



ASLBP #: 15-943-01-ESP-BD01

Docket #: 05200043

Exhibit #: PSEG004E-MA-BD01

Admitted: 03/24/2016

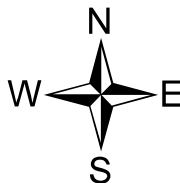
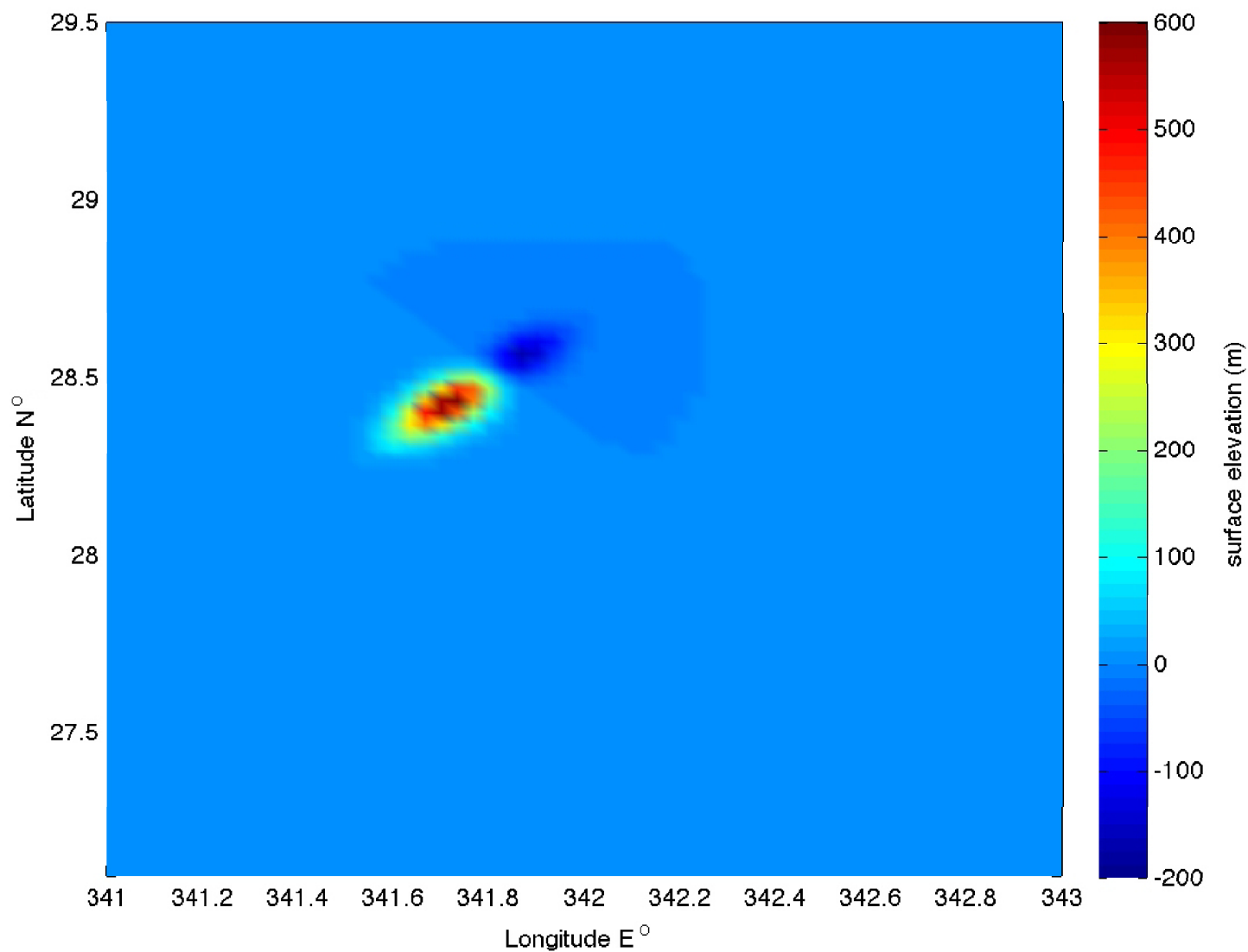
Rejected:

Other:

Identified: 03/24/2016

Withdrawn:

Stricken:

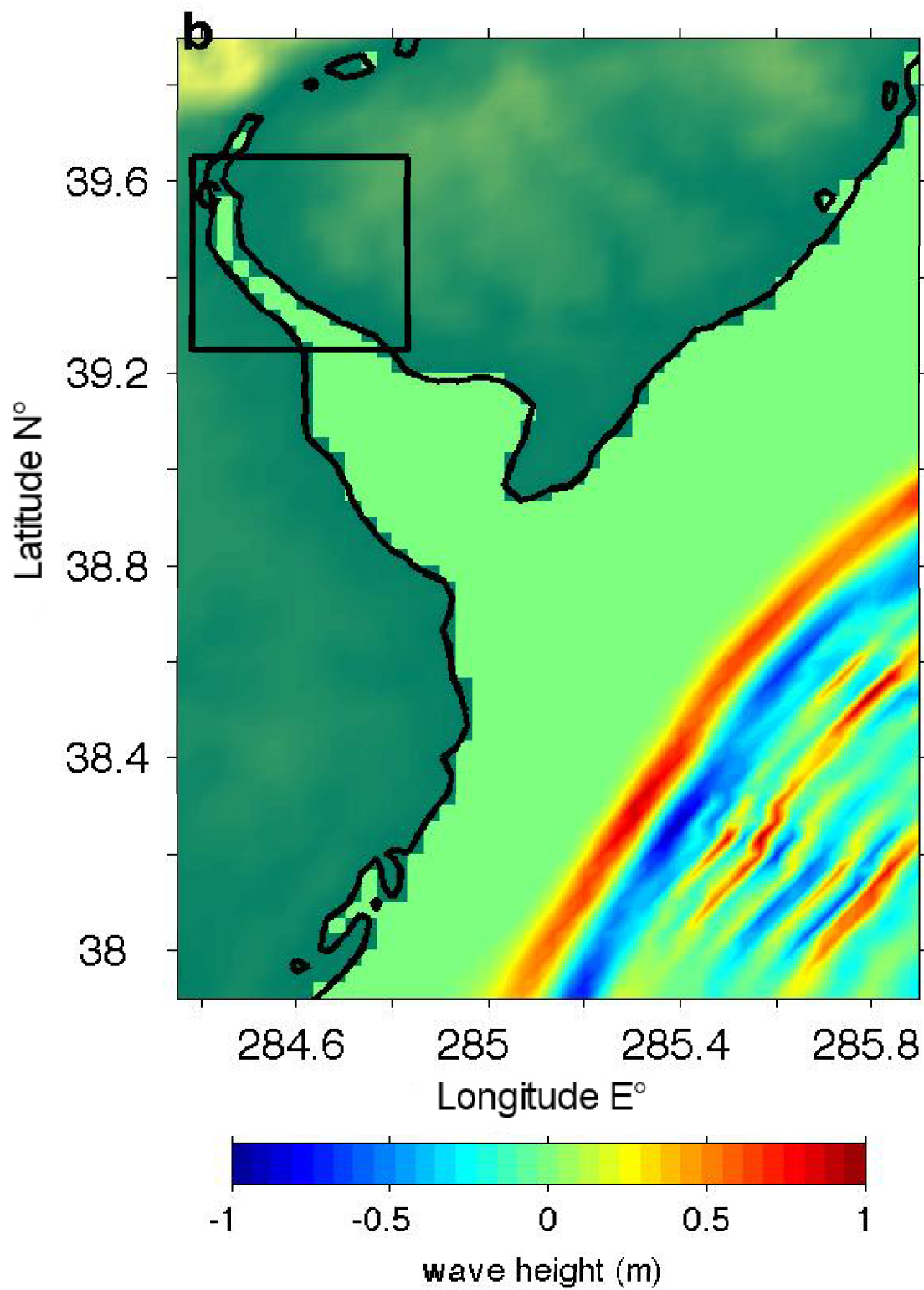


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PSEG Site ESPA
Part 2, Site Safety Analysis ReportInitial Water Surface Elevations at
Source La Palma Slide Case

FIGURE 2.4.6-16

Rev. 1

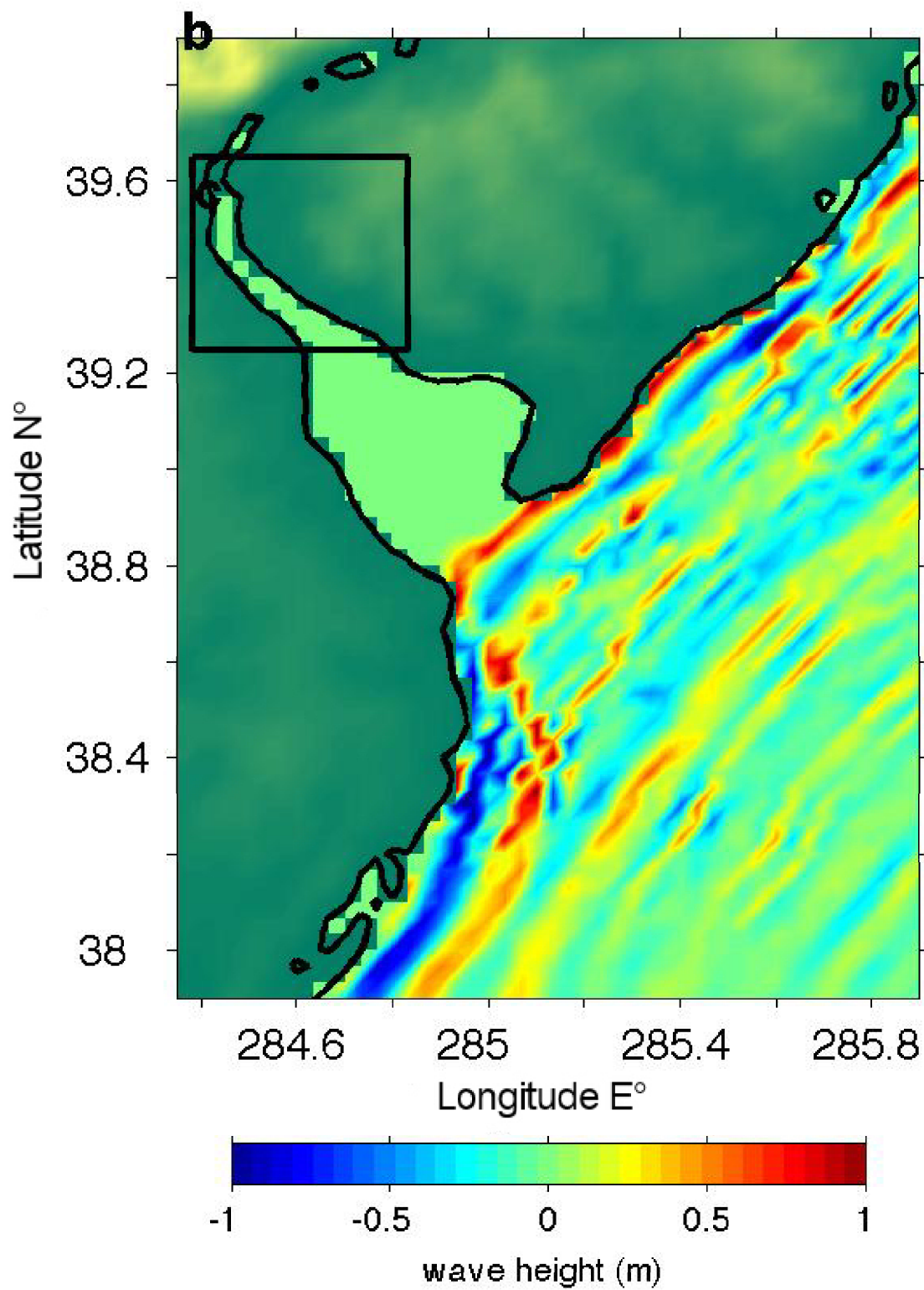


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2-D Image for La Palma Slide
at 08 hours

FIGURE 2.4.6-17

Rev 0

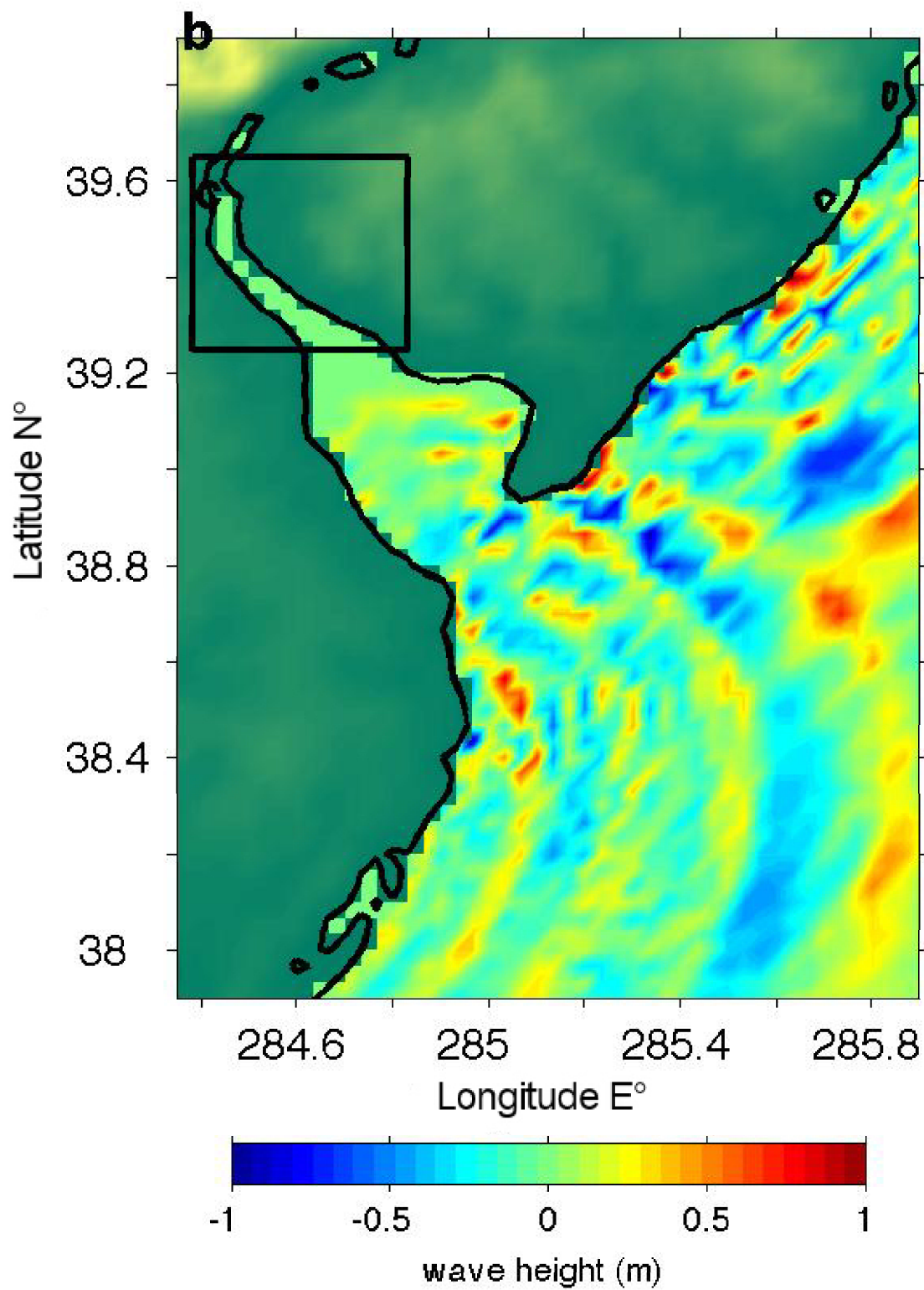


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2-D Image for La Palma Slide
at 09 hours

FIGURE 2.4.6-18

Rev 0

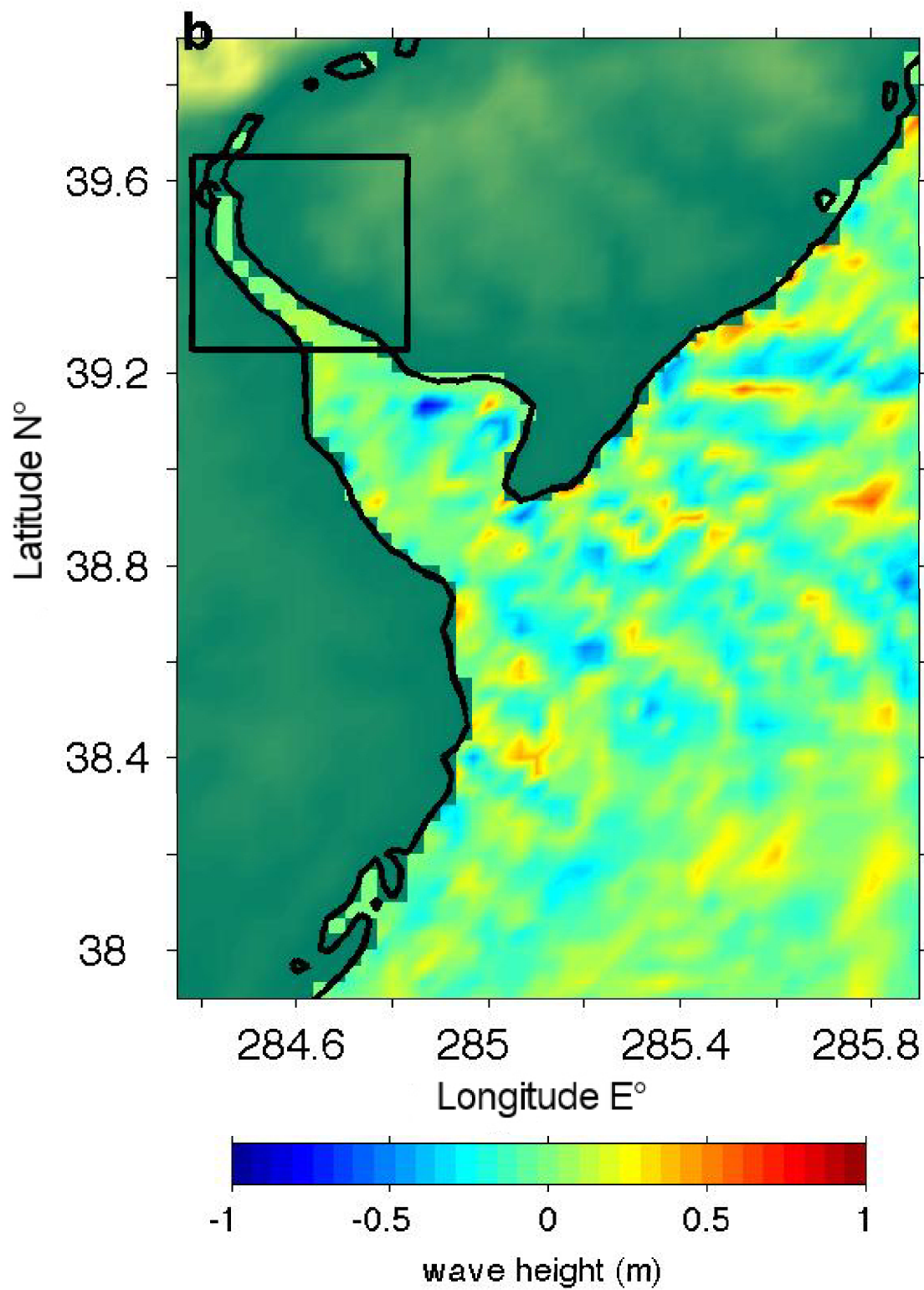


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2-D Image for La Palma Slide
at 10 hours

FIGURE 2.4.6-19

Rev 0

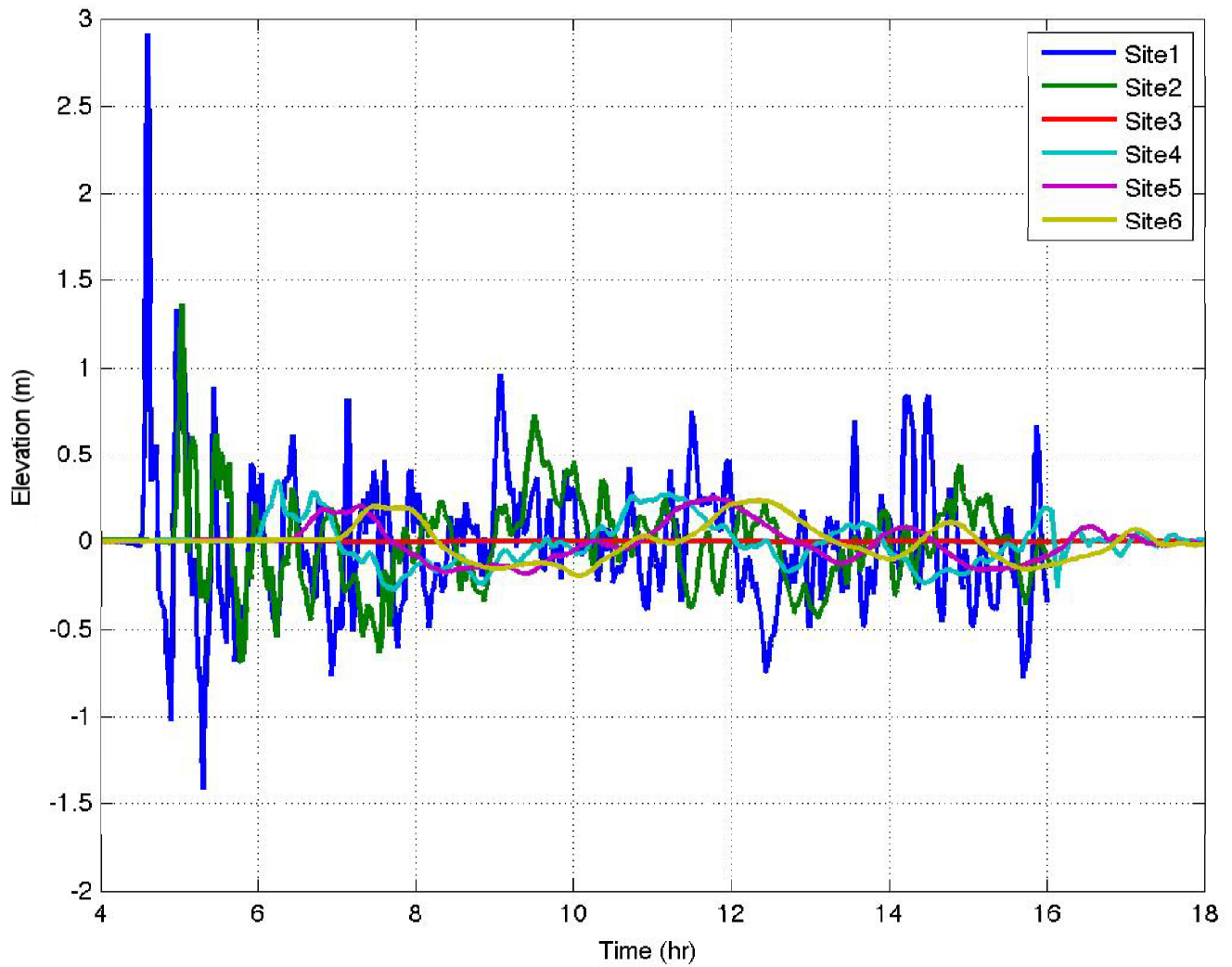


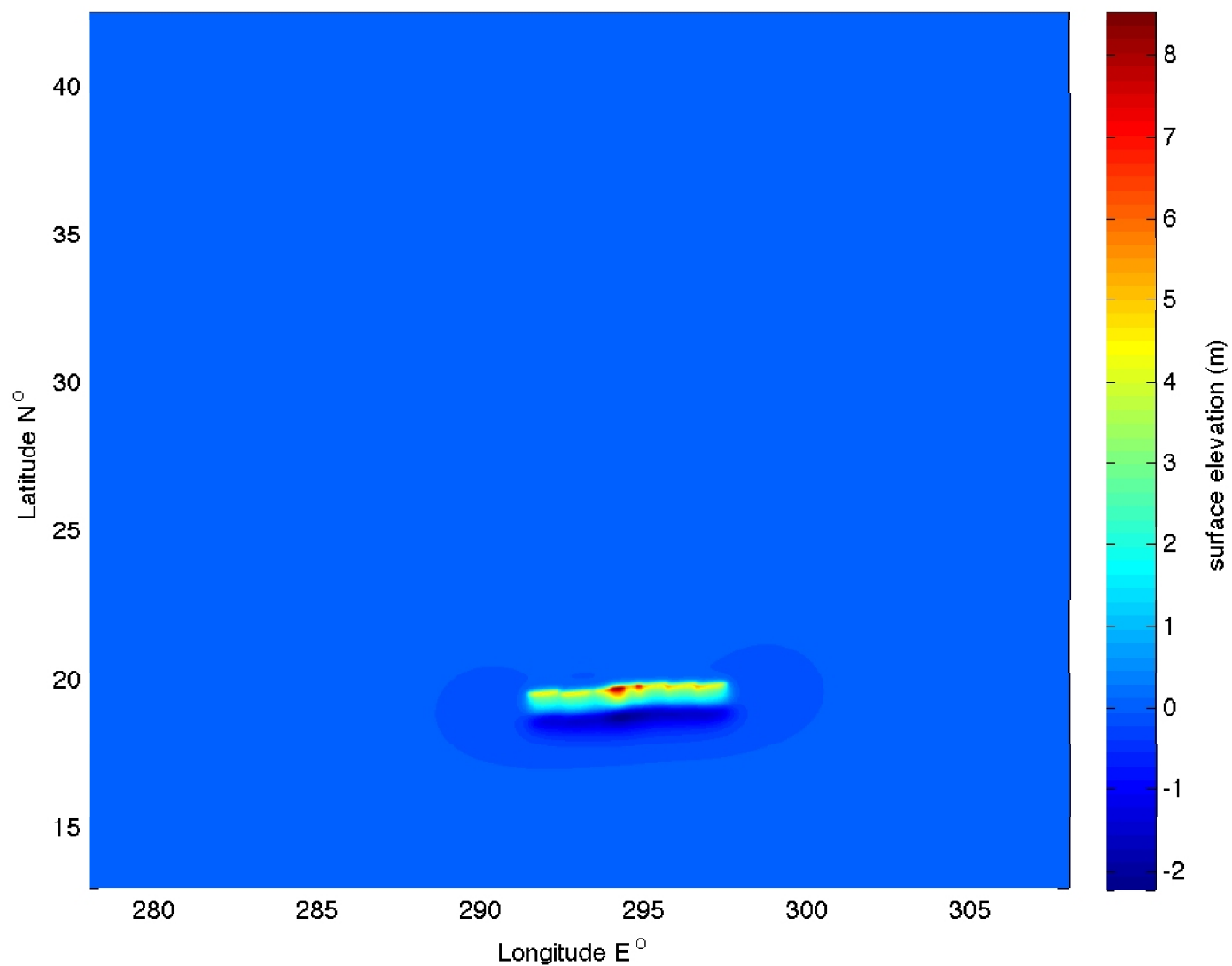
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2-D Image for La Palma Slide
at 11 hours

FIGURE 2.4.6-20

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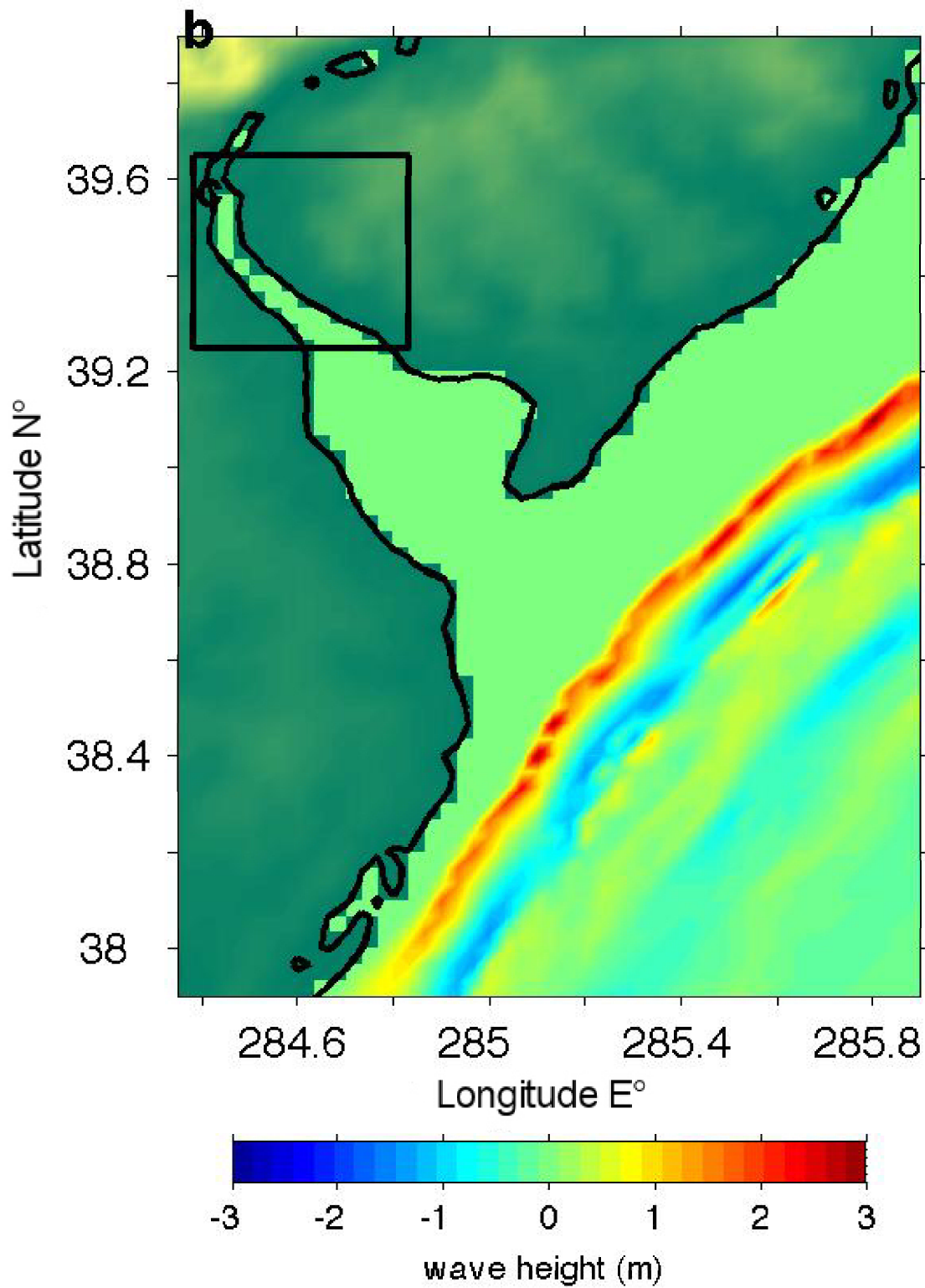
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Initial Water Surface Elevations at Source
Hispaniola Trench Earthquake Case

FIGURE 2.4.6-22

Rev. 1

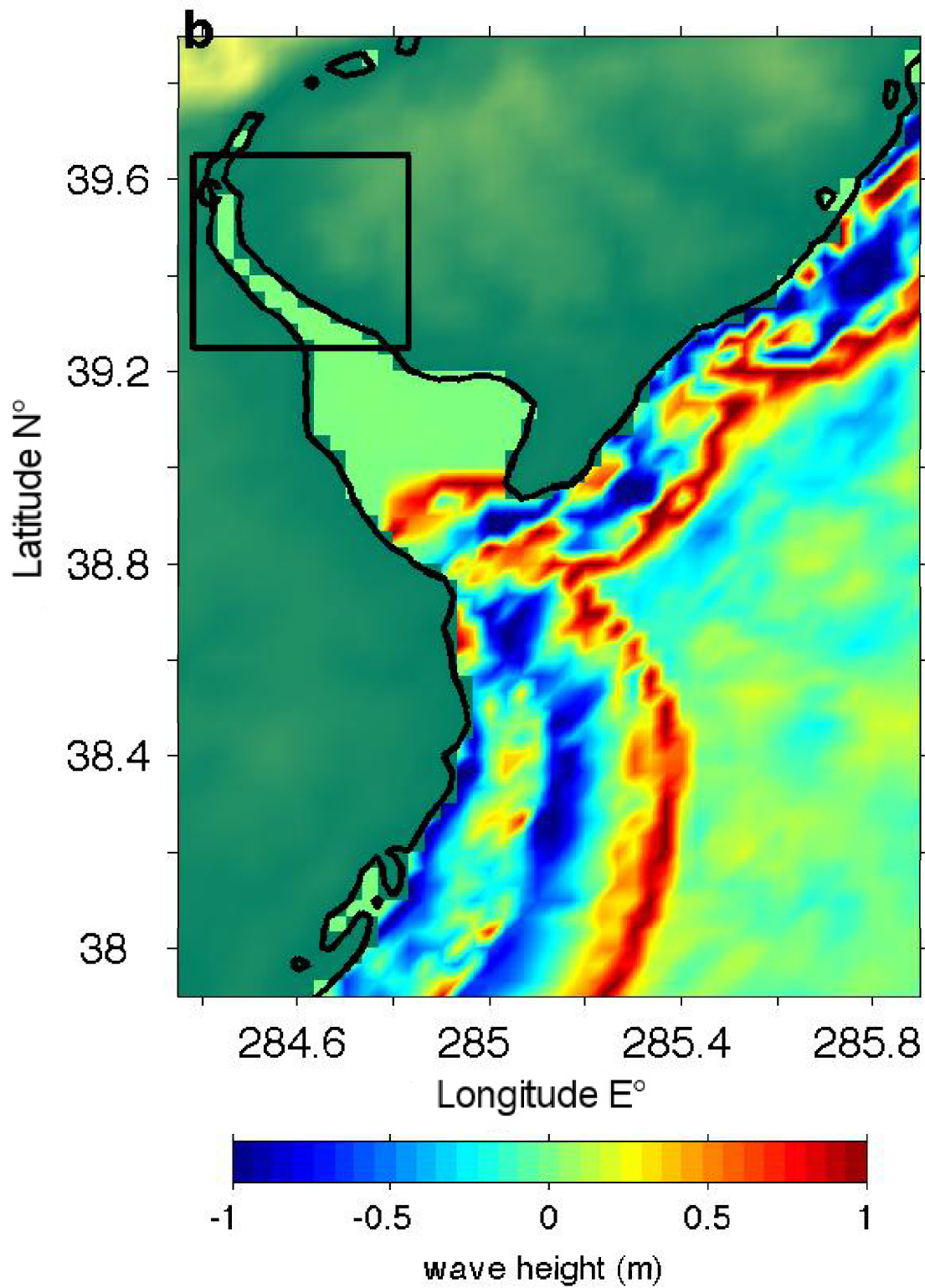


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2-D Image for Hispaniola Trench
Earthquake at 04 hours

FIGURE 2.4.6-23

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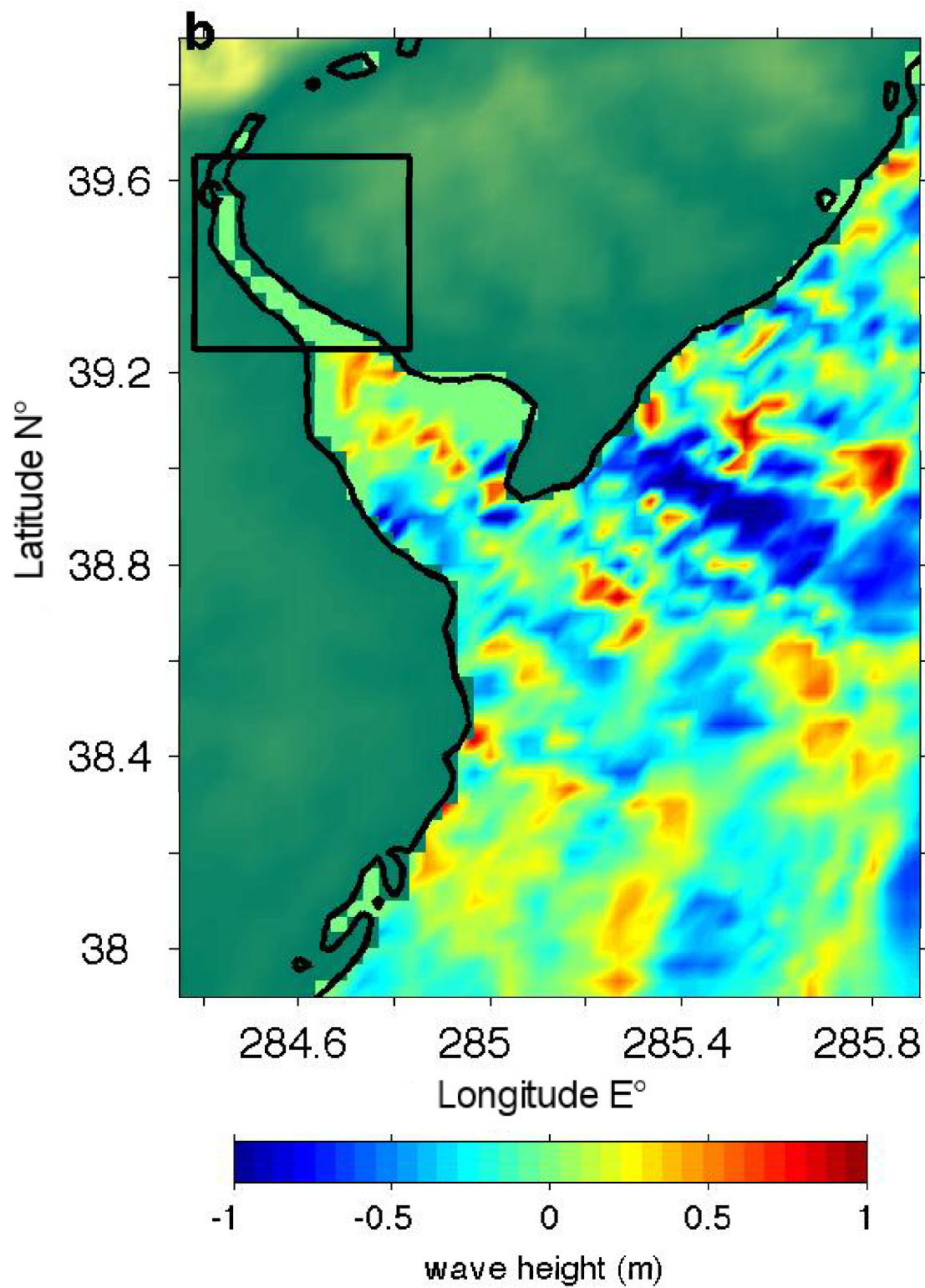


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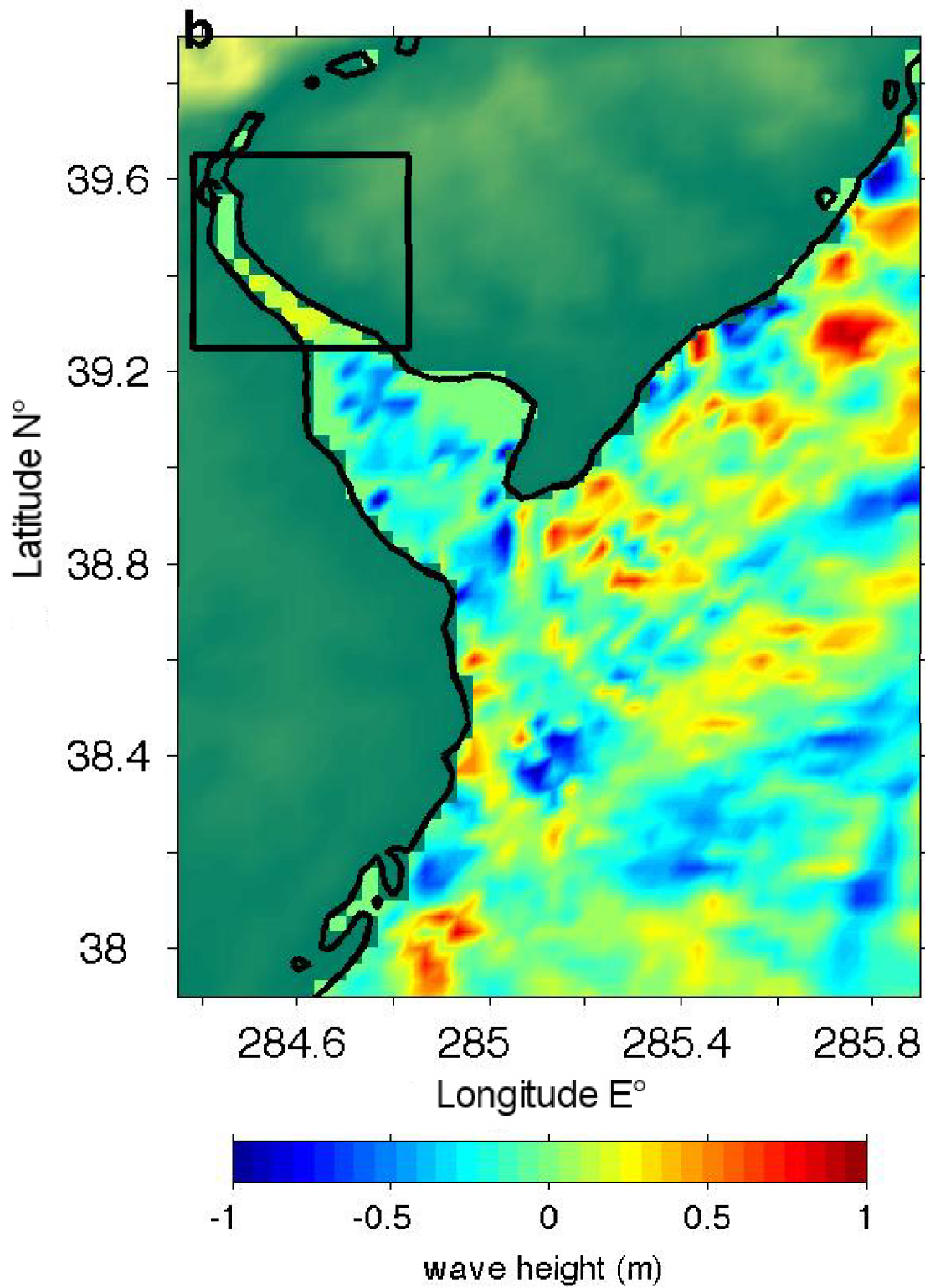
2-D Image for Hispaniola Trench
Earthquake at 05 hours

FIGURE 2.4.6-24

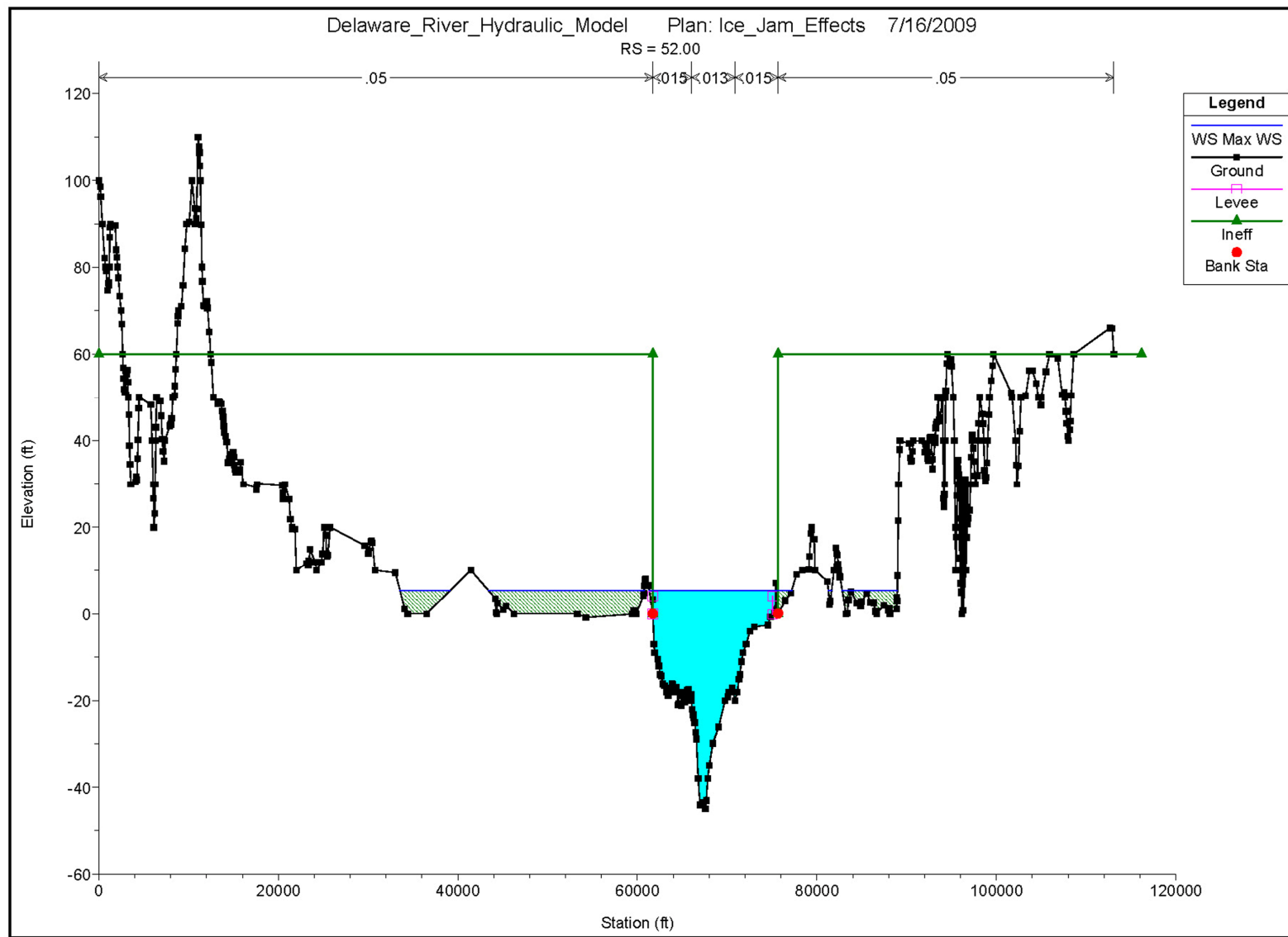
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2-D Image for Hispaniola Trench
Earthquake at 06 hours
FIGURE 2.4.6-25 Rev 0



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2-D Image for Hispaniola Trench
Earthquake at 07 hours
FIGURE 2.4.6-26 Rev 0



Note:

RS = River Station
WS = Water Surface Elevation
Max = Maximum
Ineff = Ineffective flow area
RM = River mile

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Cross Section of Delaware River at RM 52
(PSEG Site)

FIGURE 2.4.7.-1

Rev. 0



Legend

★ PSEG Site

County Boundary

State Boundary

Delaware River Basin

10 Foot Contour (NAVD 1988)



0 5 10
Kilometers

0 5 10
Miles

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Topography Near
the PSEG Site

Figure 2.4.9-1

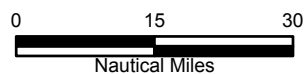
Rev. 0



Legend

- ★ PSEG Site
- USGS Discharge Gage
- NOAA Tidal Gage
- RM: River Mile

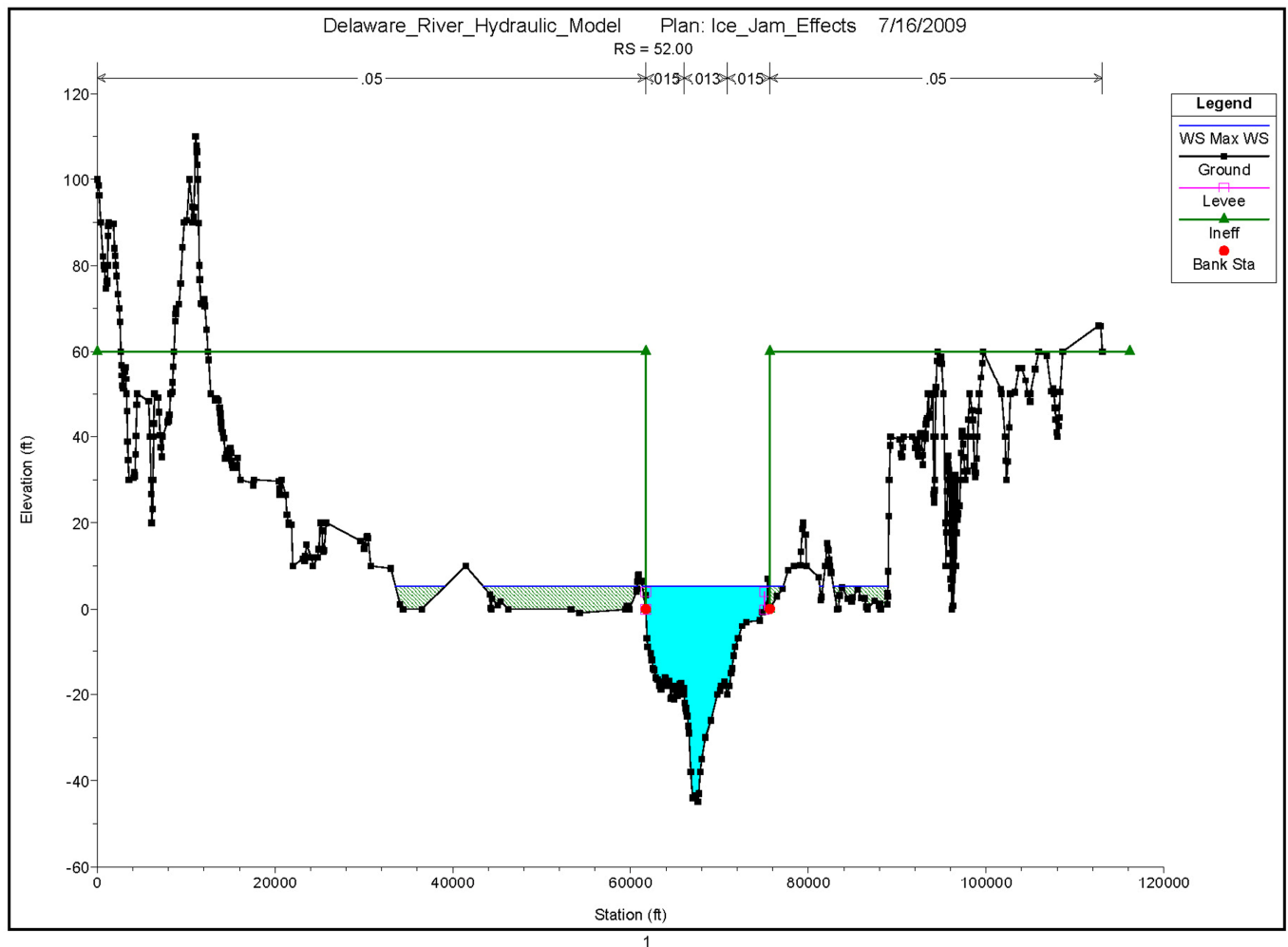
Reference 2.4.11-10



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New Plant Location
FIGURE 2.4.11-1

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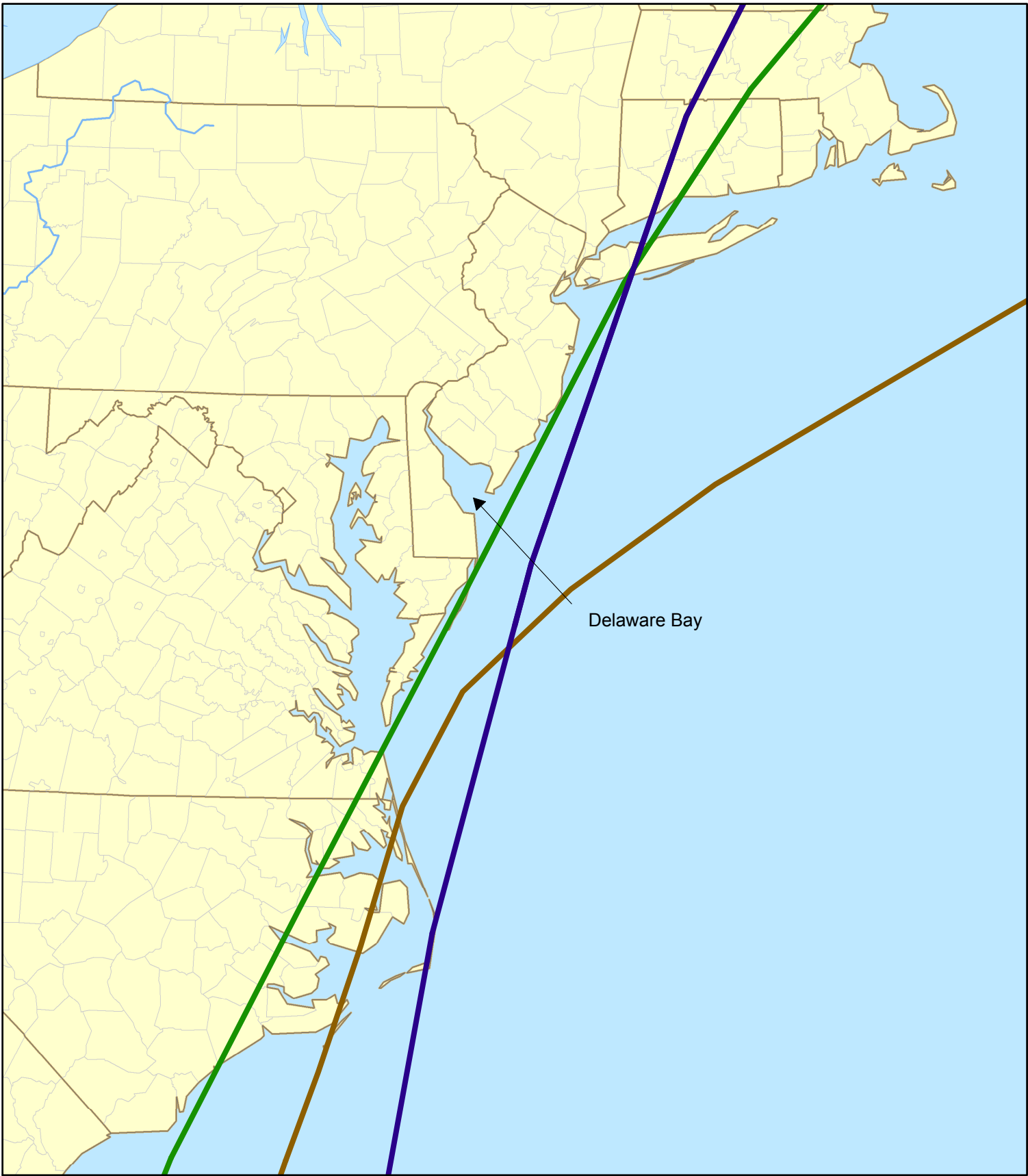
Note: RS = River Station
WS = Water Surface Elevation
Max = Maximum
Ineff = Ineffective flow area
Sta = Station

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River Mile 52 Cross Section

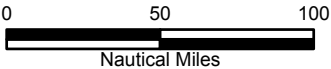
Figure 2.4.11-2

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Legend

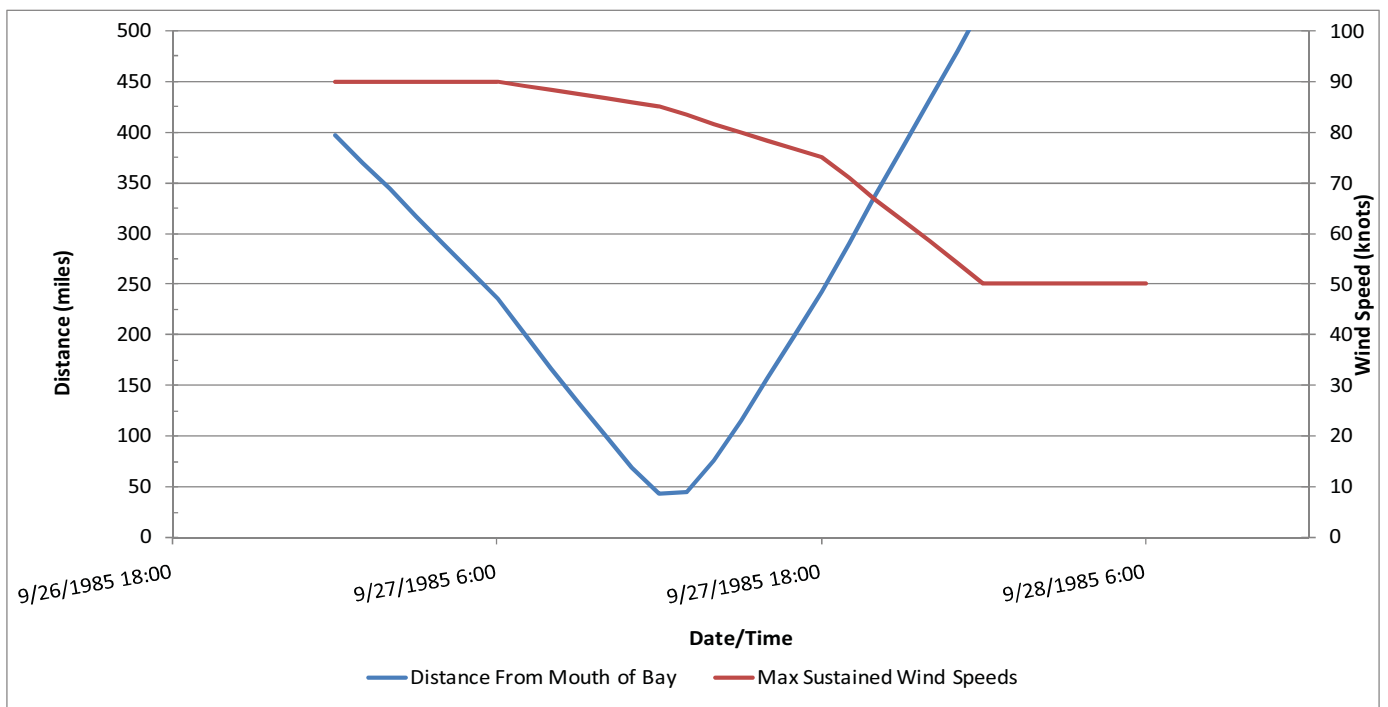
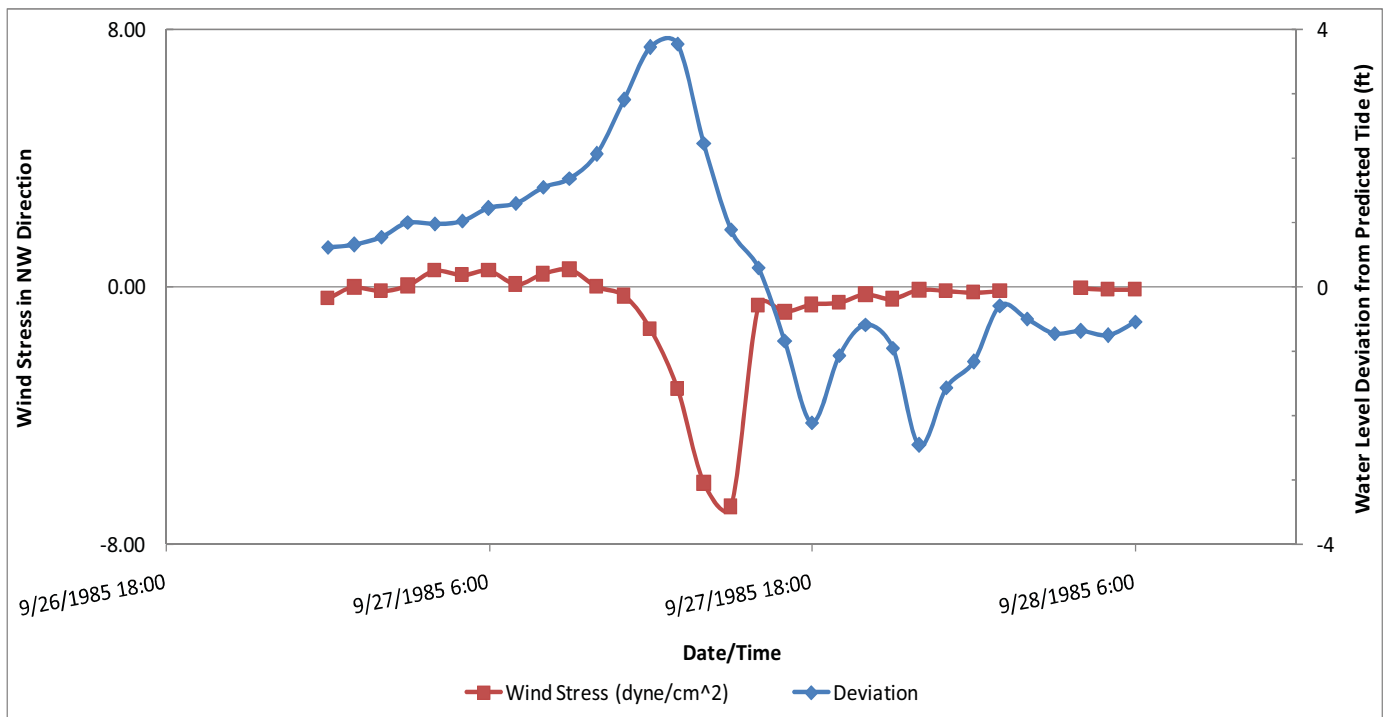
- 1985 Gloria
- 1986 Charley
- 1999 Floyd



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Historical Hurricane
Tracks
FIGURE 2.4.11-3

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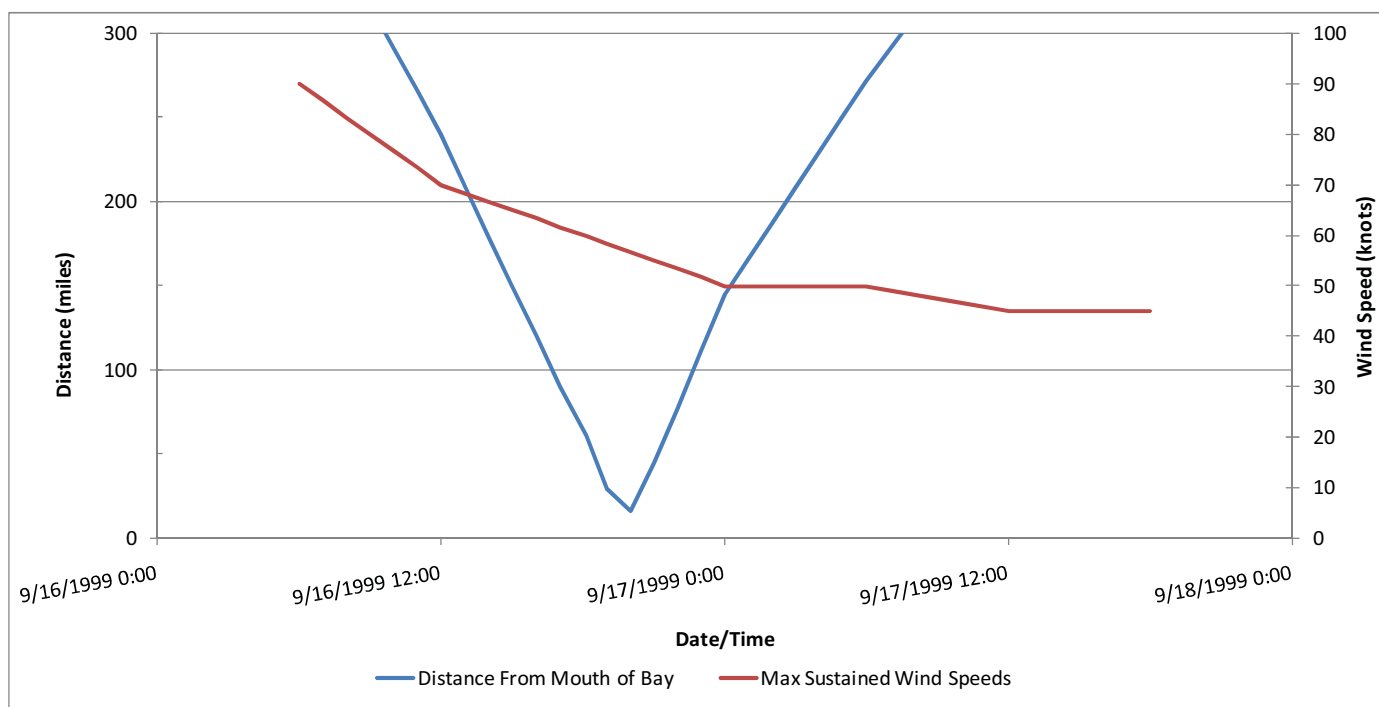
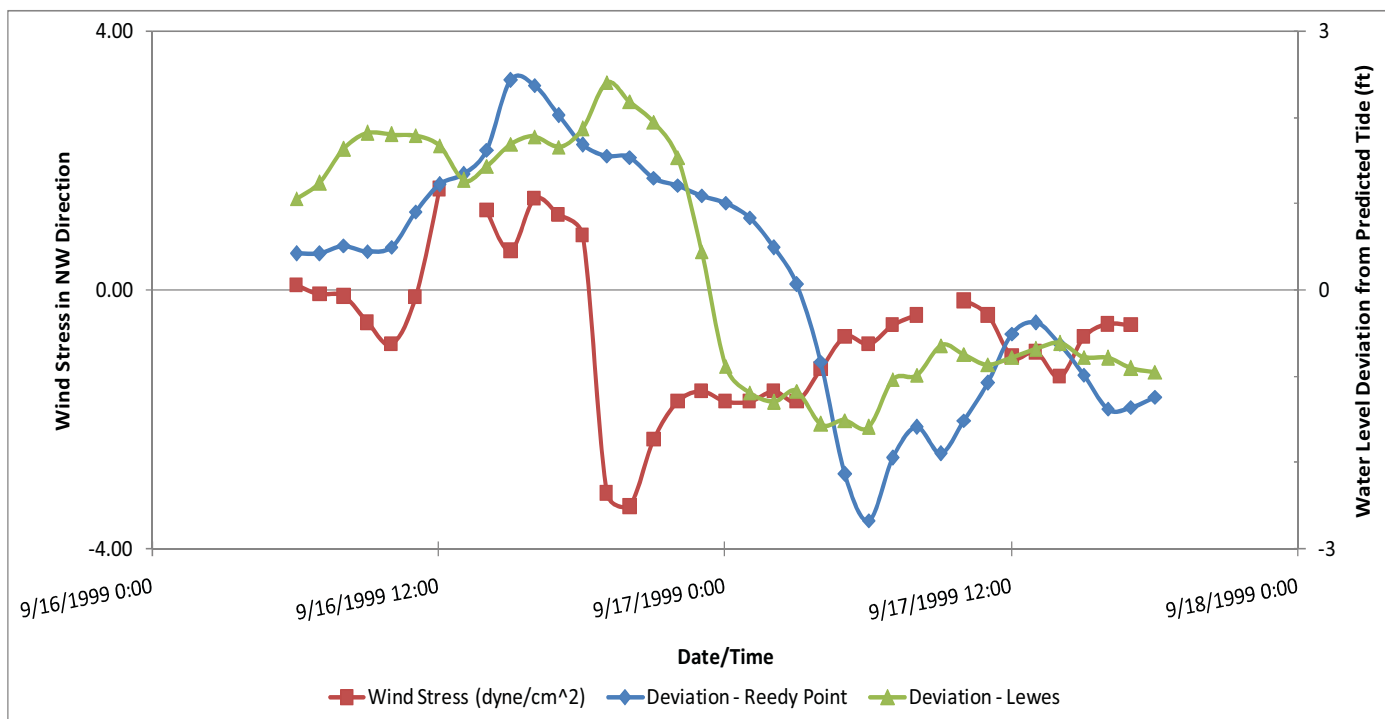
References 2.4.11-7, 2.4.11-10

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Negative Surge Caused by
Hurricane Gloria

FIGURE 2.4.11-4

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References 2.4.11-7, 2.4.11-10

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Negative Surge Caused by
Hurricane Floyd

FIGURE 2.4.11-5

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Legend

— PMH R28 D20

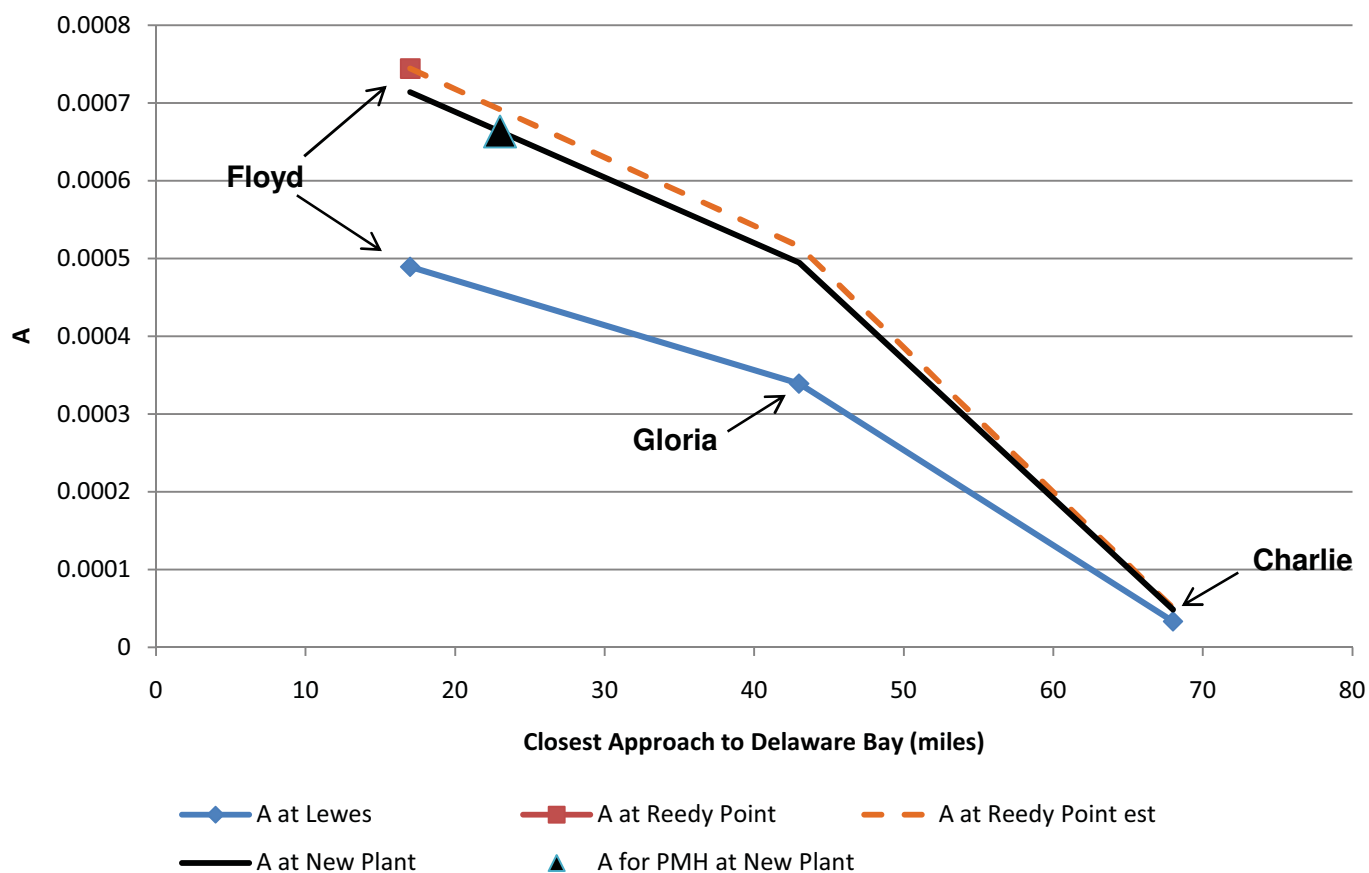


0 40 80
Nautical Miles

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Track of PMH Producing
Maximum Negative Surge
FIGURE 2.4.11-6

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$$\text{Negative Surge (ft.)} = A \times (\text{Maximum Sustained Winds})^2$$

Where A depends on the closest approach of the hurricane center to Delaware Bay as illustrated

ERA	PERIOD	EPOCH	SITE STRATIGRAPHIC UNIT	LITHOLOGIES	HYDROGEOLOGIC PROPERTIES		
CENOZOIC	QUATERNARY	HOLOCENE (RECENT)	ARTIFICIAL & HYDRAULIC FILL	AF - clays, silts, and sands of various proportions along with clayey and silty gravels.	Leaky confining units		
				HF - soft clayey silts, sandy silts, and organic clays.			
		UNCONFORMITY					
		PLEISTOCENE	ALLUVIUM	Fine to coarse sand and gravel; peat and organic rich soils; silt and clay near base.	Upper portion is a water-bearing zone; lower silts and clays, when present, act as a leaky confining unit		
				UNCONFORMITY			
	NEOGENE	MIOCENE	KIRKWOOD FORMATION	Upper - greenish-gray, silty, fine sand, fine sand and greenish-gray to brown organic clay with organic material and shell fragments.	Leaky confining unit		
				Lower - fine to coarse sand and gravel with variable amounts of silt and clay.	Water-bearing zone, part of the Vincentown aquifer		
		UNCONFORMITY					
	PALEOGENE	PALEOCENE	VINCENTOWN FORMATION	Greenish-gray, fine to medium grained silty sand with some zones of clayey sand; variably glauconitic; cemented zones.	Water-bearing zone		
			HORNERSTOWN FORMATION	Greenish-gray to dark green, silty and clayey quartz and glauconitic sand with indurated zones.	Upper portion is a water-bearing zone and part of the Vincentown Aquifer. Lower portion, along with the Navesink Formation act as a leaky confining unit.		
MESOZOIC	CRETACEOUS	UPPER CRETACEOUS	NAVESINK FORMATION	Fossiliferous, dark green to greenish-black, glauconitic sand; pelecypod fragments.	Leaky confining unit		
			MOUNT LAUREL FORMATION	Brownish gray to dark green, fine to coarse grained sand; variable amounts of silt and clay; coarsening upward sequence.	Water-bearing zone, with the Wenonah Formation comprise the Wenonah-Mt. Laurel Aquifer		
			WENONAH FORMATION	Sandy clay with clayey sand.	Water-bearing-zone		
			MARSHALLTOWN FORMATION	Glauconitic, silty and clayey fine sand.	Confining unit		
			ENGLISHTOWN FORMATION	Dark gray to black, sandy clay to clayey sand with shell fragments. Grades to black silt with trace amounts of mica and glauconite.	Water-bearing zone		
			WOODBURY FORMATION	Black, micaceous clay.	Confining unit		
			MERCHANTVILLE FORMATION	Dark greenish-black, glauconitic silts and clays with variable amounts of sand.	Confining unit		
			MAGOTHY FORMATION	Interbeds of gray to dark gray, locally mottled silts and clays that are interbedded with sands; trace amounts of lignite and carbonaceous material.	Water-bearing zone		
			UNCONFORMITY				
			LOWER CRETACEOUS	POTOMAC FORMATION	Red, gray, and white mottled clay.	Confining unit	

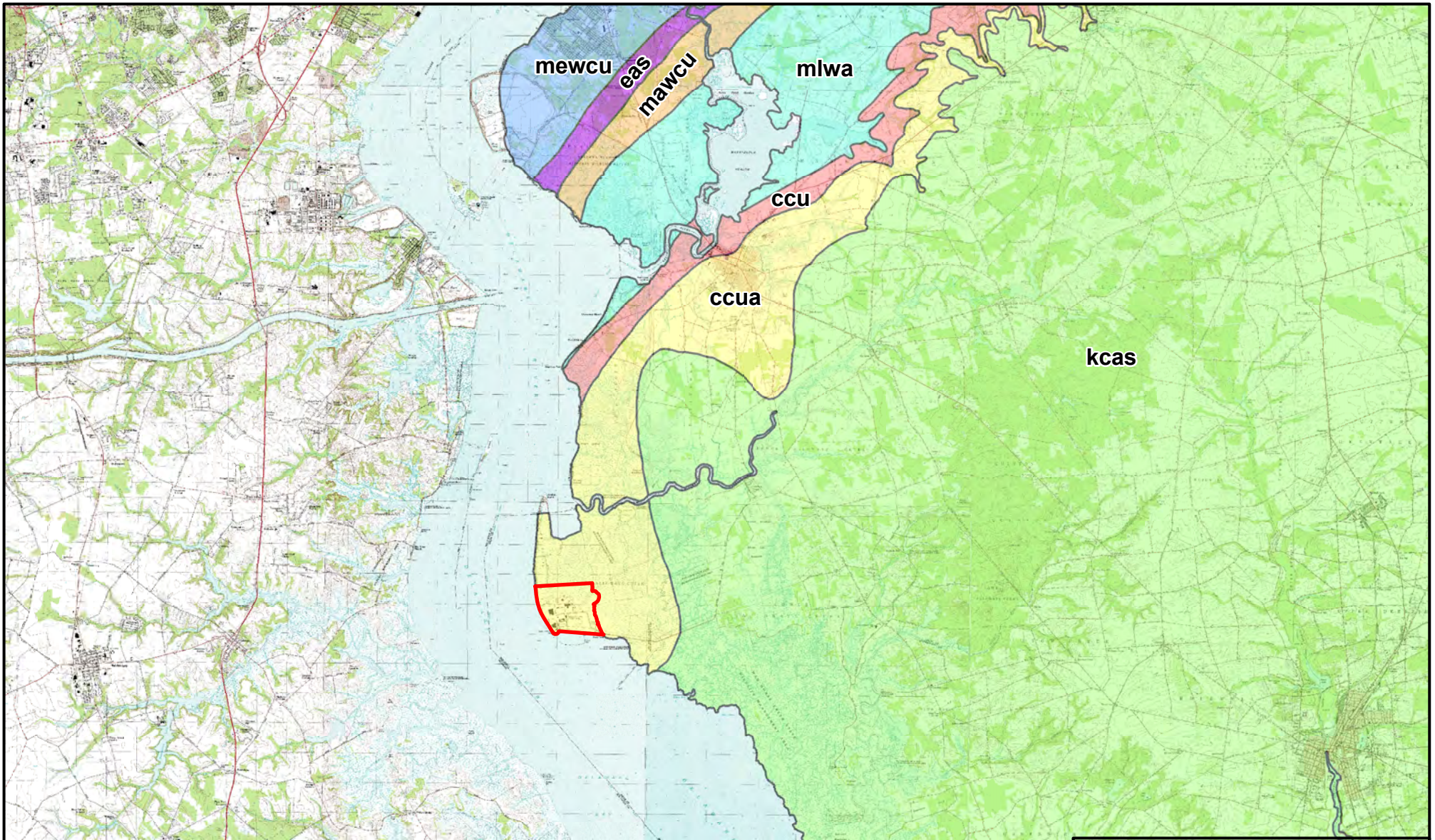
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Hydrostratigraphic Classification
for the PSEG Site

FIGURE 2.4.12-1





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LEGEND

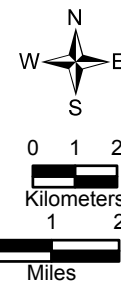


Site Boundary

-  ccu-Composite confining unit
-  ccua-Composite confining unit aquifer (includes vincentown aquifer)
-  eas-Englishtown aquifer system
-  kcas-Kirkwood-Cohansey aquifer system

Major Aquifer

-  mawcu-Marshalltown-Wenonah confining unit
-  mewcu-Merchantville-Woodbury confining unit
-  mlwa-Mt. Laurel-Wenonah aquifer



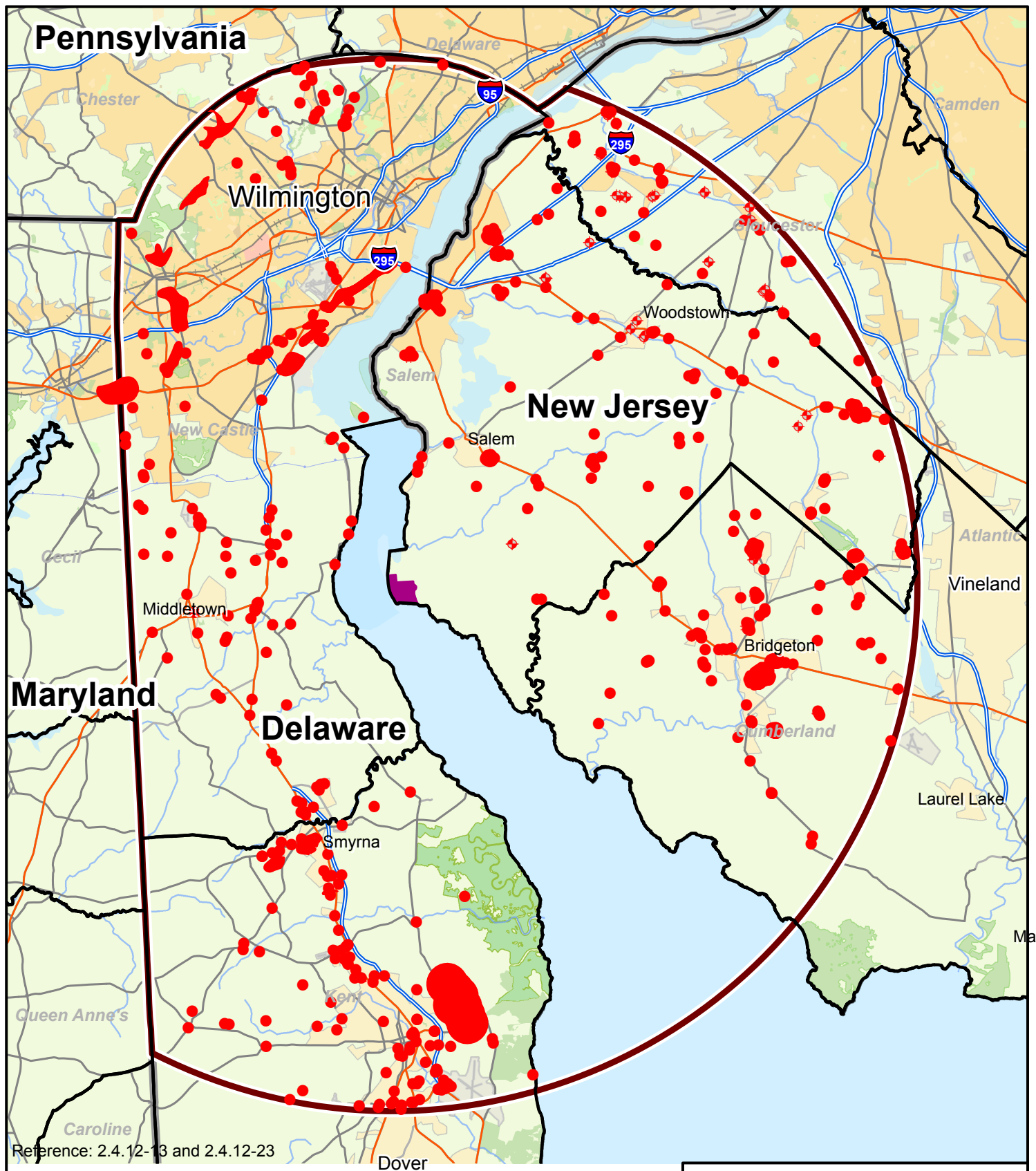
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Hydrogeology,
Extent of Major Aquifers or
Aquifer Systems in NJ

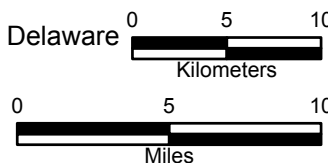
FIGURE 2.4.12-2

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LEGEND

- ◆ Public Water Supply Well
- Well Head Protection Area
- 25-mile Vicinity Boundary within New Jersey and Delaware
- Site Boundary



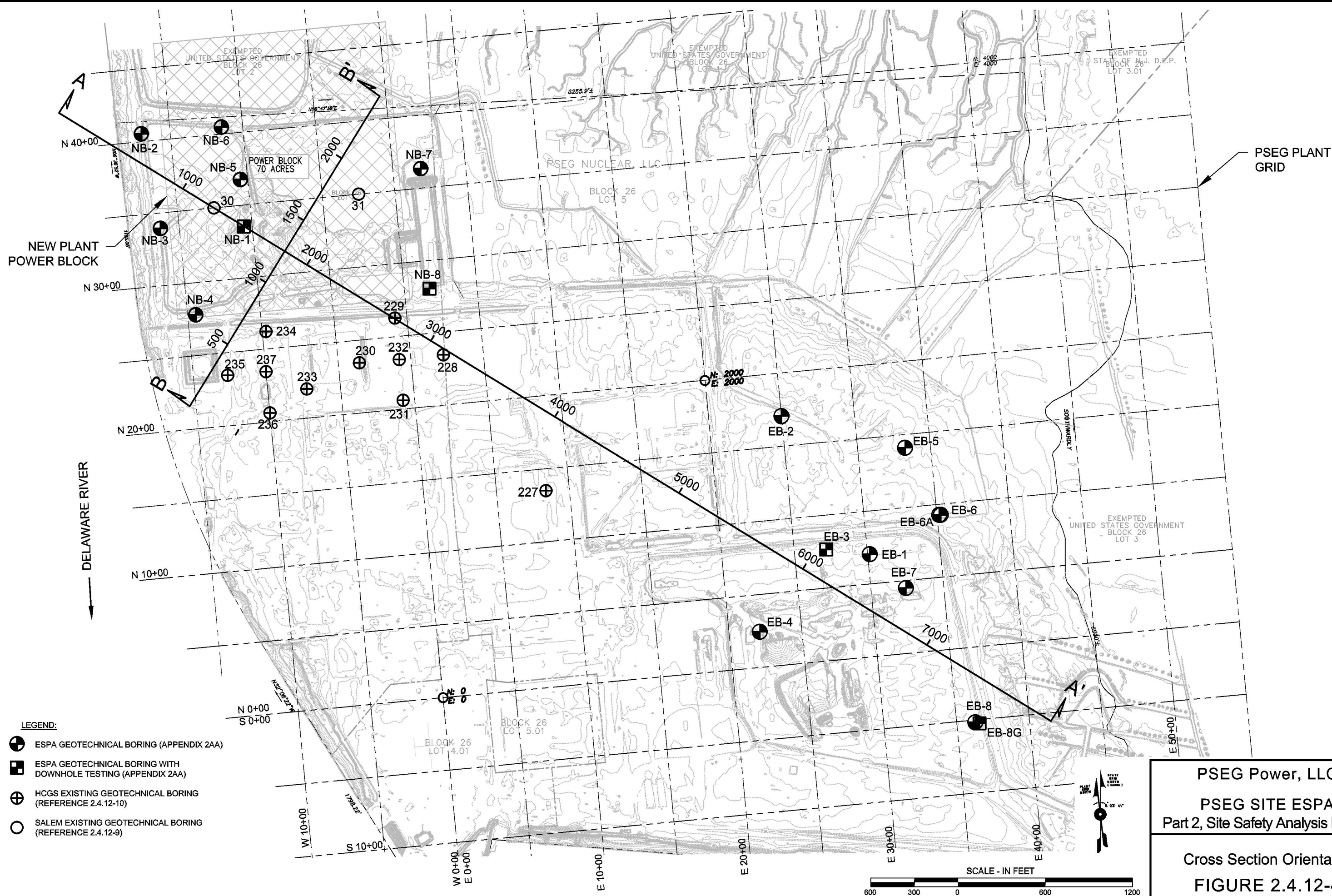
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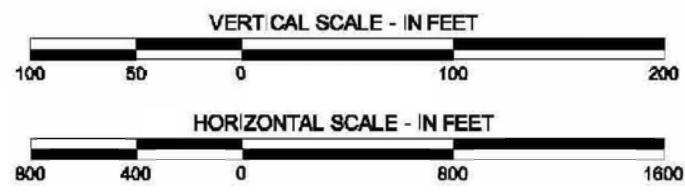
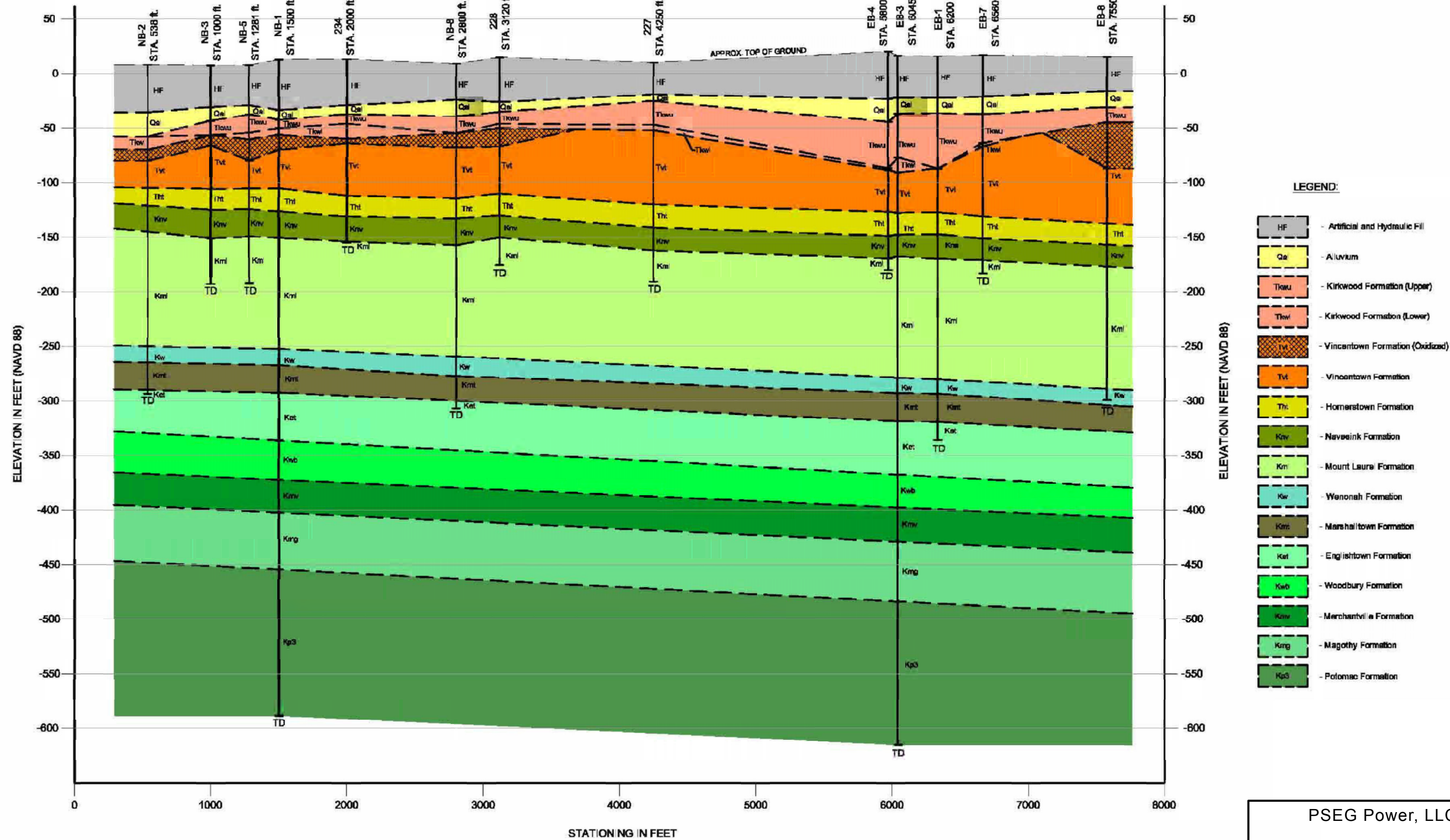
NJ & DE Well Head Protection
Areas and NJ Public Supply Wells
Within 25 Miles of the PSEG Site

FIGURE 2.4.12-3

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NW A INTERSECTION B B' A' SE

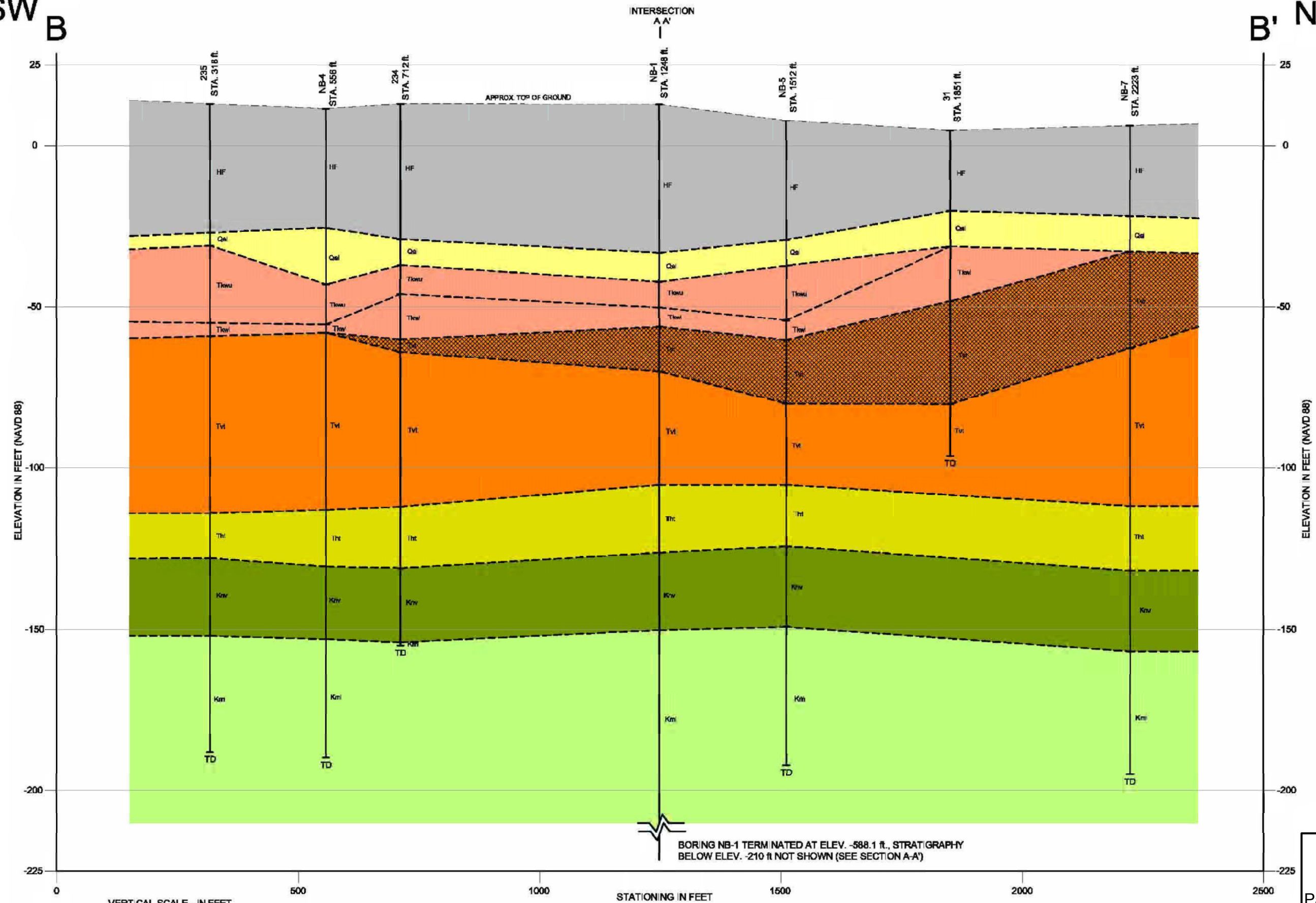


NOTES:

- BORINGS 227, 228, AND 234 (Reference 2.6.2)
- EB AND NB SERIES BORINGS COMPLETED FOR ESPA (Reference 2.6.8)
- TD = TERMINATION DEPTH
- SEE FIGURE 2.6-6 FOR SECTION LOCATION.
- BORINGS PROJECTED ORTHOGONALLY TO SECTION LINE.
- SOME BORINGS SHOWN ON FIG 2.6-6 NOT INCLUDED DUE TO SHALLOW DEPTH OR PROXIMITY TO OTHER BORINGS.

SW
B

B' NE



LEGEND:

- | | |
|------|-----------------------------------|
| HF | - Artificial and Hydraulic Fill |
| Qal | - Alluvium |
| Tlou | - Kirkwood Formation (Upper) |
| Tlow | - Kirkwood Formation (Lower) |
| Tvi | - Vincentown Formation (Oxidized) |
| Tvt | - Vincentown Formation |
| Thi | - Homestown Formation |
| Kwv | - Navesink Formation |
| Kml | - Mount Laurel Formation |

NOTES:

- BORING 31 (DAMES & MOORE, 2.6-3)
- BORINGS 234 AND 235 (2.6-2)
- EB AND NB SERIES BORINGS COMPLETED FOR ESPA (2.6-8)
- TD = TERMINATION DEPTH

NOTES (continued):

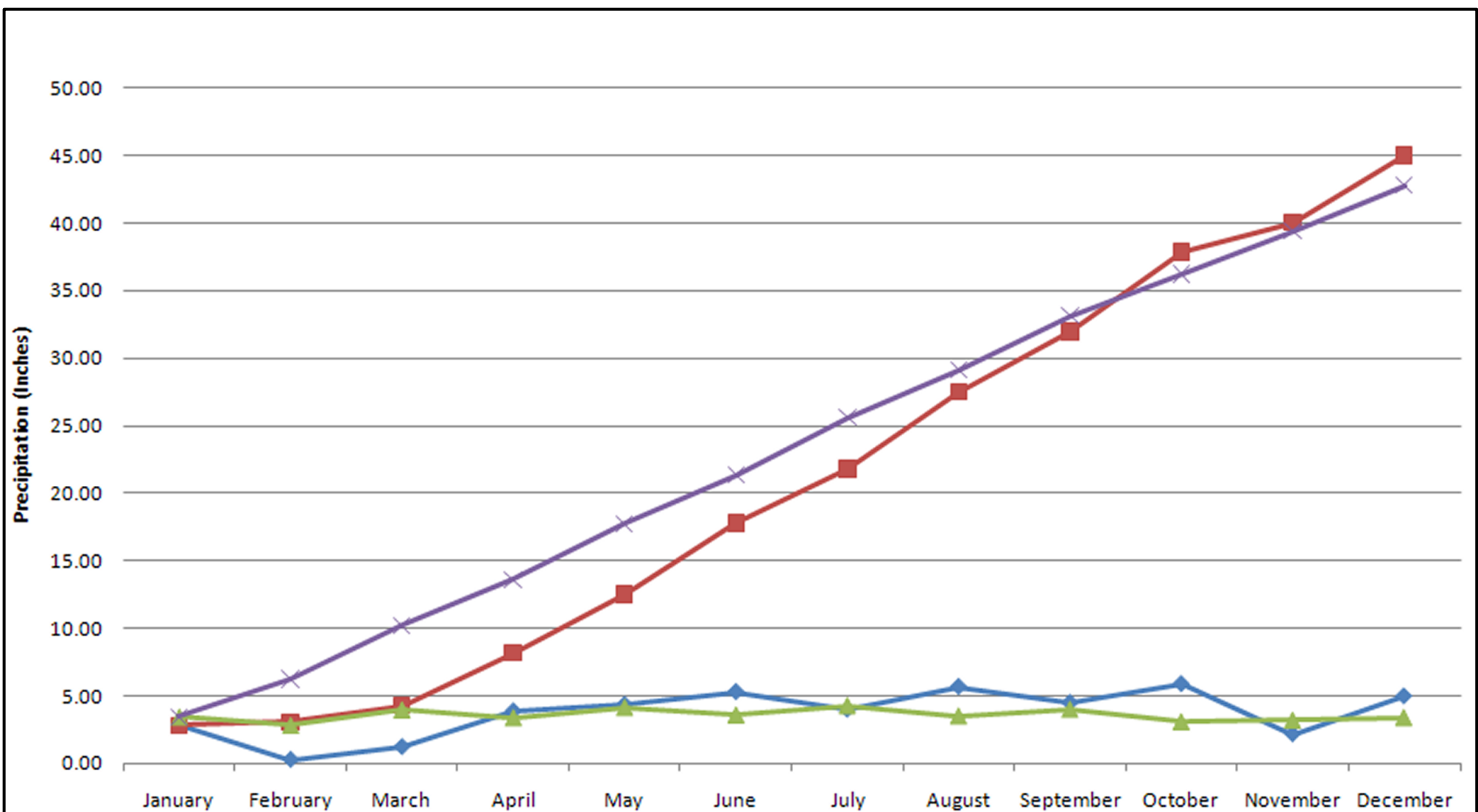
- SEE FIGURE 2.6-6 FOR SECTION LOCATION
- BORINGS PROJECTED ORTHOGONALLY TO SECTION LINE.
- SOME BORINGS SHOWN ON FIG-2.6-6 NOT INCLUDED DUE TO SHALLOW DEPTH OR PROXIMITY TO OTHER BORINGS.

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Cross Section B-B'
Orientation

FIGURE 2.4.12-6

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LEGEND

- Monthly Total (2009)
- Cumulative Year to Date (2009)
- Historical Average Monthly Total (1971-2000)
- Historical Cumulative Average Year to Date (1971-2000)

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Average and Monthly
Precipitation Data for 2009

FIGURE 2.4.12-7

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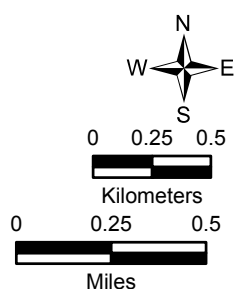


Source: USGS, 2003

LEGEND

- ◆ ESPA Observation Well
- Piezometer
- New Plant Location
- Site Boundary
- Federal/State Owned Land

Note: There is no piezometer at aquatic sampling location AS-7



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Surface and Groundwater

Sampling Locations

FIGURE 2.4.12-8

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**NOT
USED**

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NOT
USED

FIGURE 2.4.12-9 Rev 0