Exhibit 7

Coastal Zone Consistency Addendum

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October 10, 2013

Matthew P. Maraglio, CPESC
Coastal Resource Specialist
NYS Department of State
Office of Coastal, Local Government
and Community Sustainability
One Commerce Plaza
99 Washington Avenue
Albany, NY 12231-0001

Re: Addendum from Transcontinental Gas Pipe Line Company, LLC for the Rockaway Delivery Lateral Project Coastal Zone Consistency Assessment

Dear Mr. Maraglio:

On behalf of Transcontinental Gas Pipe Line, LLC (Transco), Ecology and Environment, Inc. is writing to provide this Coastal Zone Consistency Assessment (CZCA) Addendum for review and consideration following our conference call on September 17, 2013 (see attached call notes). Specifically, this letter provides additional information and discussion items that were identified during our call that require further evaluation based on the revised schedule and changes to the proposed action. The following items are discussed in the Addendum:

- Surface water use;
- Beach use during construction; and
- Potential visual effects during construction

Transco's evaluation of the revised schedule and changes to the proposed action have been ongoing and will continue with the recent issuance of the Draft Environmental Impact Statement for the Project from the Federal Energy Regulatory Commission (FERC) on October 4, 2013. This CZCA Addendum andsupporting materials will be submitted to the FERC and other cooperating and participating agencies to facilitate the evaluation of the revised schedule and changes to the proposed action through their individual permit processes.

If you have any questions regarding this correspondence or require additional project information, please do not hesitate to call me at (716) 684-8060 or by e-mail at smochrie@ene.com. Thank you for your attention to this Project.

Mr. Matthew P. Maraglio
October 10, 2013

Sincerely,

ECOLOGY AND ENVIRONMENT, INC.

Sara Mochrie
Project Manager

Enclosure

cc (via e-mail):
Anne Allen, Transco
Stephen Kellogg, Transco
Luke Jenkins, Transco
Mike Donnelly, E & E
Steve Macleod, E & E

Meeting Summary

Attendees:	***Williams (Transco)*:**	Anne Allen and Roberta Zwier
	E & E:	Sara Mochrie and Steven MacLeod
	DOS:	Matt Maraglio

Meeting Date:	**September 17, 2013**
Prepared By:	**Sara Mochrie**
Project Segment:	**Rockaway Delivery Lateral – Offshore Pipeline Route**
Project Location:	**Rockaway, Queens Co., New York**
Meeting Location:	**Conference Call**
Issues/Keywords:	**agency coordination, expectations for DEIS to address coastal zone consistency, new information DOS need to review project considering summer construction schedule**

Follow-up /Suggested timeframe: E&E to prepare outline for Coastal Zone Consistency Addendum for distribution to Williams. E&E to prepare addendum document with data to address characterization of beach use, areas adjacent that are visually affected, surface water users that are affected, why ISD can't change, and significance of potential impacts

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Williams (Transco) held a conference call with NYSDOS to discuss the Coastal Zone Consistency (CZC) filing and DEIS expectations following a meeting with senior staff in Albany on September 9, 2013. The main topics for discussion during the call were the change in the project construction schedule and identification of additional information that NYSDOS need to complete their coastal zone consistency review for the project.

Notes:

- The conference commenced at 2:00 pm. After introductions, Sara Mochrie provided an overview of why we had set-up the call, the change in schedule and concern that the DEIS may not meet NYSDOS expectations in characterizing the coastal impacts. Matt noted he was on the phone for the senior staff meeting that took place in Albany so he was up to speed on communications that had taken place.

- Anne Allen provided further detail on the changes to the project schedule, Transco's concerns that DOS has what they need to make a consistency decision and that we expect the DEIS in early October but are prepared to provide a separate submission to NYSDOS.

- Matt inquired about our ability to mobilize for offshore construction prior to the receipt of the FERC certificate. Sara Mochrie and Anne Allen indicated that the FERC Order would be required prior to construction. It was indicated that the earliest start date could be April 15th or more likely May 15th.

- Anne Allen reiterated to Matt that based on those start times, the work closest to the shore (drill) would be completed first and may be completed by early July.

- Matt indicated DOS has additional data needs. Anne Allen confirmed that Williams (E&E) will deliver an addendum to the coastal zone consistency filing that was submitted in January 2013 along with the FERC application. Matt indicated that no new policies appear to be triggered by the change in schedule but areas that need additional analysis include:

    - Characterization of beach uses during construction

- Surface waters/users that are affected
- Areas and users adjacent to the work area that may be urvisually affected

- Matt noted that if a significant impact will occur, Williams should leave ample time to discuss options for mitigation.

- Matt asked of if Williams would have the ability to halt work on a weekend or around a holiday, as a form of mitigation. Sara Mochrie indicated that was not an option for safety and performance reasons for the offshore drill and not a preferred or even viable approach to construction. Matt also asked about the potential to change the project in-service date and Anne Allen indicated that it was not currently an option based on the purpose and need for the project and the gas supply needs that National Grid is counting on from this project by November 2014.

- Matt asked about the adequacy of picket boats to manage existing traffic in the work area and Anne Allen noted the preparation of a plan that is underway that will convey that information to USCG and other agencies.

- Matt committed to additional discussion and a face-to-face meeting in October 2013 to discuss mitigation once Williams submits it addendum.

- The group discussed the next steps of the process briefly and Matt noted a mutual decision can be made to end the stay agreement. NYSDOS further state that it is not a cooperating agency on the FERC NEPA document and can make their decision discretionary based on the materials Williams submit directly to NYSDOS. The current stay agreement expires December 6th and a decision could be made as early as December 15.

- The meeting concluded at approximately 3:00 P.M.

- End of Notes -

Rockaway Delivery Lateral Project
Coastal Zone Consistency Assessment Addendum
October 10, 2013

1.0 Project Background

On January 7, 2013, Transcontinental Gas Pipe Line Company, LLC (Transco) submitted a Coastal Zone Consistency Assessment (CZCA) to the New York State Department of State (NYSDOS) for the proposed Rockaway Delivery Lateral Project (Project). As stated in the January 2013 CZCA, the Project would provide an additional service point to National Grid Corporation's local distribution companies – Brooklyn Union Gas Company (doing business as National Grid New York) and KeySpan Gas East Corporation – collectively referred to as National Grid in this document. The Project would consist of two main components, a 26-inch diameter natural gas pipeline (Rockaway Delivery Lateral) and a meter and regulating station (M&R Facility) with associated equipment at Floyd Bennett Field to monitor natural gas deliveries into the National Grid system. The Project, as provided in the January 2013 CZCA, will begin service by November 2014, per the terms of Transco's contract with National Grid, in order to meet the need for natural gas in the service area by winter 2014/2015.

Since the January 2013 CZCA, the Federal Energy Regulatory Commission's (FERC) released a Scheduling Notice in a letter dated August 8, 2013, for the issuance of the Project's Final Environmental Impact Statement (FEIS) on February 28, 2014. In response to FERC's Scheduling Notice, Transco has revised the proposed Project construction schedule along with requested modifications to the proposed action as detailed in this addendum.

1.1 Project Revisions

Based on the FERC Scheduling Notice, Transco anticipates that construction of the offshore portion of the Project cannot be completed by Memorial Day weekend in 2014 as originally planned. The Project is still proposed to begin service by November 2014, per the terms of Transco's contract with National Grid, in order to meet the expected need for natural gas in the service area by winter 2014/2015. National Grid provided a letter to Transco dated September 24, 2013 (see Attachment 1) urging Transco to avoid further Project delays and meet the November 2014 in-service date. To meet this request in accordance with the FERC Scheduling Notice, the majority of the offshore construction activities are proposed to occur during the spring and summer of 2014 (see Attachment 2).

In response to the request from the U.S. Army Corps of Engineers (USACE), Transco revised its proposed action to perform active backfill of offshore excavated areas immediately following completion of facilities installation to ensure a minimum of 4 feet of cover from the top of the pipe. Transco along with potential contractors identified and will use a jet sled model with discharge nozzles that can be configured to maximize the amount of material expelled behind the sled to perform immediate backfill of the trench and to reduce the amount of sediment deposited outside the trench. Transco will perform a post-trenching survey to verify seafloor elevations immediately following installation. Upon survey, if 4 feet of cover has not been achieved along the pipeline, Transco will then conduct targeted backfill activities at only the locations identified with less than 4 feet of cover to ensure the offshore pipeline meets the depth-of-cover requirement in accordance with any related state and federal permit conditions. For targeted backfill, a Transco will use a crane-assisted suction dredge on a barge already proposed for the offshore construction activities. The suction dredge will be pulled along and immediately adjacent to the trench sections that required additional backfill, as identified during the post-trenching survey. Additional fill material will be withdrawn from an area adjacent to the trench within the proposed footprint of disturbance. Transco has not identified nor does it anticipate using offshore borrow areas or upland sand sources for trench backfilling activities.

With Transco's commitment to immediately backfill the trench with a minimum of 4 feet of cover, grout mattresses are no longer necessary for protection of the pipeline prior to natural backfill. Therefore, as part of Transco's effort to minimize environmental impacts, installation of the grout mattresses is no longer proposed over the pipeline. The trench backfill activity is expected to take 1 to 2 weeks to complete and would be conducted within the timeframe originally proposed for installation of the grout mattresses. Therefore, there would be no net increase in the duration of Project construction.

With the refined application of the jet sled configured to maximize the amount of material expelled behind the sled, the overall footprint for construction of the trench has been reduced from the previously proposed action from 70 to 35 feet. Considering the reduction in the width of the trench and a reduction in the amount of material disturbed, the *Hydrodynamic and Sediment Transport Analyses for Rockaway Delivery Lateral Project: Addendum 2*, September 20, 2013 (Attachment 3) was prepared and reflects a decrease in impact due to a decrease in the volume of material disturbed during pipeline trenching and thus an overall decrease in the extent of total suspended solids and turbidity experiences during Project construction.

Transco expects areas to be restored quickly by natural sediment transport processes. This expectation is supported by the previous sediment transport analysis presented in the

report titled *Hydrodynamic and Sediment Transport Analyses for Rockaway Delivery Lateral Project*, revised April 30, 2013. .Additionally, seabed disturbance from the suction dredge will be similar in scale to that of a hydraulic surfclam dredge. A National Oceanic and Atmospheric Administration – National Marine Fisheries Service (NOAA Fisheries) study indicated that surfclam dredge tracks in approximately 36 feet of water lost definition within 24 hours, such that they were difficult to recognize and "blended in with the general bottom features" (Meyer et al. 1981).

Following refinement of the jet sled configuration for the pipeline trench, changes have also been adopted for the HDD exit pit in response to feedback from the USACE and NOAA Fisheries during a July 19, 2013 meeting. Transco will cover the deposited drilling fluid within the HDD exit pit with an appropriate top layer of native material. The backfill method for the exit pit may include use of a clamshell dredge and/or diver-controlled hand jetting in a manner that will cause the least amount of disturbance to the exit pit in order to prevent displacement of the HDD fluid and cuttings.

Transco would conduct a geophysical survey to evaluate the pipeline trench and the HDD exit pit immediately following the post-installation hydrostatic test., Transco will only backfill the HDD exit pit if the post-installation survey reveals that a sufficient layer of cover has not formed naturally. Active backfill will create a top layer at the HDD exit pit that is similar to the native substrate than the cuttings and HDD fluid alone. The presence of native substrate would promote faster recruitment of benthic infauna.

This addendum supersedes the January 2013 CZCA and provides Transco's amended policy conclusions per the revised proposed Project construction schedule and modifications to the proposed action. In general, as discussed in this addendum, the overall footprint of the Project has been reduced but there is a greater potential for Project impact in the following categories:

Visual aesthetics – An increased number of visitors to the Gateway National Recreation Area (GNRA) will be affected by the presence of pipeline construction equipment during the spring and summer of 2014, especially beach goers at Jacob Riis Park, which is located closest to the temporary offshore workspace.

Vessel traffic – An increased number of recreational boaters (including charter vessels) will be deterred from transiting through the temporary offshore workspace during the spring and summer of 2014. There may also be a greater number of commercial fishermen in the area r that will also be routed around the workspace.

Marine species – An increased number of marine species (e.g., the bottlenose dolphin and sea turtles) could be disturbed by noise and subject to collision due to Project activities during the spring and summer of 2014. Greater numbers of benthic invertebrates and early life stages of several fish species will be at risk of impact from offshore construction during the more productive spring and summer season. However, certain marine species that are more likely to be present or active in the Project area during the winter and early spring (e.g., migrating right whales and spawning winter flounder) will be at less risk of impact during the construction period.

1.2 Project Mitigation Measures

To offset the potential increase in impacts to GNRA users from the schedule change, Transco no longer proposes to utilize a standard horizontal directional drilling (HDD) surface tracking wire system through Jacob Riis Park to direct the drill. Transco's revised proposed action includes use of a gyroscopic HDD guidance system which uses a full inertial navigation system[1] located close to the drill head and therefore avoids any surface disturbance. Transco is also developing a Project program for onshore public awareness to educate and inform the public by posting signage and informational materials near the Jacob Riis Park waterfront, pending coordination with and approval from the National Park Service (NPS); updating the Project website during the phases of construction; as well as providing routine updates to local media outlets.

To safely manage the vessel traffic transiting the Project area during spring and summer 2014, Transco will notify mariners and guide vessels around the temporary offshore workspace per the offshore safety measures provided in Attachment 4.

Transco will use marine species observers throughout the construction period to monitor and avoid impacts to sea turtles, marine mammals and other listed species that may be present in the vicinity of Project vessels. The suction dredge proposed for backfilling the trench will be equipped with a turtle exclusion device.

1.3 Certification of Consistency

In accordance with Title 15, Code of Federal Regulations [CFR] §930.57(b), and as certified in the previous New York City WRP Consistency Assessment Form, the proposed

[1] Navigation aid that uses a computer, motion sensors (accelerometers) and rotation sensors (gyroscopes) to continuously calculate via dead reckoning the position, orientation, and velocity (direction and speed of movement) of a moving object without the need for external references.

activity (Rockaway Delivery Lateral Project) continues to comply with New York State's Coastal Management Program (CMP) as expressed in New York City's approved Local Waterfront Revitalization Program (WRP), pursuant to New York State's CMP, and will be conducted in a manner consistent with such program.

1.4 Coastal Zone Policy Review Update

As described in Transco's original January 2013 CZCA, it is necessary to demonstrate consistency with New York City's (NYC's) New WRP which contains 10 policies that incorporate the state's 44 CMP policies as they apply to activities in NYC. The portions of the New WRP policy review that may be affected by the revised Project schedule and proposed action changes are identified and discussed in Section 2.0 of this addendum. It is also necessary to demonstrate consistency with the CMP for Project activities and effects that extend beyond the NYC jurisdictional area, particularly the proposed offshore pipeline facility installation. Information to support the Project's continued consistency with the 29 applicable CMP policies is included in Section 2.0 of this addendum with the relationship to the 10 New WRP policies depicted in Table 1.

Table 1
NYS CMP and NYC New WRP Policy Reference

NYS CMP Policy Category	NYS CMP Policy[1]	Corresponding NYC New WRP Policy[2]	NYS CMP Policy Category	NYS CMP Policy[1]	Corresponding NYC New WRP Policy[2]
Development	2	2.2, 8.4, 8.5	Historic and Scenic Resources	23	10.1, 10.2
Fish and Wildlife	7	4.1, 4.3, 4.4		25	9.2
	8	4.1, 4.3	Energy	27	2.1, 2.2
	9	8.1, 8.2, 8.5	Water and Air Resources	30	5.1, 5.2, 7.1, 7.2
	10	4.4		33	5.1, 5.4
Flooding and Erosion	11	6.1		34	3.3
	12	6.1, 6.3		35	5.3
	15	6.3		36	7.1, 7.3
	17	6.1		37	5.2
General	18	ALL[3]		38	5.4
Public Access	19	8.1, 8.2		39	7.1, 7.2, 7.3
	20	8.1, 8.2		41	2.2
Recreation	21	8.1, 8.2		43	5.2
	22	8.2	Wetlands	44	4.2

Notes:
[1]Only those CMP policies considered applicable to the Project are identified.
[2]Discussion under the identified New WRP policies includes information to address Project consistency with the associated CMP policies.
[3]CMP Policy 18 is a general policy that encompasses all economic, social and environmental factors that are discussed throughout the New WRP policy review

2.0 Revised NYC WRP Policy Review

New York City's New WRP comprises 10 policies designed to maximize the benefits derived from economic development, environmental preservation, and public use of the waterfront, while minimizing the conflicts among those objectives. Each policy is presented below, followed by a discussion of the effect of the revised Project schedule and proposed action (including spring and summer construction) as compared to the statements previously provided in the original January 2013 CZCA regarding applicability and consistency with the policy. The analysis includes a discussion of the relevant subsections of the policies.

POLICY 1: *Support and facilitate commercial and residential development in areas well-suited to such development.*

1.1 ***Encourage commercial and residential redevelopment in appropriate coastal zone areas*****.**

The analysis for this policy is not affected by the revised schedule or proposed action changes.

1.2 ***Encourage non-industrial development that enlivens the waterfront and attracts the public.***

The analysis for this policy is not affected by the revised schedule or proposed action changes.

1.3 ***Encourage redevelopment in the coastal area where public facilities and infrastructure are adequate or will be developed.***

The analysis for this policy is not affected by the revised schedule or proposed action changes.

POLICY 2: *Support water-dependent and industrial uses in New York City.*

2.1 ***Promote water-dependent and industrial uses in Significant Maritime and Industrial Areas (SMIA).***

The analysis for this policy is not affected by the revised schedule or proposed action changes.

2.2 *Encourage working waterfront uses at appropriate sites outside the Significant Maritime and Industrial Areas.*

The analysis for this policy is not affected by the revised schedule or proposed action changes.

2.3 *Provide infrastructure improvements necessary to support working waterfront uses.*

The analysis for this policy is not affected by the revised schedule or proposed action changes.

POLICY 3: *Promote use of New York City's waterways for commerce and Recreational boating and water-dependent transportation centers.*

3.1 *Support and encourage recreational and commercial boating in New York City's maritime centers.*

The original analysis stated the following:

a) "Transco has made efforts to minimize potential conflicts with recreational boating and commerce in the Project area. The most notable of these efforts is the schedule for the offshore construction activity, which would last only a few months (between January and May) when there is a seasonal low for recreational activity in the area...Construction within approximately 0.6 miles of the shore would be avoided with the use of HDD."
b) "Because the pipeline would be covered by protective grout mattresses and buried at least 3 feet below the seafloor, the proposed pipeline is not expected to interfere with or be impacted by typical commercial trawling activities in the area."

The analysis is affected by the proposed schedule change because construction will occur during the spring and summer months in 2014 when there will be increased use of the offshore Project area by recreational boaters. However, the Project continues to comply with the objectives of this policy based on Transco's other efforts to minimize

potential conflicts with boating and water-based commerce. The analysis is also affected by proposed immediate backfill activities and the removal of grout mattresses, as these are no longer required to prevent interaction between the pipeline and trawling gear because the trench will be backfilled as the pipeline is installed. Transco proposes to immediately backfill the pipeline trench following construction (see Section 1.1). The pipeline trench will be backfilled through the configuration of the jet sled and a crane-assisted suction dredge along the side of the trench to side-cast native material from the seabed over the pipe. The deposited drilling fluid within the HDD exit pit will be covered with an appropriate top layer of native material. The backfill method for the exit pit may include use of a clamshell dredge and/or diver-controlled hand jetting in a manner that will cause the least amount of disturbance to the exit pit in order to prevent displacement of the HDD fluid and cuttings.

The analysis statements are revised as follows (additions underlined):

a) "Transco has made efforts to minimize potential conflicts with recreational boating and commerce in the Project area. The most notable of these efforts is extending the length of the HDD segment, such that construction within approximately 0.5 miles of the shore would be avoided. This will provide approximately 0.5 mile wide nearshore corridor with water depths of up to 25 feet through which vessels may pass. Fourteen buoys will be placed to identify the offshore workspace. At least one picket boat/escort vessel will be present to inform boaters of the temporary offshore workspace and guide them safely around the area."

b) "Because the pipeline would be buried at least 4 feet below the seafloor and actively backfilled immediately following installation, the proposed pipeline is not expected to interfere with or be impacted by typical commercial trawling activities in the area."

3.2 *Minimize conflicts between recreational, commercial, and ocean-going freight vessels.*

The original analysis indicated that this policy was not applicable based on the limited amount of recreational boating that was expected prior to high use periods that typically start Memorial Day weekend.

Deterring and redirecting recreational boaters from the offshore workspace may increase congestion around the workspace. However, the Project continues to comply with the objectives of this policy because boaters would be able to pass through a nearshore corridor 0.5 mile wide with water depths of up to 25 feet throughout the construction period. Also, at least one picket boat/escort vessel will be used to inform boaters of the temporary offshore workspace and guide them around the area. Given these conditions, safety measures, and accommodation to allow vessel traffic to continue around the perimeter of the area, conflicts between recreational vessels are expected to be minimal. Based on recent AIS vessel tracking data from 2009 and 2010, there are fewer than 12 large commercial or freight vessels that transit the area during a typical summer month (see Attachment 5), and a significant rise in commercial-related vessel transits is not anticipated. Therefore, the Project is consistent with the objectives of this policy.

3.3 ***Minimize impact of commercial and recreational boating activities on the aquatic environment and surrounding land and water uses.***

The analysis for this policy is not affected by the revised schedule or proposed action changes.

POLICY 4: *Protect and restore the quality and function of ecological systems within the New York City Coastal Area.*

4.1 ***Protect and restore the ecological quality and component habitats and resources within the Special Natural Waterfront Areas, Recognized Ecological Complexes and Significant Coastal Fish and Wildlife habitats.***

The analysis for this policy is not affected by the revised schedule or proposed action changes.

4.2 ***Protect and restore tidal and freshwater wetlands.***

The analysis for this policy is not affected by the revised schedule or proposed action changes.

4.3 ***Protect vulnerable plant, fish and wildlife species, and rare ecological communities. Design and develop land and water uses to maximize integration or compatibility with the identified ecological community.***

The original analysis stated the following:

a) "The right whale is known to migrate near the Project area during winter months, so a vibratory hammer would be used to minimize the potential for noise disturbance during in-water installation and removal of piles. Project vessels would also observe speed restrictions to minimize risk of collision with the right whale."

b) The proposed offshore construction schedule would avoid the summer months when sea turtles are generally present.

c) "A majority of the construction would also take place outside the peak Atlantic sturgeon aggregation period in late spring as well as the secondary aggregation period in the fall… Therefore, Transco expects that Atlantic sturgeon and marine mammals in the vicinity of the work area would be subject to only minor, temporary disturbance during construction."

The analysis is affected by the proposed schedule change because right whales are less likely to be present during spring and summer construction, but sea turtles are more likely to be present during spring and summer 2014 construction. The original statement regarding Atlantic sturgeon is still accurate in that much of the offshore construction would occur after the peak spring 2014 aggregation period rather than before. However, it is acknowledged that some construction will take place during the peak aggregation period in the late spring (April to June) of 2014. The Project continues to comply with the objectives of this policy because effects on species of concern are expected to be minor and temporary and construction measures have been implemented to minimize impacts overall. The analysis statements are revised as follows (additions underlined):

a) "The right whale is known to migrate near the Project area during early spring months (March and April), when construction is anticipated to begin. The species may also be present sporadically during the summer months. A vibratory hammer will be used to minimize the potential for noise disturbance during in-water installation and removal of piles. Project vessels will also observe speed restrictions to minimize risk of collision with the right whale."

b) "Because of their documented occurrence in the waters south of Long Island, it is likely that sea turtles could occur within the Project area during construction (potential for occurrence May through November)."

c) "Some offshore construction would also take place during the peak Atlantic sturgeon aggregation period in late spring but before the secondary aggregation period in the fall…"

4.4 *Maintain and protect living aquatic resources.*

The original analysis stated the following:

a) Direct impacts [on Essential Fish Habitat] would be minimized by the proposed schedule to initiate offshore construction during the winter months, which are generally associated with reduced biological activity and minimal reproduction (excluding some of the bottom-dwelling species).

b) During a recovery study by E & E ... significant recovery of benthic communities was found during the first year after construction. The Project Area has many of these features, including shallow waters and substantial hydrodynamic conditions, coupled with the winter months in which disturbance from offshore construction will occur.

c) Because construction would occur in relatively shallow and dynamic coastal waters, Transco proposes to allow the excavated areas to backfill through natural sediment transport processes, which would restore the disturbed seabed to the surrounding contours. This natural approach would avoid further impacts associated with mechanical backfill of the excavated areas.

The analysis is affected by the proposed schedule change because there may be greater potential for impact to EFH when constructing in the late spring and summer of 2014 because biological activity increases during this time period. However, the Project continues to comply with the objectives of this policy because impacts to EFH are still expected to be localized and short-term based on the scale and duration of the construction. The analysis is also affected by the revised proposed action to perform immediate backfill. Through the use of the jet sled configuration and application of a suction dredge, Transco has reduced the area of seafloor impact from 70 feet to 35 feet. The analysis statements are revised as follows (additions underlined):

a) [Statement deleted.]

b) "During a recovery study by E & E ... significant recovery of benthic communities was found during the first year after construction. The Project Area has many of these features, including shallow waters and substantial hydrodynamic conditions."

c) "Transco proposes to immediately backfill the pipeline trench following construction which would support the immediate recruitment of existing benthic infauna. The pipeline trench will be backfilled using the jet sled and a crane-assisted suction dredge along the side of the trench to side-cast native material from the seabed over the pipe. The deposited drilling fluid within the HDD exit pit will be covered with an appropriate top layer of native material. The backfill method for the exit pit may include use of a clamshell dredge and/or diver-controlled hand jetting in a manner that will cause the least amount of disturbance to the exit pit in order to prevent displacement of the HDD fluid and cuttings."

POLICY 5: *Protect and improve water quality in the New York City Coastal Area.*

5.1 ***Manage direct or indirect discharges to water bodies.***

The analysis for this policy is not affected by the revised schedule or proposed action changes.

5.2 ***Protect the quality of New York City's waters by managing activities that generate non-point sources of pollution.***

The analysis for this policy is not affected by the revised schedule or proposed action changes.

5.3 ***Protect water quality when excavating or placing fill in navigable waters and in or near marshes, estuaries, tidal marshes, and wetlands.***

The original analysis stated the following: "Because construction would occur in relatively shallow, dynamic waters, Transco proposes to allow the excavated areas to backfill through natural sediment transport processes, which would restore the disturbed seabed to the surrounding contours. This natural approach would avoid further impacts associated with mechanical backfill of the excavated areas. However, Transco will

conduct post-construction bathymetric monitoring and will adhere to any permit requirements for mechanical backfill if the excavated areas are not naturally restored to an acceptable level within the stipulated time periods. If required, clean, compatible sand or small gravel material would be used for the backfill, which would tend to settle rapidly and generate only temporary, localized turbidity plumes."

The analysis is affected by the revised proposed action to perform immediate backfill. Although this activity required modification of the jet sled and included us of a crane-mounted suction dredge, the estimated overall area of seafloor impact is reduced from a width of approximately 70 feet to 35 feet. The Project continues to comply with the objectives of this policy because modeling indicates that the proposed backfill methods will generate minimal turbidity, over a short-term period and will be contained within the lower portions of the water column. Transco does not currently propose to backfill using upland material. The analysis statement is revised as follows (additions underlined): "Transco proposes to immediately backfill excavated areas following pipeline construction. The pipeline trench will be backfilled using the jet sled and a crane-assisted suction dredge along the side of the trench to side-cast native material from the seabed over the pipe. The backfill method for the exit pit may include use of a clamshell dredge and/or diver-controlled hand jetting in a manner that will cause the least amount of disturbance to the exit pit in order to prevent displacement of the HDD fluid and cuttings. Using these methods, the revised modeling indicates that suspended sediment from the backfill would generate only temporary, localized turbidity plumes within the lower portions of the water column."

5.4 ***Protect the quality and quantity of groundwater, streams, and the sources of water for wetlands.***

The analysis for this policy is not affected by the revised schedule or proposed action changes.

POLICY 6:

Minimize the loss of life, structures, and natural resources caused by flooding and erosion.

6.1 ***Minimize losses from flooding and erosion by employing non-structural and structural management measures appropriate to the condition and use of the property to be protected and the surrounding area.***

The analysis for this policy is not affected by the revised schedule or proposed action changes.

6.2 ***Direct public funding for flood prevention or erosion control measures to those locations where the investment will yield significant public benefit.***

The analysis for this policy is not affected by the revised schedule or proposed action changes.

6.3 ***Protect and preserve non-renewable sources of sand for beach nourishment.***

The analysis for this policy is not affected by the revised schedule or proposed action changes.

POLICY 7: *Minimize environmental degradation from solid waste and hazardous substances.*

7.1 ***Manage solid waste material, hazardous waste, toxic pollutants, and substances hazardous to the environment to protect public health, control pollution and prevent degradation of coastal ecosystems.***

The analysis for this policy is not affected by the revised schedule or proposed action changes.

7.2 ***Prevent and remediate discharge of petroleum products.***

The analysis for this policy is not affected by the revised schedule or proposed action changes.

7.3 ***Transport solid waste and hazardous substances and site solid and hazardous waste facilities in a manner that minimizes potential degradation of coastal resources.***

The analysis for this policy is not affected by the revised schedule or proposed action changes.

POLICY 8: *Provide public access to and along New York City's coastal waters.*

8.1 ***Preserve, protect and maintain existing physical, visual and recreational access to the waterfront.***

The original analysis stated the following: "Temporary placement of HDD tracking wires along the ground surface is not expected to significantly affect existing access or use of waterfront resources. Additionally, Transco is proposing to construct the pipeline outside of the peak GNRA/Jacob Riis Park visitor season, which typically is between Memorial Day and Labor Day. This schedule would limit any impacts on existing access to the waterfront to the off-season, when public use is at its lowest."

The analysis is affected by the proposed schedule change because construction of the offshore pipeline facilities will occur during the peak visitor season, between Memorial Day and Labor Day 2014. To minimize impacts to visitors during this time, a surface HDD tracking wire system will no longer be used. Instead, a gyroscopic HDD guidance system will be used as the supplemental drill guidance which does not require any surface disturbance. Therefore, the temporary workspace previously associated with the tracking wire system is no longer proposed or necessary. The Project continues to comply with the objectives of this policy because it will preserve access to the waterfront during construction. The analysis statement is revised as follows (additions underlined): "To minimize disturbance to GNRA/Jacob Riis Park users during construction, Transco will use a gyroscopic HDD guidance system, which does not require use of surface tracking wires. Therefore, Project construction is not expected to affect existing access or use of the waterfront."

8.2 ***Incorporate public access into new public and private development where compatible with proposed land use and coastal locations.***

The original analysis stated the following: "Public access to a paved bicycle/walking path along the HDD entry work site would not be restricted during construction. Except for the temporary placement of tracking wires, beach and nearshore water-related recreation would not be affected by the Project because HDD would be used to cross the shoreline."

The analysis is affected by the proposed schedule change and because the surface HDD tracking wire system will no longer be used. Instead, a gyroscopic HDD guidance system will be used as the drill guidance tool. Therefore, surface disturbance is proposed or necessary. The Project continues to comply with the objectives of this policy because it will not interfere with public access to the waterfront during construction. The analysis statement is revised as follows (additions underlined):
"Public access to a paved bicycle/walking path along the HDD entry work site will not be restricted during construction. Beach and nearshore water-related recreation will not be affected by the Project because the HDD construction method would be used to install the pipeline beneath the bicycle/walking path, beach, and shoreline. To minimize disturbance to GNRA/Jacob Riis Park users during this time, Transco will use a gyroscopic HDD guidance system, which does not require the use of surface tracking wires and does not require any surface disturbance."

8.3 ***Provide visual access to coastal lands, waters and open space where physically practical.***

The analysis for this policy is not affected by the revised schedule or proposed action changes.

8.4 ***Preserve and develop waterfront open space and recreation on publicly owned land at suitable locations.***

The analysis for this policy is not affected by the revised schedule or proposed action changes.

8.5 ***Preserve the public interest in and use of lands and waters held in public trust by the state and city.***

The analysis for this policy is not affected by the revised schedule or proposed action changes.

POLICY 9: *Protect scenic resources that contribute to the visual quality of the New York City Coastal Area.*

9.1 ***Protect and improve visual quality associated with New York City's urban context and the historic and working waterfront.***

The analysis for this policy is not affected by the revised schedule or proposed action changes.

9.2 ***Protect scenic values associated with natural resources.***

The original analysis stated the following: “To further preserve natural scenic value for GNRA visitors, construction of the Project has been scheduled to occur outside the peak visitor season, which typically occurs between Memorial Day and Labor Day.”

The analysis is affected by the proposed schedule change because construction of the offshore pipeline facilities will occur during the peak visitor season, between Memorial Day and Labor Day 2014. To minimize impacts to visitors during this time, the use of a surface HDD tracking wire system will no longer be used. Instead, a gyroscopic HDD guidance system will be used as the supplemental drill guidance, which does not require any surface disturbance. The Project continues to comply with the objectives of this policy because the scenic value of the shoreline will be temporarily and minimally affected by the presence of offshore equipment during the spring and summer of 2014, as depicted in the simulated visual renderings provide as Attachment 6. Given the distance (approximately 0.5 miles) from the shoreline to the equipment, the existing vessel traffic which utilizes the shipping lanes that are established at least 4 miles from the Jacob Riis Park shore as presented in Attachment 5 and the temporary, limited change to the viewshed only during project construction, no change to shoreline use or visitor enjoyment is expected. Several studies have been completed to evaluate the potential effect of offshore structures and development on beach use and enjoyment. A summary of studies and findings is included below.

- **Minerals Management Service (MMS) [Currently Bureau of Ocean Energy Management (BOEM)] Study (1987)** – Conducted to evaluate the effects of Outer Continental Shelf (OCS) development on environmental and socioeconomic impacts. Based on a cross sectional regression analysis of 111 beaches in California the study established six variables that explained beach attendance: beach frontage length, urban versus rural beach location, pedestrian access, beach aesthetic rating, state versus local administration, and a composite proximity variable. Factors that directly affect beach attendance and may contribute more to its attractiveness than potential visual impacts from offshore structures include adding adjacent parking facilities, and increasing the

length of the beachfront area. This supports the conclusion that the temporary presence of offshore equipment from GNRA/Jacob Riis Park will not have an impact on local scenic values.

- **MMS Study Outer Continental Shelf, Oil and Gas Leasing Program Environmental Impact Statement [Currently BOEM] (2002-2007)** – This Environmental Impact Statement (EIS) contains an evaluation of potentially affected resources including visual impacts resulting from the U.S. Department of the Interior (USDOI) proposal of 20 lease sales in eight of the OCS planning areas in the Gulf of Mexico and offshore Alaska during the period 2002 to 2007. Based on the analysis presented in the EIS for visual impacts, potential direct and indirect impacts of the proposed action on sociocultural systems due to noise, visual, and traffic disturbances as a result of operations in the Gulf of Mexico and offshore Alaska for the proposed action are expected to be minor. Other areas where offshore activity have occurred and will continue to expand have not experienced any major or significant effects to their aesthetic quality and based on those existing trends and information, therefore significant effects on scenic values would not be expected for the coastal areas near the Project.
- **NOAA, University of California at Los Angeles** – This study conducted evaluations in the context of major scenarios occurring off the southern California coast that could affect beach areas which included improvement or degradation of beach water quality and beach closures. These scenarios were related to the presence and operation of offshore oil platforms and potential beach closures in the event of an oil spill. In the context of the evaluation, the visual and aesthetic impacts of the presence of the approximately 26 existing platforms were not directly evaluated but there mere presence, less than 5 miles in many instances, from the shoreline and high visibility was used as a passive indicator that high use beaches of southern California were not been visually impacted by their presence; beach use or recreation patterns were affected by other more prominent factors such as water quality, proximity to residences, demographics including household income and employment status, and the opportunity to engage in activities such as swimming, jogging, walking and entertainment such as dining and shopping.

Based on the results of these studies, attendance and use of coastal areas for recreation has a strong relationship with many physical beach factors and a weak relationship with the mere presence of an offshore structure. The factors or variables that are the most prominent include beach frontage length, urban versus rural beach location, pedestrian access, beach aesthetic rating, State versus local administration, proximity to the user and their home, crowding, cleanliness, quality of facilities, water quality, and availability of parking. Based on the studies discussed above there is no evidence to support or indicate that a temporary offshore structure visible from shore would have an impact on the scenic value of a coastal area.

GNRA/Jacob Riis Park is the closest viewshed with receptors to the proposed Project. The closest portion of GNRA to the Project is Rockaway Beach, which is located approximately 0.5 miles from the closest workspace of in-water construction. In 2012, 78,499 vehicles were documented by NPS as visiting GNRA/Jacob Riis Park between Memorial Day and Labor Day, which is the period of peak activity within GNRA/Jacob Riis Park (Vohden 2013). In 2013, 62,137 vehicles were documented by NPS during the same time period. The NPS assumes 3.2 visitors per vehicle (Vohden 2013). In order to avoid and minimize impacts to GNRA/Jacob Riis Park visitors, the HDD construction method will be used to install the pipeline beneath the bike path, beach, and near shore areas. Visual impacts will vary based on visitor and offshore vessel location and will be limited to the offshore workspace where barges and equipment will be located. Transco anticipates that only a subset of visitors will be visiting the portion of the site with direct views of construction activity since not all park users utilize this singular section of beachfront. The proposed Project will have a temporary (one season), and minimal visual impact during construction and changes to the viewshed will consist of the presence of up to four construction barges along with support vessels no closer than 0.5 miles from the shoreline.

Because impacts will vary over time, the worst case viewshed scenario of the most construction equipment closest to the shoreline (see Figure 2C of Attachment 6) will only be directly visible to a smaller subset of GNRA/Jacob Riis Park visitors and will only exist for a subset of Project construction (see Attachment 2). Viewshed impacts associated with construction will also be limited to late spring and summer 2014 and would not affect the views from GNRA, Jacob RIIS Park, and Fort Tilden in future seasons. Since permanent, visible structures associated with offshore energy are not known to substantially affect visitor experience or use of coastal recreation areas, the temporary, minor impacts to the viewshed associated with this Project are

not expected to have a significant adverse effect on the visitor experience at GNRA/Jacob Riis Park.

Recreational boaters are the other receptor that may be sensitive to the temporary changes to the viewshed. The New York Bight and New York Harbor have a high volume of commercial and recreational boat traffic each year. Approximately 3,460 feet east from the proposed Project route is Rockaway Artificial Reef (Reef), which provides suitable fish habitat. Recreational boaters may visit this area to dive or fish, including spear fishing. At its closest point, construction activities will be over 3,400 feet away from the Reef, thus fishermen or divers are not expected to be deterred from visiting the site. Natural background turbidity levels will likely preclude in-water diver visibility of the construction activities. Views from the deck of local vessels will only be partially affected since the offshore construction activity will not be in their 360 degree view. Because impacts will vary over time, the worst case viewshed impacts would only occur for a subset of the construction period, when construction activity is occurring at the closest point to the Reef.

POLICY 10: *Protect, preserve, and enhance resources significant to the historical, archaeological, and cultural legacy of the New York City Coastal Area.*

10.1 ***Retain and preserve designated historic resources and enhance resources significant to the coastal culture of New York City.***

The original analysis stated the following: “Impacts on Jacob Riis Park would be avoided using the HDD method of construction, which would be used to install the proposed pipeline to depths of more than 80 feet below GNRA property, such that there would be no surface disturbance in Jacob Riis Park. HDD tracking wires placed along the surface of Jacob Riis Park would be removed following completion of the pilot hole and would not significantly interfere with existing uses.”

The analysis is affected by the proposed schedule change because the surface HDD tracking wire system will no longer be used. Instead, a gyroscopic HDD guidance system will be used as the drill guidance tool. Therefore, no temporary surface disturbance will be necessary. The Project continues to comply with the objectives of this policy because removal of the surface tracking wires further reduces the potential for impact to the coastal culture of GNRA/Jacob Riis Park. The analysis statement is revised as follows:

“Impacts on GNRA/Jacob Riis Park would be avoided using the HDD method of construction, which would be used to install the proposed pipeline to depths of more than 80 feet below GNRA property, such that there would be no surface disturbance in Jacob Riis Park.”

10.2 ***Protect and preserve archaeological resources and artifacts.***

The analysis for this policy is not affected by the revised schedule or proposed action changes.

Attachment 1

John V. Vaughn
Vice President
Energy Procurement

nationalgrid

September 24, 2013

Transcontinental Gas Pipe Line Company, LLC
2800 Post Oak Boulevard
Houston, TX 77056
Attn: Gary Duvall

Re: Rockaway Delivery Lateral In-Service Date

Dear Mr. Duvall:

As you know, The Brooklyn Union Gas Company and KeySpan Gas East Corporation, both subsidiaries of National Grid, (collectively the "Companies") have entered into Precedent Agreements with Transcontinental Gas Pipe Line Company, LLC ("Transco") under its Rockaway Delivery Lateral project. These agreements contemplate the construction of incremental firm gas transportation capacity to meet growing demand for natural gas in the region. The Companies distribute natural gas to more than two million customers in Nassau and Suffolk Counties on Long Island and in the New York City boroughs of Brooklyn, Queens and Staten Island. These customers, most of whom are residential, rely on natural gas for critical basic needs including home heating, cooking and hot water.

The Companies currently receive natural gas from 4 interstate pipelines at various interconnections with their gas distribution systems in New York. These existing interconnects have been expanded over the years and are now at or near maximum capacity. In order to serve the growing demands of their customers, the Companies, along with Transco, identified and developed the Rockaway Delivery Lateral project which will provide for deliveries into the Companies' high pressure gas distribution system in southern Brooklyn.

The referenced Precedent Agreements were executed in 2009 and originally anticipated an in-service date of November 1, 2012. Due to unanticipated delays in obtaining Congressional approval for portions of the project, the in-service date has been delayed twice and we now anticipate that the project will commence service on November 1, 2014.

To accommodate these delays, the Companies have contracted with third parties holding firm transportation capacity to meet a portion of the Companies' peak day requirements. However, as demand for gas continues to grow, the Companies have become less comfortable with their ability to continue acquiring access to sufficient quantities of such third party pipeline capacity. For this reason, it is extremely important that the project not be delayed beyond winter heating season commencing November 1, 2014.

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In addition to providing access to incremental capacity, the Rockaway Delivery Lateral, by virtue of its location, will provide critical pressure support to the Companies' gas distribution systems thereby increasing reliability. The Companies have experienced strong growth in demand for natural gas, particularly in Brooklyn and on the Rockaway Peninsula in Queens. Further, with the passage of legislation in New York City requiring conversion from heavier fuel oils to cleaner fuels including natural gas, this growth is expected to continue. The Companies' ability to satisfy this demand may be jeopardized by any further delays in completion of this important project.

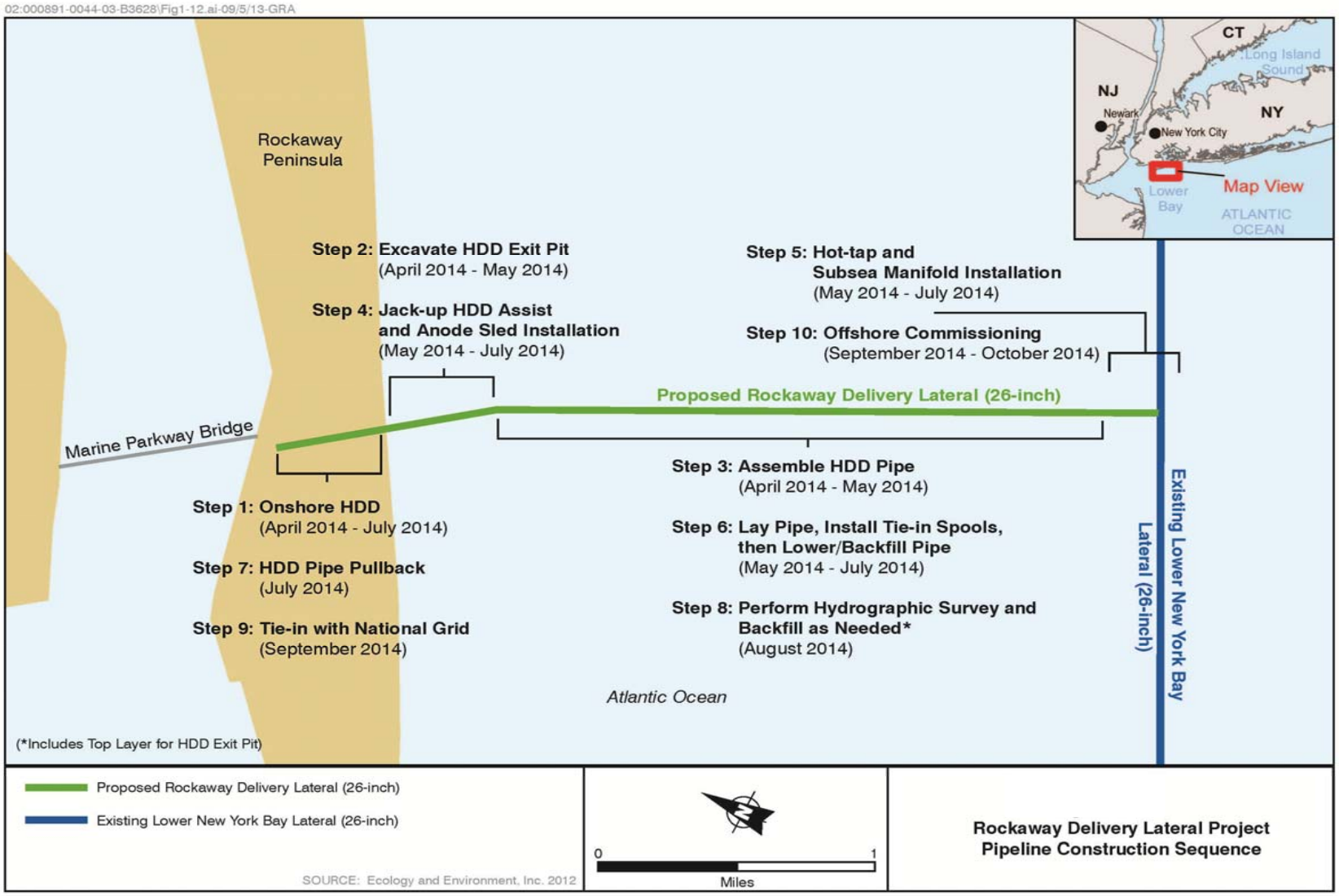
For these reasons, the Companies urge that the November 1, 2014 in-service date be maintained and that any further delays be avoided.

Sincerely,

John V. Vaughn

Attachment 2

Rockaway Delivery Lateral



Attachment 3

HYDRODYNAMIC AND SEDIMENT TRANSPORT ANALYSES FOR ROCKAWAY DELIVERY LATERAL PROJECT: ADDENDUM 2

Prepared for:

Ecology and Environment, Inc.
368 Pleasant View Drive
Lancaster, New York

Prepared by:

HDR|HydroQual
1200 MacArthur Boulevard
Mahwah, New Jersey

September 20, 2013

Table of Contents

REFINED SIMULATION OF PIPELINE CONSTRUCTION AND POST-CONSTRUCTION BURIAL

Two additional hydrodynamic and sediment transport simulations were performed. The first provides refined representation of the proposed construction sequence and sediment releases during pipeline construction. The second evaluates potential impacts of post-construction pipeline burial. Sediment releases for these two simulations reflect the most up to date description of proposed construction methods, project duration, sequence of operations, and potential sediment disturbance. To improve realism, the simulations consider multiple passes of construction equipment across the site. The height of sediment releases into the water column also dynamically vary as a function of construction conditions and the height of the jet sled/dredge discharge port above the sediment bed. Sediment releases in earlier in the construction cycle occur higher in the water column while releases later in the cycle occur lower in the water column as the depth of pipeline placement into the bed increases. In addition, the total length of construction was increased by approximately 1000 ft (305 m) to account for the length of the "pigtail" where the pipeline trench connects to the Horizontal Directional Drilling (HDD) exit pit. In these simulations the total length for pipeline construction and burial was 11,308 ft (2.14 miles; 3,457 m). Further details for each simulation and corresponding model results follow.

THREE PASS PIPELINE CONSTRUCTION SIMULATION

This scenario assumes that construction occurs during three (3) passes of the trenching equipment (i.e., the jet sled) over the pipeline route to complete construction and place the pipeline to the target depth below the ambient sediment surface. Sediment evacuated from the trench is released through a discharge port that is 13.67 feet (4.17 m) above the base of the sled. With each pass over the pipeline route, the sled base moves below the starting elevation of the sediment bed such that with each pass the release point moves closer to the original (pre-construction) grade line of the bed. However, the discharge port is a fixed point above the base of the sled so that releases in shallow water occur higher in the water column than they occur in deep water. For each pass, the jet sled traverses the route at a different rate. During the first pass, trenching occurs at 400 feet per hour (122 m/hr), the discharge height is 13.67 feet (4.17 m) above the bed, and the sediment volume released is 9,109 yd^3 (6,965 m^3). During the second pass, trenching occurs at 250 feet per hour (76 m/hr), the discharge height is 11.67 feet (3.55 m) above the bed, and the sediment volume released is 7,198 yd^3 (5,503 m^3). During the third pass, trenching occurs at 200 feet per hour (61 m/hr), the discharge height is 10.17 feet (3.1 m) above the bed, and the sediment volume released is 8,314 yd^3 (6,356 m^3). The total volume of sediment released during all three passes is 24,621 yd^3 (18,824 m^3). For this simulation, the submarine portion of the pipeline is 11,308 feet (2.14 mi; 3,457 m) (and includes the pigtail connecting

the submarine portion of the pipeline to the HDD exit pit portion) and releases occur in sequence into each of 33 model grid cells, representing sled movement along the pipeline route. The duration (i.e., time) and rate (i.e., mass per time) of sediment releases to the water column are directly related to the rate of trenching. For each pass, trenching duration is equal to trench length divided by trenching rate. In all cases, sediment is discharged at a rate of 70 liters per minute (18.5 gallons per minute). Consistent with the proposed construction schedule, hydrodynamic conditions for this simulation represent a May timeframe. A summary of trenching rates, durations, and sediment releases for each pass is presented in Table A2-1.

Water column and sediment bed results for this three pass trenching scenario are presented in Figures A2-1 through A2-15. Exceedance times for TSS levels exceeding thresholds of 50 and 100 mg/L are presented in Figures A2-16 and A2-17. Note these are the same types of figures that were previously presented in the main hydrodynamic and sediment transport modeling report and Addendum 1. Simulated suspended solids concentrations for the water column surface layer for this three pass trenching scenario are always less than ~1 mg/L (the maximum concentration occurs in just one cell and is 1.1 mg/L).

TWO PASS PIPELINE POST-CONSTRUCTION BURIAL SIMULATION

This scenario assumes that pipeline burial occurs during two (2) passes of suction dredging equipment over the pipeline route to provide sediment cover following construction. Sediment is released through a discharge port that is 3 feet (0.91 m) above the base of the dredge. The discharge port is a fixed point above the base of the dredge so that releases in shallow water occur higher in the water column than they occur in deep water. For each pass, the dredge traverses the route at a rate of 100 feet per hour (30 m/hr) and releases 2,250 yd^3 (1,720 m^3) of sediment. The total volume of sediment released during both passes is 4,500 yd^3 (3,440 m^3). For this simulation, the pipeline length is 11,308 feet (2.14 mi; 3,457 m) and releases occur in sequence into each of 33 model grid cells, representing dredge movement along the pipeline route. The duration (i.e., time) and rate (i.e., mass per time) of sediment releases to the water column are directly related to the rate of cover placement. For each pass, placement duration is equal to trench length divided by cover placement rate. In all cases, sediment is discharged at a rate of 70 liters per minute (18.5 gallons per minute). Consistent with the proposed construction schedule, hydrodynamic conditions for this simulation represent an August timeframe. A summary of placement rates, durations, and sediment releases for each pass is presented in Table A2-1.

Water column and sediment bed results for this two pass burial scenario are presented in Figures A2-18 through A2-27. Exceedance times for TSS levels exceeding thresholds of 50 and 100 mg/L are presented in Figures A2-28 and A2-29. As previously noted, these are the same types of figures that were presented in the main hydrodynamic and sediment

transport modeling report and Addendum 1. Simulated suspended solids concentrations for the water column surface layer for this two pass burial scenario are always less than 1 mg/L.

DISCUSSION

Consistent with all prior simulations, results for these two scenarios were reported as time averages over 6-minute intervals in each model grid cell. For each grid cell, the number of time intervals when TSS levels exceeded the threshold value was summed. The time of exceedance in each cell was determined by multiplying the sum of exceedances by the time interval (6 minutes) and then converting to time in hours. Some caution is needed when examining the cumulative time that TSS levels in any grid cell exceed a target threshold. In particular, the sum of exceedances only indicates the total time that concentrations in a cell exceeded the threshold; it does not indicate whether exceedances were consecutive in time. For the three pass trenching scenario, there is a hiatus of roughly 16 hours between each pass. This represents time required to reposition equipment and reverse direction for the next pass in the sequence. For the two pass burial scenario, there is a 2 hour hiatus between each pass. The hiatus for the burial scenario is shorter because equipment used is smaller and can be more quickly repositioned. Recalling that plumes are expected to rapidly dissipate following the end of construction, it is unlikely that exceedances will be continuous over time. However, assuming that all exceedances are consecutive in time provides an upper bound worst case to evaluate acute and chronic exposure because consecutive exceedances would result in the maximum duration of any exposure.

ADDENDUM 2: TABLES

Table A2-1. Simulated trenching rates, durations, and sediment release characteristics.

Construction Rate (m/hr or ft/hr)	***Duration (hrs)*** *(1)*	***Sediment Discharge Height (m or ft)***	***Sediment Volume Released (m³ or yd³)*** *(2)*
Three Pass Trenching (May Hydrodynamic Conditions)			
122 (400 ft/hr) 76 (250 ft/hr) 61 (200 ft/hr)	28.3 45.2 56.5	4.17 (13.67 ft) 3.55 (11.67 ft) 3.10 (10.17 ft)	Pass 1: 6,965 (9,109 yd³) Pass 2: 5,503 (7,198 yd³) Pass 3: 6,356 (8,314 yd³) Total: 18,824 (24,621 yd³)
Two Pass Burial (August Hydrodynamic Conditions)			
30 (100 ft/hr) 30 (100 ft/hr)	113.1 113.1	0.91 (3 ft) 0.91 (3 ft)	Pass 1: 1,720 (2,250 yd³) Pass 2: 1,720 (2,250 yd³) Total: 3,740 (4,500 yd³)

Notes: (1) duration values exclude hiatus periods when equipment is repositioned between passes; (2) Total sediment volume released is in situ volume; sediments are assumed to have a dry bulk density of 1,495 kg/m³.

ADDENDUM 2: FIGURES

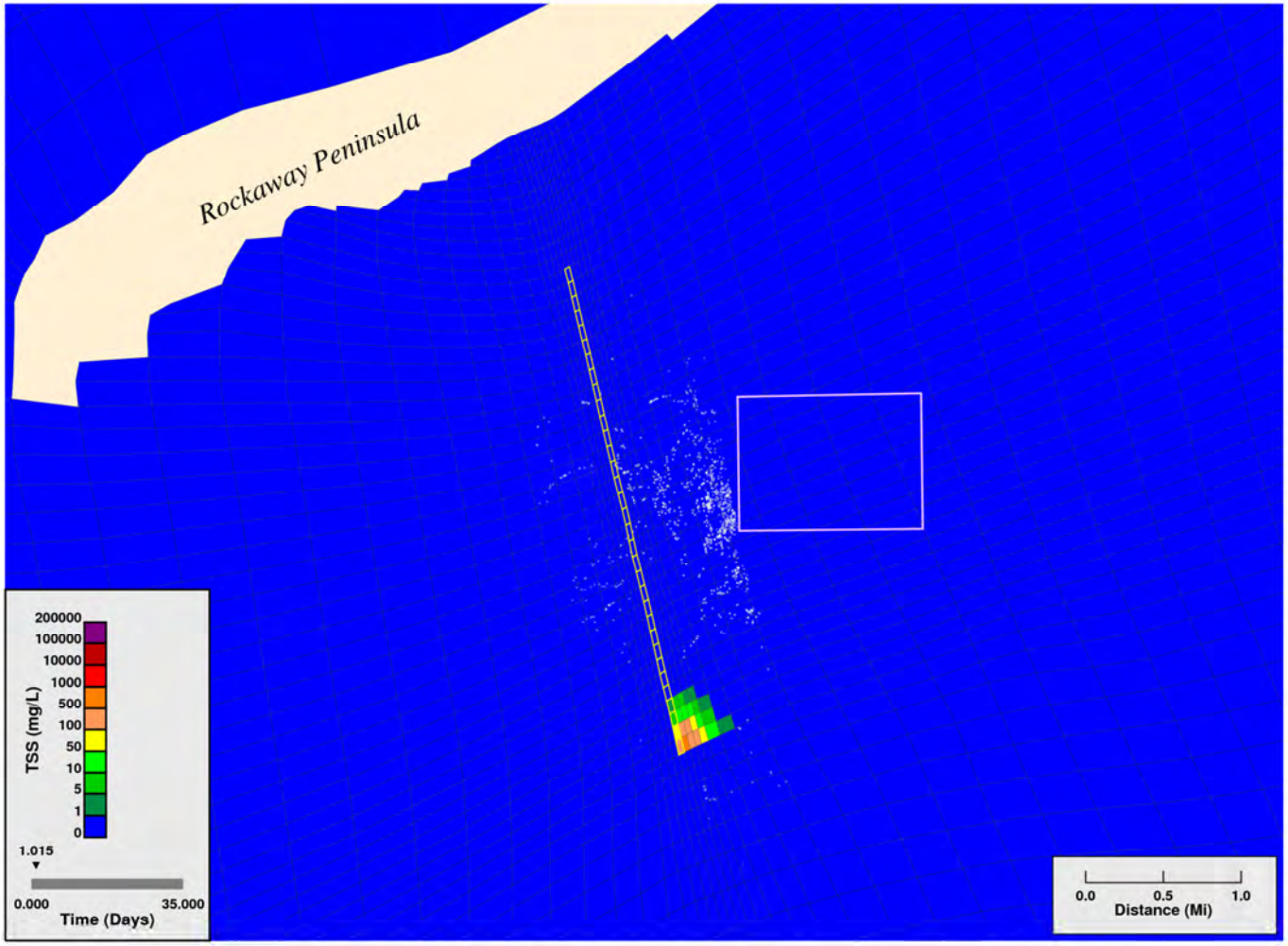


Figure A2-1. Three pass trenching: simulated suspended solids near water column bottom, Pass 1, start of pass, rate = 122 m/hr.

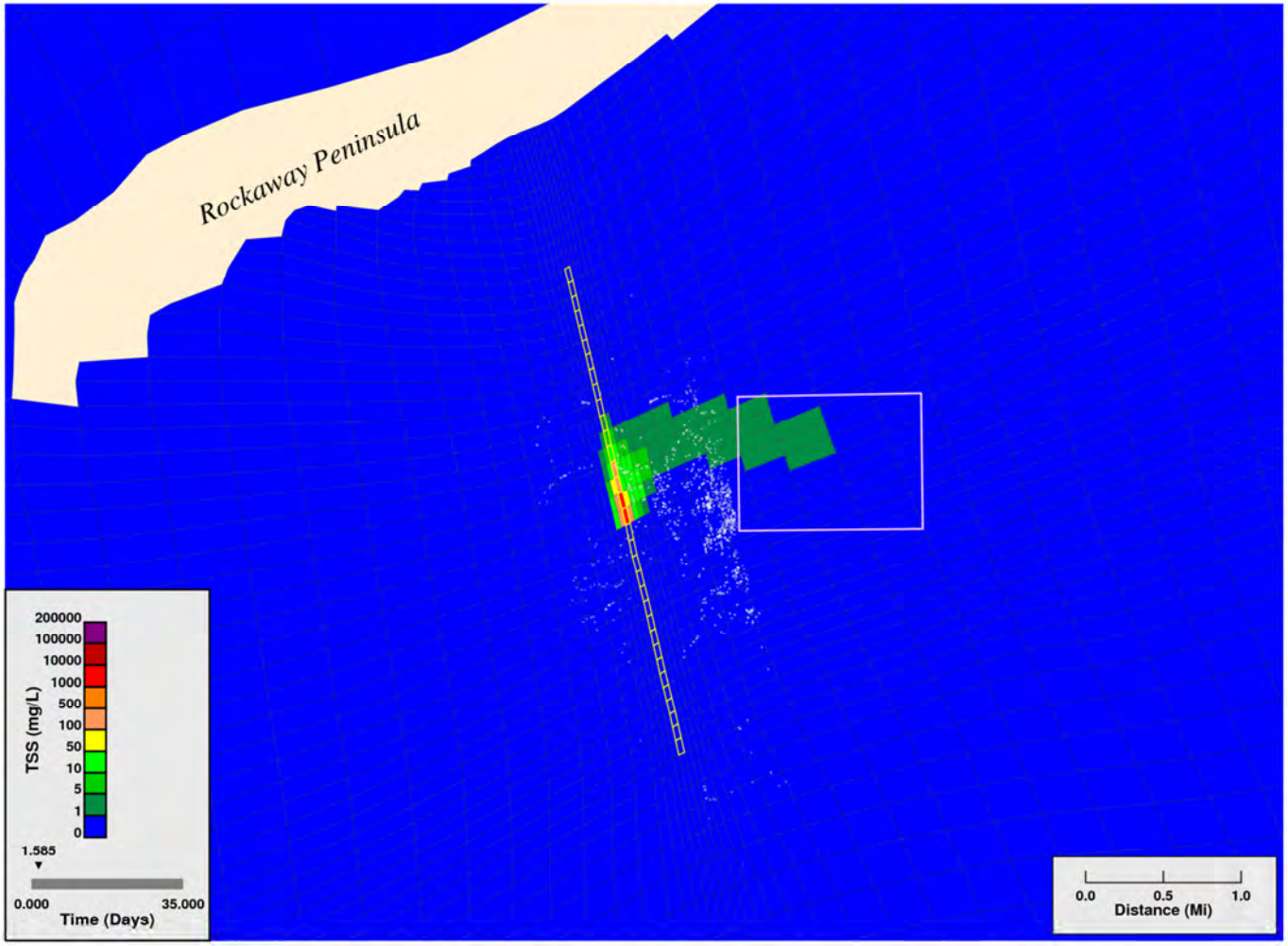


Figure A2-2. Three pass trenching: simulated suspended solids near water column bottom, Pass 1, 50% complete, rate = 122 m/hr.

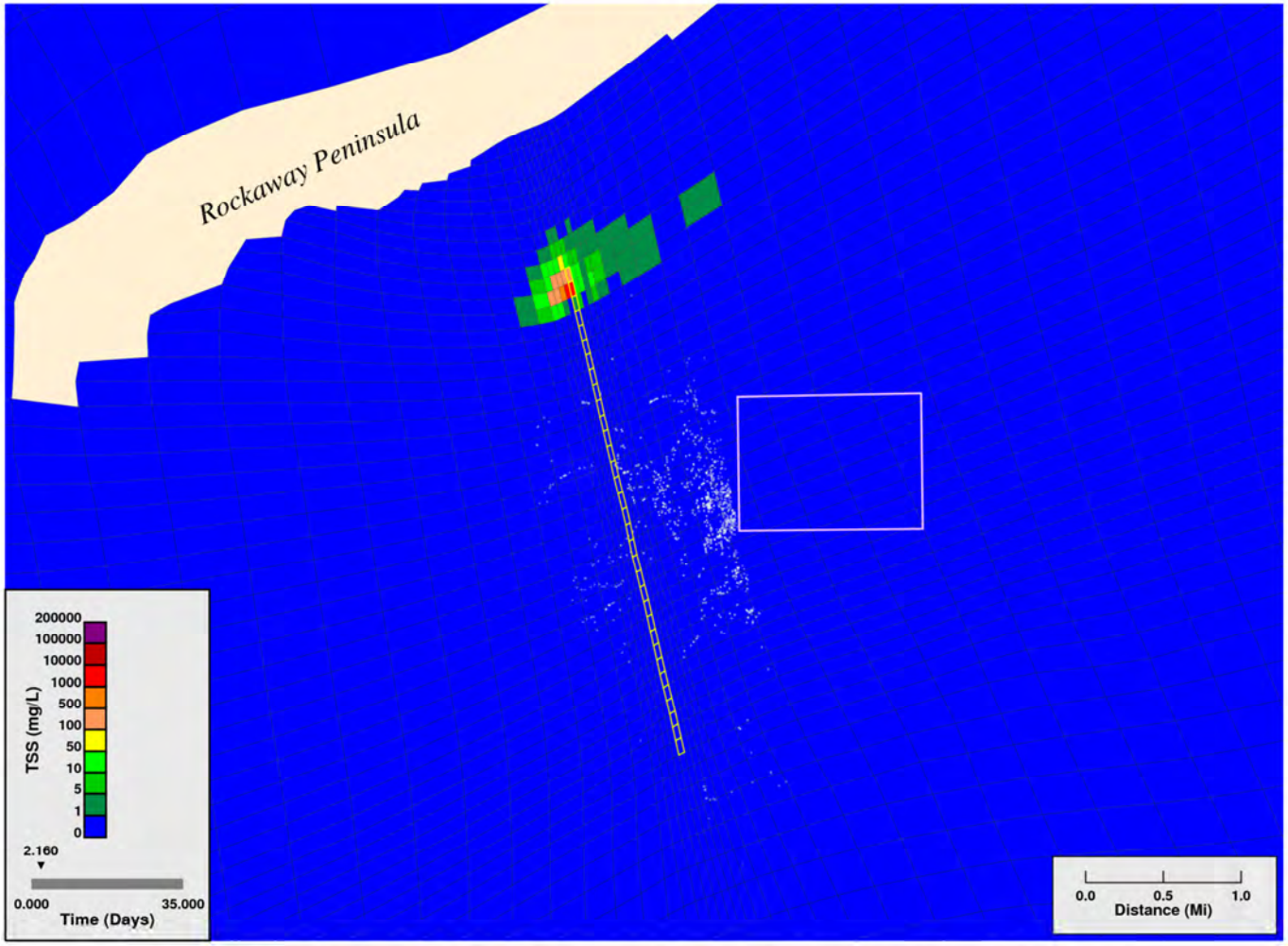


Figure A2-3. Three pass trenching: simulated suspended solids near water column bottom, Pass 1, end of trenching, rate = 122 m/hr.

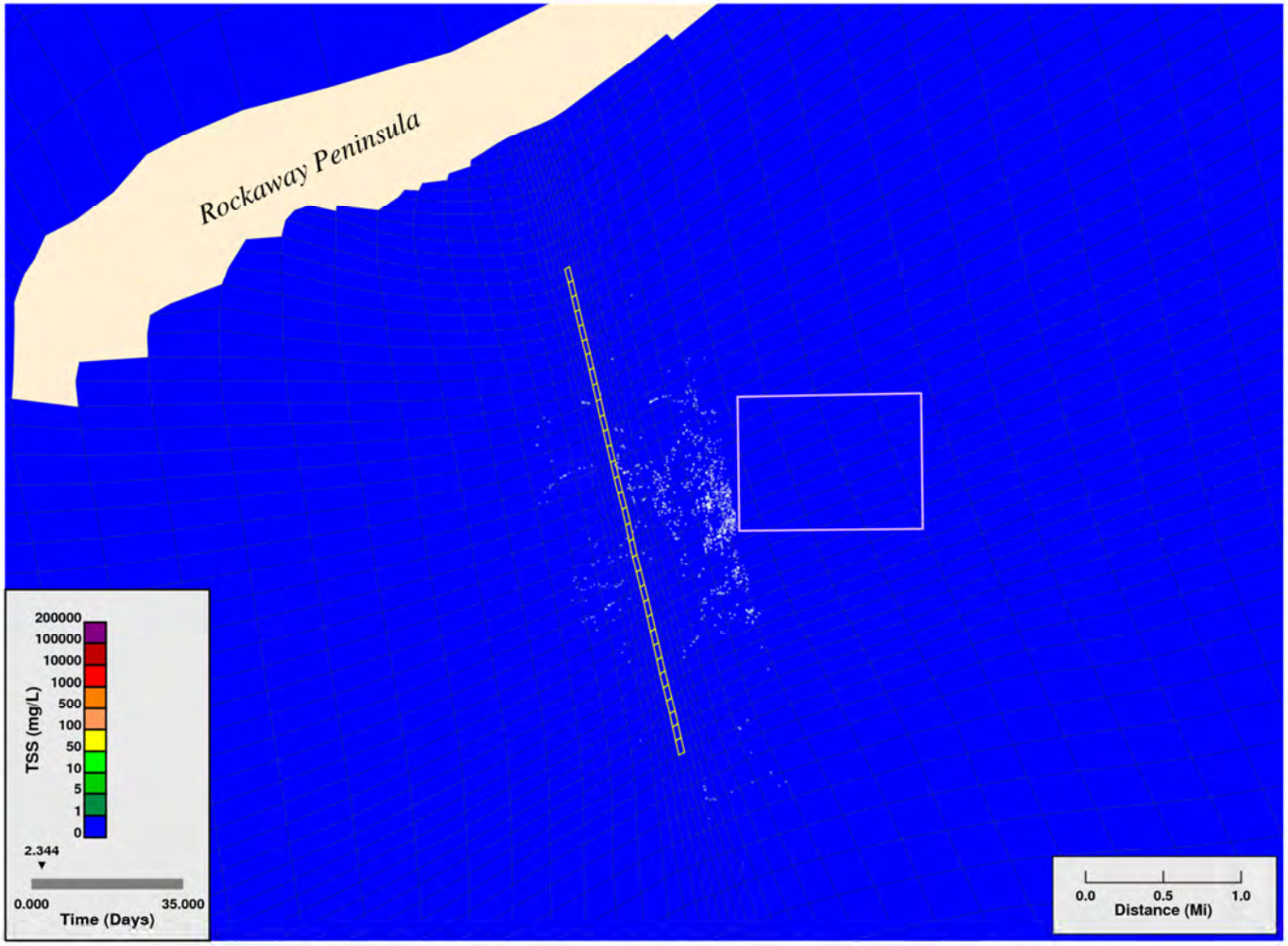


Figure A2-4. Three pass trenching: simulated suspended solids near water column bottom, Pass 1, 4 hrs after end, rate = 122 m/hr.

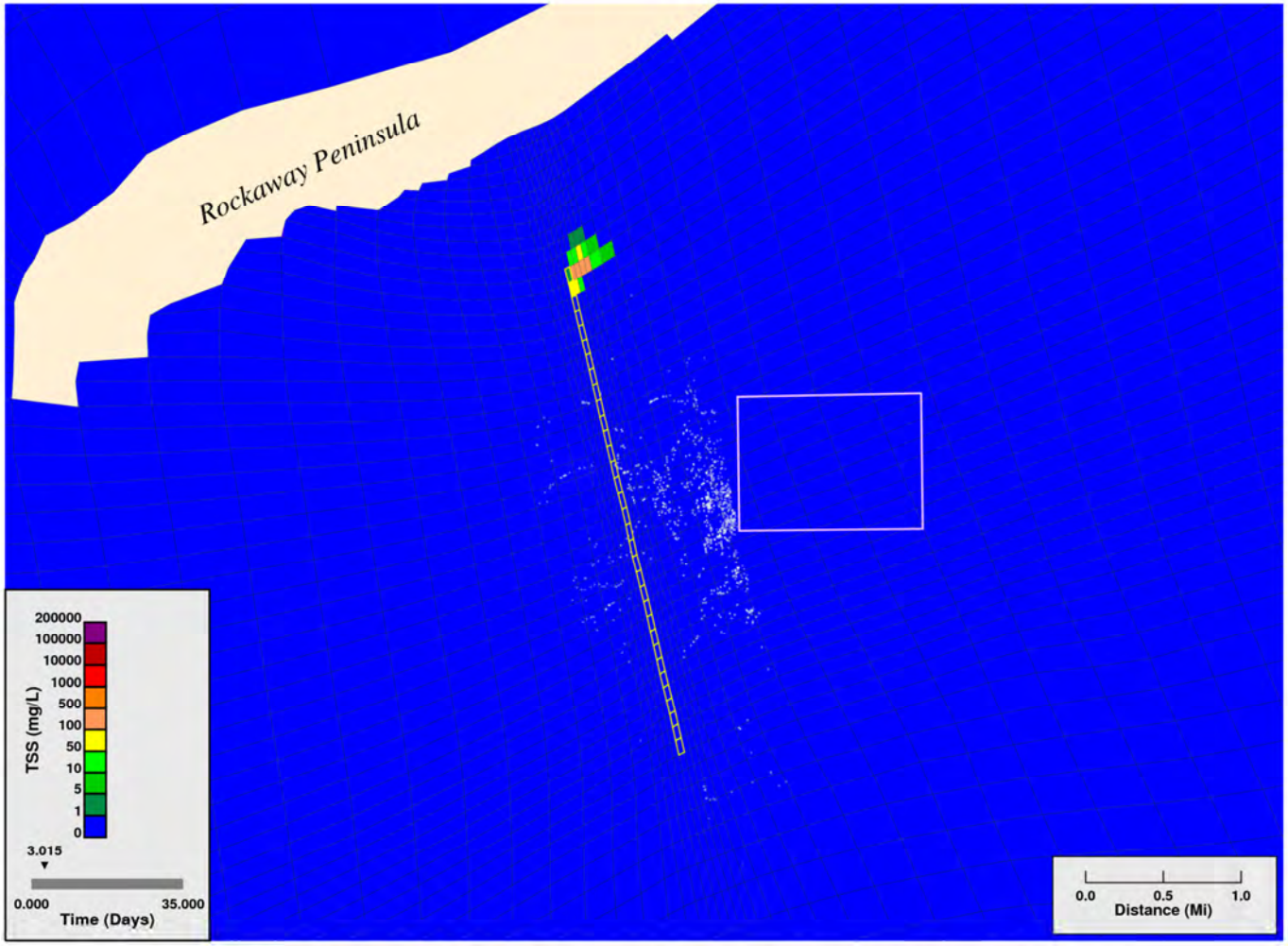


Figure A2-5. Three pass trenching: simulated suspended solids near water column bottom, Pass 2, start of trenching, rate = 76 m/hr.

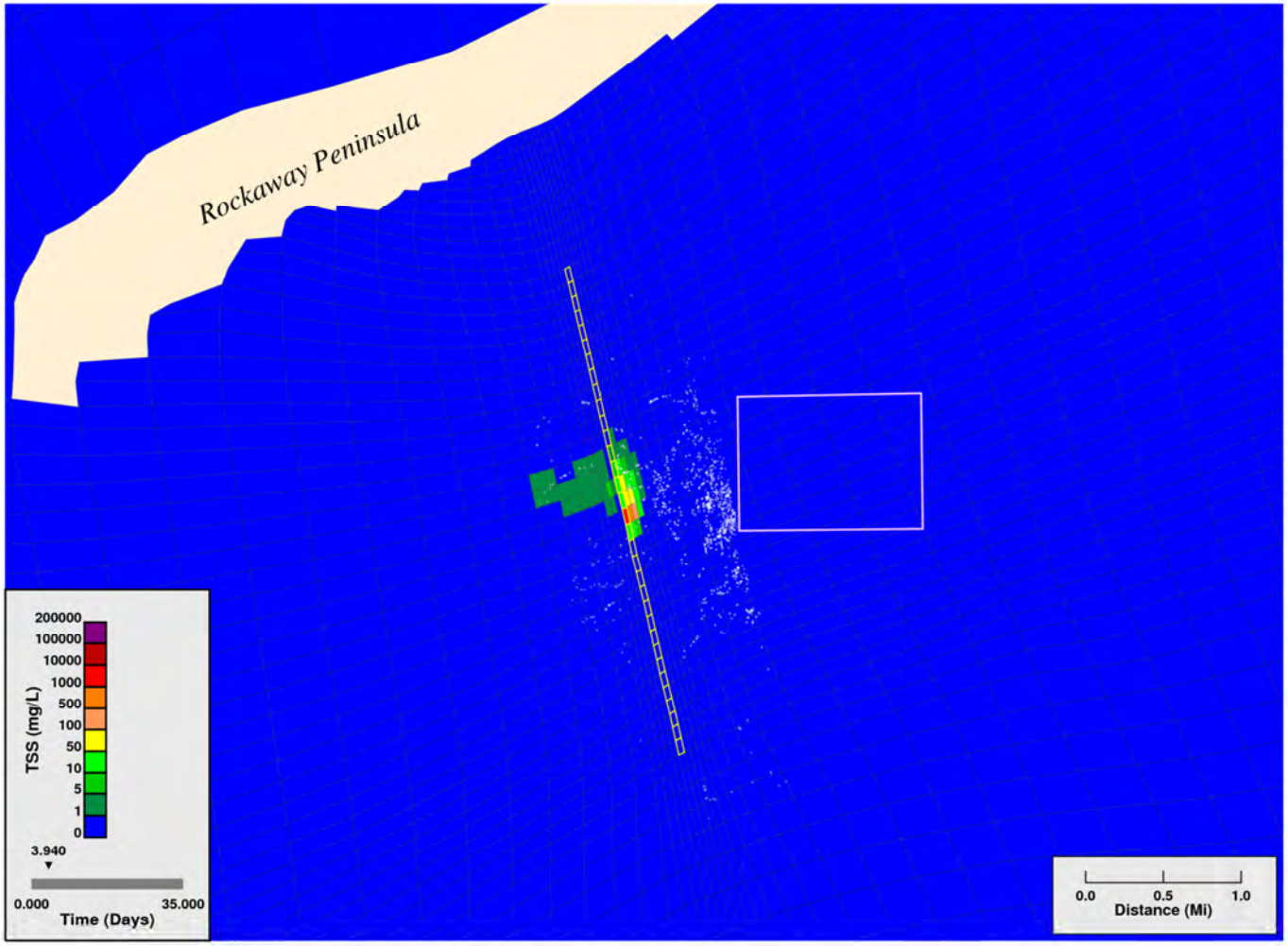


Figure A2-6. Three pass trenching: simulated suspended solids near water column bottom, Pass 2, 50% complete, rate = 76 m/hr.

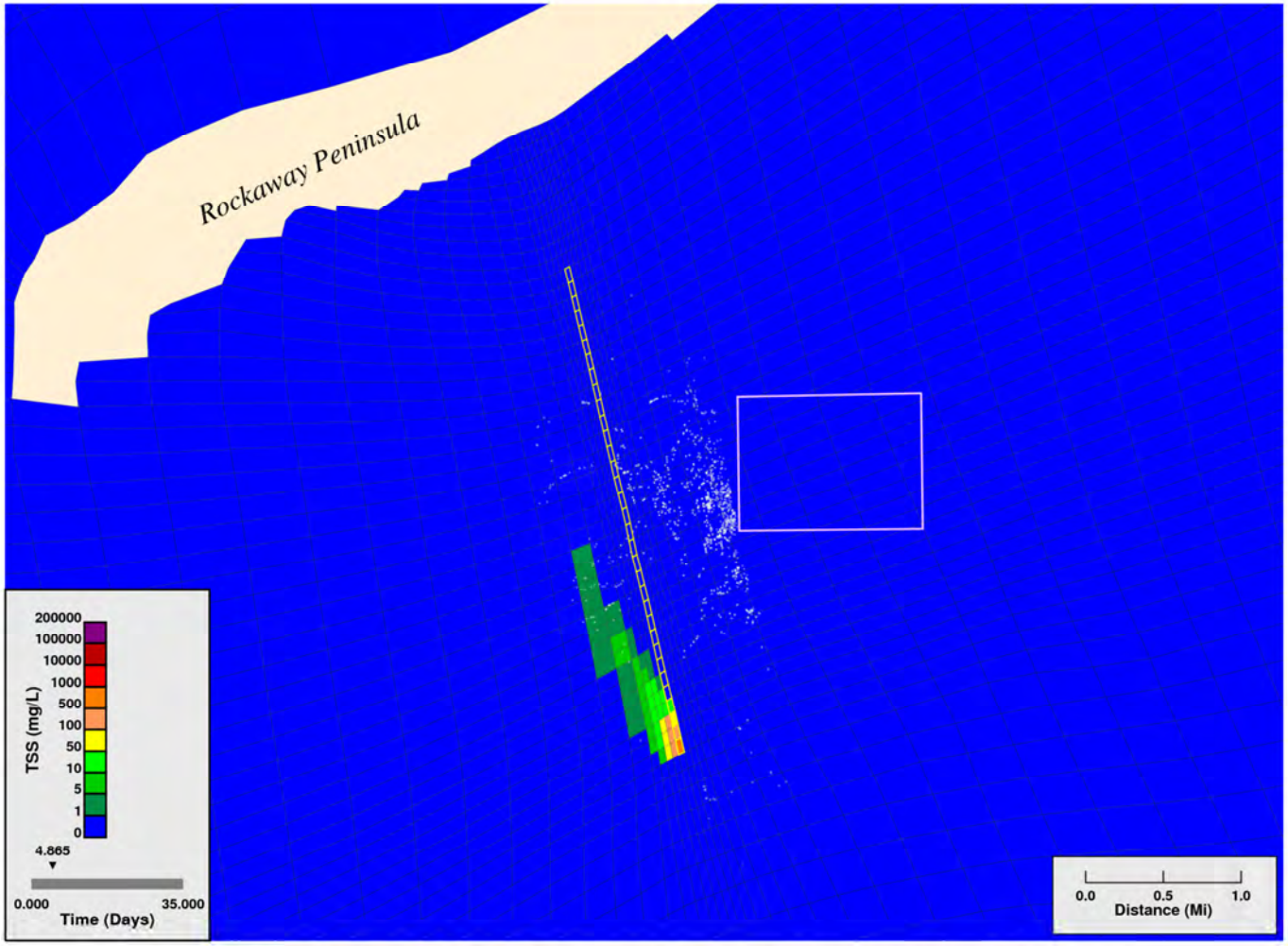


Figure A2-7. Three pass trenching: simulated suspended solids near water column bottom, Pass 2, end of trenching, rate = 76 m/hr.

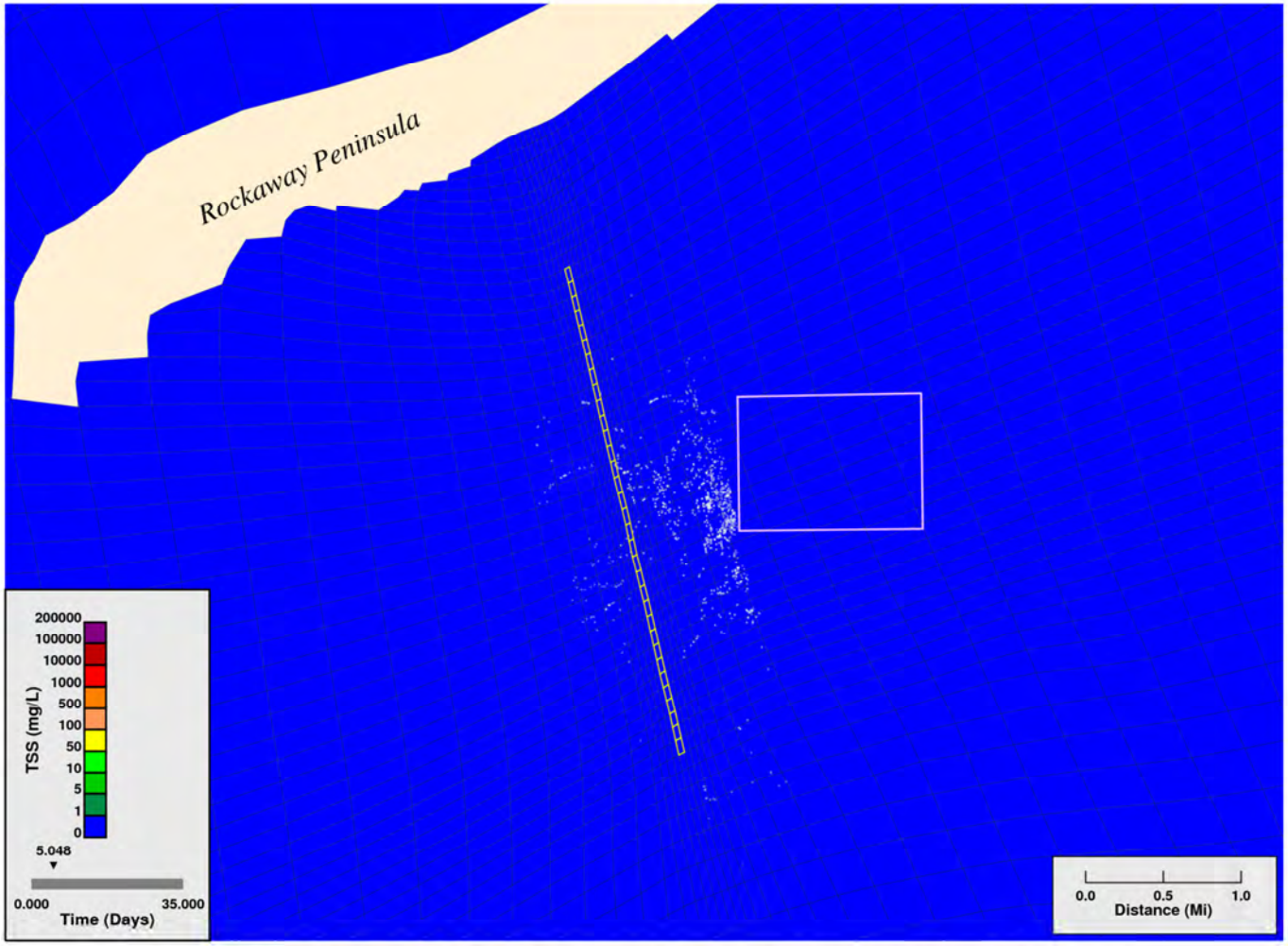


Figure A2-8. Three pass trenching: simulated suspended solids near water column bottom, Pass 2, 4 hrs after end, rate = 76 m/hr.

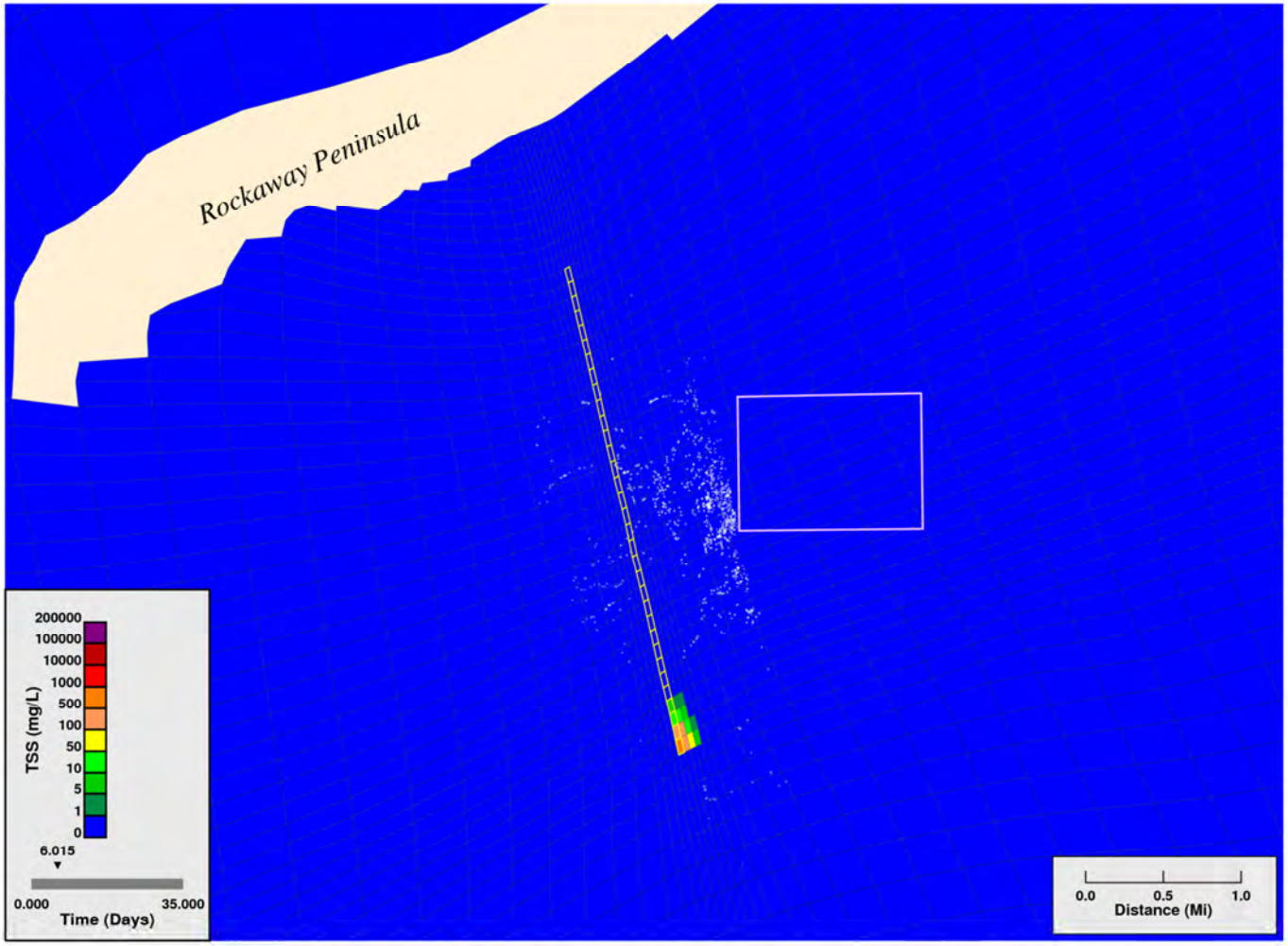


Figure A2-9. Three pass trenching: simulated suspended solids near water column bottom, Pass 3, start of trenching, rate = 61 m/hr.

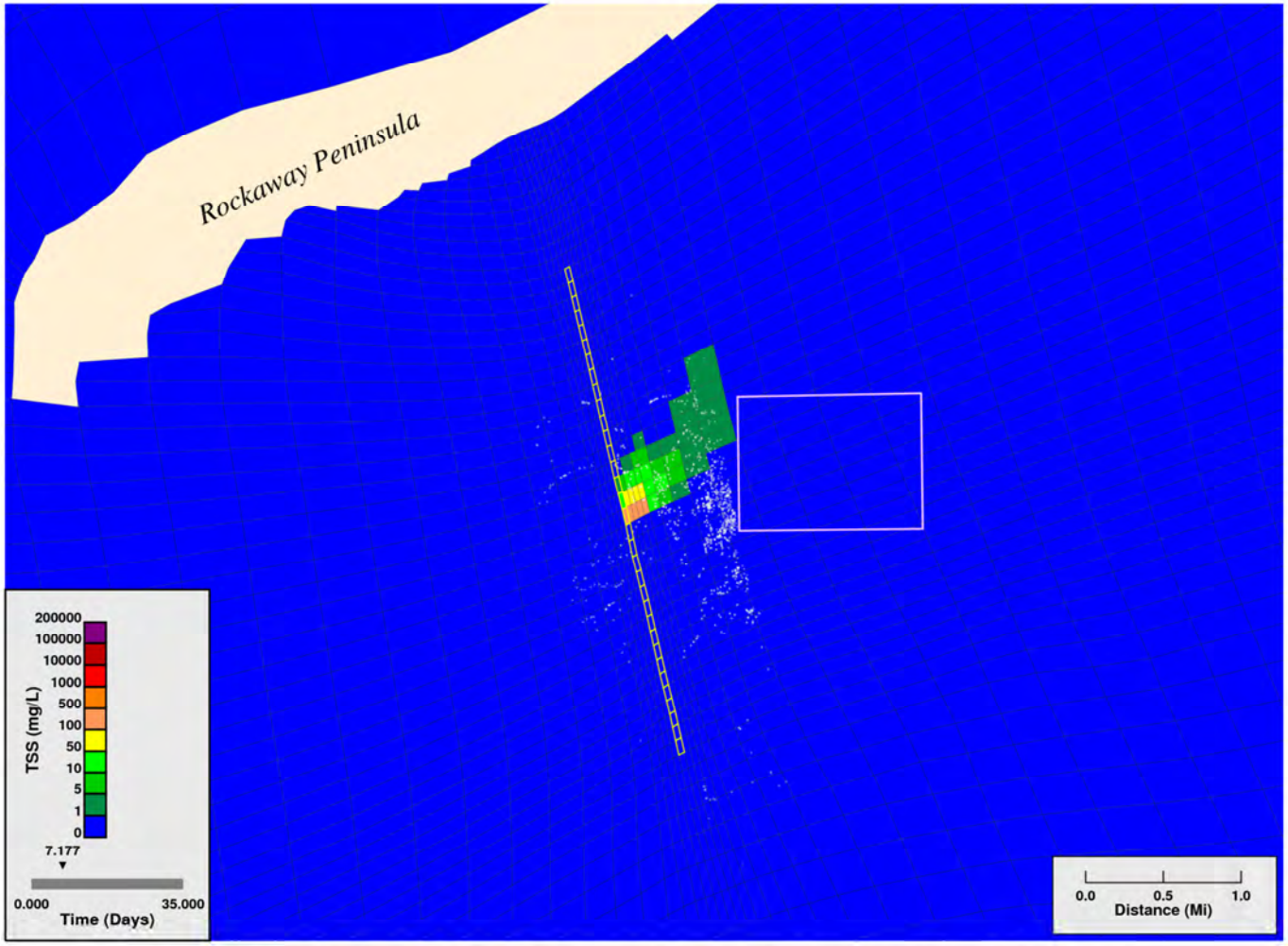


Figure A2-10. Three pass trenching: simulated suspended solids near water column bottom, Pass 3, 50% complete, rate = 61 m/hr.

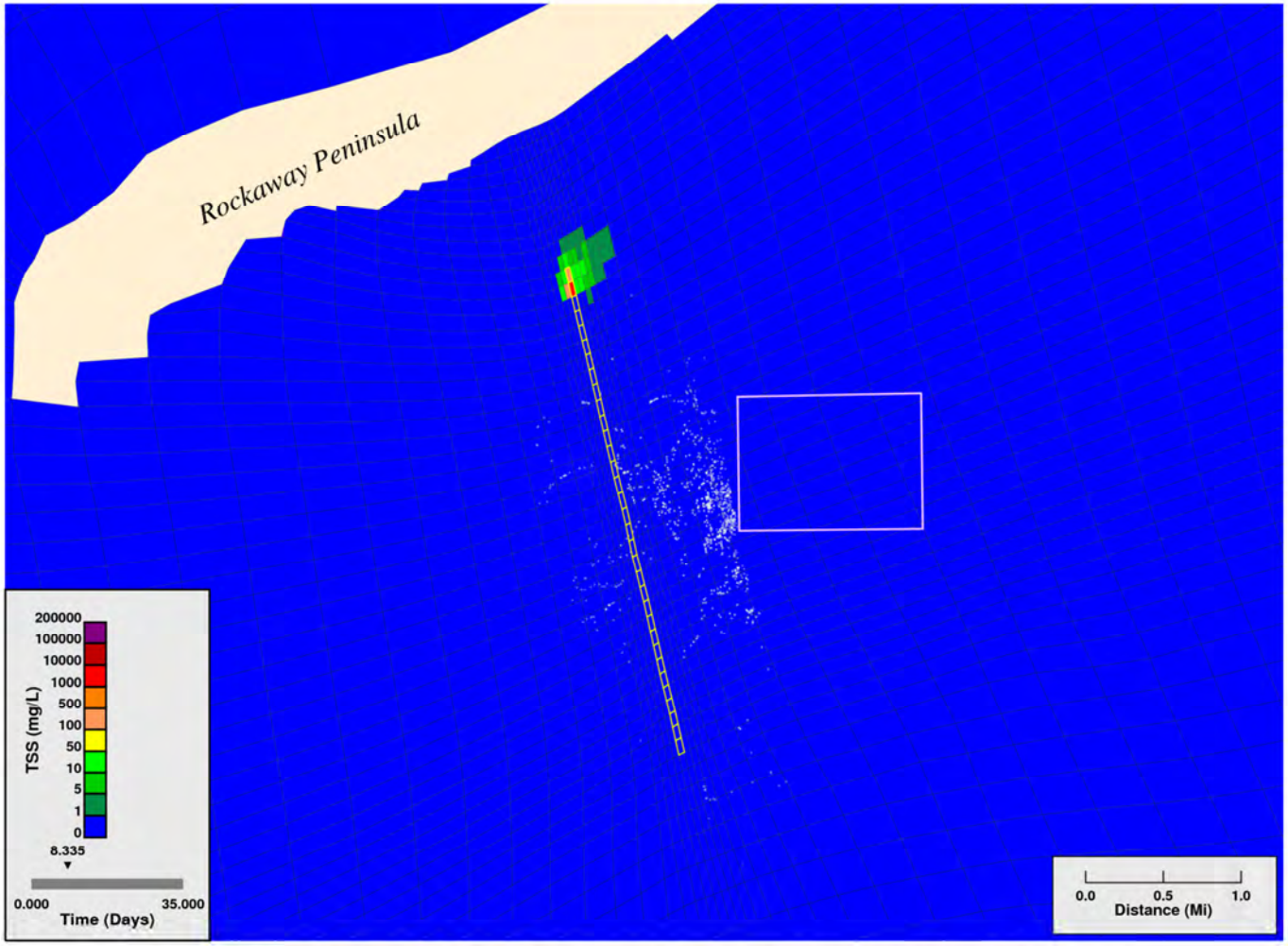


Figure A2-11. Three pass trenching: simulated suspended solids near water column bottom, Pass 3, end of trenching, rate = 61 m/hr.

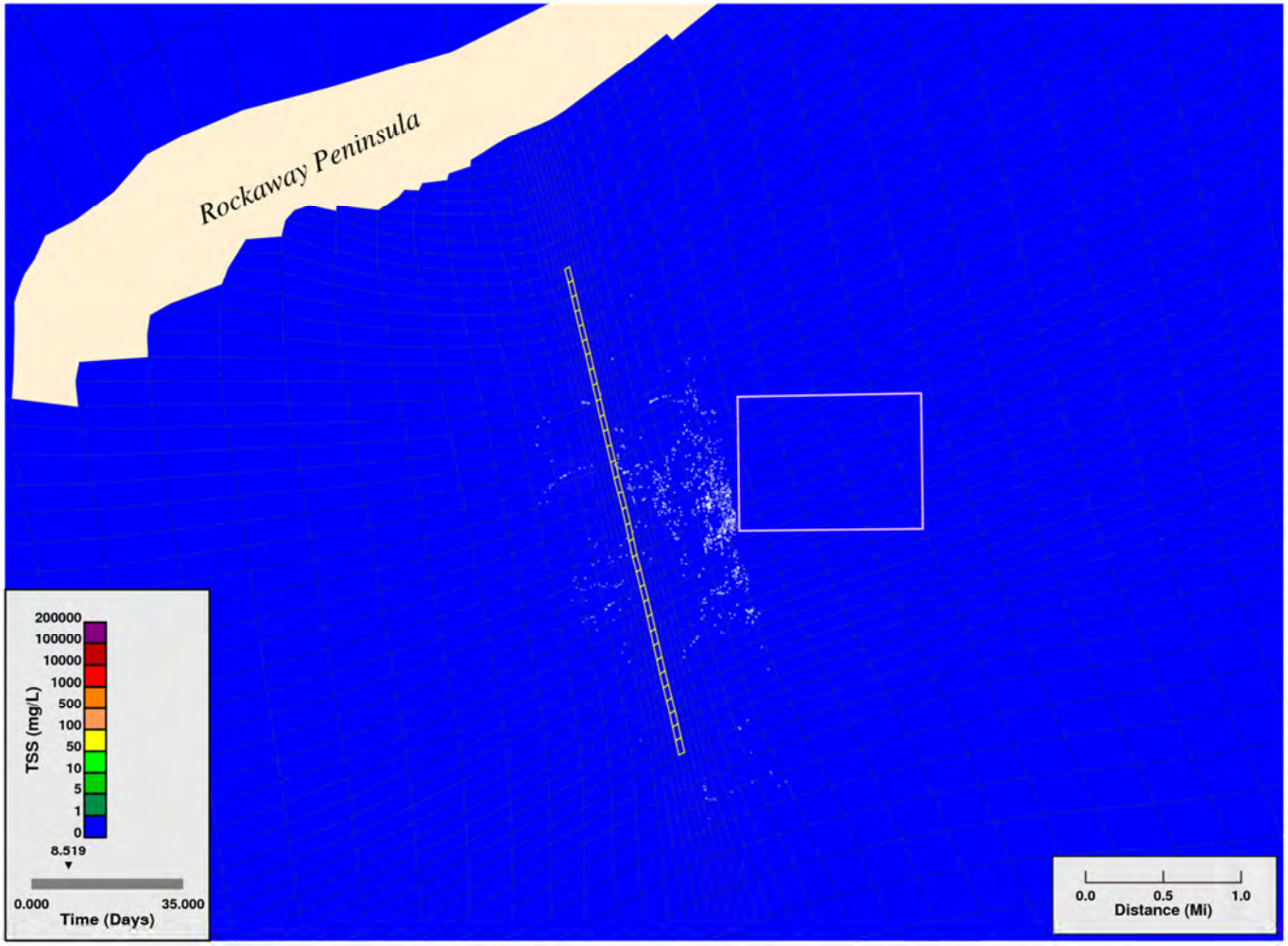


Figure A2-12. Three pass trenching: simulated suspended solids near water column bottom, Pass 3, 4 hrs after end, rate = 61 m/hr.

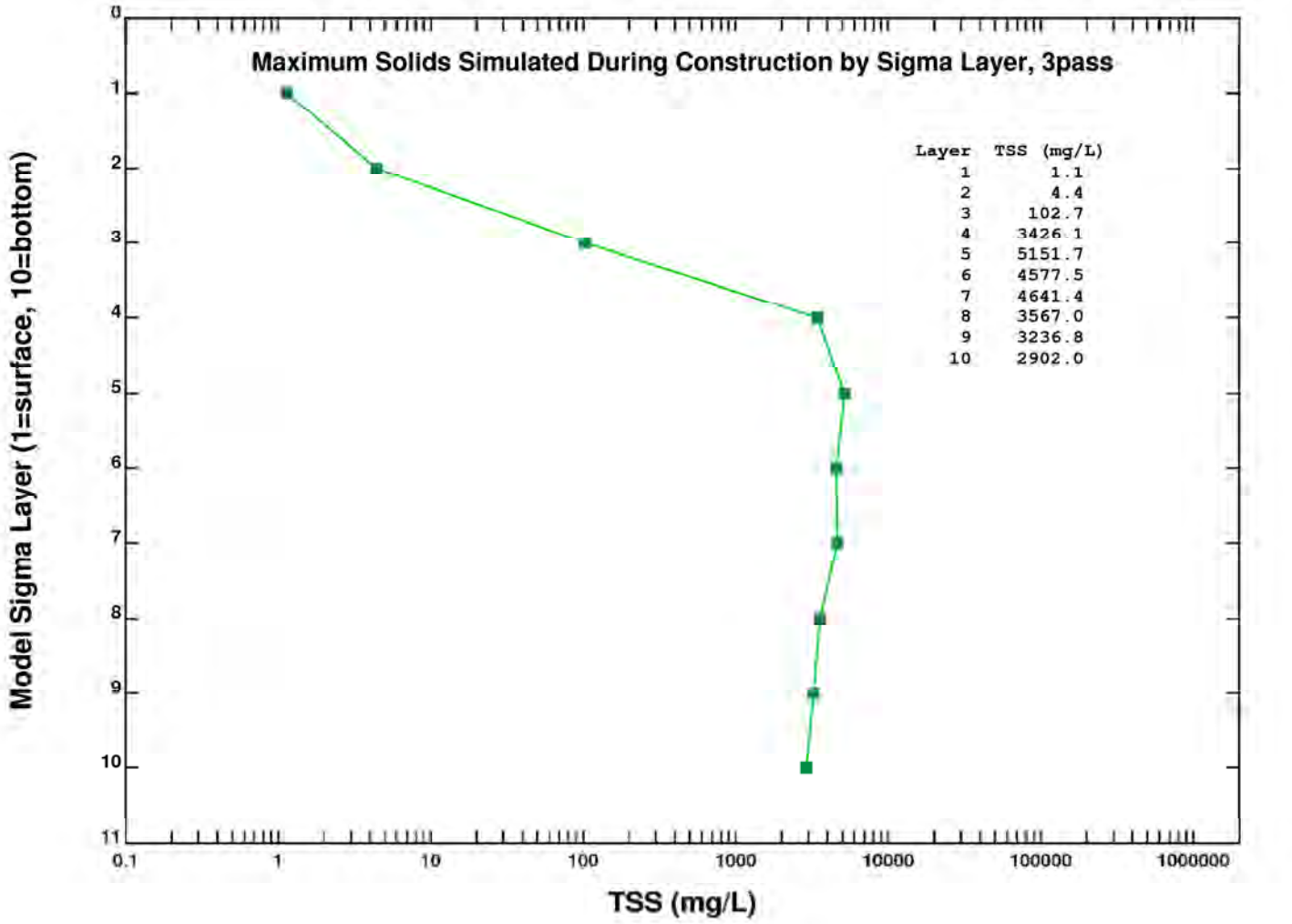
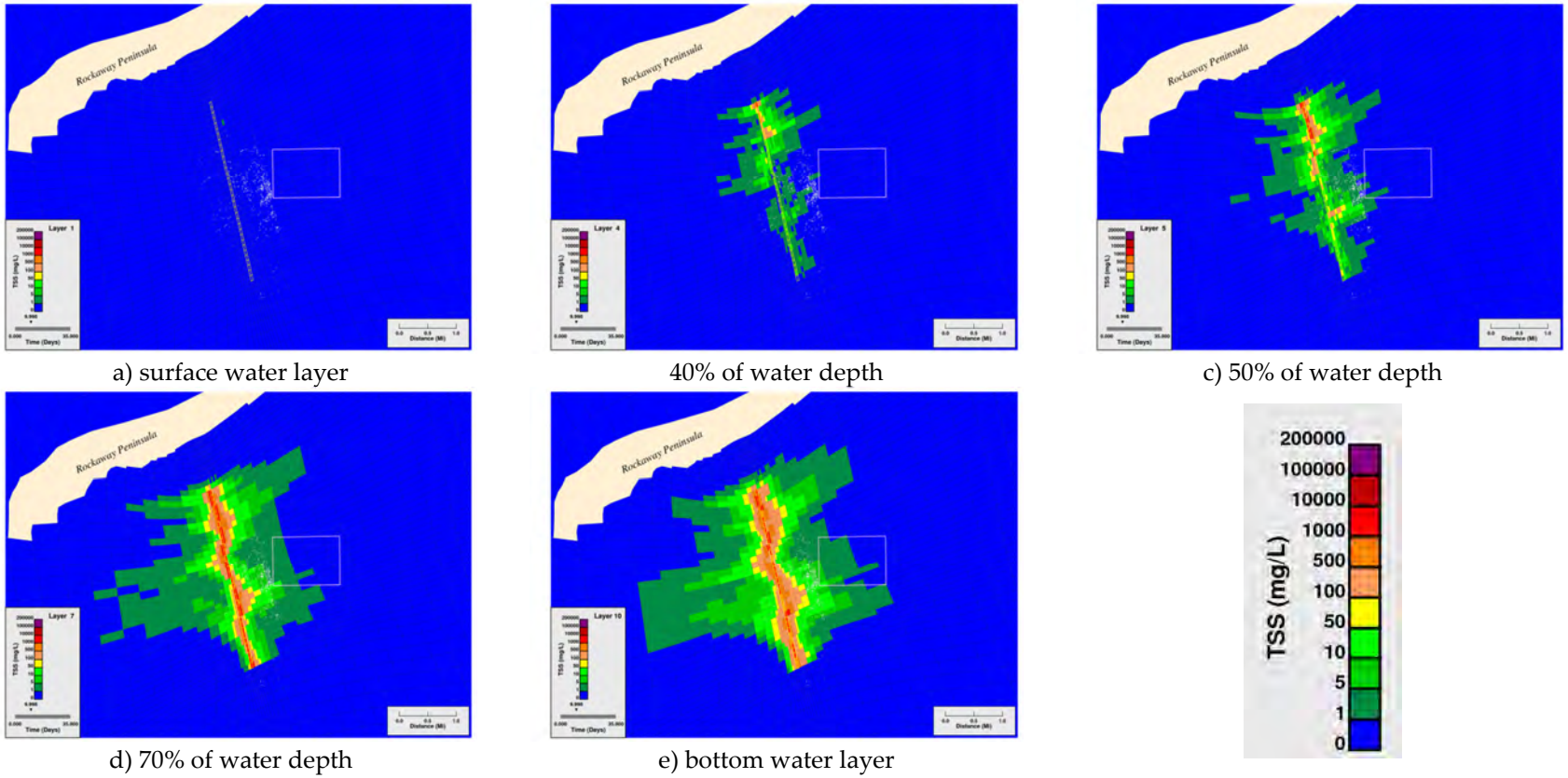


Figure A2-13. Three pass trenching: maximum simulated suspended solids in any cell of each water column sigma layer.



a) surface water layer

40% of water depth

c) 50% of water depth

d) 70% of water depth

e) bottom water layer

Notes: Values indicate the maximum solids concentration that occurred in each model grid at any time during the simulation (all trenching passes). It should be noted the concentrations are elevated near the point of construction and rapidly decrease over time as a consequence of the relatively high settling velocities of sediment grains. Plumes clear the water column within 4 hours following the end of each construction pass.

Figure A2-14. Three pass trenching: maximum simulated suspended solids extent in selected water column sigma layers (all passes).

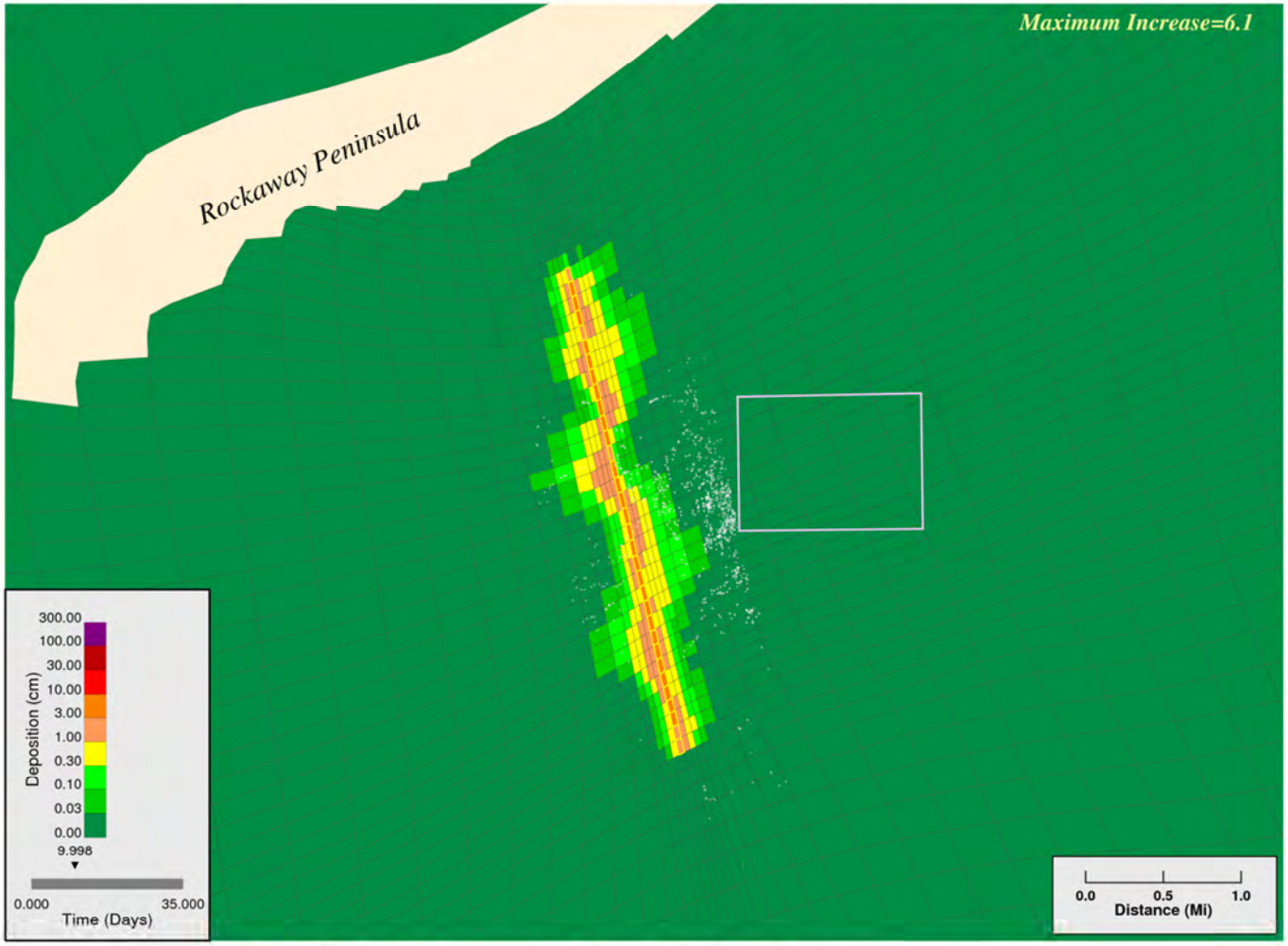


Figure A2-15. Three pass trenching: simulated thickness of deposited solids on bed surface following trenching (all passes).

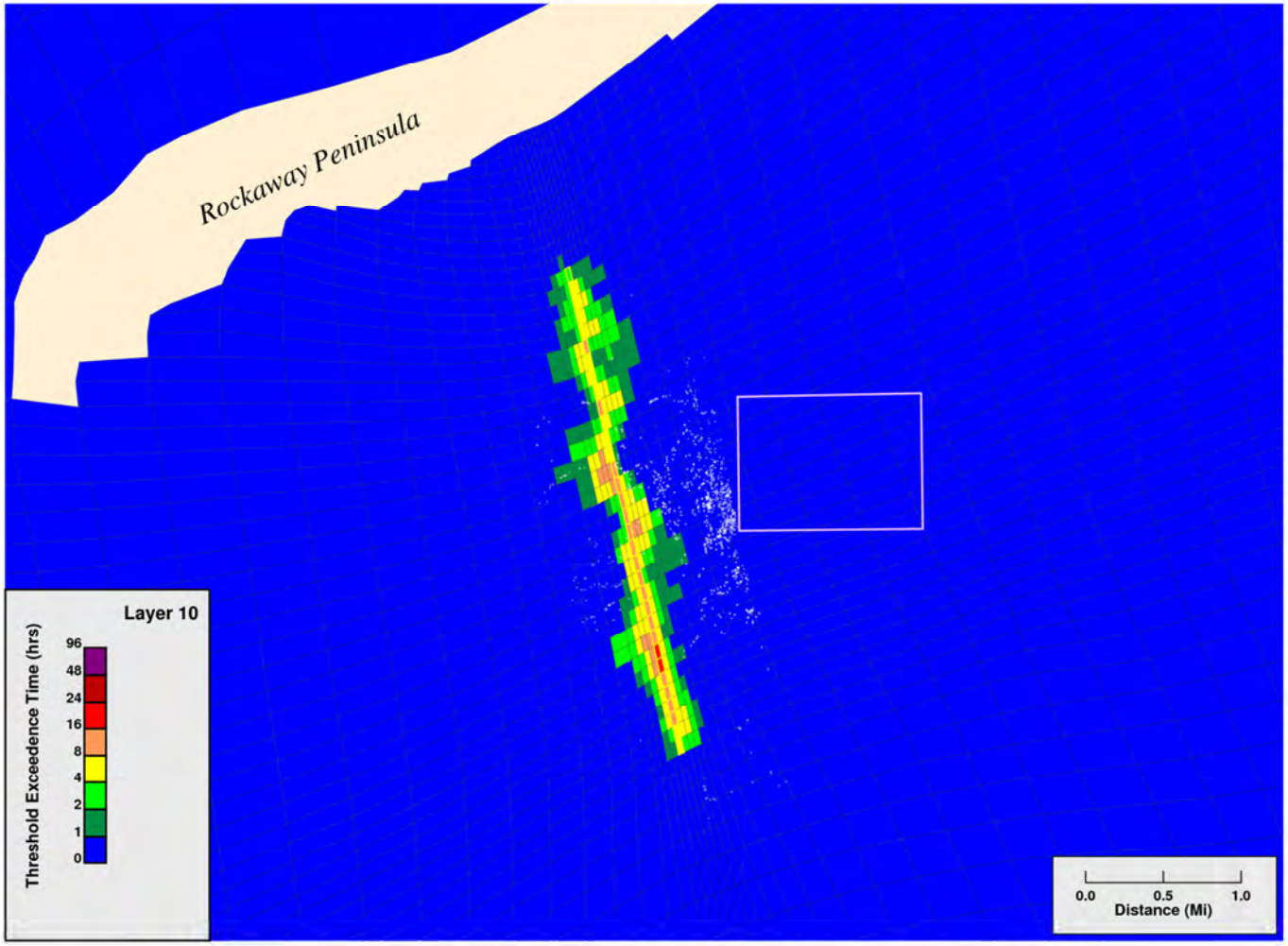


Figure A2-16. Three pass trenching: cumulative time that simulated suspended solids concentrations near water column bottom exceed a threshold of 50 mg/L.

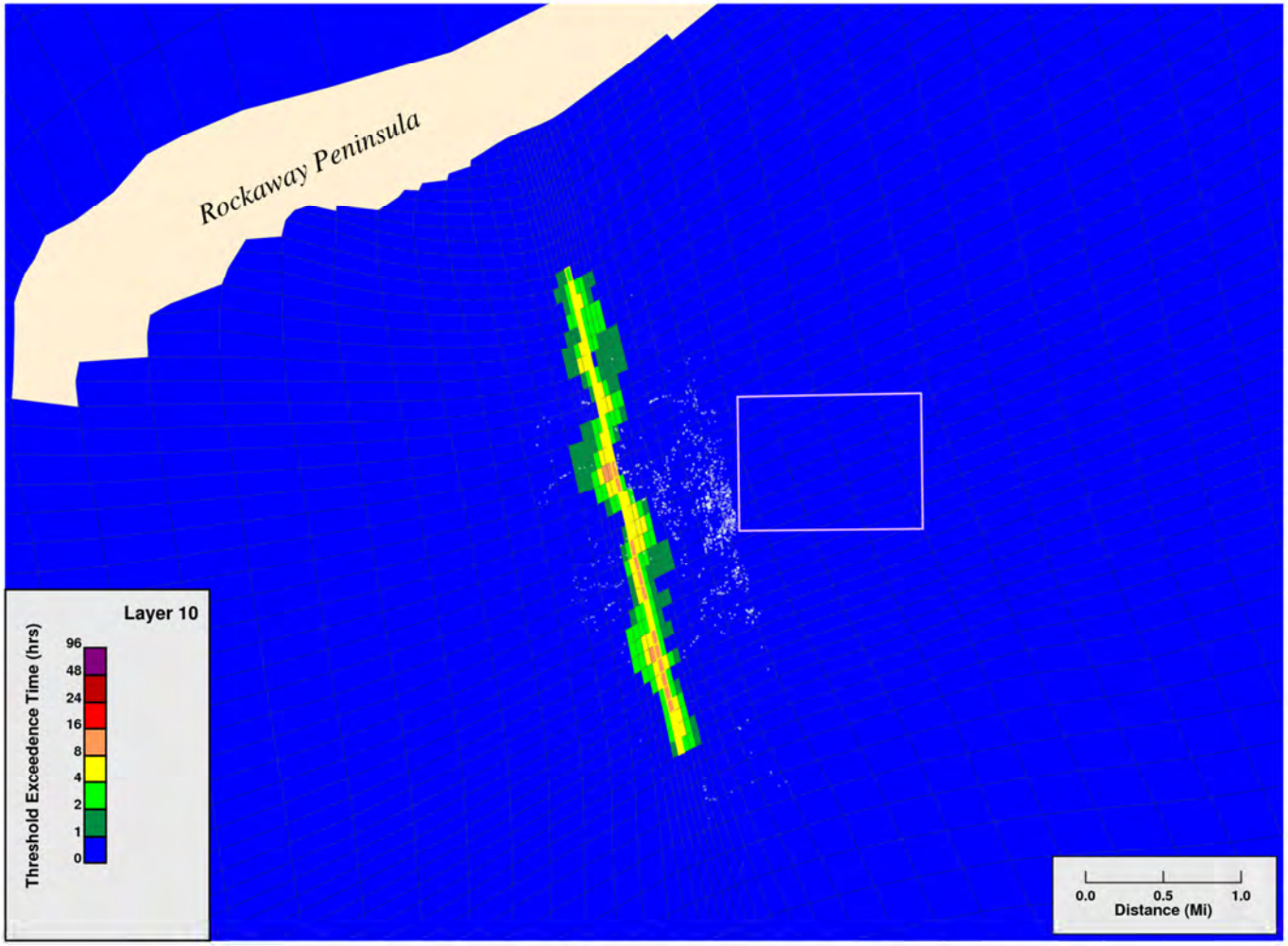


Figure A2-17. Three pass trench: cumulative time that simulated suspended solids concentrations near water column bottom exceed a threshold of 100 mg/L.

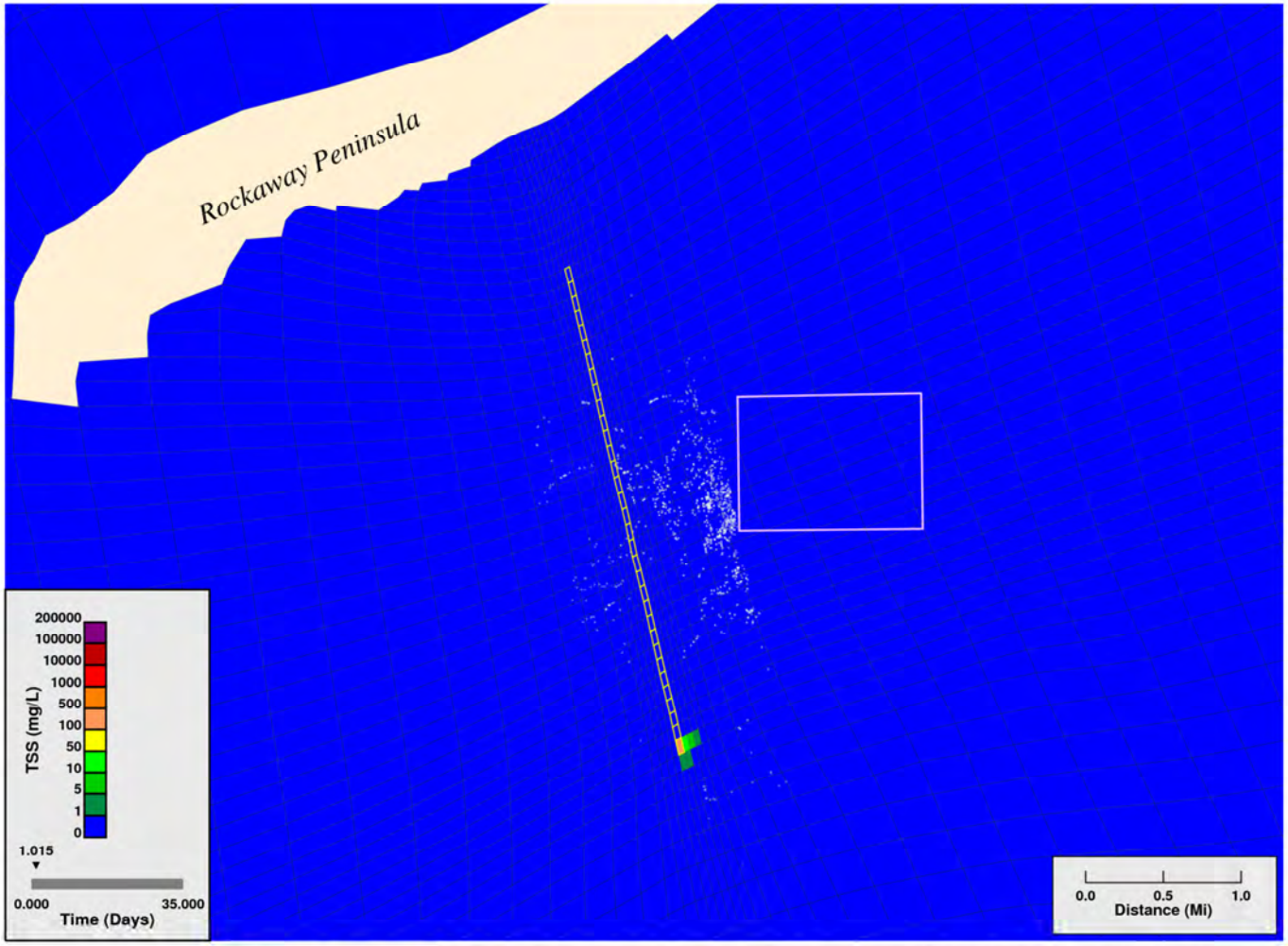


Figure A2-18. Two pass burial: simulated suspended solids near water column bottom, Pass 1, start of burial, rate = 30 m/hr.

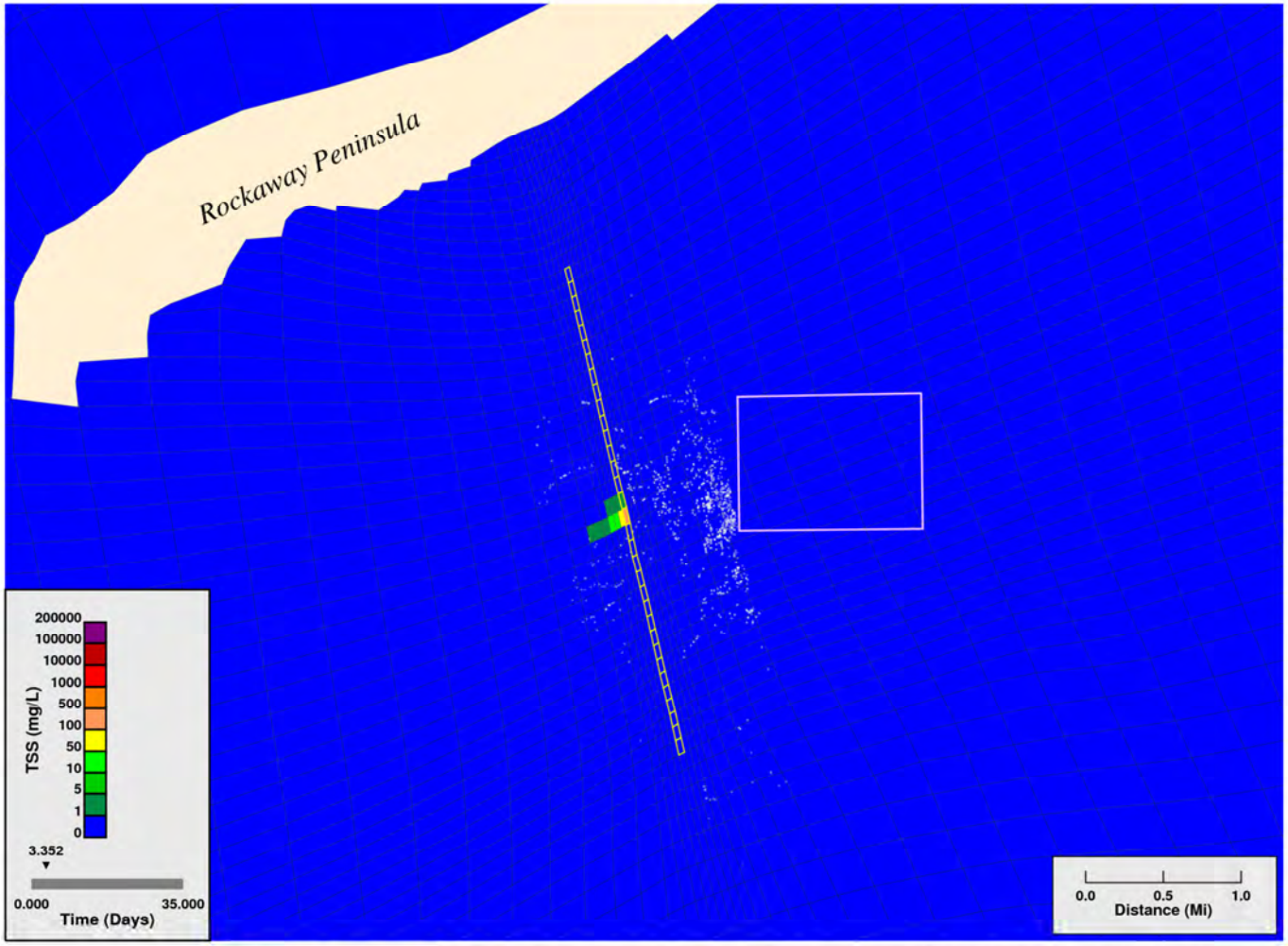


Figure A2-19. Two pass burial: simulated suspended solids near water column bottom, Pass 1, 50% complete, rate = 30 m/hr.

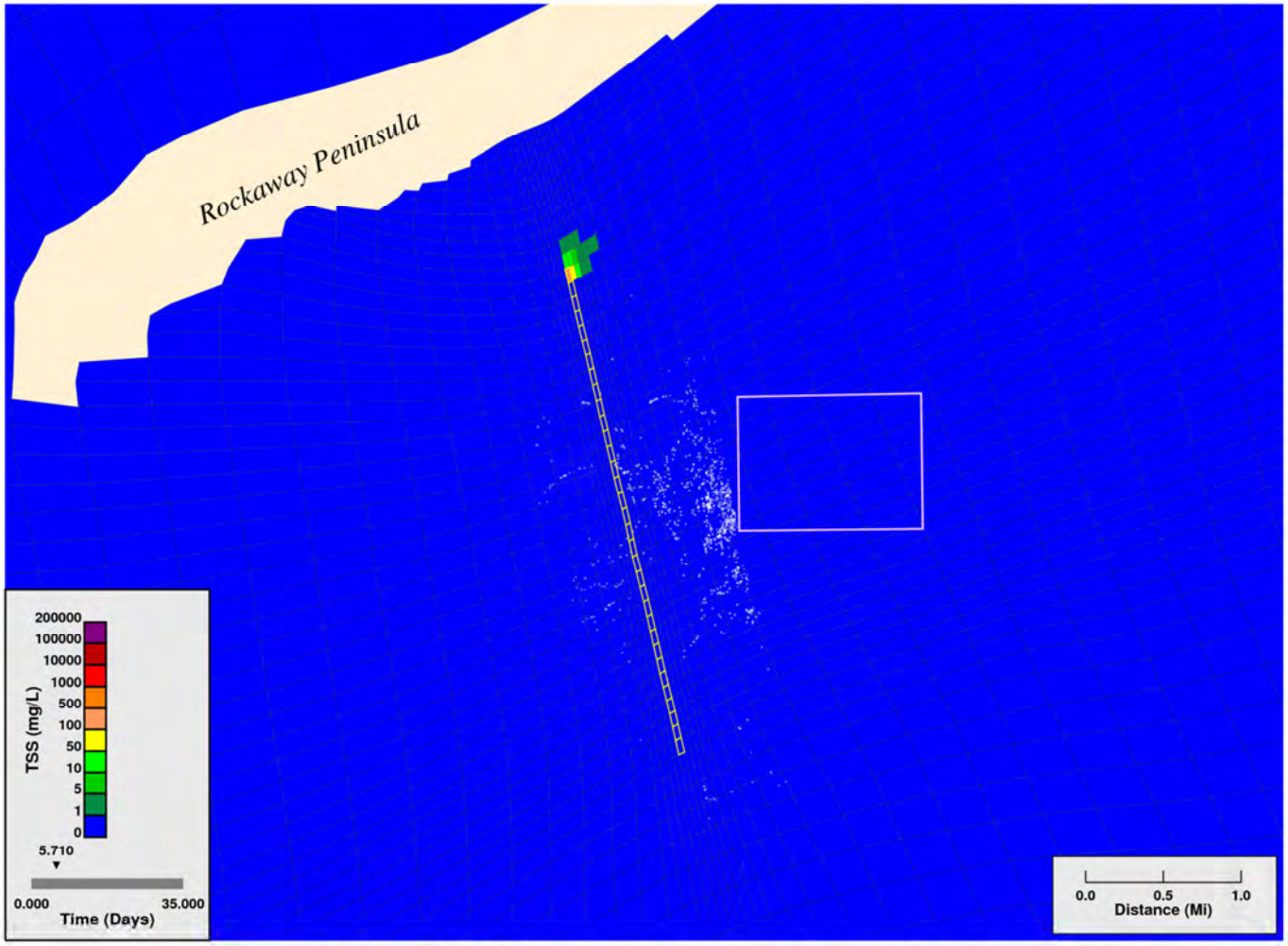


Figure A2-20. Two pass burial: simulated suspended solids near water column bottom, Pass 1, end of burial, rate = 30 m/hr.

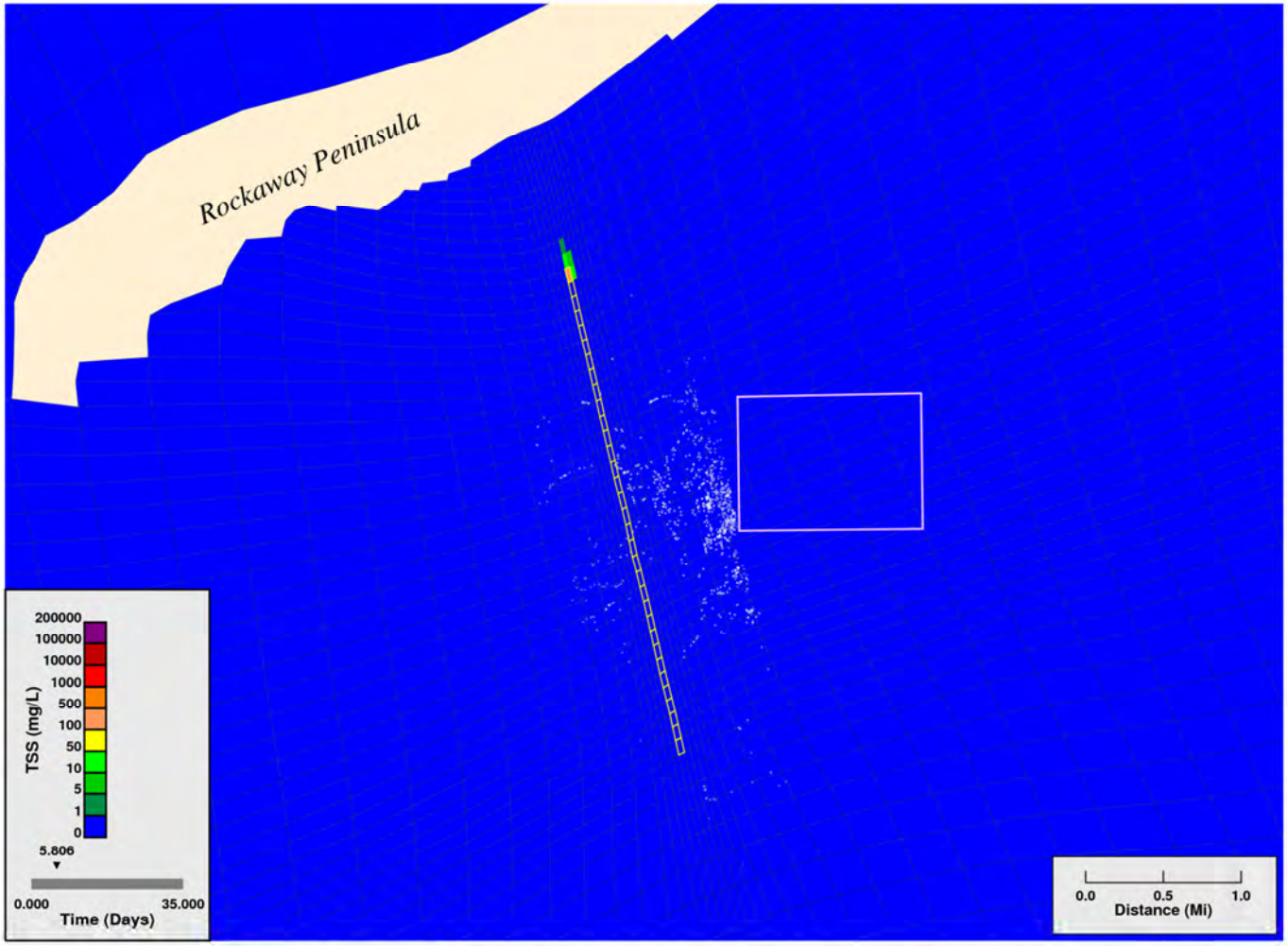


Figure A2-21. Two pass burial: simulated suspended solids near water column bottom, Pass 2, start of burial, rate = 30 m/hr.

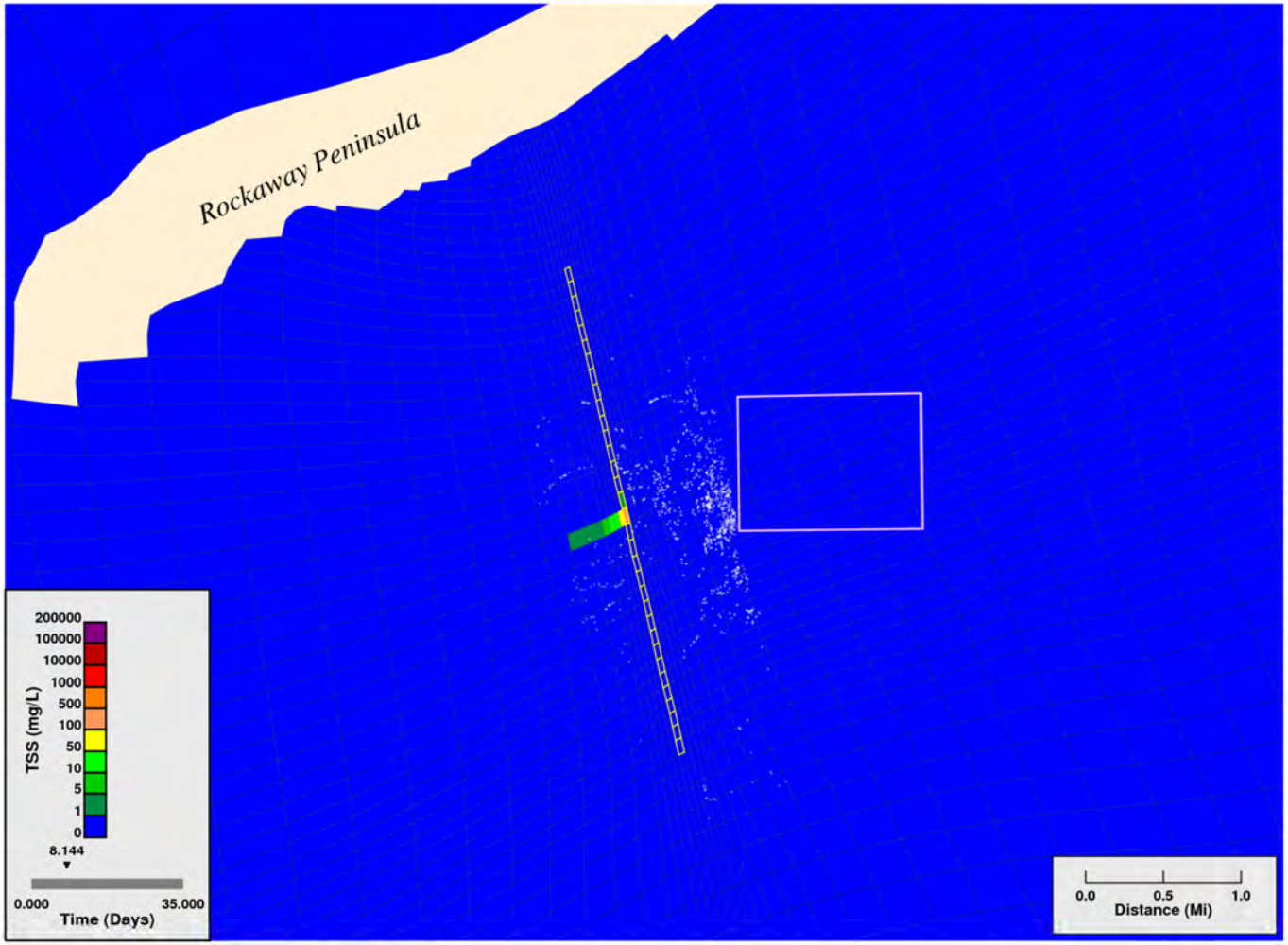


Figure A2-22. Two pass burial: simulated suspended solids near water column bottom, Pass 2, 50% complete, rate = 30 m/hr.

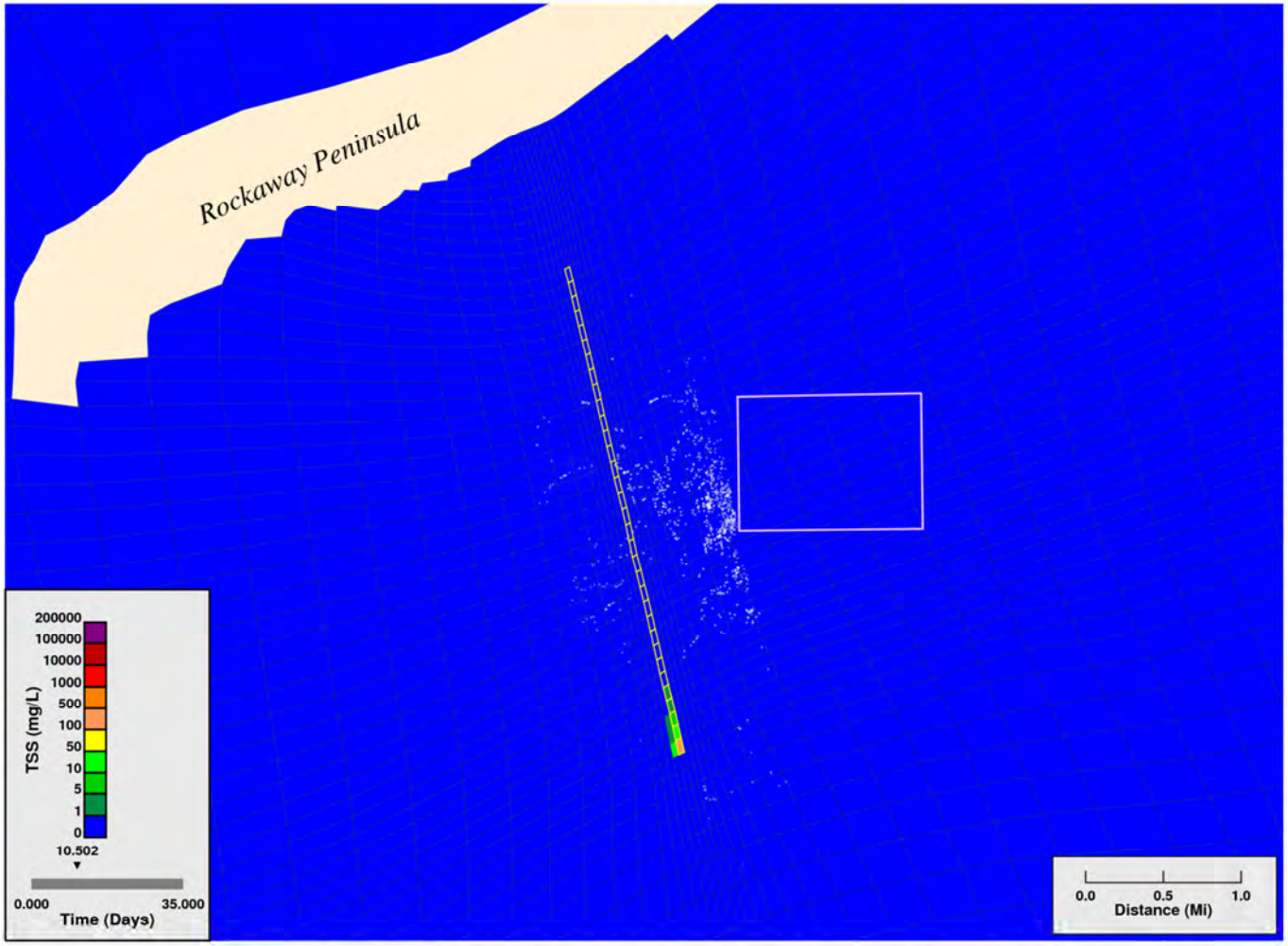


Figure A2-23. Two pass burial: simulated suspended solids near water column bottom, Pass 2, end of burial, rate = 30 m/hr.

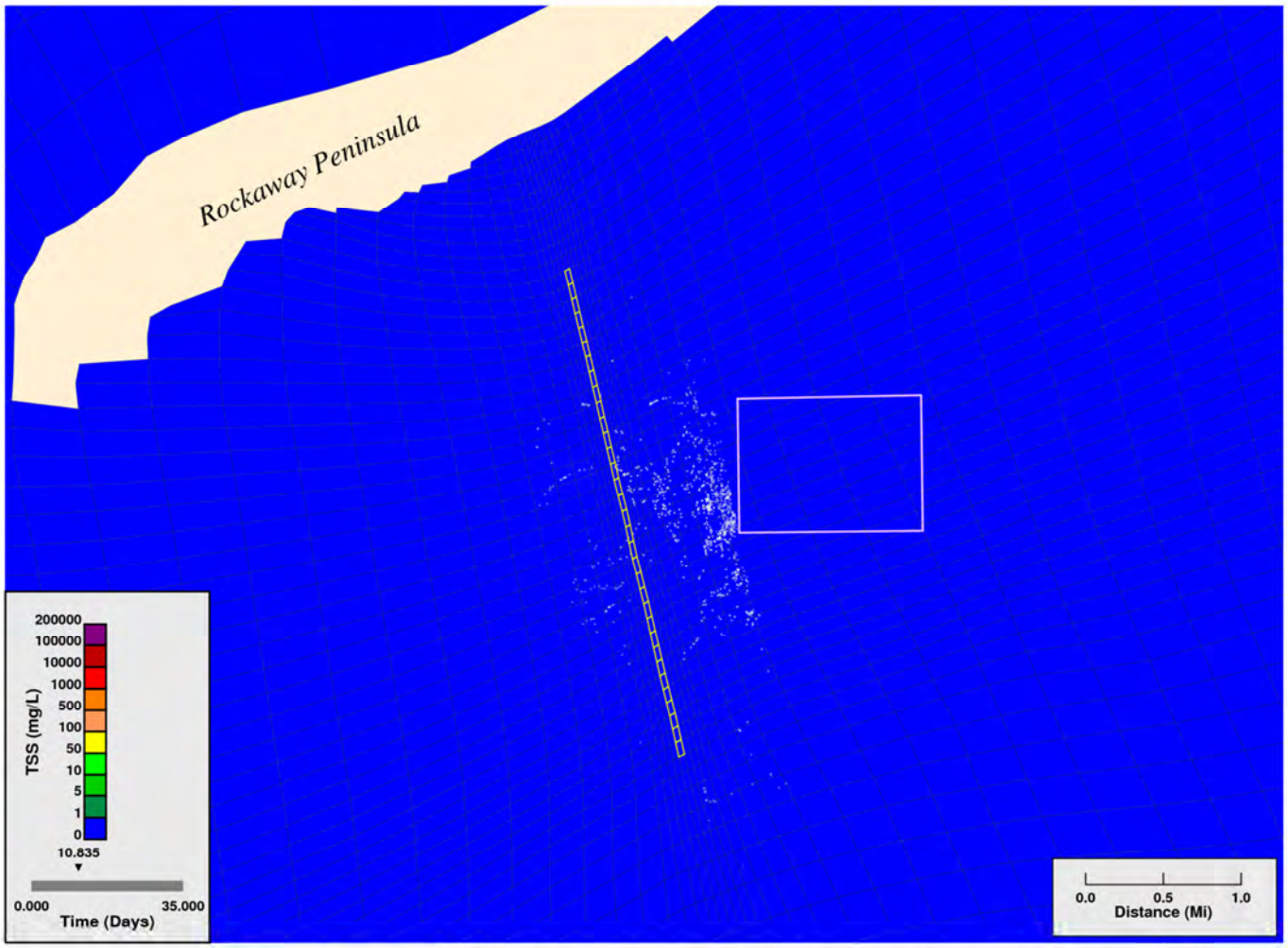


Figure A2-24. Two pass burial: simulated suspended solids near water column bottom, Pass 2, 4 hrs after end, rate = 30 m/hr.

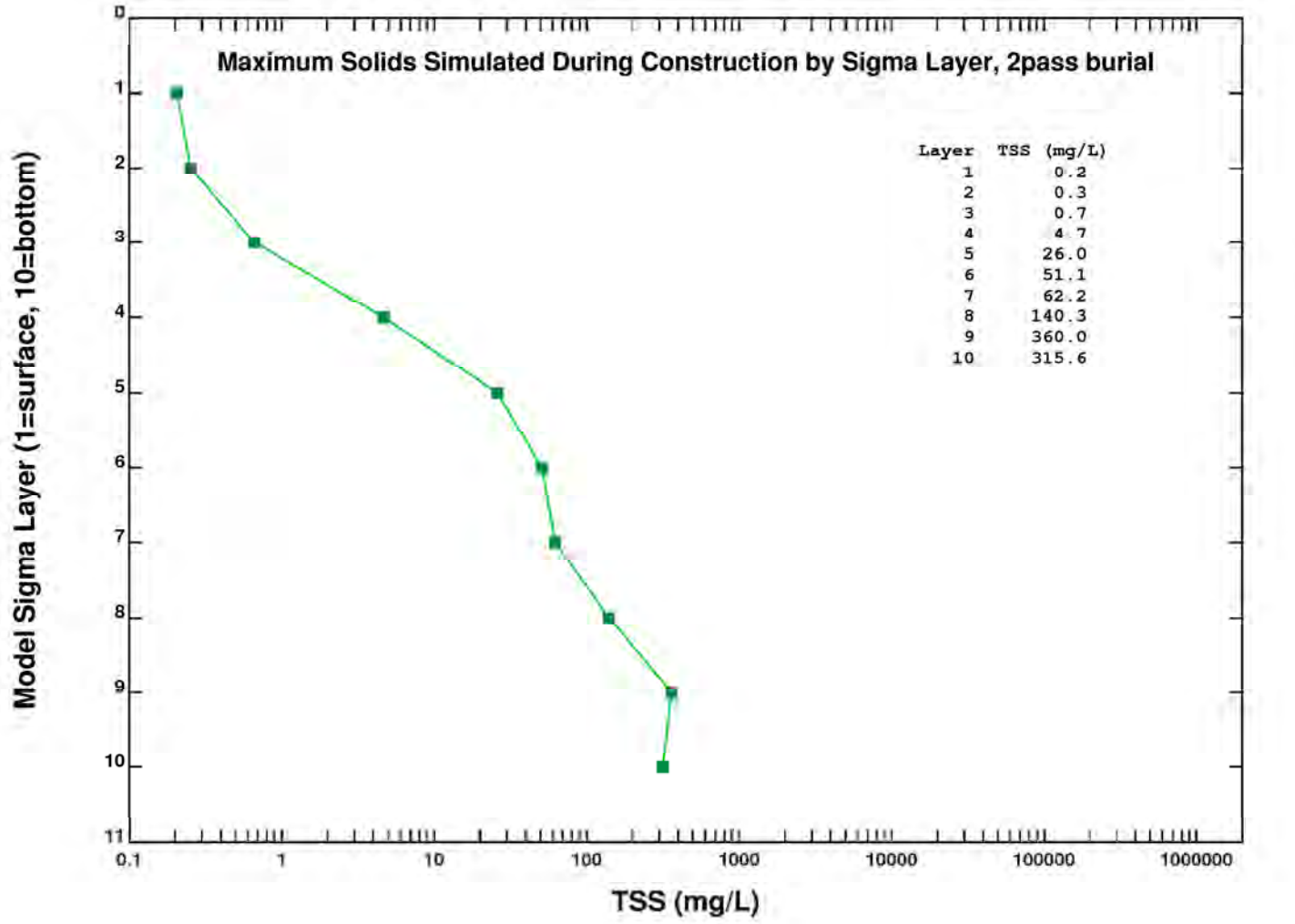
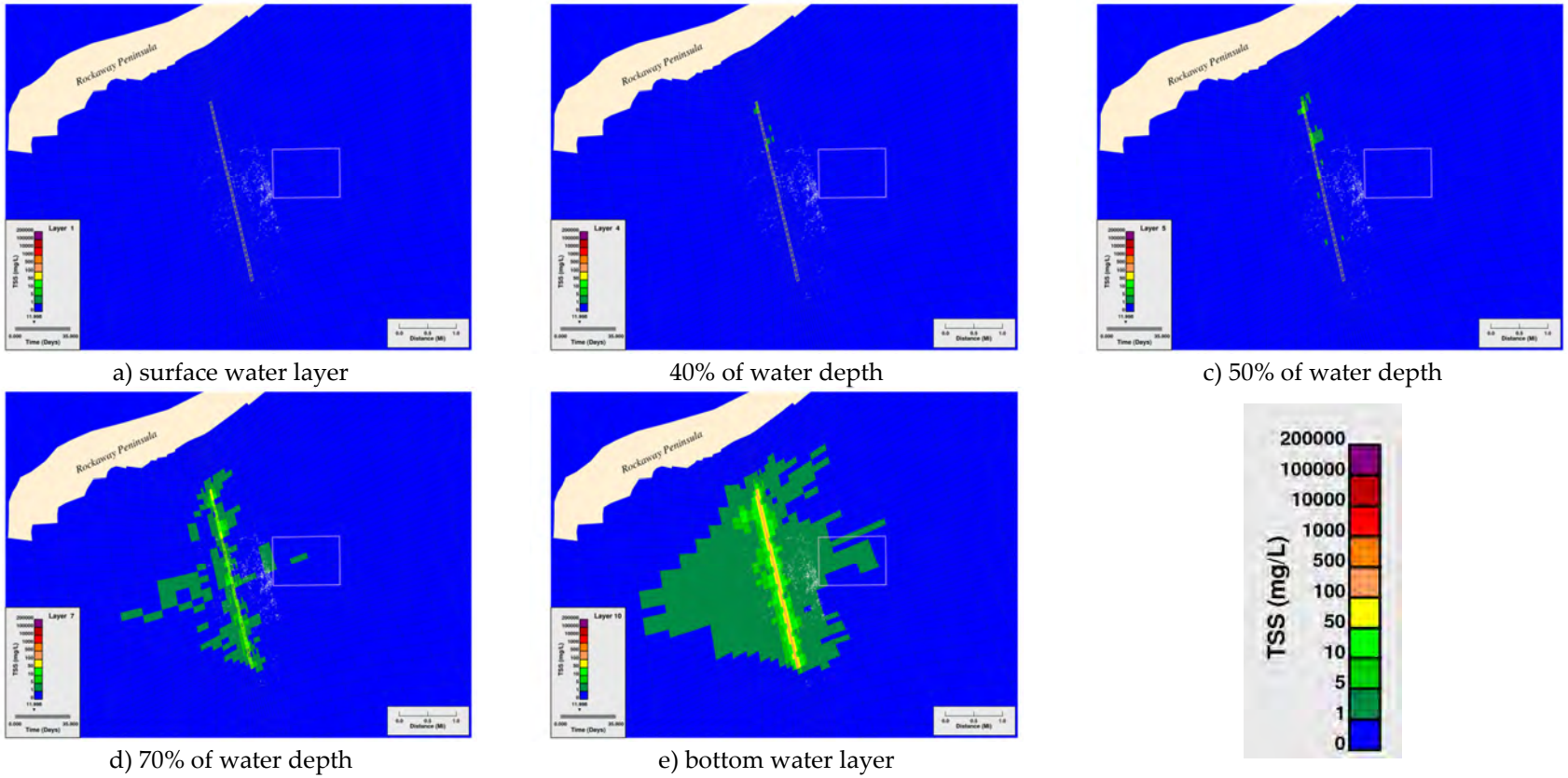


Figure A2-25. Two pass burial: maximum simulated suspended solids in any cell of each water column sigma layer.



a) surface water layer

40% of water depth

c) 50% of water depth

d) 70% of water depth

e) bottom water layer

Notes: Values indicate the maximum solids concentration that occurred in each model grid at any time during the simulation (all burial passes). It should be noted the concentrations are elevated near the point of construction and rapidly decrease over time as a consequence of the relatively high settling velocities of sediment grains. Plumes clear the water column within 4 hours following the end of each burial pass.

Figure A2-26. Two pass burial: maximum simulated suspended solids extent in selected water column sigma layers (all passes).

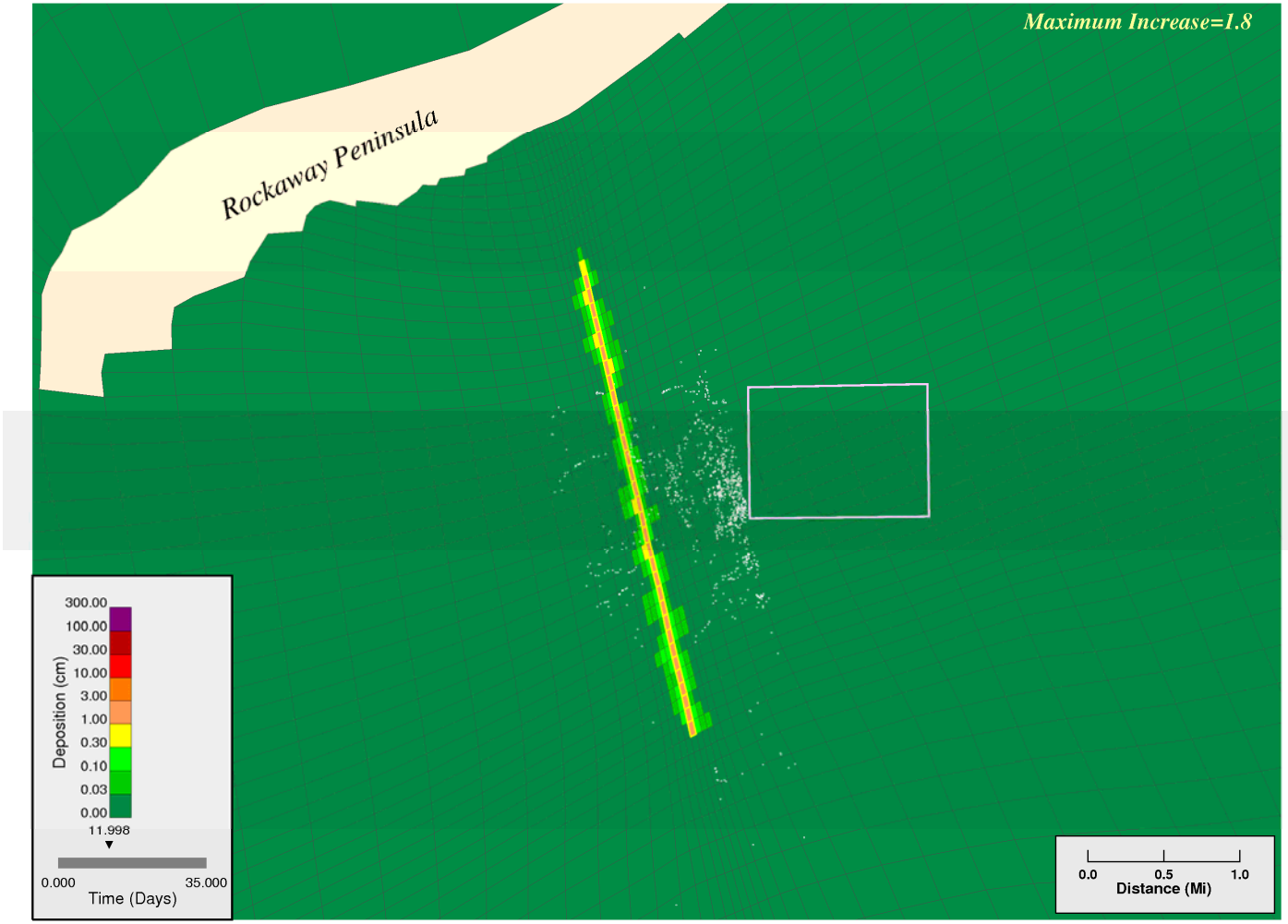


Figure A2-27. Two pass burial: simulated thickness of deposited solids on bed surface following burial (all passes).

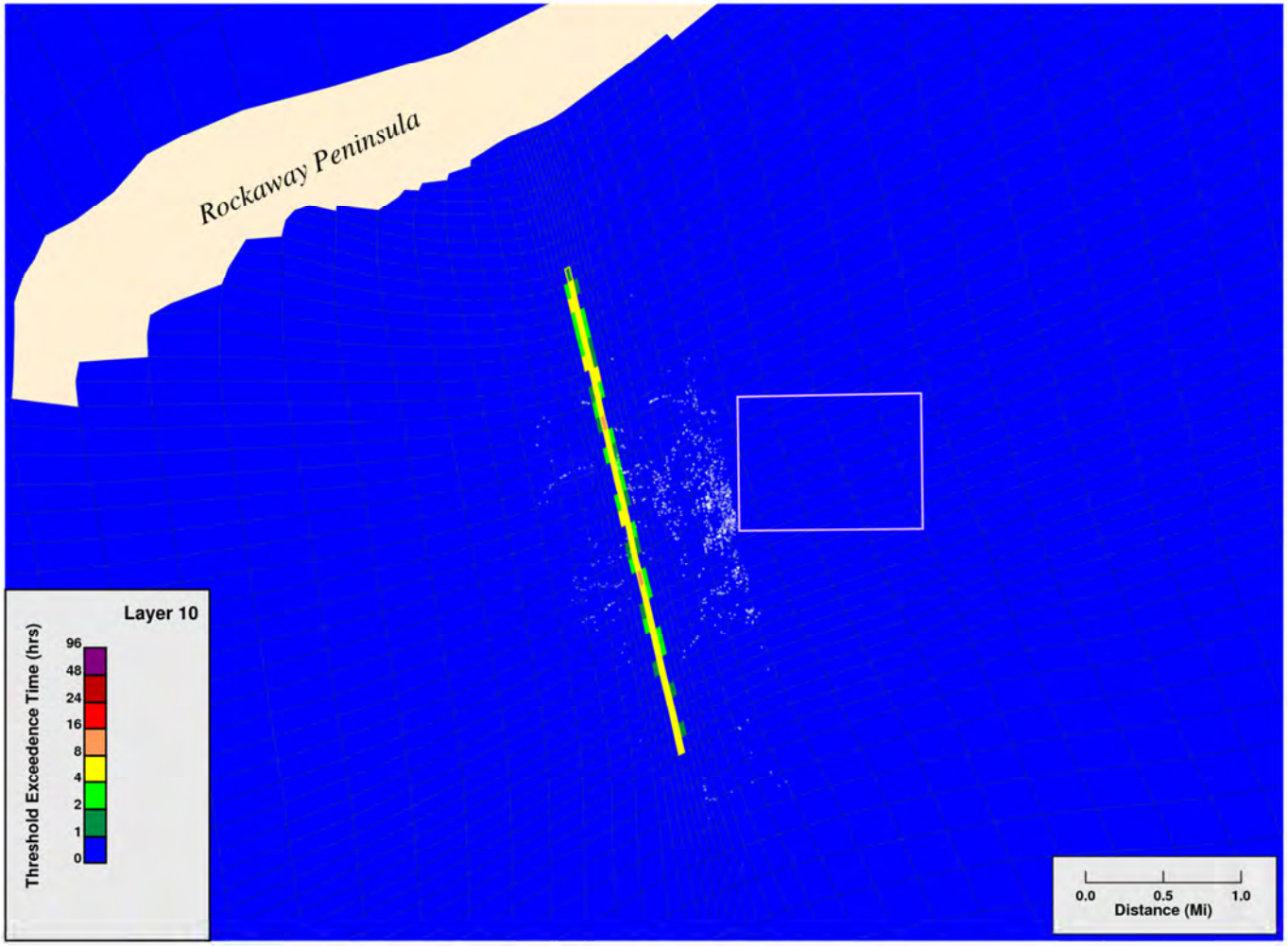


Figure A2-28. Two pass burial: cumulative time that simulated suspended solids concentrations near water column bottom exceed a threshold of 50 mg/L.

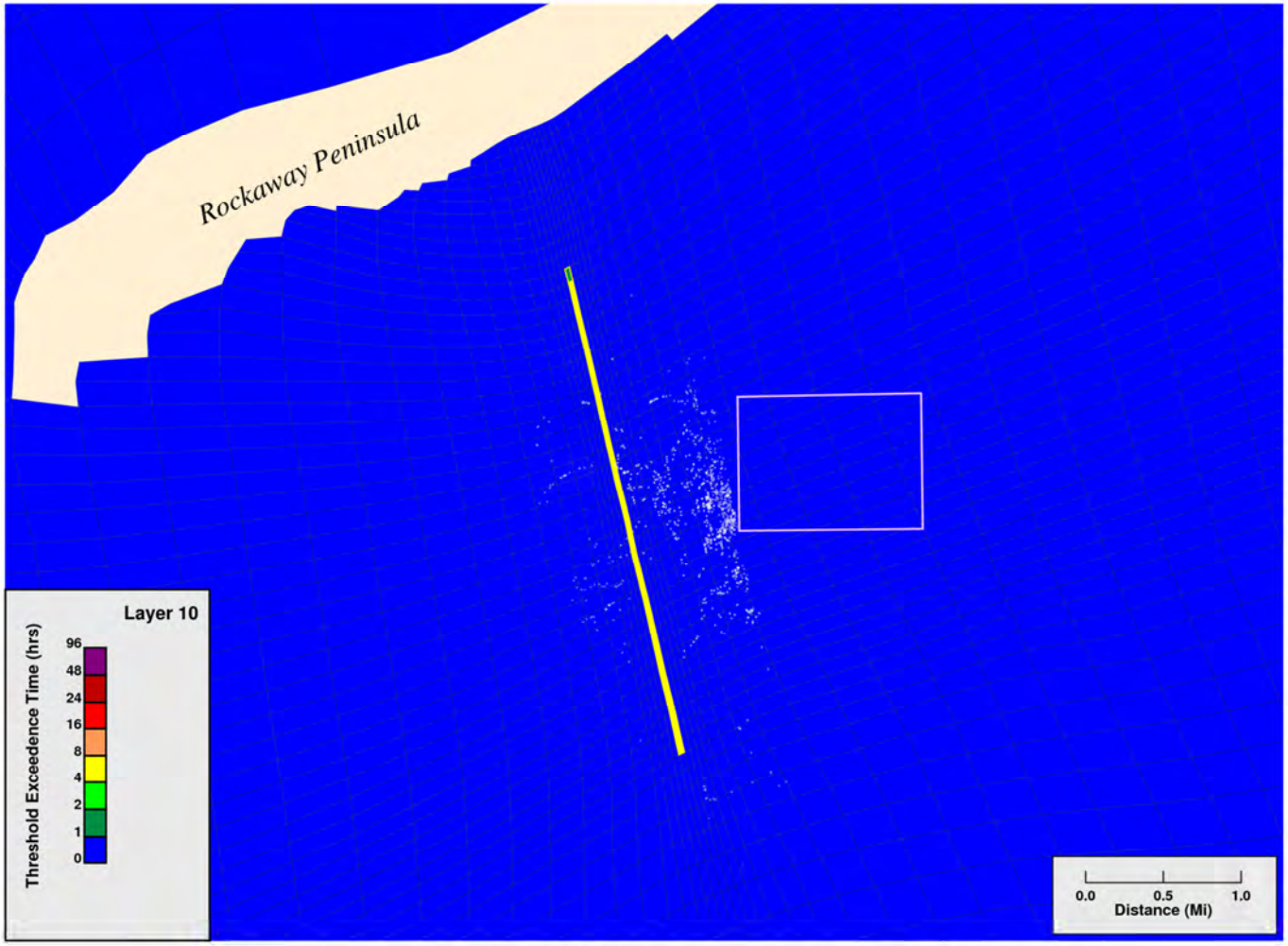


Figure A1-29. Two pass burial: cumulative time that simulated suspended solids concentrations near water column bottom exceed a threshold of 100 mg/L.

Attachment 4

Rockaway Delivery Lateral

Offshore Safety Measures

A 2.5 mile long by 0.5 mile wide safety zone has been designated for the construction of the Rockaway Delivery Lateral to allow for project vessels to complete their work while ensuring for the safe navigation for other vessels in the area. The safety zone will serve to protect the public by discouraging non-project vessels from entering a live construction area with unfamiliar risks such as multiple anchor lines, operating equipment and overhead cranes. The workspace begins 0.5 mile from shore and extends 1,000 feet beyond the existing pipeline approximately three miles from the Rockaway shoreline. The workspace would be marked by a network of 14 buoys placed along the perimeter of the workspace at a spacing of 0.5 miles. Each buoy would be a 24x60 inch general purpose can buoy with a 1 mile clear flashing solar light, or similar. Figure 1 provides a schematic drawing of the safety zone and Figure 2 provides the latitude and longitude for the buoys that will be deployed. This information will be provided in the United States Coast Guard (USCG) Notice to Mariners that will be submitted to USCG two-weeks prior to project construction.

Non-project vessels approaching the workspace perimeter would be met by project vessels tasked with intercepting these vessels, informing them of the work taking place, dissuading them from entering the workspace and guiding them to alternate safe routes around the area. Non-project vessels seeking to move along the coast (east/west direction) would be directed safely through the half-mile channel separating Rockaway beach and the safety zone. Non-project vessels traveling seaward of the safety zone would be directed safely around the workspace three miles seaward of the shoreline.

The project would employ a full time (24 hrs) picket boat to dissuade non-project vessels from entering the area. In addition, three project tug boats would also be available to assist the picket boat during periods of high traffic. All four vessels would share the responsibility of maintaining the buoys at their intended locations.

Within the safety zone, buoys may be positioned to temporarily mark features for the construction crews. Examples include buoys marking the lay barge anchor locations or buoys marking pipelines temporarily resting on the seafloor.

At night, the lighted perimeter buoys would clearly delineate the project safety zone to any non-project vessels that may be in the area. Additionally, each project vessel would have its own lighting to support safe construction activity for the crews onboard.

Figure 1 – Safety Zone

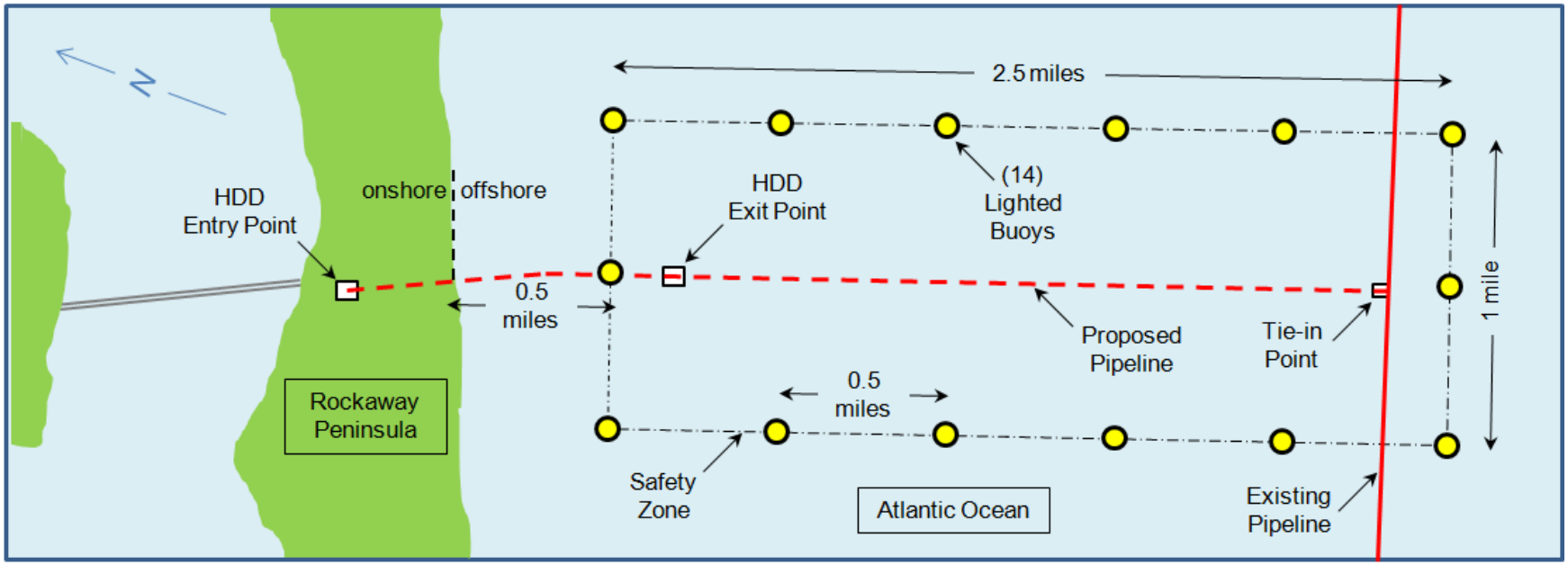


Figure 2 – Safety Zone – Lighted Buoy Coordinates

POINT DATA				
POINTS	X (EASTING)	Y (NORTHING)	LAT.	LON.
1	1021304.8128	142613.4688	N40° 33' 28.94"	W73° 51' 59.96"
2	1022148.1034	140061.9849	N40° 33' 03.71"	W73° 51' 49.08"
3	1022991.3940	137510.5009	N40° 32' 38.49"	W73° 51' 38.21"
4	1023834.6845	134959.0169	N40° 32' 13.26"	W73° 51' 27.34"
5	1024677.9751	132407.5329	N40° 31' 48.04"	W73° 51' 16.48"
6	1025521.2657	129856.0489	N40° 31' 22.81"	W73° 51' 05.61"
7	1023147.5544	129071.5140	N40° 31' 15.10"	W73° 51' 36.36"
8	1020773.8432	128286.9791	N40° 31' 07.38"	W73° 52' 07.11"
9	1019930.5527	130838.4631	N40° 31' 32.61"	W73° 52' 17.99"
10	1019087.2621	133389.9471	N40° 31' 57.83"	W73° 52' 28.86"
11	1018243.9715	135941.4310	N40° 32' 23.05"	W73° 52' 39.73"
12	1017400.6809	138492.9150	N40° 32' 48.28"	W73° 52' 50.61"
13	1016557.3904	141044.3990	N40° 33' 13.50"	W73° 53' 01.49"
14	1018931.1016	141828.9339	N40° 33' 21.22"	W73° 52' 30.72"

Attachment 5

(due to file size – attachment is provided under separate cover)

Attachment 6

Photo Location

Existing View

FIGURE 1A

Project Visualizations
Photo Location 3: Rockaway Beach at Jacob Riis Park
Borough of Queens, NY

Simulated View - Drilling Operation

- 0.8 Miles from Proposed Exit Hole

FIGURE 1B

Project Visualizations

Photo Location 3: Rockaway Beach at Jacob Riis Park

Borough of Queens, NY

Photo Location

Existing View

FIGURE 2A

Project Visualizations
Photo Location 4: Rockaway Beach at 169th Street
Borough of Queens, NY

Simulated View - Drilling Operation and Pipe Laying Barge (near Tie-In Location)

- 0.7 Miles from Proposed Exit Pit
- 2.8 Miles from Proposed Tie-in

FIGURE 2B

Project Visualizations

Photo Location 4: Rockaway Beach at 169th Street

Borough of Queens, NY

Simulated View - Drilling Operation and Pipe Laying Barge (near Exit Pit Location)

- 0.7 Miles from Proposed Exit Pit

FIGURE 2C

Project Visualizations

Photo Location 4: Rockaway Beach at 169th Street

Borough of Queens, NY

Photo Location

Existing View

FIGURE 3A

Project Visualizations
Photo Location 8: Ft. Tilden near Silver Gull Club
Borough of Queens, NY

Simulated view - Drilling Operation

- 1.3 Miles from Proposed Exit Pit

FIGURE 3B

Project Visualizations

Photo Location 8: Ft. Tilden near Silver Gull Club

Borough of Queens, NY