Appendix N July 7, 2022 Letter with Responses to NYSDEC Technical Comments dated March 4, 2022

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July 7, 2022

New York State Department of
Environmental Conservation
Division of Environmental Permits
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Response to Comments Letter Dated: March 4, 2022 Technical Comment Letter
South Brooklyn Marine Terminal – Port Infrastructure Improvements
Project DEC ID: 2-6102-00120

Dear Karen Gaidasz,

Thank you for providing technical comments on the December 23, 2021 South Brooklyn Marine Terminal Infrastructure Improvement Project Joint Permit Application in your March 4, 2022 Technical Comment Letter. Below are the Applicant's responses to your comments.

Comment 1: Sediment

Comment 1a: *The proposed dredging will expose deep sediments that contain higher levels of contaminants (i.e., mercury, dioxins, and other analytes) than what is currently present at the existing mud surface. The Applicant has presented material to NYSDEC showing an anticipated post-dredging sedimentation rate of 0.5 feet to 1.0 feet per year. This sedimentation rate was cited as evidence that a cap is not needed to cover the post-dredge sediments. NYSDEC staff have determined that a cap will not be required for the initial dredge activity based on the reported sedimentation rate. However, NYSDEC is requesting that the Applicant verify the sedimentation rate by providing a post-dredge bathymetric survey, followed by surveys taken annually for three (3) years. If the sedimentation rate in any of the three years is less than that cited by the Applicant, (i.e., 0.5 feet to 1.0 feet), the Applicant will be required to cap the post-dredge sediments. As such, please submit a post-dredging cap plan as contingency for lower-than-expected post-dredging sedimentation rates. Alternatively, the Applicant could consider the use of the cleaner class B dredge sediments to cap some of the class C sediments that will be exposed by this dredge project (see comments 1c and 1d below).*

Response 1a: During a January 26, 2022 meeting, the Applicant explained why capping of the post-dredging surface should not be required, including the limited and degraded habitat, high sedimentation rate, lack of precedent, and site suitability concerns. As shown above, the March 4, 2022 Technical Comment letter required capping in the first three years if the sedimentation rate was not observed in any year. However, stopping wind farm construction-related transport activities to cap in the first three years would be detrimental to meeting common project, State, and City goals. At the May 23, 2022 meeting with NYSDEC when this timing concern was discussed, NYSDEC stated that capping therefore would be required before operations. In response to NYSDEC's comments, the Applicant presented a targeted capping option that consists of placing a clean sand cap in contiguous areas where 2,3,7,8-TCDD TEQ concentrations in the post-dredging surface significantly exceed their TOGS 5.1.9 Class C threshold. The area identified for capping represents a large percentage (approximately 40%) of the proposed dredging area. Based on analysis of the Fall 2021 sediment data, placement of a 1-foot sand cap on the post-dredging surface in Areas 2.1A and 2.3 (**Figure 1**, attached) will achieve sediment quality across the Project Area that is similar to or better than current conditions when considered on an average, Project-wide basis. To ensure the necessary project depths (including 2 feet of overdredge) are achieved following capping, an additional 1 foot of dredging would need to be incorporated into the design in these areas. Consistent with responding to NYSDEC's requirement, the Applicant would place the clean sand cap as described above during SBMT Project construction to avoid interference with cargo carrying

vessel operations. During the May 23 meeting, NYSDEC requested that an analysis of existing vs. post-cap conditions be conducted for all constituents to inform their evaluation of the targeted cap.

Therefore, AECOM performed the same analysis as presented during the May 23 meeting on all constituents that were above Class A thresholds. **Tables 1 through 9** (attached) present area-wide average concentrations of 2,3,7,8-TCDD-TEQ, total PCBs, total PAHs, DDx (sum of DDD, DDE, and DDT) and five metals (arsenic, cadmium, copper, lead, and mercury) in the targeted dredge material and the post-dredging surface (with and without a cap in Areas 2.1A and 2.3). Benzene, total BTEX, chlordane, dieldrin, and mirex are all Class A or were not detected in the targeted dredge material and post-dredging surface and were therefore not included in this analysis.

As shown in **Tables 1 through 9**, following capping of Areas 2.1A and 2.3 (approximately 6.1 acres), the average concentrations of TCDD-TEQ, total PCBs, total PAHs, DDx and metals in the post-dredging surface are similar to or better than pre-dredge conditions on a project-wide basis.[1] In the areas not targeted for capping (Areas 1, 2.1B, and 2.2), average concentrations of all analytes except mercury (discussed below) are below Class C or marginally above (TCDD-TEQ in Area 1) in the post-dredging surface. The in-water portion of the Project Area, comprising the dredging basin footprint, is a total of 13.1 acres, but the total dredging surface area footprint, including side slopes, is 14.7 acres. By capping Areas 2.1A and 2.3, the surface weighted average concentration (SWAC) across the dredging surface area footprint (total of 14.7 acres) would be below the Class C threshold for all of the above analytes except mercury. A SWAC is a widely used metric in sediment remediation and risk assessment for evaluating exposure to contaminants in the bioactive zone by aquatic organisms.[2] Most forage fish and higher trophic level receptors that may occur in the Project Area have home ranges that are much greater than the size of the Project Area; therefore, the use of a Project-wide SWAC is appropriate and conservative. For TCDD-TEQ (**Table 1**), capping of Areas 2.1A and 2.3 significantly reduces the estimated post-dredging SWAC across the Project Area from 72 ng/kg (above the Class C threshold of 50 ng/kg) to 41.5 ng/kg (or lower in the event that there is less than 6 inches of mixing) which is below the Class C threshold and similar to the average in the targeted dredge material (41.6 ng/kg). Post-cap SWACs for total PCBs, total PAHs, DDx, arsenic, cadmium, copper, and lead (**Tables 2 through 8**) are all well below their respective Class C thresholds. For mercury (**Table 9**), the post-cap SWAC across the Project Area of 2 mg/kg is essentially the same as the average in the targeted dredge material (1.9 mg/kg), and both exceed the Class C threshold of 1 mg/kg. The levels of mercury observed in SBMT sediments are consistent with levels observed in the greater Gowanus Bay.[3]

In summary, as required by NYSDEC, placement of a clean sand cap in Areas 2.1A and 2.3 (6.1 acres of the 14.7 acre dredging footprint including side slopes; 41%) immediately following dredging would achieve sediment quality across the Project Area that is similar to or better than current conditions. Continued deposition will bring surface concentrations to ambient levels in Upper New York Harbor. This capping concept does not include future cap monitoring or cap maintenance, monitoring of sedimentation rates, or future dredging and capping of other areas so as not to disrupt future cargo carrying vessel operations.

Comment 1b: *In Section 5.2.4 Sediment Characteristics and Analysis, please estimate how many cubic yards of sandy material is represented by the cores where sand was overlain by the black silty material.*

Response 1b: There is an estimated volume of 2,900 cubic yards (CY) of sandy material within the targeted dredge volume, comprising less than 2 percent of the overall dredge volume of 148,500 CY. For the purpose of this estimate, targeted dredge material with a minimum composition of 50% sand based on the grain size

[1] Surface concentrations of analytes in Areas 2.1A and 2.3 were estimated after consolidation of cap material into underlying sediment by assuming approximately 6-inches of sediment mixing with the 1 ft of placed clean cap material. Concentrations in the cap material were assumed to be less than the Class A thresholds for metals and representative of the detection limits for organics (1 ng/kg for TCDD TEQ [estimated total TEQ detection limit which is less than the Class A threshold of 4.5 ng/kg], 100 ug/kg for total PCBs which is the same as the Class A threshold, 1000 ug/kg for total PAHs, which is less than the Class A threshold of 4,000 ug/kg, and 10 ug/kg for DDx [sum of DDD, DDE, and DDT], which is slightly above the Class A threshold but generally consistent with the detection limits for the individual isomers).

[2] See for example: Magar, V. et al. (2009), Monitored Natural Recovery at Contaminated Sediment Sites, Technical Guide prepared under grant from U.S. Department of Defense, Environmental Security Technology Certification Program, ESTCP Project ER-0622.

[3] See for example: CH2MHill and HDR (2011), Gowanus Canal Remedial Investigation Report, Prepared for EPA Region 2; and NYSDEC (2003), Contaminant Assessment and Reduction Project: NY/NJ Harbor Sediment Report 1998-2001, Division of Water.

analyses performed on samples collected during the sediment sampling program is considered "sandy material." Sandy material was identified in three distinct areas:

- Approximately 1,100 CY in Area 2.1, in the vicinity of cores A2.1-8 and A2.1-9;
- Approximately 500 CY in Area 2.1, in the vicinity of core A2.1-20; and
- Approximately 1,300 CY in Area 2.2, in the vicinity of cores A2.2-14, A2.2-18 and A2.2-19.

Please note that these are in-place volume estimates and are also based on interpolation between core locations to establish areal extents. The sandy material, where present, is in all cases overlain by silty material; the depth to the top of the sandy material varies from 5.8 to 10.3 feet below the existing sediment surface. The actual volume of sandy material that would be recoverable by segregated dredging in the field would be impacted by sloping or benching to provide stability for the surrounding black silty material, and by likely sloughing of the surrounding silty material into the sandy material as the work progresses. These conditions pose significant technical challenges to recovery of the limited sandy material within the targeted dredge volume.

Comment 1c: *Section 7.1.1 Direct Impact to Marine Habitat, indicates that the existing benthic surface does support a benthic community, but Area 2.3 has existing low invertebrate numbers. The Sediment Data Usability Summary Report indicates that some of the dredged material could potentially be used beneficially. Please explain if any of the dredged material could be used to create a more hospitable benthic environment than exists there currently.*

Response 1c: The physical characteristics of the dredged material (soft, unconsolidated sediments) would not be expected to provide a more hospitable benthic environment than already currently exists based on the sediment characterization data collected. Beneficial re-use of sediments in the benthic environment would be limited and would not be expected to produce a significant beneficial effect, as any improvements from lower contaminant levels would be nominal and temporary due to covering by continued sedimentation. Further, as discussed above and below (Responses 1b and 1d), the areas of nominally cleaner or sandier sediments within the targeted dredge material are limited and interspersed across the dredging footprint, such that removal and separation of these sediments would be extremely difficult and not be productive or cost-effective. As indicated in the JPA, dredged sediments will be beneficially used upland, if appropriate.

Comment 1d: *The conclusion section of the Sediment Data Usability Summary Report contains the statement: "Limited areas meet the Class B threshold and may be candidates for separate dredging and handling operation to optimize disposal and/or reuse options." With an additional one foot of dredging in area 2.3, would there be enough Class B material (especially the sandy fractions of the dredge areas contained in 2.1 and 2.2) to cover the exposed sediment in area 2.3 with one foot of Class B material? If not one foot, how many inches of cover could this material provide?*

Response 1d: The estimated in place volume of sediment meeting Class B thresholds in a contiguous area spanning the northern edge of Area 2.1, the southern portion of Area 2.2 adjacent to the north side of the 39th Street wharf and a portion of Area 2.2 southwest of the 35th Street wharf (show in yellow in Figure 2A of the *Sediment Data Usability Summary Report*) is estimated at 15,400 CY. However, the actual recoverable volume of sediment meeting Class B thresholds will be less – possibly by a substantial amount due to benching and sloping necessary to maintain stability, and from sloughing of material from adjacent Class C sediments into the target area that will occur during dredging. Because of the sloughing considerations, it is not possible to develop a reliable estimate of the quantity of Class B sediment that could be segregated from the overall dredge volume. The potential suitability of this material for reuse is also limited or precluded by the following considerations:

- The silty nature of the dredged material poses challenges to handling and placement, especially in light of the high-energy marine nature of the site. Further, none of the sandy material described above in Response 1b is coincident with the contiguous area of material meeting Class B thresholds. These factors pose significant challenges to effective placement of dredged material and control of water quality during placement.

- This material has poor geotechnical properties based on data gathered during engineering design investigations, which is consistent with typical experience working with silty New York Harbor sediments. This material would need to be dewatered and stabilized before any potential reuse and, therefore, is more likely to be beneficially reused at another site after stabilization (either upland, or riparian placement at another site if found to be suitable from a sediment chemistry and water quality perspective).

There are other areas of targeted dredge material meeting Class B thresholds; however, these areas are discontinuous, and the comparatively small sizes of these areas preclude an effective approach to selectively dredging these areas.

Comment 2: *Protected Species Time of Year Restrictions (TOYRs) -The narrative recognizes the need for compliance with the TOYRs, however TOYR dates are not specified. TOYRs also will apply for in-water work associated with bulkhead/wharf improvements (such any in-water vibratory pile driving). To avoid impacts to federal- and state-protected species, including migrating Atlantic sturgeon and spawning winter flounder, no in-water activity shall occur between:*

a. December 15 and March 1 in waters less than 20 feet; and
b. March 1 and June 30 and between October 1 and November 30, in waters of any depth.

Response 2: Thank you for providing the TOYRs. The project will comply with these restrictions.

Comment 3: *Protected Species Protection Measures - Please indicate the size of the buffer zone that would trigger a shut down if a protected species is observed (as discussed in Section 8.1 of the Permit Information Packet). Additionally, please also include the Protected Species Shut Down buffer zone as a Best Management Practice to be implemented.*

Response 3: As described in the JPA, the likelihood that protected species would be present in the Project Area during in-water construction activities is extremely low. Based upon review of the NOAA Fisheries *Final Biological Opinion for the New Jersey Wind Port* dated February 25, 2022, which required no buffer zone for similar in-water work, and implementation of other conflict-minimizing Best Management Practices pile installation, (e.g., operator will begin pile driving with soft start 'warning taps,' piles will be vibrated in for the majority of the installation, and then driven the remainder of the way), the Applicant believes that a shutdown buffer zone is not necessary. Based on prior experience with pile driving operations, these BMPs would cause any protected species present to leave the action area prior to the production of maximum noise levels, reducing the risk of injury. Pile driving at the start of each day would commence with an initial set of three strikes with the hammer operating at 40% power. After a one-minute pause, two more sets of three strikes separated by a one-minute pause would be performed with the hammer operating at 40% power. After a third and final one-minute pause, normal hammer operations would commence. Further, pile installation will be limited to dates outside of sturgeon TOYR, lessening the likelihood of potential impacts to sturgeon species.

Comment 4: *Mitigation Plan - According to the table on page 18 in the Summary of In-Water Work, titled, Components Installed In Marine and Tidal Habitats and Approximate Measurements of Area and Volume, the Project will add 3,863 cubic yards of fill and 3,328 cubic yards of new structures in the marine habitat below mean high water (MHW). Additionally, the table indicates that there will be 0.37 acre of shading impacts from the proposed platforms and wharves. Mitigation is required for the proposed fill and shading impacts. Please provide a mitigation plan for NYSDEC review and approval.*

Response 4: The Applicant has minimized fill and shading to the extent possible in the presented design. Based on guidance provided by NYSDEC to NYCEDC on Monday, June 13, impacts requiring mitigation have been clarified, and the fill and shading impacts will be recalculated. NYSDEC's guidance was as follows:

- Bulkheads
    - o New Fill Volume should be calculated from MHW to the existing mudline.
    - o If new fill volume is represented in cubic yards, it does not need to be represented in acres as well.
    - o For the 32-33 bulkhead, there is no need to mitigate for fill or shading.
- Wharves

    - There is no need to mitigate for pile fill when mitigating for square footage of pile supporting heavy lift platform.
- Fenders
    - The Applicant should document what fenders were previously permitted/allowed and the existing fenders. Mitigation is required for the incremental additional shading.

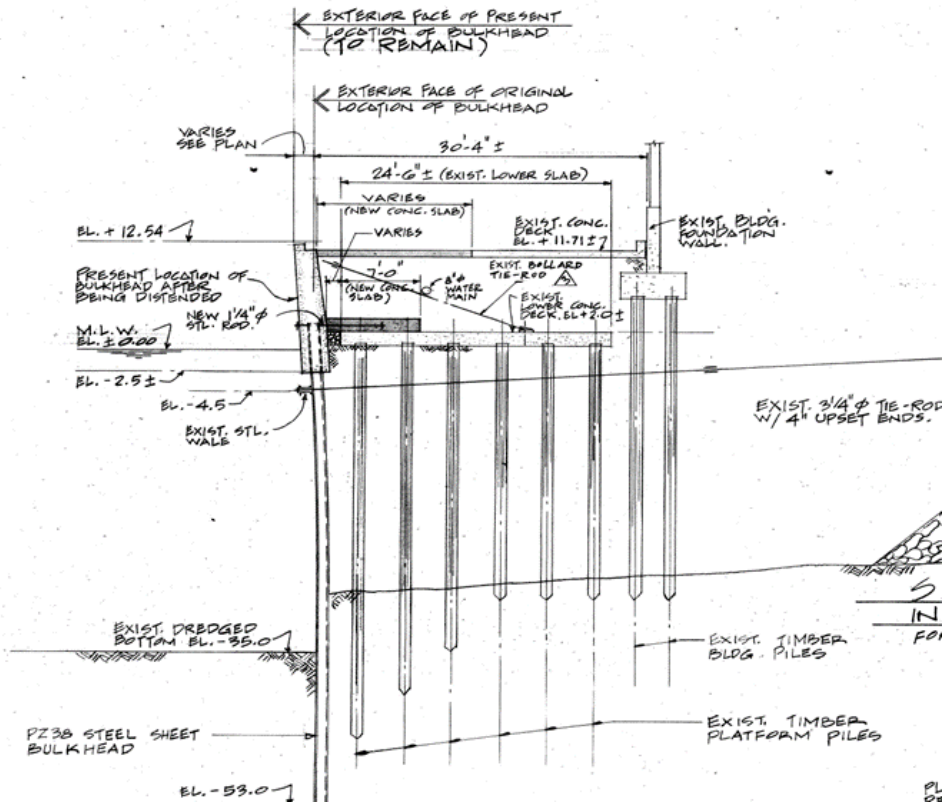
The Applicant is investigating mitigation options for the remaining fill and shading and will submit a separate mitigation plan for NYSDEC approval.

Comment 5: *Bulkhead - The JPA proposes a new bulkhead along approximately 600 feet of bulkhead on the southern side of the 39th St Pier. Plans call for the bulkhead to be placed 35 inches in front of the existing bulkhead surface. While the JPA provides justification for not meeting the NYSDEC's standard to re-build in-kind/in-place, justification must be provided for the relocation of the bulkhead 35 inches seaward. As such:*

> **Comment 5a**: *The Applicant should attempt to reduce the distance of the new bulkhead in front of the existing bulkhead to 18 inches or less.*

Response 5a: The JPA was based on preliminary engineering performed in 2021 and represents a fair assumption around new construction dimensions and existing structural capacities. Given the constraints associated with known and assumed existing conditions at the time of preliminary design and required live load capacities, the preliminary design presented in the JPA drawings represents the alternative with the smallest offset from the existing bulkhead that can be safely installed. This alternative was chosen over other designs, including a pipe and sheet pile combination wall, because of its relatively tight fit to the existing bulkhead. Further detailing will be performed in upcoming design phases, following further underwater inspection to assess the condition and dry inspection of tie rods through test pits.

A robust new steel sheeted bulkhead is needed as there is historical evidence that the existing bulkhead has experienced partial collapses. These local failures were accompanied by lateral displacement of the bulkhead. The amount of displacement varies along the bulkhead plan length (see figure below for additional details). Given the state of disrepair, the live load capacity of the bulkhead is compromised. Dredging the 39th Pier South side back to its original depth of minus 35 feet could initiate failures of the structural system.



Comment 5b: *If the Applicant cannot meet the above reduction in fill, additional justification must be provided for why this fill is reasonable and necessary.*

Response 5b: The distance between the existing and new steel sheet bulkhead is dictated by the extension of the existing concrete cap to the bulkhead face. The cast extends approximately 9 inches seaward of the sheet-piling. New piles need to be set with a clearance to avoid construction conflict with the existing concrete cap and the bowed area from the previous bulkhead failures. To drive new piles closer, the concrete cap would need to be reduced in width. That reduction and associated loss of section capacity would risk bulkhead destabilization. These factors, and the assumed deteriorated conditions of the wall, are to be confirmed by ongoing inspections.

Comment 5c: *If the Applicant can reduce the fill from the current design, the table will need to be recalculated with the new fill numbers.*

Response 5c: The fill numbers will be recalculated if the extension of bulkhead can be reduced. This will be investigated as the design advances.

Comment 6: *Provide Additional Plans - Please create separate overall site plans for each of the following proposed aspects of the Project.*

a. *Bulkhead Repair Plan*
b. *New Fenders Plan*
c. *New Wharf Plan*

Response 6: These plans have been provided and are attached. Refer to Sheet numbers 3, 4 and 5 of 33.

Comment 7: *Drawings – Please address the following comments on the drawings:*

Response 7: The sheet numbers have been revised and are attached as noted in the specific responses.

Comment 7a: *Sheet 7: Pier 39W Heavy lift platform section shows an existing mudline. NYSDEC believes this to be a solid fill pier. Explain and revise as necessary.*

Response 7a: Sheet 7: due to the request for added plans, this comment now pertains to Sheet 10 of 33. The existing mudline and dike lines within Pier 39W were from the historic 'as-built' drawing. Both lines have been removed to represent existing conditions.

Comment 7b: *Sheet 13: Add a labeled cutline from Sheet 13 where this section is taken on the appropriate plan view drawing.*

Response 7b: Sheet 13: due to the request for added plans, this comment now pertains to Sheet 16 of 33. Section line added to Sheet 16 of 33 for reference to Sheet 18 of 33, Section A.

Comment 7c: *Sheet 18: Add cut lines for all dredging sections on the proposed dredging summary.*

Response 7c: Sheet 18: due to the request for added sheets, dredge plans and sections are provided on Sheets 26 – 33. See Sheets 28, 29 and 30 for location of dredge sections, which are provided on Sheets 31, 32 and 33.

Comment 7d: *Sheet 22: Sections 1.1 and 1.2 show a raised mudline area between the proposed dredge prisms north of the 35th Street pier that will remain following construction. Explain this feature or correct the section.*

Response 7d: Sheet 22: due to the request for added sheets, this comment now pertains to Sheet 31 of 33. This feature corresponds to a dredge area that is part of Empire Wind 1 USACE permit and Article VII applications; therefore the corresponding work is not shown in Section 1.1 (outboard) and 1.2 (inboard) for Area 1. Dredge plans including Sheet 26, 27, 29 and 30 provide additional detail.

Comment 7e: *For each of the sheets and/or sections listed below, create separate existing and proposed plans and label accordingly:*

i. Plan 5, Pier 39 S Heavy Lift Platform section.
ii. Plan 9, Pier 35 Heavy Lift Platform enlarged plan.
iii. Plan 10, Pier 35W Heavy Lift Platform section.
iv. Plan 12, Pier 35 N SOV wharf plan.
v. Plan 13, Pier 35N SOV wharf section.
vi. Plan 14, Bulkhead 32 to 33.
vii. Plan 15, Bulkhead 32 to 33.

Response 7e: Separate existing and proposed plans have been provided for each of the following areas:

i. See Plan 8 for Pier 39S – Existing Low Level Platform Section
ii. See Plan 12 and 14 for Pier 35W – Existing Coffer Cell Plan and Section Note, the face of the platform has been moved west due to structural concerns. The additional fill from the structural piles and shading from the high-level deck has been accounted for.
iii. See Plan 16 and 17 for Pier 35N – Existing Revetment Plan and Section
iv. See Plan 20 and 22 for Bulkhead 32-33 – Existing Condition Plan and Section

Comment 7f: *JPA 6a response includes a sketch that shows areas where a new bulkhead is proposed, including in front of the CTV platform. However, Sheet 16, which shows the CTV platform, does not show this bulkhead. Please submit existing and proposed sections of the bulkhead or correct the sketch submitted in response to JPA 6a.*

Response 7f: Plan 16 CTV Platform: due to the request for added sheets, this comment now pertains to Plans 24 and 25 of 33. The CTV Floating Platform Plan (Plan 24) was revised and the corresponding Sections (Plan 25) have also been corrected to display the gangway landing on the gravity wall / top of bulkhead, which incorporates a new concrete deck at El. +7.5'.

Comment 8: *Dewatering Plan - Section 6.e of the Joint Permit Application Form Addendum includes a reference to dewatering scows after 24 hours of settling. Due to the Class C contamination in the dredge material, monitoring of the overlying water column will be required prior to decanting the overlying water. Please provide a detailed dewatering plan for NYSDEC staff review and approval.*

Response 8: Consistent with established dredging practices, a detailed compliance monitoring plan for discharge of decant water will be provided by the contractor for approval by NYSDEC prior to the commencement of dredging related work. The specific equipment and processes (i.e. means and methods) will be selected by the Dredge and Dredge Material Management Contractor, which will be selected prior to construction that is targeted for dredge windows in Summer 2024 and/or 2025. Refer to Sheet 27, which includes the dewatering plan submission requirement prior to commencement of dredging.

Comment 9: *Closed Environmental Bucket - Section 6.g of the Joint Permit Application Form Addendum specifies the use of a closed environmental bucket. Due to the extent of contamination in some of the material to be removed, the following are the specifications for the environmental bucket which need to be incorporated into the dredge plan:*

Comment 9a: *A closed (i.e., sealed) environmental (clamshell) bucket with sealing gaskets or an overlapping sealed design at the jaws and seals or flaps positioned at locations of vent openings shall be used to minimize sediment re-suspension at the dredging site.*

Response 9a: Noted. The environmental bucket will meet these requirements.

Comment 9b: *Seals or flaps designed or installed at the jaws and locations of vent openings must tightly cover these openings while the bucket is lifted through the water column and into the barge.*

Response 9b: Noted. The environmental bucket will meet these requirements.

Comment 9c: *The closed environmental (clamshell) bucket dredge shall be equipped with sensors to ensure complete closure of the bucket before lifting through the water.*

Response 9c: Noted. The environmental bucket will meet these requirements.

Requirement for inclusion of environmental bucket criteria a, b, and c within the dredge plan have been included. Refer to Plan 27.

Comment 10: *Turbidity Curtains - In Section 2.1.1 of the Permit Information Packet it says that turbidity curtains are proposed to be installed in those areas where it is feasible. Water quality monitoring for contaminants of concern will be required outside the confines of the silt curtain and, in areas where silt curtains are not feasible, at the edge of a 500-foot mixing zone downcurrent of the dredging operations. The concentration of contaminants shall not exceed the applicable water quality standards at either the edge of the mixing zone or outside the silt curtain containment. Please update the Dredging Plan to include the following language:*

a. *Turbidity curtains will be positioned to enclose the dredge work area prior to the commencement of dredging activities.*
b. *The turbidity curtains will remain in place and functional during all phases of the dredging operation and will remain in place for at least two hours after dredging is completed.*
c. *All dredging and barge decanting will take place within the confines of the turbidity curtain enclosure.*
d. *The turbidity curtain enclosure must be regularly inspected and maintained to ensure continuous proper operation.*
e. *Upon observation of a plume outside the confines of the turbidity curtain, the turbidity curtain containment area shall be examined for breaches. Any identified breaches in the curtain shall be immediately repaired.*

Response 10: Use of turbidity curtains, which is only feasible across the inter-pier basins, will meet the above requirements, including items a, b, c, d, and e and will be included in the dredge plan. Use of turbidity curtains in open water areas along the outer piers (39W and 35W) is not feasible due to strong tidal currents and the presence of the navigation channel. Refer to Sheet 27.

Visual monitoring will be performed during dredging to monitor impacts on water quality. If a substantial visible contrast to natural conditions (as defined at 6 NYCRR Part 703.2) is observed beyond the mixing zone, dredging activities will be reduced to minimize sediment release to the water column until there is no visible contrast. Other means of monitoring at this site are not practicable or feasible for technological or navigation safety reasons.

Currently, no technology is available to directly monitor concentrations of the contaminants identified in the targeted dredge material (primarily, several metals plus dioxin) in surface water in real time. Direct monitoring of suspended solids is likewise not possible in real time. Suspended solids concentrations may have a correlation to turbidity, which can be monitored in real time. However, particularly in high-energy marine environments with intense vessel traffic, there will be several other contributors to turbidity that can confound measurements for purposes of evaluating contribution from a specific source (including background concentrations of suspended solids, prop wash from unrelated vessel traffic, and colloids [e.g., from algal or other biological activity]). In addition, and notably, the navigation channel is immediately adjacent to the work area and the entirety of the mixing zone outboard of the work zone (1,500 feet as per TOGS 5.1.9 for open water areas) falls within the federal navigation channel. Placement of turbidity monitoring buoys within the channel is not permissible or feasible due to safety and navigation concerns.

Comment 11: *Other Best Management Practices – Please update the Dredging Plan to include other BMPs for reducing resuspension that will be required during the dredging, such as no barge overflow, no draining of the bucket over the water column and careful placement of the dredge material onto the scows. For any locations where concrete will be cast in place, there should be BMPs to keep wet concrete or concrete leachate from entering the water column. Also, please change remove references to the use of haybales and replace them with straw bales.*

Response 11: These BMPs will be included in the forthcoming JPA**.**

Comment 12: *Dredge Material Disposal - The dredge material disposal location will need to be approved by NYSDEC prior to the start of dredging. Please provide information on where the dredge material will be disposed/managed.*

Response 12: Refer to Plan 28, Note 2, which has included the requirement that the dredge material disposal location be approved in advance by NYSDEC. The selection of the dredge material disposal site will ultimately be determined by the Dredge and Dredge Material Management Contractor as part of their means and methods. The Contractor will be selected prior to construction.

If you have any questions, please reach out to me at 212-377-8737.

Yours sincerely,

andrea rosenthal

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Supplemental Information for Response 1a

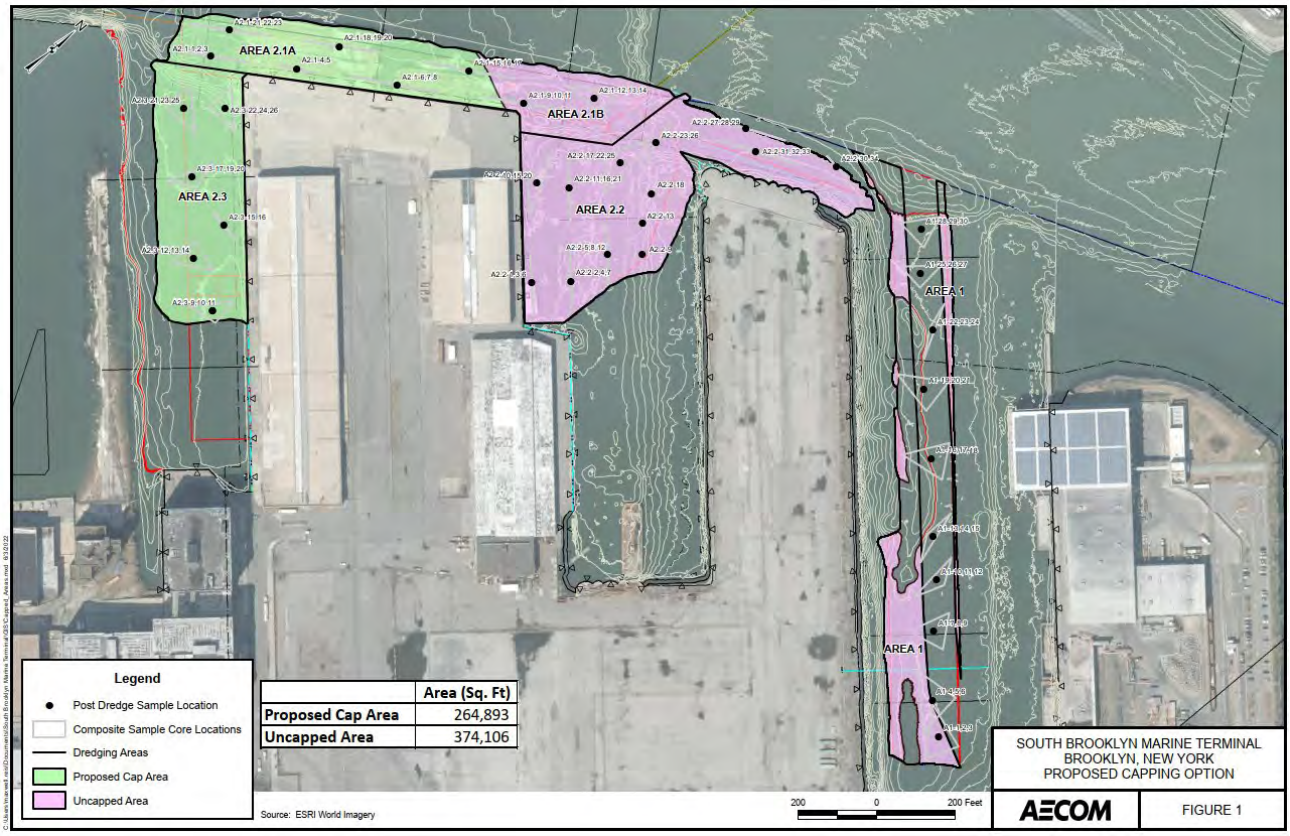
AREA 2.1A
AREA 2.1B
AREA 2.2
AREA 2.3
AREA 1
AREA 1
Legend
Post Dredge Sample Location
Composite Sample Core Locations
Dredging Areas
Proposed Cap Area
Uncapped Area
Area (Sq. Ft)
Proposed Cap Area 264,893
Uncapped Area 374,106
Source: ESRI World Imagery
200 0 200 Feet
SOUTH BROOKLYN MARINE TERMINAL
BROOKLYN, NEW YORK
PROPOSED CAPPING OPTION
AECOM
FIGURE 1

Table 1. Targeted Dredge Material and Post-Dredging Conservative* Average Concentrations 2,3,7,8-TCDD-TEQ

Area	Targeted Dredge Material (ng/kg)	Post-Dredging Surface (ng/kg)	
		w/ No Cap	w/ Limited Cap
Area 1	33.4	51.4	51.4
Area 2.1A	36.4	89.8	30.6*
Area 2.1B	82.9	35.1	35.1
Area 2.2	34.9	43.9	43.9
Area 2.3	43.9	127.7	43.2*
Project-wide SWAC	**41.6**	**72.0**	**41.5**

* Estimated surface concentration after consolidation of cap material into underlying sediment by assuming approximately 6-inches of sediment mixing with the 1 ft of cap material.
SWAC = surface weighted average concentration

TOGS Class C Threshold for TCDD-TEQ = 50 ng/kg

Table 2. Targeted Dredge Material and Post-Dredging Conservative* Average Concentrations Total PCBs

Area	Targeted Dredge Material (ug/kg)	Post-Dredging Surface (ug/kg)	
		w/ No Cap	w/ Limited Cap
Area 1	119.1	114	114
Area 2.1A	156.0	302.5	167.5*
Area 2.1B	384.2	155.0	155.0
Area 2.2	82.8	87.7	87.7
Area 2.3	199.5	416.3	205.4*
Project-wide SWAC	**156.7**	**213.4**	**139.6**

* Estimated surface concentration after consolidation of cap material into underlying sediment by assuming approximately 6-inches of sediment mixing with the 1 ft of cap material.
SWAC = surface weighted average concentration

TOGS Class C Threshold for Total PCBs = 1000 ug/kg

Table 3. Targeted Dredge Material and Post-Dredging Conservative* Average Concentrations Total PAHs

Area	Targeted Dredge Material (ug/kg)	Post-Dredging Surface (ug/kg)	
		w/ No Cap	w/ Limited Cap
Area 1	842.5	1699.0	1699.0
Area 2.1A	2479.5	2250.0	1416.7*
Area 2.1B	3216.3	4800.0	4800.0
Area 2.2	10,574.6	12,023.1	12,023.1
Area 2.3	1698.6	3500.0	1833.3*
Project-wide SWAC	**5015.1**	**6169.1**	**5628.9**

* Estimated surface concentration after consolidation of cap material into underlying sediment by assuming approximately 6-inches of sediment mixing with the 1 ft of cap material.
SWAC = surface weighted average concentration

TOGS Class C Threshold for Total PAHs = 45,000 ug/kg

Table 4. Targeted Dredge Material and Post-Dredging Conservative* Average Concentrations DDx

Area	Targeted Dredge Material (ug/kg)	Post-Dredging Surface (ug/kg)	
		w/ No Cap	w/ Limited Cap
Area 1	8.7	10.1	10.1
Area 2.1A	7.5	8.1	9.4*
Area 2.1B	8.0	7.9	7.9
Area 2.2	8.3	7.9	7.9
Area 2.3	9.0	16.3	12.1*
Project-wide SWAC	**8.3**	**10.2**	**9.4**

* Estimated surface concentration after consolidation of cap material into underlying sediment by assuming approximately 6-inches of sediment mixing with the 1 ft of cap material.
SWAC = surface weighted average concentration

TOGS Class C Threshold for DDx (sum of DDD, DDE, & DDT) = 30 ug/kg

Table 5. Targeted Dredge Material and Post-Dredging Conservative* Average Concentrations ARSENIC

Area	Targeted Dredge Material (mg/kg)	Post-Dredging Surface (mg/kg)	
		w/ No Cap	w/ Limited Cap
Area 1	13.4	15.2	15.2
Area 2.1A	16.9	21.2	12.5*
Area 2.1B	17.1	14.9	14.9
Area 2.2	20.5	24.8	24.8
Area 2.3	19.3	27.1	14.5*
Project-wide SWAC	**18.3**	**22.4**	**17.9**

* Estimated surface concentration after consolidation of cap material into underlying sediment by assuming approximately 6-inches of sediment mixing with the 1 ft of cap material.
SWAC = surface weighted average concentration

TOGS Class C Threshold for Arsenic = 53 mg/kg

Table 6. Targeted Dredge Material and Post-Dredging Conservative* Average Concentrations CADMIUM

Area	Targeted Dredge Material (mg/kg)	Post-Dredging Surface (mg/kg)	
		w/ No Cap	w/ Limited Cap
Area 1	1.5	3.0	3.0
Area 2.1A	2.5	4.8	2.4*
Area 2.1B	2.0	1.7	1.7
Area 2.2	1.2	1.6	1.6
Area 2.3	3.3	7.8	3.4*
Project-wide SWAC	**2.0**	**3.8**	**2.4**

* Estimated surface concentration after consolidation of cap material into underlying sediment by assuming approximately 6-inches of sediment mixing with the 1 ft of cap material.
SWAC = surface weighted average concentration

TOGS Class C Threshold for Cadmium = 9.5 mg/kg

Table 7. Targeted Dredge Material and Post-Dredging Conservative* Average Concentrations COPPER

Area	Targeted Dredge Material (mg/kg)	Post-Dredging Surface (mg/kg)	
		w/ No Cap	w/ Limited Cap
Area 1	112.2	161.8	161.8
Area 2.1A	130.5	196.6	87.5*
Area 2.1B	128.0	115.9	115.9
Area 2.2	127.5	148.7	148.7
Area 2.3	176.9	344.3	136.8*
Project-wide SWAC	137.5	201.6	133.3

* Estimated surface concentration after consolidation of cap material into underlying sediment by assuming approximately 6-inches of sediment mixing with the 1 ft of cap material.
SWAC = surface weighted average concentration

TOGS Class C Threshold for Copper = 270 mg/kg

Table 8. Targeted Dredge Material and Post-Dredging Conservative* Average Concentrations LEAD

Area	Targeted Dredge Material (mg/kg)	Post-Dredging Surface (mg/kg)	
		w/ No Cap	w/ Limited Cap
Area 1	134.4	177.1	177.1
Area 2.1A	139.4	180.1	91.4*
Area 2.1B	141.3	122.9	122.9
Area 2.2	158.8	191.2	191.2
Area 2.3	186.2	320.5	138.2*
Project-wide SWAC	156.6	210.8	152.2

* Estimated surface concentration after consolidation of cap material into underlying sediment by assuming approximately 6-inches of sediment mixing with the 1 ft of cap material.
SWAC = surface weighted average concentration

TOGS Class C Threshold for Lead = 218 mg/kg

Table 9. Targeted Dredge Material and Post-Dredging Conservative* Average Concentrations MERCURY

Area	Targeted Dredge Material (mg/kg)	Post-Dredging Surface (mg/kg)	
		w/ No Cap	w/ Limited Cap
Area 1	1.5	2.3	2.3
Area 2.1A	1.2	2.0	0.8*
Area 2.1B	1.6	1.1	1.1
Area 2.2	2.4	3.1	3.1
Area 2.3	1.9	4.5	1.6*
Project-wide SWAC	**1.9**	**2.9**	**2.0**

* Estimated surface concentration after consolidation of cap material into underlying sediment by assuming approximately 6-inches of sediment mixing with the 1 ft of cap material.
SWAC = surface weighted average concentration

TOGS Class C Threshold for Mercury = 1 mg/kg

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