo - E12-13 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Lift #1 (- -30)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #2 (- -15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #3 (- 0)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #4 (- +15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Initial Surcharge and Wick Drains																		
Wick Drains																		
Roll Surcharge																		
2nd Surcharge and Wick Drains																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd																
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>																		
Roll Surcharge																		
<b>Remove Surcharge to Slip 1 Fill Site</b>																		
Roll Surcharge																		
<b>Utility Construction</b>																		
New Container Yard Utilities																		
<b>Paving</b>																		
New Container Yard Construction - Paving																		
<b>Lighting, Fence, Striping, Crane Power</b>																		
New Container Yard Construction - Electrical																		
<b>Construct Retaining Structure at Pier D Oil Area</b>																		
Retaining Bulkhead Construction																		
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																		
Land Ex																		
<b>Excavate Material Fronting Pier D</b>																		
Land Ex																		
<b>Clamshell Dredging</b>																		
<b>Remove Cellular Sheetpile</b>																		
Sheet Pile Bulkhead Demolition																		
<b>Rock Revetment</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																		
Clamshell Dredging																		
<b>Ground Improvements Pier D</b>																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
<b>Demo - E12-13 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Lift #1 (- -30)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #2 (- -15)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #3 (- 0)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Lift #4 (- +15)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Initial Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>2nd Surcharge and Wick Drains</b>																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Surcharge (Initial Pump, Plus Clamshell or Truck)																		
Roll Surcharge																		
Remove Surcharge to Slip 1 Fill Site																		
Roll Surcharge																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Fence, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Construct Retaining Structure at Pier D Oil Area																		
Retaining Bulkhead Construction																		
Excavate & Truck Material in Cell Bulkhead																		
Land Ex																		
Excavate Material Fronting Pier D																		
Land Ex																		
Clamshell Dredging																		
Remove Cellular Sheetpile																		
Sheet Pile Bulkhead Demolition																		
Rock Revetment																		
Rock Placement, Push Off & Tub & Orange Peels																		
Hydraulic or Clamshell Dredge to -55 ft																		
Clamshell Dredging																		
Ground Improvements Pier D																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
Demo - E12-13 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Lift #1 (- -30)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #2 (- -15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #3 (- 0)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #4 (- +15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Initial Surcharge and Wick Drains																		
Wick Drains																		
Roll Surcharge																		
2nd Surcharge and Wick Drains																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd																
Surcharge (Initial Pump, Plus Clamshell or Truck)																		
Roll Surcharge																		
Remove Surcharge to Slip 1 Fill Site																		
Roll Surcharge																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Fence, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Construct Retaining Structure at Pier D Oil Area																		
Retaining Bulkhead Construction																		
Excavate & Truck Material in Cell Bulkhead																		
Land Ex																		
Excavate Material Fronting Pier D																		
Land Ex																		
Clamshell Dredging																		
Remove Cellular Sheetpile																		
Sheet Pile Bulkhead Demolition																		
Rock Revetment																		
Rock Placement, Push Off & Tub & Orange Peels																		
Hydraulic or Clamshell Dredge to -55 ft																		
Clamshell Dredging																		
Ground Improvements Pier D																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
Demo - E12-13 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Lift #1 (- -30)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #2 (- -15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #3 (- 0)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #4 (- +15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Initial Surcharge and Wick Drains																		
Wick Drains																		
Roll Surcharge																		
2nd Surcharge and Wick Drains																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2016		2017		2017	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Surcharge (Initial Pump, Plus Clamshell or Truck)																		
Roll Surcharge																		
Remove Surcharge to Slip 1 Fill Site																		
Roll Surcharge																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Fence, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Construct Retaining Structure at Pier D Oil Area																		
Retaining Bulkhead Construction																		
Excavate & Truck Material in Cell Bulkhead																		
Land Ex																		
Excavate Material Fronting Pier D																		
Land Ex																		
Clamshell Dredging																		
Remove Cellular Sheetpile																		
Sheet Pile Bulkhead Demolition																		
Rock Revetment																		
Rock Placement, Push Off & Tub & Orange Peels																		
Hydraulic or Clamshell Dredge to -55 ft																		
Clamshell Dredging																		
Ground Improvements Pier D																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
Demo - E12-13 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Lift #1 (- -30)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #2 (- -15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #3 (- 0)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #4 (- +15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Initial Surcharge and Wick Drains																		
Wick Drains																		
Roll Surcharge																		
2nd Surcharge and Wick Drains																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Surcharge (Initial Pump, Plus Clamshell or Truck)																		
Roll Surcharge																		
Remove Surcharge to Slip 1 Fill Site																		
Roll Surcharge																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Fence, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Construct Retaining Structure at Pier D Oil Area																		
Retaining Bulkhead Construction																		
Excavate & Truck Material in Cell Bulkhead																		
Land Ex																		
Excavate Material Fronting Pier D																		
Land Ex																		
Clamshell Dredging																		
Remove Cellular Sheetpile																		
Sheet Pile Bulkhead Demolition																		
Rock Revetment																		
Rock Placement, Push Off & Tub & Orange Peels																		
Hydraulic or Clamshell Dredge to -55 ft																		
Clamshell Dredging																		
Ground Improvements Pier D																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
Demo - E12-13 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Lift #1 (- -30)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #2 (- -15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #3 (- 0)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #4 (- +15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Initial Surcharge and Wick Drains																		
Wick Drains																		
Roll Surcharge																		
2nd Surcharge and Wick Drains																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Surcharge (Initial Pump, Plus Clamshell or Truck)																
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
<b>Surcharge (Initial Pump, Plus Clamshell or Truck)</b>				
Roll Surcharge				
<b>Remove Surcharge to Slip 1 Fill Site</b>				
Roll Surcharge				
<b>Utility Construction</b>				
New Container Yard Utilities				
<b>Paving</b>				
New Container Yard Construction - Paving				
<b>Lighting, Fence, Striping, Crane Power</b>				
New Container Yard Construction - Electrical				
<b>Construct Retaining Structure at Pier D Oil Area</b>				
Retaining Bulkhead Construction				
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>				
Land Ex				
<b>Excavate Material Fronting Pier D</b>				
Land Ex				
<b>Clamshell Dredging</b>				
<b>Remove Cellular Sheetpile</b>				
Sheet Pile Bulkhead Demolition				
<b>Rock Revetment</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Hydraulic or Clamshell Dredge to -55 ft</b>				
Clamshell Dredging				
<b>Ground Improvements Pier D</b>				
Stone Column Installation Eq				
Marine Rock Delivery Eq				
<b>Demo - E12-13 Wharf</b>				
Wharf Demolition Landside				
Wharf Demolition Marine				
<b>Lift #1 (- -30)</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Lift #2 (- -15)</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Lift #3 (- 0)</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Lift #4 (- +15)</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Initial Surcharge and Wick Drains</b>				
Wick Drains				
Roll Surcharge				
<b>2nd Surcharge and Wick Drains</b>				

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Ph 1-2																		
Clamshell Dredging																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2012		2012		2012		2012		2012		2012		2012		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun				
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	
Wick Drains																			
Roll Surcharge																			
<b>3rd Surcharge and Wick Drains</b>																			
Wick Drains																			
Roll Surcharge																			
<b>4th Surcharge and Wick Drains</b>																			
Wick Drains																			
Roll Surcharge																			
<b>Remove Surcharge</b>																			
Roll Surcharge																			
<b>Container Yard Development</b>																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
New Container Yard Construction - Electrical																			
<b>POLB Ocean Blvd Track Reconfiguration</b>																			
Triple Track Installation Demo Eq																			
Triple Track Utility Relocation Eq																			
Triple Track Grading Eq																			
Triple Track Retaining Wall Eq		0.00																	
Triple Track Trackwork Eq				0.00								0.00							
Triple Track Miscellaneous Eq				0.00								0.00							
Ph 1-1																			
Ph 1-2																			
<b>Demolish Existing Facilities</b>																			
Sheet Pile Bulkhead Demolition				0.00		0.00													
Wharf Demolition Landside				0.00		0.00													
Wharf Demolition Marine				0.00		0.00													
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																			
Retaining Bulkhead Construction				0.00															
<b>Excavation Fronting E25 and Dispose Slip 1</b>																			
Clamshell Dredging				0.00		0.00													
<b>Construct New Armor Slope</b>																			
Rock Placement, Push Off & Tub & Orange Peels												1.63							
<b>Wharf Construction</b>																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
<b>CY Development</b>																			
New Container Yard Construction - Paving																			
<b>Dredge to -55 ft</b>																			
Ph 1-2																			
Clamshell Dredging								0.00											
Ph 1-3																			
<b>Demolish Existing Facilities</b>																			

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2012		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd		
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge		0.00																
<b>Container Yard Development</b>																		
New Container Yard Utilities													0.00					
New Container Yard Construction - Paving													0.00					
New Container Yard Construction - Electrical													0.00					
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land									0.00									
Drive 24-In Octagonal Piles - Water									0.00									
Drive Piles - Misc Activities									0.00									
Reinforced Concrete Wharf									0.00									
<b>CY Development</b>																		
New Container Yard Construction - Paving													0.00					
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities								0.00								
New Container Yard Construction - Paving								0.00								
New Container Yard Construction - Electrical								0.00								
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving		0.00														
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
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Rock Placement, Push Off & Tub & Orange Peels																		
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Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
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<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
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New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2016		2017		2017	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
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<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
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Triple Track Grading Eq																		
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<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
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Drive 24-In Octagonal Piles - Land																		
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<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
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New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
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Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wick Drains																		
Roll Surcharge																		
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Wick Drains																
Roll Surcharge																
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
Wick Drains				
Roll Surcharge				
<b>3rd Surcharge and Wick Drains</b>				
Wick Drains				
Roll Surcharge				
<b>4th Surcharge and Wick Drains</b>				
Wick Drains				
Roll Surcharge				
<b>Remove Surcharge</b>				
Roll Surcharge				
<b>Container Yard Development</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
New Container Yard Construction - Electrical				
<b>POLB Ocean Blvd Track Reconfiguration</b>				
Triple Track Installation Demo Eq				
Triple Track Utility Relocation Eq				
Triple Track Grading Eq				
Triple Track Retaining Wall Eq				
Triple Track Trackwork Eq				
Triple Track Miscellaneous Eq				
Ph 1-1				
Ph 1-2				
<b>Demolish Existing Facilities</b>				
Sheet Pile Bulkhead Demolition				
Wharf Demolition Landside				
Wharf Demolition Marine				
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>				
Retaining Bulkhead Construction				
<b>Excavation Fronting E25 and Dispose Slip 1</b>				
Clamshell Dredging				
<b>Construct New Armor Slope</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Wharf Construction</b>				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
<b>CY Development</b>				
New Container Yard Construction - Paving				
<b>Dredge to -55 ft</b>				
Clamshell Dredging				
Ph 1-2				
Ph 1-3				
<b>Demolish Existing Facilities</b>				

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd																
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E26 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Construct E27 Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>CY Development</b>																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
<b>Hydraulic Dredge to -55ft</b>																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 <b>Construction</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 <b>Demolition</b>																		
Wharf Demolition Landside																		
<b>Railyard</b>																		
Intermodal Yard Construction																		
<b>Container Yard Development (F1 - F4)</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>Demo Existing F1-4, F6 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E26 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Construct E27 Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>CY Development</b>																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
<b>Hydraulic Dredge to -55ft</b>																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 <b>Construction</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 <b>Demolition</b>																		
Wharf Demolition Landside																		
<b>Railyard</b>																		
Intermodal Yard Construction																		
<b>Container Yard Development (F1 - F4)</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>Demo Existing F1-4, F6 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd																
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E26 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Construct E27 Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>CY Development</b>																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
<b>Hydraulic Dredge to -55ft</b>																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 <b>Construction</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 <b>Demolition</b>																		
Wharf Demolition Landside																		
<b>Railyard</b>																		
Intermodal Yard Construction																		
<b>Container Yard Development (F1 - F4)</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>Demo Existing F1-4, F6 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd																		
Wharf Demolition Landside																				
Wharf Demolition Marine																				
Sheet Pile Bulkhead Demolition																				
<b>Construct New Bulkhead</b>																				
Retaining Bulkhead Construction																				
<b>Excavation Fronting E26 and Dispose Slip 1</b>																				
Clamshell Dredging																				
<b>Construct New Armor Slope</b>																				
Rock Placement, Push Off & Tub & Orange Peels																				
<b>Wharf Construction</b>																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
<b>Construct E27 Bulkhead</b>																				
Retaining Bulkhead Construction																				
<b>CY Development</b>																				
Vibratory Hammer & Power Pack																				
Flatbed Truck																				
Welding Machine																				
<b>Hydraulic Dredge to -55ft</b>																				
Ph 1-3 Clamshell Dredging																				
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																				
New Container Yard Utilities																				
New Container Yard Construction - Paving																				
Ph 1-4 New Container Yard Construction - Electrical																				
Ph 1-5 <b>Construction</b>																				
New Container Yard Utilities																				
New Container Yard Construction - Paving																				
Ph 1-5 New Container Yard Construction - Electrical																				
Ph 2-1 <b>Demolition</b>																				
Wharf Demolition Landside																				
<b>Railyard</b>																				
Intermodal Yard Construction																				
<b>Container Yard Development (F1 - F4)</b>																				
New Container Yard Utilities																				
New Container Yard Construction - Paving																				
New Container Yard Construction - Electrical																				
<b>Demo Existing F1-4, F6 Wharf</b>																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2012		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E26 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Construct E27 Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>CY Development</b>																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
<b>Hydraulic Dredge to -55ft</b>																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 <b>Construction</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 <b>Demolition</b>																		
Wharf Demolition Landside																		
<b>Railyard</b>																		
Intermodal Yard Construction																		
<b>Container Yard Development (F1 - F4)</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>Demo Existing F1-4, F6 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013		2013		
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct				
	1st	2nd																	
Wharf Demolition Landside																			0.00
Wharf Demolition Marine																			0.00
Sheet Pile Bulkhead Demolition																			0.00
<b>Construct New Bulkhead</b>																			
Retaining Bulkhead Construction																			
<b>Excavation Fronting E26 and Dispose Slip 1</b>																			
Clamshell Dredging																			
<b>Construct New Armor Slope</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Wharf Construction</b>																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
<b>Construct E27 Bulkhead</b>																			
Retaining Bulkhead Construction																			
<b>CY Development</b>																			
Vibratory Hammer & Power Pack																			
Flatbed Truck																			
Welding Machine																			
<b>Hydraulic Dredge to -55ft</b>																			
Ph 1-3 Clamshell Dredging																			
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
Ph 1-4 New Container Yard Construction - Electrical																			
Ph 1-5 <b>Construction</b>																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
Ph 1-5 New Container Yard Construction - Electrical																			
Ph 2-1 <b>Demolition</b>																			
Wharf Demolition Landside																			0.00
<b>Railyard</b>																			
Intermodal Yard Construction																			
<b>Container Yard Development (F1 - F4)</b>																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
New Container Yard Construction - Electrical																			
<b>Demo Existing F1-4, F6 Wharf</b>																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2014		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction			0.00															
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging				0.00							0.00							
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Construct E27 Bulkhead																		
Retaining Bulkhead Construction				0.00		0.00												
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction				0.00														
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels				8.05														
Wharf Construction																		
Drive 24-In Octagonal Piles - Land													0.00					
Drive 24-In Octagonal Piles - Water													0.00					
Drive Piles - Misc Activities													0.00					
Reinforced Concrete Wharf													0.00					
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging								0.00										
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction				0.00														
Container Yard Development (F1 - F4)																		
New Container Yard Utilities													0.00	0.00				
New Container Yard Construction - Paving													0.00	0.00				
New Container Yard Construction - Electrical													0.00	0.00				
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land				0.00														
Drive 24-In Octagonal Piles - Water				0.00														
Drive Piles - Misc Activities				0.00														
Reinforced Concrete Wharf				0.00														
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction																		
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack		0.00																
Flatbed Truck		0.00																
Welding Machine		0.00																
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities				0.00														
New Container Yard Construction - Paving				0.00														
Ph 1-5 New Container Yard Construction - Electrical				0.00														
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction																		
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside				0.00		0.00												
Wharf Demolition Marine				0.00		0.00												

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2016		2017		2017	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd	1st	2nd														
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities														0.00				
New Container Yard Construction - Paving														0.00				
Ph 1-4 New Container Yard Construction - Electrical														0.00				
Ph 1-5 Construction																		
New Container Yard Utilities														0.00				
New Container Yard Construction - Paving														0.00				
Ph 1-5 New Container Yard Construction - Electrical														0.00				
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction																		
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd																
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities																		0.00
New Container Yard Construction - Paving																		0.00
Ph 1-5 New Container Yard Construction - Electrical																		0.00
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction																		
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities				0.00				0.00										
New Container Yard Construction - Paving				0.00				0.00										
Ph 1-4 New Container Yard Construction - Electrical				0.00				0.00										
Ph 1-5 Construction																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction																		
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-4 Seaside Railyard Area Redevelopment																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-4 New Container Yard Construction - Electrical																		
Ph 1-5 Construction																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
Ph 1-5 New Container Yard Construction - Electrical																		
Ph 2-1 Demolition																		
Wharf Demolition Landside																		
Railyard																		
Intermodal Yard Construction																		
Container Yard Development (F1 - F4)																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E26 and Dispose Slip 1																
Clamshell Dredging																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Construct E27 Bulkhead																
Retaining Bulkhead Construction																
CY Development																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
Hydraulic Dredge to -55ft																
Ph 1-3 Clamshell Dredging																
Ph 1-4 Seaside Railyard Area Redevelopment																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-4 New Container Yard Construction - Electrical																
Ph 1-5 Construction																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 1-5 New Container Yard Construction - Electrical																
Ph 2-1 Demolition																
Wharf Demolition Landside																
Railyard																
Intermodal Yard Construction																
Container Yard Development (F1 - F4)																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
Demo Existing F1-4, F6 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
Wharf Demolition Landside				
Wharf Demolition Marine				
Sheet Pile Bulkhead Demolition				
<b>Construct New Bulkhead</b>				
Retaining Bulkhead Construction				
<b>Excavation Fronting E26 and Dispose Slip 1</b>				
Clamshell Dredging				
<b>Construct New Armor Slope</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Wharf Construction</b>				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
<b>Construct E27 Bulkhead</b>				
Retaining Bulkhead Construction				
<b>CY Development</b>				
Vibratory Hammer & Power Pack				
Flatbed Truck				
Welding Machine				
<b>Hydraulic Dredge to -55ft</b>				
Ph 1-3 Clamshell Dredging				
Ph 1-4 <b>Seaside Railyard Area Redevelopment</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
Ph 1-4 New Container Yard Construction - Electrical				
Ph 1-5 <b>Construction</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
Ph 1-5 New Container Yard Construction - Electrical				
Ph 2-1 <b>Demolition</b>				
Wharf Demolition Landside				
<b>Railyard</b>				
Intermodal Yard Construction				
<b>Container Yard Development (F1 - F4)</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
New Container Yard Construction - Electrical				
<b>Demo Existing F1-4, F6 Wharf</b>				
Wharf Demolition Landside				
Wharf Demolition Marine				

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2009		2009		2010		2010		2010		2010		2010		2010		2010		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun				
	1st	2nd																	
<b>Construct East Basin Retaining Dike</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Slip/Basin Fill &amp; Surcharge East</b>																			
Cutter Suction Dredging- Spill Barge (No Booster)																			
Cutter Suction Dredging- Land Disposal (No Booster)																			
Wick Drains																			
<b>Roll Surcharge</b>																			
Roll Surcharge																			
<b>Ph 2-1</b>																			
<b>Construction - New Terminal Buildings</b>																			
Building Construction																			
<b>Dredge and Excavate at Quay Wall</b>																			
Clamshell Dredging																			
<b>Demo Existing F8-10 Wharf</b>																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			
<b>Construct Wharf, Armor, Fill</b>																			
Land Ex																			
Rock Placement, Push Off & Tub & Orange Peels																			
Retaining Bulkhead Construction																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
<b>Basin Fill and Surcharge West</b>																			
Cutter Suction Dredging- Spill Barge (No Booster)																			
Cutter Suction Dredging- Land Disposal (No Booster)																			
Wick Drains																			
<b>Settlement Period</b>																			
Roll Surcharge																			
<b>Ph 2-2</b>																			
<b>Remove Surcharge</b>																			
Roll Surcharge																			
<b>CY Development</b>																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
<b>Ph 2-3</b>																			
New Container Yard Construction - Electrical																			
<b>Activity Total Tons</b>	0	0	0	1	0	0	0	4	0	0	0	0	0	0	1	0	0	2	
<b>Yearly Total (Tons)</b>					1														

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2010		2010		2010		2010		2010		2010		2010		2011		2011	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>			
	<i>1st</i>	<i>2nd</i>																
<b>Construct East Basin Retaining Dike</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Slip/Basin Fill &amp; Surcharge East</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Roll Surcharge</b>																		
Roll Surcharge																		
<b>Ph 2-1</b>																		
<b>Ph 2-2</b>																		
<b>Construction - New Terminal Buildings</b>																		
Building Construction																		
<b>Dredge and Excavate at Quay Wall</b>																		
Clamshell Dredging																		
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Basin Fill and Surcharge West</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Settlement Period</b>																		
Roll Surcharge																		
<b>Ph 2-2</b>																		
<b>Ph 2-3</b>																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>CY Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
<b>Ph 2-3</b>																		
New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	0	5	0	0	0	0	1	0	0	0	4	0	0	1	0		
<b>Yearly Total (Tons)</b>													19					

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd																
<b>Construct East Basin Retaining Dike</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Slip/Basin Fill &amp; Surcharge East</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Roll Surcharge</b>																		
Roll Surcharge																		
<b>Ph 2-1</b>																		
<b>Ph 2-2</b>																		
<b>Construction - New Terminal Buildings</b>																		
Building Construction																		
<b>Dredge and Excavate at Quay Wall</b>																		
Clamshell Dredging																		
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Basin Fill and Surcharge West</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Settlement Period</b>																		
Roll Surcharge																		
<b>Ph 2-2</b>																		
<b>Ph 2-3</b>																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>CY Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
<b>Ph 2-3</b>																		
New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Yearly Total (Tons)</b>																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2011		2011		2012		2012		2012		2012		2012		2012		2012		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun				
	1st	2nd																	
Construct East Basin Retaining Dike																			
Rock Placement, Push Off & Tub & Orange Peels																			
Slip/Basin Fill & Surcharge East																			
Cutter Suction Dredging- Spill Barge (No Booster)																			
Cutter Suction Dredging- Land Disposal (No Booster)																			
Wick Drains																			
Roll Surcharge																			
Ph 2-1 Roll Surcharge																			
Ph 2-2 Construction - New Terminal Buildings																			
Building Construction																			
Dredge and Excavate at Quay Wall																			
Clamshell Dredging																			
Demo Existing F8-10 Wharf																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			
Construct Wharf, Armor, Fill																			
Land Ex																			
Rock Placement, Push Off & Tub & Orange Peels																			
Retaining Bulkhead Construction																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
Basin Fill and Surcharge West																			
Cutter Suction Dredging- Spill Barge (No Booster)																			
Cutter Suction Dredging- Land Disposal (No Booster)																			
Wick Drains																			
Settlement Period																			
Ph 2-2 Roll Surcharge																			
Ph 2-3 Remove Surcharge																			
Roll Surcharge																			
CY Development																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
Ph 2-3 New Container Yard Construction - Electrical																			
Activity Total Tons	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	
Yearly Total (Tons)					3														

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2012		2012		2012		2012		2012		2012		2012		2013		2013	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>			
	<i>1st</i>	<i>2nd</i>																
<b>Construct East Basin Retaining Dike</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Slip/Basin Fill &amp; Surcharge East</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Roll Surcharge</b>																		
Roll Surcharge																		
<b>Ph 2-1</b>																		
<b>Ph 2-2</b>																		
<b>Construction - New Terminal Buildings</b>																		
Building Construction																		
<b>Dredge and Excavate at Quay Wall</b>																		
Clamshell Dredging																		
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Basin Fill and Surcharge West</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Settlement Period</b>																		
Roll Surcharge																		
<b>Ph 2-2</b>																		
<b>Ph 2-3</b>																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>CY Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
<b>Ph 2-3</b>																		
New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Yearly Total (Tons)</b>														2				

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd																
<b>Construct East Basin Retaining Dike</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Slip/Basin Fill &amp; Surcharge East</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Roll Surcharge</b>																		
Roll Surcharge																		
<b>Ph 2-1</b>																		
<b>Ph 2-2</b>																		
<b>Construction - New Terminal Buildings</b>																		
Building Construction																		
<b>Dredge and Excavate at Quay Wall</b>																		
Clamshell Dredging																		
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Basin Fill and Surcharge West</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Settlement Period</b>																		
Roll Surcharge																		
<b>Ph 2-2</b>																		
<b>Ph 2-3</b>																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>CY Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
<b>Ph 2-3</b>																		
New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0
<b>Yearly Total (Tons)</b>																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2013		2013		2014		2014		2014		2014		2014		2014		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun		
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	
Construct East Basin Retaining Dike																	
Rock Placement, Push Off & Tub & Orange Peels																	
Slip/Basin Fill & Surcharge East																	
Cutter Suction Dredging- Spill Barge (No Booster)				0.00													
Cutter Suction Dredging- Land Disposal (No Booster)				0.00													
Wick Drains				0.00													
Roll Surcharge																	
Ph 2-1 Roll Surcharge																	
Ph 2-2 Construction - New Terminal Buildings																	
Building Construction																	
Dredge and Excavate at Quay Wall																	
Clamshell Dredging																	
Demo Existing F8-10 Wharf																	
Wharf Demolition Landside																	
Wharf Demolition Marine																	
Construct Wharf, Armor, Fill																	
Land Ex																	
Rock Placement, Push Off & Tub & Orange Peels																	
Retaining Bulkhead Construction																	
Drive 24-In Octagonal Piles - Land																	
Drive 24-In Octagonal Piles - Water																	
Drive Piles - Misc Activities																	
Reinforced Concrete Wharf																	
Basin Fill and Surcharge West																	
Cutter Suction Dredging- Spill Barge (No Booster)																	
Cutter Suction Dredging- Land Disposal (No Booster)																	
Wick Drains																	
Settlement Period																	
Ph 2-2 Roll Surcharge																	
Ph 2-3 Remove Surcharge																	
Roll Surcharge																	
CY Development																	
New Container Yard Utilities																	
New Container Yard Construction - Paving																	
Ph 2-3 New Container Yard Construction - Electrical																	
Activity Total Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Yearly Total (Tons)					8												

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015		
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb				
	1st	2nd	1st	2nd															
Construct East Basin Retaining Dike																			
Rock Placement, Push Off & Tub & Orange Peels																			
Slip/Basin Fill & Surcharge East																			
Cutter Suction Dredging- Spill Barge (No Booster)													0.00			0.00			
Cutter Suction Dredging- Land Disposal (No Booster)													0.00			0.00			
Wick Drains													0.00			0.00			
Roll Surcharge																			
Ph 2-1 Roll Surcharge																			
Ph 2-2 Construction - New Terminal Buildings																			
Building Construction																			
Dredge and Excavate at Quay Wall																			
Clamshell Dredging																			
Demo Existing F8-10 Wharf																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			
Construct Wharf, Armor, Fill																			
Land Ex																			
Rock Placement, Push Off & Tub & Orange Peels																			
Retaining Bulkhead Construction																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
Basin Fill and Surcharge West																			
Cutter Suction Dredging- Spill Barge (No Booster)																			
Cutter Suction Dredging- Land Disposal (No Booster)																			
Wick Drains																			
Settlement Period																			
Ph 2-2 Roll Surcharge																			
Ph 2-3 Remove Surcharge																			
Roll Surcharge																			
CY Development																			
New Container Yard Utilities																			
New Container Yard Construction - Paving																			
Ph 2-3 New Container Yard Construction - Electrical																			
Activity Total Tons	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Yearly Total (Tons)														8					

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd								
Construct East Basin Retaining Dike																
Rock Placement, Push Off & Tub & Orange Peels																
Slip/Basin Fill & Surcharge East																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Roll Surcharge																
Ph 2-1 Roll Surcharge										0.00						
Ph 2-2 Construction - New Terminal Buildings																
Building Construction																
Dredge and Excavate at Quay Wall																
Clamshell Dredging																
Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Basin Fill and Surcharge West																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Settlement Period																
Ph 2-2 Roll Surcharge																
Ph 2-3 Remove Surcharge																
Roll Surcharge																
CY Development																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 2-3 New Container Yard Construction - Electrical																
Activity Total Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yearly Total (Tons)																

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2015		2015		2016		2016		2016		2016		2016		2016		2016			
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd																		
Construct East Basin Retaining Dike																				
Rock Placement, Push Off & Tub & Orange Peels																				
Slip/Basin Fill & Surcharge East																				
Cutter Suction Dredging- Spill Barge (No Booster)																				
Cutter Suction Dredging- Land Disposal (No Booster)																				
Wick Drains																				
Roll Surcharge																				
Ph 2-1 Roll Surcharge																				
Ph 2-2 Construction - New Terminal Buildings																				
Building Construction																				
Dredge and Excavate at Quay Wall																				
Clamshell Dredging																				
Demo Existing F8-10 Wharf																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				
Construct Wharf, Armor, Fill																				
Land Ex																				
Rock Placement, Push Off & Tub & Orange Peels																				
Retaining Bulkhead Construction																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
Basin Fill and Surcharge West																				
Cutter Suction Dredging- Spill Barge (No Booster)																				
Cutter Suction Dredging- Land Disposal (No Booster)																				
Wick Drains																				
Settlement Period																				
Ph 2-2 Roll Surcharge																				
Ph 2-3 Remove Surcharge																				
Roll Surcharge																				
CY Development																				
New Container Yard Utilities																				
New Container Yard Construction - Paving																				
Ph 2-3 New Container Yard Construction - Electrical																				
Activity Total Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Yearly Total (Tons)	0																			

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2016		2016		2016		2016		2016		2016		2017		2017		
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb		
	1st	2nd	1st	2nd	1st	2nd											
<b>Construct East Basin Retaining Dike</b>																	
Rock Placement, Push Off & Tub & Orange Peels																	
<b>Slip/Basin Fill &amp; Surcharge East</b>																	
Cutter Suction Dredging- Spill Barge (No Booster)																	
Cutter Suction Dredging- Land Disposal (No Booster)																	
Wick Drains																	
<b>Roll Surcharge</b>																	
Roll Surcharge																	
<b>Ph 2-1</b>																	
<b>Ph 2-2</b>																	
<b>Construction - New Terminal Buildings</b>																	
Building Construction												0.00					
<b>Dredge and Excavate at Quay Wall</b>																	
Clamshell Dredging												0.00		0.00			
<b>Demo Existing F8-10 Wharf</b>																	
Wharf Demolition Landside																	
Wharf Demolition Marine																	
<b>Construct Wharf, Armor, Fill</b>																	
Land Ex																	
Rock Placement, Push Off & Tub & Orange Peels																	
Retaining Bulkhead Construction																	
Drive 24-In Octagonal Piles - Land																	
Drive 24-In Octagonal Piles - Water																	
Drive Piles - Misc Activities																	
Reinforced Concrete Wharf																	
<b>Basin Fill and Surcharge West</b>																	
Cutter Suction Dredging- Spill Barge (No Booster)																	
Cutter Suction Dredging- Land Disposal (No Booster)																	
Wick Drains																	
<b>Settlement Period</b>																	
Roll Surcharge																	
<b>Ph 2-2</b>																	
<b>Ph 2-3</b>																	
<b>Remove Surcharge</b>																	
Roll Surcharge																	
<b>CY Development</b>																	
New Container Yard Utilities																	
New Container Yard Construction - Paving																	
<b>Ph 2-3</b>																	
New Container Yard Construction - Electrical																	
<b>Activity Total Tons</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Yearly Total (Tons)</b>													0				

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2017		2017		2017		2017		2017		2017		2017	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd										
<b>Construct East Basin Retaining Dike</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Slip/Basin Fill &amp; Surcharge East</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Roll Surcharge</b>																		
Roll Surcharge																		
<b>Ph 2-1</b>																		
<b>Ph 2-2</b>																		
<b>Construction - New Terminal Buildings</b>																		
Building Construction																		
<b>Dredge and Excavate at Quay Wall</b>																		
Clamshell Dredging																		
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside												0.00						
Wharf Demolition Marine												0.00						
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Basin Fill and Surcharge West</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Settlement Period</b>																		
Roll Surcharge																		
<b>Ph 2-2</b>																		
<b>Ph 2-3</b>																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>CY Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
<b>Ph 2-3</b>																		
New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Yearly Total (Tons)</b>																		

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2017		2017		2018		2018		2018		2018		2018		2018	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Construct East Basin Retaining Dike																
Rock Placement, Push Off & Tub & Orange Peels																
Slip/Basin Fill & Surcharge East																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
Roll Surcharge																
Ph 2-1 Roll Surcharge																
Ph 2-2 Construction - New Terminal Buildings																
Building Construction				0.00									0.00			
Dredge and Excavate at Quay Wall																
Clamshell Dredging																
Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex				0.00												
Rock Placement, Push Off & Tub & Orange Peels				5.26												
Retaining Bulkhead Construction				0.00												
Drive 24-In Octagonal Piles - Land				0.00												
Drive 24-In Octagonal Piles - Water				0.00												
Drive Piles - Misc Activities				0.00												
Reinforced Concrete Wharf				0.00												
Basin Fill and Surcharge West																
Cutter Suction Dredging- Spill Barge (No Booster)				0.00												0.00
Cutter Suction Dredging- Land Disposal (No Booster)				0.00												0.00
Wick Drains				0.00												0.00
Settlement Period																
Ph 2-2 Roll Surcharge																
Ph 2-3 Remove Surcharge																
Roll Surcharge																
CY Development																
New Container Yard Utilities																
New Container Yard Construction - Paving																
Ph 2-3 New Container Yard Construction - Electrical																
Activity Total Tons	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Yearly Total (Tons)	5															

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2018		2018		2018		2018		2018		2018		2018		2019		2019	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
<b>Construct East Basin Retaining Dike</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Slip/Basin Fill &amp; Surcharge East</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Roll Surcharge</b>																		
Roll Surcharge																		
<b>Ph 2-1</b>																		
<b>Ph 2-2</b>																		
<b>Construction - New Terminal Buildings</b>																		
Building Construction																		
<b>Dredge and Excavate at Quay Wall</b>																		
Clamshell Dredging																		
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex							0.00											
Rock Placement, Push Off & Tub & Orange Peels							9.46											
Retaining Bulkhead Construction							0.00											
Drive 24-In Octagonal Piles - Land							0.00											
Drive 24-In Octagonal Piles - Water							0.00											
Drive Piles - Misc Activities							0.00											
Reinforced Concrete Wharf							0.00											
<b>Basin Fill and Surcharge West</b>																		
Cutter Suction Dredging- Spill Barge (No Booster)																		
Cutter Suction Dredging- Land Disposal (No Booster)																		
Wick Drains																		
<b>Settlement Period</b>																		
Roll Surcharge													0.0					
<b>Ph 2-2</b>																		
<b>Ph 2-3</b>																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>CY Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
<b>Ph 2-3</b>																		
New Container Yard Construction - Electrical																		
<b>Activity Total Tons</b>	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0
<b>Yearly Total (Tons)</b>														9				

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019		2019		2019		2019		2019		2019		2019	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>Construct East Basin Retaining Dike</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Slip/Basin Fill &amp; Surcharge East</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Roll Surcharge</b>																
Roll Surcharge																
<b>Ph 2-1</b>																
<b>Ph 2-2</b>																
<b>Construction - New Terminal Buildings</b>																
Building Construction																
<b>Dredge and Excavate at Quay Wall</b>																
Clamshell Dredging																
<b>Demo Existing F8-10 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct Wharf, Armor, Fill</b>																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Basin Fill and Surcharge West</b>																
Cutter Suction Dredging- Spill Barge (No Booster)																
Cutter Suction Dredging- Land Disposal (No Booster)																
Wick Drains																
<b>Settlement Period</b>																
Roll Surcharge																
<b>Ph 2-2</b>																
<b>Ph 2-3</b>																
<b>Remove Surcharge</b>																
Roll Surcharge									0.00							
<b>CY Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
<b>Ph 2-3</b>																
New Container Yard Construction - Electrical																
<b>Activity Total Tons</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Yearly Total (Tons)</b>																

Table A-4-Alt1-147 Tugs-Beyond3nm Annual NOx Emissions – Federal Action Component of POLB Middle Harbor Alternative 1

Activity	2019		2019	
	Nov		Dec	
	1st	2nd	1st	2nd
<b>Construct East Basin Retaining Dike</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Slip/Basin Fill &amp; Surcharge East</b>				
Cutter Suction Dredging- Spill Barge (No Booster)				
Cutter Suction Dredging- Land Disposal (No Booster)				
Wick Drains				
<b>Roll Surcharge</b>				
Roll Surcharge				
<b>Ph 2-1</b>				
<b>Ph 2-2</b>				
<b>Construction - New Terminal Buildings</b>				
Building Construction				
<b>Dredge and Excavate at Quay Wall</b>				
Clamshell Dredging				
<b>Demo Existing F8-10 Wharf</b>				
Wharf Demolition Landside				
Wharf Demolition Marine				
<b>Construct Wharf, Armor, Fill</b>				
Land Ex				
Rock Placement, Push Off & Tub & Orange Peels				
Retaining Bulkhead Construction				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
<b>Basin Fill and Surcharge West</b>				
Cutter Suction Dredging- Spill Barge (No Booster)				
Cutter Suction Dredging- Land Disposal (No Booster)				
Wick Drains				
<b>Settlement Period</b>				
Roll Surcharge				
<b>Ph 2-2</b>				
<b>Ph 2-3</b>				
<b>Remove Surcharge</b>				
Roll Surcharge				
<b>CY Development</b>				
New Container Yard Utilities		0.00		
New Container Yard Construction - Paving		0.00		
<b>Ph 2-3</b>				
New Container Yard Construction - Electrical		0.00		
<b>Activity Total Tons</b>	0	0		
<b>Yearly Total (Tons)</b>	0			

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**ATTACHMENT A-4.3 –  
Alternative 2 Conformity Emission Calculations**

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Table A.4.1-Alt 2-1. Activity Data - Demolish Existing Facilities - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-2. Activity Data - Construct New Bulkhead - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-3. Activity Data - Excavation Fronting E24 - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-4. Activity Data - Construct New Armor Slope - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-5. Activity Data - Wharf Construction - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-6. Activity Data - Paving - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-7. Activity Data - Prepare for Toe Dike / Construct Dike (1st Lift) - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-8. Activity Data - Fill within Dike - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-9. Activity Data - Remaining Dike Lifts - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-10. Activity Data - Remaining Fill Lifts - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-11. Activity Data - Wharf Construction - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-12. Activity Data - Construct South Mooring Dolphin - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-13. Activity Data - Wick Drains - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-14. Activity Data - Surcharge (Initial Pump, Plus Clamshell or Truck) - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-15. Activity Data - Remove Surcharge to Slip 1 Fill Site - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-16. Activity Data - Paving - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-17. Activity Data - Lighting, Fence, Striping, Crane Power - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-18. Activity Data - Construct Retaining Structure at Pier D Oil Area - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-19. Activity Data - Excavate & Truck Material in Cell Bulkhead - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-20. Activity Data - Excavate Material Fronting Pier D - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-21. Activity Data - Remove Cellular Sheetpile - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-22. Activity Data - Rock Revetment - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-23. Activity Data - Hydraulic or Clamshell Dredge to -55 ft - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-24. Activity Data - Ground Improvements Pier D - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-25. Activity Data - Demo E12-13 Wharf - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-26. Activity Data - Lift #1 (~ -30) - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-27. Activity Data - Lift #2 (~ -15) - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-28. Activity Data - Lift #3 (~ 0) - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-29. Activity Data - Lift #4 (~ +15) - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-30. Activity Data - Initial Surcharge and Wick Drains - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-31. Activity Data - 2nd Surcharge and Wick Drains - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-32. Activity Data - 3rd Surcharge and Wick Drains - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-33. Activity Data - Utility Construction - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-34. Activity Data - Remove Surcharge - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-35. Activity Data - Container Yard Development - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-36. Total Construction Emissions - Demolish Existing Facilities - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-37. Total Construction Emissions - Construct New Bulkhead - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-38. Total Construction Emissions - Excavation Fronting E24 - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-39. Total Construction Emissions - Construct New Armor Slope - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-40. Total Construction Emissions - Wharf Construction - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-41. Total Construction Emissions - Paving - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-42. Total Construction Emissions - Prepare for Toe Dike / Construct Dike (1st Lift) - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-43. Total Construction Emissions - Fill Within Dike - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-44. Total Construction Emissions - Remaining Dike Lifts - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-45. Total Construction Emissions - Remaining Fill Lifts - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-46. Total Construction Emissions - Wharf Construction - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-47. Total Construction Emissions - Construct South Mooring Dolphin - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-48. Total Construction Emissions - Wick Drains - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-49. Total Construction Emissions - Surcharge (Initial Pump, Plus Clamshell or Truck) - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-50. Daily Construction Emissions - Remove Surcharge to Slip 1 Fill Site - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-51. Total Construction Emissions - Paving - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-52. Total Construction Emissions - Construct Retaining Structure at Pier D Oil Area - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-53. Total Construction Emissions - Excavate & Truck Material in Cell Bulkhead - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-54. Total Construction Emissions - Excavate Material Fronting Pier D - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-55. Total Construction Emissions - Remove Cellular Sheetpile - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-56. Total Construction Emissions - Rock Revetment - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-57. Total Construction Emissions - Hydraulic or Clamshell Dredge to -55 ft - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-58. Total Construction Emissions - Ground Improvements Pier D - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-59. Total Construction Emissions - Demo - E12-13 Wharf - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-60. Total Construction Emissions - Lift #1 (~ -30) - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-61. Total Construction Emissions - Lift #2 (~ -15) - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-62. Total Construction Emissions - Lift #3 (~ 0) - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-63. Total Construction Emissions - Lift #4 (~ +15) - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-64. Total Construction Emissions - Initial Surcharge and Wick Drains - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-65. Total Construction Emissions - 2nd Surcharge and Wick Drains - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-66. Total Construction Emissions - 3rd Surcharge and Wick Drains - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-67. Total Construction Emissions - 4th Surcharge and Wick Drains - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-68. Total Construction Emissions - Remove Surcharge - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-69. Total Construction Emissions - Container Yard Development - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-70. Total Conformity-Related Emissions - POLB Middle Harbor Project - Phase 1 - Stage 1 (1 of 3)

Table A.4.1-Alt 2-70. Total Conformity-Related Emissions - POLB Middle Harbor Project - Phase 1 - Stage 1 (2 of 3)

Table A.4.1-Alt 2-70. Total Conformity-Related Emissions - POLB Middle Harbor Project - Phase 1 - Stage 1 (3 of 3)

Table A.4.1-Alt 2-71. Activity Data - Demolish Existing Facilities - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-72. Activity Data - Construct New Bulkhead - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-73. Activity Data - Excavation Fronting E25 and Dispose Slip 1 - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-74. Activity Data - Construct New Armor Slope - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-75. Activity Data - Wharf Construction - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-76. Activity Data - CY Development - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-77. Activity Data -Dredge to -55 ft - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-78. Total Construction Emissions - Demolish Existing Facilities - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-79. Total Construction Emissions - Construct New Bulkhead - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-80. Total Construction Emissions -Excavation Fronting E25 and Dispose Slip 1 - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-81. Total Construction Emissions - Construct New Armor Slope - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-82. Total Construction Emissions - Wharf Construction - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-83. Total Construction Emissions - DCY Development - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-84. Total Construction Emissions - Dredge to -55 ft - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-85. Total Construction Emissions - POLB Middle Harbor Project - Phase 1 - Stage 2

Table A.4.1-Alt 2-86. Activity Data - Demolish Existing Facilities - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-87. Activity Data - Construct New Bulkhead - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-88. Activity Data - Excavation Fronting E26 and Dispose Slip 1 - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-89. Activity Data - Construct New Armor Slope - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-90. Activity Data - Wharf Construction - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-91. Activity Data - Construct E27 Bulkhead - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-92. Activity Data - CY Development - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-93. Activity Data - Hydraulic Dredging to -55ft - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-94. Total Construction Emissions - Demolish Existing Facilities - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-95. Total Construction Emissions - Construct New Bulkhead - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-96. Total Construction Emissions - Excavation Fronting E26 and Dispose Slip 1 - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-97. Total Construction Emissions - Construct New Armor Slope - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-98. Total Construction Emissions - Wharf Construction - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-99. Total Construction Emissions - Construct E27 Bulkhead - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-100. Total Construction Emissions - CY Development - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-101. Total Construction Emissions - Hydraulic Dredging to -55ft - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-102. Total Emissions - POLB Middle Harbor Project - Phase 1 - Stage 3

Table A.4.1-Alt 2-103. Activity Data - Demo Existing F1-4, F6 Wharf - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-104. Activity Data - Roll Surcharge - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-105. Daily Construction Emissions - Demo Existing F1-4, F6 Wharf - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-106. Daily Construction Emissions - Roll Surcharge - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-107. Daily Emissions - POLB Middle Harbor Project - Phase 2 - Stage 1

Table A.4.1-Alt 2-108. Activity Data - Demo Existing F8-10 Wharf - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-109. Activity Data - Construct Wharf, Armor, Fill - POLB Middle Harbor - Alternative 2 (1 of 2)

Table A.4.1-Alt 2-110. Activity Data - Construct Wharf, Armor, Fill - POLB Middle Harbor - Alternative 2 (2 of 2)

Table A.4.1-Alt 2-111. Total Construction Emissions - Demo Existing F8-10 Wharf - POLB Middle Harbor - Alternative 2

Table A.4.1-Alt 2-112. Total Construction Emissions - Construct Wharf, Armor, Fill - POLB Middle Harbor - Alternative 2 (1 of 2)

Table A.4.1-Alt 2-112. Total Construction Emissions - Construct Wharf, Armor, Fill - POLB Middle Harbor - Alternative 2 (2 of 2)

Table A.4.1-Alt 2-113. Total Emissions - POLB Middle Harbor Project - Phase 2 - Stage 2

Table A-4.1-Alt2-114. Annual Conformity-Related Construction Emissions from Construction Equipment – POLB Middle Harbor Alternative 2

Table A-4.1-Alt2-115. Annual Conformity-Related Construction Emissions from Trucks – POLB Middle Harbor Alternative 2

Table A-4.1-Alt2-116. Annual Conformity-Related Construction Emissions from Tug Boat Usage Within 3nm of the Coast – POLB Middle Harbor Alternative 2

Table A-4.1-Alt2-117. Annual Conformity-Related Construction Emissions from Tug Boat Usage Beyond 3nm of the Coast – POLB Middle Harbor Alternative 2

Table A-4.1-Alt2-118. Total Annual Conformity-Related Construction Emissions – Federal Action Portion of POLB Middle Harbor Alternative 2

Table A-4.1-Alt2-119. Total Annual NOx Emissions - POLB Middle Harbor Alternative 2

Table A-4.1-Alt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Table A-4.1-Alt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Table A-4.1-Alt2-122. Tugs within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Table A-4.1-Alt2-123. Tugsbeyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Table A.4.1-Alt 2-1. Activity Data - Demolish Existing Facilities - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>WHARF DEMOLITION LANDSIDE</b>								
Hydra-Crane	130	0.43	1	56	8	447	82	36,670
Excavator	428	0.57	1	244	8	1,952	82	160,038
Flatbed Truck	230	0.25	1	58	8	460	82	37,720
End Dump Truck	310	0.30	4	372	8	2,976	82	244,032
<b>WHARF DEMOLITION MARINE</b>								
Derrick Barge	600	0.43	1	258	8	2,064	82	169,042
	200	0.50	1	100	8	800	82	65,600
Work Tug	750	0.20	1	150	8	1,200	82	98,280
	150	0.50	1	75	8	600	82	49,200
Hydra-Crane	130	0.43	1	56	8	447	82	36,626
Excavator	428	0.57	1	244	8	1,952	82	159,843
Flatbed Truck	230	0.25	1	58	8	460	82	37,674
End Dump Truck	310	0.30	3	279	8	2,232	82	182,801
<b>SHEET PILE BULKHEAD DEMOLITION</b>								
Crane - 100 Ton	335	0.43	1	144	8	1,152	82	94,382
Vibratory Hammer & Power Pack	350	0.75	1	263	8	2,100	82	171,990
Excavator	428	0.57	1	244	8	1,952	82	159,843
Flatbed Truck	230	0.25	1	58	8	460	82	37,674
Welding Machine	26	0.50	1	13	8	104	82	8,518
Generator	13	0.74	1	10	8	77	82	6,303

Table A.4.1-Alt 2-2. Activity Data - Construct New Bulkhead - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>RETAINING BULKHEAD CONSTRUCTION</b>								
Crane - 100 Ton	335	0.43	1	144	8	1,152	15	17,286
Vibratory Hammer & Power Pack	350	0.75	1	263	8	2,100	15	31,500
Flatbed Truck	230	0.25	1	58	8	460	15	6,900
Welding Machine	26	0.45	1	12	8	94	15	1,404
Generator	13	0.74	1	10	8	77	15	1,154

Table A.4.1-Alt 2-3. Activity Data - Excavation Fronting E24 - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>CLAMSHELL DREDGING</b>								
Clamshell Dredge	2,500	0.00	1	0	24	0	70	0
	500	0.00	1	0	24	0	70	0
Bottom Dump Scow	250	0.05	1	13	24	300	70	21,000
Tug Boat	2,500	0.30	1	750	6	4,500	70	315,000
	400	0.25	1	100	6	600	70	42,000
Work Tug	750	0.20	1	150	12	1,800	70	126,000
	150	0.25	1	38	12	450	70	31,500
Crew/Survey Boat	400	0.30	1	120	24	2,880	70	201,600
	80	0.50	1	40	24	960	70	67,200
<b>LAND EX</b>								
Excavator	428	0.57	1	244	8	1,952	70	136,618
Loader	170	0.68	1	116	8	925	70	64,736
End Dump Truck	310	0.25	4	310	8	2,480	70	173,600

Table A.4.1-Alt 2-4. Activity Data - Construct New Armor Slope - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>								
Derrick Barge	600	0.43	1	258	8	2,064	50	103,200
	200	0.50	1	100	8	800	50	40,000
Front End Loader	400	0.68	1	272	8	2,176	50	108,800
Tug Boat	1,200	0.20	1	240	8	1,920	50	96,000
	150	0.50	1	75	8	600	50	30,000
Tug Boat Rock Transport - Within 3 nm	2,500	0.20	1	500	4	2,000	50	100,000
	400	0.50	1	200	4	800	50	40,000
Tug Boat Rock Transport - Beyond 3 nm	2,500	0.80	1	2,000	2.3	4,600	50	230,000
	400	0.50	1	200	2.3	460	50	23,000
Crew/Survey Boat	400	0.30	1	120	8	960	50	48,000
	80	0.50	1	40	8	320	50	16,000

Table A.4.1-Alt 2-5. Activity Data - Wharf Construction - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>DRIVE 24-IN OCTAGONAL PILES - LAND</b>								
Hydraulic Crane	152	0.43	1	65	8	523	39	20,598
Crane - 200 Ton	335	0.43	1	144	8	1,152	39	45,398
Drill/Power Pack HPSI	270	0.75	1	203	8	1,620	39	63,818
Piledriving Hammer	211	0.50	1	106	8	844	39	33,248
Loader-Wheel	300	0.30	1	90	8	720	39	28,364
Jet Pump	33	0.74	1	24	8	195	39	7,696
End Dump Truck	310	0.25	1	78	8	620	39	24,180
Truck-Flatbed	230	0.25	1	58	8	460	39	17,940
Truck-Lowboy	350	0.25	1	88	8	700	39	27,300
<b>DRIVE 24-IN OCTAGONAL PILES - WATER</b>								
Crane - 200 Ton	335	0.43	1	144	8	1,152	45	52,018
Derrick Barge	380	0.43	1	163	8	1,307	45	59,006
	195	0.50	1	98	8	780	45	35,100
Piledriving Hammer	211	0.50	1	106	8	844	45	38,097
End Dump Truck	310	0.25	1	78	8	620	45	27,900
Tugboat	1,000	0.50	1	500	8	4,000	45	180,556
	100	0.50	1	50	8	400	45	18,000
Truck-Flatbed	230	0.25	1	58	8	460	45	20,700
<b>DRIVE PILES - MISC ACTIVITIES</b>								
Excavator	428	0.57	1	244	8	1,952	175	341,544
Loader-Wheel	180	0.30	1	54	8	432	175	75,600
Hydraulic Crane	152	0.43	1	65	8	523	175	91,504
Crane - 150 Ton	335	0.43	1	144	8	1,152	175	201,670
<b>REINFORCED CONCRETE WHARF</b>								
Hydraulic Crane	152	0.43	1	65	8	523	175	91,504
Crane - 150 Ton	335	0.43	1	144	8	1,152	175	201,670
Crane Barge - 150 ton	335	0.43	1	144	8	1,152	175	201,670
	107	0.50	1	54	8	428	175	74,900
Concrete Pump	210	0.74	1	155	8	1,243	175	217,560
Concrete Trucks	285	0.25	4.5	321	8	2,565	175	448,875
Sandblaster w/air compressor	50	0.00	1	0	8	0	175	0
Truck-Flatbed	230	0.25	1	58	8	460	175	80,500
Tugboat	1,000	0.20	1	200	8	1,600	175	280,000
	100	0.40	1	40	8	320	175	56,000
Concrete Saw	35	0.10	1	4	8	28	175	4,900
Truck Crane - 65 ton	365	0.20	1	73	8	584	175	102,200
Boom Truck	350	0.20	1	70	8	560	175	98,000
<b>RETAINING BULKHEAD CONSTRUCTION</b>								
Crane - 100 Ton	335	0.43	1	144	8	1,152	88	100,835
Vibratory Hammer & Power Pack	350	0.75	1	263	8	2,100	88	183,750
Flatbed Truck	230	0.25	1	58	8	460	88	40,250
Welding Machine	26	0.45	1	12	8	94	88	8,190
Generator	13	0.74	1	10	8	77	88	6,734

Table A.4.1-Alt 2-6. Activity Data - Paving - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>NEW CONTAINER YARD CONSTRUCTION - PAVING</b>								
AC Paver	187	0.40	1	75	8	598	6	3,471
Grader	215	0.40	1	86	8	688	6	3,990
Roller	151	0.40	3	181	8	1,450	6	8,408
Vibration Roller	154	0.40	3	185	8	1,478	6	8,575
Water Truck	210	0.30	1	63	8	504	6	2,923
Road Sweeper	190	0.40	1	76	8	608	6	3,526

Table A.4.1-Alt 2-7. Activity Data - Prepare for Toe Dike / Construct Dike (1st Lift) - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hours Per Day	Daily Hp-Hrs	Work Days	Total Hp-Hrs
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>								
Derrick Barge	600	0.43	1	258	8	2,064	60	123,840
	200	0.50	1	100	8	800	60	48,000
Front End Loader	400	0.68	1	272	8	2,176	60	130,560
Tug Boat	1,200	0.20	1	240	8	1,920	60	115,200
	150	0.50	1	75	8	600	60	36,000
Tug Boat Rock Transport - Within 3 nm	2,500	0.49	1	1,225	6	7,105	60	426,300
	400	0.50	1	200	6	1,160	60	69,600
Tug Boat Rock Transport - Beyond 3 nm	2,500	0.73	1	1,825	8.2	14,965	60	897,900
	400	0.50	1	200	9.2	1,840	60	110,400
Crew/Survey Boat	400	0.30	1	120	8	960	60	57,600
	80	0.50	1	40	8	320	60	19,200

Table A.4.1-Alt 2-8. Activity Data - Fill within Dike - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hours Per Day	Daily Hp-Hrs	Work Days	Total Hp-Hrs
<b>CLAMSHELL DREDGING</b>								
Clamshell Dredge	2,500	0.00	1	0	24	0	18	0
	500	0.00	1	0	24	0	18	0
Bottom Dump Scow	250	0.05	1	13	24	300	18	5,400
Tug Boat	2,500	0.30	1	750	6	4,500	18	81,000
	400	0.25	1	100	6	600	18	10,800
Work Tug	750	0.20	1	150	12	1,800	18	32,400
	150	0.25	1	38	12	450	18	8,100
Crew/Survey Boat	400	0.30	1	120	24	2,880	18	51,840
	80	0.50	1	40	24	960	18	17,280

Table A.4.1-Alt 2-9. Activity Data - Remaining Dike Lifts - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hours Per Day	Daily Hp-Hrs	Work Days	Total Hp-Hrs
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>								
Derrick Barge	600	0.43	1	258	8	2,064	60	123,840
	200	0.50	1	100	8	800	60	48,000
Front End Loader	400	0.68	1	272	8	2,176	60	130,560
Tug Boat	1,200	0.20	1	240	8	1,920	60	115,200
	150	0.50	1	75	8	600	60	36,000
Tug Boat Rock Transport - Within 3 nm	2,500	0.49	1	1,225	6	7,105	60	426,300
	400	0.50	1	200	6	1,160	60	69,600
Tug Boat Rock Transport - Beyond 3 nm	2,500	0.73	1	1,825	8.2	14,965	60	897,900
	400	0.50	1	200	9.2	1,840	60	110,400
Crew/Survey Boat	400	0.30	1	120	8	960	60	57,600
	80	0.50	1	40	8	320	60	19,200

Table A.4.1-Alt 2-10. Activity Data - Remaining Fill Lifts - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hours Per Day	Daily Hp-Hrs	Work Days	Total Hp-Hrs
<b>CLAMSHELL DREDGING</b>								
Clamshell Dredge	2,500	0.00	1	0	24	0	60	0
	500	0.00	1	0	24	0	60	0
Bottom Dump Scow	250	0.05	1	13	24	300	60	18,000
Tug Boat	2,500	0.30	1	750	6	4,500	60	270,000
	400	0.25	1	100	6	600	60	36,000
Work Tug	750	0.20	1	150	12	1,800	60	108,000
	150	0.25	1	38	12	450	60	27,000
Crew/Survey Boat	400	0.30	1	120	24	2,880	60	172,800
	80	0.50	1	40	24	960	60	57,600

Table A.4.1-Alt 2-11. Activity Data - Wharf Construction - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>DRIVE 24-IN OCTAGONAL PILES - LAND</b>								
Hydraulic Crane	152	0.43	1	65	8	523	33	17,429
Crane - 200 Ton	335	0.43	1	144	8	1,152	33	38,413
Drill/Power Pack HPSI	270	0.75	1	203	8	1,620	33	54,000
Piledriving Hammer	211	0.50	1	106	8	844	33	28,133
Loader-Wheel	300	0.30	1	90	8	720	33	24,000
Jet Pump	33	0.74	1	24	8	195	33	6,512
End Dump Truck	310	0.25	1	78	8	620	33	20,460
Truck-Flatbed	230	0.25	1	58	8	460	33	15,180
Truck-Lowboy	350	0.25	1	88	8	700	33	23,100
<b>DRIVE 24-IN OCTAGONAL PILES - WATER</b>								
Crane - 200 Ton	335	0.43	1	144	8	1,152	38	44,015
Derrick Barge	380	0.43	1	163	8	1,307	38	49,928
	195	0.50	1	98	8	780	38	29,640
Piledriving Hammer	211	0.50	1	106	8	844	38	32,236
End Dump Truck	310	0.25	1	78	8	620	38	23,560
Tugboat	1,000	0.50	1	500	8	4,000	38	152,778
	100	0.50	1	50	8	400	38	15,200
Truck-Flatbed	230	0.25	1	58	8	460	38	17,480
<b>DRIVE PILES - MISC ACTIVITIES</b>								
Excavator	428	0.57	1	244	8	1,952	126	245,912
Loader-Wheel	180	0.30	1	54	8	432	126	54,432
Hydraulic Crane	152	0.43	1	65	8	523	126	65,883
Crane - 150 Ton	335	0.43	1	144	8	1,152	126	145,202
<b>REINFORCED CONCRETE WHARF</b>								
Hydraulic Crane	152	0.43	1	65	8	523	126	65,883
Crane - 150 Ton	335	0.43	1	144	8	1,152	126	145,202
Crane Barge - 150 ton	335	0.43	1	144	8	1,152	126	145,202
	107	0.50	1	54	8	428	126	53,928
Concrete Pump	210	0.74	1	155	8	1,243	126	156,643
Concrete Trucks	285	0.25	5	321	8	2,565	126	323,190
Sandblaster w/air compressor	50	0.00	1	0	8	0	126	0
Truck-Flatbed	230	0.25	1	58	8	460	126	57,960
Tugboat	1,000	0.20	1	200	8	1,600	126	201,600
	100	0.40	1	40	8	320	126	40,320
Concrete Saw	35	0.10	1	4	8	28	126	3,528
Truck Crane - 65 ton	365	0.20	1	73	8	584	126	73,584
Boom Truck	350	0.20	1	70	8	560	126	70,560
<b>RETAINING BULKHEAD CONSTRUCTION</b>								
Crane - 100 Ton	335	0.43	1	144	8	1,152	38	43,561
Vibratory Hammer & Power Pack	350	0.75	1	263	8	2,100	38	79,380
Flatbed Truck	230	0.25	1	58	8	460	38	17,388
Welding Machine	26	0.45	1	12	8	94	38	3,538
Generator	13	0.74	1	10	8	77	38	2,909

Table A.4.1-Alt 2-12. Activity Data - Construct South Mooring Dolphin - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>DRIVE 24-IN OCTAGONAL PILES - WATER</b>								
Crane - 200 Ton	335	0.43	1	144	8	1,152	6	6,453
Derrick Barge	380	0.43	1	163	8	1,307	6	7,320
	195	0.50	1	98	8	780	6	4,680
Piledriving Hammer	211	0.50	1	106	8	844	6	4,726
End Dump Truck	310	0.25	1	78	8	620	6	3,720
Tugboat	1,000	0.50	1	500	8	4,000	6	22,400
	100	0.50	1	50	8	400	6	2,400
Truck-Flatbed	230	0.25	1	58	8	460	6	2,760

Table A.4.1-Alt 2-13. Activity Data - Wick Drains - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>WICK DRAINS</b>								
Wick Drain Rig - Excavator Mounted	428	0.30	1	128	8	1,027	9	9,245

Table A.4.1-Alt 2-14. Activity Data - Surcharge (Initial Pump, Plus Clamshell or Truck) - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>ROLL SURCHARGE</b>								
Scrapers	475	0.60	9	2,565	8	20,520	8	164,160
Dozers	285	0.35	2	200	8	1,596	8	12,768
Loader	170	0.30	3	153	8	1,224	8	9,792
End Dump Truck	310	0.25	6	465	8	3,720	8	29,760
Water Truck	310	0.25	1	78	8	620	8	4,960

Table A.4.1-Alt 2-15. Activity Data - Remove Surcharge to Slip 1 Fill Site - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>ROLL SURCHARGE</b>								
Scrapers	475	0.60	9	2,565	8	20,520	4	82,080
Dozers	285	0.35	2	200	8	1,596	4	6,384
Loader	170	0.30	3	153	8	1,224	4	4,896
End Dump Truck	310	0.25	6	465	8	3,720	4	14,880
Water Truck	310	0.25	1	78	8	620	4	2,480

Table A.4.1-Alt 2-16. Activity Data - Paving - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>NEW CONTAINER YARD CONSTRUCTION - PAVING</b>								
AC Paver	187	0.53	1	99	8	793	30	23,786
Grader	215	0.61	1	131	8	1,049	30	31,476
Roller	151	0.50	3	227	8	1,812	30	54,360
Vibration Roller	154	0.50	3	231	8	1,848	30	55,440
Water Truck	210	0.50	1	105	8	840	30	25,200
Road Sweeper	190	0.50	1	95	8	760	30	22,800

Table A.4.1-Alt 2-17. Activity Data - Lighting, Fence, Striping, Crane Power - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>NEW CONTAINER YARD CONSTRUCTION - ELECTRICAL</b>								
Flat Bed Truck	230	0.25	1	58	8	460		0
Truck Crane	130	0.20	1	26	8	208		0
Auger	125	0.50	1	63	8	500		0

Table A.4.1-Alt 2-18. Activity Data - Construct Retaining Structure at Pier D Oil Area - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>RETAINING BULKHEAD CONSTRUCTION</b>								
Crane - 100 Ton	335	0.43	1	144	8	1,152	16	18,876
Vibratory Hammer & Power Pack	350	0.75	1	263	8	2,100	16	34,398
Flatbed Truck	230	0.25	1	58	8	460	16	7,535
Welding Machine	26	0.45	1	12	8	94	16	1,533
Generator	13	0.74	1	10	8	77	16	1,261

Table A.4.1-Alt 2-19. Activity Data - Excavate & Truck Material in Cell Bulkhead - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>LAND EX</b>								
Excavator	428	0.57	1	244	8	1,952	24	46,840
Loader	170	0.68	1	116	8	925	24	22,195
End Dump Truck	310	0.25	4	310	8	2,480	24	59,520

Table A.4.1-Alt 2-20. Activity Data - Excavate Material Fronting Pier D - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>LAND EX</b>								
Excavator	428	0.57	1	244	8	1,952	39	76,116
Loader	170	0.68	1	116	8	925	39	36,067
End Dump Truck	310	0.25	4	310	8	2,480	39	96,720
<b>CLAMSHELL DREDGING</b>								
Clamshell Dredge	2,500	0.00	1	0	24	0	65	0
	500	0.00	1	0	24	0	65	0
Bottom Dump Scow	250	0.05	1	13	24	300	65	19,500
Tug Boat	2,500	0.30	1	750	6	4,500	65	292,500
	400	0.25	1	100	6	600	65	39,000
Work Tug	750	0.20	1	150	12	1,800	65	117,000
	150	0.25	1	38	12	450	65	29,250
Crew/Survey Boat	400	0.30	1	120	24	2,880	65	187,200
	80	0.50	1	40	24	960	65	62,400

Table A.4.1-Alt 2-21. Activity Data - Remove Cellular Sheetpile - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>SHEET PILE BULKHEAD DEMOLITION</b>								
Crane - 100 Ton	335	0.43	1	144	8	1,152	65	74,906
Vibratory Hammer & Power Pack	350	0.75	1	263	8	2,100	65	136,500
Excavator	428	0.57	1	244	8	1,952	65	126,859
Flatbed Truck	230	0.25	1	58	8	460	65	29,900
Welding Machine	26	0.50	1	13	8	104	65	6,760
Generator	13	0.74	1	10	8	77	65	5,002

Table A.4.1-Alt 2-22. Activity Data - Rock Revetment - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>								
Derrick Barge	600	0.43	1	258	8	2,064	48	99,072
	200	0.50	1	100	8	800	48	38,400
Front End Loader	400	0.68	1	272	8	2,176	48	104,448
Tug Boat	1,200	0.20	1	240	8	1,920	48	92,160
	150	0.50	1	75	8	600	48	28,800
Tug Boat Rock Transport - Within 3 nm	2,500	0.49	1	1,225	6	7,105	48	341,040
	400	0.50	1	200	6	1,160	48	55,680
Tug Boat Rock Transport - Beyond 3 nm	2,500	0.73	1	1,825	8.2	14,965	48	718,320
	400	0.50	1	200	9.2	1,840	48	88,320
Crew/Survey Boat	400	0.30	1	120	8	960	48	46,080
	80	0.50	1	40	8	320	48	15,360

Table A.4.1-Alt 2-23. Activity Data - Hydraulic or Clamshell Dredge to -55 ft - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>CLAMSHELL DREDGING</b>								
Clamshell Dredge	2,500	0.00	1	0	24	0	18	0
	500	0.00	1	0	24	0	18	0
Bottom Dump Scow	250	0.05	1	13	24	300	18	5,400
Tug Boat	2,500	0.30	1	750	6	4,500	18	81,000
	400	0.25	1	100	6	600	18	10,800
Work Tug	750	0.20	1	150	12	1,800	18	32,400
	150	0.25	1	38	12	450	18	8,100
Crew/Survey Boat	400	0.30	1	120	24	2,880	18	51,840
	80	0.50	1	40	24	960	18	17,280

Table A.4.1-Alt 2-24. Activity Data - Ground Improvements Pier D - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>STONE COLUMN INSTALLATION EQ</b>								
Stone Column Crane - 100 Ton	335	0.43	3	432	8	3,457	68	234,168
Vibratory Probe & Power Pack	350	0.75	3	788	8	6,300	68	426,720
Auger Crane - 100 Ton	335	0.43	1	144	8	1,152	68	78,056
Auger & Hydraulic Power Pack	350	0.75	1	263	8	2,100	68	142,240
Welding Machine	26	0.50	1	13	8	104	68	7,044
Generator	13	0.74	1	10	8	77	68	5,213
Excavator	428	0.25	1	107	8	856	68	57,980
Loader	170	0.30	4	204	8	1,632	68	110,541
End Dump Truck	310	0.25	4	310	8	2,480	68	167,979
<b>MARINE ROCK DELIVERY EQ</b>								
Derrick Barge	800	0.30	1	240	8	1,920	34	65,024
Front End Loader	400	0.30	1	120	8	960	34	32,512
Tug Boat	1,650	0.30	1	495	8	3,960	34	134,112
Tug Boat	2,500	0.50	1	1,250	8	10,000	34	338,667

Table A.4.1-Alt 2-25. Activity Data - Demo E12-13 Wharf - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>WHARF DEMOLITION LANDSIDE</b>								
Hydra-Crane	130	0.43	1	56	8	447	109	48,834
Excavator	428	0.57	1	244	8	1,952	109	213,123
Flatbed Truck	230	0.25	1	58	8	460	109	50,232
End Dump Truck	310	0.30	4	372	8	2,976	109	324,979
<b>WHARF DEMOLITION MARINE</b>								
Derrick Barge	600	0.43	1	258	8	2,064	109	225,389
	200	0.50	1	100	8	800	109	87,200
Work Tug	750	0.20	1	150	8	1,200	109	131,040
	150	0.50	1	75	8	600	109	65,400
Hydra-Crane	130	0.43	1	56	8	447	109	48,834
Excavator	428	0.57	1	244	8	1,952	109	213,123
Flatbed Truck	230	0.25	1	58	8	460	109	50,232
End Dump Truck	310	0.30	3	279	8	2,232	109	243,734

Table A.4.1-Alt 2-26. Activity Data - Lift #1 (- 30) - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>								
Derrick Barge	600	0.43	1	258	8	2,064	27	55,728
	200	0.50	1	100	8	800	27	21,600
Front End Loader	400	0.68	1	272	8	2,176	27	58,752
Tug Boat	1,200	0.20	1	240	8	1,920	27	51,840
	150	0.50	1	75	8	600	27	16,200
Tug Boat Rock Transport - Within 3 nm	2,500	0.49	1	1,225	6	7,105	27	191,835
	400	0.50	1	200	6	1,160	27	31,320
Tug Boat Rock Transport - Beyond 3 nm	2,500	0.73	1	1,825	8.2	14,965	27	404,055
	400	0.50	1	200	9.2	1,840	27	49,680
Crew/Survey Boat	400	0.30	1	120	8	960	27	25,920
	80	0.50	1	40	8	320	27	8,640

Table A.4.1-Alt 2-27. Activity Data - Lift #2 (- 15) - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>								
Derrick Barge	600	0.43	1	258	8	2,064	16	33,024
	200	0.50	1	100	8	800	16	12,800
Front End Loader	400	0.68	1	272	8	2,176	16	34,816
Tug Boat	1,200	0.20	1	240	8	1,920	16	30,720
	150	0.50	1	75	8	600	16	9,600
Tug Boat Rock Transport - Within 3 nm	2,500	0.49	1	1,225	6	7,105	16	113,680
	400	0.50	1	200	6	1,160	16	18,560
Tug Boat Rock Transport - Beyond 3 nm	2,500	0.73	1	1,825	8.2	14,965	16	239,440
	400	0.50	1	200	9.2	1,840	16	29,440
Crew/Survey Boat	400	0.30	1	120	8	960	16	15,360
	80	0.50	1	40	8	320	16	5,120

Table A.4.1-Alt 2-28. Activity Data - Lift #3 (- 0) - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>								
Derrick Barge	600	0.43	1	258	8	2,064	14	28,896
	200	0.50	1	100	8	800	14	11,200
Front End Loader	400	0.68	1	272	8	2,176	14	30,464
Tug Boat	1,200	0.20	1	240	8	1,920	14	26,880
	150	0.50	1	75	8	600	14	8,400
Tug Boat Rock Transport - Within 3 nm	2,500	0.49	1	1,225	6	7,105	14	99,470
	400	0.50	1	200	6	1,160	14	16,240
Tug Boat Rock Transport - Beyond 3 nm	2,500	0.73	1	1,825	8.2	14,965	14	209,510
	400	0.50	1	200	9.2	1,840	14	25,760
Crew/Survey Boat	400	0.30	1	120	8	960	14	13,440
	80	0.50	1	40	8	320	14	4,480

Table A.4.1-Alt 2-29. Activity Data - Lift #4 (- +15) - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>								
Derrick Barge	600	0.43	1	258	8	2,064	12	24,768
	200	0.50	1	100	8	800	12	9,600
Front End Loader	400	0.68	1	272	8	2,176	12	26,112
Tug Boat	1,200	0.20	1	240	8	1,920	12	23,040
	150	0.50	1	75	8	600	12	7,200
Tug Boat Rock Transport - Within 3 nm	2,500	0.49	1	1,225	6	7,105	12	85,260
	400	0.50	1	200	6	1,160	12	13,920
Tug Boat Rock Transport - Beyond 3 nm	2,500	0.73	1	1,825	8.2	14,965	12	179,580
	400	0.50	1	200	9.2	1,840	12	22,080
Crew/Survey Boat	400	0.30	1	120	8	960	12	11,520
	80	0.50	1	40	8	320	12	3,840

Table A.4.1-Alt 2-30. Activity Data - Initial Surcharge and Wick Drains - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>WICK DRAINS</b>								
Wick Drain Rig - Excavator Mounted	428	0.30	1	128	8	1,027	12	12,326
<b>ROLL SURCHARGE</b>								
Scrapers	475	0.60	9	2,565	8	20,520	12	246,240
Dozers	285	0.35	2	200	8	1,596	12	19,152
Loader	170	0.30	3	153	8	1,224	12	14,688
End Dump Truck	310	0.25	6	465	8	3,720	12	44,640
Water Truck	310	0.25	1	78	8	620	12	7,440

Table A.4.1-Alt 2-31. Activity Data - 2nd Surcharge and Wick Drains - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>WICK DRAINS</b>								
Wick Drain Rig - Excavator Mounted	428	0.30	1	128	8	1,027	30	30,816
<b>ROLL SURCHARGE</b>								
Scrapers	475	0.60	9	2,565	8	20,520	18	369,360
Dozers	285	0.35	2	200	8	1,596	18	28,728
Loader	170	0.30	3	153	8	1,224	18	22,032
End Dump Truck	310	0.25	6	465	8	3,720	18	66,960
Water Truck	310	0.25	1	78	8	620	18	11,160

Table A.4.1-Alt 2-32. Activity Data - 3rd Surcharge and Wick Drains - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>WICK DRAINS</b>								
Wick Drain Rig - Excavator Mounted	428	0.30	1	128	8	1,027	30	30,816
<b>ROLL SURCHARGE</b>								
Scrapers	475	0.60	9	2,565	8	20,520	24	492,480
Dozers	285	0.35	2	200	8	1,596	24	38,304
Loader	170	0.30	3	153	8	1,224	24	29,376
End Dump Truck	310	0.25	6	465	8	3,720	24	89,280
Water Truck	310	0.25	1	78	8	620	24	14,880

Table A.4.1-Alt 2-33. Activity Data - Utility Construction - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>WICK DRAINS</b>								
Wick Drain Rig - Excavator Mounted	428	0.30	1	128	8	1,027	27	27,734
<b>ROLL SURCHARGE</b>								
Scrapers	475	0.60	9	2,565	8	20,520	45	923,400
Dozers	285	0.35	2	200	8	1,596	45	71,820
Loader	170	0.30	3	153	8	1,224	45	55,080
End Dump Truck	310	0.25	6	465	8	3,720	45	167,400
Water Truck	310	0.25	1	78	8	620	45	27,900

Table A.4.1-Alt 2-34. Activity Data - Remove Surcharge - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>ROLL SURCHARGE</b>								
Scrapers	475	0.60	9	2,565	8	20,520	36	738,720
Dozers	285	0.35	2	200	8	1,596	36	57,456
Loader	170	0.30	3	153	8	1,224	36	44,064
End Dump Truck	310	0.25	6	465	8	3,720	36	133,920
Water Truck	310	0.25	1	78	8	620	36	22,320

Table A.4.1-Alt 2-35. Activity Data - Container Yard Development - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>NEW CONTAINER YARD UTILITIES</b>								
Pipelayer	300	0.50	1	150	8	1,200		0
Auger	125	0.50	1	63	8	500		0
Crane	130	0.43	1	56	8	447		0
Grader	215	0.61	3	393	8	3,148		0
End Dump Truck	310	0.25	1	78	8	620		0
Flat Bed Truck	230	0.25	2	115	8	920		0
Concrete Truck	250	1	4	600	8	4,800		0
Front End Loader	400	0.40	2	320	8	2,560		0
Trencher	200	0.20	1	40	8	320		0
<b>NEW CONTAINER YARD CONSTRUCTION - PAVING</b>								
AC Paver	187	0.40	1	75	8	598	223	133,204
Grader	215	0.40	1	86	8	688	223	153,149
Roller	151	0.40	3	181	8	1,450	223	322,681
Vibration Roller	154	0.40	3	185	8	1,478	223	329,092
Water Truck	210	0.30	1	63	8	504	223	112,190
Road Sweeper	190	0.40	1	76	8	608	223	135,341

Table A.4.1-Alt 2-36. Total Construction Emissions - Demolish Existing Facilities - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>WHARF DEMOLITION LANDSIDE</b>							
Hydra-Crane	0.01	0.04	0.11	0.00	0.01	0.01	0.01
Excavator	0.04	0.15	0.49	0.00	0.03	0.03	0.02
Flatbed Truck	0.01	0.03	0.12	0.00	0.01	0.01	0.01
End Dump Truck	0.05	0.23	0.75	0.00	0.04	0.04	0.04
<b>Subtotal</b>	<b>0.11</b>	<b>0.44</b>	<b>1.48</b>	<b>0.00</b>	<b>0.08</b>	<b>0.08</b>	<b>0.08</b>
<b>WHARF DEMOLITION MARINE</b>							
Derrick Barge	0.04	0.25	0.52	0.00	0.03	0.03	0.03
	0.01	0.05	0.20	0.00	0.01	0.01	0.01
Work Tug	0.02	0.20	0.55	0.00	0.02	0.02	0.02
	0.01	0.05	0.15	0.00	0.01	0.01	0.01
Hydra-Crane	0.01	0.04	0.11	0.00	0.01	0.01	0.01
Excavator	0.04	0.15	0.49	0.00	0.03	0.03	0.02
Flatbed Truck	0.01	0.03	0.12	0.00	0.01	0.01	0.01
End Dump Truck	0.04	0.17	0.56	0.00	0.03	0.03	0.03
<b>Subtotal</b>	<b>0.18</b>	<b>0.93</b>	<b>2.71</b>	<b>0.00</b>	<b>0.14</b>	<b>0.14</b>	<b>0.13</b>
<b>SHEET PILE BULKHEAD DEMOLITION</b>							
Crane - 100 Ton	0.02	0.09	0.29	0.00	0.02	0.02	0.01
Vibratory Hammer & Power Pack	0.04	0.16	0.53	0.00	0.03	0.03	0.03
Excavator	0.04	0.15	0.49	0.00	0.03	0.03	0.02
Flatbed Truck	0.01	0.03	0.12	0.00	0.01	0.01	0.01
Welding Machine	0.01	0.01	0.05	0.00	0.00	0.00	0.00
Generator	0.00	0.01	0.03	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.11</b>	<b>0.45</b>	<b>1.51</b>	<b>0.00</b>	<b>0.08</b>	<b>0.08</b>	<b>0.08</b>

Table A.4.1-Alt 2-37. Total Construction Emissions - Construct New Bulkhead - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>RETAINING BULKHEAD CONSTRUCTION</b>							
Crane - 100 Ton	0.00	0.02	0.05	0.00	0.00	0.00	0.00
Vibratory Hammer & Power Pack	0.01	0.03	0.10	0.00	0.01	0.01	0.00
Flatbed Truck	0.00	0.01	0.02	0.00	0.00	0.00	0.00
Welding Machine	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Generator	0.00	0.00	0.01	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.01</b>	<b>0.06</b>	<b>0.19</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>

Table A.4.1-Alt 2-38. Total Construction Emissions - Excavation Fronting E24 - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>CLAMSHELL DREDGING</b>							
Clamshell Dredge	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bottom Dump Scow	0.00	0.02	0.06	0.00	0.00	0.00	0.00
Tug Boat	0.07	0.65	1.76	0.00	0.05	0.05	0.05
	0.01	0.04	0.13	0.00	0.01	0.01	0.01
Work Tug	0.03	0.26	0.70	0.00	0.02	0.02	0.02
	0.01	0.03	0.10	0.00	0.01	0.01	0.01
Crew/Survey Boat	0.04	0.28	1.66	0.10	0.07	0.07	0.06
	0.01	0.18	0.24	0.00	0.02	0.02	0.02
<b>Subtotal</b>	<b>0.17</b>	<b>1.45</b>	<b>4.66</b>	<b>0.11</b>	<b>0.18</b>	<b>0.18</b>	<b>0.17</b>
<b>LAND EX</b>							
Excavator	0.03	0.13	0.42	0.00	0.02	0.02	0.02
Loader	0.01	0.06	0.20	0.00	0.02	0.02	0.01
End Dump Truck	0.04	0.16	0.54	0.00	0.03	0.03	0.03
<b>Subtotal</b>	<b>0.08</b>	<b>0.35</b>	<b>1.16</b>	<b>0.00</b>	<b>0.07</b>	<b>0.07</b>	<b>0.06</b>

Table A.4.1-Alt 2-39. Total Construction Emissions - Construct New Armor Slope - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>							
Derrick Barge	0.02	0.15	0.32	0.00	0.02	0.02	0.02
	0.01	0.03	0.12	0.00	0.01	0.01	0.01
Front End Loader	0.02	0.10	0.34	0.00	0.02	0.02	0.02
Tug Boat	0.02	0.20	0.54	0.00	0.02	0.02	0.01
	0.01	0.03	0.09	0.00	0.01	0.01	0.01
Tug Boat Rock Transport - Within 3 nm	0.02	0.21	0.56	0.00	0.02	0.02	0.02
	0.01	0.04	0.12	0.00	0.01	0.01	0.01
Tug Boat Rock Transport - Beyond 3 nm	0.05	0.47	1.29	0.00	0.04	0.04	0.04
	0.01	0.02	0.07	0.00	0.00	0.00	0.00
Crew/Survey Boat	0.01	0.07	0.39	0.02	0.02	0.02	0.01
	0.00	0.04	0.06	0.00	0.01	0.01	0.00
<b>Subtotal</b>	<b>0.18</b>	<b>1.36</b>	<b>3.90</b>	<b>0.03</b>	<b>0.15</b>	<b>0.15</b>	<b>0.14</b>

Table A.4.1-Alt 2-40. Total Construction Emissions - Wharf Construction - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>DRIVE 24-IN OCTAGONAL PILES - LAND</b>							
Hydraulic Crane	0.00	0.02	0.06	0.00	0.00	0.00	0.00
Crane - 200 Ton	0.01	0.04	0.14	0.00	0.01	0.01	0.01
Drill/Power Pack HPSI	0.01	0.06	0.20	0.00	0.01	0.01	0.01
Piledriving Hammer	0.01	0.03	0.10	0.00	0.01	0.01	0.01
Loader-Wheel	0.01	0.03	0.09	0.00	0.00	0.00	0.00
Jet Pump	0.01	0.01	0.04	0.00	0.00	0.00	0.00
End Dump Truck	0.01	0.02	0.07	0.00	0.00	0.00	0.00
Truck-Flatbed	0.00	0.01	0.06	0.00	0.00	0.00	0.00
Truck-Lowboy	0.01	0.03	0.08	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.06</b>	<b>0.25</b>	<b>0.85</b>	<b>0.00</b>	<b>0.05</b>	<b>0.05</b>	<b>0.04</b>
<b>DRIVE 24-IN OCTAGONAL PILES - WATER</b>							
Crane - 200 Ton	0.01	0.05	0.16	0.00	0.01	0.01	0.01
Derrick Barge	0.01	0.05	0.18	0.00	0.01	0.01	0.01
	0.01	0.03	0.11	0.00	0.01	0.01	0.01
Piledriving Hammer	0.01	0.03	0.12	0.00	0.01	0.01	0.01
End Dump Truck	0.01	0.03	0.09	0.00	0.00	0.00	0.00
Tugboat	0.04	0.37	1.01	0.00	0.03	0.03	0.03
	0.00	0.05	0.07	0.00	0.01	0.01	0.01
Truck-Flatbed	0.00	0.02	0.06	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.10</b>	<b>0.62</b>	<b>1.79</b>	<b>0.00</b>	<b>0.07</b>	<b>0.07</b>	<b>0.07</b>
<b>DRIVE PILES - MISC ACTIVITIES</b>							
Excavator	0.08	0.32	1.05	0.00	0.06	0.06	0.05
Loader-Wheel	0.02	0.06	0.23	0.00	0.01	0.01	0.01
Hydraulic Crane	0.02	0.09	0.28	0.00	0.02	0.02	0.02
Crane - 150 Ton	0.04	0.19	0.62	0.00	0.03	0.03	0.03
<b>Subtotal</b>	<b>0.16</b>	<b>0.65</b>	<b>2.19</b>	<b>0.00</b>	<b>0.12</b>	<b>0.12</b>	<b>0.11</b>
<b>REINFORCED CONCRETE WHARF</b>							
Hydraulic Crane	0.02	0.19	0.62	0.00	0.05	0.05	0.04
Crane - 150 Ton	0.04	0.19	0.62	0.00	0.03	0.03	0.03
Crane Barge - 150 ton	0.04	0.19	0.62	0.00	0.03	0.03	0.03
	0.02	0.20	0.27	0.00	0.02	0.02	0.02
Concrete Pump	0.05	0.18	0.67	0.00	0.04	0.04	0.03
Concrete Trucks	0.10	0.42	1.39	0.00	0.07	0.07	0.07
Sandblaster w/air compressor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck-Flatbed	0.02	0.07	0.25	0.00	0.01	0.01	0.01
Tugboat	0.06	0.58	1.57	0.00	0.05	0.05	0.04
	0.01	0.15	0.20	0.00	0.02	0.02	0.02
Concrete Saw	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Truck Crane - 65 ton	0.02	0.09	0.32	0.00	0.02	0.02	0.02
Boom Truck	0.02	0.09	0.30	0.00	0.02	0.02	0.01
<b>Subtotal</b>	<b>0.41</b>	<b>2.34</b>	<b>6.86</b>	<b>0.01</b>	<b>0.36</b>	<b>0.36</b>	<b>0.34</b>
<b>RETAINING BULKHEAD CONSTRUCTION</b>							
Crane - 100 Ton	0.02	0.09	0.31	0.00	0.02	0.02	0.02
Vibratory Hammer & Power Pack	0.04	0.17	0.57	0.00	0.03	0.03	0.03
Flatbed Truck	0.01	0.03	0.12	0.00	0.01	0.01	0.01
Welding Machine	0.01	0.01	0.05	0.00	0.00	0.00	0.00
Generator	0.00	0.01	0.04	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.08</b>	<b>0.32</b>	<b>1.08</b>	<b>0.00</b>	<b>0.06</b>	<b>0.06</b>	<b>0.06</b>

Table A.4.1-Alt 2-41. Total Construction Emissions - Paving - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Tons</i>						
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM</i>	<i>PM10</i>	<i>PM2.5</i>
<b>NEW CONTAINER YARD CONSTRUCTION - PAVING</b>							
AC Paver	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Grader	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Roller	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Vibration Roller	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Water Truck	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Road Sweeper	0.00	0.00	0.01	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.01</b>	<b>0.03</b>	<b>0.10</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>

Table A.4.1-Alt 2-42. Total Construction Emissions - Prepare for Toe Dike / Construct Dike (1st Lift) - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>							
Derrick Barge	0.03	0.18	0.38	0.00	0.02	0.02	0.02
	0.01	0.04	0.15	0.00	0.01	0.01	0.01
Front End Loader	0.03	0.12	0.40	0.00	0.02	0.02	0.02
Tug Boat	0.03	0.24	0.64	0.00	0.02	0.02	0.02
	0.01	0.03	0.11	0.00	0.01	0.01	0.01
Tug Boat Rock Transport - Within 3 nm	0.09	0.88	2.38	0.00	0.07	0.07	0.07
	0.02	0.06	0.21	0.00	0.01	0.01	0.01
Tug Boat Rock Transport - Beyond 3 nm	0.20	1.85	5.02	0.00	0.15	0.15	0.14
	0.02	0.10	0.34	0.00	0.02	0.02	0.02
Crew/Survey Boat	0.01	0.08	0.47	0.03	0.02	0.02	0.02
	0.00	0.05	0.07	0.00	0.01	0.01	0.01
<b>Subtotal</b>	<b>0.45</b>	<b>3.63</b>	<b>10.20</b>	<b>0.04</b>	<b>0.35</b>	<b>0.35</b>	<b>0.33</b>

Table A.4.1-Alt 2-43. Total Construction Emissions - Fill Within Dike - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>CLAMSHELL DREDGING</b>							
Clamshell Dredge	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bottom Dump Scow	0.00	0.00	0.02	0.00	0.00	0.00	0.00
Tug Boat	0.02	0.17	0.45	0.00	0.01	0.01	0.01
	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Work Tug	0.01	0.07	0.18	0.00	0.01	0.01	0.00
	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Crew/Survey Boat	0.01	0.07	0.43	0.03	0.02	0.02	0.02
	0.00	0.05	0.06	0.00	0.01	0.01	0.01
<b>Subtotal</b>	<b>0.04</b>	<b>0.37</b>	<b>1.20</b>	<b>0.03</b>	<b>0.05</b>	<b>0.05</b>	<b>0.04</b>

Table A.4.1-Alt 2-44. Total Construction Emissions - Remaining Dike Lifts - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>							
Derrick Barge	0.03	0.18	0.38	0.00	0.02	0.02	0.02
	0.01	0.04	0.15	0.00	0.01	0.01	0.01
Front End Loader	0.03	0.12	0.40	0.00	0.02	0.02	0.02
Tug Boat	0.03	0.24	0.64	0.00	0.02	0.02	0.02
	0.01	0.03	0.11	0.00	0.01	0.01	0.01
Tug Boat Rock Transport - Within 3 nm	0.09	0.88	2.38	0.00	0.07	0.07	0.07
	0.02	0.06	0.21	0.00	0.01	0.01	0.01
Tug Boat Rock Transport - Beyond 3 nm	0.20	1.85	5.02	0.00	0.15	0.15	0.14
	0.02	0.10	0.34	0.00	0.02	0.02	0.02
Crew/Survey Boat	0.01	0.08	0.47	0.03	0.02	0.02	0.02
	0.00	0.05	0.07	0.00	0.01	0.01	0.01
<b>Subtotal</b>	<b>0.45</b>	<b>3.63</b>	<b>10.20</b>	<b>0.04</b>	<b>0.35</b>	<b>0.35</b>	<b>0.33</b>

Table A.4.1-Alt 2-45. Total Construction Emissions - Remaining Fill Lifts - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>CLAMSHELL DREDGING</b>							
Clamshell Dredge	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bottom Dump Scow	0.00	0.01	0.06	0.00	0.00	0.00	0.00
Tug Boat	0.06	0.56	1.51	0.00	0.04	0.04	0.04
	0.01	0.03	0.11	0.00	0.01	0.01	0.01
Work Tug	0.02	0.22	0.60	0.00	0.02	0.02	0.02
	0.01	0.03	0.08	0.00	0.01	0.01	0.01
Crew/Survey Boat	0.03	0.24	1.42	0.09	0.06	0.06	0.05
	0.01	0.15	0.21	0.00	0.02	0.02	0.02
<b>Subtotal</b>	<b>0.14</b>	<b>1.24</b>	<b>3.99</b>	<b>0.09</b>	<b>0.15</b>	<b>0.15</b>	<b>0.14</b>

Table A.4.1-Alt 2-46. Total Construction Emissions - Wharf Construction - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>DRIVE 24-IN OCTAGONAL PILES - LAND</b>							
Hydraulic Crane	0.00	0.02	0.05	0.00	0.00	0.00	0.00
Crane - 200 Ton	0.01	0.04	0.12	0.00	0.01	0.01	0.01
Drill/Power Pack HPSI	0.01	0.05	0.17	0.00	0.01	0.01	0.01
Piledriving Hammer	0.01	0.02	0.09	0.00	0.00	0.00	0.00
Loader-Wheel	0.01	0.02	0.07	0.00	0.00	0.00	0.00
Jet Pump	0.00	0.01	0.04	0.00	0.00	0.00	0.00
End Dump Truck	0.00	0.02	0.06	0.00	0.00	0.00	0.00
Truck-Flatbed	0.00	0.01	0.05	0.00	0.00	0.00	0.00
Truck-Lowboy	0.01	0.02	0.07	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.05</b>	<b>0.21</b>	<b>0.72</b>	<b>0.00</b>	<b>0.04</b>	<b>0.04</b>	<b>0.04</b>
<b>DRIVE 24-IN OCTAGONAL PILES - WATER</b>							
Crane - 200 Ton	0.01	0.04	0.14	0.00	0.01	0.01	0.01
Derrick Barge	0.01	0.05	0.15	0.00	0.01	0.01	0.01
	0.01	0.02	0.09	0.00	0.00	0.00	0.00
Piledriving Hammer	0.01	0.03	0.10	0.00	0.01	0.01	0.00
End Dump Truck	0.01	0.02	0.07	0.00	0.00	0.00	0.00
Tugboat	0.03	0.31	0.85	0.00	0.03	0.03	0.02
	0.00	0.04	0.06	0.00	0.01	0.01	0.00
Truck-Flatbed	0.00	0.01	0.05	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.08</b>	<b>0.53</b>	<b>1.52</b>	<b>0.00</b>	<b>0.06</b>	<b>0.06</b>	<b>0.06</b>
<b>DRIVE PILES - MISC ACTIVITIES</b>							
Excavator	0.05	0.23	0.76	0.00	0.04	0.04	0.04
Loader-Wheel	0.01	0.05	0.17	0.00	0.01	0.01	0.01
Hydraulic Crane	0.01	0.06	0.20	0.00	0.02	0.02	0.01
Crane - 150 Ton	0.03	0.13	0.45	0.00	0.02	0.02	0.02
<b>Subtotal</b>	<b>0.11</b>	<b>0.47</b>	<b>1.58</b>	<b>0.00</b>	<b>0.09</b>	<b>0.09</b>	<b>0.08</b>
<b>REINFORCED CONCRETE WHARF</b>							
Hydraulic Crane	0.01	0.06	0.20	0.00	0.02	0.02	0.01
Crane - 150 Ton	0.03	0.13	0.45	0.00	0.02	0.02	0.02
Crane Barge - 150 ton	0.03	0.13	0.45	0.00	0.02	0.02	0.02
	0.01	0.14	0.20	0.00	0.02	0.02	0.02
Concrete Pump	0.03	0.13	0.48	0.00	0.03	0.03	0.02
Concrete Trucks	0.07	0.30	1.00	0.00	0.05	0.05	0.05
Sandblaster w/air compressor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck-Flatbed	0.01	0.05	0.18	0.00	0.01	0.01	0.01
Tugboat	0.04	0.41	1.13	0.00	0.03	0.03	0.03
	0.01	0.11	0.15	0.00	0.01	0.01	0.01
Concrete Saw	0.00	0.01	0.02	0.00	0.00	0.00	0.00
Truck Crane - 65 ton	0.02	0.07	0.23	0.00	0.01	0.01	0.01
Boom Truck	0.02	0.07	0.22	0.00	0.01	0.01	0.01
<b>Subtotal</b>	<b>0.30</b>	<b>1.61</b>	<b>4.69</b>	<b>0.01</b>	<b>0.24</b>	<b>0.24</b>	<b>0.22</b>
<b>RETAINING BULKHEAD CONSTRUCTION</b>							
Crane - 100 Ton	0.01	0.04	0.13	0.00	0.01	0.01	0.01
Vibratory Hammer & Power Pack	0.02	0.07	0.25	0.00	0.01	0.01	0.01
Flatbed Truck	0.00	0.01	0.05	0.00	0.00	0.00	0.00
Welding Machine	0.00	0.01	0.02	0.00	0.00	0.00	0.00
Generator	0.00	0.00	0.02	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.04</b>	<b>0.14</b>	<b>0.47</b>	<b>0.00</b>	<b>0.03</b>	<b>0.03</b>	<b>0.02</b>

Table A.4.1-Alt 2-47. Total Construction Emissions - Construct South Mooring Dolphin - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>DRIVE 24-IN OCTAGONAL PILES - WATER</b>							
Crane - 200 Ton	0.00	0.01	0.02	0.00	0.00	0.00	0.00
Derrick Barge	0.00	0.01	0.02	0.00	0.00	0.00	0.00
	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Piledriving Hammer	0.00	0.00	0.01	0.00	0.00	0.00	0.00
End Dump Truck	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Tugboat	0.00	0.05	0.13	0.00	0.00	0.00	0.00
	0.00	0.01	0.01	0.00	0.00	0.00	0.00
Truck-Flatbed	0.00	0.00	0.01	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.01</b>	<b>0.08</b>	<b>0.23</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>

Table A.4.1-Alt 2-48. Total Construction Emissions - Wick Drains - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>WICK DRAINS</b>							
Wick Drain Rig - Excavator Mounted	0.00	0.01	0.03	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.00</b>	<b>0.01</b>	<b>0.03</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Table A.4.1-Alt 2-49. Total Construction Emissions - Surcharge (Initial Pump, Plus Clamshell or Truck) - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>ROLL SURCHARGE</b>							
Scrapers	0.04	0.15	0.51	0.00	0.03	0.03	0.02
Dozers	0.00	0.01	0.04	0.00	0.00	0.00	0.00
Loader	0.00	0.01	0.03	0.00	0.00	0.00	0.00
End Dump Truck	0.01	0.03	0.09	0.00	0.00	0.00	0.00
Water Truck	0.00	0.00	0.02	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.05</b>	<b>0.21</b>	<b>0.68</b>	<b>0.00</b>	<b>0.04</b>	<b>0.04</b>	<b>0.03</b>

Table A.4.1-Alt 2-50. Daily Construction Emissions - Remove Surcharge to Slip 1 Fill Site - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>ROLL SURCHARGE</b>							
Scrapers	0.02	0.08	0.25	0.00	0.01	0.01	0.01
Dozers	0.00	0.01	0.02	0.00	0.00	0.00	0.00
Loader	0.00	0.00	0.02	0.00	0.00	0.00	0.00
End Dump Truck	0.00	0.01	0.05	0.00	0.00	0.00	0.00
Water Truck	0.00	0.00	0.01	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.02</b>	<b>0.10</b>	<b>0.34</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>	<b>0.02</b>

Table A.4.1-Alt 2-51. Total Construction Emissions - Paving - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Tons</i>						
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM</i>	<i>PM10</i>	<i>PM2.5</i>
<b>NEW CONTAINER YARD CONSTRUCTION - PAVING</b>							
AC Paver	0.01	0.02	0.07	0.00	0.00	0.00	0.00
Grader	0.01	0.03	0.10	0.00	0.01	0.01	0.00
Roller	0.01	0.05	0.17	0.00	0.01	0.01	0.01
Vibration Roller	0.01	0.05	0.17	0.00	0.01	0.01	0.01
Water Truck	0.01	0.02	0.08	0.00	0.00	0.00	0.00
Road Sweeper	0.01	0.02	0.07	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.05</b>	<b>0.19</b>	<b>0.66</b>	<b>0.00</b>	<b>0.04</b>	<b>0.04</b>	<b>0.04</b>

Table A.4.1-Alt 2-52. Total Construction Emissions - Construct Retaining Structure at Pier D Oil Area - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>RETAINING BULKHEAD CONSTRUCTION</b>							
Crane - 100 Ton	0.00	0.02	0.06	0.00	0.00	0.00	0.00
Vibratory Hammer & Power Pack	0.01	0.03	0.11	0.00	0.01	0.01	0.01
Flatbed Truck	0.00	0.01	0.02	0.00	0.00	0.00	0.00
Welding Machine	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Generator	0.00	0.00	0.01	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.02</b>	<b>0.06</b>	<b>0.20</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>

Table A.4.1-Alt 2-53. Total Construction Emissions - Excavate & Truck Material in Cell Bulkhead - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>LAND EX</b>							
Excavator	0.01	0.04	0.14	0.00	0.01	0.01	0.01
Loader	0.00	0.02	0.07	0.00	0.01	0.01	0.00
End Dump Truck	0.01	0.06	0.18	0.00	0.01	0.01	0.01
<b>Subtotal</b>	<b>0.03</b>	<b>0.12</b>	<b>0.40</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>	<b>0.02</b>

Table A.4.1-Alt 2-54. Total Construction Emissions - Excavate Material Fronting Pier D - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>LAND EX</b>							
Excavator	0.02	0.07	0.23	0.00	0.01	0.01	0.01
Loader	0.01	0.03	0.11	0.00	0.01	0.01	0.01
End Dump Truck	0.02	0.09	0.30	0.00	0.02	0.02	0.01
<b>Subtotal</b>	<b>0.05</b>	<b>0.19</b>	<b>0.64</b>	<b>0.00</b>	<b>0.04</b>	<b>0.04</b>	<b>0.03</b>
<b>CLAMSHELL DREDGING</b>							
Clamshell Dredge	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bottom Dump Scow	0.00	0.02	0.06	0.00	0.00	0.00	0.00
Tug Boat	0.06	0.60	1.64	0.00	0.05	0.05	0.05
	0.01	0.04	0.12	0.00	0.01	0.01	0.01
Work Tug	0.03	0.24	0.65	0.00	0.02	0.02	0.02
	0.01	0.03	0.09	0.00	0.01	0.01	0.01
Crew/Survey Boat	0.03	0.26	1.54	0.10	0.06	0.06	0.06
	0.01	0.16	0.23	0.00	0.02	0.02	0.02
<b>Subtotal</b>	<b>0.16</b>	<b>1.35</b>	<b>4.33</b>	<b>0.10</b>	<b>0.17</b>	<b>0.17</b>	<b>0.16</b>

Table A.4.1-Alt 2-55. Total Construction Emissions - Remove Cellular Sheetpile - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>SHEET PILE BULKHEAD DEMOLITION</b>							
Crane - 100 Ton	0.02	0.07	0.23	0.00	0.01	0.01	0.01
Vibratory Hammer & Power Pack	0.03	0.13	0.42	0.00	0.02	0.02	0.02
Excavator	0.03	0.12	0.39	0.00	0.02	0.02	0.02
Flatbed Truck	0.01	0.02	0.09	0.00	0.00	0.00	0.00
Welding Machine	0.00	0.01	0.04	0.00	0.00	0.00	0.00
Generator	0.00	0.01	0.03	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.09</b>	<b>0.36</b>	<b>1.20</b>	<b>0.00</b>	<b>0.07</b>	<b>0.07</b>	<b>0.06</b>

Table A.4.1-Alt 2-56. Total Construction Emissions - Rock Revetment - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>							
Derrick Barge	0.02	0.15	0.31	0.00	0.02	0.02	0.02
	0.01	0.03	0.12	0.00	0.01	0.01	0.01
Front End Loader	0.02	0.10	0.32	0.00	0.02	0.02	0.02
Tug Boat	0.02	0.19	0.52	0.00	0.02	0.02	0.01
	0.01	0.03	0.09	0.00	0.01	0.01	0.01
Tug Boat Rock Transport - Within 3 nm	0.08	0.70	1.91	0.00	0.06	0.06	0.05
	0.01	0.05	0.17	0.00	0.01	0.01	0.01
Tug Boat Rock Transport - Beyond 3 nm	0.16	1.48	4.02	0.00	0.12	0.12	0.11
	0.02	0.08	0.27	0.00	0.01	0.01	0.01
Crew/Survey Boat	0.01	0.06	0.38	0.02	0.02	0.02	0.01
	0.00	0.04	0.06	0.00	0.01	0.01	0.00
<b>Subtotal</b>	<b>0.36</b>	<b>2.91</b>	<b>8.16</b>	<b>0.03</b>	<b>0.28</b>	<b>0.28</b>	<b>0.26</b>

Table A.4.1-Alt 2-57. Total Construction Emissions - Hydraulic or Clamshell Dredge to -55 ft - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>CLAMSHELL DREDGING</b>							
Clamshell Dredge	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bottom Dump Scow	0.00	0.00	0.02	0.00	0.00	0.00	0.00
Tug Boat	0.02	0.17	0.45	0.00	0.01	0.01	0.01
	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Work Tug	0.01	0.07	0.18	0.00	0.01	0.01	0.00
	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Crew/Survey Boat	0.01	0.07	0.43	0.03	0.02	0.02	0.02
	0.00	0.05	0.06	0.00	0.01	0.01	0.01
<b>Subtotal</b>	<b>0.04</b>	<b>0.37</b>	<b>1.20</b>	<b>0.03</b>	<b>0.05</b>	<b>0.05</b>	<b>0.04</b>

Table A.4.1-Alt 2-58. Total Construction Emissions - Ground Improvements Pier D - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>STONE COLUMN INSTALLATION EQ</b>							
Stone Column Crane - 100 Ton	0.05	0.22	0.72	0.00	0.04	0.04	0.04
Vibratory Probe & Power Pack	0.09	0.40	1.32	0.00	0.07	0.07	0.06
Auger Crane - 100 Ton	0.02	0.07	0.24	0.00	0.01	0.01	0.01
Auger & Hydraulic Power Pack	0.03	0.13	0.44	0.00	0.02	0.02	0.02
Welding Machine	0.00	0.01	0.04	0.00	0.00	0.00	0.00
Generator	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Excavator	0.01	0.05	0.18	0.00	0.01	0.01	0.01
Loader	0.02	0.11	0.34	0.00	0.03	0.03	0.02
End Dump Truck	0.04	0.16	0.52	0.00	0.03	0.03	0.03
<b>Subtotal</b>	<b>0.28</b>	<b>1.15</b>	<b>3.83</b>	<b>0.01</b>	<b>0.22</b>	<b>0.22</b>	<b>0.20</b>
<b>MARINE ROCK DELIVERY EQ</b>							
Derrick Barge	0.02	0.05	0.32	0.00	0.01	0.01	0.01
Front End Loader	0.01	0.03	0.10	0.00	0.01	0.01	0.00
Tug Boat	0.03	0.28	0.75	0.00	0.02	0.02	0.02
Tug Boat	0.08	0.70	1.89	0.00	0.06	0.06	0.05
<b>Subtotal</b>	<b>0.13</b>	<b>1.06</b>	<b>3.07</b>	<b>0.00</b>	<b>0.09</b>	<b>0.09</b>	<b>0.09</b>

Table A.4.1-Alt 2-59. Total Construction Emissions - Demo - E12-13 Wharf - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>WHARF DEMOLITION LANDSIDE</b>							
Hydra-Crane	0.01	0.05	0.15	0.00	0.01	0.01	0.01
Excavator	0.05	0.20	0.66	0.00	0.04	0.04	0.03
Flatbed Truck	0.01	0.04	0.16	0.00	0.01	0.01	0.01
End Dump Truck	0.07	0.30	1.00	0.00	0.05	0.05	0.05
<b>Subtotal</b>	<b>0.14</b>	<b>0.59</b>	<b>1.97</b>	<b>0.00</b>	<b>0.11</b>	<b>0.11</b>	<b>0.10</b>
<b>WHARF DEMOLITION MARINE</b>							
Derrick Barge	0.05	0.33	0.70	0.00	0.04	0.04	0.03
	0.02	0.07	0.27	0.00	0.01	0.01	0.01
Work Tug	0.03	0.27	0.73	0.00	0.02	0.02	0.02
	0.01	0.06	0.20	0.00	0.02	0.02	0.01
Hydra-Crane	0.01	0.05	0.15	0.00	0.01	0.01	0.01
Excavator	0.05	0.20	0.66	0.00	0.04	0.04	0.03
Flatbed Truck	0.01	0.04	0.16	0.00	0.01	0.01	0.01
End Dump Truck	0.05	0.23	0.75	0.00	0.04	0.04	0.04
<b>Subtotal</b>	<b>0.23</b>	<b>1.25</b>	<b>3.62</b>	<b>0.01</b>	<b>0.18</b>	<b>0.18</b>	<b>0.17</b>

Table A.4.1-Alt 2-60. Total Construction Emissions - Lift #1 (~ -30) - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>							
Derrick Barge	0.01	0.08	0.17	0.00	0.01	0.01	0.01
	0.00	0.02	0.07	0.00	0.00	0.00	0.00
Front End Loader	0.01	0.05	0.18	0.00	0.01	0.01	0.01
Tug Boat	0.01	0.11	0.29	0.00	0.01	0.01	0.01
	0.00	0.02	0.05	0.00	0.00	0.00	0.00
Tug Boat Rock Transport - Within 3 nm	0.04	0.39	1.07	0.00	0.03	0.03	0.03
	0.01	0.03	0.10	0.00	0.01	0.01	0.00
Tug Boat Rock Transport - Beyond 3 nm	0.09	0.83	2.26	0.00	0.07	0.07	0.06
	0.01	0.05	0.15	0.00	0.01	0.01	0.01
Crew/Survey Boat	0.00	0.04	0.21	0.01	0.01	0.01	0.01
	0.00	0.02	0.03	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.20</b>	<b>1.64</b>	<b>4.59</b>	<b>0.02</b>	<b>0.16</b>	<b>0.16</b>	<b>0.15</b>

Table A.4.1-Alt 2-61. Total Construction Emissions - Lift #2 (~ -15) - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>							
Derrick Barge	0.01	0.05	0.10	0.00	0.01	0.01	0.01
	0.00	0.01	0.04	0.00	0.00	0.00	0.00
Front End Loader	0.01	0.03	0.11	0.00	0.01	0.01	0.01
Tug Boat	0.01	0.06	0.17	0.00	0.01	0.01	0.00
	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Tug Boat Rock Transport - Within 3 nm	0.03	0.23	0.64	0.00	0.02	0.02	0.02
	0.00	0.02	0.06	0.00	0.00	0.00	0.00
Tug Boat Rock Transport - Beyond 3 nm	0.05	0.49	1.34	0.00	0.04	0.04	0.04
	0.01	0.03	0.09	0.00	0.00	0.00	0.00
Crew/Survey Boat	0.00	0.02	0.13	0.01	0.01	0.01	0.00
	0.00	0.01	0.02	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.12</b>	<b>0.97</b>	<b>2.72</b>	<b>0.01</b>	<b>0.09</b>	<b>0.09</b>	<b>0.09</b>

Table A.4.1-Alt 2-62. Total Construction Emissions - Lift #3 (- 0) - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>							
Derrick Barge	0.01	0.04	0.09	0.00	0.00	0.00	0.00
	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Front End Loader	0.01	0.03	0.09	0.00	0.01	0.01	0.00
Tug Boat	0.01	0.06	0.15	0.00	0.00	0.00	0.00
	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Tug Boat Rock Transport - Within 3 nm	0.02	0.20	0.56	0.00	0.02	0.02	0.02
	0.00	0.02	0.05	0.00	0.00	0.00	0.00
Tug Boat Rock Transport - Beyond 3 nm	0.05	0.43	1.17	0.00	0.03	0.03	0.03
	0.01	0.02	0.08	0.00	0.00	0.00	0.00
Crew/Survey Boat	0.00	0.02	0.11	0.01	0.00	0.00	0.00
	0.00	0.01	0.02	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.10</b>	<b>0.85</b>	<b>2.38</b>	<b>0.01</b>	<b>0.08</b>	<b>0.08</b>	<b>0.08</b>

Table A.4.1-Alt 2-63. Total Construction Emissions - Lift #4 (- +15) - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>							
Derrick Barge	0.01	0.04	0.08	0.00	0.00	0.00	0.00
	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Front End Loader	0.01	0.02	0.08	0.00	0.00	0.00	0.00
Tug Boat	0.01	0.05	0.13	0.00	0.00	0.00	0.00
	0.00	0.01	0.02	0.00	0.00	0.00	0.00
Tug Boat Rock Transport - Within 3 nm	0.02	0.18	0.48	0.00	0.01	0.01	0.01
	0.00	0.01	0.04	0.00	0.00	0.00	0.00
Tug Boat Rock Transport - Beyond 3 nm	0.04	0.37	1.00	0.00	0.03	0.03	0.03
	0.00	0.02	0.07	0.00	0.00	0.00	0.00
Crew/Survey Boat	0.00	0.02	0.09	0.01	0.00	0.00	0.00
	0.00	0.01	0.01	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.09</b>	<b>0.73</b>	<b>2.04</b>	<b>0.01</b>	<b>0.07</b>	<b>0.07</b>	<b>0.07</b>

Table A.4.1-Alt 2-64. Total Construction Emissions - Initial Surcharge and Wick Drains - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>WICK DRAINS</b>							
Wick Drain Rig - Excavator Mounted	0.00	0.01	0.04	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.00</b>	<b>0.01</b>	<b>0.04</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>ROLL SURCHARGE</b>							
Scrapers	0.05	0.23	0.76	0.00	0.04	0.04	0.04
Dozers	0.00	0.02	0.06	0.00	0.00	0.00	0.00
Loader	0.00	0.01	0.05	0.00	0.00	0.00	0.00
End Dump Truck	0.01	0.04	0.14	0.00	0.01	0.01	0.01
Water Truck	0.00	0.01	0.02	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.07</b>	<b>0.31</b>	<b>1.03</b>	<b>0.00</b>	<b>0.06</b>	<b>0.06</b>	<b>0.05</b>

Table A.4.1-Alt 2-65. Total Construction Emissions - 2nd Surcharge and Wick Drains - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>WICK DRAINS</b>							
Wick Drain Rig - Excavator Mounted	0.01	0.03	0.10	0.00	0.01	0.01	0.00
<b>Subtotal</b>	<b>0.01</b>	<b>0.03</b>	<b>0.10</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>
<b>ROLL SURCHARGE</b>							
Scrapers	0.08	0.34	1.14	0.00	0.06	0.06	0.06
Dozers	0.01	0.03	0.09	0.00	0.00	0.00	0.00
Loader	0.00	0.02	0.07	0.00	0.01	0.01	0.00
End Dump Truck	0.01	0.06	0.21	0.00	0.01	0.01	0.01
Water Truck	0.00	0.01	0.03	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.11</b>	<b>0.46</b>	<b>1.54</b>	<b>0.00</b>	<b>0.08</b>	<b>0.08</b>	<b>0.08</b>

Table A.4.1-Alt 2-66. Total Construction Emissions - 3rd Surcharge and Wick Drains - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>WICK DRAINS</b>							
Wick Drain Rig - Excavator Mounted	0.01	0.03	0.10	0.00	0.01	0.01	0.00
<b>Subtotal</b>	<b>0.01</b>	<b>0.03</b>	<b>0.10</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>
<b>ROLL SURCHARGE</b>							
Scrapers	0.11	0.46	1.52	0.00	0.08	0.08	0.07
Dozers	0.01	0.04	0.12	0.00	0.01	0.01	0.01
Loader	0.01	0.03	0.09	0.00	0.01	0.01	0.01
End Dump Truck	0.02	0.08	0.28	0.00	0.01	0.01	0.01
Water Truck	0.00	0.01	0.05	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.15</b>	<b>0.62</b>	<b>2.05</b>	<b>0.00</b>	<b>0.11</b>	<b>0.11</b>	<b>0.10</b>

Table A.4.1-Alt 2-67. Total Construction Emissions - 4th Surcharge and Wick Drains - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>WICK DRAINS</b>							
Wick Drain Rig - Excavator Mounted	0.01	0.03	0.09	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.01</b>	<b>0.03</b>	<b>0.09</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>ROLL SURCHARGE</b>							
Scrapers	0.20	0.86	2.85	0.00	0.15	0.15	0.14
Dozers	0.02	0.07	0.22	0.00	0.01	0.01	0.01
Loader	0.01	0.05	0.17	0.00	0.01	0.01	0.01
End Dump Truck	0.04	0.16	0.52	0.00	0.03	0.03	0.03
Water Truck	0.01	0.03	0.09	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.27</b>	<b>1.16</b>	<b>3.84</b>	<b>0.01</b>	<b>0.21</b>	<b>0.21</b>	<b>0.19</b>

Table A.4.1-Alt 2-68. Total Construction Emissions - Remove Surcharge - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>ROLL SURCHARGE</b>							
Scrapers	0.16	0.68	2.28	0.00	0.12	0.12	0.11
Dozers	0.01	0.05	0.18	0.00	0.01	0.01	0.01
Loader	0.01	0.04	0.14	0.00	0.01	0.01	0.01
End Dump Truck	0.03	0.12	0.41	0.00	0.02	0.02	0.02
Water Truck	0.00	0.02	0.07	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.22</b>	<b>0.92</b>	<b>3.08</b>	<b>0.00</b>	<b>0.17</b>	<b>0.17</b>	<b>0.15</b>

Table A.4.1-Alt 2-69. Total Construction Emissions - Container Yard Development - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>NEW CONTAINER YARD UTILITIES</b>							
Pipelayer	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Auger	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grader	0.00	0.00	0.00	0.00	0.00	0.00	0.00
End Dump Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Flat Bed Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Front End Loader	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trencher	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.00</b>						
<b>NEW CONTAINER YARD CONSTRUCTION - PAVING</b>							
AC Paver	0.03	0.11	0.41	0.00	0.02	0.02	0.02
Grader	0.03	0.13	0.47	0.00	0.03	0.03	0.02
Roller	0.07	0.31	1.00	0.00	0.08	0.08	0.07
Vibration Roller	0.07	0.32	1.02	0.00	0.08	0.08	0.07
Water Truck	0.02	0.09	0.35	0.00	0.02	0.02	0.02
Road Sweeper	0.03	0.11	0.42	0.00	0.02	0.02	0.02
<b>Subtotal</b>	<b>0.26</b>	<b>1.07</b>	<b>3.66</b>	<b>0.01</b>	<b>0.25</b>	<b>0.25</b>	<b>0.23</b>

**Table A.4.1-Alt 2-70. Total Conformity-Related Emissions - POLB Middle Harbor Project - Phase 1 - Stage**

Activity	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>Demolish Existing Facilities</b>							
Wharf Demolition Landside	0.11	0.44	1.48	0.00	0.08	0.08	0.08
Wharf Demolition Marine	0.18	0.93	2.71	0.00	0.14	0.14	0.13
Sheet Pile Bulkhead Demolition	0.11	0.45	1.51	0.00	0.08	0.08	0.08
<b>Construct New Bulkhead</b>							
Retaining Bulkhead Construction	0.01	0.06	0.19	0.00	0.01	0.01	0.01
<b>Excavation Fronting E24</b>							
Clamshell Dredging	0.17	1.45	4.66	0.11	0.18	0.18	0.17
Land Ex	0.08	0.35	1.16	0.00	0.07	0.07	0.06
<b>Construct New Armor Slope</b>							
Rock Placement, Push Off & Tub & Orange Peels	0.18	1.36	3.90	0.03	0.15	0.15	0.14
<b>Wharf Construction</b>							
Drive 24-In Octagonal Piles - Land	0.06	0.25	0.85	0.00	0.05	0.05	0.04
Drive 24-In Octagonal Piles - Water	0.10	0.62	1.79	0.00	0.07	0.07	0.07
Drive Piles - Misc Activities	0.16	0.65	2.19	0.00	0.12	0.12	0.11
Reinforced Concrete Wharf	0.41	2.34	6.86	0.01	0.36	0.36	0.34
Retaining Bulkhead Construction	0.08	0.32	1.08	0.00	0.06	0.06	0.06
<b>Utility Construction</b>							
New Container Yard Utilities	-	-	-	-	-	-	-
<b>Paving</b>							
New Container Yard Construction - Paving	0.01	0.03	0.10	0.00	0.01	0.01	0.01
<b>Lighting, Striping, Crane Power</b>							
New Container Yard Construction - Electrical	-	-	-	-	-	-	-
<b>Prepare for Toe Dike/Construct Dike (1st Lift)</b>							
Rock Placement, Push Off & Tub & Orange Peels	0.45	3.63	10.20	0.04	0.35	0.35	0.33
<b>Fill within Dike</b>							
Clamshell Dredging	0.04	0.37	1.20	0.03	0.05	0.05	0.04
<b>Remaining Dike Lifts</b>							
Rock Placement, Push Off & Tub & Orange Peels	0.45	3.63	10.20	0.04	0.35	0.35	0.33
<b>Remaining Fill Lifts</b>							
Clamshell Dredging	0.14	1.24	3.99	0.09	0.15	0.15	0.14
<b>Wharf Construction</b>							
Drive 24-In Octagonal Piles - Land	0.05	0.21	0.72	0.00	0.04	0.04	0.04
Drive 24-In Octagonal Piles - Water	0.08	0.53	1.52	0.00	0.06	0.06	0.06
Drive Piles - Misc Activities	0.11	0.47	1.58	0.00	0.09	0.09	0.08
Reinforced Concrete Wharf	0.30	1.61	4.69	0.01	0.24	0.24	0.22
Retaining Bulkhead Construction	0.04	0.14	0.47	0.00	0.03	0.03	0.02
<b>Construct South Mooring Dolphin</b>							
Drive 24-In Octagonal Piles - Water	0.01	0.08	0.23	0.00	0.01	0.01	0.01
<b>Wick Drains</b>							
Wick Drains	0.00	0.01	0.03	0.00	0.00	0.00	0.00
<b>Remove Surcharge</b>							
Roll Surcharge	0.05	0.21	0.68	0.00	0.04	0.04	0.03
<b>Remove Surcharge to Slip 1 Fill Site</b>							
Roll Surcharge	0.02	0.10	0.34	0.00	0.02	0.02	0.02
<b>Utility Construction</b>							
New Container Yard Utilities	-	-	-	-	-	-	-

**Table A.4.1-Alt 2-70. Total Conformity-Related Emissions - POLB Middle Harbor Project - Phase 1 - Stage**

<b>Paving</b>							
New Container Yard Construction - Paving	0.05	0.19	0.66	0.00	0.04	0.04	0.04
<b>Lighting, Fence, Stripine, Crane Power</b>							
New Container Yard Construction - Electrical	-	-	-	-	-	-	-
<b>Construct Retaining Structure at Pier D Oil Area</b>							
Retaining Bulkhead Construction	0.02	0.06	0.20	0.00	0.01	0.01	0.01
<b>Excavate Trucking Material in Cell Bulkhead</b>							
Land Ex	0.03	0.12	0.40	0.00	0.02	0.02	0.02
<b>Excavate Material Fronting Pier D</b>							
Land Ex	0.05	0.19	0.64	0.00	0.04	0.04	0.03
Clamshell Dredging	0.16	1.35	4.33	0.10	0.17	0.17	0.16
<b>Remove Cellular Sheetpile</b>							
Sheet Pile Bulkhead Demolition	0.09	0.36	1.20	0.00	0.07	0.07	0.06
<b>Rock Revetment</b>							
Rock Placement, Push Off & Tub & Orange Peels	0.36	2.91	8.16	0.03	0.28	0.28	0.26
<b>Hydraulic or Clamshell Dredge to -55ft</b>							
Clamshell Dredging	0.04	0.37	1.20	0.03	0.05	0.05	0.04
<b>Ground Improvements Pier D</b>							
Stone Column Installation Eq	0.28	1.15	3.83	0.01	0.22	0.22	0.20
Marine Rock Delivery Eq	0.13	1.06	3.07	0.00	0.09	0.09	0.09
<b>Demo - E12-13 Wharf</b>							
Wharf Demolition Landside	0.14	0.59	1.97	0.00	0.11	0.11	0.10
Wharf Demolition Marine	0.23	1.25	3.62	0.01	0.18	0.18	0.17
<b>Lift #1 (- -30)</b>							
Rock Placement, Push Off & Tub & Orange Peels	0.20	1.64	4.59	0.02	0.16	0.16	0.15
<b>Lift #2 (- -15)</b>							
Rock Placement, Push Off & Tub & Orange Peels	0.12	0.97	2.72	0.01	0.09	0.09	0.09
<b>Lift #3 (- 0)</b>							
Rock Placement, Push Off & Tub & Orange Peels	0.10	0.85	2.38	0.01	0.08	0.08	0.08
<b>Lift #4 (- +15)</b>							
Rock Placement, Push Off & Tub & Orange Peels	0.09	0.73	2.04	0.01	0.07	0.07	0.07
<b>Initial Surcharge and Wick Drains</b>							
Wick Drains	0.00	0.01	0.04	0.00	0.00	0.00	0.00
Roll Surcharge	0.07	0.31	1.03	0.00	0.06	0.06	0.05
<b>2 nd Surcharge and Wick Drains</b>							
Wick Drains	0.01	0.03	0.10	0.00	0.01	0.01	0.00
Roll Surcharge	0.11	0.46	1.54	0.00	0.08	0.08	0.08
<b>3rd Surcharge and Wick Drains</b>							
Wick Drains	0.01	0.03	0.10	0.00	0.01	0.01	0.00
Roll Surcharge	0.15	0.62	2.05	0.00	0.11	0.11	0.10
<b>4th Surcharge and Wick Drains</b>							
Wick Drains	0.01	0.03	0.09	0.00	0.00	0.00	0.00
Roll Surcharge	0.27	1.16	3.84	0.01	0.21	0.21	0.19
<b>Remove Surcharge</b>							
Roll Surcharge	0.22	0.92	3.08	0.00	0.17	0.17	0.15
<b>Container Yard Development</b>							
New Container Yard Utilities	-	-	-	-	-	-	-
New Container Yard Construction - Paving	0.26	1.07	3.66	0.01	0.25	0.25	0.23
New Container Yard Construction - Electrical	-	-	-	-	-	-	-

**Table A.4.1-Alt 2-70. Total Conformity-Related Emissions - POLB Middle Harbor Project - Phase 1 - Stage**

<b>Haul off dump trucks for spoil</b>							
Triple Track Installation Demo Eq	-	-	-	-	-	-	-
Triple Track Utility Relocation Eq	-	-	-	-	-	-	-
Triple Track Grading Eq	-	-	-	-	-	-	-
Triple Track Retaining Wall Eq	-	-	-	-	-	-	-
Triple Track Trackwork Eq	-	-	-	-	-	-	-
Triple Track Miscellaneous Eq	-	-	-	-	-	-	-
<b>Vibratory Compactor</b>							
Grading	-	-	-	-	-	-	-
Survey	-	-	-	-	-	-	-
Civil	-	-	-	-	-	-	-
Electrical	-	-	-	-	-	-	-
Transformer Setup	-	-	-	-	-	-	-
Test	-	-	-	-	-	-	-
Paving	-	-	-	-	-	-	-
Fence Installation	-	-	-	-	-	-	-
<b>Overhead Subtransmission Line Construction</b>							
Installation of 160 LWS poles and removal of wood poles	-	-	-	-	-	-	-
Wire Replacement/Attachment and Termination	-	-	-	-	-	-	-
Final Connection of New Lines	-	-	-	-	-	-	-
<b>Other Emissions</b>							
Fugitive Dust	-	-	-	-	-	-	-
Commuter Emissions	-	-	-	-	-	-	-
<b>Total Emissions</b>	<b>6.60</b>	<b>39.89</b>	<b>120.81</b>	<b>0.63</b>	<b>5.40</b>	<b>5.40</b>	<b>5.00</b>

Table A.4.1-Alt 2-71. Activity Data - Demolish Existing Facilities - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hours Per Day	Daily Hp-Hrs	Work Days	Total Hp-Hrs
<b>SHEET PILE BULKHEAD DEMOLITION</b>								
Crane - 100 Ton	335	0.43	1	144	8	1,152	60	69,144
Vibratory Hammer & Power Pack	350	0.75	1	263	8	2,100	60	126,000
Excavator	428	0.57	1	244	8	1,952	60	117,101
Flatbed Truck	230	0.25	1	58	8	460	60	27,600
Welding Machine	26	0.50	1	13	8	104	60	6,240
Generator	13	0.74	1	10	8	77	60	4,618
<b>WHARF DEMOLITION LANDSIDE</b>								
Hydra-Crane	130	0.43	1	56	8	447	60	26,832
Excavator	428	0.57	1	244	8	1,952	60	117,101
Flatbed Truck	230	0.25	1	58	8	460	60	27,600
End Dump Truck	310	0.30	4	372	8	2,976	60	178,560
<b>WHARF DEMOLITION MARINE</b>								
Derrick Barge	600	0.43	1	258	8	2,064	60	123,840
	200	0.50	1	100	8	800	60	48,000
Work Tug	750	0.20	1	150	8	1,200	60	72,000
	150	0.50	1	75	8	600	60	36,000
Hydra-Crane	130	0.43	1	56	8	447	60	26,832
Excavator	428	0.57	1	244	8	1,952	60	117,101
Flatbed Truck	230	0.25	1	58	8	460	60	27,600
End Dump Truck	310	0.30	3	279	8	2,232	60	133,920

Table A.4.1-Alt 2-72. Activity Data - Construct New Bulkhead - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hours Per Day	Daily Hp-Hrs	Work Days	Total Hp-Hrs
<b>RETAINING BULKHEAD CONSTRUCTION</b>								
Crane - 100 Ton	335	0.43	1	144	8	1,152	9	10,372
Vibratory Hammer & Power Pack	350	0.75	1	263	8	2,100	9	18,900
Flatbed Truck	230	0.25	1	58	8	460	9	4,140
Welding Machine	26	0.45	1	12	8	94	9	842
Generator	13	0.74	1	10	8	77	9	693

Table A.4.1-Alt 2-73. Activity Data - Excavation Fronting E25 and Dispose Slip 1 - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hours Per Day	Daily Hp-Hrs	Work Days	Total Hp-Hrs
<b>CLAMSHELL DREDGING</b>								
Clamshell Dredge	2,500	0.00	1	0	24	0	30	0
	500	0.00	1	0	24	0	30	0
Bottom Dump Scow	250	0.05	1	13	24	300	30	9,000
Tug Boat	2,500	0.30	1	750	6	4,500	30	135,000
	400	0.25	1	100	6	600	30	18,000
Work Tug	750	0.20	1	150	12	1,800	30	54,000
	150	0.25	1	38	12	450	30	13,500
Crew/Survey Boat	400	0.30	1	120	24	2,880	30	86,400
	80	0.50	1	40	24	960	30	28,800

Table A.4.1-Alt 2-74. Activity Data - Construct New Armor Slope - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hours Per Day	Daily Hp-Hrs	Work Days	Total Hp-Hrs
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>								
Derrick Barge	600	0.43	1	258	8	2,064	60	123,840
	200	0.50	1	100	8	800	60	48,000
Front End Loader	400	0.68	1	272	8	2,176	60	130,560
Tug Boat	1,200	0.20	1	240	8	1,920	60	115,200
	150	0.50	1	75	8	600	60	36,000
Tug Boat Rock Transport - Within 3 nm	2,500	0.20	1	500	4	2,000	60	120,000
	400	0.50	1	200	4	800	60	48,000
Tug Boat Rock Transport - Beyond 3 nm	2,500	0.80	1	2,000	2.3	4,600	60	276,000
	400	0.50	1	200	2.3	460	60	27,600
Crew/Survey Boat	400	0.30	1	120	8	960	60	57,600
	80	0.50	1	40	8	320	60	19,200

Table A.4.1-Alt 2-75. Activity Data - Wharf Construction - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hours Per Day	Daily Hp-Hrs	Work Days	Total Hp-Hrs
<b>DRIVE 24-IN OCTAGONAL PILES - LAND</b>								
Hydraulic Crane	152	0.43	1	65	8	523	36	19,014
Crane - 200 Ton	335	0.43	1	144	8	1,152	36	41,905
Drill/Power Pack HPSI	270	0.75	1	203	8	1,620	36	58,909
Piledriving Hammer	211	0.50	1	106	8	844	36	30,691
Loader-Wheel	300	0.30	1	90	8	720	36	26,182
Jet Pump	33	0.74	1	24	8	195	36	7,104
End Dump Truck	310	0.25	1	78	8	620	36	22,320
Truck-Flatbed	230	0.25	1	58	8	460	36	16,560
Truck-Lowboy	350	0.25	1	88	8	700	36	25,200
<b>DRIVE 24-IN OCTAGONAL PILES - WATER</b>								
Crane - 200 Ton	335	0.43	1	144	8	1,152	42	48,017
Derrick Barge	380	0.43	1	163	8	1,307	42	54,467
	195	0.50	1	98	8	780	42	32,760
Piledriving Hammer	211	0.50	1	106	8	844	42	35,167
End Dump Truck	310	0.25	1	78	8	620	42	26,040
Tugboat	1,000	0.50	1	500	8	4,000	42	166,667
	100	0.50	1	50	8	400	42	16,800
Truck-Flatbed	230	0.25	1	58	8	460	42	19,320
<b>DRIVE PILES - MISC ACTIVITIES</b>								
Excavator	428	0.57	1	244	8	1,952	175	341,544
Loader-Wheel	180	0.30	1	54	8	432	175	75,600
Hydraulic Crane	152	0.43	1	65	8	523	175	91,504
Crane - 150 Ton	335	0.43	1	144	8	1,152	175	201,670
<b>REINFORCED CONCRETE WHARF</b>								
Hydraulic Crane	152	0.43	1	65	8	523	175	91,504
Crane - 150 Ton	335	0.43	1	144	8	1,152	175	201,670
Crane Barge - 150 ton	335	0.43	1	144	8	1,152	175	201,670
	107	0.50	1	54	8	428	175	74,900
Concrete Pump	210	0.74	1	155	8	1,243	175	217,560
Concrete Trucks	285	0.25	5	321	8	2,565	175	448,875
Sandblaster w/air compressor	50	0.00	1	0	8	0	175	0
Truck-Flatbed	230	0.25	1	58	8	460	175	80,500
Tugboat	1,000	0.20	1	200	8	1,600	175	280,000
	100	0.40	1	40	8	320	175	56,000
Concrete Saw	35	0.10	1	4	8	28	175	4,900
Truck Crane - 65 ton	365	0.20	1	73	8	584	175	102,200
Boom Truck	350	0.20	1	70	8	560	175	98,000

Table A.4.1-Alt 2-76. Activity Data - CY Development - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>NEW CONTAINER YARD CONSTRUCTION - PAVING</b>								
AC Paver	187	0.40	1	75	8	598	21	12,791
Grader	215	0.40	1	86	8	688	21	14,706
Roller	151	0.40	3	181	8	1,450	21	30,985
Vibration Roller	154	0.40	3	185	8	1,478	21	31,601
Water Truck	210	0.30	1	63	8	504	21	10,773
Road Sweeper	190	0.40	1	76	8	608	21	12,996

Table A.4.1-Alt 2-77. Activity Data -Dredge to -55 ft - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>CLAMSHELL DREDGING</b>								
Clamshell Dredge	2,500	0.00	1	0	24	0	20	0
	500	0.00	1	0	24	0	20	0
Bottom Dump Scow	250	0.05	1	13	24	300	20	6,000
Tug Boat	2,500	0.30	1	750	6	4,500	20	90,000
	400	0.25	1	100	6	600	20	12,000
Work Tug	750	0.20	1	150	12	1,800	20	36,000
	150	0.25	1	38	12	450	20	9,000
Crew/Survey Boat	400	0.30	1	120	24	2,880	20	57,600
	80	0.50	1	40	24	960	20	19,200

Table A.4.1-Alt 2-78. Total Construction Emissions - Demolish Existing Facilities - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>SHEET PILE BULKHEAD DEMOLITION</b>							
Crane - 100 Ton	0.02	0.06	0.21	0.00	0.01	0.01	0.01
Vibratory Hammer & Power Pack	0.03	0.12	0.39	0.00	0.02	0.02	0.02
Excavator	0.03	0.11	0.36	0.00	0.02	0.02	0.02
Flatbed Truck	0.01	0.02	0.09	0.00	0.00	0.00	0.00
Welding Machine	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Generator	0.00	0.01	0.03	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.08</b>	<b>0.33</b>	<b>1.11</b>	<b>0.00</b>	<b>0.06</b>	<b>0.06</b>	<b>0.06</b>
<b>WHARF DEMOLITION LANDSIDE</b>							
Hydra-Crane	0.01	0.03	0.08	0.00	0.01	0.01	0.01
Excavator	0.03	0.11	0.36	0.00	0.02	0.02	0.02
Flatbed Truck	0.01	0.02	0.09	0.00	0.00	0.00	0.00
End Dump Truck	0.04	0.17	0.55	0.00	0.03	0.03	0.03
<b>Subtotal</b>	<b>0.08</b>	<b>0.32</b>	<b>1.08</b>	<b>0.00</b>	<b>0.06</b>	<b>0.06</b>	<b>0.06</b>
<b>WHARF DEMOLITION MARINE</b>							
Derrick Barge	0.03	0.18	0.38	0.00	0.02	0.02	0.02
	0.01	0.04	0.15	0.00	0.01	0.01	0.01
Work Tug	0.02	0.15	0.40	0.00	0.01	0.01	0.01
	0.01	0.03	0.11	0.00	0.01	0.01	0.01
Hydra-Crane	0.01	0.03	0.08	0.00	0.01	0.01	0.01
Excavator	0.03	0.11	0.36	0.00	0.02	0.02	0.02
Flatbed Truck	0.01	0.02	0.09	0.00	0.00	0.00	0.00
End Dump Truck	0.03	0.12	0.41	0.00	0.02	0.02	0.02
<b>Subtotal</b>	<b>0.13</b>	<b>0.68</b>	<b>1.99</b>	<b>0.00</b>	<b>0.10</b>	<b>0.10</b>	<b>0.09</b>

Table A.4.1-Alt 2-79. Total Construction Emissions - Construct New Bulkhead - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>RETAINING BULKHEAD CONSTRUCTION</b>							
Crane - 100 Ton	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Vibratory Hammer & Power Pack	0.00	0.02	0.06	0.00	0.00	0.00	0.00
Flatbed Truck	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Welding Machine	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Generator	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.01</b>	<b>0.03</b>	<b>0.11</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>

Table A.4.1-Alt 2-80. Total Construction Emissions -Excavation Fronting E25 and Dispose Slip 1 - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>CLAMSHELL DREDGING</b>							
Clamshell Dredge	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bottom Dump Scow	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Tug Boat	0.03	0.28	0.76	0.00	0.02	0.02	0.02
	0.00	0.02	0.06	0.00	0.00	0.00	0.00
Work Tug	0.01	0.11	0.30	0.00	0.01	0.01	0.01
	0.00	0.01	0.04	0.00	0.00	0.00	0.00
Crew/Survey Boat	0.02	0.12	0.71	0.04	0.03	0.03	0.03
	0.01	0.08	0.10	0.00	0.01	0.01	0.01
<b>Subtotal</b>	<b>0.07</b>	<b>0.62</b>	<b>2.00</b>	<b>0.05</b>	<b>0.08</b>	<b>0.08</b>	<b>0.07</b>

Table A.4.1-Alt 2-81. Total Construction Emissions - Construct New Armor Slope - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>							
Derrick Barge	0.03	0.18	0.38	0.00	0.02	0.02	0.02
	0.01	0.04	0.15	0.00	0.01	0.01	0.01
Front End Loader	0.03	0.12	0.40	0.00	0.02	0.02	0.02
Tug Boat	0.03	0.24	0.64	0.00	0.02	0.02	0.02
	0.01	0.03	0.11	0.00	0.01	0.01	0.01
Tug Boat Rock Transport - Within 3 nm	0.03	0.25	0.67	0.00	0.02	0.02	0.02
	0.01	0.04	0.15	0.00	0.01	0.01	0.01
Tug Boat Rock Transport - Beyond 3 nm	0.06	0.57	1.54	0.00	0.05	0.05	0.04
	0.01	0.03	0.09	0.00	0.00	0.00	0.00
Crew/Survey Boat	0.01	0.08	0.47	0.03	0.02	0.02	0.02
	0.00	0.05	0.07	0.00	0.01	0.01	0.01
<b>Subtotal</b>	<b>0.22</b>	<b>1.63</b>	<b>4.68</b>	<b>0.03</b>	<b>0.18</b>	<b>0.18</b>	<b>0.17</b>

Table A.4.1-Alt 2-82. Total Construction Emissions - Wharf Construction - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>DRIVE 24-IN OCTAGONAL PILES - LAND</b>							
Hydraulic Crane	0.00	0.02	0.06	0.00	0.00	0.00	0.00
Crane - 200 Ton	0.01	0.04	0.13	0.00	0.01	0.01	0.01
Drill/Power Pack HPSI	0.01	0.05	0.18	0.00	0.01	0.01	0.01
Piledriving Hammer	0.01	0.03	0.09	0.00	0.01	0.01	0.00
Loader-Wheel	0.01	0.02	0.08	0.00	0.00	0.00	0.00
Jet Pump	0.00	0.01	0.04	0.00	0.00	0.00	0.00
End Dump Truck	0.00	0.02	0.07	0.00	0.00	0.00	0.00
Truck-Flatbed	0.00	0.01	0.05	0.00	0.00	0.00	0.00
Truck-Lowboy	0.01	0.02	0.08	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.06</b>	<b>0.23</b>	<b>0.78</b>	<b>0.00</b>	<b>0.04</b>	<b>0.04</b>	<b>0.04</b>
<b>DRIVE 24-IN OCTAGONAL PILES - WATER</b>							
Crane - 200 Ton	0.01	0.04	0.15	0.00	0.01	0.01	0.01
Derrick Barge	0.01	0.05	0.17	0.00	0.01	0.01	0.01
	0.01	0.03	0.10	0.00	0.01	0.01	0.00
Piledriving Hammer	0.01	0.03	0.11	0.00	0.01	0.01	0.01
End Dump Truck	0.01	0.02	0.08	0.00	0.00	0.00	0.00
Tugboat	0.04	0.34	0.93	0.00	0.03	0.03	0.03
	0.00	0.04	0.06	0.00	0.01	0.01	0.01
Truck-Flatbed	0.00	0.02	0.06	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.09</b>	<b>0.58</b>	<b>1.66</b>	<b>0.00</b>	<b>0.07</b>	<b>0.07</b>	<b>0.06</b>
<b>DRIVE PILES - MISC ACTIVITIES</b>							
Excavator	0.08	0.32	1.05	0.00	0.06	0.06	0.05
Loader-Wheel	0.02	0.06	0.23	0.00	0.01	0.01	0.01
Hydraulic Crane	0.02	0.09	0.28	0.00	0.02	0.02	0.02
Crane - 150 Ton	0.04	0.19	0.62	0.00	0.03	0.03	0.03
<b>Subtotal</b>	<b>0.16</b>	<b>0.65</b>	<b>2.19</b>	<b>0.00</b>	<b>0.12</b>	<b>0.12</b>	<b>0.11</b>
<b>REINFORCED CONCRETE WHARF</b>							
Hydraulic Crane	0.02	0.09	0.28	0.00	0.02	0.02	0.02
Crane - 150 Ton	0.04	0.19	0.62	0.00	0.03	0.03	0.03
Crane Barge - 150 ton	0.04	0.19	0.62	0.00	0.03	0.03	0.03
	0.02	0.20	0.27	0.00	0.02	0.02	0.02
Concrete Pump	0.05	0.18	0.67	0.00	0.04	0.04	0.03
Concrete Trucks	0.10	0.42	1.39	0.00	0.07	0.07	0.07
Sandblaster w/air compressor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck-Flatbed	0.02	0.07	0.25	0.00	0.01	0.01	0.01
Tugboat	0.06	0.58	1.57	0.00	0.05	0.05	0.04
	0.01	0.15	0.20	0.00	0.02	0.02	0.02
Concrete Saw	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Truck Crane - 65 ton	0.02	0.09	0.32	0.00	0.02	0.02	0.02
Boom Truck	0.02	0.09	0.30	0.00	0.02	0.02	0.01
<b>Subtotal</b>	<b>0.41</b>	<b>2.23</b>	<b>6.52</b>	<b>0.01</b>	<b>0.34</b>	<b>0.34</b>	<b>0.31</b>

Table A.4.1-Ait 2-83. Total Construction Emissions - DCY Development - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Tons</i>						
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM</i>	<i>PM10</i>	<i>PM2.5</i>
<b>NEW CONTAINER YARD CONSTRUCTION - PAVING</b>							
AC Paver	0.00	0.01	0.04	0.00	0.00	0.00	0.00
Grader	0.00	0.01	0.05	0.00	0.00	0.00	0.00
Roller	0.01	0.03	0.10	0.00	0.01	0.01	0.01
Vibration Roller	0.01	0.03	0.10	0.00	0.01	0.01	0.01
Water Truck	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Road Sweeper	0.00	0.01	0.04	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.03</b>	<b>0.10</b>	<b>0.35</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>	<b>0.02</b>

Table A.4.1-Ait 2-84. Total Construction Emissions - Dredge to -55 ft - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Tons</i>						
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM</i>	<i>PM10</i>	<i>PM2.5</i>
<b>CLAMSHELL DREDGING</b>							
Clamshell Dredge	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bottom Dump Scow	0.00	0.00	0.02	0.00	0.00	0.00	0.00
Tug Boat	0.02	0.19	0.50	0.00	0.01	0.01	0.01
	0.00	0.01	0.04	0.00	0.00	0.00	0.00
Work Tug	0.01	0.07	0.20	0.00	0.01	0.01	0.01
	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Crew/Survey Boat	0.01	0.08	0.47	0.03	0.02	0.02	0.02
	0.00	0.05	0.07	0.00	0.01	0.01	0.01
<b>Subtotal</b>	<b>0.05</b>	<b>0.41</b>	<b>1.33</b>	<b>0.03</b>	<b>0.05</b>	<b>0.05</b>	<b>0.05</b>

**Table A.4.1-Alt 2-85. Total Construction Emissions - POLB Middle Harbor Project - Phase 1 - Stage 2**

Activity	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>Demolish Existing Facilities</b>							
Sheet Pile Bulkhead Demolition	0	0	1	0	0	0	0
Wharf Demolition Landside	0	0	1	0	0	0	0
Wharf Demolition Marine	0	1	2	0	0	0	0
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>							
Retaining Bulkhead Construction	0	0	0	0	0	0	0
<b>Excavation Fronting E25 and Dispose Slip 1</b>							
Clamshell Dredging	0	1	2	0	0	0	0
<b>Construct New Armor Slope</b>							
Rock Placement, Push Off & Tub & Orange Peels	0	2	5	0	0	0	0
<b>Wharf Construction</b>							
Drive 24-In Octagonal Piles - Land	0	0	1	0	0	0	0
Drive 24-In Octagonal Piles - Water	0	1	2	0	0	0	0
Drive Piles - Misc Activities	0	1	2	0	0	0	0
Reinforced Concrete Wharf	0	2	7	0	0	0	0
<b>CY Development</b>							
New Container Yard Construction - Paving	0	0	0	0	0	0	0
<b>Dredge to -55 ft</b>							
Clamshell Dredging	0	0	1	0	0	0	0
<b>Other Peak Daily Emissions</b>							
Fugitive Emissions	-	-	-	-	-	-	-
Commuter Emissions							
<b>Dredging Activities</b>							
Dredging Activities	0	1	3	0	0	0	0
Peak Daily Emissions	0	2	6	0	0	0	0
Mitigated Peak Daily Emissions (1)	0	2	6	0	0	0	0
SCAQMD Daily Significance Thresholds	75	550	100	150	NA	150	55

Table A.4.1-Alt 2-86. Activity Data - Demolish Existing Facilities - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>WHARF DEMOLITION LANDSIDE</b>								
Hydra-Crane	130	0.43	1	56	8	447	120	53,664
Excavator	428	0.57	1	244	8	1,952	120	234,202
Flatbed Truck	230	0.25	1	58	8	460	120	55,200
End Dump Truck	310	0.30	4	372	8	2,976	120	357,120
<b>WHARF DEMOLITION MARINE</b>								
Derrick Barge	600	0.43	1	258	8	2,064	120	247,680
	200	0.50	1	100	8	800	120	96,000
Work Tug	750	0.20	1	150	8	1,200	120	144,000
	150	0.50	1	75	8	600	120	72,000
Hydra-Crane	130	0.43	1	56	8	447	120	53,664
Excavator	428	0.57	1	244	8	1,952	120	234,202
Flatbed Truck	230	0.25	1	58	8	460	120	55,200
End Dump Truck	310	0.30	3	279	8	2,232	120	267,840
<b>SHEET PILE BULKHEAD DEMOLITION</b>								
Crane - 100 Ton	335	0.43	1	144	8	1,152	120	138,288
Vibratory Hammer & Power Pack	350	0.75	1	263	8	2,100	120	252,000
Excavator	428	0.57	1	244	8	1,952	120	234,202
Flatbed Truck	230	0.25	1	58	8	460	120	55,200
Welding Machine	26	0.50	1	13	8	104	120	12,480
Generator	13	0.74	1	10	8	77	120	9,235

Table A.4.1-Alt 2-87. Activity Data - Construct New Bulkhead - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>RETAINING BULKHEAD CONSTRUCTION</b>								
Crane - 100 Ton	335	0.43	1	144	8	1,152	12	13,829
Vibratory Hammer & Power Pack	350	0.75	1	263	8	2,100	12	25,200
Flatbed Truck	230	0.25	1	58	8	460	12	5,520
Welding Machine	26	0.45	1	12	8	94	12	1,123
Generator	13	0.74	1	10	8	77	12	924

Table A.4.1-Alt 2-88. Activity Data - Excavation Fronting E26 and Dispose Slip 1 - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>CLAMSHELL DREDGING</b>								
Clamshell Dredge	2,500	0.00	1	0	24	0	27	0
	500	0.00	1	0	24	0	27	0
Bottom Dump Scow	250	0.05	1	13	24	300	27	8,100
Tug Boat	2,500	0.30	1	750	6	4,500	27	121,500
	400	0.25	1	100	6	600	27	16,200
Work Tug	750	0.20	1	150	12	1,800	27	48,600
	150	0.25	1	38	12	450	27	12,150
Crew/Survey Boat	400	0.30	1	120	24	2,880	27	77,760
	80	0.50	1	40	24	960	27	25,920

Table A.4.1-Alt 2-89. Activity Data - Construct New Armor Slope - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hours Per Day	Daily Hp-Hrs	Work Days	Total Hp-Hrs
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>								
Derrick Barge	600	0.43	1	258	8	2,064	90	185,760
	200	0.50	1	100	8	800	90	72,000
Front End Loader	400	0.68	1	272	8	2,176	90	195,840
Tug Boat	1,200	0.20	1	240	8	1,920	90	172,800
	150	0.50	1	75	8	600	90	54,000
Tug Boat Rock Transport - Within 3 nm	2,500	0.49	1	1,225	6	7,105	90	639,450
	400	0.50	1	200	6	1,160	90	104,400
Tug Boat Rock Transport - Beyond 3 nm	2,500	0.73	1	1,825	8.2	14,965	90	1,346,850
	400	0.50	1	200	9.2	1,840	90	165,600
Crew/Survey Boat	400	0.30	1	120	8	960	90	86,400
	80	0.50	1	40	8	320	90	28,800

Table A.4.1-Alt 2-90. Activity Data - Wharf Construction - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Power Rating (Hp)	Load Factor	# Active	Hourly Hp-Hrs	Hours Per Day	Daily Hp-Hrs	Work Days	Total Hp-Hrs
<b>DRIVE 24-IN OCTAGONAL PILES - LAND</b>								
Hydraulic Crane	152	0.43	1	65	8	523	67	34,859
Crane - 200 Ton	335	0.43	1	144	8	1,152	67	76,827
Drill/Power Pack HPSI	270	0.75	1	203	8	1,620	67	108,000
Piledriving Hammer	211	0.50	1	106	8	844	67	56,267
Loader-Wheel	300	0.30	1	90	8	720	67	48,000
Jet Pump	33	0.74	1	24	8	195	67	13,024
End Dump Truck	310	0.25	1	78	8	620	67	41,540
Truck-Flatbed	230	0.25	1	58	8	460	67	30,820
Truck-Lowboy	350	0.25	1	88	8	700	67	46,900
<b>DRIVE 24-IN OCTAGONAL PILES - WATER</b>								
Crane - 200 Ton	335	0.43	1	144	8	1,152	76	88,031
Derrick Barge	380	0.43	1	163	8	1,307	76	99,856
	195	0.50	1	98	8	780	76	59,280
Piledriving Hammer	211	0.50	1	106	8	844	76	64,472
End Dump Truck	310	0.25	1	78	8	620	76	47,120
Tugboat	1,000	0.50	1	500	8	4,000	76	305,556
	100	0.50	1	50	8	400	76	30,400
Truck-Flatbed	230	0.25	1	58	8	460	76	34,960
<b>DRIVE PILES - MISC ACTIVITIES</b>								
Excavator	428	0.57	1	244	8	1,952	245	478,162
Loader-Wheel	180	0.30	1	54	8	432	245	105,840
Hydraulic Crane	152	0.43	1	65	8	523	245	128,106
Crane - 150 Ton	335	0.43	1	144	8	1,152	245	282,338
<b>REINFORCED CONCRETE WHARF</b>								
Hydraulic Crane	152	0.43	1	65	8	523	245	128,106
Crane - 150 Ton	335	0.43	1	144	8	1,152	245	282,338
Crane Barge - 150 ton	335	0.43	1	144	8	1,152	245	282,338
	107	0.50	1	54	8	428	245	104,860
Concrete Pump	210	0.74	1	155	8	1,243	245	304,584
Concrete Trucks	285	0.25	5	321	8	2,565	245	628,425
Sandblaster w/air compressor	50	0.00	1	0	8	0	245	0
Truck-Flatbed	230	0.25	1	58	8	460	245	112,700
Tugboat	1,000	0.20	1	200	8	1,600	245	392,000
	100	0.40	1	40	8	320	245	78,400
Concrete Saw	35	0.10	1	4	8	28	245	6,860
Truck Crane - 65 ton	365	0.20	1	73	8	584	245	143,080
Boom Truck	350	0.20	1	70	8	560	245	137,200

Table A.4.1-Alt 2-91. Activity Data - Construct E27 Bulkhead - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>RETAINING BULKHEAD CONSTRUCTION</b>								
Crane - 100 Ton	335	0.43	1	144	8	1,152	40	46,096
Vibratory Hammer & Power Pack	350	0.75	1	263	8	2,100	40	84,000
Flatbed Truck	230	0.25	1	58	8	460	40	18,400
Welding Machine	26	0.45	1	12	8	94	40	3,744
Generator	13	0.74	1	10	8	77	40	3,078

Table A.4.1-Alt 2-92. Activity Data - CY Development - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>NEW CONTAINER YARD UTILITIES</b>								
Pipelayer	300	0.50	1	150	8	1,200		0
Auger	125	0.50	1	63	8	500		0
Crane	130	0.43	1	56	8	447		0
Grader	215	0.61	3	393	8	3,148		0
End Dump Truck	310	0.25	1	78	8	620		0
Flat Bed Truck	230	0.25	2	115	8	920		0
Concrete Truck	250	0.60	4	600	8	4,800		0
Front End Loader	400	0.40	2	320	8	2,560		0
Trencher	200	0.20	1	40	8	320		0
<b>NEW CONTAINER YARD CONSTRUCTION - PAVING</b>								
AC Paver	187	0.40	1	75	8	598	105	62,832
Grader	215	0.40	1	86	8	688	105	72,240
Roller	151	0.40	3	181	8	1,450	105	152,208
Vibration Roller	154	0.40	3	185	8	1,478	105	155,232
Water Truck	210	0.30	1	63	8	504	105	52,920
Road Sweeper	190	0.40	1	76	8	608	105	63,840
<b>NEW CONTAINER YARD CONSTRUCTION - ELECTRICAL</b>								
Flat Bed Truck	230	0.25	1	58	8	460		0
Truck Crane	130	0.20	1	26	8	208		0
Auger	125	0.50	1	63	8	500		0

Table A.4.1-Alt 2-93. Activity Data - Hydraulic Dredging to -55ft - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>CLAMSHELL DREDGING</b>								
Clamshell Dredge	2,500	0.00	1	0	24	0	30	0
	500	0.00	1	0	24	0	30	0
Bottom Dump Scow	250	0.05	1	13	24	300	30	9,000
Tug Boat	2,500	0.30	1	750	6	4,500	30	135,000
	400	0.25	1	100	6	600	30	18,000
Work Tug	750	0.20	1	150	12	1,800	30	54,000
	150	0.25	1	38	12	450	30	13,500
Crew/Survey Boat	400	0.30	1	120	24	2,880	30	86,400
	80	0.50	1	40	24	960	30	28,800

Table A.4.1-Ait 2-94. Total Construction Emissions - Demolish Existing Facilities - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>WHARF DEMOLITION LANDSIDE</b>							
Hydra-Crane	0.01	0.05	0.17	0.00	0.01	0.01	0.01
Excavator	0.05	0.22	0.72	0.00	0.04	0.04	0.04
Flatbed Truck	0.01	0.05	0.17	0.00	0.01	0.01	0.01
End Dump Truck	0.08	0.33	1.10	0.00	0.06	0.06	0.05
<b>Subtotal</b>	<b>0.15</b>	<b>0.64</b>	<b>2.16</b>	<b>0.00</b>	<b>0.12</b>	<b>0.12</b>	<b>0.11</b>
<b>WHARF DEMOLITION MARINE</b>							
Derrick Barge	0.05	0.36	0.76	0.00	0.04	0.04	0.04
	0.02	0.08	0.30	0.00	0.02	0.02	0.01
Work Tug	0.03	0.30	0.81	0.00	0.02	0.02	0.02
	0.02	0.07	0.22	0.00	0.02	0.02	0.02
Hydra-Crane	0.01	0.05	0.17	0.00	0.01	0.01	0.01
Excavator	0.05	0.22	0.72	0.00	0.04	0.04	0.04
Flatbed Truck	0.01	0.05	0.17	0.00	0.01	0.01	0.01
End Dump Truck	0.06	0.25	0.83	0.00	0.04	0.04	0.04
<b>Subtotal</b>	<b>0.26</b>	<b>1.37</b>	<b>3.97</b>	<b>0.01</b>	<b>0.20</b>	<b>0.20</b>	<b>0.19</b>
<b>SHEET PILE BULKHEAD DEMOLITION</b>							
Crane - 100 Ton	0.03	0.13	0.43	0.00	0.02	0.02	0.02
Vibratory Hammer & Power Pack	0.06	0.23	0.78	0.00	0.04	0.04	0.04
Excavator	0.05	0.22	0.72	0.00	0.04	0.04	0.04
Flatbed Truck	0.01	0.05	0.17	0.00	0.01	0.01	0.01
Welding Machine	0.01	0.02	0.07	0.00	0.01	0.01	0.01
Generator	0.01	0.02	0.05	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.16</b>	<b>0.66</b>	<b>2.22</b>	<b>0.00</b>	<b>0.12</b>	<b>0.12</b>	<b>0.11</b>

Table A.4.1-Ait 2-95. Total Construction Emissions - Construct New Bulkhead - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>RETAINING BULKHEAD CONSTRUCTION</b>							
Crane - 100 Ton	0.00	0.01	0.04	0.00	0.00	0.00	0.00
Vibratory Hammer & Power Pack	0.01	0.02	0.08	0.00	0.00	0.00	0.00
Flatbed Truck	0.00	0.00	0.02	0.00	0.00	0.00	0.00
Welding Machine	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Generator	0.00	0.00	0.01	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.01</b>	<b>0.04</b>	<b>0.15</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>

Table A.4.1-Ait 2-96. Total Construction Emissions - Excavation Fronting E26 and Dispose Slip 1 - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>CLAMSHELL DREDGING</b>							
Clamshell Dredge	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bottom Dump Scow	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Tug Boat	0.03	0.25	0.68	0.00	0.02	0.02	0.02
	0.00	0.02	0.05	0.00	0.00	0.00	0.00
Work Tug	0.01	0.10	0.27	0.00	0.01	0.01	0.01
	0.00	0.01	0.04	0.00	0.00	0.00	0.00
Crew/Survey Boat	0.01	0.11	0.64	0.04	0.03	0.03	0.02
	0.01	0.07	0.09	0.00	0.01	0.01	0.01
<b>Subtotal</b>	<b>0.07</b>	<b>0.56</b>	<b>1.80</b>	<b>0.04</b>	<b>0.07</b>	<b>0.07</b>	<b>0.06</b>

Table A.4.1-Alt 2-97. Total Construction Emissions - Construct New Armor Slope - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>							
Derrick Barge	0.04	0.27	0.57	0.00	0.03	0.03	0.03
	0.02	0.06	0.22	0.00	0.01	0.01	0.01
Front End Loader	0.04	0.18	0.60	0.00	0.03	0.03	0.03
Tug Boat	0.04	0.36	0.97	0.00	0.03	0.03	0.03
	0.01	0.05	0.17	0.00	0.01	0.01	0.01
Tug Boat Rock Transport - Within 3 nm	0.14	1.32	3.58	0.00	0.11	0.11	0.10
	0.02	0.10	0.32	0.00	0.02	0.02	0.02
Tug Boat Rock Transport - Beyond 3 nm	0.30	2.77	7.53	0.01	0.22	0.22	0.21
	0.04	0.15	0.51	0.00	0.03	0.03	0.03
Crew/Survey Boat	0.02	0.12	0.71	0.04	0.03	0.03	0.03
	0.01	0.08	0.10	0.00	0.01	0.01	0.01
<b>Subtotal</b>	<b>0.67</b>	<b>5.45</b>	<b>15.29</b>	<b>0.06</b>	<b>0.53</b>	<b>0.53</b>	<b>0.49</b>

Table A.4.1-Alt 2-98. Total Construction Emissions - Wharf Construction - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>DRIVE 24-IN OCTAGONAL PILES - LAND</b>							
Hydraulic Crane	0.01	0.03	0.11	0.00	0.01	0.01	0.01
Crane - 200 Ton	0.02	0.07	0.24	0.00	0.01	0.01	0.01
Drill/Power Pack HPSI	0.02	0.10	0.33	0.00	0.02	0.02	0.02
Piledriving Hammer	0.01	0.05	0.17	0.00	0.01	0.01	0.01
Loader-Wheel	0.01	0.04	0.15	0.00	0.01	0.01	0.01
Jet Pump	0.01	0.02	0.07	0.00	0.01	0.01	0.01
End Dump Truck	0.01	0.04	0.13	0.00	0.01	0.01	0.01
Truck-Flatbed	0.01	0.03	0.10	0.00	0.01	0.01	0.00
Truck-Lowboy	0.01	0.04	0.14	0.00	0.01	0.01	0.01
<b>Subtotal</b>	<b>0.11</b>	<b>0.42</b>	<b>1.44</b>	<b>0.00</b>	<b>0.08</b>	<b>0.08</b>	<b>0.08</b>
<b>DRIVE 24-IN OCTAGONAL PILES - WATER</b>							
Crane - 200 Ton	0.02	0.08	0.27	0.00	0.01	0.01	0.01
Derrick Barge	0.02	0.09	0.31	0.00	0.02	0.02	0.02
	0.01	0.05	0.18	0.00	0.01	0.01	0.01
Piledriving Hammer	0.01	0.05	0.20	0.00	0.01	0.01	0.01
End Dump Truck	0.01	0.04	0.15	0.00	0.01	0.01	0.01
Tugboat	0.07	0.63	1.71	0.00	0.05	0.05	0.05
	0.01	0.08	0.11	0.00	0.01	0.01	0.01
Truck-Flatbed	0.01	0.03	0.11	0.00	0.01	0.01	0.01
<b>Subtotal</b>	<b>0.16</b>	<b>1.06</b>	<b>3.03</b>	<b>0.00</b>	<b>0.13</b>	<b>0.13</b>	<b>0.12</b>
<b>DRIVE PILES - MISC ACTIVITIES</b>							
Excavator	0.11	0.44	1.48	0.00	0.08	0.08	0.07
Loader-Wheel	0.02	0.09	0.33	0.00	0.02	0.02	0.02
Hydraulic Crane	0.03	0.12	0.40	0.00	0.03	0.03	0.03
Crane - 150 Ton	0.06	0.26	0.87	0.00	0.05	0.05	0.04
<b>Subtotal</b>	<b>0.22</b>	<b>0.91</b>	<b>3.07</b>	<b>0.00</b>	<b>0.17</b>	<b>0.17</b>	<b>0.16</b>
<b>REINFORCED CONCRETE WHARF</b>							
Hydraulic Crane	0.03	0.12	0.40	0.00	0.03	0.03	0.03
Crane - 150 Ton	0.06	0.26	0.87	0.00	0.05	0.05	0.04
Crane Barge - 150 ton	0.06	0.26	0.87	0.00	0.05	0.05	0.04
	0.02	0.27	0.38	0.00	0.03	0.03	0.03
Concrete Pump	0.07	0.25	0.94	0.00	0.05	0.05	0.05
Concrete Trucks	0.14	0.58	1.94	0.00	0.10	0.10	0.10
Sandblaster w/air compressor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck-Flatbed	0.02	0.09	0.35	0.00	0.02	0.02	0.02
Tugboat	0.09	0.81	2.19	0.00	0.06	0.06	0.06
	0.02	0.20	0.29	0.00	0.03	0.03	0.02
Concrete Saw	0.00	0.01	0.04	0.00	0.00	0.00	0.00
Truck Crane - 65 ton	0.03	0.13	0.44	0.00	0.02	0.02	0.02
Boom Truck	0.03	0.13	0.42	0.00	0.02	0.02	0.02
<b>Subtotal</b>	<b>0.58</b>	<b>3.13</b>	<b>9.13</b>	<b>0.01</b>	<b>0.47</b>	<b>0.47</b>	<b>0.44</b>

Table A.4.1-Alt 2-99. Total Construction Emissions - Construct E27 Bulkhead - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>RETAINING BULKHEAD CONSTRUCTION</b>							
Crane - 100 Ton	0.01	0.04	0.14	0.00	0.01	0.01	0.01
Vibratory Hammer & Power Pack	0.02	0.08	0.26	0.00	0.01	0.01	0.01
Flatbed Truck	0.00	0.02	0.06	0.00	0.00	0.00	0.00
Welding Machine	0.00	0.01	0.02	0.00	0.00	0.00	0.00
Generator	0.00	0.01	0.02	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.04</b>	<b>0.15</b>	<b>0.50</b>	<b>0.00</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>

Table A.4.1-Alt 2-100. Total Construction Emissions - CY Development - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>NEW CONTAINER YARD UTILITIES</b>							
Pipelayer	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Auger	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grader	0.00	0.00	0.00	0.00	0.00	0.00	0.00
End Dump Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Flat Bed Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Front End Loader	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trencher	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.00</b>						
<b>NEW CONTAINER YARD CONSTRUCTION - PAVING</b>							
AC Paver	0.01	0.05	0.19	0.00	0.01	0.01	0.01
Grader	0.02	0.06	0.22	0.00	0.01	0.01	0.01
Roller	0.03	0.15	0.47	0.00	0.04	0.04	0.03
Vibration Roller	0.03	0.15	0.48	0.00	0.04	0.04	0.03
Water Truck	0.01	0.04	0.16	0.00	0.01	0.01	0.01
Road Sweeper	0.01	0.05	0.20	0.00	0.01	0.01	0.01
<b>Subtotal</b>	<b>0.12</b>	<b>0.50</b>	<b>1.73</b>	<b>0.00</b>	<b>0.12</b>	<b>0.12</b>	<b>0.11</b>
<b>NEW CONTAINER YARD CONSTRUCTION - ELECTRICAL</b>							
Flat Bed Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck Crane	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Auger	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.00</b>						

Table A.4.1-Alt 2-101. Total Construction Emissions - Hydraulic Dredging to -55ft - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>CLAMSHELL DREDGING</b>							
Clamshell Dredge	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bottom Dump Scow	0.00	0.01	0.03	0.00	0.00	0.00	0.00
Tug Boat	0.03	0.28	0.76	0.00	0.02	0.02	0.02
	0.00	0.02	0.06	0.00	0.00	0.00	0.00
Work Tug	0.01	0.11	0.30	0.00	0.01	0.01	0.01
	0.00	0.04	0.05	0.00	0.00	0.00	0.00
Crew/Survey Boat	0.02	0.12	0.71	0.04	0.03	0.03	0.03
	0.01	0.08	0.10	0.00	0.01	0.01	0.01
<b>Subtotal</b>	<b>0.07</b>	<b>0.64</b>	<b>2.00</b>	<b>0.05</b>	<b>0.08</b>	<b>0.08</b>	<b>0.07</b>

**Table A.4.1-Alt 2-102. Total Emissions - POLB Middle Harbor Project - Phase 1 - Stage 3**

Activity	Tons						
	VOC	CO	NOx	SOx	PM	PM10	PM2.5
<b>Demolish Existing Facilities</b>							
Wharf Demolition Landside	0	1	2	0	0	0	0
Wharf Demolition Marine	0	1	4	0	0	0	0
Sheet Pile Bulkhead Demolition	0	1	2	0	0	0	0
<b>Construct New Bulkhead</b>							
Retaining Bulkhead Construction	0	0	0	0	0	0	0
<b>Excavation Fronting E26 and Dispose Slip 1</b>							
Clamshell Dredging	0	1	2	0	0	0	0
<b>Construct New Armor Slope</b>							
Rock Placement, Push Off & Tub & Orange Peels	1	5	15	0	1	1	0
<b>Wharf Construction</b>							
Drive 24-In Octagonal Piles - Land	0	0	1	0	0	0	0
Drive 24-In Octagonal Piles - Water	0	1	3	0	0	0	0
Drive Piles - Misc Activities	0	1	3	0	0	0	0
Reinforced Concrete Wharf	1	3	9	0	0	0	0
<b>Construct E27 Bulkhead</b>							
Retaining Bulkhead Construction	0	0	0	0	0	0	0
<b>CY Development</b>							
Vibratory Hammer & Power Pack	0	0	0	0	0	0	0
Flatbed Truck	0	1	2	0	0	0	0
Welding Machine	0	0	0	0	0	0	0
<b>Hydraulic Dredge to -55ft</b>							
Clamshell Dredging	0	1	2	0	0	0	0
<b>Other Peak Daily Emissions</b>							
Fugitive Dust	-	-	-	-			
Commuter Emissions							
<b>Dredging Activities</b>							
Dredging Activities	0	1	4	0	0	0	0.1
Peak Daily Emissions	1	6	19	0	1	1	1
Mitigated Peak Daily Emissions	1	6	19	0	1	1	1
SCAQMD Daily Significance Thresholds	75	550	100	150	NA	150	55

Table A.4.1-Alt 2-103. Activity Data - Demo Existing F1-4, F6 Wharf - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>WHARF DEMOLITION LANDSIDE</b>								
Hydra-Crane	130	0.43	1	56	8	447	182	81,390
Excavator	428	0.57	1	244	8	1,952	182	355,206
Flatbed Truck	230	0.25	1	58	8	460	182	83,720
End Dump Truck	310	0.30	4	372	8	2,976	182	541,632

Table A.4.1-Alt 2-104. Activity Data - Roll Surcharge - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>ROLL SURCHARGE</b>								
Scrapers	475	0.60	9	2,565	8	20,520	42	861,840
Dozers	285	0.35	2	200	8	1,596	42	67,032
Loader	170	0.30	3	153	8	1,224	42	51,408
End Dump Truck	310	0.25	6	465	8	3,720	42	156,240
Water Truck	310	0.25	1	78	8	620	42	26,040

Table A.4.1-Alt 2-105. Daily Construction Emissions - Demo Existing F1-4, F6 Wharf - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Tons</i>							<i>Total Tons</i>
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM</i>	<i>PM10</i>	<i>PM2.5</i>	<i>DPM</i>
<b>WHARF DEMOLITION LANDSIDE</b>								
Hydra-Crane	0.02	0.08	0.25	0.00	0.02	0.02	0.02	3.59
Excavator	0.08	0.33	1.10	0.00	0.06	0.06	0.05	10.69
Flatbed Truck	0.02	0.07	0.26	0.00	0.01	0.01	0.01	2.52
End Dump Truck	0.12	0.50	1.67	0.00	0.09	0.09	0.08	16.30
<b>Subtotal</b>	<b>0.23</b>	<b>0.98</b>	<b>3.28</b>	<b>0.01</b>	<b>0.18</b>	<b>0.18</b>	<b>0.17</b>	<b>33.10</b>

Table A.4.1-Alt 2-106. Daily Construction Emissions - Roll Surcharge - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons							Total Tons
	VOC	CO	NOx	SOx	PM	PM10	PM2.5	DPM
<b>ROLL SURCHARGE</b>								
Scrapers	0.19	0.80	2.66	0.00	0.14	0.14	0.13	5.99
Dozers	0.01	0.06	0.21	0.00	0.01	0.01	0.01	0.47
Loader	0.01	0.05	0.16	0.00	0.01	0.01	0.01	0.52
End Dump Truck	0.03	0.14	0.48	0.00	0.03	0.03	0.02	1.09
Water Truck	0.01	0.02	0.08	0.00	0.00	0.00	0.00	0.18
<b>Subtotal</b>	<b>0.26</b>	<b>1.08</b>	<b>3.59</b>	<b>0.01</b>	<b>0.20</b>	<b>0.20</b>	<b>0.18</b>	<b>8.24</b>

Table A.4.1-Alt 2-107. Daily Emissions - POLB Middle Harbor Project - Phase 2 - Stage 1

Activity	Tons							Total Tons
	VOC	CO	NOx	SOx	PM	PM10	PM2.5	DPM
<b>Demolition</b>								
Wharf Demolition Landside	0	0	0	0	0	0	0	0
<b>Railyard</b>								
Intermodal Yard Construction	0	0	0	0	0	0	0	0
<b>Container Yard Development (F1 - F4)</b>								
New Container Yard Utilities	0	0	0	0	0	0	0	0
New Container Yard Construction - Paving	0	0	0	0	0	0	0	0
New Container Yard Construction - Electrical	0	0	0	0	0	0	0	0
<b>Demo Existing F1-4, F6 Wharf</b>								
Wharf Demolition Landside	0	1	3	0	0	0	0	33
Wharf Demolition Marine	0	0	0	0	0	0	0	0
<b>Construct East Basin Retaining Dike</b>								
Rock Placement, Push Off & Tub & Orange Peels	0	0	0	0	0	0	0	0
<b>Slip/Basin Fill &amp; Surcharge East</b>								
Cutter Suction Dredging- Spill Barge (No Booster)	0	0	0	0	0	0	0	0
Cutter Suction Dredging- Land Disposal (No Booster)	0	0	0	0	0	0	0	0
Wick Drains	0	0	0	0	0	0	0	0
<b>Roll Surcharge</b>								
Roll Surcharge	0	1	4	0	0	0	0	8
<b>Other Peak Daily Emissions</b>								
Fugitive Dust	-	-	-	-	0	0	0	
Commuter Emissions								
<b>Dredging Activities</b>								
Dredging Activities	0	0	0	0	0	0	0	0
Peak Daily Emissions	0	1	3	0	0	0	0	0
Mitigated Peak Daily Emissions (1)	0	1	3	0	0	0	0	0
<b>SCAQMD Daily Significance Thresholds</b>	<b>75</b>	<b>550</b>	<b>100</b>	<b>150</b>	<b>NA</b>	<b>150</b>	<b>55</b>	

Table A.4.1-Alt 2-108. Activity Data - Demo Existing F8-10 Wharf - POLB Middle Harbor - Alternative 2

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>WHARF DEMOLITION LANDSIDE</b>								
Hydra-Crane	130	0.43	1	56	8	447	182	81,390
Excavator	428	0.57	1	244	8	1,952	182	355,206
Flatbed Truck	230	0.25	1	58	8	460	182	83,720
End Dump Truck	310	0.30	4	372	8	2,976	182	541,632
<b>WHARF DEMOLITION MARINE</b>								
Derrick Barge	600	0.43	1	258	8	2,064	182	375,648
	200	0.50	1	100	8	800	182	145,600
Work Tug	750	0.20	1	150	8	1,200	182	218,400
	150	0.50	1	75	8	600	182	109,200
Hydra-Crane	130	0.43	1	56	8	447	182	81,390
Excavator	428	0.57	1	244	8	1,952	182	355,206
Flatbed Truck	230	0.25	1	58	8	460	182	83,720
End Dump Truck	310	0.30	3	279	8	2,232	182	406,224

Table A.4.1-Alt 2-109. Activity Data - Construct Wharf, Armor, Fill - POLB Middle Harbor - Alternative 2 (1 of 2)

<i>Location/Equipment Type</i>	<i>Power Rating (Hp)</i>	<i>Load Factor</i>	<i># Active</i>	<i>Hourly Hp-Hrs</i>	<i>Hours Per Day</i>	<i>Daily Hp-Hrs</i>	<i>Work Days</i>	<i>Total Hp-Hrs</i>
<b>LAND EX</b>								
Excavator	428	0.57	1	244	8	1,952	168	327,882
Loader	170	0.68	1	116	8	925	168	155,366
End Dump Truck	310	0.25	4	310	8	2,480	168	416,640
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>								
Derrick Barge	600	0.43	1	258	8	2,064	168	346,752
	200	0.50	1	100	8	800	168	134,400
Front End Loader	400	0.68	1	272	8	2,176	168	365,568
Tug Boat	1,200	0.20	1	240	8	1,920	168	322,560
	150	0.50	1	75	8	600	168	100,800
Tug Boat Rock Transport - Within 3 nm	2,500	0.49	1	1,225	6	7,105	168	1,193,640
	400	0.50	1	200	6	1,160	168	194,880
Tug Boat Rock Transport - Beyond 3 nm	2,500	0.73	1	1,825	8.2	14,965	169	2,529,085
	400	0.50	1	200	9.2	1,840	170	312,800
Crew/Survey Boat	400	0.30	1	120	8	960	168	161,280
	80	0.50	1	40	8	320	168	53,760
<b>RETAINING BULKHEAD CONSTRUCTION</b>								
Crane - 100 Ton	335	0.43	1	144	8	1,152	168	193,603
Vibratory Hammer & Power Pack	350	0.75	1	263	8	2,100	168	352,800
Flatbed Truck	230	0.25	1	58	8	460	168	77,280
Welding Machine	26	0.45	1	12	8	94	168	15,725
Generator	13	0.74	1	10	8	77	168	12,929
<b>DRIVE 24-IN OCTAGONAL PILES - LAND</b>								
Hydraulic Crane	152	0.43	1	65	8	523	126	65,883
Crane - 200 Ton	335	0.43	1	144	8	1,152	126	145,202
Drill/Power Pack HPSI	270	0.75	1	203	8	1,620	126	204,120
Piledriving Hammer	211	0.50	1	106	8	844	126	106,344
Loader-Wheel	300	0.30	1	90	8	720	126	90,720
Jet Pump	33	0.74	1	24	8	195	126	24,615
End Dump Truck	310	0.25	1	78	8	620	126	78,120
Truck-Flatbed	230	0.25	1	58	8	460	126	57,960
Truck-Lowboy	350	0.25	1	88	8	700	126	88,200

Table A.4.1-Alt 2-110. Activity Data - Construct Wharf, Armor, Fill - POLB Middle Harbor - Alternative 2 (2 of 2)

<b>DRIVE 24-IN OCTAGONAL PILES - WATER</b>								
Crane - 200 Ton	335	0.43	1	144	8	1,152	126	145,202
Derrick Barge	380	0.43	1	163	8	1,307	126	164,707
	195	0.50	1	98	8	780	126	98,280
Piledriving Hammer	211	0.50	1	106	8	844	126	106,344
End Dump Truck	310	0.25	1	78	8	620	126	78,120
Tugboat	1,000	0.50	1	500	8	4,000	126	504,000
	100	0.50	1	50	8	400	126	50,400
Truck-Flatbed	230	0.25	1	58	8	460	126	57,960
<b>DRIVE PILES - MISC ACTIVITIES</b>								
Excavator	428	0.57	1	244	8	1,952	126	245,912
Loader-Wheel	180	0.30	1	54	8	432	126	54,432
Hydraulic Crane	152	0.43	1	65	8	523	126	65,883
Crane - 150 Ton	335	0.43	1	144	8	1,152	126	145,202
<b>REINFORCED CONCRETE WHARF</b>								
Hydraulic Crane	152	0.43	1	65	8	523	210	109,805
Crane - 150 Ton	335	0.43	1	144	8	1,152	210	242,004
Crane Barge - 150 ton	335	0.43	1	144	8	1,152	210	242,004
	107	0.50	1	54	8	428	210	89,880
Concrete Pump	210	0.74	1	155	8	1,243	210	261,072
Concrete Trucks	285	0.25	5	321	8	2,565	210	538,650
Sandblaster w/air compressor	50	0.00	1	0	8	0	210	0
Truck-Flatbed	230	0.25	1	58	8	460	210	96,600
Tugboat	1,000	0.20	1	200	8	1,600	210	336,000
	100	0.40	1	40	8	320	210	67,200
Concrete Saw	35	0.10	1	4	8	28	210	5,880
Truck Crane - 65 ton	365	0.20	1	73	8	584	210	122,640
Boom Truck	350	0.20	1	70	8	560	210	117,600

Table A.4.1-Alt 2-111. Total Construction Emissions - Demo Existing F8-10 Wharf - POLB Middle Harbor - Alternative 2

Location/Equipment Type	Tons							Total Tons
	VOC	CO	NOx	SOx	PM	PM10	PM2.5	DPM
<b>WHARF DEMOLITION LANDSIDE</b>								
Hydra-Crane	0.02	0.08	0.25	0.00	0.02	0.02	0.02	3.59
Excavator	0.08	0.33	1.10	0.00	0.06	0.06	0.05	10.69
Flatbed Truck	0.02	0.07	0.26	0.00	0.01	0.01	0.01	2.52
End Dump Truck	0.12	0.50	1.67	0.00	0.09	0.09	0.08	16.30
<b>Subtotal</b>	<b>0.23</b>	<b>0.98</b>	<b>3.28</b>	<b>0.01</b>	<b>0.18</b>	<b>0.18</b>	<b>0.17</b>	<b>33.10</b>
<b>WHARF DEMOLITION MARINE</b>								
Derrick Barge	0.08	0.55	1.16	0.00	0.06	0.06	0.06	11.30
	0.03	0.12	0.45	0.00	0.02	0.02	0.02	4.38
Work Tug	0.05	0.45	1.22	0.00	0.04	0.04	0.03	6.54
	0.02	0.10	0.34	0.00	0.03	0.03	0.02	4.82
Hydra-Crane	0.02	0.08	0.25	0.00	0.02	0.02	0.02	3.59
Excavator	0.08	0.33	1.10	0.00	0.06	0.06	0.05	10.69
Flatbed Truck	0.02	0.07	0.26	0.00	0.01	0.01	0.01	2.52
End Dump Truck	0.09	0.38	1.25	0.00	0.07	0.07	0.06	12.22
<b>Subtotal</b>	<b>0.39</b>	<b>2.08</b>	<b>6.03</b>	<b>0.01</b>	<b>0.31</b>	<b>0.31</b>	<b>0.28</b>	<b>56.07</b>

Table A.4.1-Alt 2-112. Total Construction Emissions - Construct Wharf, Armor, Fill - POLB Middle Harbor - Alternative 2 (1 of 2)

Location/Equipment Type	Tons							Total Tons
	VOC	CO	NOx	SOx	PM	PM10	PM2.5	DPM
<b>LAND EX</b>								
Excavator	0.07	0.30	1.01	0.00	0.05	0.05	0.05	9.11
Loader	0.03	0.15	0.48	0.00	0.04	0.04	0.03	6.33
End Dump Truck	0.09	0.39	1.29	0.00	0.07	0.07	0.06	11.57
<b>Subtotal</b>	<b>0.20</b>	<b>0.84</b>	<b>2.78</b>	<b>0.00</b>	<b>0.16</b>	<b>0.16</b>	<b>0.15</b>	<b>27.01</b>
<b>ROCK PLACEMENT, PUSH OFF &amp; TUB &amp; ORANGE PEELS</b>								
Derrick Barge	0.08	0.51	1.07	0.00	0.06	0.06	0.05	9.63
	0.03	0.11	0.41	0.00	0.02	0.02	0.02	3.73
Front End Loader	0.08	0.34	1.13	0.00	0.06	0.06	0.06	10.15
Tug Boat	0.07	0.66	1.80	0.00	0.05	0.05	0.05	8.92
	0.02	0.10	0.31	0.00	0.02	0.02	0.02	4.11
Tug Boat Rock Transport - Within 3 nm	0.27	2.45	6.68	0.01	0.20	0.20	0.18	32.99
	0.04	0.18	0.60	0.00	0.03	0.03	0.03	5.41
Tug Boat Rock Transport - Beyond 3 nm	0.56	5.20	14.15	0.01	0.42	0.42	0.39	70.32
	0.07	0.29	0.97	0.00	0.05	0.05	0.05	8.79
Crew/Survey Boat	0.03	0.23	1.33	0.08	0.05	0.05	0.05	8.96
	0.01	0.14	0.20	0.00	0.02	0.02	0.02	2.99
<b>Subtotal</b>	<b>1.26</b>	<b>10.21</b>	<b>28.64</b>	<b>0.11</b>	<b>0.99</b>	<b>0.99</b>	<b>0.92</b>	<b>166.01</b>
<b>RETAINING BULKHEAD CONSTRUCTION</b>								
Crane - 100 Ton	0.04	0.18	0.60	0.00	0.03	0.03	0.03	5.38
Vibratory Hammer & Power Pack	0.08	0.33	1.09	0.00	0.06	0.06	0.05	9.80
Flatbed Truck	0.02	0.06	0.24	0.00	0.01	0.01	0.01	2.15
Welding Machine	0.01	0.03	0.09	0.00	0.01	0.01	0.01	1.31
Generator	0.01	0.02	0.07	0.00	0.01	0.01	0.01	1.08
<b>Subtotal</b>	<b>0.16</b>	<b>0.62</b>	<b>2.08</b>	<b>0.00</b>	<b>0.12</b>	<b>0.12</b>	<b>0.11</b>	<b>19.71</b>
<b>DRIVE 24-IN OCTAGONAL PILES - LAND</b>								
Hydraulic Crane	0.01	0.06	0.20	0.00	0.02	0.02	0.01	2.01
Crane - 200 Ton	0.03	0.13	0.45	0.00	0.02	0.02	0.02	3.03
Drill/Power Pack HPSI	0.05	0.19	0.63	0.00	0.03	0.03	0.03	4.25
Piledriving Hammer	0.02	0.09	0.33	0.00	0.02	0.02	0.02	2.22
Loader-Wheel	0.02	0.08	0.28	0.00	0.02	0.02	0.01	1.89
Jet Pump	0.02	0.04	0.14	0.00	0.01	0.01	0.01	1.54
End Dump Truck	0.02	0.07	0.24	0.00	0.01	0.01	0.01	1.63
Truck-Flatbed	0.01	0.05	0.18	0.00	0.01	0.01	0.01	1.21
Truck-Lowboy	0.02	0.08	0.27	0.00	0.01	0.01	0.01	1.84
<b>Subtotal</b>	<b>0.20</b>	<b>0.80</b>	<b>2.72</b>	<b>0.00</b>	<b>0.16</b>	<b>0.16</b>	<b>0.14</b>	<b>19.61</b>

Table A.4.1-Alt 2-112. Total Construction Emissions - Construct Wharf, Armor, Fill - POLB Middle Harbor - Alternative 2 (2 of 2)

<b>DRIVE 24-IN OCTAGONAL PILES - WATER</b>								
Crane - 200 Ton	0.03	0.13	0.45	0.00	0.02	0.02	0.02	3.03
Derrick Barge	0.04	0.15	0.51	0.00	0.03	0.03	0.03	3.43
	0.02	0.08	0.30	0.00	0.02	0.02	0.01	2.05
Piledriving Hammer	0.02	0.09	0.33	0.00	0.02	0.02	0.02	2.22
End Dump Truck	0.02	0.07	0.24	0.00	0.01	0.01	0.01	1.63
Tugboat	0.11	1.04	2.82	0.00	0.08	0.08	0.08	10.45
	0.01	0.13	0.18	0.00	0.02	0.02	0.02	2.10
Truck-Flatbed	0.01	0.05	0.18	0.00	0.01	0.01	0.01	1.21
<b>Subtotal</b>	<b>0.27</b>	<b>1.74</b>	<b>5.01</b>	<b>0.01</b>	<b>0.21</b>	<b>0.21</b>	<b>0.19</b>	<b>26.10</b>
<b>DRIVE PILES - MISC ACTIVITIES</b>								
Excavator	0.05	0.23	0.76	0.00	0.04	0.04	0.04	5.12
Loader-Wheel	0.01	0.05	0.17	0.00	0.01	0.01	0.01	1.13
Hydraulic Crane	0.01	0.06	0.20	0.00	0.02	0.02	0.01	2.01
Crane - 150 Ton	0.03	0.13	0.45	0.00	0.02	0.02	0.02	3.03
<b>Subtotal</b>	<b>0.11</b>	<b>0.47</b>	<b>1.58</b>	<b>0.00</b>	<b>0.09</b>	<b>0.09</b>	<b>0.08</b>	<b>11.30</b>
<b>REINFORCED CONCRETE WHARF</b>								
Hydraulic Crane	0.02	0.11	0.34	0.00	0.03	0.03	0.02	5.59
Crane - 150 Ton	0.05	0.22	0.75	0.00	0.04	0.04	0.04	8.40
Crane Barge - 150 ton	0.05	0.22	0.75	0.00	0.04	0.04	0.04	8.40
	0.02	0.23	0.33	0.00	0.03	0.03	0.03	6.24
Concrete Pump	0.06	0.22	0.81	0.00	0.04	0.04	0.04	9.07
Concrete Trucks	0.12	0.50	1.66	0.00	0.09	0.09	0.08	18.70
Sandblaster w/air compressor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck-Flatbed	0.02	0.08	0.30	0.00	0.02	0.02	0.01	3.35
Tugboat	0.07	0.69	1.88	0.00	0.06	0.06	0.05	11.61
	0.01	0.18	0.24	0.00	0.02	0.02	0.02	4.67
Concrete Saw	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.61
Truck Crane - 65 ton	0.03	0.11	0.38	0.00	0.02	0.02	0.02	4.26
Boom Truck	0.03	0.11	0.36	0.00	0.02	0.02	0.02	4.08
<b>Subtotal</b>	<b>0.17</b>	<b>1.18</b>	<b>3.20</b>	<b>0.00</b>	<b>0.14</b>	<b>0.14</b>	<b>0.13</b>	<b>28.58</b>

**Table A.4.1-Alt 2-113. Total Emissions - POLB Middle Harbor Project - Phase 2 - Stage 2**

Activity	Tons							Total Tons
	VOC	CO	NOx	SOx	PM	PM10	PM2.5	DPM
<b>Construction</b>								
Building Construction	0	0	0	0	0	0	0	0
<b>Dredge and Excavate at Quay Wall</b>								
Clamshell Dredging	0	0	0	0	0	0	0	0
<b>Demo Existing F8-10 Wharf</b>								
Wharf Demolition Landside	0	1	3	0	0	0	0	33
Wharf Demolition Marine	0	2	6	0	0	0	0	56
<b>Construct Wharf, Armor, Fill</b>								
Land Ex	0	1	3	0	0	0	0	27
Rock Placement, Push Off & Tub & Orange Peels	1	10	29	0	1	1	1	166
Retaining Bulkhead Construction	0	1	2	0	0	0	0	20
Drive 24-In Octagonal Piles - Land	0	1	3	0	0	0	0	20
Drive 24-In Octagonal Piles - Water	0	2	5	0	0	0	0	26
Drive Piles - Misc Activities	0	0	2	0	0	0	0	11
Reinforced Concrete Wharf	0	1	3	0	0	0	0	29
<b>Basin Fill and Surcharge West</b>								
Cutter Suction Dredging- Spill Barge (No Booster)	0	0	0	0	0	0	0	0
Cutter Suction Dredging- Land Disposal (No Booster)	0	0	0	0	0	0	0	0
Wick Drains	0	0	0	0	0	0	0	0
<b>Settlement Period</b>								
Roll Surcharge	0	0	0	0	0	0	0	0
<b>Other Peak Daily Emissions</b>								
Fugitive Dust	-	-	-	-	0	0	0	
Commuter Emissions								
<b>Dredging Activities</b>								
Dredging Activities	0	0	0	0	0	0	0	0
Peak Daily Emissions	2	16	46	0	0	0	0	
Mitigated Peak Daily Emissions (1)	2	16	46	0	0	0	0	
<b>SCAQMD Daily Significance Thresholds</b>	75	550	100	150	NA	150	55	

(1) These data represent 90% control of fugitive dust only.

Table A-4.1-Alt2-114. Annual Conformity-Related Construction Emissions from Construction Equipment – POLB Middle Harbor Alternative 2

Year	Tons					
	VOC	CO	NOx	SOx	PM10	PM2.5
2009	0.12	0.55	1.67	0.04	0.29	0.13
2010	1.87	8.47	26.46	0.64	3.72	1.83
2011	1.03	4.40	14.40	0.61	1.86	0.96
2012	1.51	4.76	14.11	1.89	5.41	2.19
2013	1.28	4.38	13.08	1.75	4.54	1.88
2014	0.77	3.40	10.70	0.23	0.60	0.60
2015	0.50	1.81	5.60	0.36	1.56	0.64
2016	-	-	-	-	-	-
2017	-	-	-	-	-	-
2018	-	-	-	-	-	-
2019	-	-	-	-	-	-
Conformity De Minimis Thresholds - SCAB	10	100	10	100	70	100

Table A-4.1-Alt2-115. Annual Conformity-Related Construction Emissions from Trucks – POLB Middle Harbor Alternative  
2

Year	Tons					
	VOC	CO	NOx	SOx	PM10	PM2.5
2009	0.05	0.22	0.74	0.04	0.24	0.08
2010	0.48	1.99	6.76	0.58	2.64	0.80
2011	0.23	0.94	2.63	0.29	1.25	0.38
2012	0.50	1.58	4.95	1.25	4.52	1.29
2013	0.50	1.51	4.73	1.15	3.86	1.16
2014	0.19	0.79	2.69	0.06	0.14	0.14
2015	0.13	0.50	1.68	0.25	1.23	0.33
2016	-	-	-	-	-	-
2017	-	-	-	-	-	-
2018	-	-	-	-	-	-
2019	-	-	-	-	-	-
Conformity De Minimis Thresholds - SCAB	10	100	10	100	70	100

Table A-4.1-Alt2-116. Annual Conformity-Related Construction Emissions from Tug Boat Usage Within 3nm of the Coast – POLB Middle Harbor Alternative 2

Year	Tons					
	VOC	CO	NOx	SOx	PM10	PM2.5
2009	0.05	0.38	1.09	0.05	0.24	0.08
2010	1.43	12.43	36.74	1.00	3.59	1.71
2011	0.24	2.06	5.93	0.28	1.26	0.41
2012	0.30	1.60	4.67	1.07	4.39	1.14
2013	0.56	4.50	12.42	1.26	3.93	1.26
2014	0.65	5.73	16.34	0.32	0.58	0.58
2015	0.09	0.86	2.15	0.24	1.21	0.31
2016	-	-	-	-	-	-
2017	-	-	-	-	-	-
2018	-	-	-	-	-	-
2019	-	-	-	-	-	-
<b>Conformity De Minimis Thresholds - SCAB</b>	<b>10</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>70</b>	<b>100</b>

Table A-4.1-Alt2-117. Annual Conformity-Related Construction Emissions from Tug Boat Usage Beyond 3nm of the Coast – POLB Middle Harbor Alternative 2

Year	Tons					
	VOC	CO	NOx	SOx	PM10	PM2.5
2009	0.04	0.39	1.07	0.04	0.23	0.07
2010	0.78	6.84	18.81	0.48	2.83	1.01
2011	0.11	0.97	2.66	0.22	1.14	0.30
2012	0.07	0.59	1.63	0.85	4.15	0.90
2013	0.44	3.84	10.58	1.09	3.77	1.09
2014	0.52	4.57	12.58	0.17	0.39	0.39
2015	-	-	-	0.24	1.13	0.24
2016	-	-	-	-	-	-
2017	-	-	-	-	-	-
2018	-	-	-	-	-	-
2019	-	-	-	-	-	-
<b>Conformity De Minimis Thresholds - SCAB</b>	<b>10</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>70</b>	<b>100</b>

Table A-4.1-Alt2-118. Total Annual Conformity-Related Construction Emissions – Federal Action Portion of POLB Middle Harbor Alternative 2

Year	Tons					
	VOC	CO	NOx	SOx	PM10	PM2.5
2009	0.26	1.54	4.57	0.17	0.99	0.35
2010	4.57	29.71	88.76	2.69	12.78	5.35
2011	1.61	8.37	25.62	1.39	5.51	2.04
2012	2.37	8.52	25.36	5.06	18.46	5.52
2013	2.77	14.23	40.81	5.25	16.11	5.39
2014	2.14	14.50	42.31	0.79	1.72	1.71
2015	0.72	3.18	9.43	1.08	5.12	1.51
2016	-	-	-	-	-	-
2017	-	-	-	-	-	-
2018	-	-	-	-	-	-
2019	-	-	-	-	-	-
Conformity De Minimis Thresholds - SCAB	10	100	10	100	70	100

Table A-4.1-Ait2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside				0.66					0.82							
Wharf Demolition Marine				1.21					1.51							
Sheet Pile Bulkhead Demolition				0.67					0.84							
Construct New Bulkhead																
Retaining Bulkhead Construction							0.19									
Excavation Fronting E24																
Clamshell Dredging														4.66		
Land Ex														1.16		
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels														3.90		
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels				2.04				8.16								
Fill within Dike																
Clamshell Dredging														1.20		
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-Alt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land								0.85								
Drive 24-In Octagonal Piles - Water								1.79								
Drive Piles - Misc Activities								2.19								
Reinforced Concrete Wharf								6.86								
Retaining Bulkhead Construction								1.08								
Utility Construction																
New Container Yard Utilities									0.00							
Paving																
New Container Yard Construction - Paving										0.10						
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical											0.00		0.00			
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels				10.20												
Remaining Fill Lifts																
Clamshell Dredging								3.99								
Wharf Construction																
Drive 24-In Octagonal Piles - Land												0.54		0.18		
Drive 24-In Octagonal Piles - Water												1.14		0.38		
Drive Piles - Misc Activities												1.18		0.39		
Reinforced Concrete Wharf												3.52		1.17		
Retaining Bulkhead Construction												0.35		0.12		
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains										0.03						
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water		0.23														
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2012		2012		2012		2012		2012		2012		2013		2013		2013		
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb				
	1st	2nd																	
Ph 1-1 Demolish Existing Facilities																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			
Sheet Pile Bulkhead Demolition																			
<b>Construct New Bulkhead</b>																			
Retaining Bulkhead Construction																			
<b>Excavation Fronting E24</b>																			
Clamshell Dredging																			
Land Ex																			
<b>Construct New Armor Slope</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Wharf Construction</b>																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
Retaining Bulkhead Construction																			
<b>Utility Construction</b>																			
New Container Yard Utilities																			
<b>Paving</b>																			
New Container Yard Construction - Paving																			
<b>Lighting, Striping, Crane Power</b>																			
New Container Yard Construction - Electrical																			
<b>Prepare for Toe Dike / Construct Dike (1st Lift)</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Fill within Dike</b>																			
Clamshell Dredging																			
<b>Remaining Dike Lifts</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Remaining Fill Lifts</b>																			
Clamshell Dredging																			
<b>Wharf Construction</b>																			
Drive 24-In Octagonal Piles - Land																			
Drive 24-In Octagonal Piles - Water																			
Drive Piles - Misc Activities																			
Reinforced Concrete Wharf																			
Retaining Bulkhead Construction																			
<b>Construct South Mooring Dolphin</b>																			
Drive 24-In Octagonal Piles - Water																			
<b>Wick Drains</b>																			
Wick Drains																			
Surcharge (Initial Pump, Plus Clamshell or Truck)																			

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E24</b>																
Clamshell Dredging																
Land Ex																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
<b>Utility Construction</b>																
New Container Yard Utilities																
<b>Paving</b>																
New Container Yard Construction - Paving																
<b>Lighting, Striping, Crane Power</b>																
New Container Yard Construction - Electrical																
<b>Prepare for Toe Dike / Construct Dike (1st Lift)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Fill within Dike</b>																
Clamshell Dredging																
<b>Remaining Dike Lifts</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Remaining Fill Lifts</b>																
Clamshell Dredging																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
<b>Construct South Mooring Dolphin</b>																
Drive 24-In Octagonal Piles - Water																
<b>Wick Drains</b>																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-Alt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-Alt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2015		2015		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd										
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction												0.20				
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																4.59
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Roll Surcharge												0.68				
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
<b>Utility Construction</b>																
New Container Yard Utilities																
<b>Paving</b>																
New Container Yard Construction - Paving																
<b>Lighting, Fence, Striping, Crane Power</b>																
New Container Yard Construction - Electrical																
<b>Construct Retaining Structure at Pier D Oil Area</b>																
Retaining Bulkhead Construction																
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																
Land Ex								0.40								
<b>Excavate Material Fronting Pier D</b>																
Land Ex								0.64								
Clamshell Dredging								4.33								
<b>Remove Cellular Sheetpile</b>																
Sheet Pile Bulkhead Demolition												1.20				
<b>Rock Revetment</b>																
Rock Placement, Push Off & Tub & Orange Peels												5.93		2.22		
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																
Clamshell Dredging								1.20								
<b>Ground Improvements Pier D</b>																
Stone Column Installation Eq												1.91			1.91	
Marine Rock Delivery Eq												1.53				1.53
<b>Demo - E12-13 Wharf</b>																
Wharf Demolition Landside						1.97										
Wharf Demolition Marine						3.62										
<b>Lift #1 (- -30)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #2 (- -15)</b>																
Rock Placement, Push Off & Tub & Orange Peels												2.72				
<b>Lift #3 (- 0)</b>																
Rock Placement, Push Off & Tub & Orange Peels												1.59		0.79		
<b>Lift #4 (- +15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Initial Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>2nd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Roll Surcharge																
<b>Remove Surcharge to Slip 1 Fill Site</b>																
Roll Surcharge				0.34												
<b>Utility Construction</b>																
New Container Yard Utilities			0.00													
<b>Paving</b>																
New Container Yard Construction - Paving							0.66									
<b>Lighting, Fence, Striping, Crane Power</b>																
New Container Yard Construction - Electrical											0.00					
<b>Construct Retaining Structure at Pier D Oil Area</b>																
Retaining Bulkhead Construction																
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																
Land Ex																
<b>Excavate Material Fronting Pier D</b>																
Land Ex																
Clamshell Dredging																
<b>Remove Cellular Sheetpile</b>																
Sheet Pile Bulkhead Demolition																
<b>Rock Revetment</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ground Improvements Pier D</b>																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
<b>Demo - E12-13 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Lift #1 (- -30)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #2 (- -15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #3 (- 0)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #4 (- +15)</b>																
Rock Placement, Push Off & Tub & Orange Peels				2.04												
<b>Initial Surcharge and Wick Drains</b>																
Wick Drains					0.04											
Roll Surcharge					1.03											
<b>2nd Surcharge and Wick Drains</b>																
Wick Drains							0.10									
Roll Surcharge							1.54									

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2012		2012		2012		2012		2012		2012		2013		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Roll Surcharge																		
Remove Surcharge to Slip 1 Fill Site																		
Roll Surcharge																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Fence, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Construct Retaining Structure at Pier D Oil Area																		
Retaining Bulkhead Construction																		
Excavate & Truck Material in Cell Bulkhead																		
Land Ex																		
Excavate Material Fronting Pier D																		
Land Ex																		
Clamshell Dredging																		
Remove Cellular Sheetpile																		
Sheet Pile Bulkhead Demolition																		
Rock Revetment																		
Rock Placement, Push Off & Tub & Orange Peels																		
Hydraulic or Clamshell Dredge to -55 ft																		
Clamshell Dredging																		
Ground Improvements Pier D																		
Stone Column Installation Eq																		
Marine Rock Delivery Eq																		
Demo - E12-13 Wharf																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Lift #1 (- -30)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #2 (- -15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #3 (- 0)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Lift #4 (- +15)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Initial Surcharge and Wick Drains																		
Wick Drains																		
Roll Surcharge																		
2nd Surcharge and Wick Drains																		
Wick Drains																		
Roll Surcharge																		

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Roll Surcharge																
<b>Remove Surcharge to Slip 1 Fill Site</b>																
Roll Surcharge																
<b>Utility Construction</b>																
New Container Yard Utilities																
<b>Paving</b>																
New Container Yard Construction - Paving																
<b>Lighting, Fence, Striping, Crane Power</b>																
New Container Yard Construction - Electrical																
<b>Construct Retaining Structure at Pier D Oil Area</b>																
Retaining Bulkhead Construction																
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																
Land Ex																
<b>Excavate Material Fronting Pier D</b>																
Land Ex																
Clamshell Dredging																
<b>Remove Cellular Sheetpile</b>																
Sheet Pile Bulkhead Demolition																
<b>Rock Revetment</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ground Improvements Pier D</b>																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
<b>Demo - E12-13 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Lift #1 (- -30)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #2 (- -15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #3 (- 0)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #4 (- +15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Initial Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>2nd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2015		2015		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2010		2010		2010		2010		2010		2010		2011		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains									0.10							
Roll Surcharge								2.05								
<b>4th Surcharge and Wick Drains</b>																
Wick Drains													0.09			
Roll Surcharge												3.84				
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq													0.00			
Triple Track Utility Relocation Eq														0.00		
Triple Track Grading Eq															0.00	
Triple Track Retaining Wall Eq																0.00
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Ph 1-3																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011				2012				2012				2012				2012			
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd				
<b>3rd Surcharge and Wick Drains</b>																				
Wick Drains																				
Roll Surcharge																				
<b>4th Surcharge and Wick Drains</b>																				
Wick Drains																				
Roll Surcharge																				
<b>Remove Surcharge</b>																				
Roll Surcharge																				
<b>Container Yard Development</b>																				
New Container Yard Utilities																				
New Container Yard Construction - Paving																				
New Container Yard Construction - Electrical																				
<b>POLB Ocean Blvd Track Reconfiguration</b>																				
Triple Track Installation Demo Eq																				
Triple Track Utility Relocation Eq																				
Triple Track Grading Eq																				
Triple Track Retaining Wall Eq		0.00																		
Triple Track Trackwork Eq				0.00						0.00										
Triple Track Miscellaneous Eq				0.00						0.00										
<b>Ph 1-1</b>																				
<b>Ph 1-2</b>																				
<b>Demolish Existing Facilities</b>																				
Sheet Pile Bulkhead Demolition				0.92		0.18														
Wharf Demolition Landside				0.90		0.18														
Wharf Demolition Marine				1.66		0.33														
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																				
Retaining Bulkhead Construction				0.11																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																				
Clamshell Dredging				1.60		0.40														
<b>Construct New Armor Slope</b>																				
Rock Placement, Push Off & Tub & Orange Peels											4.68									
<b>Wharf Construction</b>																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
<b>CY Development</b>																				
New Container Yard Construction - Paving																				
<b>Dredge to -55 ft</b>																				
Clamshell Dredging								1.33												
<b>Ph 1-3</b>																				
<b>Demolish Existing Facilities</b>																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				
Sheet Pile Bulkhead Demolition																				

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2012		2012		2012		2012		2012		2012		2013		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge	3.08																	
<b>Container Yard Development</b>																		
New Container Yard Utilities													0.00					
New Container Yard Construction - Paving													1.83					
New Container Yard Construction - Electrical													0.00					
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land							0.06											
Drive 24-In Octagonal Piles - Water							0.09											
Drive Piles - Misc Activities							0.16											
Reinforced Concrete Wharf							0.41											
<b>CY Development</b>																		
New Container Yard Construction - Paving									0.16									
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities						0.00										
New Container Yard Construction - Paving						1.83										
New Container Yard Construction - Electrical						0.00										
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving		0.19														
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside														0.15		
Wharf Demolition Marine														0.26		
Sheet Pile Bulkhead Demolition														0.16		

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Clamshell Dredging																
Ph 1-3																
Ph 1-6a																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
<b>Roll Surcharge</b>																
Roll Surcharge																
Ph 1-6b																
<b>Demo Existing F8-10 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct Wharf, Armor, Fill</b>																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2010		2010		2010		2010		2010		2010		2011		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E26 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Construct E27 Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>CY Development</b>																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
<b>Hydraulic Dredge to -55ft</b>																		
Clamshell Dredging																		
Ph 1-3																		
Ph 1-6a																		
<b>Demo Existing F1-4, F6 Wharf</b>																		
Wharf Demolition Landside																		
<b>Roll Surcharge</b>																		
Roll Surcharge																		
Ph 1-6b																		
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Clamshell Dredging																
Ph 1-3																
Ph 1-6a																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
<b>Roll Surcharge</b>																
Roll Surcharge																
Ph 1-6b																
<b>Demo Existing F8-10 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct Wharf, Armor, Fill</b>																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2011				2012				2012				2012				2012			
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd	1st	2nd																
<b>Construct New Bulkhead</b>																				
Retaining Bulkhead Construction																				
<b>Excavation Fronting E26 and Dispose Slip 1</b>																				
Clamshell Dredging																				
<b>Construct New Armor Slope</b>																				
Rock Placement, Push Off & Tub & Orange Peels																				
<b>Wharf Construction</b>																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
<b>Construct E27 Bulkhead</b>																				
Retaining Bulkhead Construction																				
<b>CY Development</b>																				
Vibratory Hammer & Power Pack																				
Flatbed Truck																				
Welding Machine																				
<b>Hydraulic Dredge to -55ft</b>																				
Clamshell Dredging																				
Ph 1-3																				
Ph 1-6a																				
<b>Demo Existing F1-4, F6 Wharf</b>																				
Wharf Demolition Landside																				
<b>Roll Surcharge</b>																				
Roll Surcharge																				
Ph 1-6b																				
<b>Demo Existing F8-10 Wharf</b>																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				
<b>Construct Wharf, Armor, Fill</b>																				
Land Ex																				
Rock Placement, Push Off & Tub & Orange Peels																				
Retaining Bulkhead Construction																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2012		2012		2012		2012		2012		2012		2013		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E26 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Construct E27 Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>CY Development</b>																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
<b>Hydraulic Dredge to -55ft</b>																		
Clamshell Dredging																		
Ph 1-3																		
Ph 1-6a																		
<b>Demo Existing F1-4, F6 Wharf</b>																		
Wharf Demolition Landside																		
<b>Roll Surcharge</b>																		
Roll Surcharge																		
Ph 1-6b																		
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Clamshell Dredging																
Ph 1-3																
Ph 1-6a																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
<b>Roll Surcharge</b>																
Roll Surcharge																
Ph 1-6b																
<b>Demo Existing F8-10 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct Wharf, Armor, Fill</b>																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2013				2014				2014				2014				2014			
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd				
<b>Construct New Bulkhead</b>																				
Retaining Bulkhead Construction			0.15																	
<b>Excavation Fronting E26 and Dispose Slip 1</b>																				
Clamshell Dredging			0.22								1.57									
<b>Construct New Armor Slope</b>																				
Rock Placement, Push Off & Tub & Orange Peels																				
<b>Wharf Construction</b>																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
<b>Construct E27 Bulkhead</b>																				
Retaining Bulkhead Construction			0.17			0.33														
<b>CY Development</b>																				
Vibratory Hammer & Power Pack																				
Flatbed Truck																				
Welding Machine																				
<b>Hydraulic Dredge to -55ft</b>																				
Clamshell Dredging																				
<b>Ph 1-3</b>																				
<b>Ph 1-6a</b>																				
<b>Demo Existing F1-4, F6 Wharf</b>																				
Wharf Demolition Landside																				
<b>Roll Surcharge</b>																				
Roll Surcharge																				
<b>Ph 1-6b</b>																				
<b>Demo Existing F8-10 Wharf</b>																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				
<b>Construct Wharf, Armor, Fill</b>																				
Land Ex				1.94							0.83									
Rock Placement, Push Off & Tub & Orange Peels				20.05							8.59									
Retaining Bulkhead Construction				1.46							0.62									
Drive 24-In Octagonal Piles - Land				1.90							0.82									
Drive 24-In Octagonal Piles - Water				3.51							1.50									
Drive Piles - Misc Activities				1.10							0.47									
Reinforced Concrete Wharf				2.24							0.96									

Table A-4.1-AIt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E26 and Dispose Slip 1																
Clamshell Dredging																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels				15.29												
Wharf Construction																
Drive 24-In Octagonal Piles - Land												0.72				
Drive 24-In Octagonal Piles - Water												1.52				
Drive Piles - Misc Activities												1.53				
Reinforced Concrete Wharf												4.56				
Construct E27 Bulkhead																
Retaining Bulkhead Construction																
CY Development																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
Hydraulic Dredge to -55ft																
Ph 1-3 Clamshell Dredging								2.00								
Ph 1-6a Demo Existing F1-4, F6 Wharf																
Wharf Demolition Landside																
Roll Surcharge																
Roll Surcharge																
Ph 1-6b Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																













Table A-4.1-Alt2-119. Total Annual NOx Emissions - POLB  
Middle Harbor Alternative 2

Activity	2012		2012		2012		2012		2012		2012		2013		2013		2013		
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb				
	1st	2nd																	
Activity Total Tons	0	3	0	0	3	0	1	0	0	0	0	0	6	0	0	0	0	0	
Yearly Total (Tons)													25						











Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside				0.27					0.34							
Wharf Demolition Marine				0.59					0.74							
Sheet Pile Bulkhead Demolition				0.62					0.78							
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction							0.16									
<b>Excavation Fronting E24</b>																
Clamshell Dredging														0.06		
Land Ex														0.62		
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels														0.78		
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
<b>Utility Construction</b>																
New Container Yard Utilities																
<b>Paving</b>																
New Container Yard Construction - Paving																
<b>Lighting, Striping, Crane Power</b>																
New Container Yard Construction - Electrical																
<b>Prepare for Toe Dike / Construct Dike (1st Lift)</b>																
Rock Placement, Push Off & Tub & Orange Peels				0.19				0.75								
<b>Fill within Dike</b>																
Clamshell Dredging														0.47		
<b>Remaining Dike Lifts</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Remaining Fill Lifts</b>																
Clamshell Dredging																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
<b>Construct South Mooring Dolphin</b>																
Drive 24-In Octagonal Piles - Water																
<b>Wick Drains</b>																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-Alt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water		0.07														
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2012		2012		2012		2012		2012		2012		2013		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E24</b>																		
Clamshell Dredging																		
Land Ex																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
<b>Utility Construction</b>																		
New Container Yard Utilities																		
<b>Paving</b>																		
New Container Yard Construction - Paving																		
<b>Lighting, Striping, Crane Power</b>																		
New Container Yard Construction - Electrical																		
<b>Prepare for Toe Dike / Construct Dike (1st Lift)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Fill within Dike</b>																		
Clamshell Dredging																		
<b>Remaining Dike Lifts</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Remaining Fill Lifts</b>																		
Clamshell Dredging																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
<b>Construct South Mooring Dolphin</b>																		
Drive 24-In Octagonal Piles - Water																		
<b>Wick Drains</b>																		
Wick Drains																		
Surcharge (Initial Pump, Plus Clamshell or Truck)																		

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	<i>Mar</i>		<i>Apr</i>		<i>May</i>		<i>Jun</i>		<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>	
	<i>1st</i>	<i>2nd</i>														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E24</b>																
Clamshell Dredging																
Land Ex																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
<b>Utility Construction</b>																
New Container Yard Utilities																
<b>Paving</b>																
New Container Yard Construction - Paving																
<b>Lighting, Striping, Crane Power</b>																
New Container Yard Construction - Electrical																
<b>Prepare for Toe Dike / Construct Dike (1st Lift)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Fill within Dike</b>																
Clamshell Dredging																
<b>Remaining Dike Lifts</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Remaining Fill Lifts</b>																
Clamshell Dredging																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
<b>Construct South Mooring Dolphin</b>																
Drive 24-In Octagonal Piles - Water																
<b>Wick Drains</b>																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E24																		
Clamshell Dredging																		
Land Ex																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Prepare for Toe Dike / Construct Dike (1st Lift)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Fill within Dike																		
Clamshell Dredging																		
Remaining Dike Lifts																		
Rock Placement, Push Off & Tub & Orange Peels																		
Remaining Fill Lifts																		
Clamshell Dredging																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Construct South Mooring Dolphin																		
Drive 24-In Octagonal Piles - Water																		
Wick Drains																		
Wick Drains																		
Surcharge (Initial Pump, Plus Clamshell or Truck)																		

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015				2016				2016				2016				2016			
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd	1st	2nd																
Ph 1-1 Demolish Existing Facilities																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				
Sheet Pile Bulkhead Demolition																				
Construct New Bulkhead																				
Retaining Bulkhead Construction																				
Excavation Fronting E24																				
Clamshell Dredging																				
Land Ex																				
Construct New Armor Slope																				
Rock Placement, Push Off & Tub & Orange Peels																				
Wharf Construction																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
Retaining Bulkhead Construction																				
Utility Construction																				
New Container Yard Utilities																				
Paving																				
New Container Yard Construction - Paving																				
Lighting, Striping, Crane Power																				
New Container Yard Construction - Electrical																				
Prepare for Toe Dike / Construct Dike (1st Lift)																				
Rock Placement, Push Off & Tub & Orange Peels																				
Fill within Dike																				
Clamshell Dredging																				
Remaining Dike Lifts																				
Rock Placement, Push Off & Tub & Orange Peels																				
Remaining Fill Lifts																				
Clamshell Dredging																				
Wharf Construction																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
Retaining Bulkhead Construction																				
Construct South Mooring Dolphin																				
Drive 24-In Octagonal Piles - Water																				
Wick Drains																				
Wick Drains																				
Surcharge (Initial Pump, Plus Clamshell or Truck)																				

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd										
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction												0.18				
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																0.42
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Roll Surcharge												0.58				
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
<b>Utility Construction</b>																
New Container Yard Utilities																
<b>Paving</b>																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex								0.21								
Excavate Material Fronting Pier D																
Land Ex								0.35								
Clamshell Dredging								0.06								
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition											1.11					
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels												0.54			0.20	
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging									0.02							
<b>Ground Improvements Pier D</b>																
Stone Column Installation Eq												1.65				1.65
Marine Rock Delivery Eq												0.21				0.21
Demo - E12-13 Wharf																
Wharf Demolition Landside						0.81										
Wharf Demolition Marine						1.77										
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels										0.25						
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels												0.15		0.07		
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Roll Surcharge																
<b>Remove Surcharge to Slip 1 Fill Site</b>																
Roll Surcharge				0.29												
<b>Utility Construction</b>																
New Container Yard Utilities			0.00													
<b>Paving</b>																
New Container Yard Construction - Paving							0.58									
<b>Lighting, Fence, Striping, Crane Power</b>																
New Container Yard Construction - Electrical												0.00				
<b>Construct Retaining Structure at Pier D Oil Area</b>																
Retaining Bulkhead Construction																
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																
Land Ex																
<b>Excavate Material Fronting Pier D</b>																
Land Ex																
Clamshell Dredging																
<b>Remove Cellular Sheetpile</b>																
Sheet Pile Bulkhead Demolition																
<b>Rock Revetment</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ground Improvements Pier D</b>																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
<b>Demo - E12-13 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Lift #1 (- -30)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #2 (- -15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #3 (- 0)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #4 (- +15)</b>																
Rock Placement, Push Off & Tub & Orange Peels				0.19												
<b>Initial Surcharge and Wick Drains</b>																
Wick Drains						0.04										
Roll Surcharge						0.86										
<b>2nd Surcharge and Wick Drains</b>																
Wick Drains									0.10							
Roll Surcharge									1.30							

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2012		2012		2012		2012		2012		2012		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2010		2010		2010		2010		2010		2010		2011		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011				2012				2012				2012				2012			
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd				
<b>3rd Surcharge and Wick Drains</b>																				
Wick Drains																				
Roll Surcharge																				
<b>4th Surcharge and Wick Drains</b>																				
Wick Drains																				
Roll Surcharge																				
<b>Remove Surcharge</b>																				
Roll Surcharge																				
<b>Container Yard Development</b>																				
New Container Yard Utilities																				
New Container Yard Construction - Paving																				
New Container Yard Construction - Electrical																				
<b>POLB Ocean Blvd Track Reconfiguration</b>																				
Triple Track Installation Demo Eq																				
Triple Track Utility Relocation Eq																				
Triple Track Grading Eq																				
Triple Track Retaining Wall Eq		0.00																		
Triple Track Trackwork Eq				0.00						0.00										
Triple Track Miscellaneous Eq				0.00						0.00										
<b>Ph 1-1</b>																				
<b>Ph 1-2</b>																				
<b>Demolish Existing Facilities</b>																				
Sheet Pile Bulkhead Demolition				0.85		0.17														
Wharf Demolition Landside				0.37		0.07														
Wharf Demolition Marine				0.81		0.16														
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																				
Retaining Bulkhead Construction				0.10																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																				
Clamshell Dredging				0.02		0.01														
<b>Construct New Armor Slope</b>																				
Rock Placement, Push Off & Tub & Orange Peels										0.93										
<b>Wharf Construction</b>																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
<b>CY Development</b>																				
New Container Yard Construction - Paving																				
<b>Dredge to -55 ft</b>																				
Clamshell Dredging							0.02													
<b>Ph 1-3</b>																				
<b>Demolish Existing Facilities</b>																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				
Sheet Pile Bulkhead Demolition																				

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2012		2012		2012		2012		2012		2012		2013		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge	2.59																	
<b>Container Yard Development</b>																		
New Container Yard Utilities													0.00					
New Container Yard Construction - Paving													1.66					
New Container Yard Construction - Electrical													0.00					
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land							0.04											
Drive 24-In Octagonal Piles - Water							0.04											
Drive Piles - Misc Activities							0.16											
Reinforced Concrete Wharf							0.30											
<b>CY Development</b>																		
New Container Yard Construction - Paving											0.14							
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities						0.00										
New Container Yard Construction - Paving						1.66										
New Container Yard Construction - Electrical						0.00										
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving		0.17														
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside														0.06		
Wharf Demolition Marine														0.14		
Sheet Pile Bulkhead Demolition														0.15		

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015		2016		2016		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Clamshell Dredging																
Ph 1-3																
Ph 1-6a																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
<b>Roll Surcharge</b>																
Roll Surcharge																
Ph 1-6b																
<b>Demo Existing F8-10 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct Wharf, Armor, Fill</b>																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Clamshell Dredging																
Ph 1-3																
Ph 1-6a																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
<b>Roll Surcharge</b>																
Roll Surcharge																
Ph 1-6b																
<b>Demo Existing F8-10 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct Wharf, Armor, Fill</b>																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Clamshell Dredging																
Ph 1-3																
Ph 1-6a																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
<b>Roll Surcharge</b>																
Roll Surcharge																
Ph 1-6b																
<b>Demo Existing F8-10 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct Wharf, Armor, Fill</b>																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																





Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Clamshell Dredging																
Ph 1-3																
Ph 1-6a																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
<b>Roll Surcharge</b>																
Roll Surcharge																
Ph 1-6b																
<b>Demo Existing F8-10 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct Wharf, Armor, Fill</b>																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013				2014				2014				2014				2014			
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd				
<b>Construct New Bulkhead</b>																				
Retaining Bulkhead Construction			0.13																	
<b>Excavation Fronting E26 and Dispose Slip 1</b>																				
Clamshell Dredging				0.00							0.02									
<b>Construct New Armor Slope</b>																				
Rock Placement, Push Off & Tub & Orange Peels																				
<b>Wharf Construction</b>																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
<b>Construct E27 Bulkhead</b>																				
Retaining Bulkhead Construction			0.15			0.29														
<b>CY Development</b>																				
Vibratory Hammer & Power Pack																				
Flatbed Truck																				
Welding Machine																				
<b>Hydraulic Dredge to -55ft</b>																				
Clamshell Dredging																				
Ph 1-3																				
Ph 1-6a																				
<b>Demo Existing F1-4, F6 Wharf</b>																				
Wharf Demolition Landside																				
<b>Roll Surcharge</b>																				
Roll Surcharge																				
Ph 1-6b																				
<b>Demo Existing F8-10 Wharf</b>																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				
<b>Construct Wharf, Armor, Fill</b>																				
Land Ex				1.04							0.45									
Rock Placement, Push Off & Tub & Orange Peels				1.83							0.78									
Retaining Bulkhead Construction				1.29							0.55									
Drive 24-In Octagonal Piles - Land				1.42							0.61									
Drive 24-In Octagonal Piles - Water				1.11							0.48									
Drive Piles - Misc Activities				1.10							0.47									
Reinforced Concrete Wharf				0.29							0.12									

Table A-4.1-AIt2-120. ConstEquip Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E26 and Dispose Slip 1																
Clamshell Dredging																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels				1.40												
Wharf Construction																
Drive 24-In Octagonal Piles - Land												0.54				
Drive 24-In Octagonal Piles - Water												0.48				
Drive Piles - Misc Activities												1.53				
Reinforced Concrete Wharf												2.94				
Construct E27 Bulkhead																
Retaining Bulkhead Construction																
CY Development																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
Hydraulic Dredge to -55ft																
Ph 1-3 Clamshell Dredging								0.03								
Ph 1-6a Demo Existing F1-4, F6 Wharf																
Wharf Demolition Landside																
Roll Surcharge																
Roll Surcharge																
Ph 1-6b Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																

























Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside				0.39					0.48							
Wharf Demolition Marine				0.30					0.38							
Sheet Pile Bulkhead Demolition				0.05					0.06							
Construct New Bulkhead																
Retaining Bulkhead Construction							0.02									
Excavation Fronting E24																
Clamshell Dredging															0.00	
Land Ex															0.54	
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels															0.00	
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels				0.00				0.00								
Fill within Dike																
Clamshell Dredging															0.00	
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction											0.02					
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																0.00
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Clamshell Dredging																
Ph 1-3																
Ph 1-6a																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
<b>Roll Surcharge</b>																
Roll Surcharge																
Ph 1-6b																
<b>Demo Existing F8-10 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct Wharf, Armor, Fill</b>																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																



Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Roll Surcharge												0.11				
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex								0.18								
Excavate Material Fronting Pier D																
Land Ex								0.30								
Clamshell Dredging								0.00								
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition											0.09					
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels											0.00			0.00		
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging								0.00								
Ground Improvements Pier D																
Stone Column Installation Eq											0.26					0.26
Marine Rock Delivery Eq											0.00					0.00
Demo - E12-13 Wharf																
Wharf Demolition Landside						1.16										
Wharf Demolition Marine						0.91										
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels										0.00						
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels											0.00			0.00		
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2010		2010		2010		2010		2010		2010		2011		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E26 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Construct E27 Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>CY Development</b>																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
<b>Hydraulic Dredge to -55ft</b>																		
Clamshell Dredging																		
Ph 1-3																		
Ph 1-6a																		
<b>Demo Existing F1-4, F6 Wharf</b>																		
Wharf Demolition Landside																		
<b>Roll Surcharge</b>																		
Roll Surcharge																		
Ph 1-6b																		
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		



Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water		0.02														
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Roll Surcharge																
<b>Remove Surcharge to Slip 1 Fill Site</b>																
Roll Surcharge				0.05												
<b>Utility Construction</b>																
New Container Yard Utilities			0.00													
<b>Paving</b>																
New Container Yard Construction - Paving								0.08								
<b>Lighting, Fence, Striping, Crane Power</b>																
New Container Yard Construction - Electrical												0.00				
<b>Construct Retaining Structure at Pier D Oil Area</b>																
Retaining Bulkhead Construction																
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																
Land Ex																
<b>Excavate Material Fronting Pier D</b>																
Land Ex																
Clamshell Dredging																
<b>Remove Cellular Sheetpile</b>																
Sheet Pile Bulkhead Demolition																
<b>Rock Revetment</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ground Improvements Pier D</b>																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
<b>Demo - E12-13 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Lift #1 (- -30)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #2 (- -15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #3 (- 0)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #4 (- +15)</b>																
Rock Placement, Push Off & Tub & Orange Peels				0.00												
<b>Initial Surcharge and Wick Drains</b>																
Wick Drains						0.00										
Roll Surcharge						0.16										
<b>2nd Surcharge and Wick Drains</b>																
Wick Drains									0.00							
Roll Surcharge									0.24							

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Ph 1-3																





Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd								
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq		0.00														
Triple Track Trackwork Eq				0.00						0.00						
Triple Track Miscellaneous Eq				0.00						0.00						
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition				0.07		0.01										
Wharf Demolition Landside				0.53		0.11										
Wharf Demolition Marine				0.42		0.08										
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction				0.01												
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging				0.00		0.00										
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels										0.00						
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging								0.00								
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011				2012				2012				2012				2012			
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd	1st	2nd																
Construct New Bulkhead																				
Retaining Bulkhead Construction																				
Excavation Fronting E26 and Dispose Slip 1																				
Clamshell Dredging																				
Construct New Armor Slope																				
Rock Placement, Push Off & Tub & Orange Peels																				
Wharf Construction																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
Construct E27 Bulkhead																				
Retaining Bulkhead Construction																				
CY Development																				
Vibratory Hammer & Power Pack																				
Flatbed Truck																				
Welding Machine																				
Hydraulic Dredge to -55ft																				
Ph 1-3 Clamshell Dredging																				
Ph 1-6a Demo Existing F1-4, F6 Wharf																				
Wharf Demolition Landside																				
Roll Surcharge																				
Roll Surcharge																				
Ph 1-6b Demo Existing F8-10 Wharf																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				
Construct Wharf, Armor, Fill																				
Land Ex																				
Rock Placement, Push Off & Tub & Orange Peels																				
Retaining Bulkhead Construction																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				



Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2012		2012		2012		2012		2012		2012		2013		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E24</b>																		
Clamshell Dredging																		
Land Ex																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
<b>Utility Construction</b>																		
New Container Yard Utilities																		
<b>Paving</b>																		
New Container Yard Construction - Paving																		
<b>Lighting, Striping, Crane Power</b>																		
New Container Yard Construction - Electrical																		
<b>Prepare for Toe Dike / Construct Dike (1st Lift)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Fill within Dike</b>																		
Clamshell Dredging																		
<b>Remaining Dike Lifts</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Remaining Fill Lifts</b>																		
Clamshell Dredging																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
<b>Construct South Mooring Dolphin</b>																		
Drive 24-In Octagonal Piles - Water																		
<b>Wick Drains</b>																		
Wick Drains																		
Surcharge (Initial Pump, Plus Clamshell or Truck)																		

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2012		2012		2012		2012		2012		2012		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2012		2012		2012		2012		2012		2012		2013		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge			0.48															
<b>Container Yard Development</b>																		
New Container Yard Utilities													0.00					
New Container Yard Construction - Paving													0.17					
New Container Yard Construction - Electrical													0.00					
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land									0.01									
Drive 24-In Octagonal Piles - Water									0.01									
Drive Piles - Misc Activities									0.00									
Reinforced Concrete Wharf									0.14									
<b>CY Development</b>																		
New Container Yard Construction - Paving											0.02							
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		





Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E24</b>																
Clamshell Dredging																
Land Ex																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
<b>Utility Construction</b>																
New Container Yard Utilities																
<b>Paving</b>																
New Container Yard Construction - Paving																
<b>Lighting, Striping, Crane Power</b>																
New Container Yard Construction - Electrical																
<b>Prepare for Toe Dike / Construct Dike (1st Lift)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Fill within Dike</b>																
Clamshell Dredging																
<b>Remaining Dike Lifts</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Remaining Fill Lifts</b>																
Clamshell Dredging																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
<b>Construct South Mooring Dolphin</b>																
Drive 24-In Octagonal Piles - Water																
<b>Wick Drains</b>																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Roll Surcharge																
<b>Remove Surcharge to Slip 1 Fill Site</b>																
Roll Surcharge																
<b>Utility Construction</b>																
New Container Yard Utilities																
<b>Paving</b>																
New Container Yard Construction - Paving																
<b>Lighting, Fence, Striping, Crane Power</b>																
New Container Yard Construction - Electrical																
<b>Construct Retaining Structure at Pier D Oil Area</b>																
Retaining Bulkhead Construction																
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																
Land Ex																
<b>Excavate Material Fronting Pier D</b>																
Land Ex																
Clamshell Dredging																
<b>Remove Cellular Sheetpile</b>																
Sheet Pile Bulkhead Demolition																
<b>Rock Revetment</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ground Improvements Pier D</b>																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
<b>Demo - E12-13 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Lift #1 (- -30)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #2 (- -15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #3 (- 0)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #4 (- +15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Initial Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>2nd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities						0.00										
New Container Yard Construction - Paving						0.17										
New Container Yard Construction - Electrical						0.00										
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving		0.02														
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside														0.09		
Wharf Demolition Marine														0.07		
Sheet Pile Bulkhead Demolition														0.01		





Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013				2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd		
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E24																		
Clamshell Dredging																		
Land Ex																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Prepare for Toe Dike / Construct Dike (1st Lift)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Fill within Dike																		
Clamshell Dredging																		
Remaining Dike Lifts																		
Rock Placement, Push Off & Tub & Orange Peels																		
Remaining Fill Lifts																		
Clamshell Dredging																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Construct South Mooring Dolphin																		
Drive 24-In Octagonal Piles - Water																		
Wick Drains																		
Wick Drains																		
Surcharge (Initial Pump, Plus Clamshell or Truck)																		

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013				2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction			0.02															
<b>Excavation Fronting E26 and Dispose Slip 1</b>																		
Clamshell Dredging				0.00							0.00							
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Construct E27 Bulkhead</b>																		
Retaining Bulkhead Construction				0.02		0.04												
<b>CY Development</b>																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
<b>Hydraulic Dredge to -55ft</b>																		
Clamshell Dredging																		
Ph 1-3																		
Ph 1-6a																		
<b>Demo Existing F1-4, F6 Wharf</b>																		
Wharf Demolition Landside																		
<b>Roll Surcharge</b>																		
Roll Surcharge																		
Ph 1-6b																		
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex				0.90						0.39								
Rock Placement, Push Off & Tub & Orange Peels				0.00						0.00								
Retaining Bulkhead Construction				0.17						0.07								
Drive 24-In Octagonal Piles - Land				0.48						0.21								
Drive 24-In Octagonal Piles - Water				0.29						0.13								
Drive Piles - Misc Activities				0.00						0.00								
Reinforced Concrete Wharf				0.46						0.20								



Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E24																		
Clamshell Dredging																		
Land Ex																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Prepare for Toe Dike / Construct Dike (1st Lift)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Fill within Dike																		
Clamshell Dredging																		
Remaining Dike Lifts																		
Rock Placement, Push Off & Tub & Orange Peels																		
Remaining Fill Lifts																		
Clamshell Dredging																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Construct South Mooring Dolphin																		
Drive 24-In Octagonal Piles - Water																		
Wick Drains																		
Wick Drains																		
Surcharge (Initial Pump, Plus Clamshell or Truck)																		

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E26 and Dispose Slip 1																
Clamshell Dredging																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels				0.00												
Wharf Construction																
Drive 24-In Octagonal Piles - Land												0.18				
Drive 24-In Octagonal Piles - Water												0.13				
Drive Piles - Misc Activities												0.00				
Reinforced Concrete Wharf												1.36				
Construct E27 Bulkhead																
Retaining Bulkhead Construction																
CY Development																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
Hydraulic Dredge to -55ft																
Ph 1-3 Clamshell Dredging								0.00								
Ph 1-6a Demo Existing F1-4, F6 Wharf																
Wharf Demolition Landside																
Roll Surcharge																
Roll Surcharge																
Ph 1-6b Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																



Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																





Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar			
	1st	2nd										
Ph 1-1 Demolish Existing Facilities												
Wharf Demolition Landside												
Wharf Demolition Marine												
Sheet Pile Bulkhead Demolition												
Construct New Bulkhead												
Retaining Bulkhead Construction												
Excavation Fronting E24												
Clamshell Dredging												
Land Ex												
Construct New Armor Slope												
Rock Placement, Push Off & Tub & Orange Peels												
Wharf Construction												
Drive 24-In Octagonal Piles - Land												
Drive 24-In Octagonal Piles - Water												
Drive Piles - Misc Activities												
Reinforced Concrete Wharf												
Retaining Bulkhead Construction												
Utility Construction												
New Container Yard Utilities												
Paving												
New Container Yard Construction - Paving												
Lighting, Striping, Crane Power												
New Container Yard Construction - Electrical												
Prepare for Toe Dike / Construct Dike (1st Lift)												
Rock Placement, Push Off & Tub & Orange Peels												
Fill within Dike												
Clamshell Dredging												
Remaining Dike Lifts												
Rock Placement, Push Off & Tub & Orange Peels												
Remaining Fill Lifts												
Clamshell Dredging												
Wharf Construction												
Drive 24-In Octagonal Piles - Land												
Drive 24-In Octagonal Piles - Water												
Drive Piles - Misc Activities												
Reinforced Concrete Wharf												
Retaining Bulkhead Construction												
Construct South Mooring Dolphin												
Drive 24-In Octagonal Piles - Water												
Wick Drains												
Wick Drains												
Surcharge (Initial Pump, Plus Clamshell or Truck)												

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar			
	1st	2nd										
Roll Surcharge												
Remove Surcharge to Slip 1 Fill Site												
Roll Surcharge												
Utility Construction												
New Container Yard Utilities												
Paving												
New Container Yard Construction - Paving												
Lighting, Fence, Striping, Crane Power												
New Container Yard Construction - Electrical												
Construct Retaining Structure at Pier D Oil Area												
Retaining Bulkhead Construction												
Excavate & Truck Material in Cell Bulkhead												
Land Ex												
Excavate Material Fronting Pier D												
Land Ex												
Clamshell Dredging												
Remove Cellular Sheetpile												
Sheet Pile Bulkhead Demolition												
Rock Revetment												
Rock Placement, Push Off & Tub & Orange Peels												
Hydraulic or Clamshell Dredge to -55 ft												
Clamshell Dredging												
Ground Improvements Pier D												
Stone Column Installation Eq												
Marine Rock Delivery Eq												
Demo - E12-13 Wharf												
Wharf Demolition Landside												
Wharf Demolition Marine												
Lift #1 (- -30)												
Rock Placement, Push Off & Tub & Orange Peels												
Lift #2 (- -15)												
Rock Placement, Push Off & Tub & Orange Peels												
Lift #3 (- 0)												
Rock Placement, Push Off & Tub & Orange Peels												
Lift #4 (- +15)												
Rock Placement, Push Off & Tub & Orange Peels												
Initial Surcharge and Wick Drains												
Wick Drains												
Roll Surcharge												
2nd Surcharge and Wick Drains												
Wick Drains												
Roll Surcharge												

Table A-4.1-AIt2-121. Trucks Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015		2016		2016		2016		2016	
	Nov		Dec		Jan		Feb		Mar			
	1st	2nd										
<b>3rd Surcharge and Wick Drains</b>												
Wick Drains												
Roll Surcharge												
<b>4th Surcharge and Wick Drains</b>												
Wick Drains												
Roll Surcharge												
<b>Remove Surcharge</b>												
Roll Surcharge												
<b>Container Yard Development</b>												
New Container Yard Utilities												
New Container Yard Construction - Paving												
New Container Yard Construction - Electrical												
<b>POLB Ocean Blvd Track Reconfiguration</b>												
Triple Track Installation Demo Eq												
Triple Track Utility Relocation Eq												
Triple Track Grading Eq												
Triple Track Retaining Wall Eq												
Triple Track Trackwork Eq												
Triple Track Miscellaneous Eq												
<b>Ph 1-1</b>												
<b>Ph 1-2</b>												
<b>Demolish Existing Facilities</b>												
Sheet Pile Bulkhead Demolition												
Wharf Demolition Landside												
Wharf Demolition Marine												
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>												
Retaining Bulkhead Construction												
<b>Excavation Fronting E25 and Dispose Slip 1</b>												
Clamshell Dredging												
<b>Construct New Armor Slope</b>												
Rock Placement, Push Off & Tub & Orange Peels												
<b>Wharf Construction</b>												
Drive 24-In Octagonal Piles - Land												
Drive 24-In Octagonal Piles - Water												
Drive Piles - Misc Activities												
Reinforced Concrete Wharf												
<b>CY Development</b>												
New Container Yard Construction - Paving												
<b>Dredge to -55 ft</b>												
Clamshell Dredging												
<b>Ph 1-2</b>												
<b>Ph 1-3</b>												
<b>Demolish Existing Facilities</b>												
Wharf Demolition Landside												
Wharf Demolition Marine												
Sheet Pile Bulkhead Demolition												





Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside				-					-							
Wharf Demolition Marine				0.31					0.39							
Sheet Pile Bulkhead Demolition				-					-							
Construct New Bulkhead																
Retaining Bulkhead Construction							0.00									
Excavation Fronting E24																
Clamshell Dredging															4.60	
Land Ex															0.00	
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels															1.77	
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels				0.78				3.12								
Fill within Dike																
Clamshell Dredging															1.18	
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land										0.00						
Drive 24-In Octagonal Piles - Water										1.08						
Drive Piles - Misc Activities										0.00						
Reinforced Concrete Wharf										1.77						
Retaining Bulkhead Construction										0.00						
Utility Construction																
New Container Yard Utilities										0.00						
Paving																
New Container Yard Construction - Paving											0.00					
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical												0.00		0.00		
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels				3.90												
Remaining Fill Lifts																
Clamshell Dredging										3.94						
Wharf Construction																
Drive 24-In Octagonal Piles - Land												0.00		0.00		
Drive 24-In Octagonal Piles - Water												0.68		0.23		
Drive Piles - Misc Activities												0.00		0.00		
Reinforced Concrete Wharf												0.96		0.32		
Retaining Bulkhead Construction												0.00		0.00		
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains											0.00					
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water		0.13														
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2012		2012		2012		2012		2012		2012		2013		2013		2013	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>			
	<i>1st</i>	<i>2nd</i>																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E24</b>																		
Clamshell Dredging																		
Land Ex																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
<b>Utility Construction</b>																		
New Container Yard Utilities																		
<b>Paving</b>																		
New Container Yard Construction - Paving																		
<b>Lighting, Striping, Crane Power</b>																		
New Container Yard Construction - Electrical																		
<b>Prepare for Toe Dike / Construct Dike (1st Lift)</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Fill within Dike</b>																		
Clamshell Dredging																		
<b>Remaining Dike Lifts</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Remaining Fill Lifts</b>																		
Clamshell Dredging																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
<b>Construct South Mooring Dolphin</b>																		
Drive 24-In Octagonal Piles - Water																		
<b>Wick Drains</b>																		
Wick Drains																		
Surcharge (Initial Pump, Plus Clamshell or Truck)																		

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E24</b>																
Clamshell Dredging																
Land Ex																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
<b>Utility Construction</b>																
New Container Yard Utilities																
<b>Paving</b>																
New Container Yard Construction - Paving																
<b>Lighting, Striping, Crane Power</b>																
New Container Yard Construction - Electrical																
<b>Prepare for Toe Dike / Construct Dike (1st Lift)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Fill within Dike</b>																
Clamshell Dredging																
<b>Remaining Dike Lifts</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Remaining Fill Lifts</b>																
Clamshell Dredging																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
<b>Construct South Mooring Dolphin</b>																
Drive 24-In Octagonal Piles - Water																
<b>Wick Drains</b>																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E24																		
Clamshell Dredging																		
Land Ex																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Prepare for Toe Dike / Construct Dike (1st Lift)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Fill within Dike																		
Clamshell Dredging																		
Remaining Dike Lifts																		
Rock Placement, Push Off & Tub & Orange Peels																		
Remaining Fill Lifts																		
Clamshell Dredging																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Construct South Mooring Dolphin																		
Drive 24-In Octagonal Piles - Water																		
Wick Drains																		
Wick Drains																		
Surcharge (Initial Pump, Plus Clamshell or Truck)																		

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015	
	Nov		Dec	
	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities				
Wharf Demolition Landside				
Wharf Demolition Marine				
Sheet Pile Bulkhead Demolition				
Construct New Bulkhead				
Retaining Bulkhead Construction				
Excavation Fronting E24				
Clamshell Dredging				
Land Ex				
Construct New Armor Slope				
Rock Placement, Push Off & Tub & Orange Peels				
Wharf Construction				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
Retaining Bulkhead Construction				
Utility Construction				
New Container Yard Utilities				
Paving				
New Container Yard Construction - Paving				
Lighting, Striping, Crane Power				
New Container Yard Construction - Electrical				
Prepare for Toe Dike / Construct Dike (1st Lift)				
Rock Placement, Push Off & Tub & Orange Peels				
Fill within Dike				
Clamshell Dredging				
Remaining Dike Lifts				
Rock Placement, Push Off & Tub & Orange Peels				
Remaining Fill Lifts				
Clamshell Dredging				
Wharf Construction				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
Retaining Bulkhead Construction				
Construct South Mooring Dolphin				
Drive 24-In Octagonal Piles - Water				
Wick Drains				
Wick Drains				
Surcharge (Initial Pump, Plus Clamshell or Truck)				

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd										
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction												0.00				
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																1.75
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Roll Surcharge												0.00				
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
<b>Utility Construction</b>																
New Container Yard Utilities																
<b>Paving</b>																
New Container Yard Construction - Paving																
<b>Lighting, Fence, Striping, Crane Power</b>																
New Container Yard Construction - Electrical																
<b>Construct Retaining Structure at Pier D Oil Area</b>																
Retaining Bulkhead Construction																
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																
Land Ex								0.00								
<b>Excavate Material Fronting Pier D</b>																
Land Ex								0.00								
Clamshell Dredging								4.27								
<b>Remove Cellular Sheetpile</b>																
Sheet Pile Bulkhead Demolition											0.00					
<b>Rock Revetment</b>																
Rock Placement, Push Off & Tub & Orange Peels												2.27			0.85	
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																
Clamshell Dredging									1.18							
<b>Ground Improvements Pier D</b>																
Stone Column Installation Eq												0.00				0.00
Marine Rock Delivery Eq												1.32				1.32
<b>Demo - E12-13 Wharf</b>																
Wharf Demolition Landside						0.00										
Wharf Demolition Marine						0.93										
<b>Lift #1 (- -30)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #2 (- -15)</b>																
Rock Placement, Push Off & Tub & Orange Peels										1.04						
<b>Lift #3 (- 0)</b>																
Rock Placement, Push Off & Tub & Orange Peels												0.60		0.30		
<b>Lift #4 (- +15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Initial Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>2nd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Roll Surcharge																
<b>Remove Surcharge to Slip 1 Fill Site</b>																
Roll Surcharge				0.00												
<b>Utility Construction</b>																
New Container Yard Utilities			0.00													
<b>Paving</b>																
New Container Yard Construction - Paving							0.00									
<b>Lighting, Fence, Striping, Crane Power</b>																
New Container Yard Construction - Electrical											0.00					
<b>Construct Retaining Structure at Pier D Oil Area</b>																
Retaining Bulkhead Construction																
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																
Land Ex																
<b>Excavate Material Fronting Pier D</b>																
Land Ex																
Clamshell Dredging																
<b>Remove Cellular Sheetpile</b>																
Sheet Pile Bulkhead Demolition																
<b>Rock Revetment</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ground Improvements Pier D</b>																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
<b>Demo - E12-13 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Lift #1 (- -30)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #2 (- -15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #3 (- 0)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #4 (- +15)</b>																
Rock Placement, Push Off & Tub & Orange Peels							0.78									
<b>Initial Surcharge and Wick Drains</b>																
Wick Drains							0.00									
Roll Surcharge							0.00									
<b>2nd Surcharge and Wick Drains</b>																
Wick Drains										0.00						
Roll Surcharge										0.00						

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2012		2012		2012		2012		2012		2012		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Roll Surcharge																
<b>Remove Surcharge to Slip 1 Fill Site</b>																
Roll Surcharge																
<b>Utility Construction</b>																
New Container Yard Utilities																
<b>Paving</b>																
New Container Yard Construction - Paving																
<b>Lighting, Fence, Striping, Crane Power</b>																
New Container Yard Construction - Electrical																
<b>Construct Retaining Structure at Pier D Oil Area</b>																
Retaining Bulkhead Construction																
<b>Excavate &amp; Truck Material in Cell Bulkhead</b>																
Land Ex																
<b>Excavate Material Fronting Pier D</b>																
Land Ex																
Clamshell Dredging																
<b>Remove Cellular Sheetpile</b>																
Sheet Pile Bulkhead Demolition																
<b>Rock Revetment</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Hydraulic or Clamshell Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ground Improvements Pier D</b>																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
<b>Demo - E12-13 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Lift #1 (- -30)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #2 (- -15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #3 (- 0)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Lift #4 (- +15)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Initial Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>2nd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015	
	Nov		Dec	
	1st	2nd	1st	2nd
Roll Surcharge				
Remove Surcharge to Slip 1 Fill Site				
Roll Surcharge				
Utility Construction				
New Container Yard Utilities				
Paving				
New Container Yard Construction - Paving				
Lighting, Fence, Striping, Crane Power				
New Container Yard Construction - Electrical				
Construct Retaining Structure at Pier D Oil Area				
Retaining Bulkhead Construction				
Excavate & Truck Material in Cell Bulkhead				
Land Ex				
Excavate Material Fronting Pier D				
Land Ex				
Clamshell Dredging				
Remove Cellular Sheetpile				
Sheet Pile Bulkhead Demolition				
Rock Revetment				
Rock Placement, Push Off & Tub & Orange Peels				
Hydraulic or Clamshell Dredge to -55 ft				
Clamshell Dredging				
Ground Improvements Pier D				
Stone Column Installation Eq				
Marine Rock Delivery Eq				
Demo - E12-13 Wharf				
Wharf Demolition Landside				
Wharf Demolition Marine				
Lift #1 (- -30)				
Rock Placement, Push Off & Tub & Orange Peels				
Lift #2 (- -15)				
Rock Placement, Push Off & Tub & Orange Peels				
Lift #3 (- 0)				
Rock Placement, Push Off & Tub & Orange Peels				
Lift #4 (- +15)				
Rock Placement, Push Off & Tub & Orange Peels				
Initial Surcharge and Wick Drains				
Wick Drains				
Roll Surcharge				
2nd Surcharge and Wick Drains				
Wick Drains				
Roll Surcharge				

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2010		2010		2010		2010		2010		2010		2011		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
<b>3rd Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>4th Surcharge and Wick Drains</b>																		
Wick Drains																		
Roll Surcharge																		
<b>Remove Surcharge</b>																		
Roll Surcharge																		
<b>Container Yard Development</b>																		
New Container Yard Utilities																		
New Container Yard Construction - Paving																		
New Container Yard Construction - Electrical																		
<b>POLB Ocean Blvd Track Reconfiguration</b>																		
Triple Track Installation Demo Eq																		
Triple Track Utility Relocation Eq																		
Triple Track Grading Eq																		
Triple Track Retaining Wall Eq																		
Triple Track Trackwork Eq																		
Triple Track Miscellaneous Eq																		
Ph 1-1																		
Ph 1-2																		
<b>Demolish Existing Facilities</b>																		
Sheet Pile Bulkhead Demolition																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E25 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>CY Development</b>																		
New Container Yard Construction - Paving																		
<b>Dredge to -55 ft</b>																		
Clamshell Dredging																		
Ph 1-2																		
Ph 1-3																		
<b>Demolish Existing Facilities</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Ph 1-3																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011				2012				2012				2012				2012			
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd				
<b>3rd Surcharge and Wick Drains</b>																				
Wick Drains																				
Roll Surcharge																				
<b>4th Surcharge and Wick Drains</b>																				
Wick Drains																				
Roll Surcharge																				
<b>Remove Surcharge</b>																				
Roll Surcharge																				
<b>Container Yard Development</b>																				
New Container Yard Utilities																				
New Container Yard Construction - Paving																				
New Container Yard Construction - Electrical																				
<b>POLB Ocean Blvd Track Reconfiguration</b>																				
Triple Track Installation Demo Eq																				
Triple Track Utility Relocation Eq																				
Triple Track Grading Eq																				
Triple Track Retaining Wall Eq		0.00																		
Triple Track Trackwork Eq				0.00						0.00										
Triple Track Miscellaneous Eq				0.00						0.00										
<b>Ph 1-1</b>																				
<b>Ph 1-2</b>																				
<b>Demolish Existing Facilities</b>																				
Sheet Pile Bulkhead Demolition				0.00		0.00														
Wharf Demolition Landside				0.00		0.00														
Wharf Demolition Marine				0.43		0.09														
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																				
Retaining Bulkhead Construction				0.00																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																				
Clamshell Dredging				1.58		0.39														
<b>Construct New Armor Slope</b>																				
Rock Placement, Push Off & Tub & Orange Peels											2.12									
<b>Wharf Construction</b>																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
<b>CY Development</b>																				
New Container Yard Construction - Paving																				
<b>Dredge to -55 ft</b>																				
Clamshell Dredging									1.31											
<b>Ph 1-3</b>																				
<b>Demolish Existing Facilities</b>																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				
Sheet Pile Bulkhead Demolition																				

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2012		2012		2012		2012		2012		2012		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge	0.00															
<b>Container Yard Development</b>																
New Container Yard Utilities													0.00			
New Container Yard Construction - Paving													0.00			
New Container Yard Construction - Electrical													0.00			
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land									0.00							
Drive 24-In Octagonal Piles - Water									0.04							
Drive Piles - Misc Activities									0.00							
Reinforced Concrete Wharf									0.07							
<b>CY Development</b>																
New Container Yard Construction - Paving											0.00					
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
Dredge to -55 ft																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015	
	Nov		Dec	
	1st	2nd	1st	2nd
<b>3rd Surcharge and Wick Drains</b>				
Wick Drains				
Roll Surcharge				
<b>4th Surcharge and Wick Drains</b>				
Wick Drains				
Roll Surcharge				
<b>Remove Surcharge</b>				
Roll Surcharge				
<b>Container Yard Development</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
New Container Yard Construction - Electrical				
<b>POLB Ocean Blvd Track Reconfiguration</b>				
Triple Track Installation Demo Eq				
Triple Track Utility Relocation Eq				
Triple Track Grading Eq				
Triple Track Retaining Wall Eq				
Triple Track Trackwork Eq				
Triple Track Miscellaneous Eq				
Ph 1-1				
<b>Ph 1-2 Demolish Existing Facilities</b>				
Sheet Pile Bulkhead Demolition				
Wharf Demolition Landside				
Wharf Demolition Marine				
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>				
Retaining Bulkhead Construction				
<b>Excavation Fronting E25 and Dispose Slip 1</b>				
Clamshell Dredging				
<b>Construct New Armor Slope</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Wharf Construction</b>				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
<b>CY Development</b>				
New Container Yard Construction - Paving				
<b>Dredge to -55 ft</b>				
Clamshell Dredging				
Ph 1-2				
<b>Ph 1-3 Demolish Existing Facilities</b>				
Wharf Demolition Landside				
Wharf Demolition Marine				
Sheet Pile Bulkhead Demolition				

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Clamshell Dredging																
Ph 1-3																
Ph 1-6a																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
<b>Roll Surcharge</b>																
Roll Surcharge																
Ph 1-6b																
<b>Demo Existing F8-10 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct Wharf, Armor, Fill</b>																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2010		2010		2010		2010		2010		2010		2011		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E26 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Construct E27 Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>CY Development</b>																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
<b>Hydraulic Dredge to -55ft</b>																		
Clamshell Dredging																		
Ph 1-3																		
Ph 1-6a																		
<b>Demo Existing F1-4, F6 Wharf</b>																		
Wharf Demolition Landside																		
<b>Roll Surcharge</b>																		
Roll Surcharge																		
Ph 1-6b																		
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Clamshell Dredging																
Ph 1-3																
Ph 1-6a																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
<b>Roll Surcharge</b>																
Roll Surcharge																
Ph 1-6b																
<b>Demo Existing F8-10 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct Wharf, Armor, Fill</b>																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011				2012				2012				2012				2012			
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd				
<b>Construct New Bulkhead</b>																				
Retaining Bulkhead Construction																				
<b>Excavation Fronting E26 and Dispose Slip 1</b>																				
Clamshell Dredging																				
<b>Construct New Armor Slope</b>																				
Rock Placement, Push Off & Tub & Orange Peels																				
<b>Wharf Construction</b>																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
<b>Construct E27 Bulkhead</b>																				
Retaining Bulkhead Construction																				
<b>CY Development</b>																				
Vibratory Hammer & Power Pack																				
Flatbed Truck																				
Welding Machine																				
<b>Hydraulic Dredge to -55ft</b>																				
Clamshell Dredging																				
Ph 1-3																				
Ph 1-6a																				
<b>Demo Existing F1-4, F6 Wharf</b>																				
Wharf Demolition Landside																				
<b>Roll Surcharge</b>																				
Roll Surcharge										0.00										
Ph 1-6b																				
<b>Demo Existing F8-10 Wharf</b>																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				
<b>Construct Wharf, Armor, Fill</b>																				
Land Ex																				
Rock Placement, Push Off & Tub & Orange Peels																				
Retaining Bulkhead Construction																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				





Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013				2014				2014				2014				2014			
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd				
<b>Construct New Bulkhead</b>																				
Retaining Bulkhead Construction			0.00																	
<b>Excavation Fronting E26 and Dispose Slip 1</b>																				
Clamshell Dredging				0.22							1.55									
<b>Construct New Armor Slope</b>																				
Rock Placement, Push Off & Tub & Orange Peels																				
<b>Wharf Construction</b>																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
<b>Construct E27 Bulkhead</b>																				
Retaining Bulkhead Construction				0.00		0.00														
<b>CY Development</b>																				
Vibratory Hammer & Power Pack																				
Flatbed Truck																				
Welding Machine																				
<b>Hydraulic Dredge to -55ft</b>																				
Clamshell Dredging																				
<b>Ph 1-3</b>																				
<b>Ph 1-6a</b>																				
<b>Demo Existing F1-4, F6 Wharf</b>																				
Wharf Demolition Landside																				
<b>Roll Surcharge</b>																				
Roll Surcharge																				
<b>Ph 1-6b</b>																				
<b>Demo Existing F8-10 Wharf</b>																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				
<b>Construct Wharf, Armor, Fill</b>																				
Land Ex				0.00							0.00									
Rock Placement, Push Off & Tub & Orange Peels				7.64							3.27									
Retaining Bulkhead Construction				0.00							0.00									
Drive 24-In Octagonal Piles - Land				0.00							0.00									
Drive 24-In Octagonal Piles - Water				2.10							0.90									
Drive Piles - Misc Activities				0.00							0.00									
Reinforced Concrete Wharf				1.49							0.64									





Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015	
	Nov		Dec	
	1st	2nd	1st	2nd
<b>Construct New Bulkhead</b>				
Retaining Bulkhead Construction				
<b>Excavation Fronting E26 and Dispose Slip 1</b>				
Clamshell Dredging				
<b>Construct New Armor Slope</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Wharf Construction</b>				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
<b>Construct E27 Bulkhead</b>				
Retaining Bulkhead Construction				
<b>CY Development</b>				
Vibratory Hammer & Power Pack		0.00		
Flatbed Truck		0.00		
Welding Machine		0.00		
<b>Hydraulic Dredge to -55ft</b>				
Clamshell Dredging				
Ph 1-3				
<b>Ph 1-6a Demo Existing F1-4, F6 Wharf</b>				
Wharf Demolition Landside				
<b>Roll Surcharge</b>				
Roll Surcharge				
Ph 1-6b				
<b>Demo Existing F8-10 Wharf</b>				
Wharf Demolition Landside				
Wharf Demolition Marine				
<b>Construct Wharf, Armor, Fill</b>				
Land Ex				
Rock Placement, Push Off & Tub & Orange Peels				
Retaining Bulkhead Construction				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				













Table A-4.1-Ait2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2014		2014		2014		2014		2014		2014		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun		
	1st	2nd															
Activity Total Tons	0	0	0	11	0	0	0	0	0	5	2	0	0	0	0	0	
Yearly Total (Tons)					12												

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
<b>Activity Total Tons</b>	0	0	0	6	0	0	2	0	0	0	0	0	2	0	0	0
<b>Yearly Total (Tons)</b>													16			

Table A-4.1-AIt2-122. Tugs-within3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	<i>Mar</i>		<i>Apr</i>		<i>May</i>		<i>Jun</i>		<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>	
	<i>1st</i>	<i>2nd</i>														
<b>Activity Total Tons</b>	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
<b>Yearly Total (Tons)</b>																

Table A-4.1-Alt2-122. Tugs-within3nm Annual NOx  
Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015	
	Nov		Dec	
	1st	2nd	1st	2nd
Activity Total Tons	0	0	0	0
Yearly Total (Tons)	2			

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside				-					-							
Wharf Demolition Marine				-					-							
Sheet Pile Bulkhead Demolition				-					-							
Construct New Bulkhead																
Retaining Bulkhead Construction							0.00									
Excavation Fronting E24																
Clamshell Dredging															0.00	
Land Ex															0.00	
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels															1.36	
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels				1.07				4.29								
Fill within Dike																
Clamshell Dredging															0.00	
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd	1st	2nd	1st	2nd										
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction												0.00				
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																2.41
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
Ph 1-3																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-123. Tugs beyond 3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2009		2009		2010		2010		2010		2010		2010		2010	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Clamshell Dredging																
Ph 1-3																
Ph 1-6a																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
<b>Roll Surcharge</b>																
Roll Surcharge																
Ph 1-6b																
<b>Demo Existing F8-10 Wharf</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct Wharf, Armor, Fill</b>																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

<i>Activity</i>	2009		2009		2010		2010		2010		2010		2010		2010		
	<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>		<i>Mar</i>		<i>Apr</i>		<i>May</i>		<i>Jun</i>		
	<i>1st</i>	<i>2nd</i>															
<b>Activity Total Tons</b>	0	0	0	1	0	0	0	4	0	0	0	0	0	0	1	0	2
<b>Yearly Total (Tons)</b>					1												

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land								0.00								
Drive 24-In Octagonal Piles - Water								0.00								
Drive Piles - Misc Activities								0.00								
Reinforced Concrete Wharf								0.00								
Retaining Bulkhead Construction								0.00								
Utility Construction																
New Container Yard Utilities								0.00								
Paving																
New Container Yard Construction - Paving									0.00							
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical											0.00		0.00			
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels				5.36												
Remaining Fill Lifts																
Clamshell Dredging								0.00								
Wharf Construction																
Drive 24-In Octagonal Piles - Land											0.00		0.00			
Drive 24-In Octagonal Piles - Water											0.00		0.00			
Drive Piles - Misc Activities											0.00		0.00			
Reinforced Concrete Wharf											0.00		0.00			
Retaining Bulkhead Construction											0.00		0.00			
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains									0.00							
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Roll Surcharge												0.00				
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex								0.00								
Excavate Material Fronting Pier D																
Land Ex								0.00								
Clamshell Dredging								0.00								
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition											0.00					
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels												3.12			1.17	
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging								0.00								
Ground Improvements Pier D																
Stone Column Installation Eq												0.00				0.00
Marine Rock Delivery Eq												0.00				0.00
Demo - E12-13 Wharf																
Wharf Demolition Landside						0.00										
Wharf Demolition Marine						0.00										
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels										1.43						
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels												0.83		0.42		
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2010		2010		2010		2010		2010		2010		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2010		2010		2010		2010		2010		2010		2011		2011		2011	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
<b>Construct New Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>Excavation Fronting E26 and Dispose Slip 1</b>																		
Clamshell Dredging																		
<b>Construct New Armor Slope</b>																		
Rock Placement, Push Off & Tub & Orange Peels																		
<b>Wharf Construction</b>																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
<b>Construct E27 Bulkhead</b>																		
Retaining Bulkhead Construction																		
<b>CY Development</b>																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
<b>Hydraulic Dredge to -55ft</b>																		
Clamshell Dredging																		
Ph 1-3																		
Ph 1-6a																		
<b>Demo Existing F1-4, F6 Wharf</b>																		
Wharf Demolition Landside																		
<b>Roll Surcharge</b>																		
Roll Surcharge																		
Ph 1-6b																		
<b>Demo Existing F8-10 Wharf</b>																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
<b>Construct Wharf, Armor, Fill</b>																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2010		2010		2010		2010		2010		2010		2011		2011	
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>	
	<i>1st</i>	<i>2nd</i>														
Activity Total Tons	0	0	5	0	0	0	0	1	0	0	0	4	0	0	1	0
Yearly Total (Tons)													19			

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water		0.00														
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd												
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge				0.00												
Utility Construction																
New Container Yard Utilities			0.00													
Paving																
New Container Yard Construction - Paving								0.00								
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical												0.00				
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels								1.07								
Initial Surcharge and Wick Drains																
Wick Drains								0.00								
Roll Surcharge								0.00								
2nd Surcharge and Wick Drains																
Wick Drains																0.00
Roll Surcharge																0.00

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2011		2011		2011		2011		2011		2011	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
Ph 1-1																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
Ph 1-2																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Ph 1-3																





Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2012		2012		2012		2012		2012		2012	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011				2012				2012				2012				2012			
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd				
<b>3rd Surcharge and Wick Drains</b>																				
Wick Drains																				
Roll Surcharge																				
<b>4th Surcharge and Wick Drains</b>																				
Wick Drains																				
Roll Surcharge																				
<b>Remove Surcharge</b>																				
Roll Surcharge																				
<b>Container Yard Development</b>																				
New Container Yard Utilities																				
New Container Yard Construction - Paving																				
New Container Yard Construction - Electrical																				
<b>POLB Ocean Blvd Track Reconfiguration</b>																				
Triple Track Installation Demo Eq																				
Triple Track Utility Relocation Eq																				
Triple Track Grading Eq																				
Triple Track Retaining Wall Eq		0.00																		
Triple Track Trackwork Eq				0.00						0.00										
Triple Track Miscellaneous Eq				0.00						0.00										
<b>Ph 1-1</b>																				
<b>Ph 1-2</b>																				
<b>Demolish Existing Facilities</b>																				
Sheet Pile Bulkhead Demolition				0.00		0.00														
Wharf Demolition Landside				0.00		0.00														
Wharf Demolition Marine				0.00		0.00														
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																				
Retaining Bulkhead Construction				0.00																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																				
Clamshell Dredging				0.00		0.00														
<b>Construct New Armor Slope</b>																				
Rock Placement, Push Off & Tub & Orange Peels											1.63									
<b>Wharf Construction</b>																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
<b>CY Development</b>																				
New Container Yard Construction - Paving																				
<b>Dredge to -55 ft</b>																				
Clamshell Dredging								0.00												
<b>Ph 1-2</b>																				
<b>Ph 1-3</b>																				
<b>Demolish Existing Facilities</b>																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				
Sheet Pile Bulkhead Demolition																				

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011				2012				2012				2012				2012			
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd				
<b>Construct New Bulkhead</b>																				
Retaining Bulkhead Construction																				
<b>Excavation Fronting E26 and Dispose Slip 1</b>																				
Clamshell Dredging																				
<b>Construct New Armor Slope</b>																				
Rock Placement, Push Off & Tub & Orange Peels																				
<b>Wharf Construction</b>																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
<b>Construct E27 Bulkhead</b>																				
Retaining Bulkhead Construction																				
<b>CY Development</b>																				
Vibratory Hammer & Power Pack																				
Flatbed Truck																				
Welding Machine																				
<b>Hydraulic Dredge to -55ft</b>																				
Clamshell Dredging																				
Ph 1-3																				
Ph 1-6a																				
<b>Demo Existing F1-4, F6 Wharf</b>																				
Wharf Demolition Landside																				
<b>Roll Surcharge</b>																				
Roll Surcharge										0.00										
Ph 1-6b																				
<b>Demo Existing F8-10 Wharf</b>																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				
<b>Construct Wharf, Armor, Fill</b>																				
Land Ex																				
Rock Placement, Push Off & Tub & Orange Peels																				
Retaining Bulkhead Construction																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				

Table A-4.1-AIt2-123. Tugs beyond 3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2011		2011		2012		2012		2012		2012		2012		2012		2012		
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun				
	1st	2nd																	
<b>Activity Total Tons</b>	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	
<b>Yearly Total (Tons)</b>					3														

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2012		2012		2012		2012		2012		2012		2013		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E24																		
Clamshell Dredging																		
Land Ex																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Prepare for Toe Dike / Construct Dike (1st Lift)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Fill within Dike																		
Clamshell Dredging																		
Remaining Dike Lifts																		
Rock Placement, Push Off & Tub & Orange Peels																		
Remaining Fill Lifts																		
Clamshell Dredging																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Construct South Mooring Dolphin																		
Drive 24-In Octagonal Piles - Water																		
Wick Drains																		
Wick Drains																		
Surcharge (Initial Pump, Plus Clamshell or Truck)																		

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2012		2012		2012		2012		2012		2012		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2012		2012		2012		2012		2012		2012		2013		2013		2013		
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb				
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	
<b>3rd Surcharge and Wick Drains</b>																			
Wick Drains																			
Roll Surcharge																			
<b>4th Surcharge and Wick Drains</b>																			
Wick Drains																			
Roll Surcharge																			
<b>Remove Surcharge</b>																			
Roll Surcharge		0.00																	
<b>Container Yard Development</b>																			
New Container Yard Utilities													0.00						
New Container Yard Construction - Paving													0.00						
New Container Yard Construction - Electrical													0.00						
<b>POLB Ocean Blvd Track Reconfiguration</b>																			
Triple Track Installation Demo Eq																			
Triple Track Utility Relocation Eq																			
Triple Track Grading Eq																			
Triple Track Retaining Wall Eq																			
Triple Track Trackwork Eq																			
Triple Track Miscellaneous Eq																			
Ph 1-1																			
Ph 1-2																			
<b>Demolish Existing Facilities</b>																			
Sheet Pile Bulkhead Demolition																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																			
Retaining Bulkhead Construction																			
<b>Excavation Fronting E25 and Dispose Slip 1</b>																			
Clamshell Dredging																			
<b>Construct New Armor Slope</b>																			
Rock Placement, Push Off & Tub & Orange Peels																			
<b>Wharf Construction</b>																			
Drive 24-In Octagonal Piles - Land									0.00										
Drive 24-In Octagonal Piles - Water									0.00										
Drive Piles - Misc Activities									0.00										
Reinforced Concrete Wharf									0.00										
<b>CY Development</b>																			
New Container Yard Construction - Paving													0.00						
<b>Dredge to -55 ft</b>																			
Clamshell Dredging																			
Ph 1-2																			
Ph 1-3																			
<b>Demolish Existing Facilities</b>																			
Wharf Demolition Landside																			
Wharf Demolition Marine																			
Sheet Pile Bulkhead Demolition																			

Table A-4.1-AIt2-123. Tugs beyond 3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2012		2012		2012		2012		2012		2012		2013		2013		2013	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E26 and Dispose Slip 1																		
Clamshell Dredging																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Construct E27 Bulkhead																		
Retaining Bulkhead Construction																		
CY Development																		
Vibratory Hammer & Power Pack																		
Flatbed Truck																		
Welding Machine																		
Hydraulic Dredge to -55ft																		
Ph 1-3 Clamshell Dredging																		
Ph 1-6a Demo Existing F1-4, F6 Wharf																		
Wharf Demolition Landside						0.00												
Roll Surcharge																		
Roll Surcharge																		
Ph 1-6b Demo Existing F8-10 Wharf																		
Wharf Demolition Landside													0.00					
Wharf Demolition Marine													0.00					
Construct Wharf, Armor, Fill																		
Land Ex																		
Rock Placement, Push Off & Tub & Orange Peels																		
Retaining Bulkhead Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2012		2012		2012		2012		2012		2012		2013		2013		
	<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>		<i>Nov</i>		<i>Dec</i>		<i>Jan</i>		<i>Feb</i>		
	1st	2nd															
Activity Total Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Yearly Total (Tons)													2				

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	<i>Mar</i>		<i>Apr</i>		<i>May</i>		<i>Jun</i>		<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>	
	<i>1st</i>	<i>2nd</i>														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E24</b>																
Clamshell Dredging																
Land Ex																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
<b>Utility Construction</b>																
New Container Yard Utilities																
<b>Paving</b>																
New Container Yard Construction - Paving																
<b>Lighting, Striping, Crane Power</b>																
New Container Yard Construction - Electrical																
<b>Prepare for Toe Dike / Construct Dike (1st Lift)</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Fill within Dike</b>																
Clamshell Dredging																
<b>Remaining Dike Lifts</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Remaining Fill Lifts</b>																
Clamshell Dredging																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
<b>Construct South Mooring Dolphin</b>																
Drive 24-In Octagonal Piles - Water																
<b>Wick Drains</b>																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
Dredge to -55 ft																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-123. Tugs beyond 3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
<b>Construct New Bulkhead</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E26 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>Construct E27 Bulkhead</b>																
Retaining Bulkhead Construction																
<b>CY Development</b>																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
<b>Hydraulic Dredge to -55ft</b>																
Clamshell Dredging																
Ph 1-3																
Ph 1-6a																
<b>Demo Existing F1-4, F6 Wharf</b>																
Wharf Demolition Landside																
<b>Roll Surcharge</b>																
Roll Surcharge																
Ph 1-6b																
<b>Demo Existing F8-10 Wharf</b>																
Wharf Demolition Landside								0.00								
Wharf Demolition Marine								0.00								
<b>Construct Wharf, Armor, Fill</b>																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2013		2013		2013		2013		2013		2013	
	<i>Mar</i>		<i>Apr</i>		<i>May</i>		<i>Jun</i>		<i>Jul</i>		<i>Aug</i>		<i>Sep</i>		<i>Oct</i>	
	<i>1st</i>	<i>2nd</i>														
<b>Activity Total Tons</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Yearly Total (Tons)</b>																

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013		2013		2014		2014		2014		2014		2014		2014	
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2013				2014				2014				2014				2014			
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun					
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd				
<b>Construct New Bulkhead</b>																				
Retaining Bulkhead Construction			0.00																	
<b>Excavation Fronting E26 and Dispose Slip 1</b>																				
Clamshell Dredging				0.00							0.00									
<b>Construct New Armor Slope</b>																				
Rock Placement, Push Off & Tub & Orange Peels																				
<b>Wharf Construction</b>																				
Drive 24-In Octagonal Piles - Land																				
Drive 24-In Octagonal Piles - Water																				
Drive Piles - Misc Activities																				
Reinforced Concrete Wharf																				
<b>Construct E27 Bulkhead</b>																				
Retaining Bulkhead Construction				0.00		0.00														
<b>CY Development</b>																				
Vibratory Hammer & Power Pack																				
Flatbed Truck																				
Welding Machine																				
<b>Hydraulic Dredge to -55ft</b>																				
Clamshell Dredging																				
<b>Ph 1-3</b>																				
<b>Ph 1-6a</b>																				
<b>Demo Existing F1-4, F6 Wharf</b>																				
Wharf Demolition Landside																				
<b>Roll Surcharge</b>																				
Roll Surcharge																				
<b>Ph 1-6b</b>																				
<b>Demo Existing F8-10 Wharf</b>																				
Wharf Demolition Landside																				
Wharf Demolition Marine																				
<b>Construct Wharf, Armor, Fill</b>																				
Land Ex				0.00							0.00									
Rock Placement, Push Off & Tub & Orange Peels				10.58							4.53									
Retaining Bulkhead Construction				0.00							0.00									
Drive 24-In Octagonal Piles - Land				0.00							0.00									
Drive 24-In Octagonal Piles - Water				0.00							0.00									
Drive Piles - Misc Activities				0.00							0.00									
Reinforced Concrete Wharf				0.00							0.00									



Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2014		2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb			
	1st	2nd																
Ph 1-1 Demolish Existing Facilities																		
Wharf Demolition Landside																		
Wharf Demolition Marine																		
Sheet Pile Bulkhead Demolition																		
Construct New Bulkhead																		
Retaining Bulkhead Construction																		
Excavation Fronting E24																		
Clamshell Dredging																		
Land Ex																		
Construct New Armor Slope																		
Rock Placement, Push Off & Tub & Orange Peels																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Utility Construction																		
New Container Yard Utilities																		
Paving																		
New Container Yard Construction - Paving																		
Lighting, Striping, Crane Power																		
New Container Yard Construction - Electrical																		
Prepare for Toe Dike / Construct Dike (1st Lift)																		
Rock Placement, Push Off & Tub & Orange Peels																		
Fill within Dike																		
Clamshell Dredging																		
Remaining Dike Lifts																		
Rock Placement, Push Off & Tub & Orange Peels																		
Remaining Fill Lifts																		
Clamshell Dredging																		
Wharf Construction																		
Drive 24-In Octagonal Piles - Land																		
Drive 24-In Octagonal Piles - Water																		
Drive Piles - Misc Activities																		
Reinforced Concrete Wharf																		
Retaining Bulkhead Construction																		
Construct South Mooring Dolphin																		
Drive 24-In Octagonal Piles - Water																		
Wick Drains																		
Wick Drains																		
Surcharge (Initial Pump, Plus Clamshell or Truck)																		

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2014		2014		2014		2014		2014		2014		2015		2015	
	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E26 and Dispose Slip 1																
Clamshell Dredging																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels				8.05												
Wharf Construction																
Drive 24-In Octagonal Piles - Land												0.00				
Drive 24-In Octagonal Piles - Water												0.00				
Drive Piles - Misc Activities												0.00				
Reinforced Concrete Wharf												0.00				
Construct E27 Bulkhead																
Retaining Bulkhead Construction																
CY Development																
Vibratory Hammer & Power Pack																
Flatbed Truck																
Welding Machine																
Hydraulic Dredge to -55ft																
Ph 1-3 Clamshell Dredging								0.00								
Ph 1-6a Demo Existing F1-4, F6 Wharf																
Wharf Demolition Landside																
Roll Surcharge																
Roll Surcharge																
Ph 1-6b Demo Existing F8-10 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Construct Wharf, Armor, Fill																
Land Ex																
Rock Placement, Push Off & Tub & Orange Peels																
Retaining Bulkhead Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																



Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Ph 1-1 Demolish Existing Facilities																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																
Construct New Bulkhead																
Retaining Bulkhead Construction																
Excavation Fronting E24																
Clamshell Dredging																
Land Ex																
Construct New Armor Slope																
Rock Placement, Push Off & Tub & Orange Peels																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Striping, Crane Power																
New Container Yard Construction - Electrical																
Prepare for Toe Dike / Construct Dike (1st Lift)																
Rock Placement, Push Off & Tub & Orange Peels																
Fill within Dike																
Clamshell Dredging																
Remaining Dike Lifts																
Rock Placement, Push Off & Tub & Orange Peels																
Remaining Fill Lifts																
Clamshell Dredging																
Wharf Construction																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
Retaining Bulkhead Construction																
Construct South Mooring Dolphin																
Drive 24-In Octagonal Piles - Water																
Wick Drains																
Wick Drains																
Surcharge (Initial Pump, Plus Clamshell or Truck)																

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
Roll Surcharge																
Remove Surcharge to Slip 1 Fill Site																
Roll Surcharge																
Utility Construction																
New Container Yard Utilities																
Paving																
New Container Yard Construction - Paving																
Lighting, Fence, Striping, Crane Power																
New Container Yard Construction - Electrical																
Construct Retaining Structure at Pier D Oil Area																
Retaining Bulkhead Construction																
Excavate & Truck Material in Cell Bulkhead																
Land Ex																
Excavate Material Fronting Pier D																
Land Ex																
Clamshell Dredging																
Remove Cellular Sheetpile																
Sheet Pile Bulkhead Demolition																
Rock Revetment																
Rock Placement, Push Off & Tub & Orange Peels																
Hydraulic or Clamshell Dredge to -55 ft																
Clamshell Dredging																
Ground Improvements Pier D																
Stone Column Installation Eq																
Marine Rock Delivery Eq																
Demo - E12-13 Wharf																
Wharf Demolition Landside																
Wharf Demolition Marine																
Lift #1 (- -30)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #2 (- -15)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #3 (- 0)																
Rock Placement, Push Off & Tub & Orange Peels																
Lift #4 (- +15)																
Rock Placement, Push Off & Tub & Orange Peels																
Initial Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																
2nd Surcharge and Wick Drains																
Wick Drains																
Roll Surcharge																

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015		2015		2015		2015		2015		2015		2015	
	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
	1st	2nd														
<b>3rd Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>4th Surcharge and Wick Drains</b>																
Wick Drains																
Roll Surcharge																
<b>Remove Surcharge</b>																
Roll Surcharge																
<b>Container Yard Development</b>																
New Container Yard Utilities																
New Container Yard Construction - Paving																
New Container Yard Construction - Electrical																
<b>POLB Ocean Blvd Track Reconfiguration</b>																
Triple Track Installation Demo Eq																
Triple Track Utility Relocation Eq																
Triple Track Grading Eq																
Triple Track Retaining Wall Eq																
Triple Track Trackwork Eq																
Triple Track Miscellaneous Eq																
<b>Ph 1-1</b>																
<b>Ph 1-2</b>																
<b>Demolish Existing Facilities</b>																
Sheet Pile Bulkhead Demolition																
Wharf Demolition Landside																
Wharf Demolition Marine																
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>																
Retaining Bulkhead Construction																
<b>Excavation Fronting E25 and Dispose Slip 1</b>																
Clamshell Dredging																
<b>Construct New Armor Slope</b>																
Rock Placement, Push Off & Tub & Orange Peels																
<b>Wharf Construction</b>																
Drive 24-In Octagonal Piles - Land																
Drive 24-In Octagonal Piles - Water																
Drive Piles - Misc Activities																
Reinforced Concrete Wharf																
<b>CY Development</b>																
New Container Yard Construction - Paving																
<b>Dredge to -55 ft</b>																
Clamshell Dredging																
<b>Ph 1-2</b>																
<b>Ph 1-3</b>																
<b>Demolish Existing Facilities</b>																
Wharf Demolition Landside																
Wharf Demolition Marine																
Sheet Pile Bulkhead Demolition																





Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015	
	Nov		Dec	
	1st	2nd	1st	2nd
Ph 1-1 Demolish Existing Facilities				
Wharf Demolition Landside				
Wharf Demolition Marine				
Sheet Pile Bulkhead Demolition				
Construct New Bulkhead				
Retaining Bulkhead Construction				
Excavation Fronting E24				
Clamshell Dredging				
Land Ex				
Construct New Armor Slope				
Rock Placement, Push Off & Tub & Orange Peels				
Wharf Construction				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
Retaining Bulkhead Construction				
Utility Construction				
New Container Yard Utilities				
Paving				
New Container Yard Construction - Paving				
Lighting, Striping, Crane Power				
New Container Yard Construction - Electrical				
Prepare for Toe Dike / Construct Dike (1st Lift)				
Rock Placement, Push Off & Tub & Orange Peels				
Fill within Dike				
Clamshell Dredging				
Remaining Dike Lifts				
Rock Placement, Push Off & Tub & Orange Peels				
Remaining Fill Lifts				
Clamshell Dredging				
Wharf Construction				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
Retaining Bulkhead Construction				
Construct South Mooring Dolphin				
Drive 24-In Octagonal Piles - Water				
Wick Drains				
Wick Drains				
Surcharge (Initial Pump, Plus Clamshell or Truck)				

Table A-4.1-AIt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015	
	Nov		Dec	
	1st	2nd	1st	2nd
Roll Surcharge				
Remove Surcharge to Slip 1 Fill Site				
Roll Surcharge				
Utility Construction				
New Container Yard Utilities				
Paving				
New Container Yard Construction - Paving				
Lighting, Fence, Striping, Crane Power				
New Container Yard Construction - Electrical				
Construct Retaining Structure at Pier D Oil Area				
Retaining Bulkhead Construction				
Excavate & Truck Material in Cell Bulkhead				
Land Ex				
Excavate Material Fronting Pier D				
Land Ex				
Clamshell Dredging				
Remove Cellular Sheetpile				
Sheet Pile Bulkhead Demolition				
Rock Revetment				
Rock Placement, Push Off & Tub & Orange Peels				
Hydraulic or Clamshell Dredge to -55 ft				
Clamshell Dredging				
Ground Improvements Pier D				
Stone Column Installation Eq				
Marine Rock Delivery Eq				
Demo - E12-13 Wharf				
Wharf Demolition Landside				
Wharf Demolition Marine				
Lift #1 (- -30)				
Rock Placement, Push Off & Tub & Orange Peels				
Lift #2 (- -15)				
Rock Placement, Push Off & Tub & Orange Peels				
Lift #3 (- 0)				
Rock Placement, Push Off & Tub & Orange Peels				
Lift #4 (- +15)				
Rock Placement, Push Off & Tub & Orange Peels				
Initial Surcharge and Wick Drains				
Wick Drains				
Roll Surcharge				
2nd Surcharge and Wick Drains				
Wick Drains				
Roll Surcharge				

Table A-4.1-Alt2-123. Tugs beyond3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015	
	Nov		Dec	
	1st	2nd	1st	2nd
<b>3rd Surcharge and Wick Drains</b>				
Wick Drains				
Roll Surcharge				
<b>4th Surcharge and Wick Drains</b>				
Wick Drains				
Roll Surcharge				
<b>Remove Surcharge</b>				
Roll Surcharge				
<b>Container Yard Development</b>				
New Container Yard Utilities				
New Container Yard Construction - Paving				
New Container Yard Construction - Electrical				
<b>POLB Ocean Blvd Track Reconfiguration</b>				
Triple Track Installation Demo Eq				
Triple Track Utility Relocation Eq				
Triple Track Grading Eq				
Triple Track Retaining Wall Eq				
Triple Track Trackwork Eq				
Triple Track Miscellaneous Eq				
Ph 1-1				
<b>Demolish Existing Facilities</b>				
Sheet Pile Bulkhead Demolition				
Wharf Demolition Landside				
Wharf Demolition Marine				
<b>Construct New Bulkhead (Install Transition Bulkhead)</b>				
Retaining Bulkhead Construction				
<b>Excavation Fronting E25 and Dispose Slip 1</b>				
Clamshell Dredging				
<b>Construct New Armor Slope</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Wharf Construction</b>				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
<b>CY Development</b>				
New Container Yard Construction - Paving				
<b>Dredge to -55 ft</b>				
Clamshell Dredging				
Ph 1-2				
<b>Demolish Existing Facilities</b>				
Wharf Demolition Landside				
Wharf Demolition Marine				
Sheet Pile Bulkhead Demolition				
Ph 1-3				

Table A-4.1-AIt2-123. Tugs beyond 3nm Annual NOx Emissions - POLB Middle Harbor Alternative 2

Activity	2015		2015	
	Nov		Dec	
	1st	2nd	1st	2nd
<b>Construct New Bulkhead</b>				
Retaining Bulkhead Construction				
<b>Excavation Fronting E26 and Dispose Slip 1</b>				
Clamshell Dredging				
<b>Construct New Armor Slope</b>				
Rock Placement, Push Off & Tub & Orange Peels				
<b>Wharf Construction</b>				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				
<b>Construct E27 Bulkhead</b>				
Retaining Bulkhead Construction				
<b>CY Development</b>				
Vibratory Hammer & Power Pack		0.00		
Flatbed Truck		0.00		
Welding Machine		0.00		
<b>Hydraulic Dredge to -55ft</b>				
Clamshell Dredging				
Ph 1-3				
<b>Ph 1-6a Demo Existing F1-4, F6 Wharf</b>				
Wharf Demolition Landside				
<b>Roll Surcharge</b>				
Roll Surcharge				
Ph 1-6b				
<b>Demo Existing F8-10 Wharf</b>				
Wharf Demolition Landside				
Wharf Demolition Marine				
<b>Construct Wharf, Armor, Fill</b>				
Land Ex				
Rock Placement, Push Off & Tub & Orange Peels				
Retaining Bulkhead Construction				
Drive 24-In Octagonal Piles - Land				
Drive 24-In Octagonal Piles - Water				
Drive Piles - Misc Activities				
Reinforced Concrete Wharf				



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