



**TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC**

**APPENDIX N**

**DRAFT**

**WATER QUALITY MONITORING PLAN**

**FOR**

**NEW JERSEY WATERS**

**NORTHEAST SUPPLY ENHANCEMENT PROJECT**

**JANUARY 2020**

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**LIST OF ACRONYMS AND ABBREVIATIONS**

BMP	best management practice
d/b/a	doing business as
Dth/d	dekatherms per day
DGPS	differential global positioning system
GPS	Global Positioning System
HDD	horizontal directional drill
LNYBL	Lower New York Bay Lateral
MP	milepost
N.J.A.C	New Jersey Administrative Code
NJDEP	New Jersey Department of Environmental Protection
OEI	Offshore Environmental Inspector
SWQS	surface water quality standards
TAT	turnaround time
Transco	Transcontinental Gas Pipe Line Company, LLC
USEPA	U.S. Environmental Protection Agency
WFD	(NJDEP) Individual Waterfront Development
WQMP	Water Quality Monitoring Plan

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## 1 INTRODUCTION

This Draft Water Quality Monitoring Plan (WQMP) describes the water quality monitoring program and reporting to be performed during the Northeast Supply Enhancement Project's (Project) offshore excavation (including both dredging and trenching) in navigable waters located in New Jersey. This Draft WQMP has been developed through consultation with the New Jersey Department of Environmental Protection (NJDEP) and in accordance with New Jersey Surface Water Quality Standards (New Jersey Administrative Code [N.J.A.C.] 7:9B). The Final WQMP will incorporate relevant permit conditions in the anticipated NJDEP water quality certification(s) for the Project.

### 1.1 Background

Transcontinental Gas Pipe Line Company, LLC (Transco), a subsidiary of Williams Partners L.P., proposes to expand its existing interstate natural gas pipeline system in Pennsylvania and New Jersey and its existing offshore natural gas pipeline system in New Jersey and New York waters. The Project's capacity is fully subscribed by two entities of National Grid: Brooklyn Union Gas Company doing business as [d/b/a] National Grid NY) and KeySpan Gas East Corporation (d/b/a National Grid), collectively referred to herein as "National Grid."

To provide the incremental 400,000 dekatherms per day (Dth/d) of capacity, Transco plans to expand portions of its system from the existing Compressor Station 195 in York County, Pennsylvania, to the Rockaway Transfer Point in New York State waters. As defined in executed precedent agreements with National Grid, the Rockaway Transfer Point is the interconnection point between Transco's existing Lower New York Bay Lateral (LNYBL) and existing offshore Rockaway Delivery Lateral.

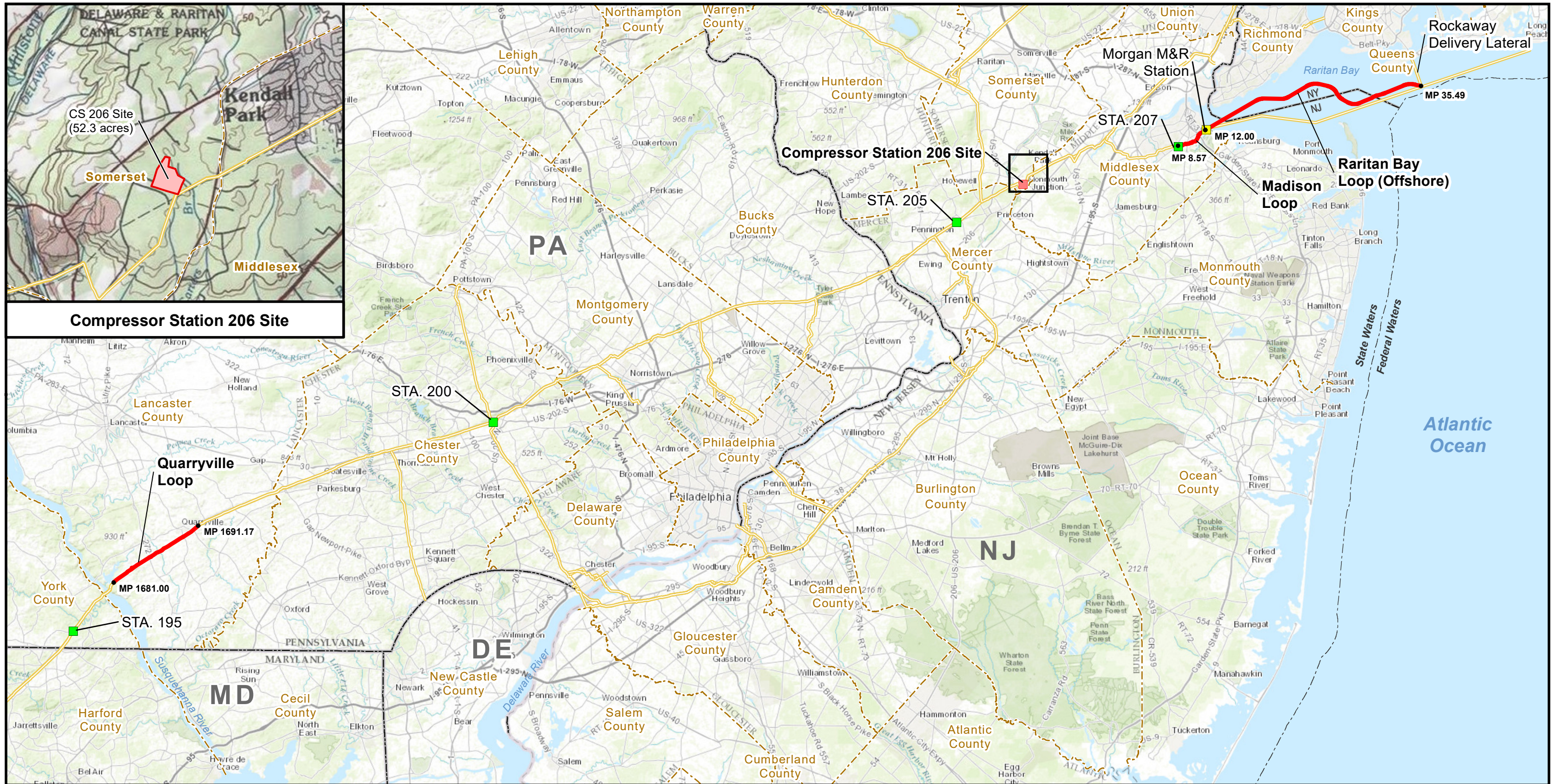
The offshore portion of the Project includes a new 26-inch-diameter pipeline that will extend approximately 23.33 miles east-northeast across Raritan Bay and Lower New York Bay from the Borough of Sayreville shoreline in Middlesex County, New Jersey, to the Rockaway Transfer Point, located in the Atlantic Ocean approximately 3 miles seaward of the Rockaway Peninsula in Queens County, New York (see Figure 1).

Transco has selected a suite of offshore construction methods, including pre-lay clamshell dredge, post-lay jet trencher, and horizontal directional drill (HDD), for the Raritan Bay Loop. These methods were selected in consideration of the site-specific conditions located along the pipeline route, with particular focus on installation efficiency, minimization of sediment disturbance, site-specific burial depth requirements, and future success of facility operations (see Table 1 for a breakdown of construction methods by milepost [MP]). All of these construction methods will result in a temporary increase in suspended sediment levels and associated turbidity within New Jersey waters.

**Table 1  
Offshore Raritan Bay Loop Installation and Backfill Methods, New Jersey**

Milepost Start	Milepost End	Proposed Trenching Method <sup>e</sup>	Proposed Backfill Method	Total Estimated Volume (cubic yards)
CP HDD Pit Excavation ~1,200 feet north of 12.30		Clamshell Dredge	Clamshell Dredge	461
12.10	12.30	HDD (CP Power Cable)	N/A	N/A
MSA HDD Pit Excavation at 12.50		Clamshell Dredge	Clamshell Dredge	9,931
12.20	12.50	HDD (MSA)	N/A	N/A
12.50	14.02	Clamshell Dredge	Clamshell Dredge	63,868
Neptune Cable Crossing at 13.88		Hand Jet	Hand Jet <sup>a</sup>	1,676
26.55 <sup>b</sup>	29.52	Jet trencher	Clamshell Dredge <sup>c</sup>	51,548
AC HDD Pit Excavation at 29.52		Clamshell Dredge	Clamshell Dredge	14,050
29.52	30.40	HDD (AC)	N/A	N/A
AC HDD Pit Excavation at 30.40		Clamshell Dredge	Clamshell Dredge	32,450
30.40	30.64	Jet trencher	Clamshell Dredge <sup>c</sup>	4,187
<b>Total Volume</b>				<b>178,171<sup>d</sup></b>
<p>Notes:</p> <ul style="list-style-type: none"> <li><sup>a</sup> If the hand jet or mass flow excavator is unable to adequately backfill the area using the sediments previously excavated from the trench, or if supplemental backfill is required, then a clamshell dredge will be used to backfill.</li> <li><sup>b</sup> This jet trenching segment extends west into New York state waters to Milepost 25.22.</li> <li><sup>c</sup> Sediment loss from areas installed via jet trencher is expected to be minimal (maximum of 5% trench volume loss). However, if supplemental backfill is required following pipeline installation/final pass, a clamshell dredge will be used to backfill.</li> <li><sup>d</sup> Total may not sum exactly due to rounding.</li> <li><sup>e</sup> Clamshell bucket to be equipped with an environmental bucket for trenching activities.</li> </ul> <p>Key:</p> <ul style="list-style-type: none"> <li>AC = Ambrose Channel</li> <li>CP = Cathodic protection</li> <li>HDD = Horizontal directional drill</li> <li>MSA = Morgan Shore Approach</li> <li>N/A = Not applicable</li> </ul>				

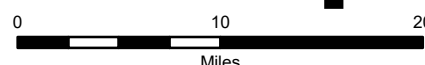




**Compressor Station 206 Site**

**Legend**

- Milepost
- Existing Compressor Station
- Existing Meter & Regulating Station
- Compressor Station 206
- Proposed Pipeline
- Existing Transco Pipeline
- State Boundary
- County Boundary
- State/Federal Offshore Line



SITE LOCATION		DRAWING NO.		REFERENCE TITLE	
				A-1	

**TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC**  
**PROJECT LOCATION MAP**  
**NORTHEAST SUPPLY ENHANCEMENT PROJECT**  
**PENNSYLVANIA, NEW JERSEY, NEW YORK**

**Williams**

NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.	DRAWN BY:	DATE:	ISSUE FOR BID:	SCALE:
A	6/14/2016	AL	ISSUED FOR FEREC PRE-FILING	1000891	JM	JM	RS	5/31/2017	N/A	1:600,000
B	8/31/2016	AL	ISSUED FOR PLANNING PRESENTATION	1000891	JM	JM	MK	5/31/2017	N/A	Project features ver15
C	11/14/2016	AL	ISSUED FOR FEREC DRAFT FILING	1000891	JM	SM				
D	3/20/2017	AL	ISSUED FOR FEREC FILING	1000891	JM	SM				
E	5/31/2017	RS	ISSUED FOR FEREC SUPPLEMENTAL FILING	1000891	MK	SM				

**FIGURE A-1**

Data Sources: BOEM 2005; Williams 2017; E&E 2017; ESRI 2012, 2017.

L:\Buffalo\Williams\_NYREMap\IXDs\Permit\_Request\2017\_05\_31\_OffshoreGeoTech\_Locs\FigA-1\_ProjectLocationMap\_11x17.mxd

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## 1.2 Water Quality Modeling

Transco conducted Project-specific hydrodynamic and sediment transport and dispersion modeling for the installation methods proposed for the Raritan Bay Loop to numerically predict the suspended sediment plumes and areas of deposition that may be generated by the offshore construction, to better estimate potential impacts from suspended and deposited sediments, and to help determine appropriate avoidance and minimization measures. This consisted of two interconnected modeling tasks, which are described in detail in the Hydrodynamic and Sediment Transport Modeling Results (Modeling Reports) (RPS 2017a, b, 2018a, b, 2019):

- Development and calibration of a three-dimensional hydrodynamic model for the New York/New Jersey Harbor Estuary and nearby waters of the Atlantic Ocean; and
- Simulations of the suspended sediment fate, transport, plumes, and deposition that could result from Project-specific offshore construction activities.

The model analysis is summarized in Transco's application for an Individual Waterfront Development (WFD) permit, and individual modeling reports are included as part of Transco's WFD permit application as Appendix F. For work proposed at least partly in New Jersey waters, the modeling predicts that TSS concentrations at or above 50 milligrams per liter (mg/L) would extend up to 2,346 feet from the pipeline trench during jet trenching. A TSS concentration of 50 mg/L above ambient conditions was considered because it is the default threshold of chronic toxicity listed in New York State Department of Environmental Conservation's Technical and Operational Guidance Series 5.1.9. Concentration values of 50 mg/L may be roughly equivalent to a turbidity level of between 10 nephelometric turbidity units (NTUs) and 30 NTUs<sup>1</sup>, corresponding to New Jersey's water quality standard for the maximum turbidity threshold in Class SC and SE1 waters, respectively.

Sediment plumes with average TSS concentrations greater than 50 mg/L above ambient conditions are predicted to extend up to 2,592 feet from potential hand-jetting locations in New Jersey waters. Modeling for clamshell dredging with an environmental bucket in New Jersey waters yielded much more localized plumes, i.e., the clamshell dredging activities are predicted

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<sup>1</sup> Applying a standard direct conversion between TSS concentrations and turbidity for the entire length of the Raritan Bay Loop is not feasible, as the relationship is site-specific and can vary depending on concentrations of suspended particles, as well as other particle characteristics such as size, shape, surface area, color, etc. However, turbidity-to-TSS correlations ranging between approximately 1 NTU to 1 mg/L and 1 NTU to 6 mg/L have been reported for other freshwater and marine environments around the United States (Anchor Environmental CA, L.P. 2003; Holliday et al. 2003).

to generate elevated TSS concentrations more than 50 mg/L above ambient conditions not more than 443 feet from dredging locations. During backfill activities using clean, sandy material (less than 5% silt/clay), TSS concentrations greater than 50 mg/L above ambient conditions is predicted to extend up to 5,299 feet from backfill locations in New Jersey waters. Ambient TSS conditions are expected to return in less than 8 hours following completion of these activities. Actual TSS concentrations during construction may be less than modeled concentrations based on the use of conservative modeling assumptions.

Water quality monitoring for turbidity will be performed using visual observations and real-time measurements throughout the duration of excavation and fill placement activities required for pipeline installation. If concentrations exceed the turbidity compliance threshold(s), NJDEP will be notified and, as warranted, adaptive management measures will be implemented (see Section 3).

### **1.3 Water Quality Monitoring Plan Organization**

The goal of this Draft WQMP is to establish a water quality monitoring program to document Project compliance with water quality standards of New Jersey, as will be described in the anticipated NJDEP WFD permit and water quality certification. This Draft WQMP includes the following sections:

- Section 1 presents the Project background and a general overview of this Draft WQMP.
- Section 2 describes the water quality monitoring program, including the monitoring parameters, monitoring locations, and schedule.
- Section 3 identifies the water quality compliance thresholds developed for this Project and the actions that will be followed based on monitoring results, including any potential adaptive management procedures.
- Section 4 describes the reporting procedures.
- Section 5 provides the references for this Draft WQMP.

## 2 WATER QUALITY MONITORING PROGRAM

This program will monitor turbidity during offshore excavation (including dredging and trenching) and fill activities associated with installation of the Raritan Bay Loop. This will be accomplished using visual observation of turbidity by offshore observers and real-time turbidity monitoring during the various in-water excavation and fill activities. These activities may be adjusted in response to site conditions and results of previous monitoring. Any significant modifications to the monitoring activities described herein will be made in consultation with the NJDEP and will be documented, including an explanation for the modification, as described in Section 4.

### 2.1 Methods

Water quality monitoring will be accomplished at the offshore Project site in New Jersey waters using the following methods:

1. Visual observations of turbidity at the sea surface;
2. Turbidity measurements using field monitoring equipment; and
3. The collection of concurrent temporal and positional information using a shipboard differential global positioning system (DGPS).

### Visual Observations

The visual observation of the water surface near the excavation and fill activities will be conducted by an observer equipped with polarized glasses at the compliance stations described in Section 2.2. The observer will document whether or not Project-related activities appear to be causing a “substantial visible contrast to natural conditions” for turbidity. Observations will be recorded in a log book and at least one photograph will be taken for each log entry. Other potentially relevant factors such as tidal stage, weather, and sea conditions will also be recorded.

### Turbidity Measurements

Turbidity monitoring will be conducted at the locations described in Section 2.2. At each monitoring location, measurements will be collected using YSI turbidity monitoring probes, or equivalent, deployed from the survey vessel and/or grab water column samples analyzed with an onboard portable turbidity meter. Proposed depths and distances of turbidity monitoring are outlined in Sections 2.2 and 2.3 below and will be consistent with the anticipated NJDEP WFD permit and water quality certification. The measurement depth will be determined either by using the vessel’s depth finder/sonar, hand-held electronic depth finder/sonar, or by manually deploying

a weight attached to a calibrated rope/cable. Turbidity monitoring probes will be rinsed with ocean water at each monitoring location prior to turbidity measurements.

The turbidity probes and/or meters will be calibrated prior to initial use. Calibration and cleaning of the probes and/or meters will be performed on a daily basis thereafter.

## **2.2 Monitoring Locations**

Two types of locations will be monitored as part of this monitoring program: background stations and compliance stations. At each station that is 20 feet and deeper, turbidity measurements using a turbidity probe and/or grab samples for onboard analysis will be taken at 1 foot below the surface, at mid-depth, and 3 feet above the seafloor, depending on tide and wave conditions. At each station that is shallower than 20 feet, turbidity measurements using a turbidity probe and/or grab samples for onboard analysis will be taken at 1 foot below the surface and at mid-depth, depending on tide and wave conditions.

The water quality monitoring crew will communicate daily with the Offshore Environmental Inspector (OEI) in an effort to conduct monitoring while in-water excavation activities are underway. However, monitoring will only be conducted during daylight hours and only when meteorological and oceanographic conditions are safe for vessel operations, as determined by the vessel captain. Any decision to discontinue monitoring activities will be documented, including an explanation for the modification, as described in Section 4.

### **Background Station(s)**

Two background measurement stations will be identified daily for each active offshore excavation and fill activity – one station location for an outgoing tide (ebb current) and another station location for an incoming tide (flood current). The background monitoring locations will be established up-current approximately 5,000 feet from each active in-water excavation and fill activity, and outside of any existing visible plumes that may be present. The monitoring crew will visually survey the perimeter of the work space and evaluate the prevailing current direction, tidal phases, and weather conditions in order to identify the area that is up-current of the active in-water excavation activities. The background locations may be modified during the course of the day depending on tidal phase and location of in-water excavation activities. When spatially separate in-water excavation activities occur, then separate background locations will be identified to monitor up-current of each activity. Background turbidity monitoring frequency details are presented in Section 2.3.

### **Compliance Station(s)**

Compliance monitoring locations will be established approximately 2,500 feet down-current of each active offshore excavation activity. These down-current locations will be identified daily. The monitoring crew will visually survey the perimeter of the work space and evaluate the prevailing current direction, tidal phases, and weather conditions in order to identify the area that is down-current of the active in-water excavation activities. The compliance locations will be modified during the course of the day depending on tidal phase and location of in-water excavation activities. When spatially separate in-water excavation activities occur, then separate compliance locations will be identified to monitor down-current of each activity.

Compliance monitoring frequency details are presented in Section 2.3.

### **2.3 Monitoring Schedule and Frequency**

Water quality monitoring, including visual turbidity observations and measurement of turbidity for real-time monitoring, will be performed during daylight hours throughout the duration of the in-water excavation and backfill activities. Unless adverse conditions prevent monitoring due to safety reasons or offshore excavation and fill activities are halted, visual turbidity observations and turbidity measurements will be conducted during all excavation and fill activities. However, it is possible that under certain sea conditions, even though in-water excavation and fill activities may continue, visual observations and turbidity monitoring will not be conducted due to meteorological and oceanographic conditions that may be unsafe for the survey vessel, as determined by the vessel captain. Any days where monitoring was not attempted or accomplished due to meteorological or oceanographic conditions will be reported as discussed in Section 4.

### **Turbidity Measurements**

Real-time turbidity measurements will be performed during daylight hours throughout the duration of the in-water excavation and fill activities. Unless adverse conditions prevent monitoring due to safety reasons or offshore excavation activities are halted, turbidity monitoring will be conducted during all excavation and fill activities. However, it is possible that under certain sea conditions, even though in-water excavation activities may continue, monitoring will not be conducted due to meteorological and oceanographic conditions that may be unsafe for the survey vessel. Any days where turbidity monitoring was not attempted or accomplished due to meteorological or oceanographic conditions will be reported as discussed in Section 4.

The monitoring activities will be performed twice daily when in-water excavation and fill activities are scheduled to occur, once during an outgoing tide (ebb current) and once during an

incoming tide (flood current). The monitoring locations will be determined during each monitoring period as described in Section 2.2.

**Visual Observations**

In addition to the turbidity monitoring, visual turbidity observations will be recorded at least once during each monitoring event.



### 3 COMPLIANCE THRESHOLDS AND RESPONSE ACTIONS

This section identifies the water quality compliance thresholds developed for the Raritan Bay Loop and the actions that will be followed based on monitoring results. Modifications to the compliance thresholds described herein will be made in consultation with the NJDEP. If, during any in-water excavation activities, compliance thresholds are exceeded, the NJDEP will be notified as described in Section 4.

#### 3.1 Water Quality Compliance Thresholds

Compliance thresholds for the in-water excavation activities have been developed to implement an efficient and environmentally protective program. The primary means of monitoring impacts of in-water excavation activities on water quality will be based on visual turbidity observations and real-time measurements, as described in Section 2.

Based on consultations with NJDEP in a January 6, 2020 meeting, Transco anticipates that the NJDEP WFD permit and water quality certificate will require that turbidity measurements at compliance monitoring locations are not more than 50% higher than the ambient turbidity measured at corresponding background monitoring locations. However, to account for natural turbidity variability, compliance measurements 3 NTUs or less above the background measurements will not be considered reportable exceedances.<sup>2</sup>

#### 3.2 Adaptive Management Actions

Adaptive management actions presented herein are triggered by measurements and observations at compliance stations. In the event of an exceedance of a compliance threshold, as determined by turbidity measurements, the OEI and the Construction Chief will be notified, and the following steps will be taken:

1. Confirm the turbidity measurement with additional probe and/or meter measurements. The turbidity values will be confirmed by evaluating turbidity at the compliance location within 30 minutes after the observed exceedance and comparing these results to the corresponding measurements from the background station. The original and additional measurements will be reviewed prior to additional response action for potentially spurious turbidity levels.

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<sup>2</sup> For example, if turbidity at a background station is measured as 4.0 NTU and turbidity at a corresponding compliance station is measured as 7.0 NTU, the results would be recorded but NJDEP would not be notified and no adaptive management action would be taken.

2. If the subsequent turbidity levels continue to exceed the compliance threshold, evaluate potential causes of turbidity changes. This evaluation will include: inspection of the probe(s) (i.e., for damage, fouling, malfunction, or other localized conditions) and visually inspecting the surrounding area for increased turbidity resulting from non-Project-related activities.
3. Monitor turbidity using a different method (i.e., grab water column samples and analyze with an onboard portable turbidity meter if original measurement was collected with a turbidity probe deployed over the side of the vessel) to verify if there are problems with the probes.
4. If the turbidity exceedance can be reasonably attributed to a field equipment malfunction or damage, the equipment will be repaired/replaced, as appropriate and alternative field methods for monitoring turbidity employed. Until the situation is corrected, grab water column samples and analysis with an onboard portable turbidity meter and/or in-situ measurements with a turbidity probe will be used to corroborate the conclusion of equipment malfunction.
5. If the turbidity exceedance is determined to be potentially attributable to in-water excavation and fill activities, the monitoring crew will update the OEI and the Construction Chief. The OEI will coordinate with the Construction Chief to evaluate the specific operations and implement reasonable and feasible adaptive management measures. These measures may include changing the rate of advancement of the jet trencher, modifying hydraulic jetting pressures, slowing the rate of clamshell dredging, observing a one-hour slack-tide pause in dredging<sup>3</sup>, and/or implementing other reasonable operational controls that may reduce suspension of in-situ sediments as much as practicable. The OEI will notify the NJDEP as soon as possible and no later than 48 hours after confirming that an exceedance has occurred, including a description of any actions taken to further control turbidity.
6. The survey crew will continue collecting turbidity measurements approximately every 30 minutes at the compliance station(s) while turbidity monitoring indicates exceedances, and for two hours following the last measured turbidity exceedance (during daylight hours).

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<sup>3</sup> Transco may employ a 1-hour pause in dredging during each slack-tide period (i.e., either side of high tide and low tide intervals).

7. Whole-water grab samples for laboratory TSS and turbidity analyses will be collected from both the compliance and background stations once daily while there is an exceedance observed.
8. If an increase in turbidity resulting from Project-related activities that causes a substantial visible contrast to natural conditions is observed, immediate action should be taken to adjust the activities that may be causing or contributing to the substantial visible contrast on the water surface. The monitoring crew will attempt to determine the extent of the substantial contrast by moving down-current of the densest part of the visible plume until no substantial contrast on the water surface is observed. If the visible plume yields an exceedance in turbidity, and the exceedance is determined to be potentially attributable to in-water excavation and fill activities, the monitoring crew will update the OEI and the Construction Chief and adaptive management measures will be implemented, as described above. The monitoring activities will continue for an additional two hours after a substantial visible contrast to natural conditions was last observed (during daylight hours). The routine schedule will resume thereafter. If initial adjustments to in-water activities do not resolve the substantial visible contrast condition, additional adaptive management actions will be implemented.

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## 4 REPORTING

The specific roles and individuals responsible for reporting water quality monitoring data will be finalized in conjunction with the various contractors prior to the start of in-water excavation and fill activities. The general reporting protocols are described in the following subsections.

### 4.1 Routine Monitoring Results

Monitoring results will be transmitted electronically by the field crew to the OEI and the Transco Environmental Compliance Manager on a daily basis. The daily monitoring results will include:

- Time and date of monitoring activities;
- Depth of water body at the monitoring location and depth of measurements;
- General weather conditions, including wind direction and velocity;
- Tidal stage and direction of flow;
- Global Positioning System (GPS) coordinates for monitoring activities;
- Documentation of any days when monitoring was not attempted or accomplished due to meteorological or oceanographic conditions; and
- Documentation of any decision to discontinue monitoring activities, including an explanation for the modification and a description of any pertinent consultation with the NJDEP.

The complete data package and electronic data deliverable will be delivered electronically to the Transco Environmental Compliance Manager within five business days of each monitoring activity. Based on consultation with NJDEP in a January 6, 2020 meeting, Transco will provide NJDEP with a daily summary of monitoring results via an online portal (or equivalent) to be established by Transco.

### 4.2 Water Quality Exceedances Notification and Reporting

In the event of an exceedance of a compliance threshold:

- The survey vessel crew will notify the OEI and the Construction Chief.
- If the exceedance of the turbidity standard threshold is determined to be potentially attributable to in-water excavation and fill activities, the monitoring crew will update the OEI and the Construction Chief immediately.

- The OEI will notify the NJDEP as soon as possible and no later than 48 hours after determining that an exceedance occurred.
- The Transco Environmental Compliance Manager will summarize the related water quality data (i.e., visual turbidity observations, real time measurements, and associated laboratory data as appropriate) and adaptive management actions (see Section 3.2) and send to the NJDEP via email within 48 hours of laboratory data receipt (or next business day thereafter). Transmitted data will include temporal and positional information from the shipboard DGPS system of where the monitoring occurred and/or samples were collected.

### **4.3 Final Report**

Within 30 days of completion of in-water installation including backfill activities, a final paper and electronic report summarizing the results of the water quality monitoring program will be submitted to the NJDEP. The final report will include:

- A summary of monitoring activities;
- Coordinates of monitoring locations;
- Description of the methods used for turbidity monitoring;
- A map indicating the location of the in-water excavation activities and general monitoring locations (background and compliance);
- A summary of significant modifications to the monitoring including the reasons for the modifications;
- A list of the days that monitoring was not attempted or accomplished due to meteorological or oceanographic conditions;
- A summary of corrective actions taken and follow-up testing/observations; and
- A summary of the data quality review for laboratory testing results, if applicable.

One paper copy and one electronic copy of the final report will also be submitted to the Federal Energy Regulatory Commission. Electronic copies will be sent to other agencies upon request.

## 5 REFERENCES

- RPS. 2017a. Northeast Supply Enhancement Project: Hydrodynamic and Sediment Transport Modeling Results – Base Case Simulations. Submitted August 28, 2017.
- \_\_\_\_\_. 2017b. Northeast Supply Enhancement Project: Hydrodynamic and Sediment Transport Modeling Results – Addendum 1. Submitted October 22, 2017.
- \_\_\_\_\_. 2018a. Northeast Supply Enhancement Project: Hydrodynamic and Sediment Transport Modeling Results – Addendum 2. Submitted May 9, 2018.
- \_\_\_\_\_. 2018b. Northeast Supply Enhancement Project: Hydrodynamic and Sediment Transport Modeling Results – Addendum 3. Submitted September 19, 2018.
- \_\_\_\_\_. 2019. Northeast Supply Enhancement Project – Hydrodynamic and Sediment Transport Modeling Results (Addendum 5). Memo. Submitted February 15, 2019.

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