



Hudson River PCBs Site

Phase 1 Target Area Identification Report

Prepared for:

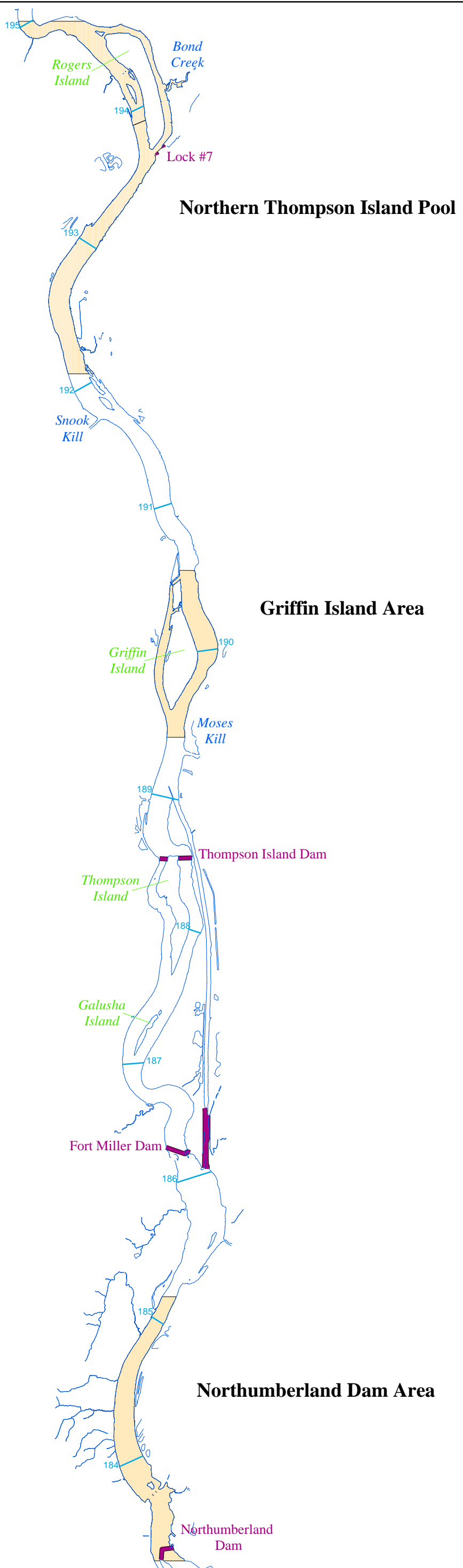
**General Electric Company
Albany, NY**

Prepared by:

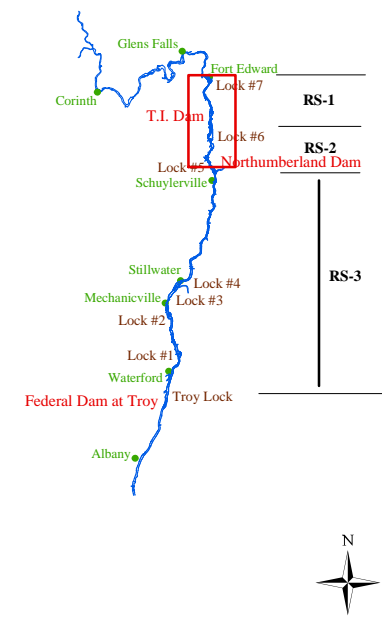
**Quantitative Environmental Analysis, LLC
Glens Falls, NY**

September 13, 2004

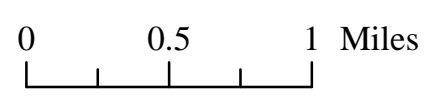
FIGURES



LOCATOR MAP OF THE UPPER HUDSON RIVER



GRAPHIC SCALE



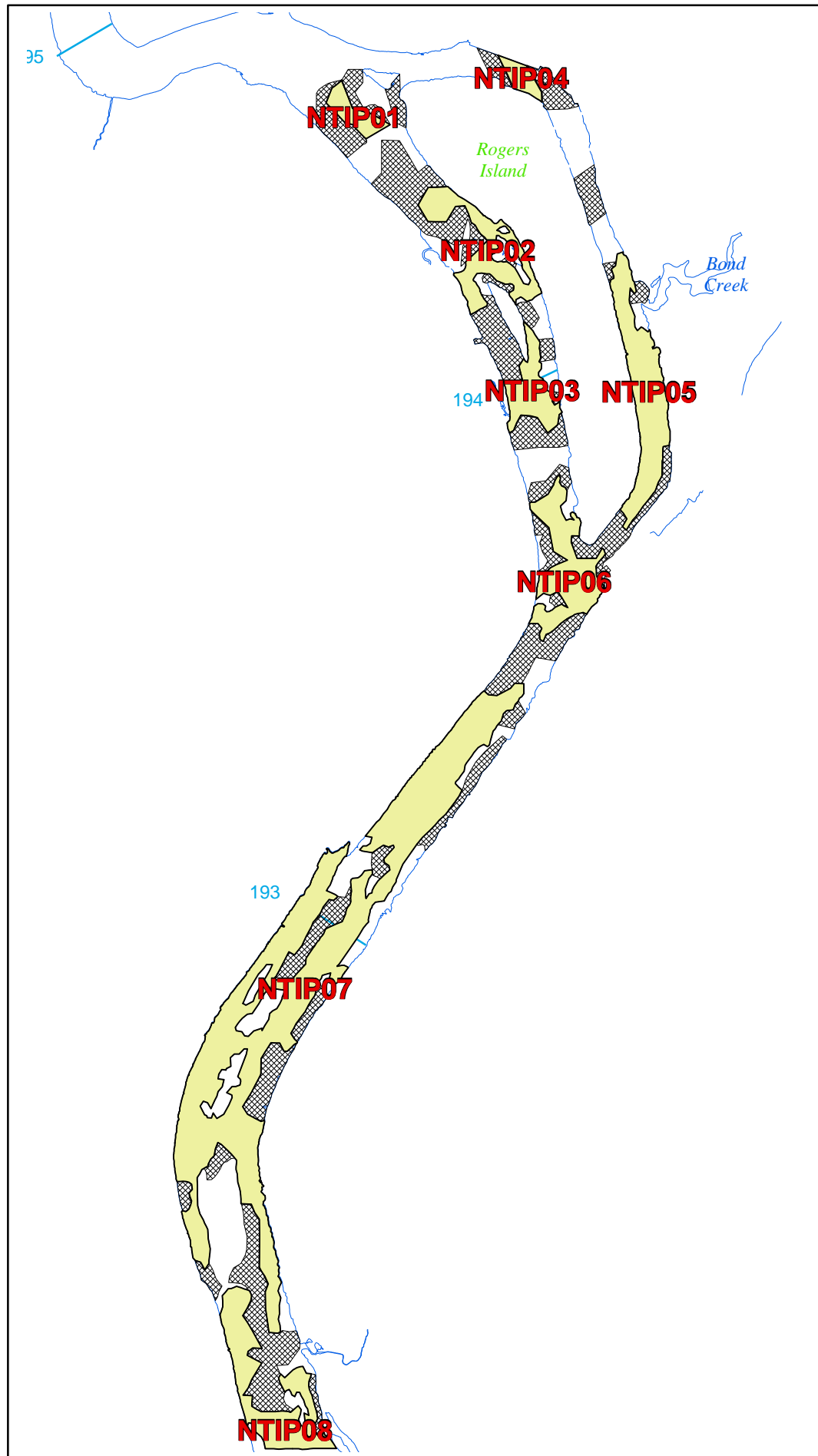
LEGEND

- River Miles
- Shore Line
- █ Dams and Locks
- Candidate Phase 1 Areas

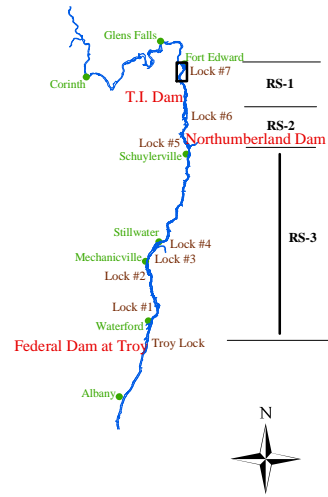
**General Electric Company
Hudson River Project**

**Figure 1-1.
Map of Candidate
Phase 1 Areas.**

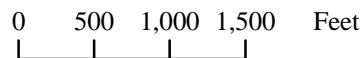








LOCATOR MAP OF THE UPPER HUDSON RIVER



GRAPHIC SCALE



LEGEND

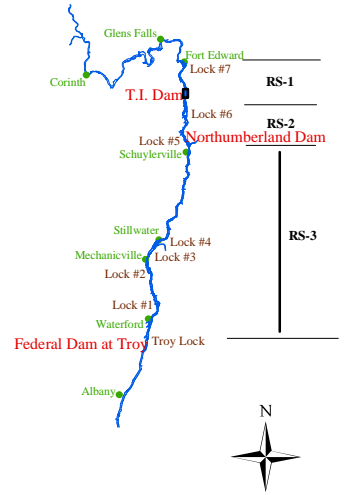
-  River miles
-  Shoreline
-  Preliminary dredge areas
-  Uncertain areas

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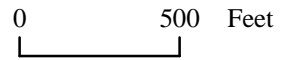
**Figure 1-2.
Northern TIP,
preliminary dredge areas,
and uncertain areas.**



LOCATOR MAP OF THE UPPER HUDSON RIVER



GRAPHIC SCALE

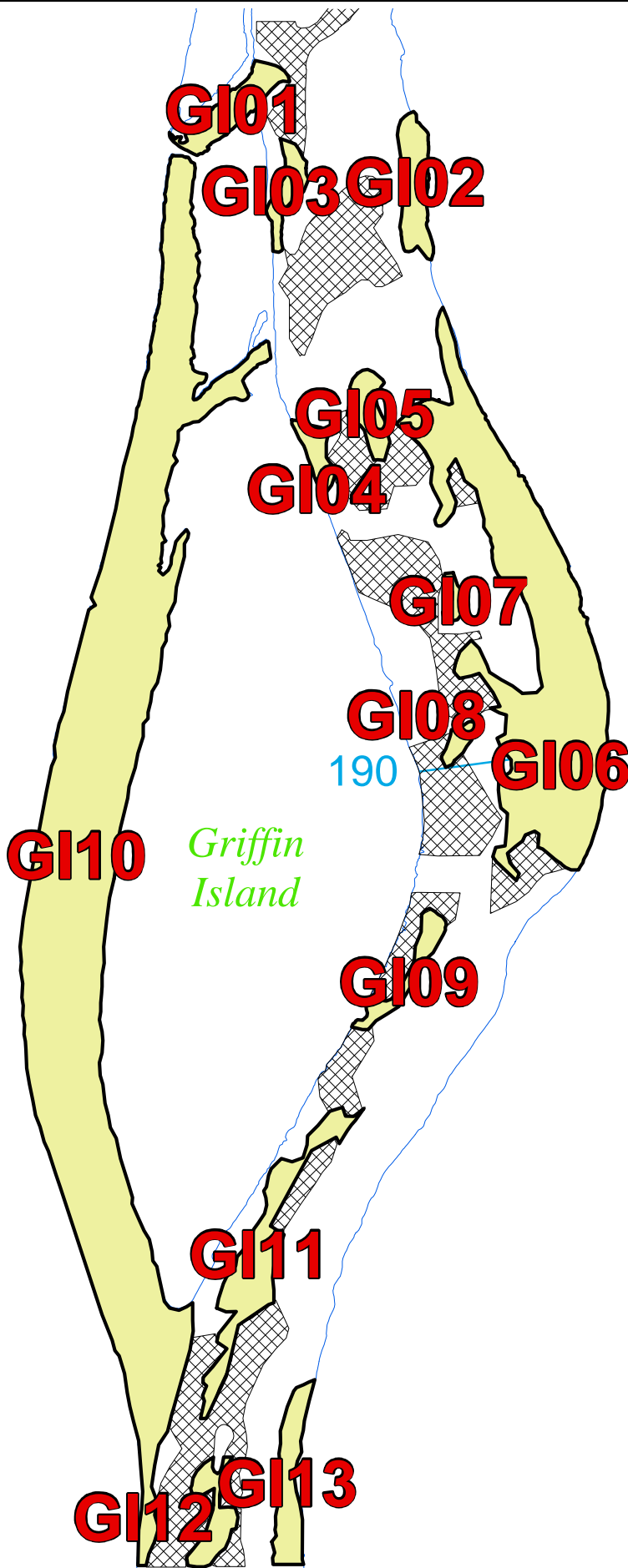


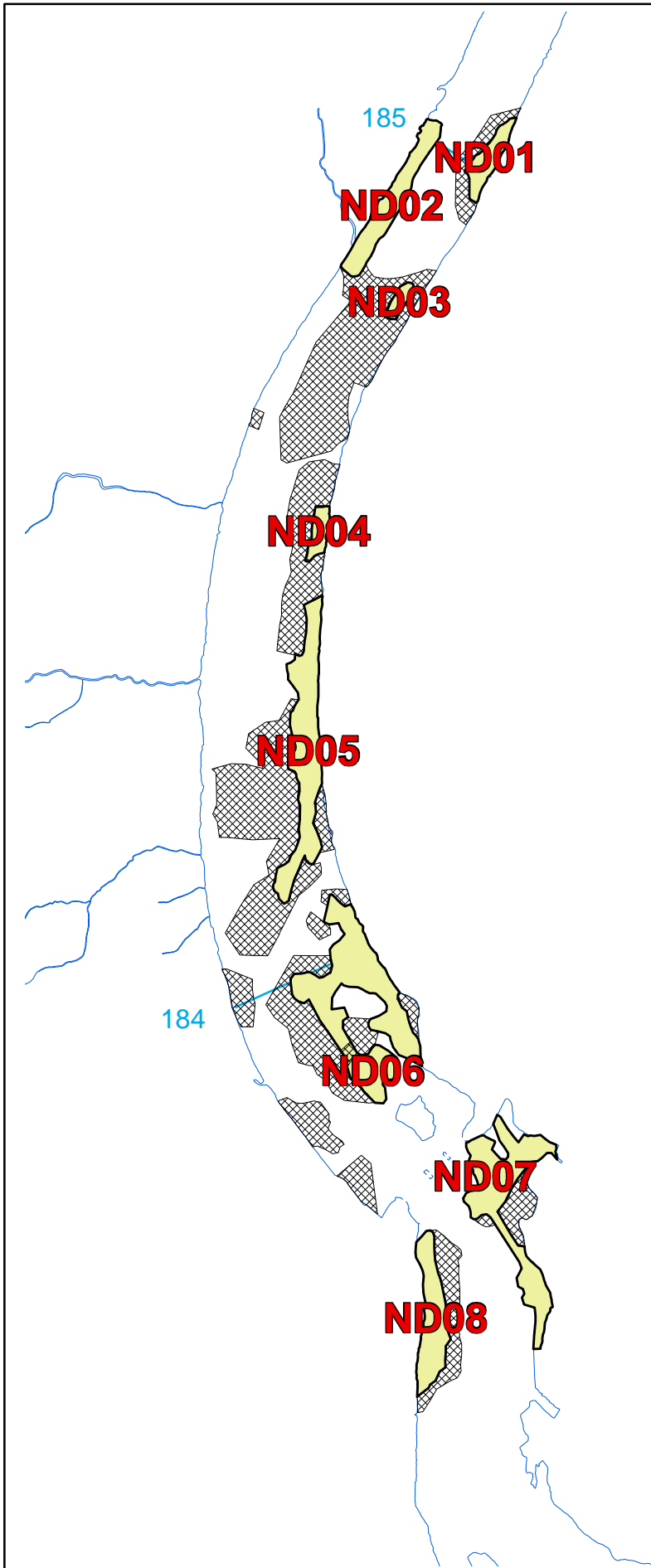
LEGEND

- River miles
- Shoreline
- Preliminary dredge areas
- Uncertain areas

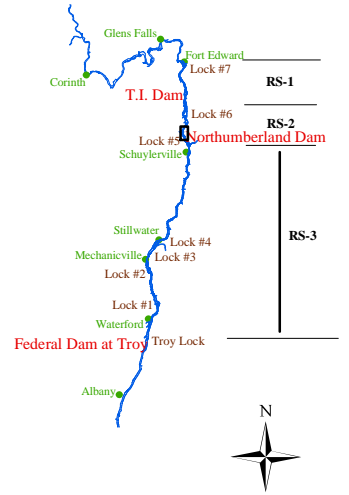
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**Figure 1-3.
Griffin Island,
preliminary dredge areas,
and uncertain areas.**

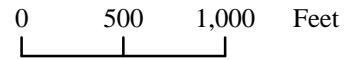




LOCATOR MAP OF THE UPPER HUDSON RIVER



GRAPHIC SCALE



LEGEND

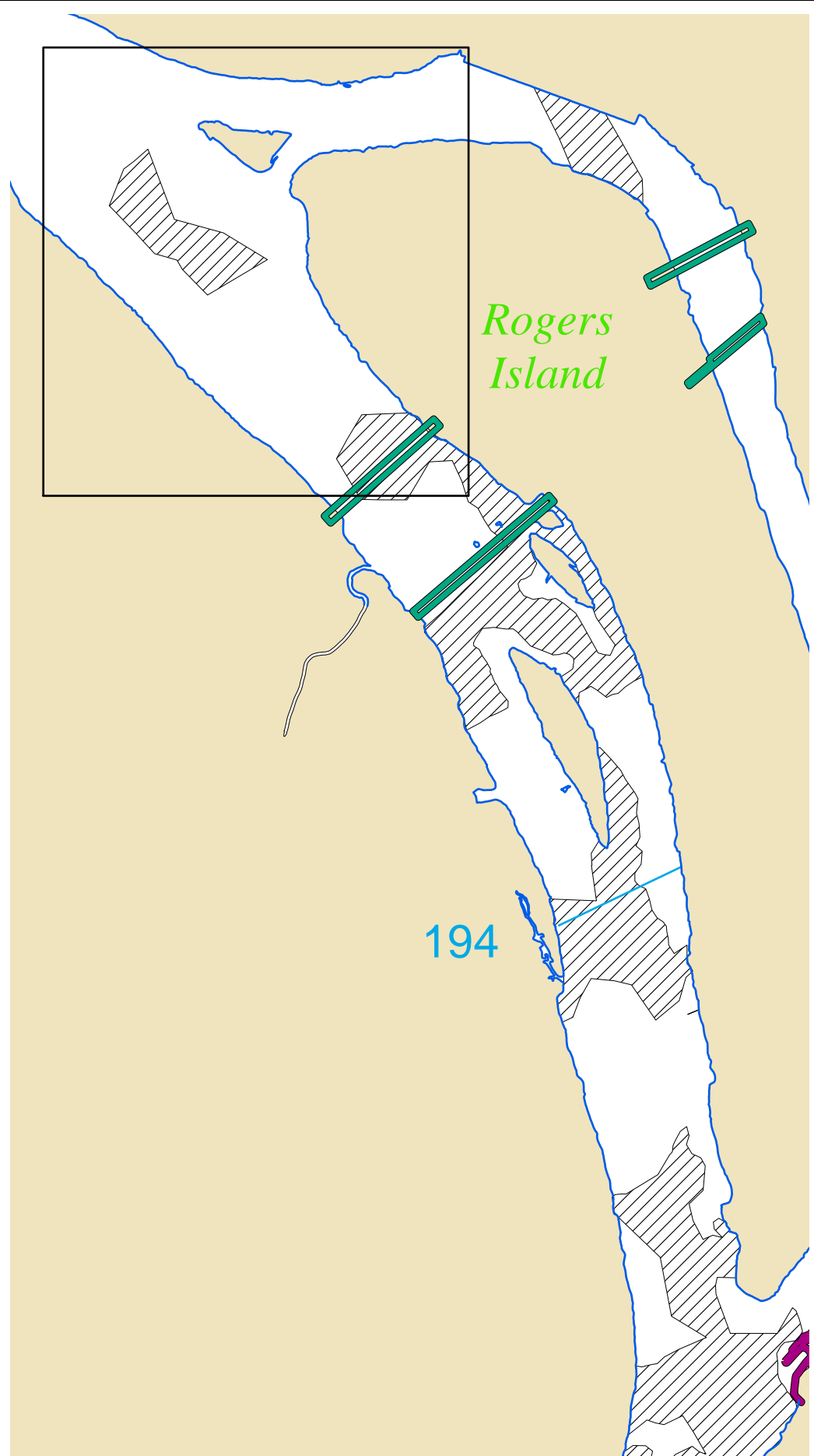
- River miles
- Shoreline
- Preliminary dredge areas
- Uncertain areas

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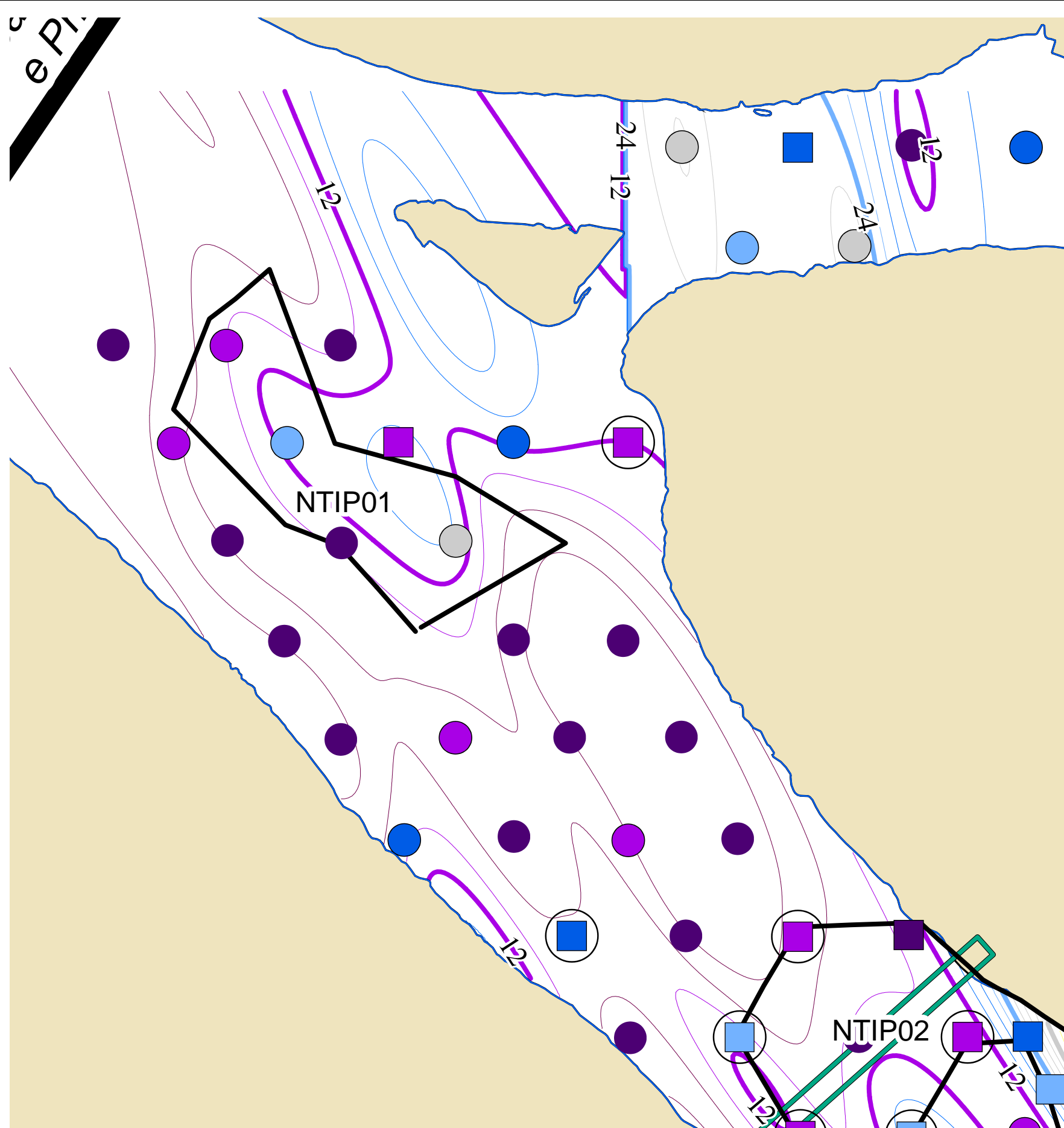
**Figure 1-4.
Northumberland Dam Area,
preliminary dredge areas,
and uncertain areas.**



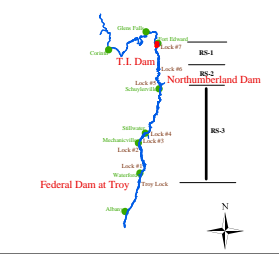
GENERAL AREA



FOCUSED AREA



LOCATOR MAP OF THE HUDSON RIVER



LEGEND

- Dredge Areas
 - Dams and Locks
 - River Miles
 - Bridges
- DOC Contours**
- 12 Inch Intervals
 - 3 Inch Intervals

- Incomplete cores with uncertain depths of contamination
- Cores with certain depths of contamination
- Incomplete cores with uncertain depths of contamination but integrated into interpolation
- Historic cores

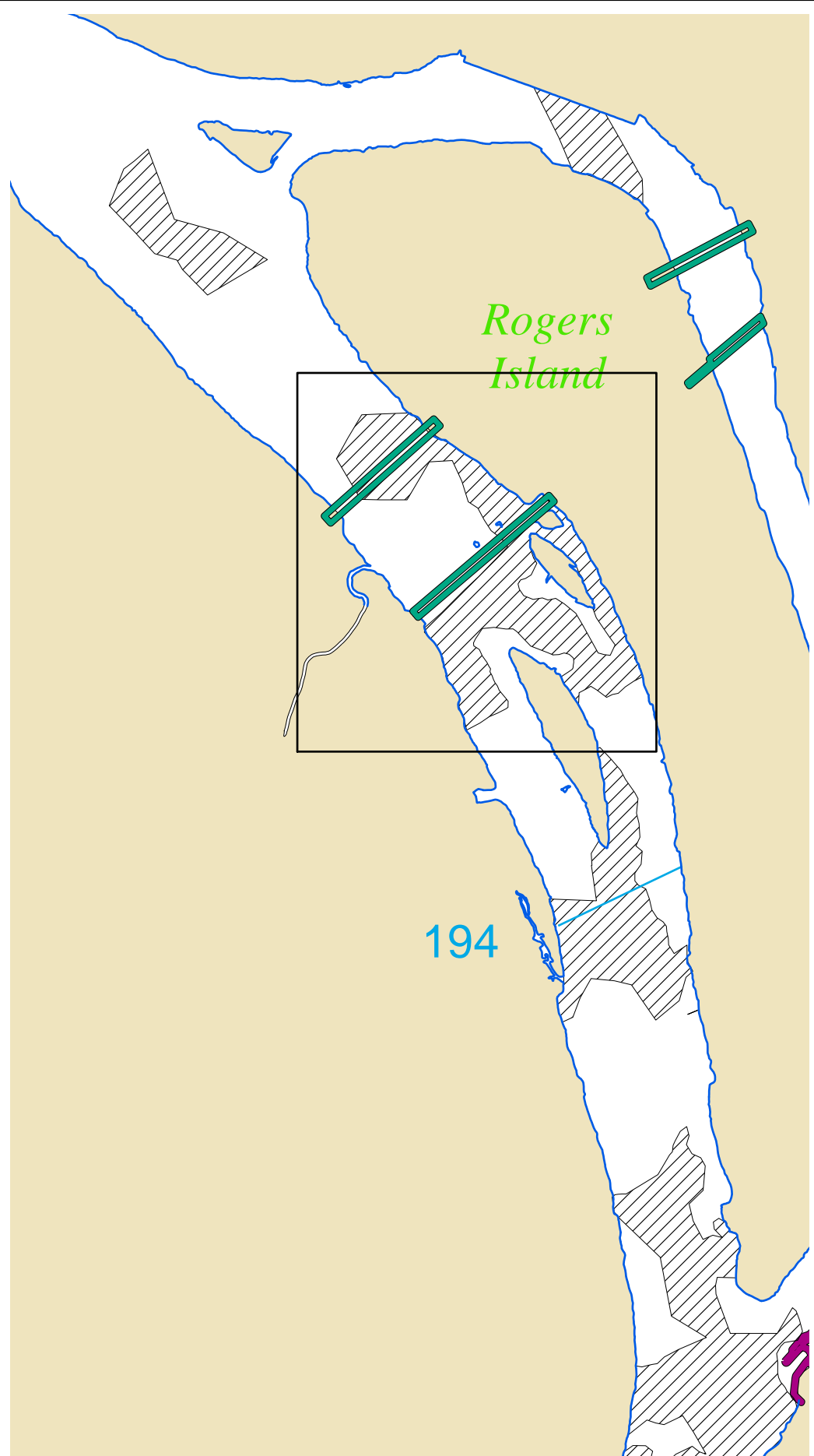
- Depth scale (in.)**
- 0 - 6
 - 6 - 12
 - 12 - 18
 - 18 - 24
 - 24 - 36
 - 36 - 48
 - 48 - 60
 - 60 - 72
 - 72 - 84
 - 84 - 96
 - 96 - 108
 - 108 - 120

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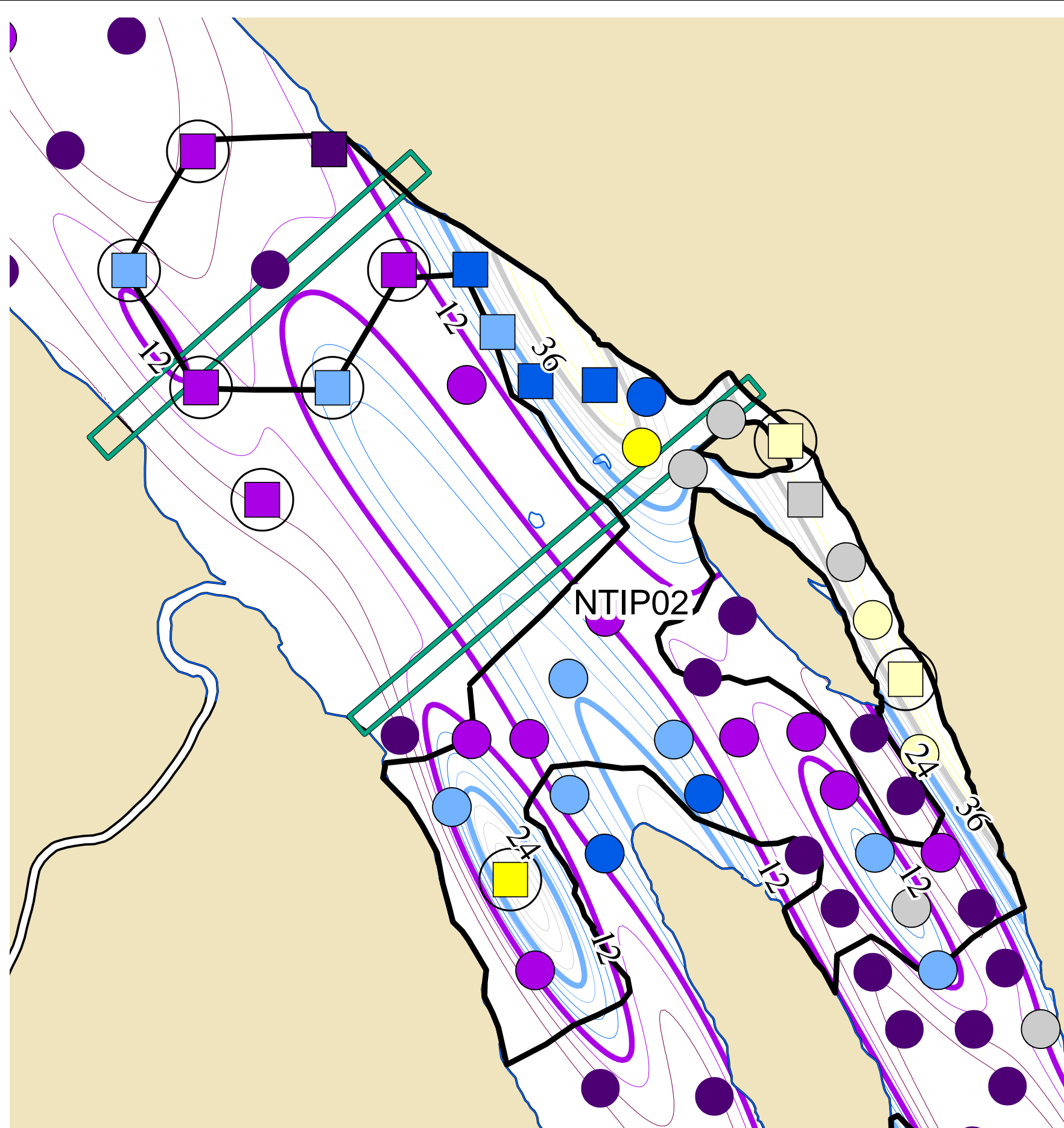
Figure 2-1
Depth of contamination contours for NTIP01.



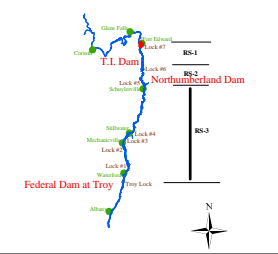
GENERAL AREA



FOCUSED AREA



LOCATOR MAP OF THE HUDSON RIVER



LEGEND

- Dredge Areas
- Dams and Locks
- River Miles
- Bridges

DOC Contours

- 12 Inch Intervals
- 3 Inch Intervals

Incomplete cores with uncertain depths of contamination

Cores with certain depths of contamination

Incomplete cores with uncertain depths of contamination but integrated into interpolation

Historic cores

Depth scale (in.)

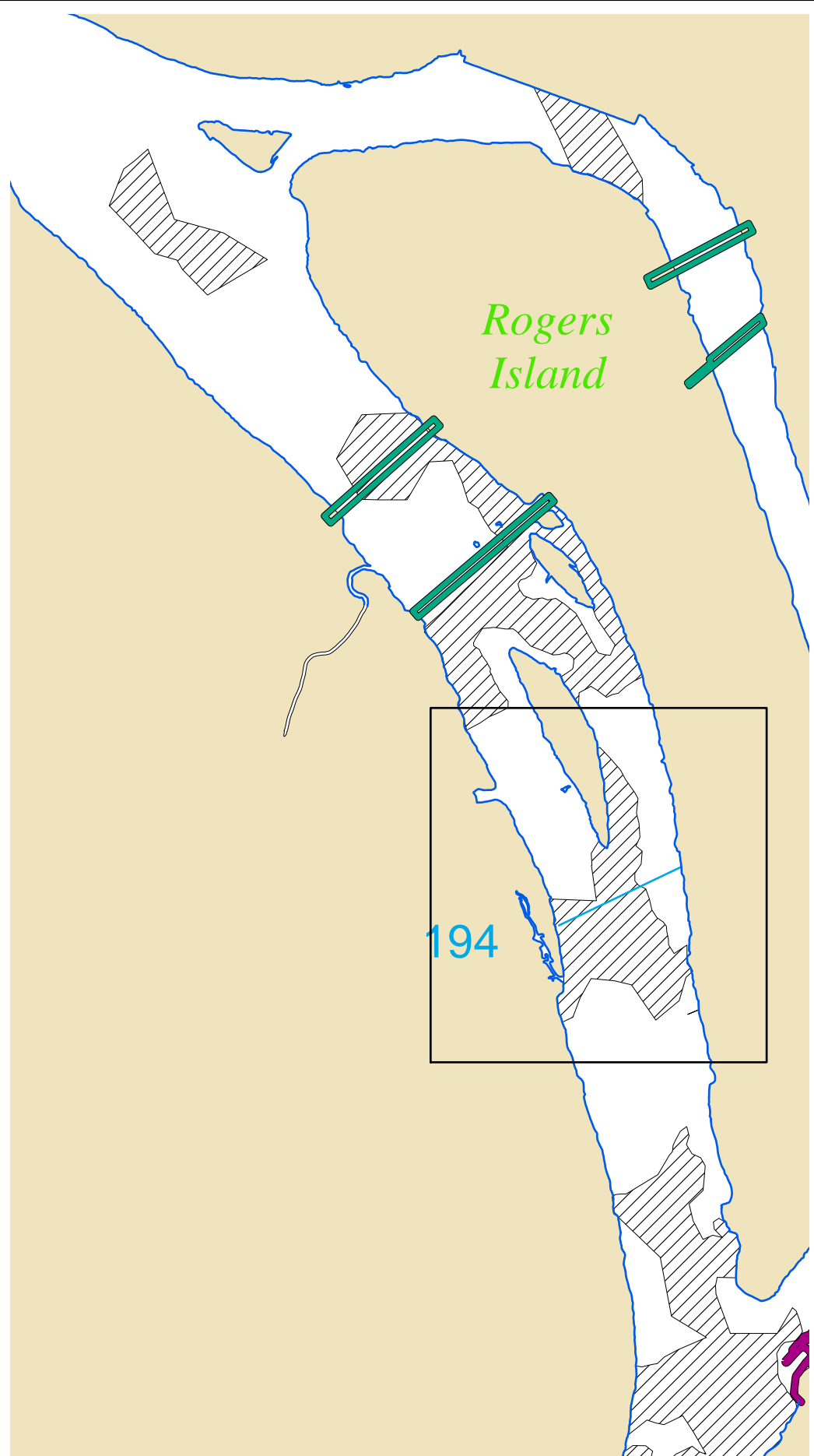
- 0 - 6
- 6 - 12
- 12 - 18
- 18 - 24
- 24 - 36
- 36 - 48
- 48 - 60
- 60 - 72
- 72 - 84
- 84 - 96
- 96 - 108
- 108 - 120

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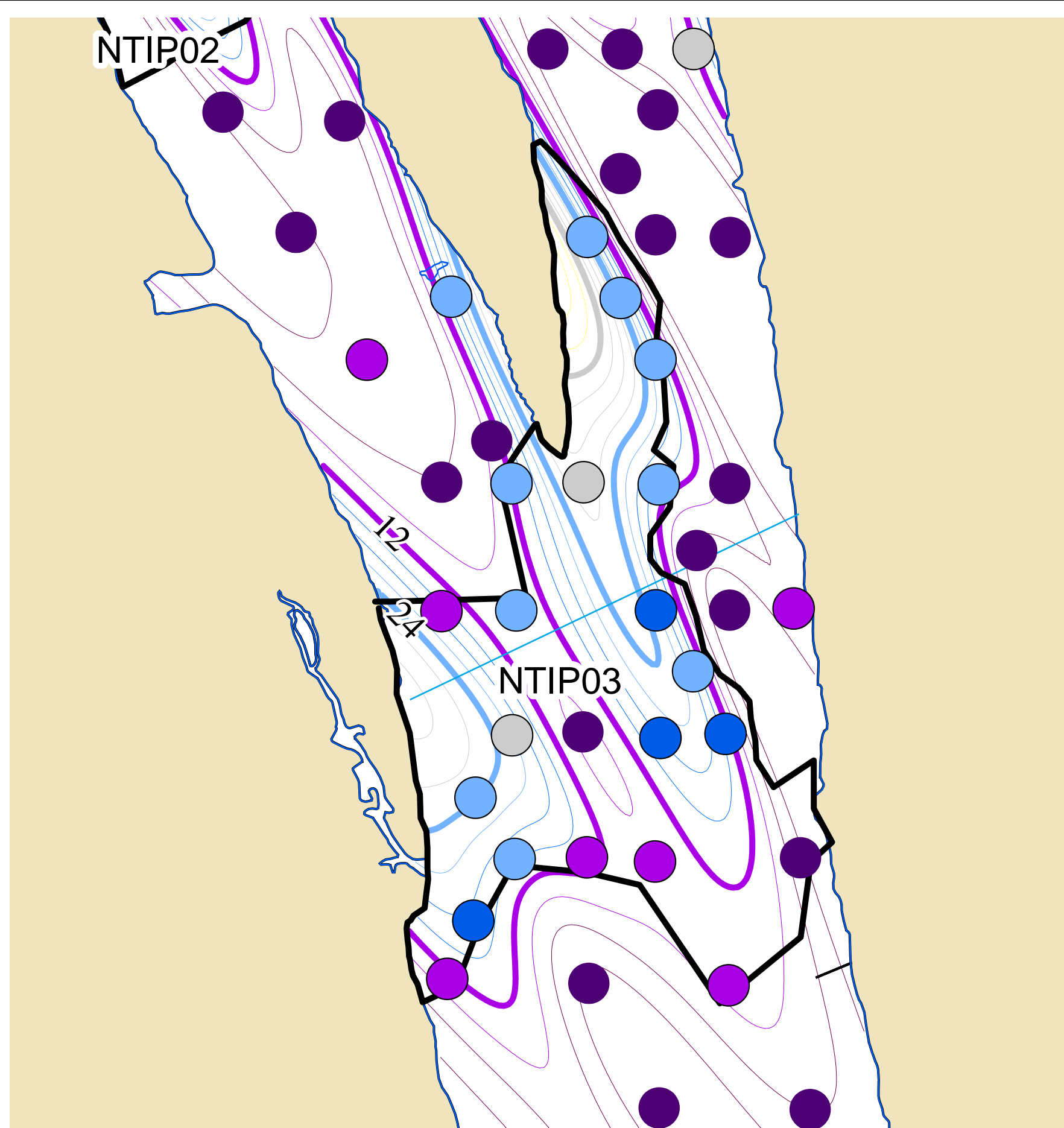
Figure 2-2
Depth of contamination contours for NTIP02.



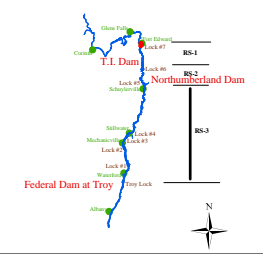
GENERAL AREA



FOCUSED AREA



LOCATOR MAP OF THE HUDSON RIVER



LEGEND

- Dredge Areas
- Dams and Locks
- River Miles
- Bridges

DOC Contours

- 12 Inch Intervals
- 3 Inch Intervals

Incomplete cores with uncertain depths of contamination

Cores with certain depths of contamination

Incomplete cores with uncertain depths of contamination but integrated into interpolation

Historic cores

Depth scale (in.)

- 0 - 6
- 6 - 12
- 12 - 18
- 18 - 24
- 24 - 36
- 36 - 48
- 48 - 60
- 60 - 72
- 72 - 84
- 84 - 96
- 96 - 108
- 108 - 120

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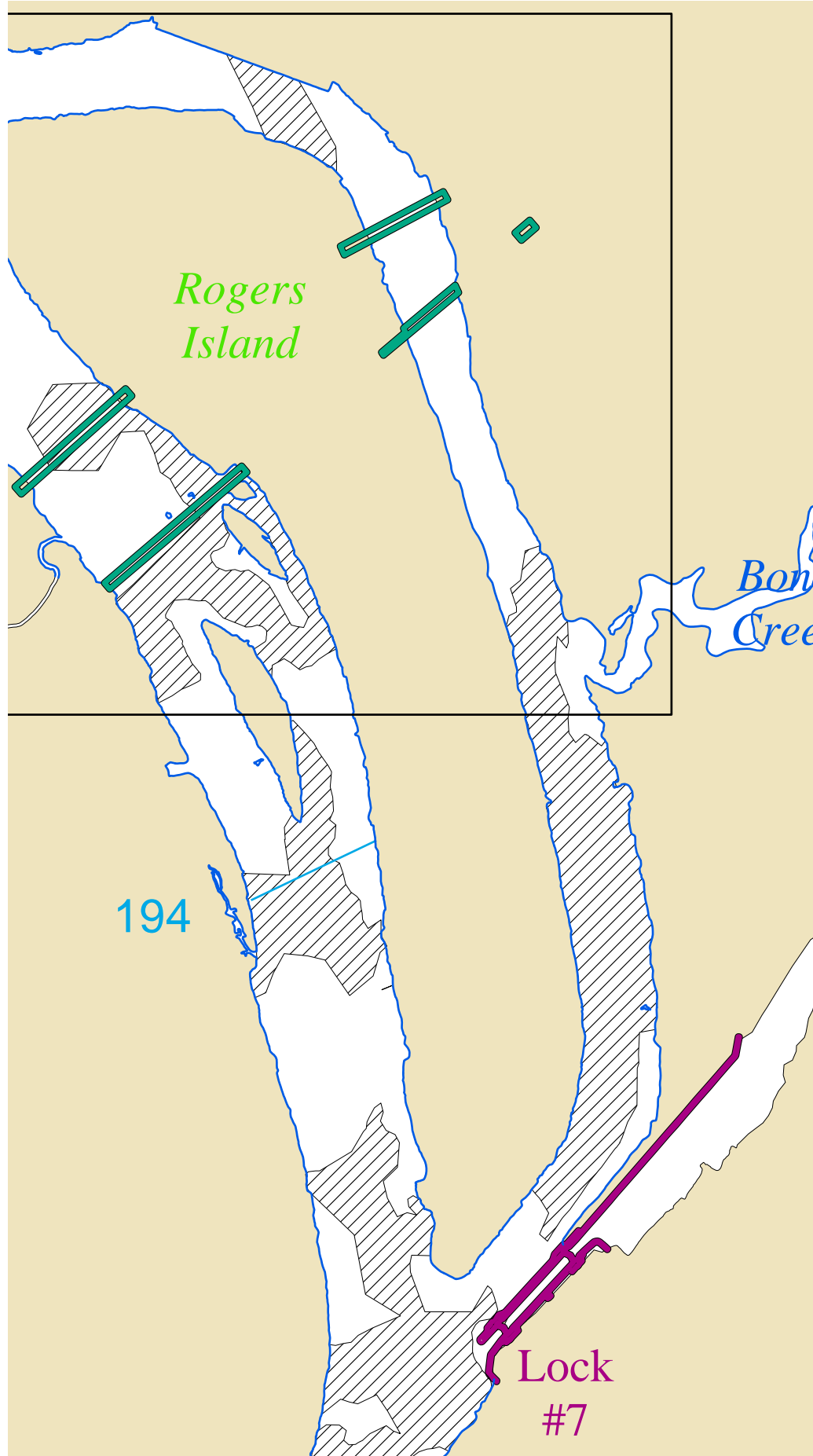
Figure 2-3

Depth of contamination contours for NTIP02 and NTIP03.

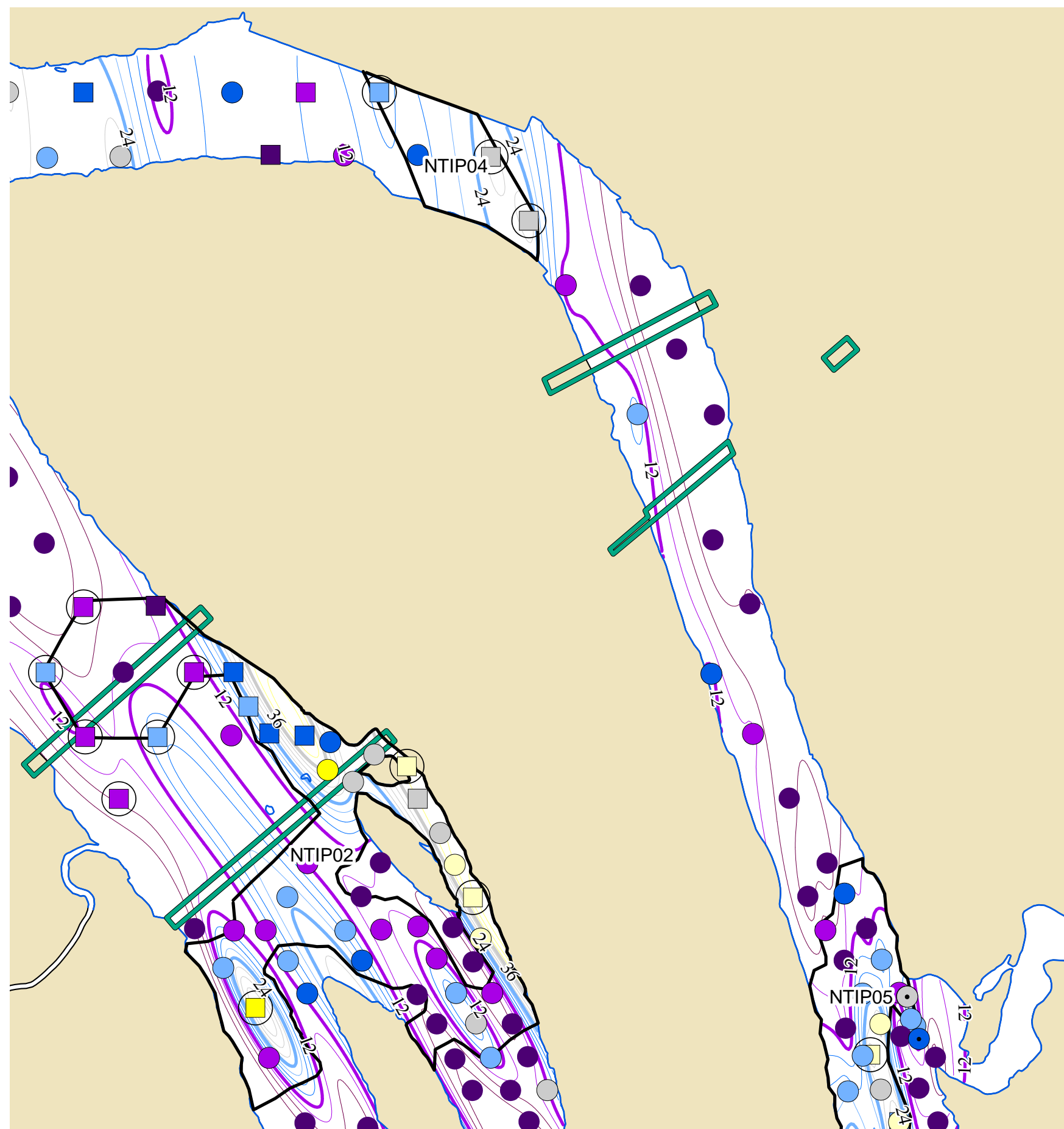


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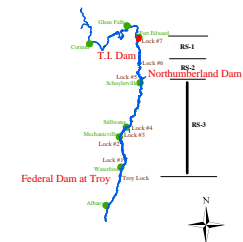
GENERAL AREA



FOCUSED AREA



LOCATOR MAP OF THE HUDSON RIVER



LEGEND

- Dredge Areas
 - Dams and Locks
 - River Miles
 - Bridges
- DOC Contours**
- 12 Inch Intervals
 - 3 Inch Intervals

- Incomplete cores with uncertain depths of contamination
- Cores with certain depths of contamination
- Incomplete cores with uncertain depths of contamination but integrated into interpolation
- Historic cores

- Depth scale (in.)**
- 0 - 6
 - 6 - 12
 - 12 - 18
 - 18 - 24
 - 24 - 36
 - 36 - 48
 - 48 - 60
 - 60 - 72
 - 72 - 84
 - 84 - 96
 - 96 - 108
 - 108 - 120

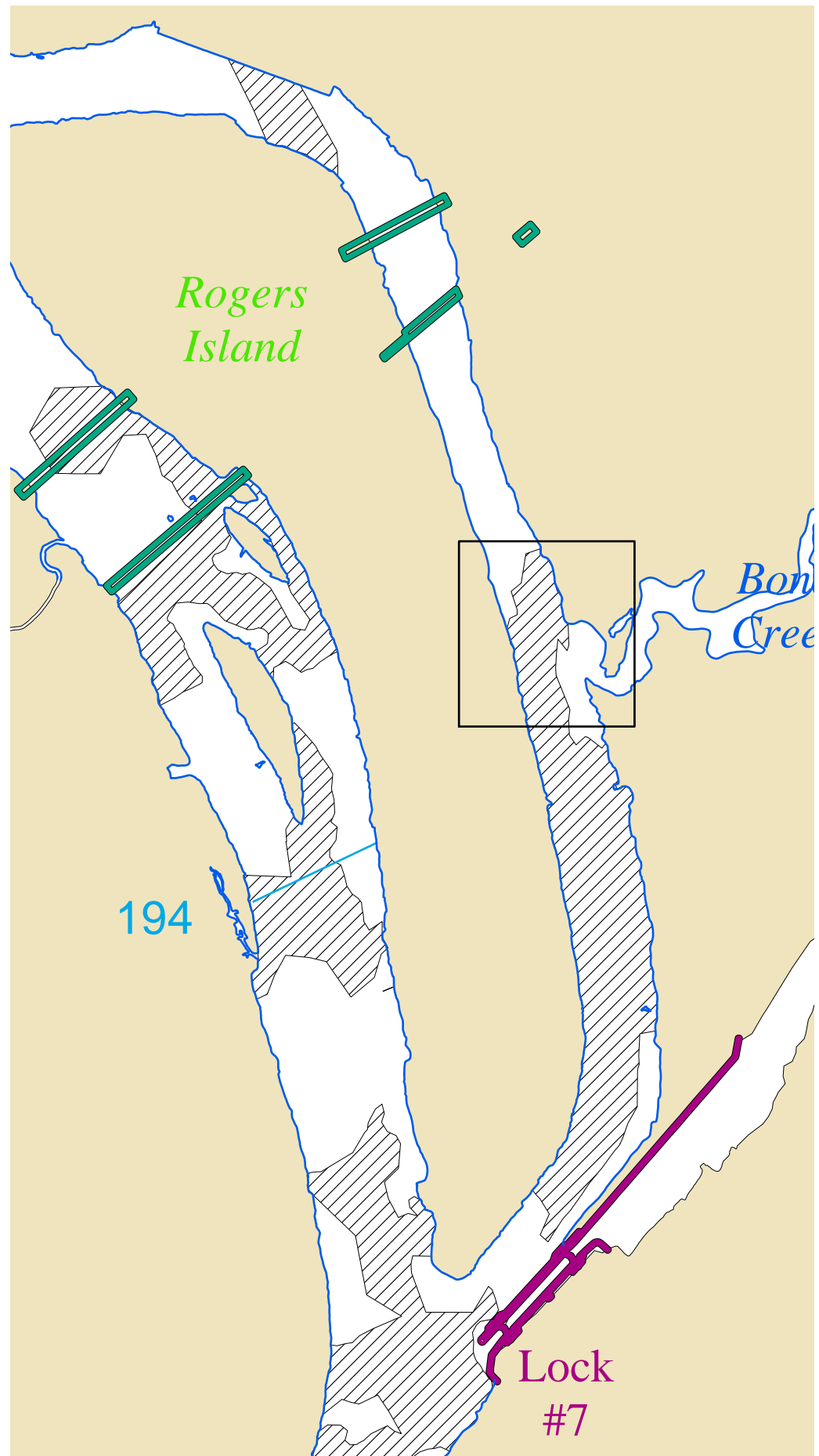
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Figure 2-4
Depth of contamination contours for NTIP04.

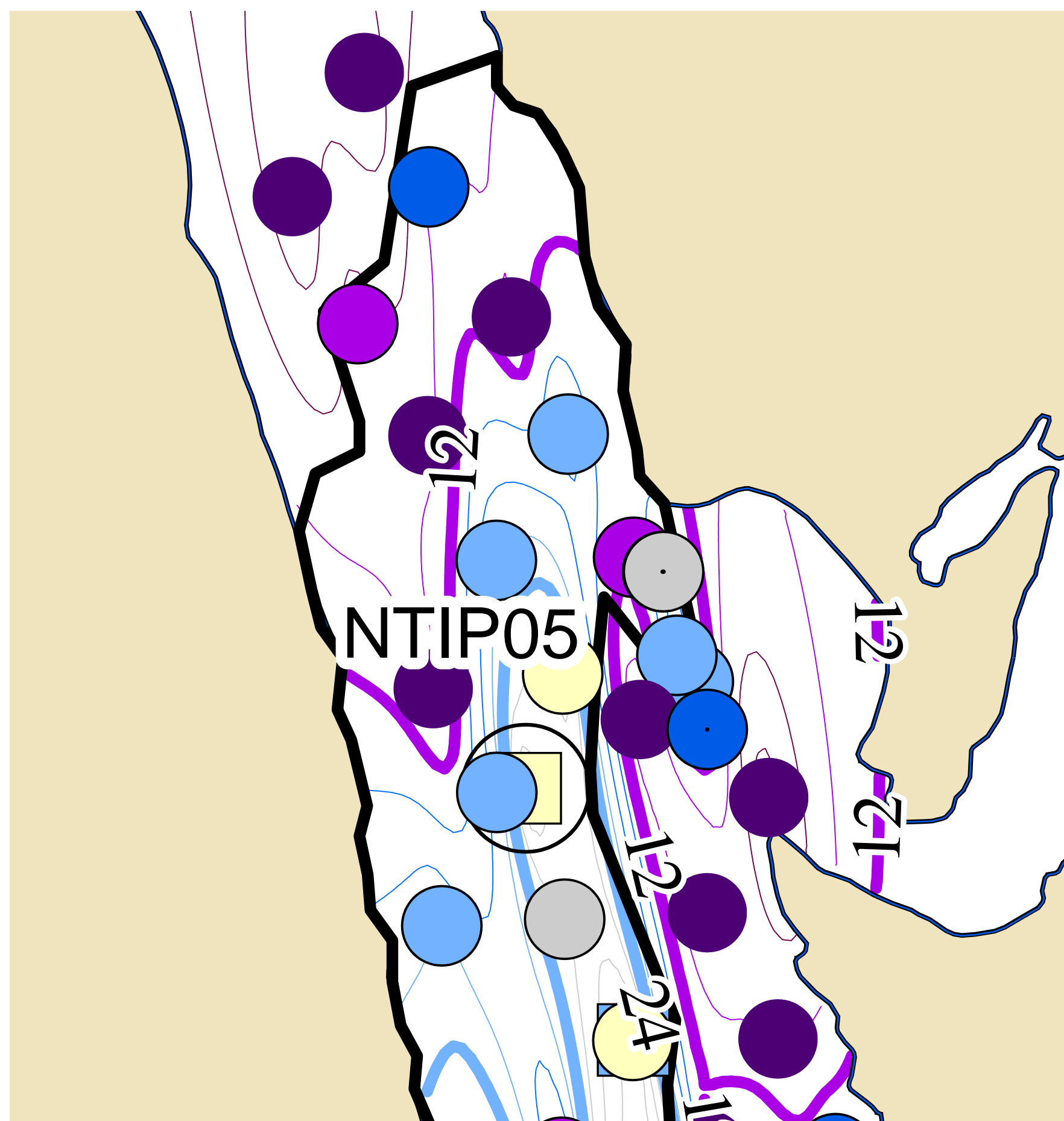


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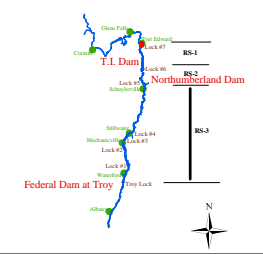
GENERAL AREA



FOCUSED AREA



LOCATOR MAP OF THE HUDSON RIVER



LEGEND

- Dredge Areas
 - Dams and Locks
 - River Miles
 - Bridges
- DOC Contours**
- 12 Inch Intervals
 - 3 Inch Intervals

- Incomplete cores with uncertain depths of contamination
- Cores with certain depths of contamination
- Incomplete cores with uncertain depths of contamination but integrated into interpolation
- Historic cores

- Depth scale (in.)**
- 0 - 6
 - 6 - 12
 - 12 - 18
 - 18 - 24
 - 24 - 36
 - 36 - 48
 - 48 - 60
 - 60 - 72
 - 72 - 84
 - 84 - 96
 - 96 - 108
 - 108 - 120

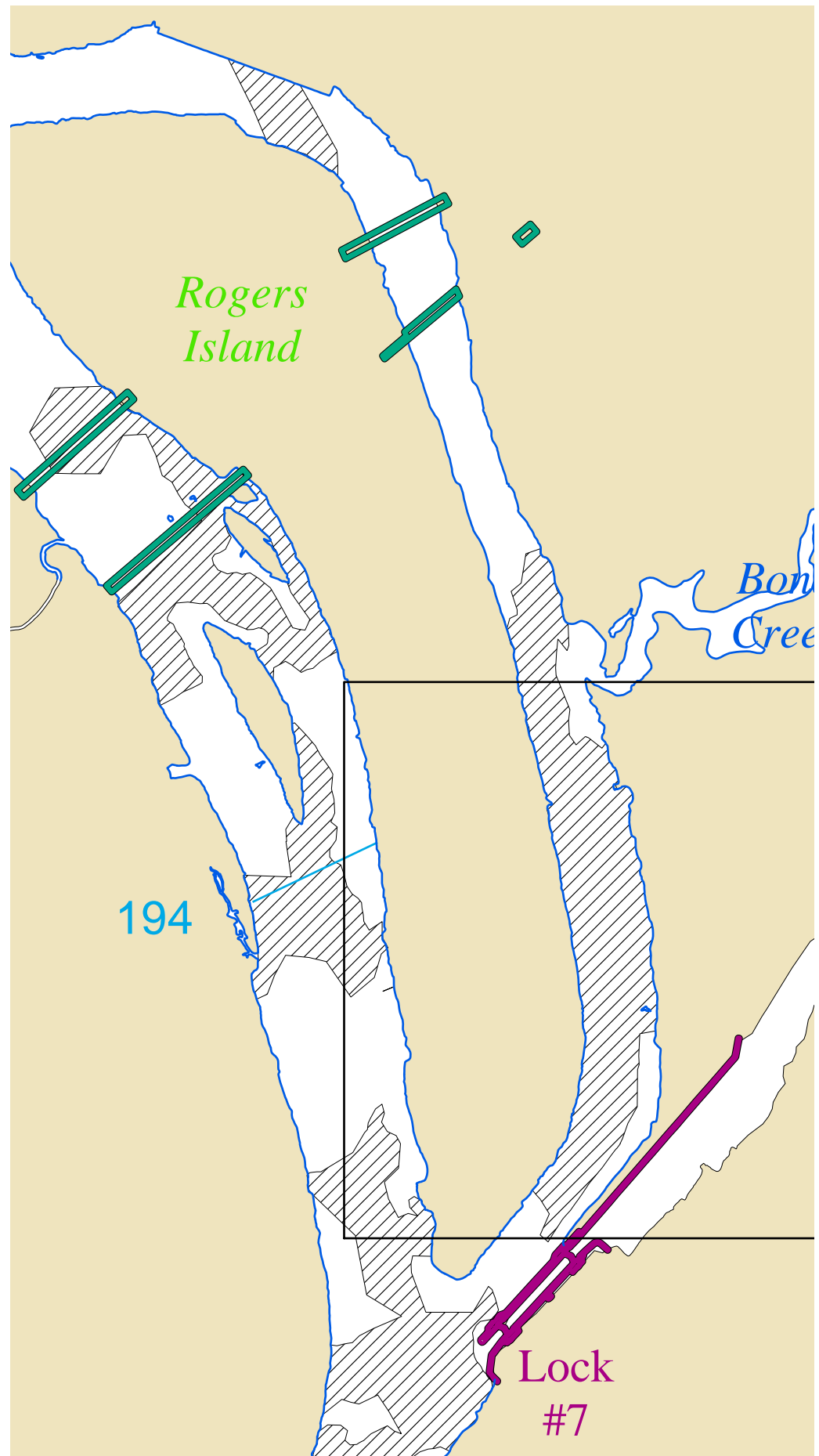
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Figure 2-5
Depth of contamination contours for upper NTIP05.

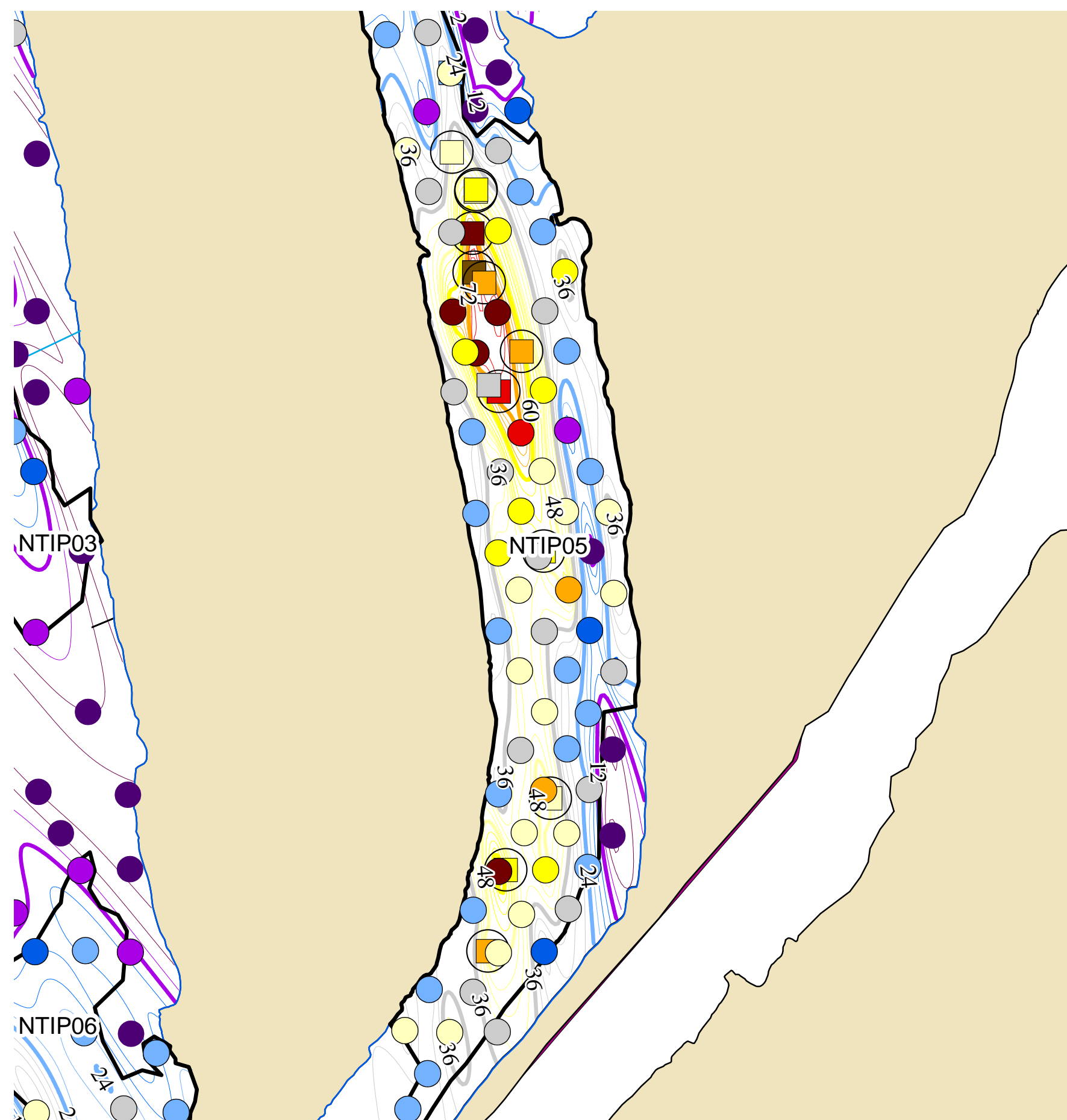


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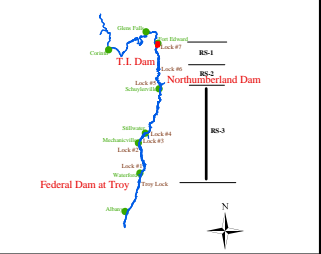
GENERAL AREA



FOCUSED AREA



LOCATOR MAP OF THE HUDSON RIVER



LEGEND

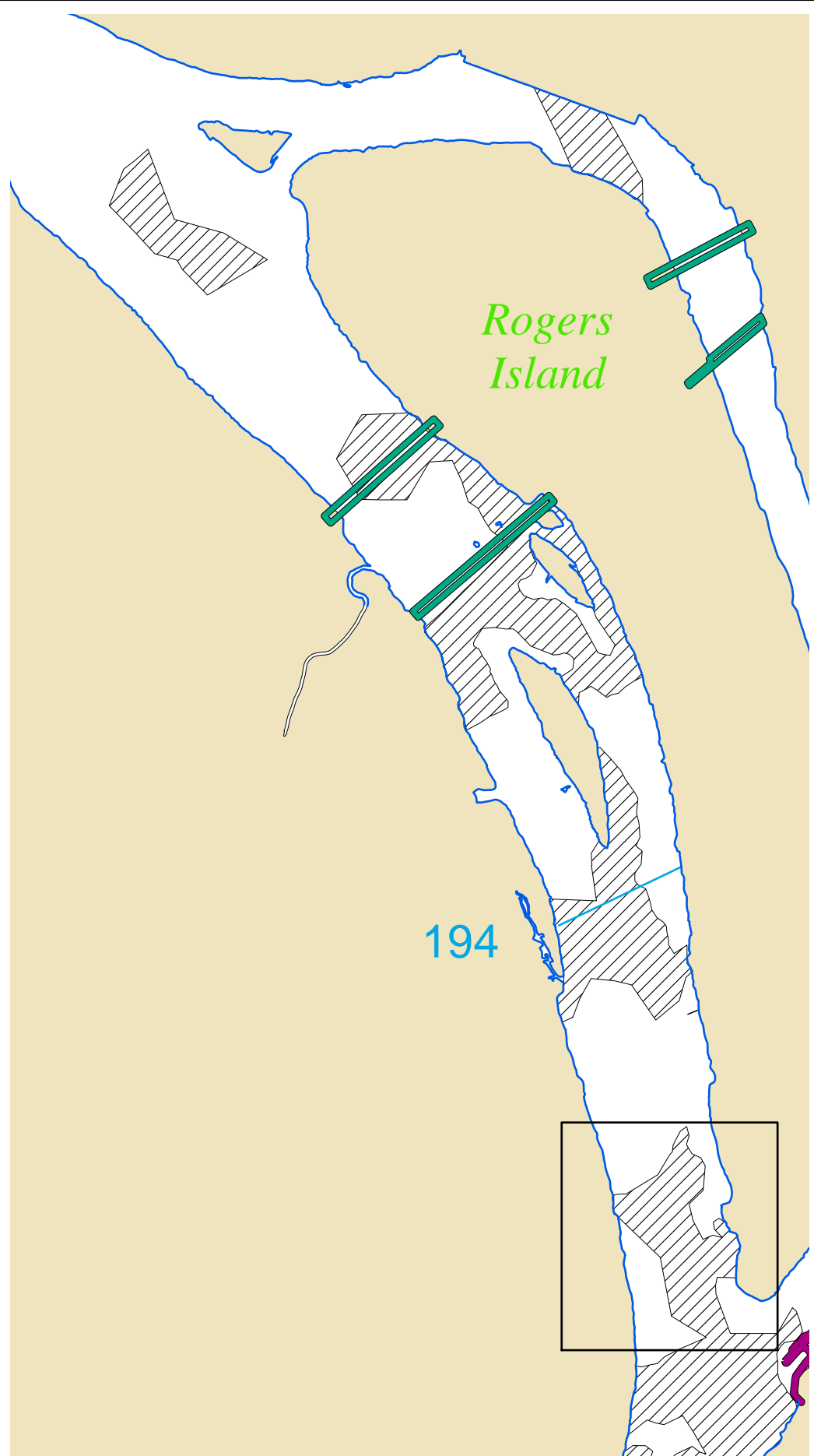
- Dredge Areas
 - Dams and Locks
 - River Miles
 - Bridges
- DOC Contours**
- 12 Inch Intervals
 - 3 Inch Intervals
- Incomplete cores with uncertain depths of contamination
 - Cores with certain depths of contamination
 - Incomplete cores with uncertain depths of contamination but integrated into interpolation
 - Historic cores
- Depth scale (in.)**
- 0 - 6
 - 6 - 12
 - 12 - 18
 - 18 - 24
 - 24 - 36
 - 36 - 48
 - 48 - 60
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 - 72 - 84
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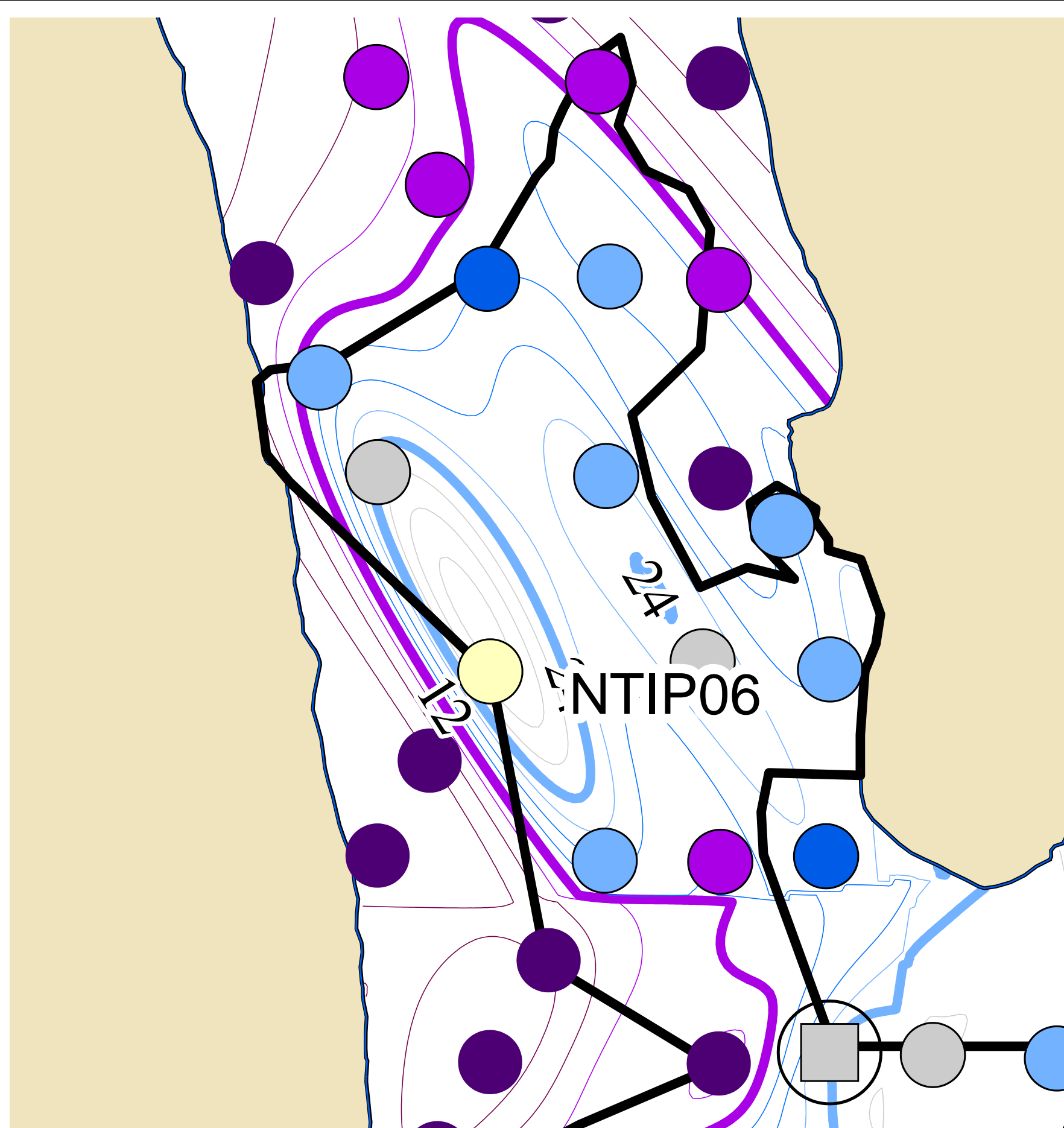
Figure 2-6
Depth of contamination contours for lower NTIP05.



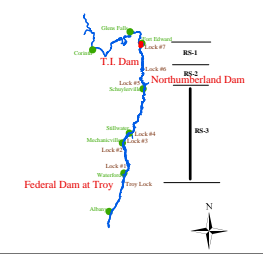
GENERAL AREA



FOCUSED AREA



LOCATOR MAP OF THE HUDSON RIVER



LEGEND

- Dredge Areas
 - Dams and Locks
 - River Miles
 - Bridges
- DOC Contours**
- 12 Inch Intervals
 - 3 Inch Intervals

- Incomplete cores with uncertain depths of contamination
- Cores with certain depths of contamination
- Incomplete cores with uncertain depths of contamination but integrated into interpolation
- Historic cores

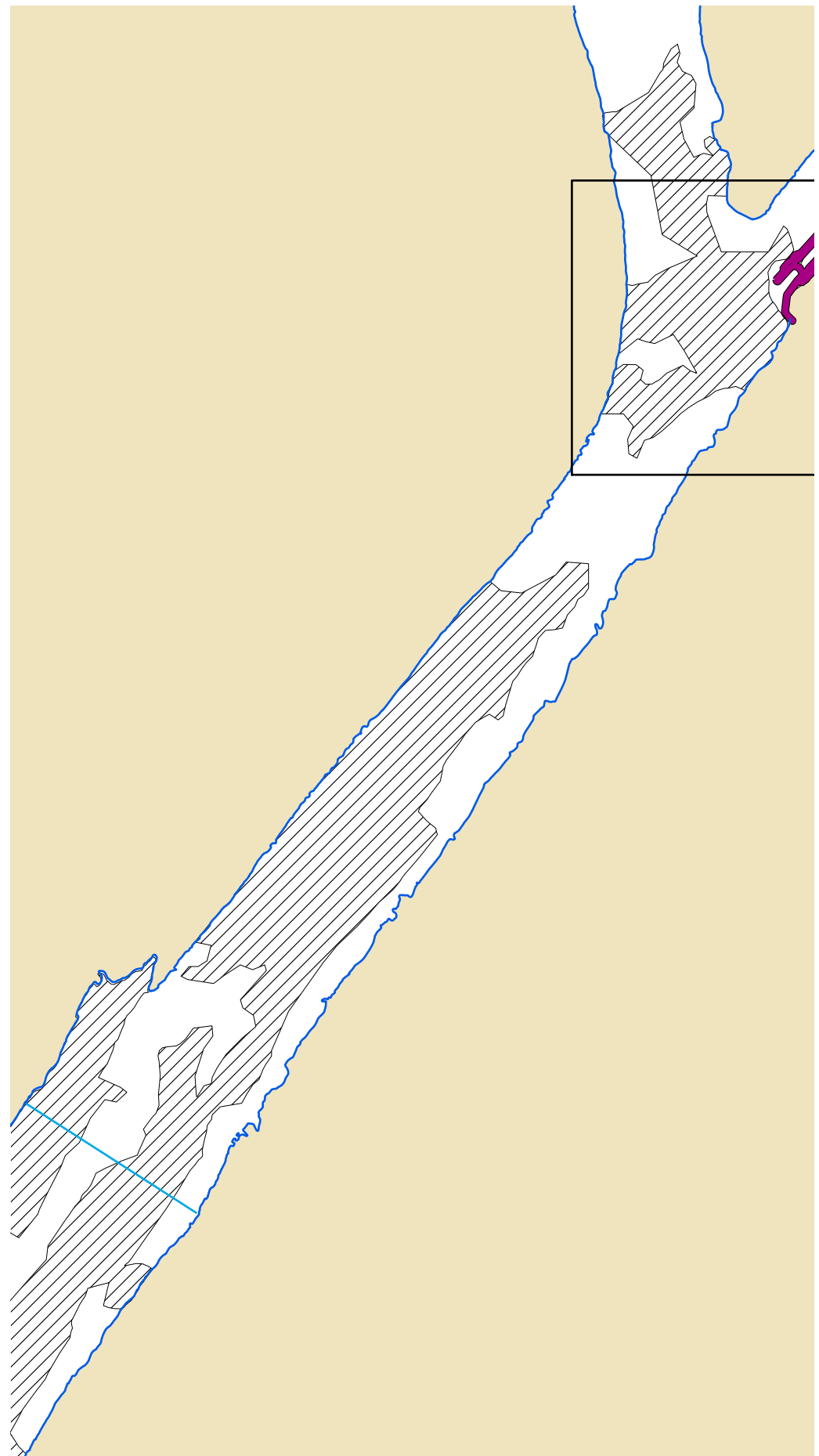
- Depth scale (in.)**
- 0 - 6
 - 6 - 12
 - 12 - 18
 - 18 - 24
 - 24 - 36
 - 36 - 48
 - 48 - 60
 - 60 - 72
 - 72 - 84
 - 84 - 96
 - 96 - 108
 - 108 - 120

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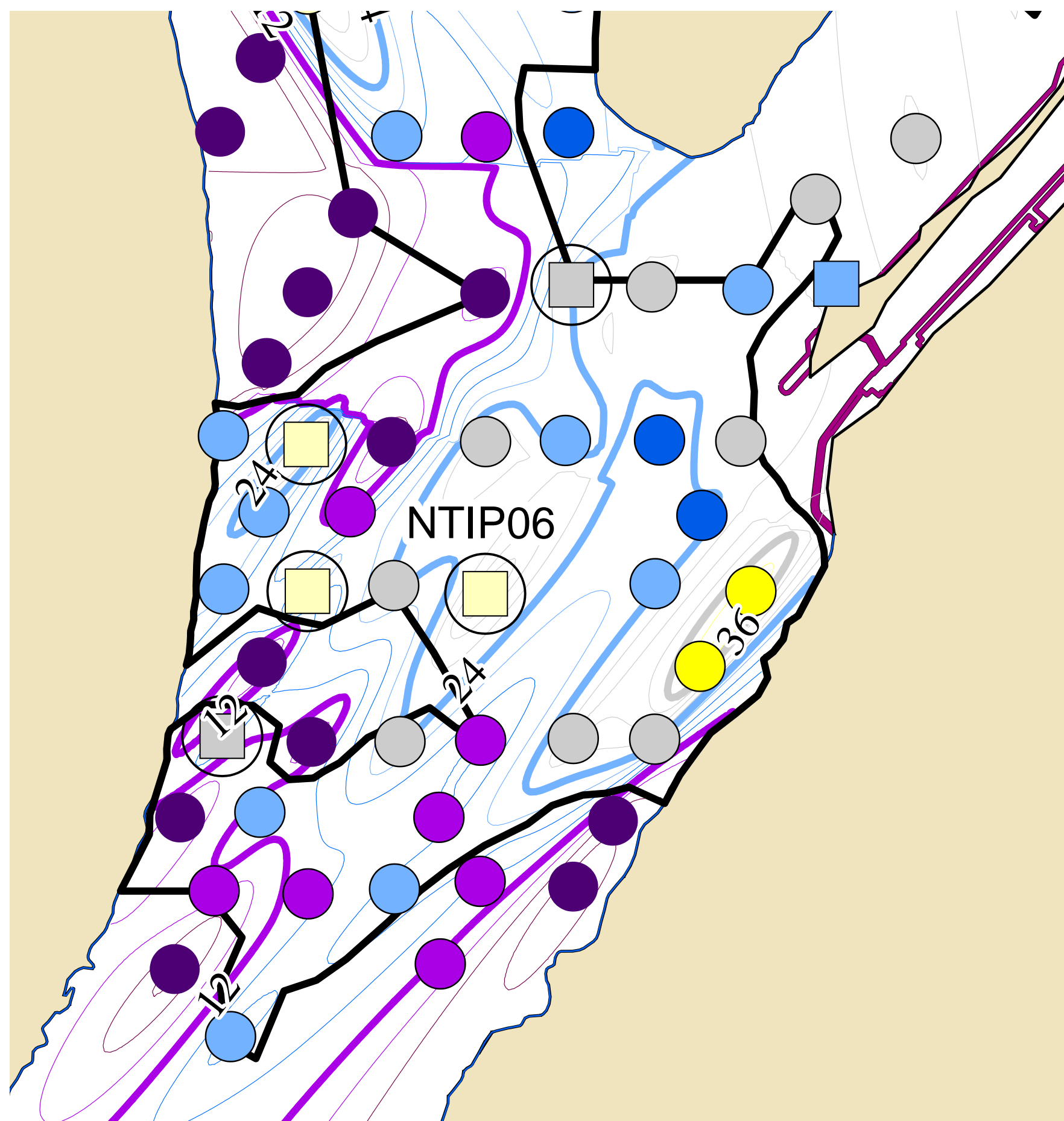
Figure 2-7
Depth of contamination contours for upper NTIP06.



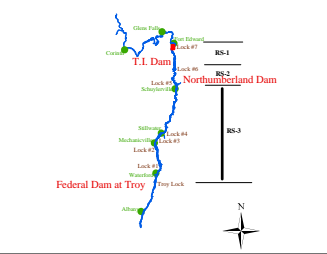
GENERAL AREA



FOCUSED AREA



LOCATOR MAP OF THE HUDSON RIVER



LEGEND

- Dredge Areas
- Dams and Locks
- River Miles
- Bridges

DOC Contours

- 12 Inch Intervals
- 3 Inch Intervals

Incomplete cores with uncertain depths of contamination

Cores with certain depths of contamination

Incomplete cores with uncertain depths of contamination but integrated into interpolation

Historic cores

Depth scale (in.)

- 0 - 6
- 6 - 12
- 12 - 18
- 18 - 24
- 24 - 36
- 36 - 48
- 48 - 60
- 60 - 72
- 72 - 84
- 84 - 96
- 96 - 108
- 108 - 120

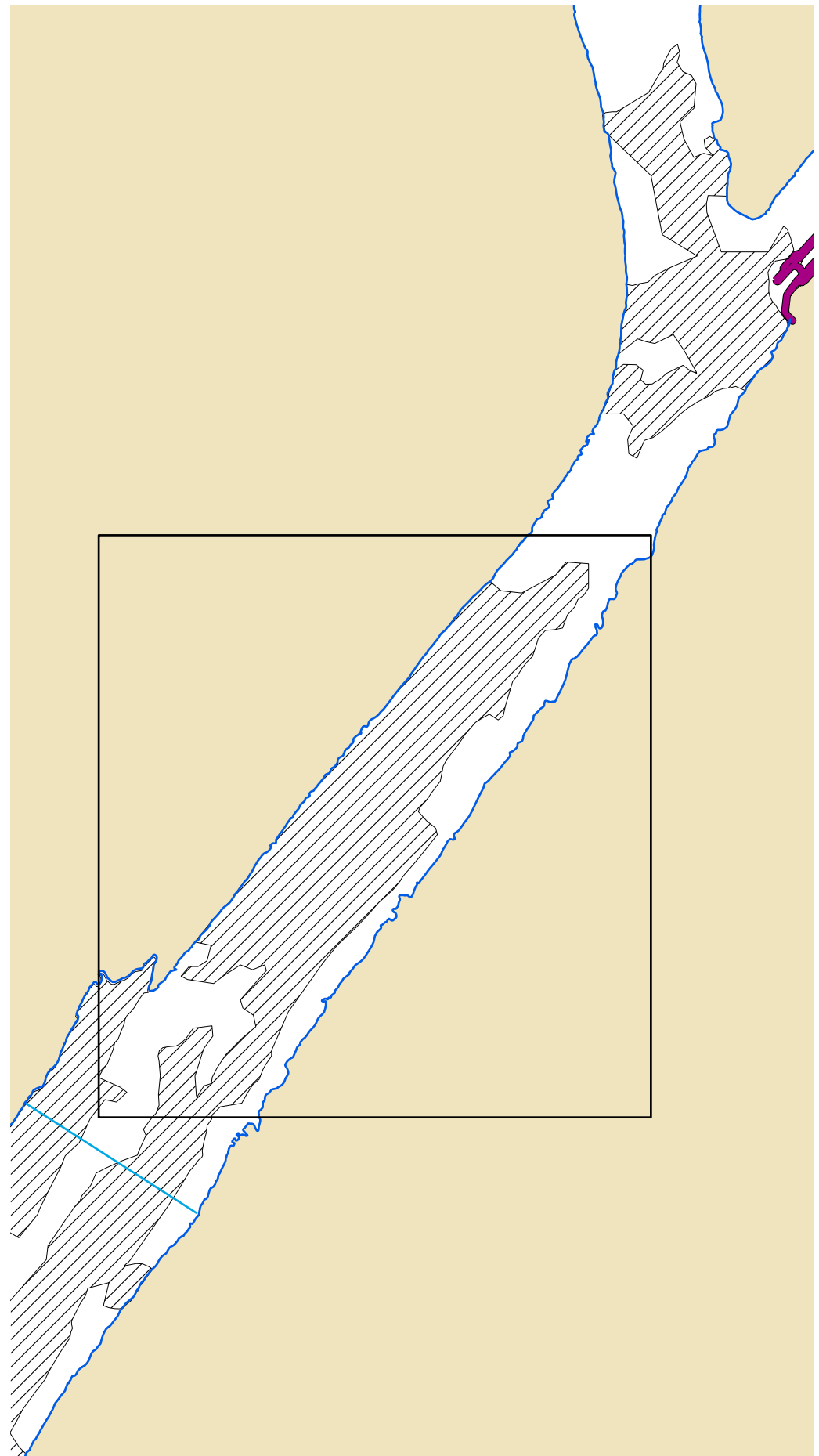
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Figure 2-8
Depth of contamination contours for lower NTIP06.

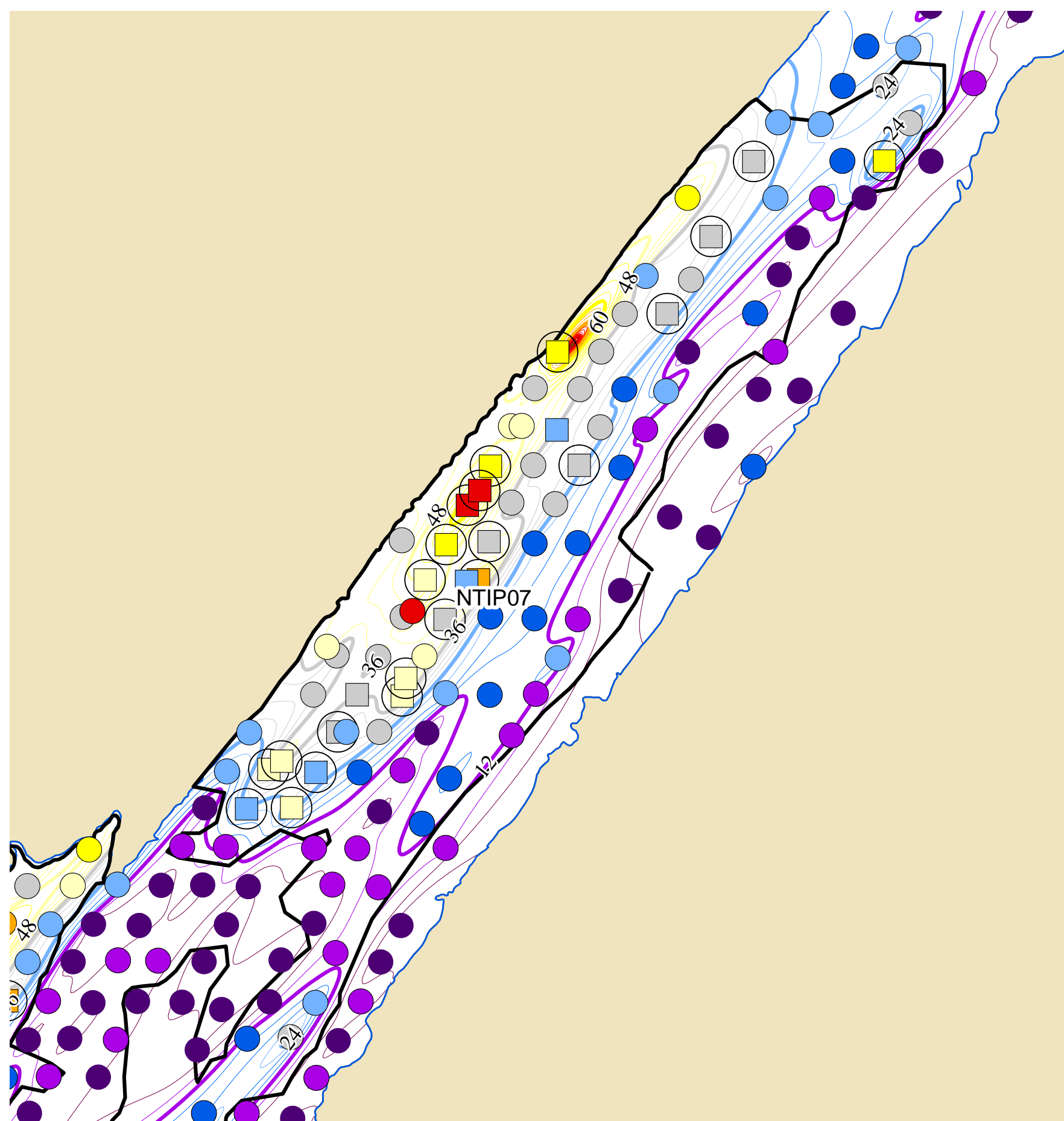


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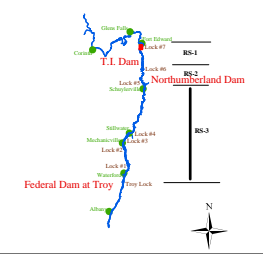
GENERAL AREA



FOCUSED AREA



LOCATOR MAP OF THE HUDSON RIVER



LEGEND

- Dredge Areas
 - Dams and Locks
 - River Miles
 - Bridges
- DOC Contours**
- 12 Inch Intervals
 - 3 Inch Intervals

- Incomplete cores with uncertain depths of contamination
- Cores with certain depths of contamination
- Incomplete cores with uncertain depths of contamination but integrated into interpolation
- Historic cores

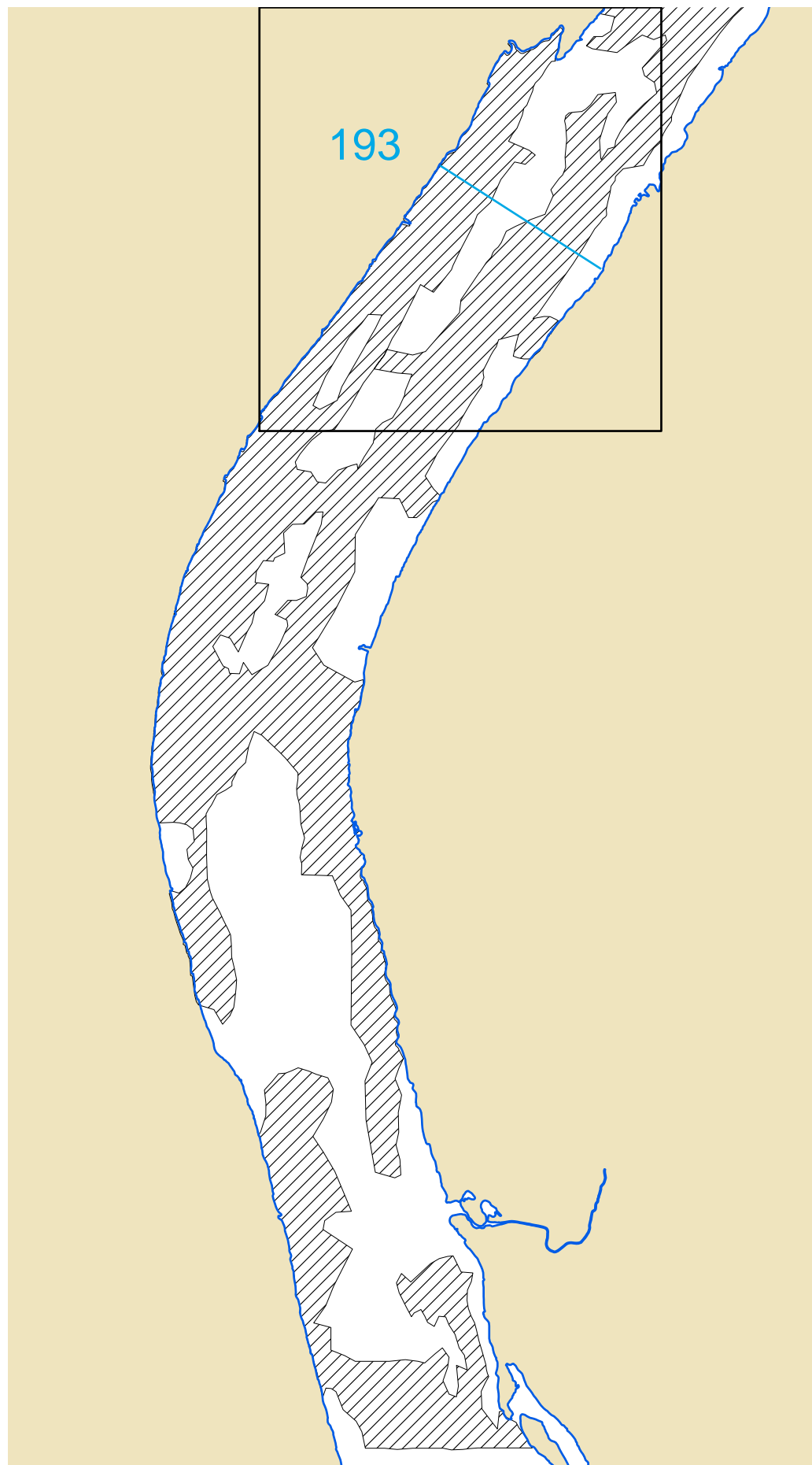
- Depth scale (in.)**
- 0 - 6
 - 6 - 12
 - 12 - 18
 - 18 - 24
 - 24 - 36
 - 36 - 48
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 - 72 - 84
 - 84 - 96
 - 96 - 108
 - 108 - 120

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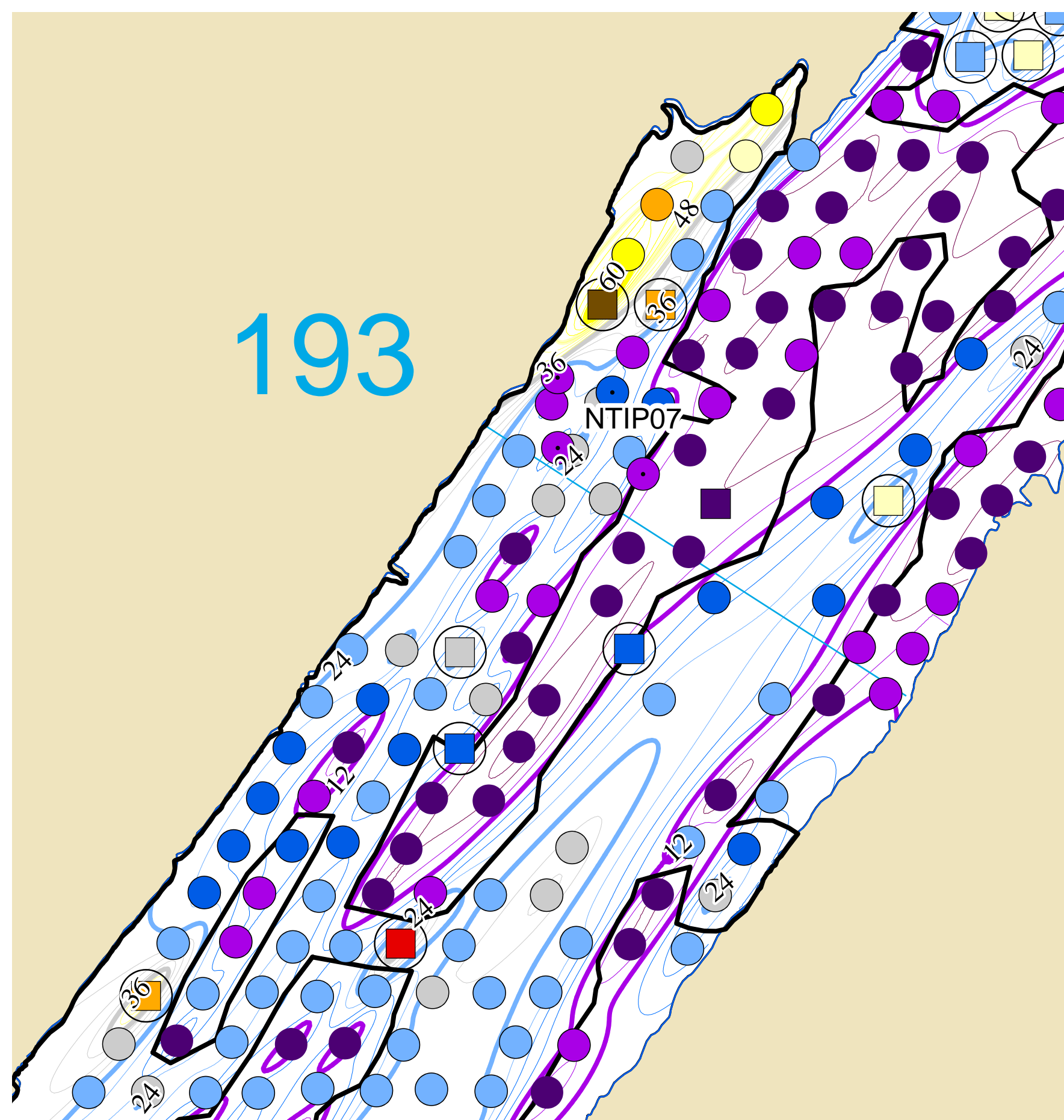
Figure 2-9
Depth of contamination contours for upper NTIP07.



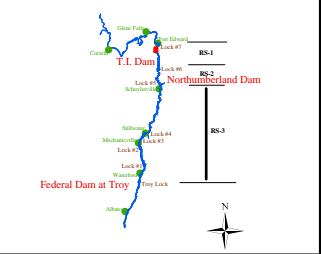
GENERAL AREA



FOCUSED AREA



LOCATOR MAP OF THE HUDSON RIVER



LEGEND

- Dredge Areas
- Dams and Locks
- River Miles
- Bridges

DOC Contours

- 12 Inch Intervals
- 3 Inch Intervals

Incomplete cores with uncertain depths of contamination

Cores with certain depths of contamination

Incomplete cores with uncertain depths of contamination but integrated into interpolation

Historic cores

Depth scale (in.)

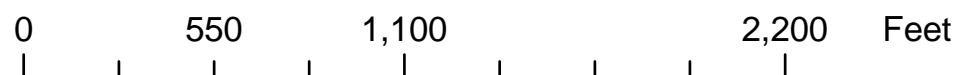
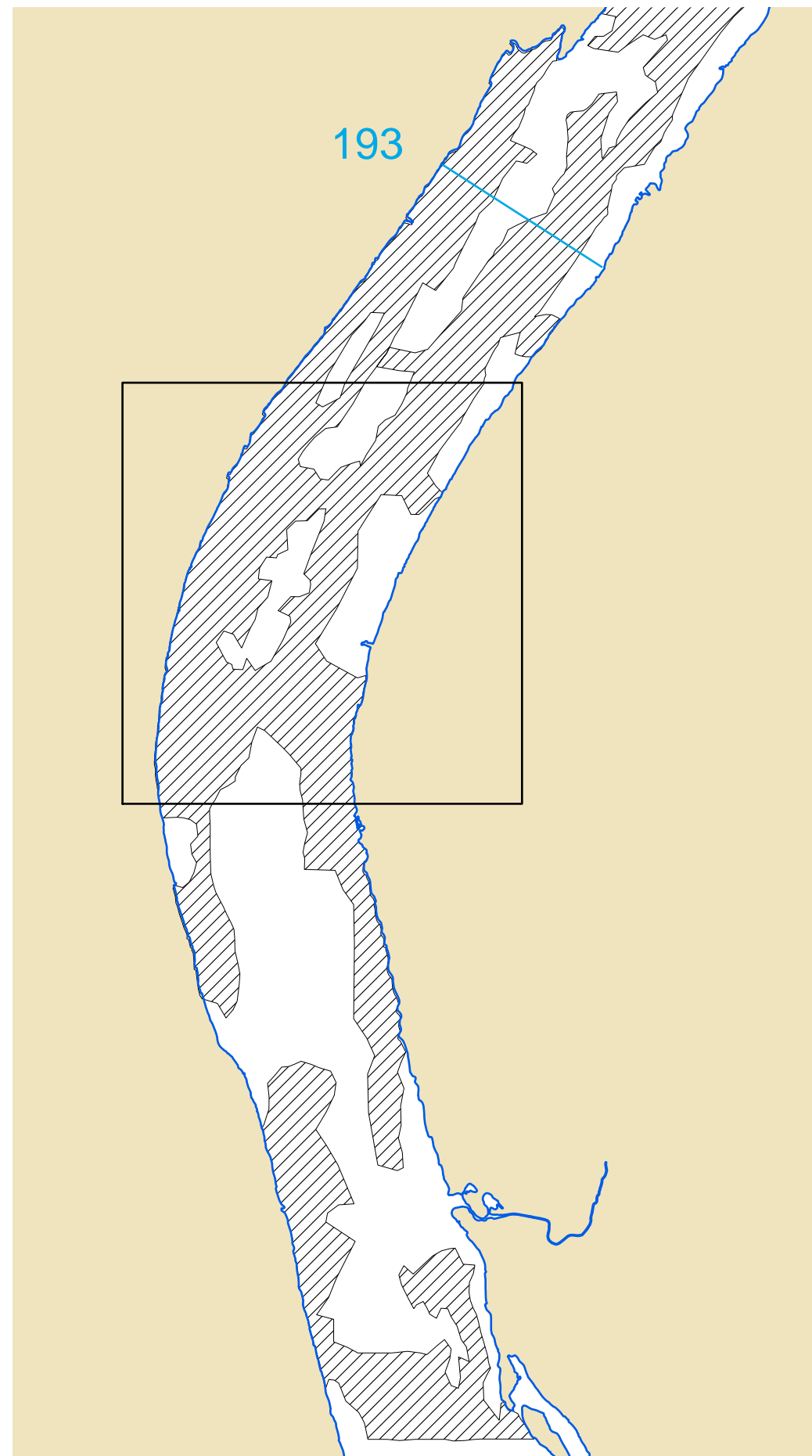
- 0 - 6
- 6 - 12
- 12 - 18
- 18 - 24
- 24 - 36
- 36 - 48
- 48 - 60
- 60 - 72
- 72 - 84
- 84 - 96
- 96 - 108
- 108 - 120

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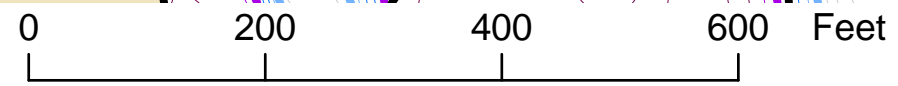
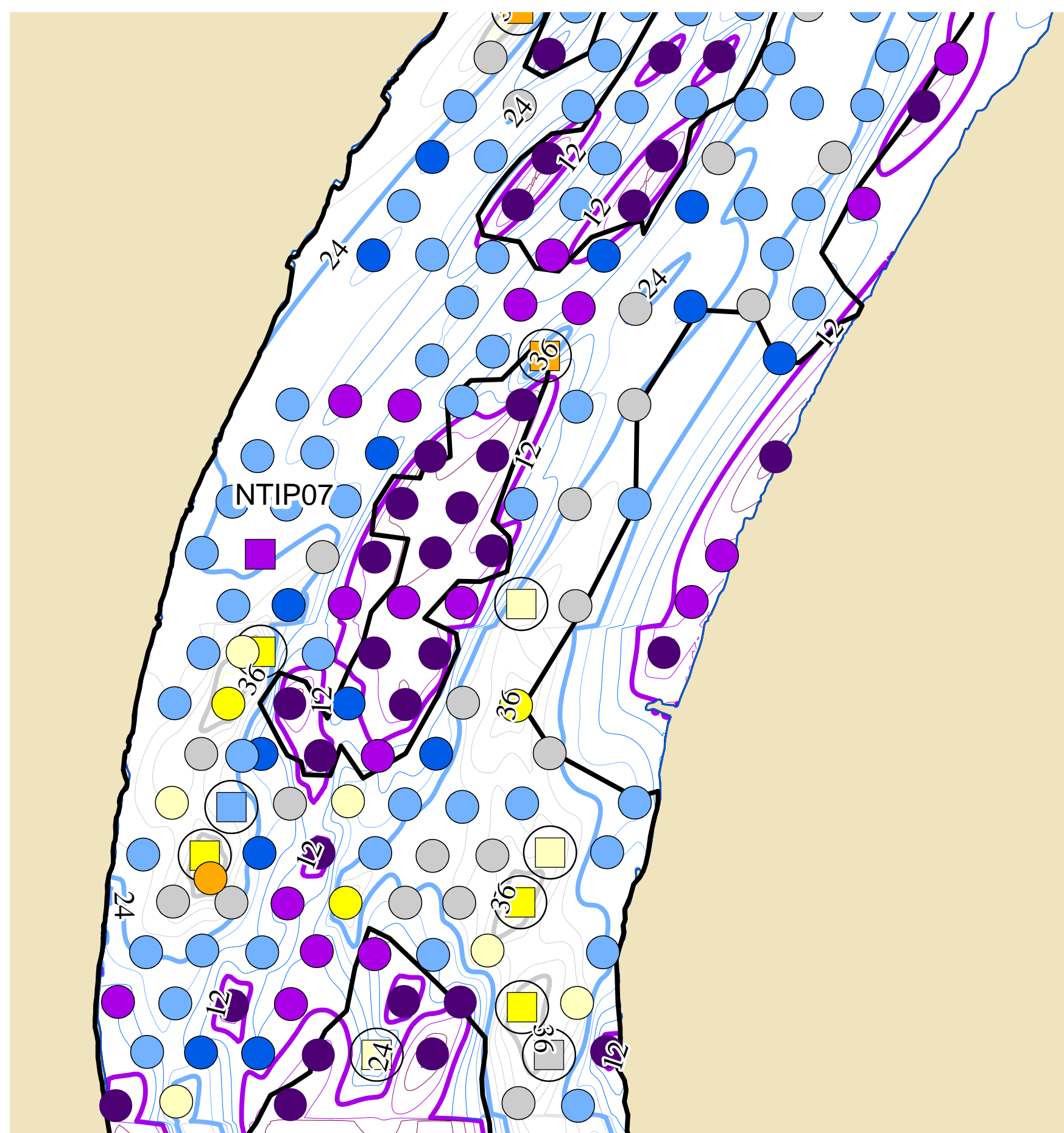
Figure 2-10
Depth of contamination contours for upper middle NTIP07.



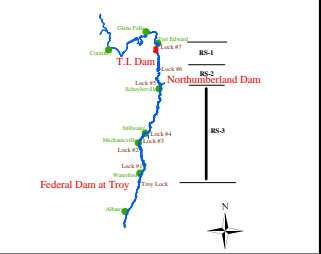
GENERAL AREA



FOCUSED AREA



LOCATOR MAP OF THE HUDSON RIVER



LEGEND

- Dredge Areas
- Dams and Locks
- River Miles
- Bridges

DOC Contours

- 12 Inch Intervals
- 3 Inch Intervals

Incomplete cores with uncertain depths of contamination

Cores with certain depths of contamination

Incomplete cores with uncertain depths of contamination but integrated into interpolation

Historic cores

Depth scale (in.)

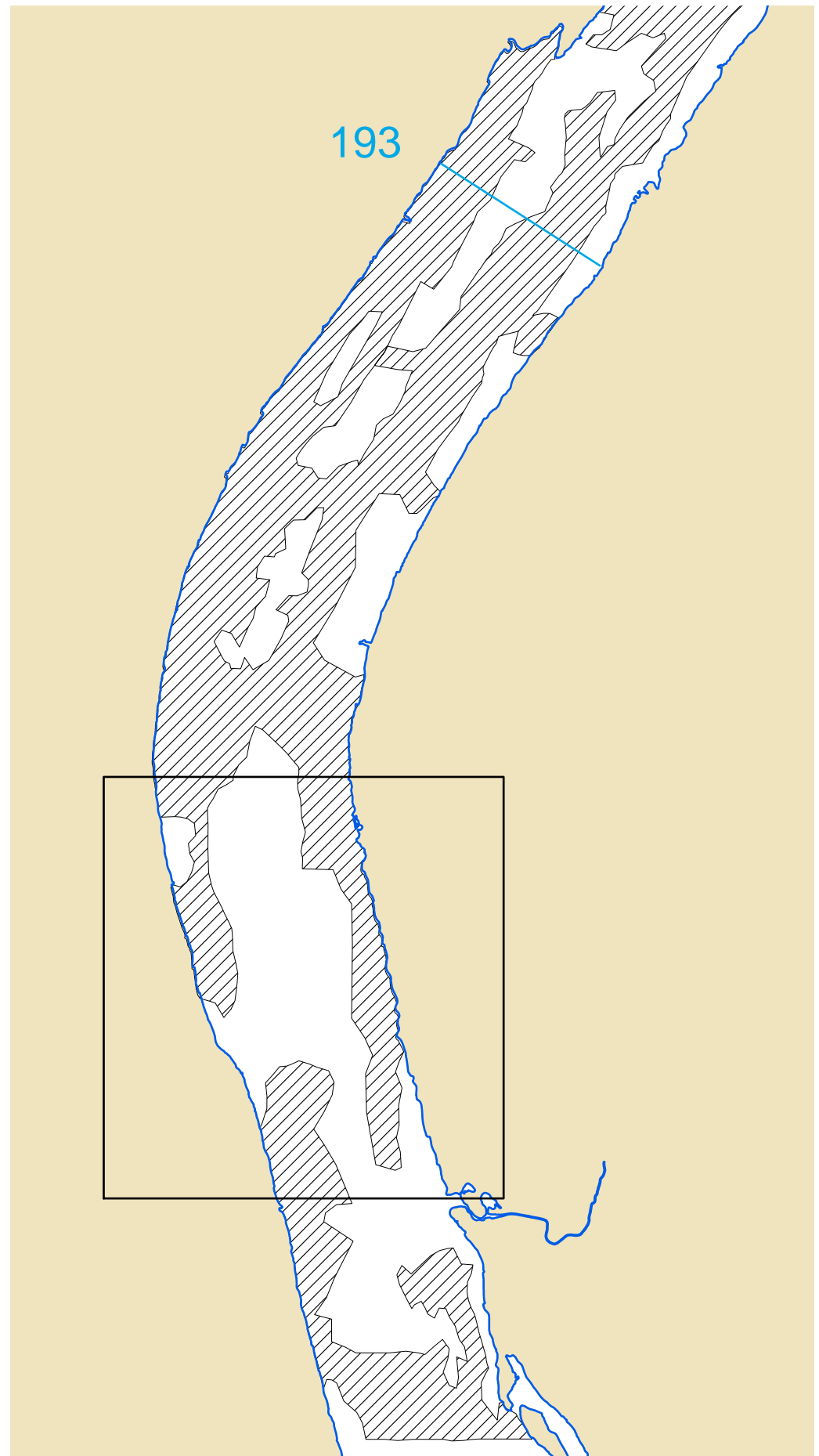
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- 18 - 24
- 24 - 36
- 36 - 48
- 48 - 60
- 60 - 72
- 72 - 84
- 84 - 96
- 96 - 108
- 108 - 120

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Hudson River Project

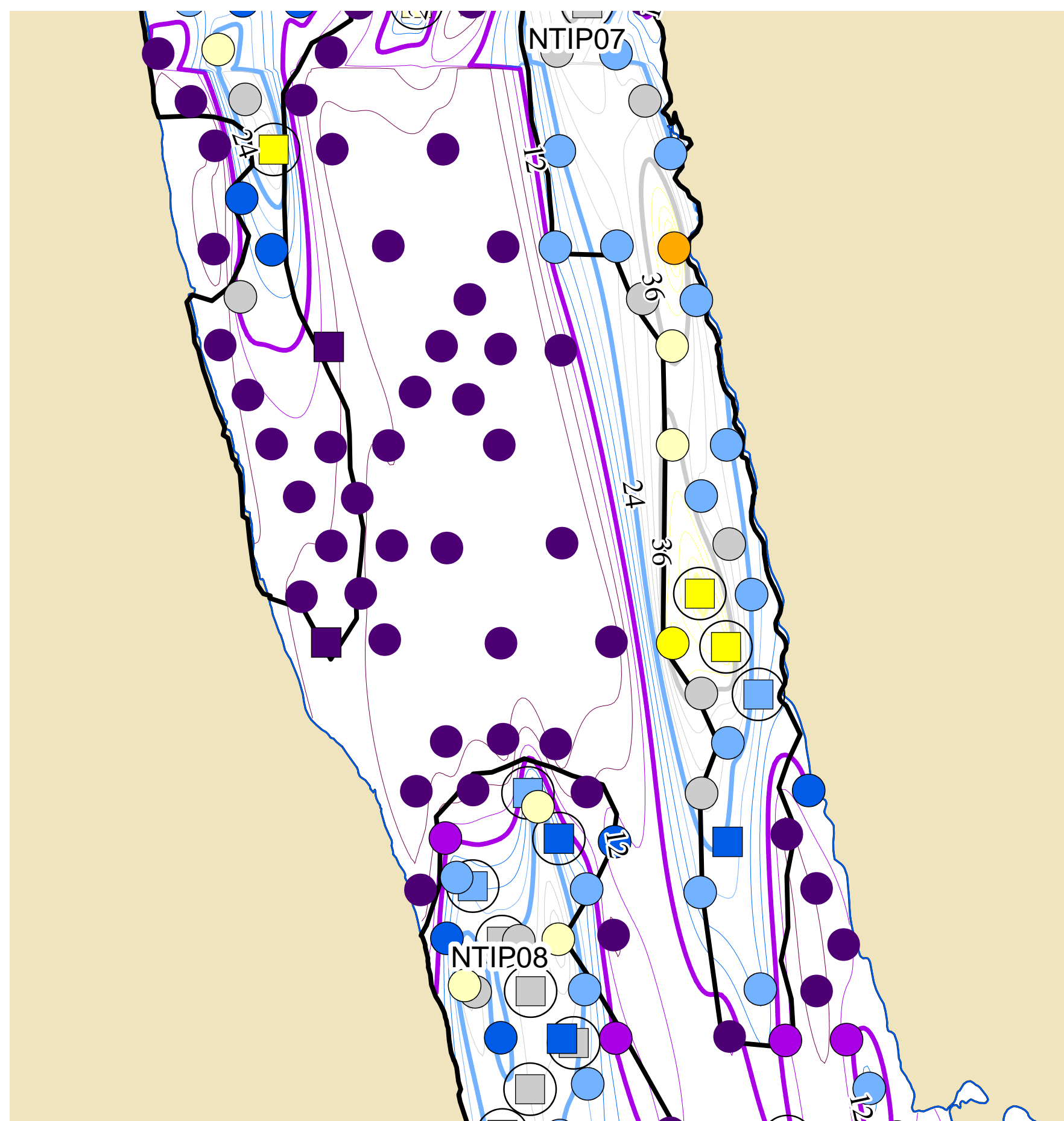
Figure 2-11
Depth of contamination contours for lower middle NTIP07.



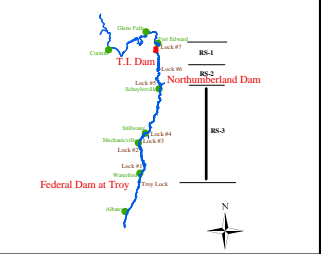
GENERAL AREA



FOCUSED AREA



LOCATOR MAP OF THE HUDSON RIVER



LEGEND

- Dredge Areas
 - Dams and Locks
 - River Miles
 - Bridges
- DOC Contours**
- 12 Inch Intervals
 - 3 Inch Intervals

- Incomplete cores with uncertain depths of contamination
- Cores with certain depths of contamination
- Incomplete cores with uncertain depths of contamination but integrated into interpolation
- Historic cores

Depth scale (in.)

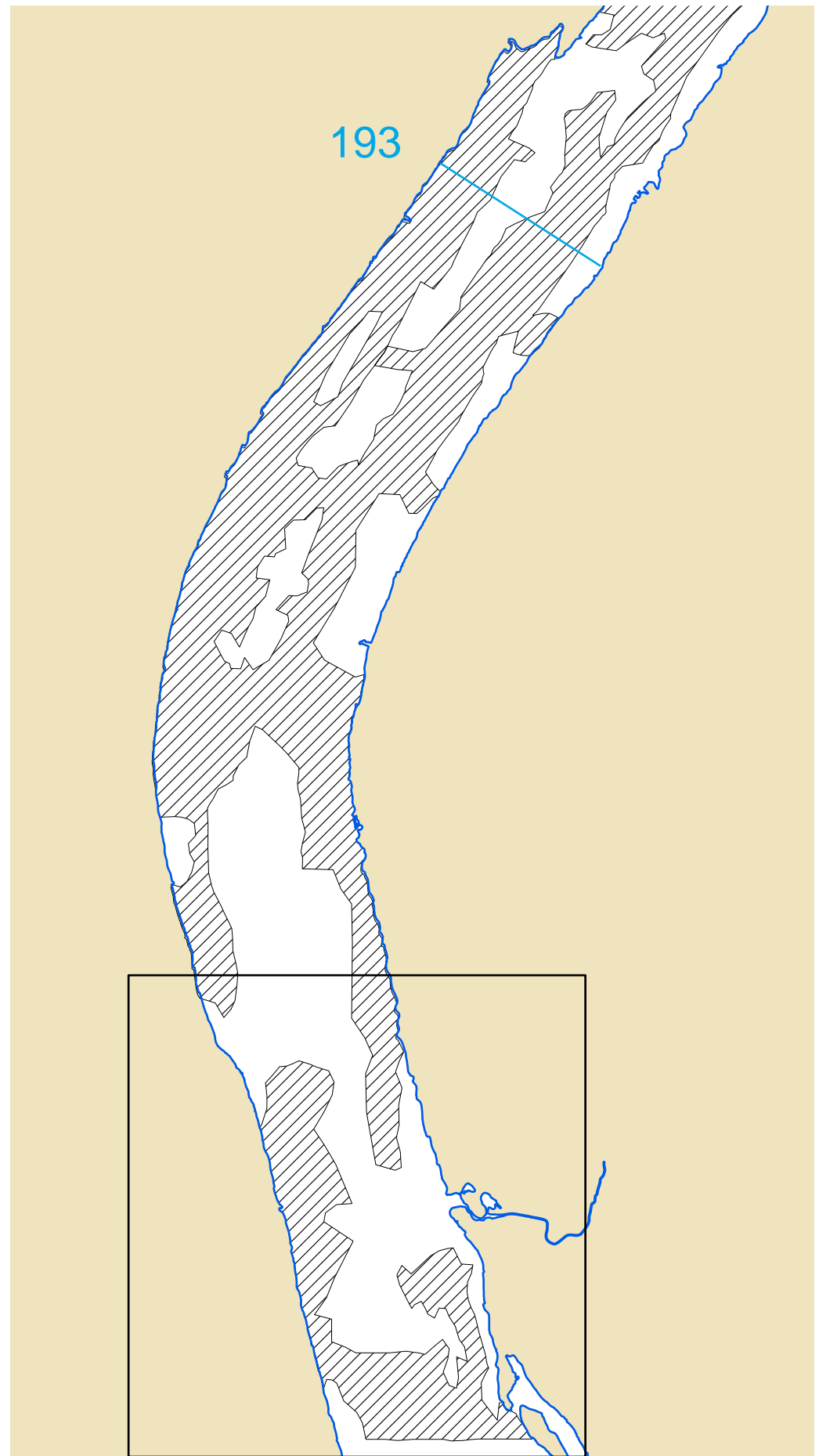
- 0 - 6
- 6 - 12
- 12 - 18
- 18 - 24
- 24 - 36
- 36 - 48
- 48 - 60
- 60 - 72
- 72 - 84
- 84 - 96
- 96 - 108
- 108 - 120

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Hudson River Project

Figure 2-12
Depth of contamination contours for lower NTIP07.

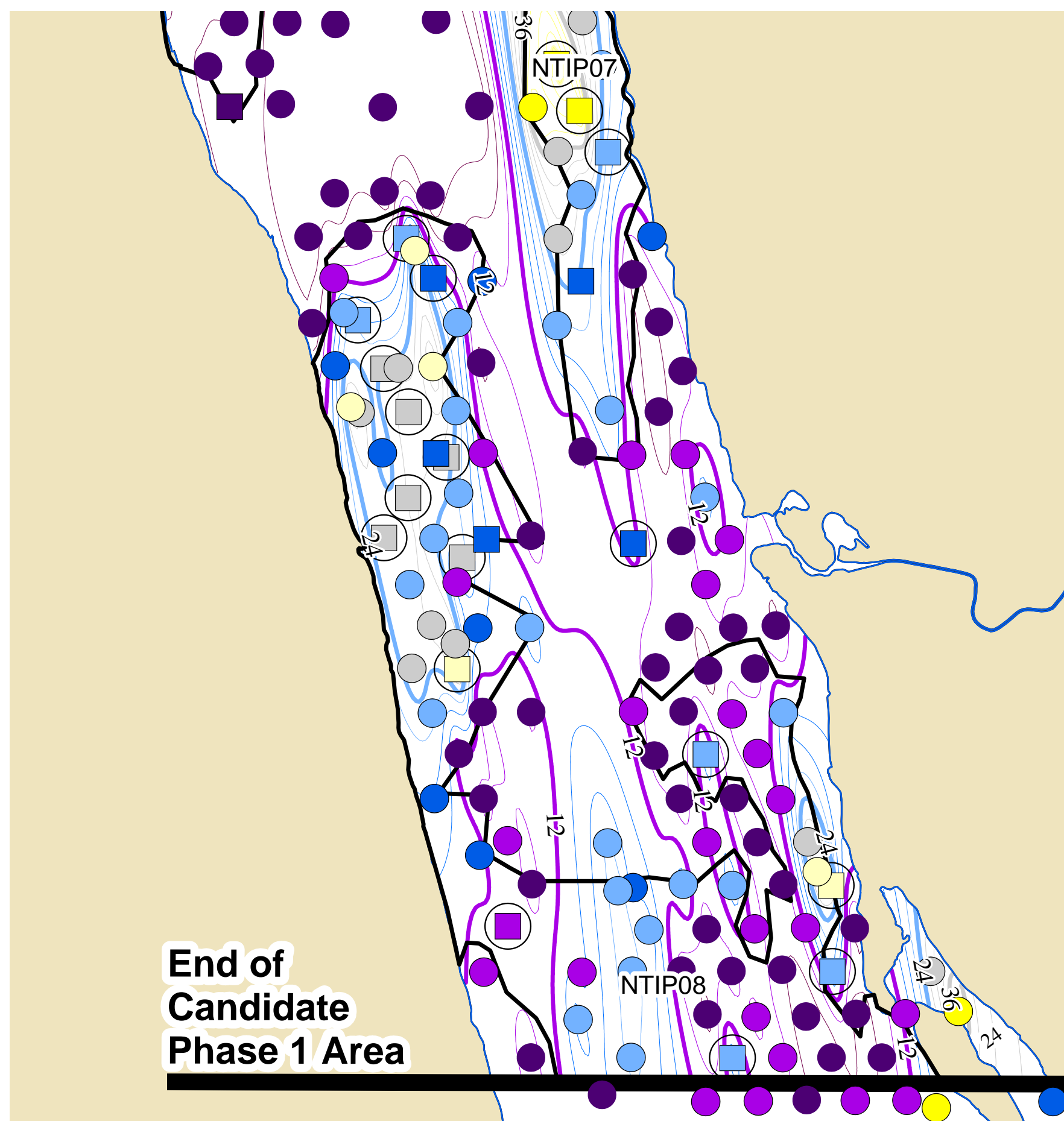


GENERAL AREA



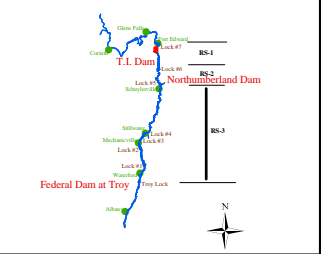
0 550 1,100 2,200 Feet

FOCUSED AREA



0 230 460 690 Feet

LOCATOR MAP OF THE HUDSON RIVER



LEGEND

- Dredge Areas
 - Dams and Locks
 - River Miles
 - Bridges
- DOC Contours**
- 12 Inch Intervals
 - 3 Inch Intervals

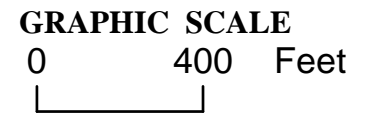
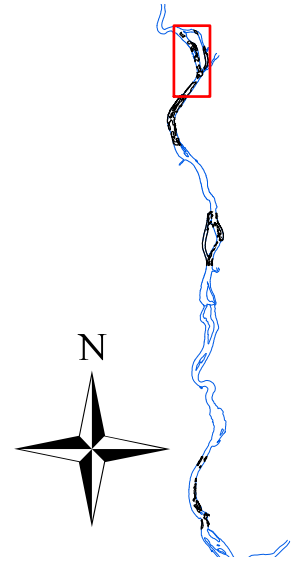
- Incomplete cores with uncertain depths of contamination
- Cores with certain depths of contamination
- Incomplete cores with uncertain depths of contamination but integrated into interpolation
- Historic cores

- Depth scale (in.)**
- 0 - 6
 - 6 - 12
 - 12 - 18
 - 18 - 24
 - 24 - 36
 - 36 - 48
 - 48 - 60
 - 60 - 72
 - 72 - 84
 - 84 - 96
 - 96 - 108
 - 108 - 120

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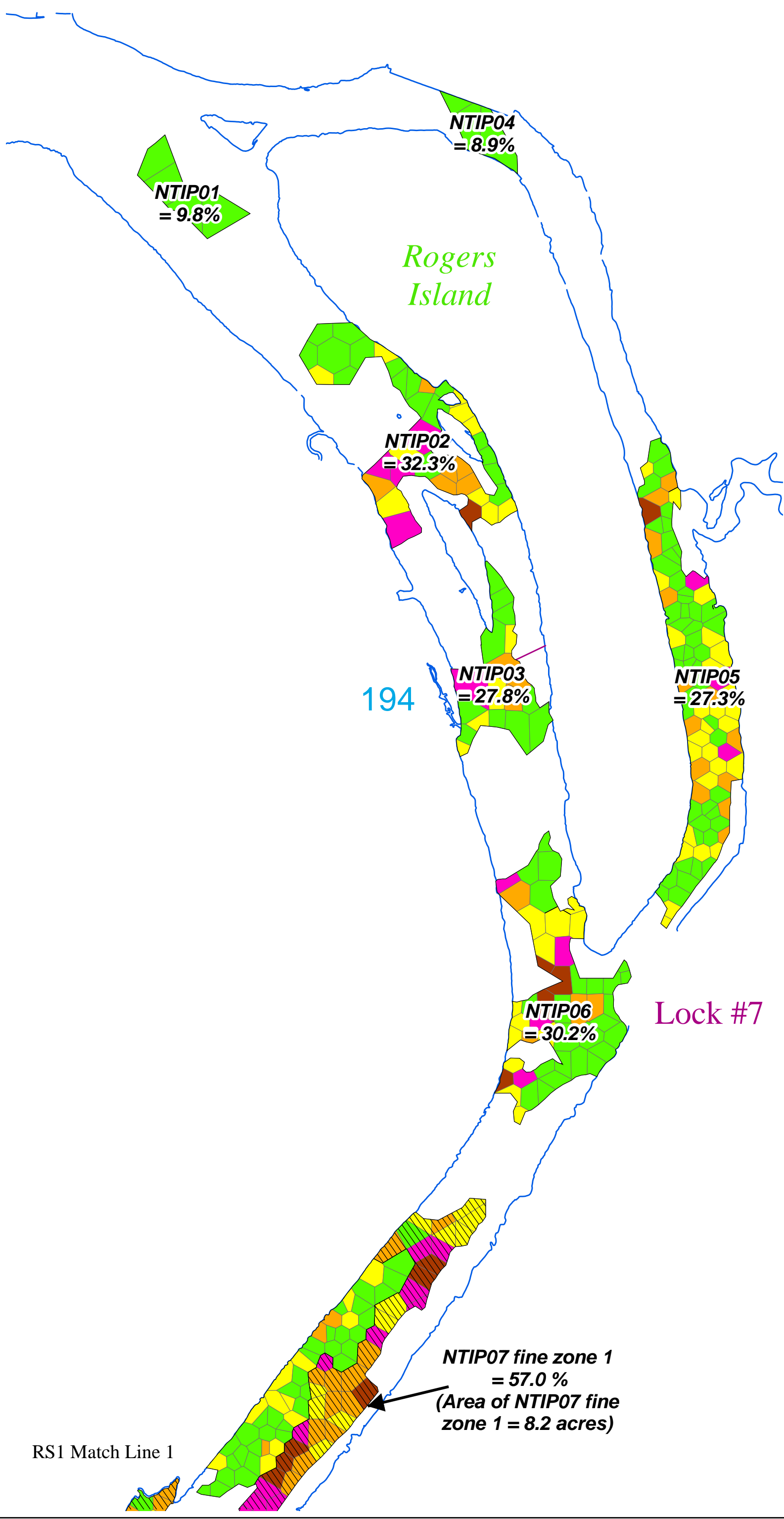
Figure 2-13
Depth of contamination contours for NTIP08.





LEGEND

Combined silt and clay content (% by mass)



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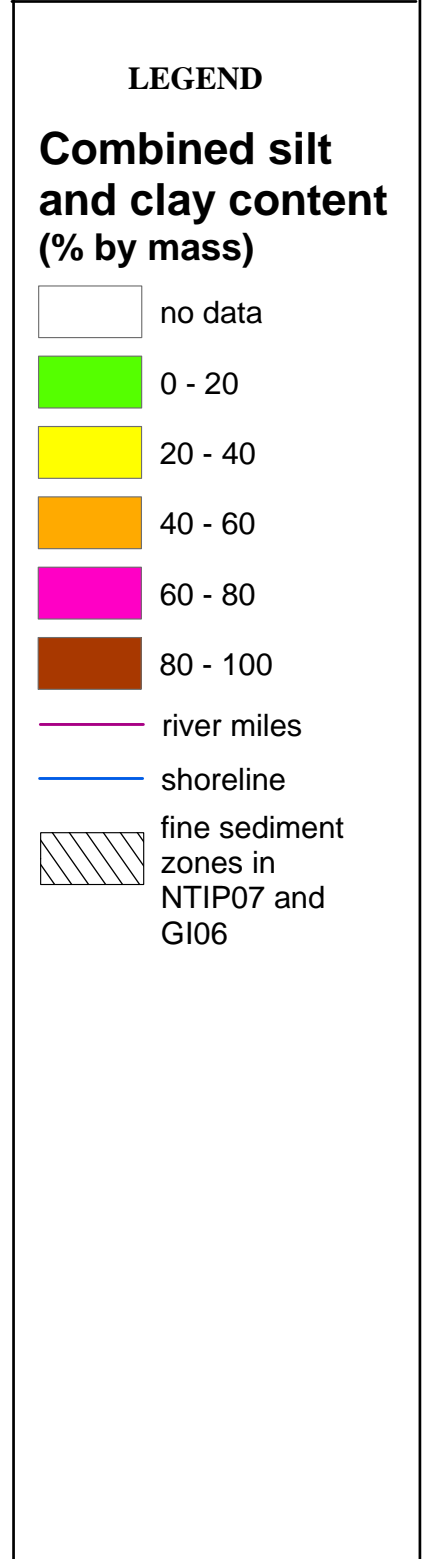
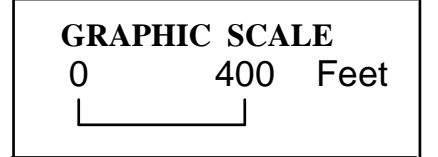
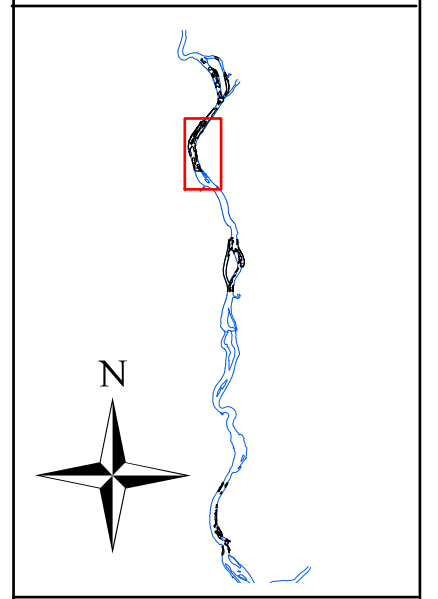
Figure 2-14.

Percent by mass
silt + clay
- northern NTIP.



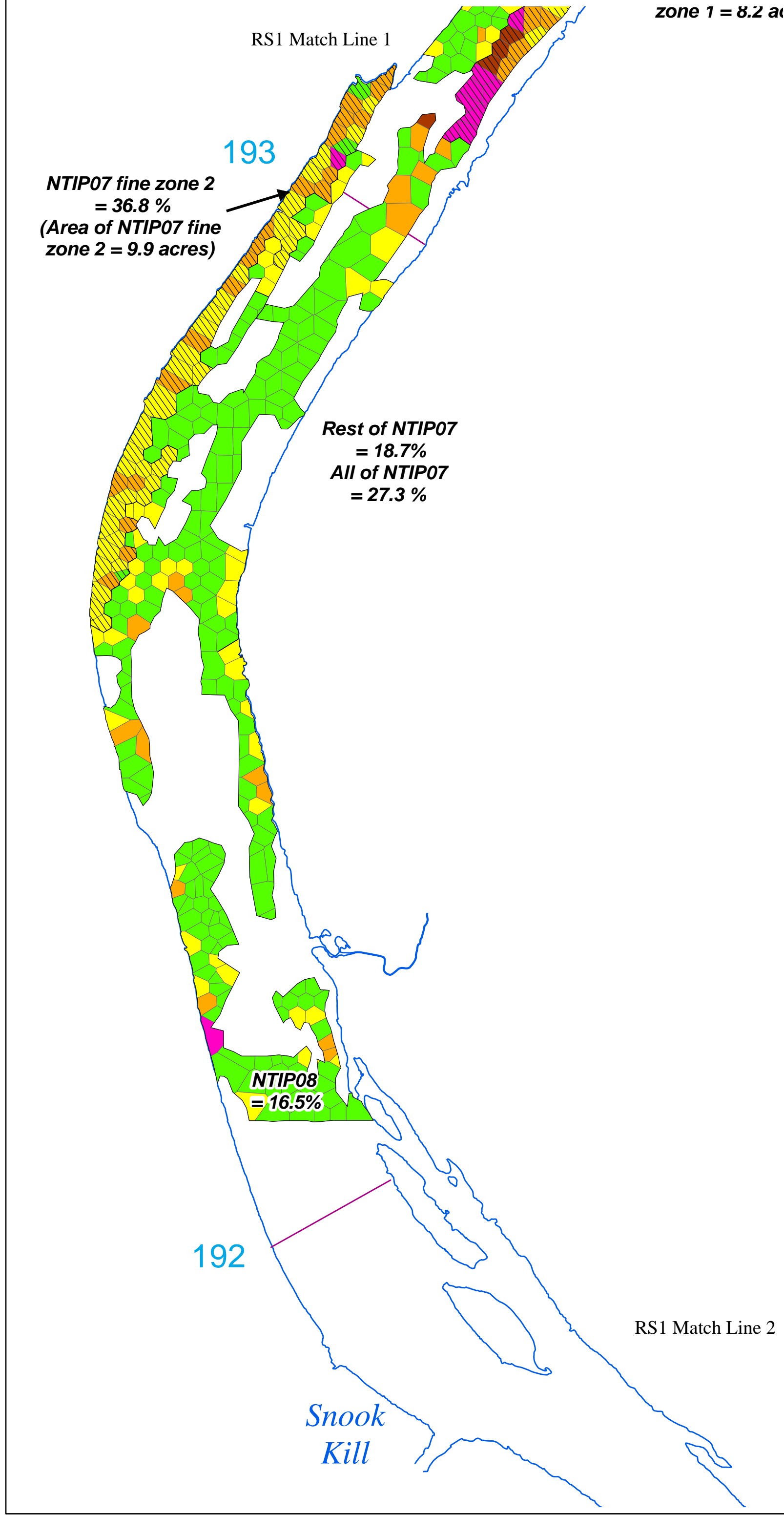
zone 1 = 8.2 ac

LOCATOR MAP OF THE THOMPSON ISLAND POOL

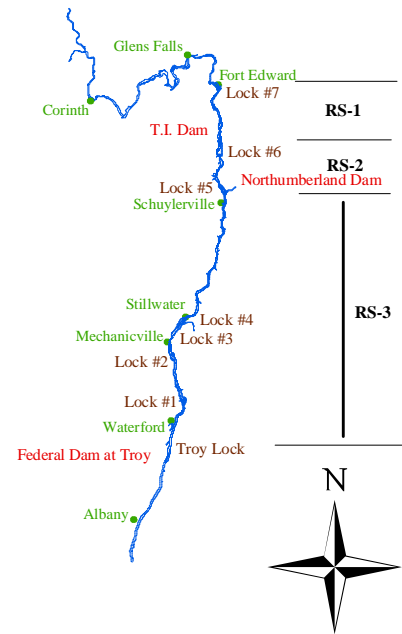


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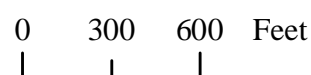
Figure 2-15.
Percent by mass silt + clay - southern NTIP.



LOCATOR MAP OF THE UPPER HUDSON RIVER



GRAPHIC SCALE



LEGEND

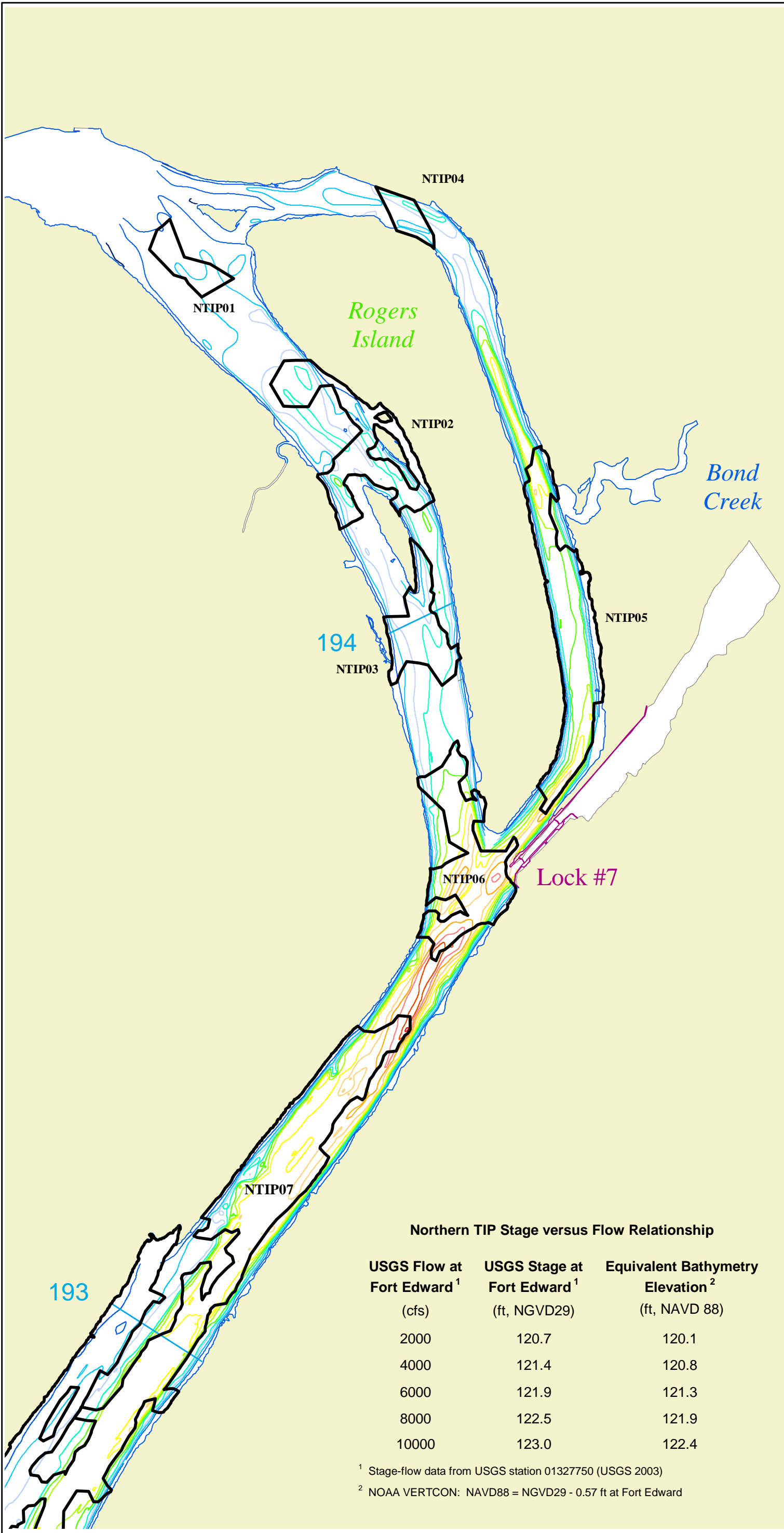
2001 Bathymetry Contours Elevation (ft NAVD88)

- 119
- 117
- 115
- 113
- 111
- 109
- 107
- 105
- 103
- 101
- 99
- 97
- 95
- 93
- 91
- 89
- ▭ Dredge Areas
- Shoreline
- Dams and Locks
- River Miles

Notes:
 1) Dredge areas shown were delineated in the Phase 1 Dredge Area Delineation Report (QEA 2004).
 2) Elevation data is referenced to North American Vertical Datum of 1988 (NAVD88).

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Figure 2-16. Bathymetry Contours and Water Depths - Northern NTIP.

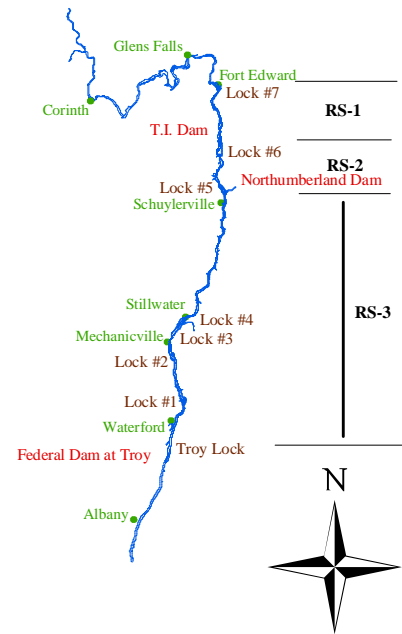


Northern TIP Stage versus Flow Relationship

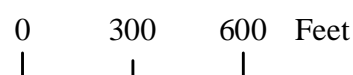
USGS Flow at Fort Edward ¹ (cfs)	USGS Stage at Fort Edward ¹ (ft, NGVD29)	Equivalent Bathymetry Elevation ² (ft, NAVD 88)
2000	120.7	120.1
4000	121.4	120.8
6000	121.9	121.3
8000	122.5	121.9
10000	123.0	122.4

¹ Stage-flow data from USGS station 01327750 (USGS 2003)
² NOAA VERTCON: NAVD88 = NGVD29 - 0.57 ft at Fort Edward

LOCATOR MAP OF THE UPPER HUDSON RIVER



GRAPHIC SCALE



LEGEND

**2001 Bathymetry Contours
Elevation (ft NAVD88)**

- 119
- 117
- 115
- 113
- 111
- 109
- 107
- 105
- 103
- 101
- 99
- 97
- 95
- 93
- 91
- 89
- Dredge Areas
- Shoreline
- Dams and Locks
- River Miles

Notes:
 1) Dredge areas shown were delineated in the Phase 1 Dredge Area Delineation Report (QEA 2004).
 2) Elevation data is referenced to North American Vertical Datum of 1988 (NAVD88).

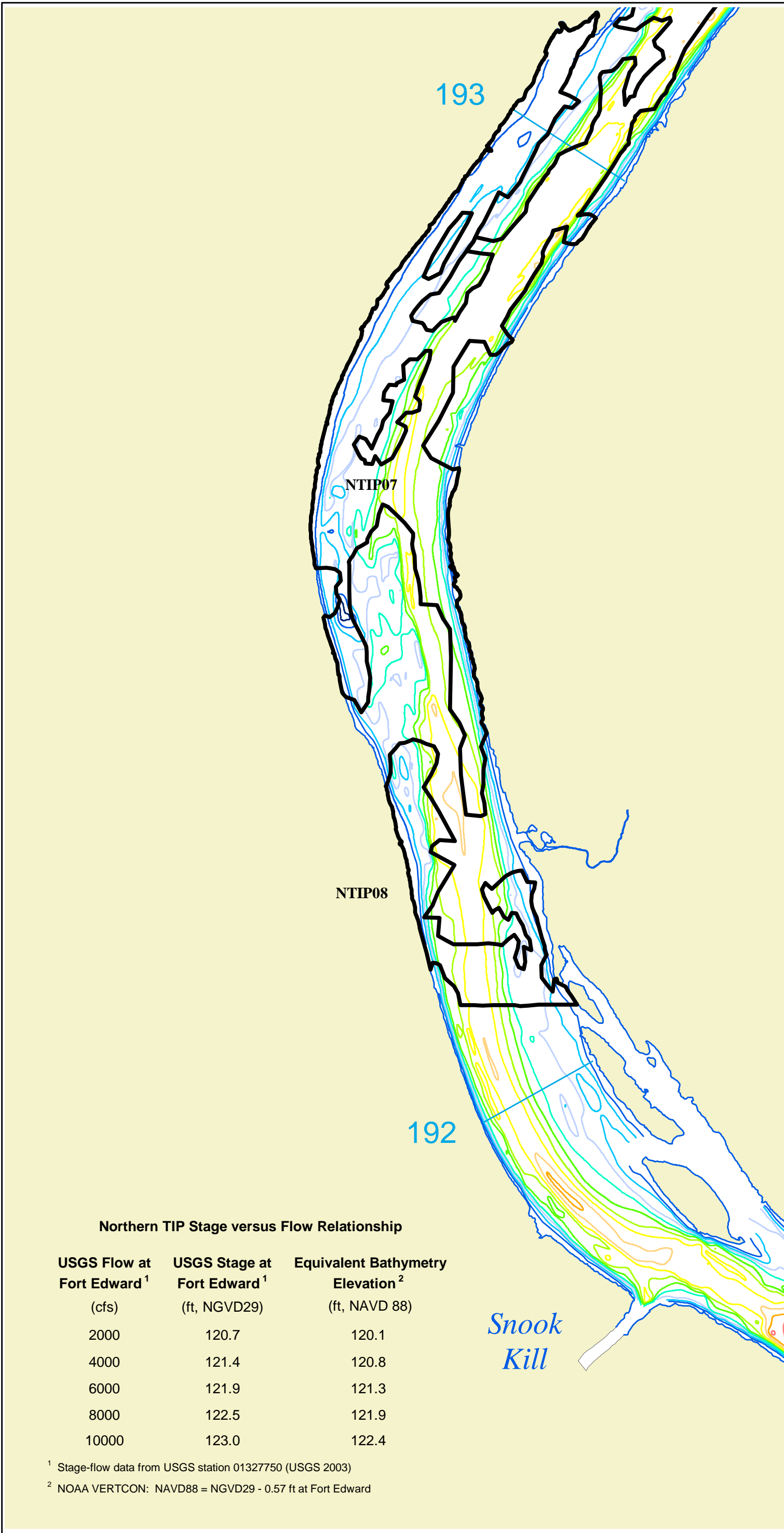
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**Figure 2-17.
Bathymetry Contours
and Water Depths -
Southern NTIP.**



GENdad:132

September 2004



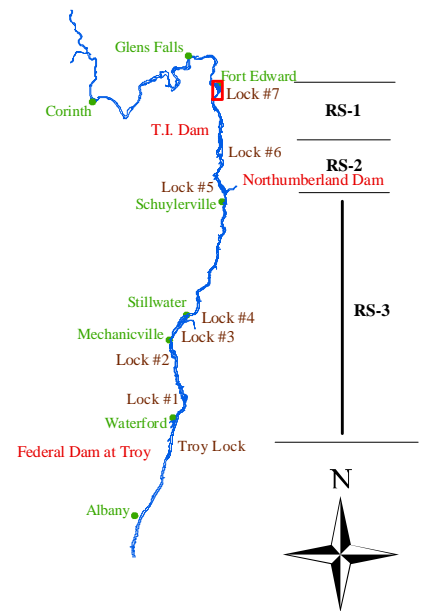
Northern TIP Stage versus Flow Relationship

USGS Flow at Fort Edward ¹ (cfs)	USGS Stage at Fort Edward ¹ (ft, NGVD29)	Equivalent Bathymetry Elevation ² (ft, NAVD 88)
2000	120.7	120.1
4000	121.4	120.8
6000	121.9	121.3
8000	122.5	121.9
10000	123.0	122.4

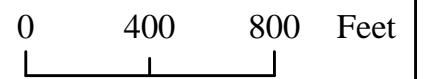
¹ Stage-flow data from USGS station 01327750 (USGS 2003)

² NOAA VERTCON: NAVD88 = NGVD29 - 0.57 ft at Fort Edward

LOCATOR MAP OF THE UPPER HUDSON RIVER



GRAPHIC SCALE



LEGEND

- Sonar Targets
- Dredge Areas
- Shore Line
- Dams and Locks
- River Miles

Notes:

1. Side Scan Sonar target areas created by: Ocean Surveys, Inc., 2003. Data Interpretation Report - Side Scan Sonar Survey Investigation. Hudson River - River Sections 1 and 3, Fall 2002. OSI Report No. 02ES072 - DIR - F2002. May 1, 2003. Prepared for the General Electric Company.
2. Dredge areas shown were delineated in the Phase 1 Dredge Area Delineation Report (QEA 2004).

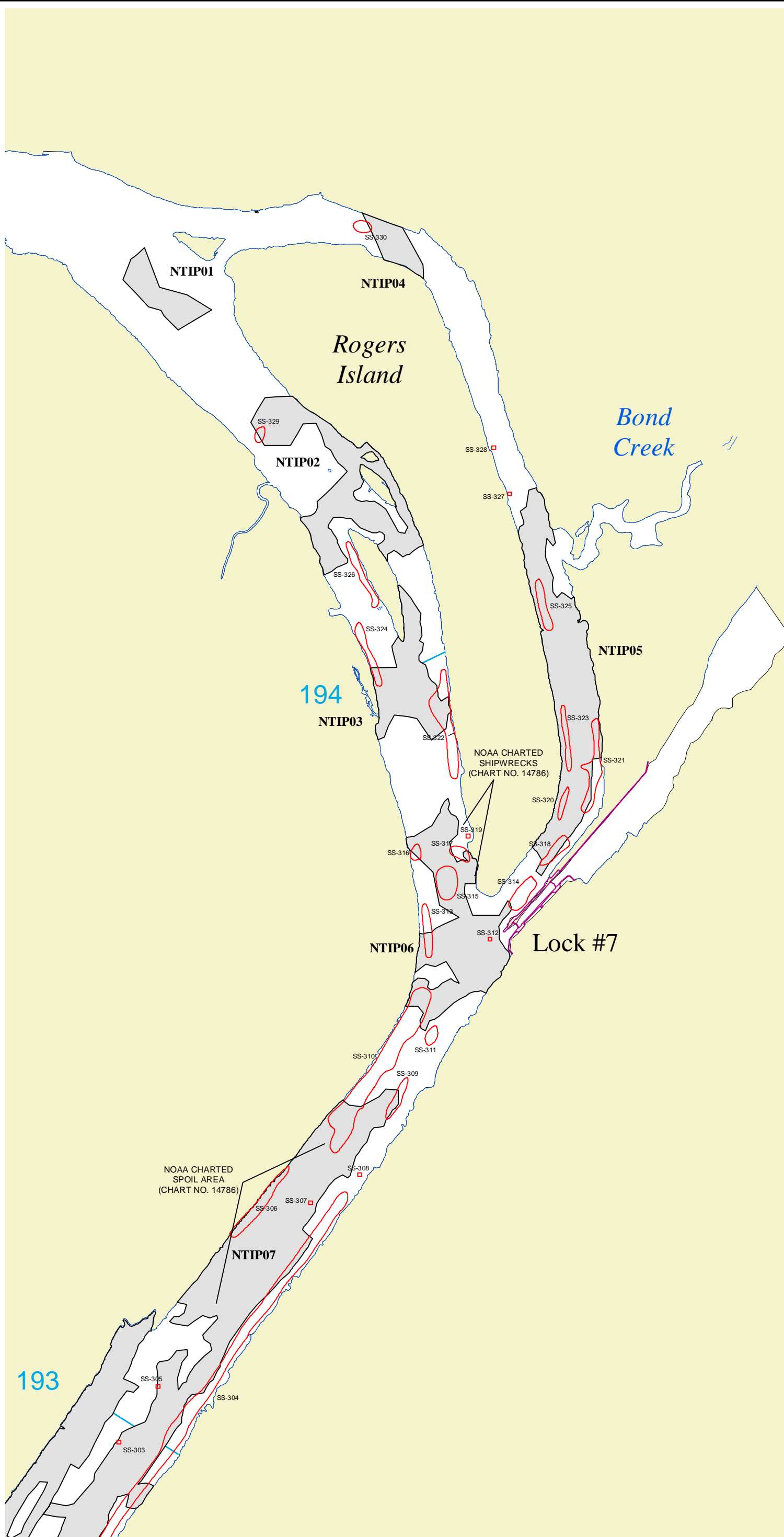
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Figure 2-18. Charted sonar targets and debris areas - Northern NTIP.

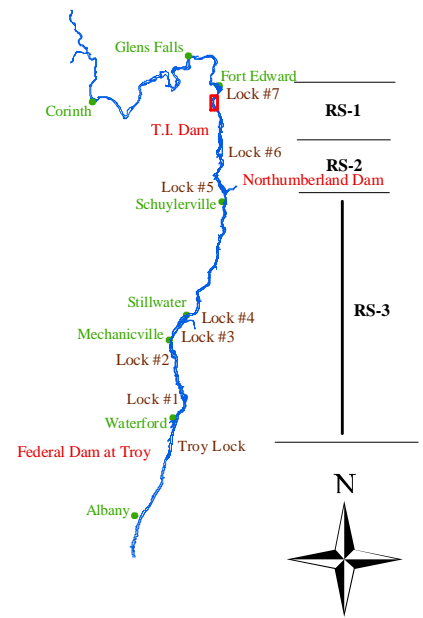


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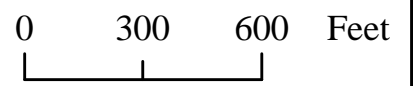
September 2004



LOCATOR MAP OF THE UPPER HUDSON RIVER



GRAPHIC SCALE



LEGEND

- Sonar Targets
- Dredge Areas
- Shore Line
- Dams and Locks
- River Miles

Notes:

1. Side Scan Sonar target areas created by: Ocean Surveys, Inc., 2003. Data Interpretation Report - Side Scan Sonar Survey Investigation. Hudson River - River Sections 1 and 3, Fall 2002. OSI Report No. 02ES072 - DIR - F2002. May 1, 2003. Prepared for the General Electric Company.
2. Dredge areas shown were delineated in the Phase 1 Dredge Area Delineation Report (QEA 2004).

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Figure 2-19. Charted sonar targets and debris areas - Southern NTIP.



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