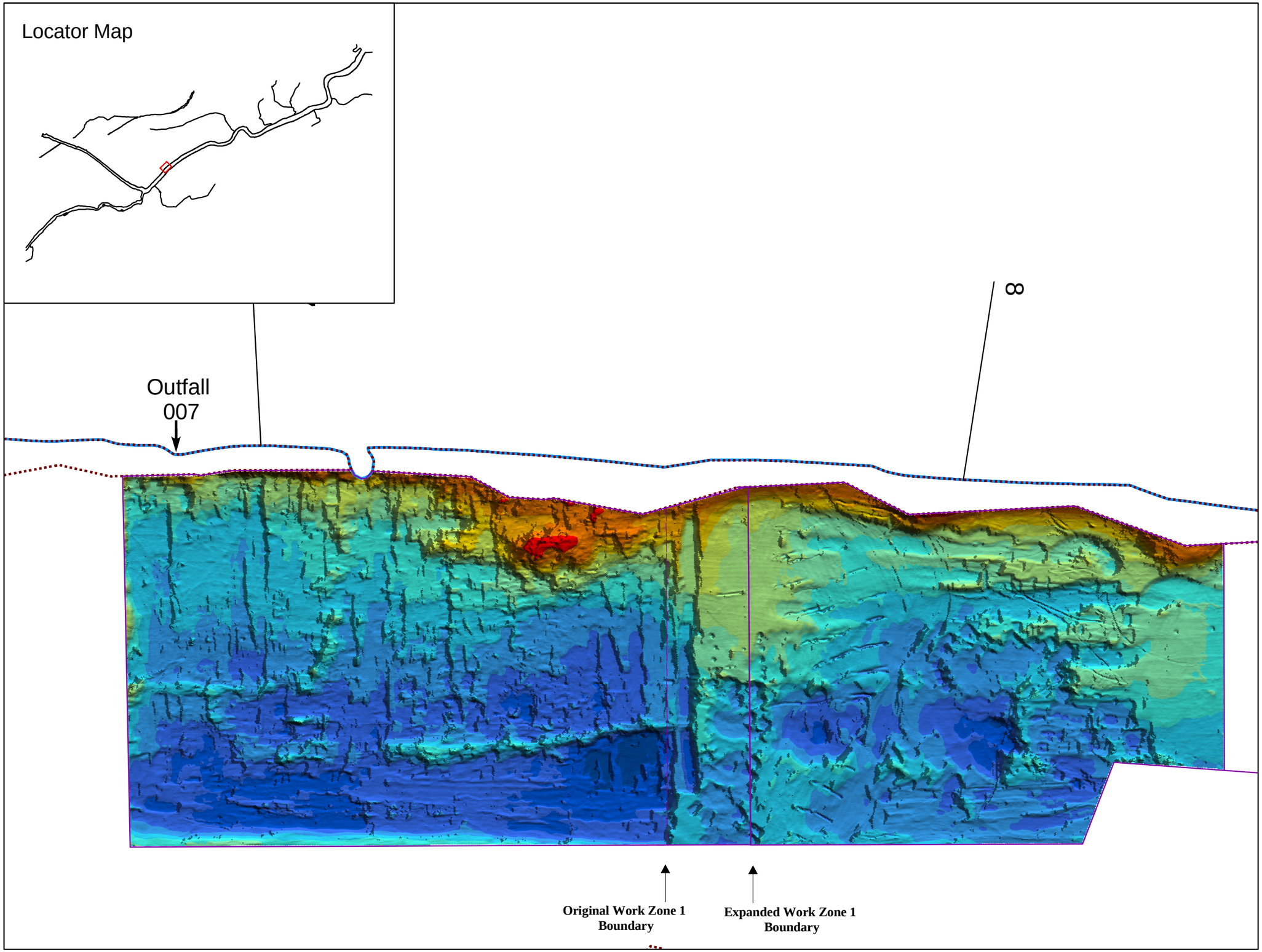
124021

# *Appendix O*




N

GRAPHIC SCALE

Feet

0 25 50 100

LEGEND

Elevation (ft)

- 151 - 152
- 150 - 151
- 149 - 150
- 148 - 149
- 147 - 148
- 146 - 147
- 145 - 146
- 144 - 145
- 143 - 144
- 142 - 143
- 141 - 142
- 140 - 141
- 139 - 140
- 138 - 139
- 137 - 138
- Work Zone Outline
- Original Work Zone Boundary
- Near Shore Area
- Grasse River Shoreline
- Sediment Probing Transects

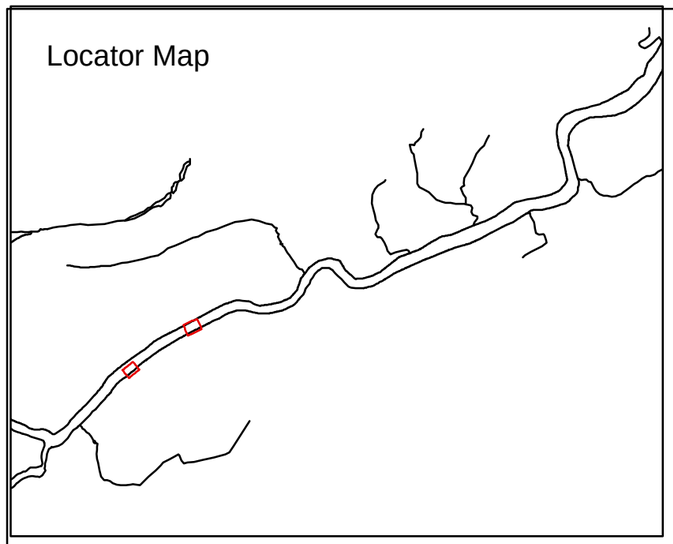
**GRASSE RIVER STUDY AREA**
**MASSENA, NEW YORK**

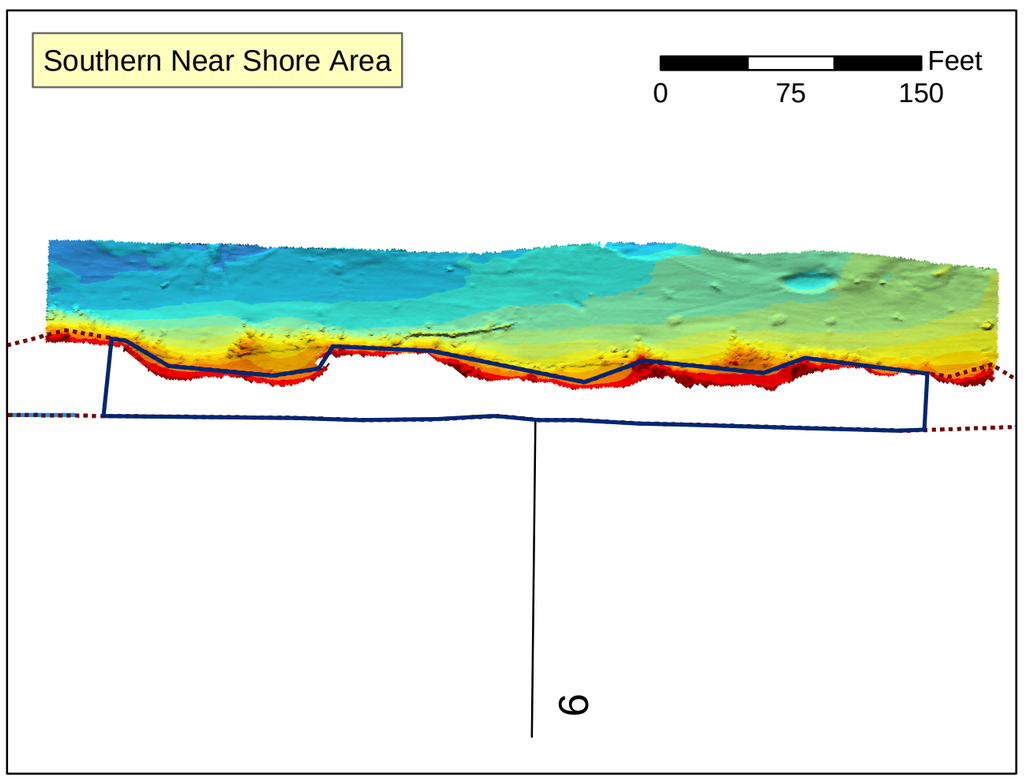
Sediment Elevations
in Work Zones 1 and 2
based on September 12
Multibeam Bathymetric Survey

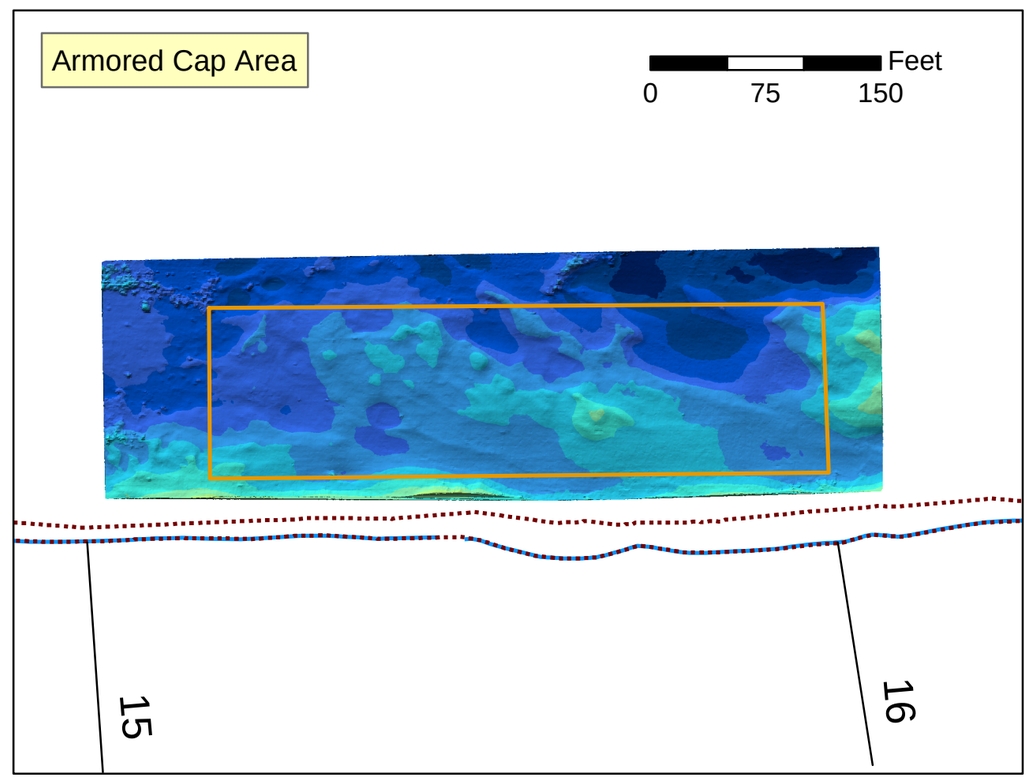
ALCOA

May 2006

ARC:\\ARC\D_drive\ALCgra\Analysis\ROPS\GIS\sediment\pre\probing\rops_probing_MC2005arc_060329.mxd




LEGEND

Elevation (ft)

- 152 - 153
- 151 - 152
- 150 - 151
- 149 - 150
- 148 - 149
- 147 - 148
- 146 - 147
- 145 - 146
- 144 - 145
- 143 - 144
- 142 - 143
- 141 - 142
- 140 - 141
- 139 - 140
- 138 - 139
- 137 - 138
- 136 - 137
- Armored Cap Area
- Southern Near Shore
- Near Shore Area
- Grasse River Shoreline
- Sediment Probing Transects

**GRASSE RIVER STUDY AREA**
**MASSENA, NEW YORK**

**Sediment Elevations in the Southern Near Shore and Armored Cap Areas based on September 13 Multibeam Bathymetric Survey**

ALCOA

May 2006

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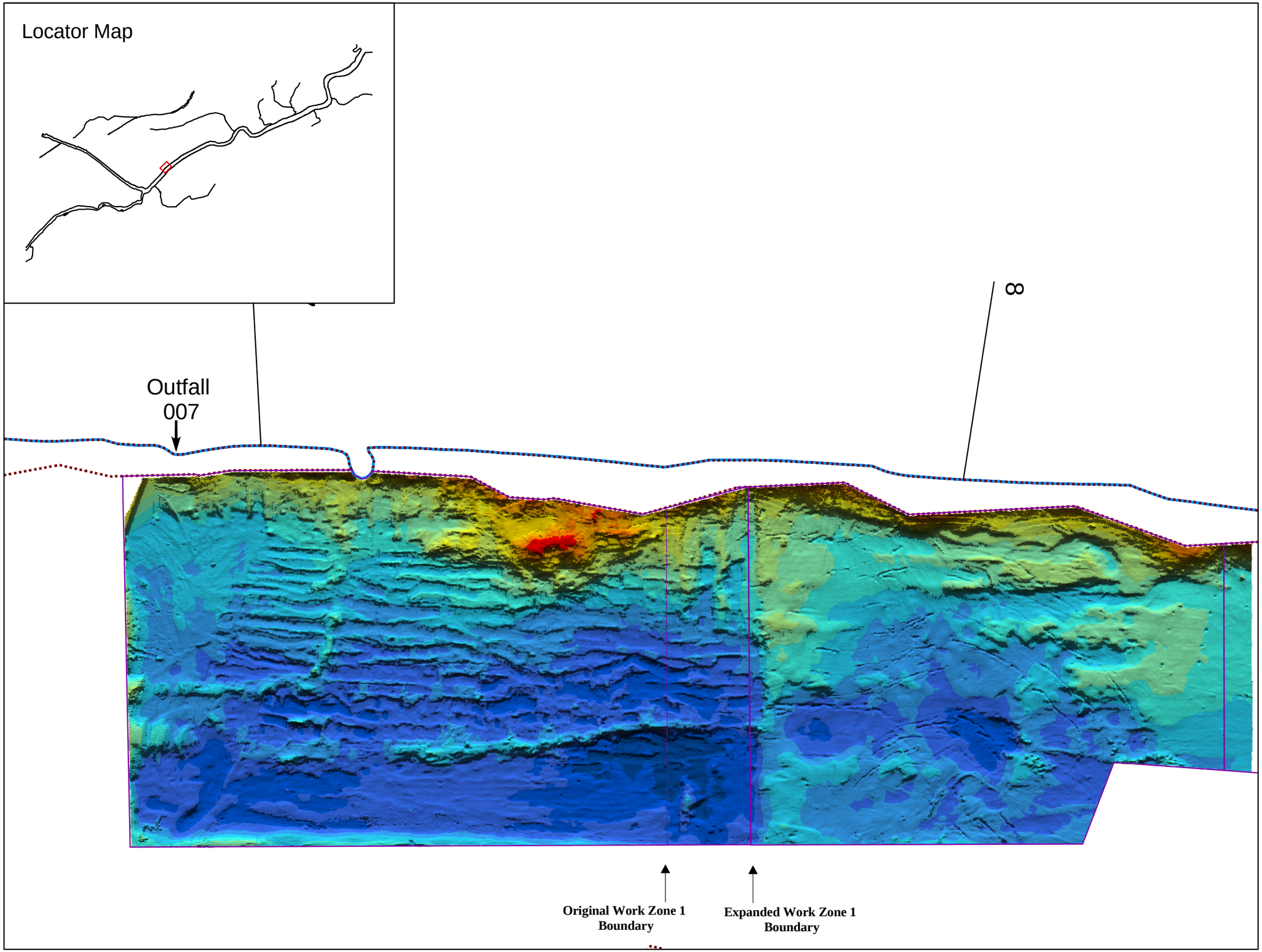


N

GRAPHIC SCALE

Feet

0 25 50 100

LEGEND

Elevation (ft)

- 150 - 151
- 149 - 150
- 148 - 149
- 147 - 148
- 146 - 147
- 145 - 146
- 144 - 145
- 143 - 144
- 142 - 143
- 141 - 142
- 140 - 141
- 139 - 140
- 138 - 139
- 137 - 138
- 136 - 137

- Work Zone Outline
- Original Work Zone Boundary
- Near Shore Area
- Grasse River Shoreline
- Sediment Probing Transects

**GRASSE RIVER STUDY AREA**
**MASSENA, NEW YORK**

Sediment Elevations
in Work Zones 1 and 2
based on September 30
Multibeam Bathymetric Survey

ALCOA

May 2006

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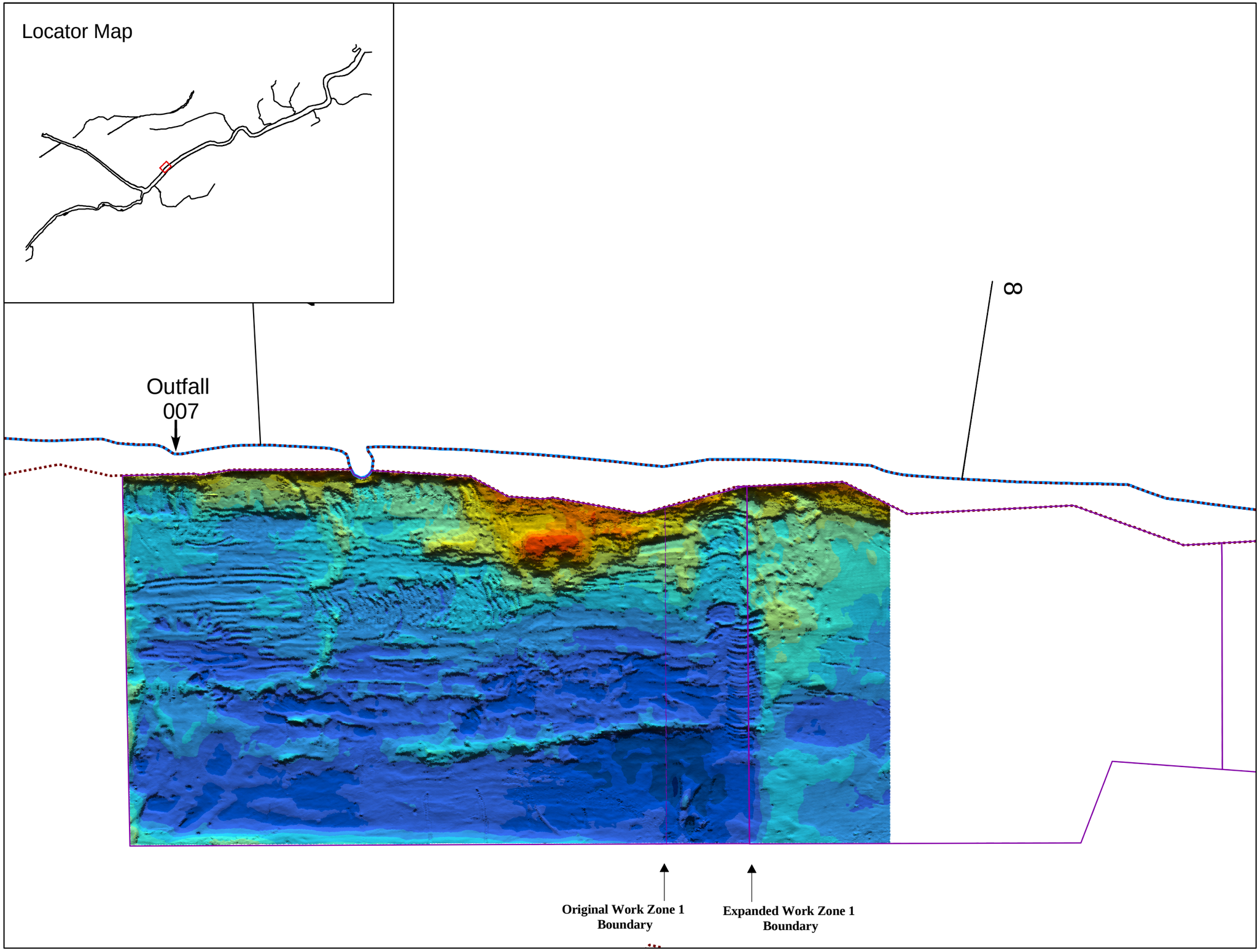



N

GRAPHIC SCALE

Feet

0 25 50 100

LEGEND

Elevation (ft)

- 151 - 152
- 150 - 151
- 149 - 150
- 148 - 149
- 147 - 148
- 146 - 147
- 145 - 146
- 144 - 145
- 143 - 144
- 142 - 143
- 141 - 142
- 140 - 141
- 139 - 140
- 138 - 139
- 137 - 138
- 136 - 137
- Work Zone Outline
- Original Work Zone Boundary
- Near Shore Area
- Grasse River Shoreline
- Sediment Probing Transects

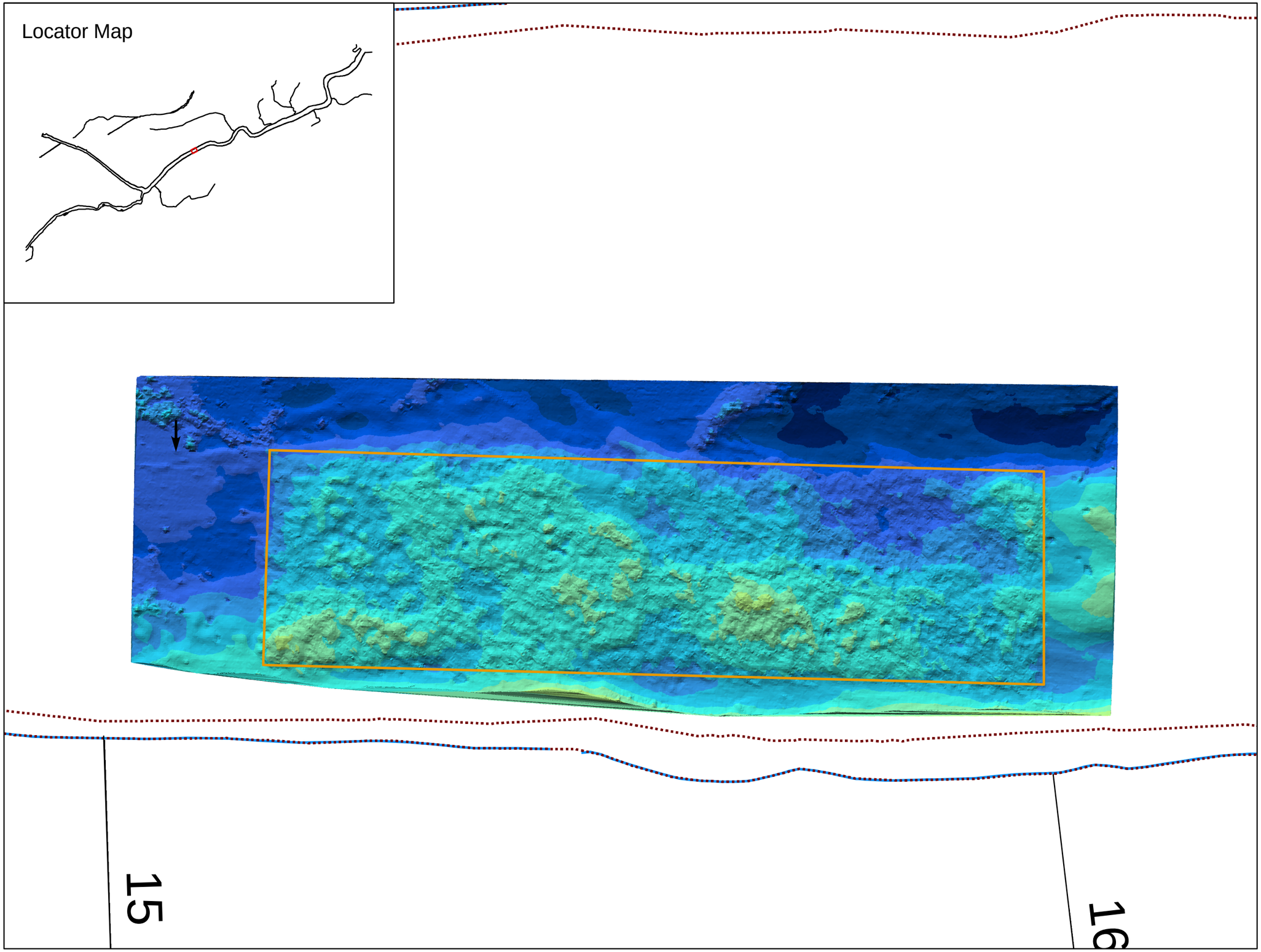
**GRASSE RIVER STUDY AREA**
**MASSENA, NEW YORK**

Sediment Elevations
in Work Zone 1
based on October 22
Multibeam Bathymetric Survey

ALCOA

May 2006

ARC:\\ARC\D_drive\ALCgra\Analysis\ROPS\GIS\sediment\pre\probing\rops_probing_MC2005arc_060329.mxd




N

GRAPHIC SCALE

Feet

0 15 30 60

LEGEND

Elevation (ft)

- 151 - 152
- 150 - 151
- 149 - 150
- 148 - 149
- 147 - 148
- 146 - 147
- 145 - 146
- 144 - 145
- 143 - 144
- 142 - 143
- 141 - 142
- 140 - 141
- 139 - 140
- 138 - 139
- 137 - 138
- 136 - 137
- Armored Capping Area
- Near Shore Area
- Grasse River Shoreline
- Sediment Probing Transects

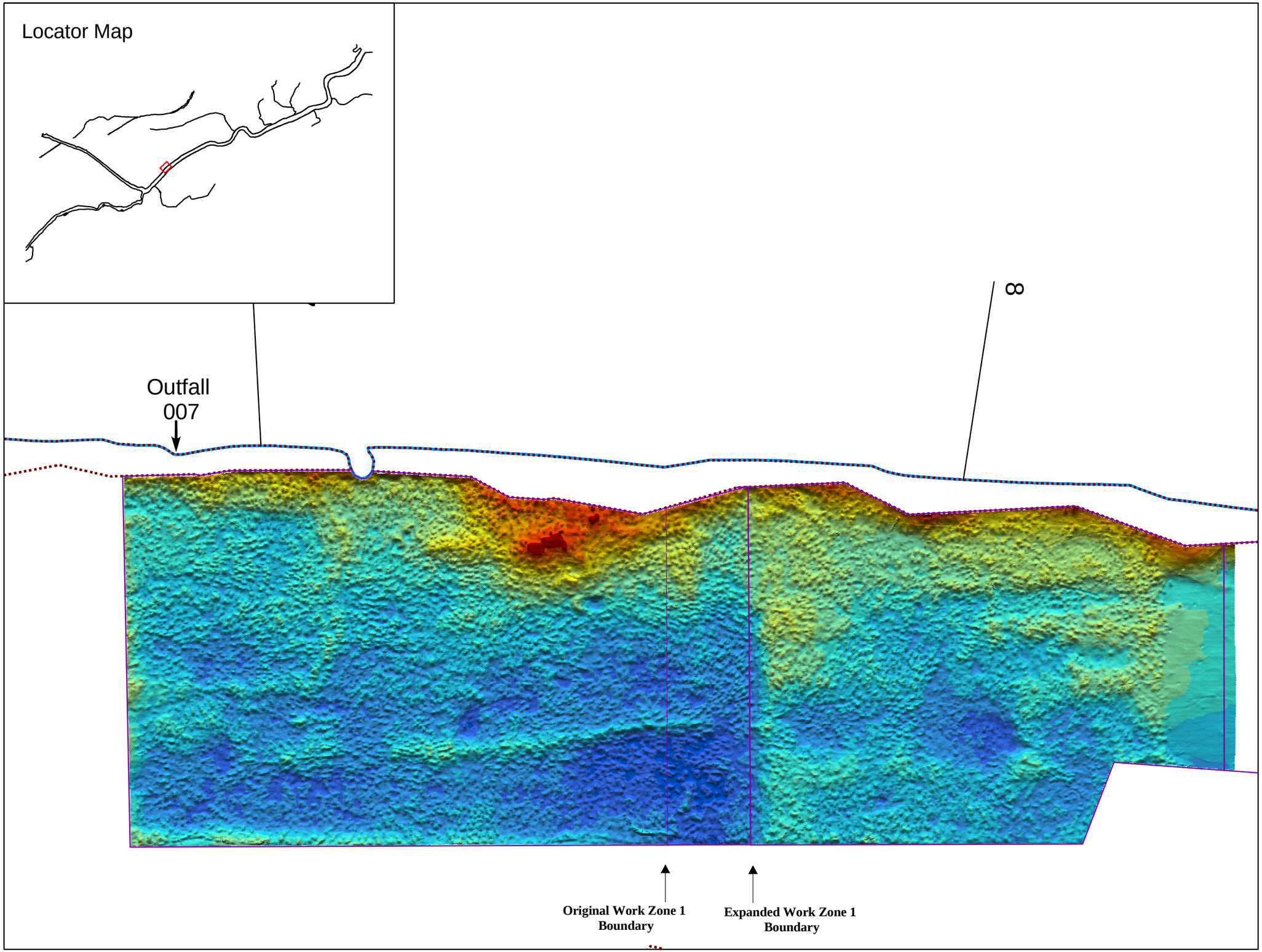
**GRASSE RIVER STUDY AREA**
**MASSENA, NEW YORK**

Post-Capping
Sediment Elevations
in the Armored Cap Area
based on October 22
Multibeam Bathymetric Survey

ALCOA

May 2006

ARC:\\ARC\D_drive\ALCgra\Analysis\ROPS\GIS\sediment\pre\probing\rops_probing_MC2005arc_060329.mxd




N

GRAPHIC SCALE

Feet

0 25 50 100

LEGEND

Elevation (ft)

- 151 - 152
- 150 - 151
- 149 - 150
- 148 - 149
- 147 - 148
- 146 - 147
- 145 - 146
- 144 - 145
- 143 - 144
- 142 - 143
- 141 - 142
- 140 - 141
- 139 - 140
- 138 - 139
- Work Zone Outline
- Original Work Zone Boundary
- Near Shore Area
- Grasse River Shoreline
- Sediment Probing Transects

**GRASSE RIVER STUDY AREA**
**MASSENA, NEW YORK**

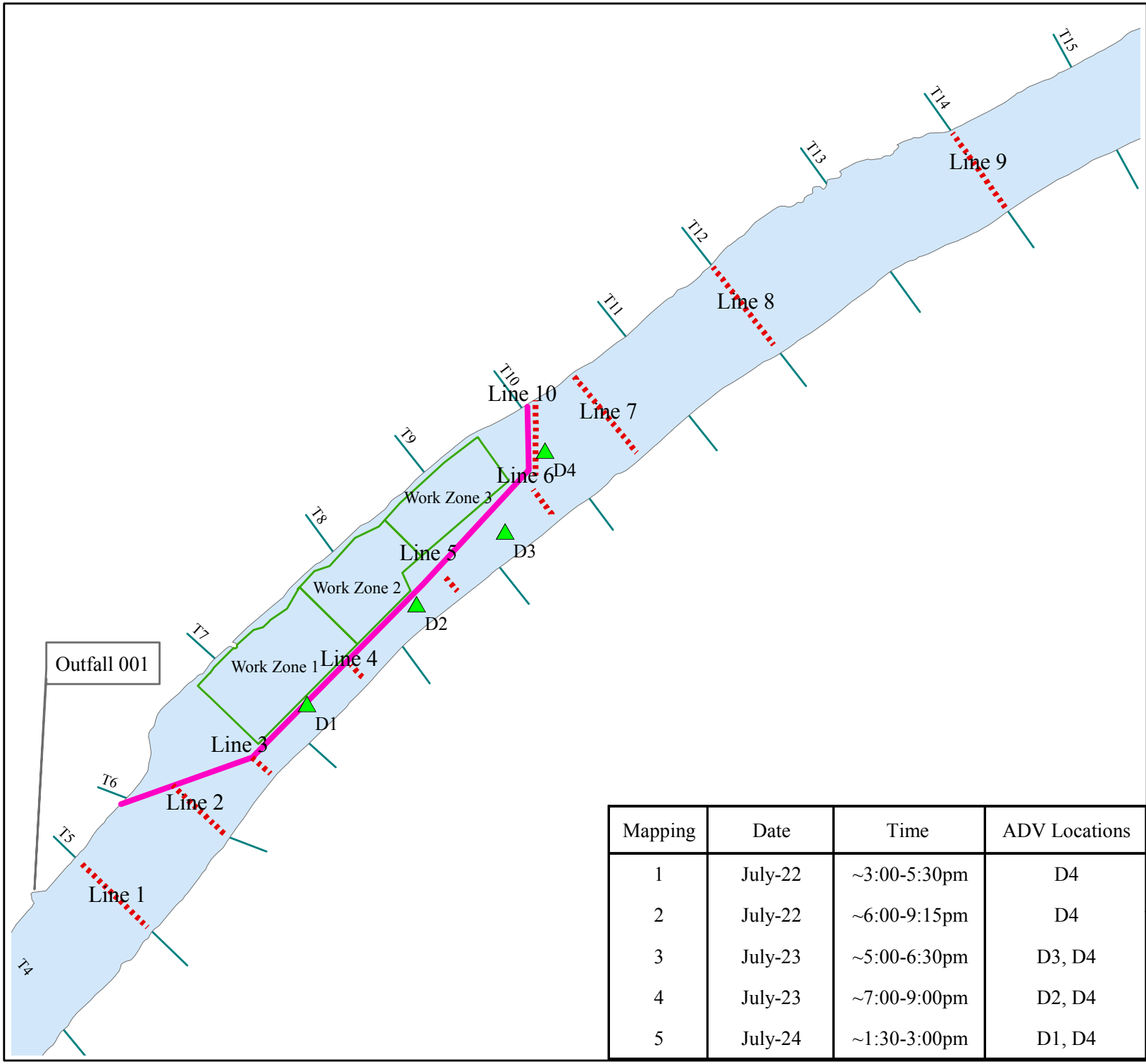
Post-Capping
Sediment Elevations
in Work Zones 1 and 2
based on November 18
Multibeam Bathymetric Survey

ALCOA

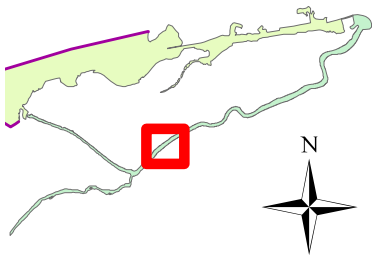
May 2006

ARC:\\ARC\D_drive\ALCgra\Analysis\ROPS\GIS\sediment\pre\probing\rops_probing_MC2005arc_060329.mxd

# *Appendix P*




LOCATOR MAP




GRAPHIC SCALE

400 200 0 400 Feet

LEGEND

- ADV Locations
- ADCP Transects
- Silt Curtain
- Sediment Transects
- Work Zones
- River

| Mapping | Date | Time | ADV Locations |
|---|---|---|---|
| 1 | July-22 | ~3:00-5:30pm | D4 |
| 2 | July-22 | ~6:00-9:15pm | D4 |
| 3 | July-23 | ~5:00-6:30pm | D3, D4 |
| 4 | July-23 | ~7:00-9:00pm | D2, D4 |
| 5 | July-24 | ~1:30-3:00pm | D1, D4 |

**GRASSE RIVER STUDY AREA**
**MASSENA, NEW YORK**

**Figure P-1.**

ADCP and ADV Mesurement Locations for July 2005 Velocity Study

ALCOA

Jan 06

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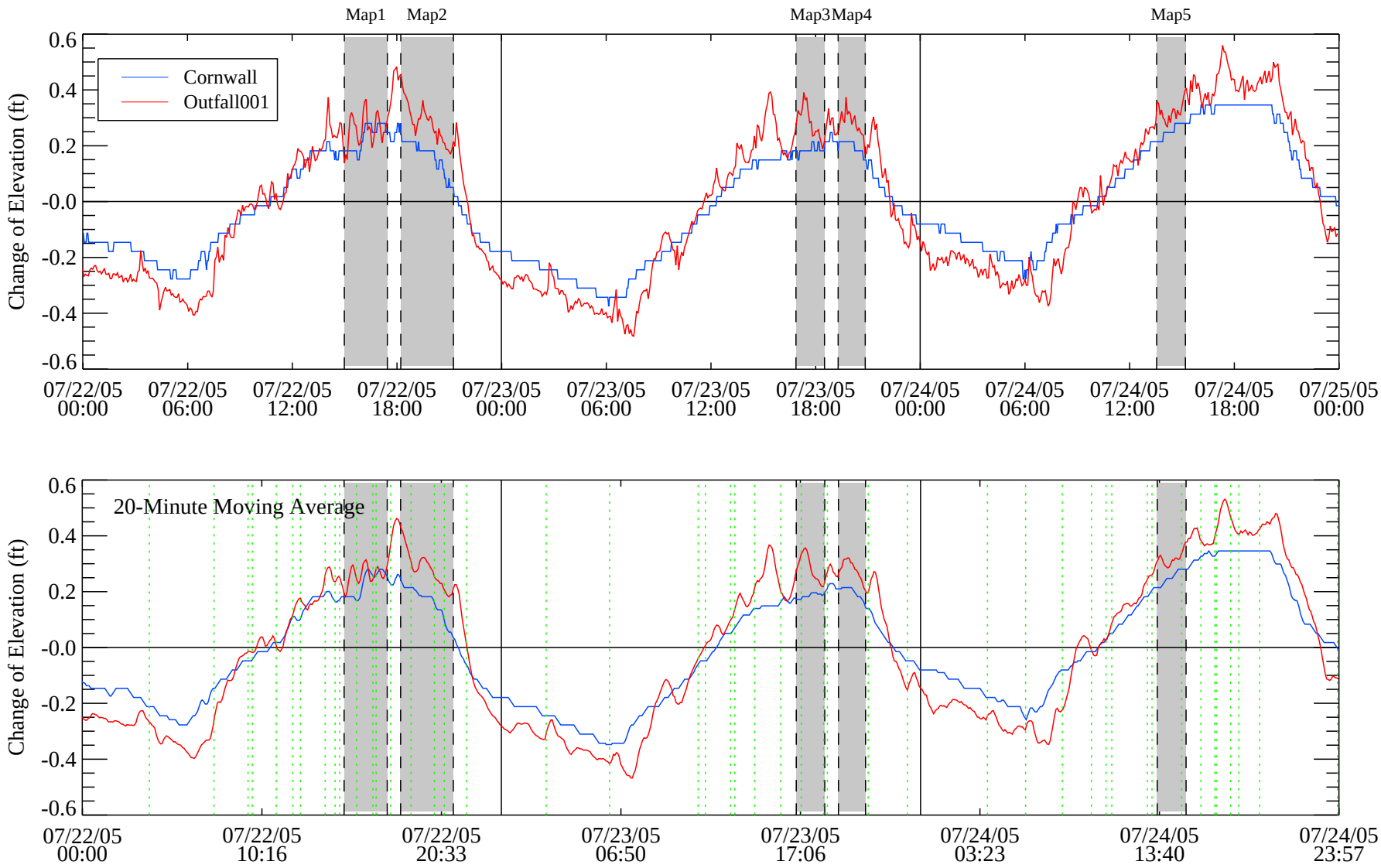


**Figure P-2. Water Surface Elevations at Outfall 001 and Cornwall, ON During July 2005 Velocity Study**

*Vertical dotted lines represent time of Snell Lock operations. Grey areas represent times when data were collected for each mapping.*

rm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p2_corn_ofall1.pro
Tue May 16 17:30:50 2006

## Depth = 0.8 m

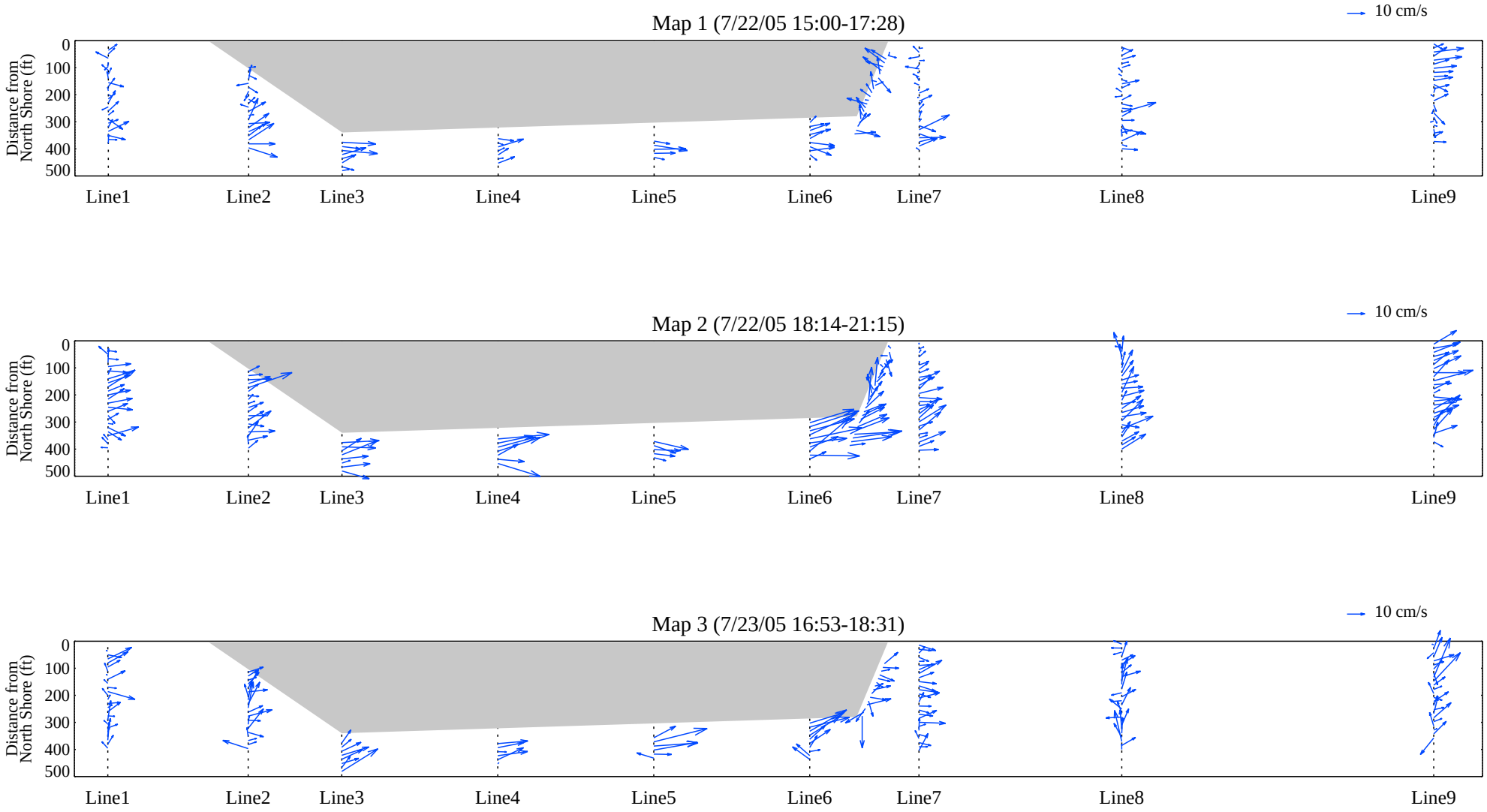


**Figure P-3a. Vector Diagrams for ADCP Velocity Measurements at 0.8 Meters for Mapping 1, 2, and 3**

*Shaded area represents portion of river enclosed by containment system.*

rm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_P3_trans_vect_byDepth.pro
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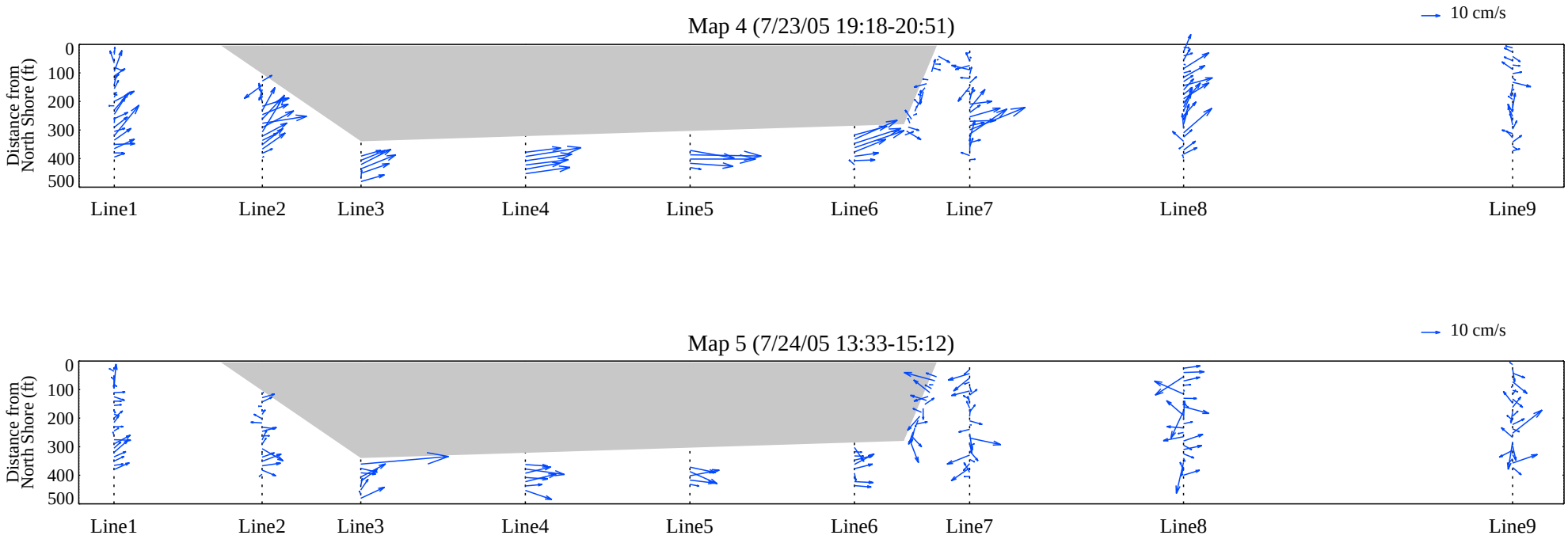


**Figure P-3b. Vector Diagrams for ADCP Velocity Measurements at 0.8 Meters for Mapping 4 and 5**

*Shaded area represents portion of river enclosed by containment system.*

rm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_P3_trans_vect_byDepth.pro
Tue May 16 17:31:56 2006

## Depth = 1.2 m

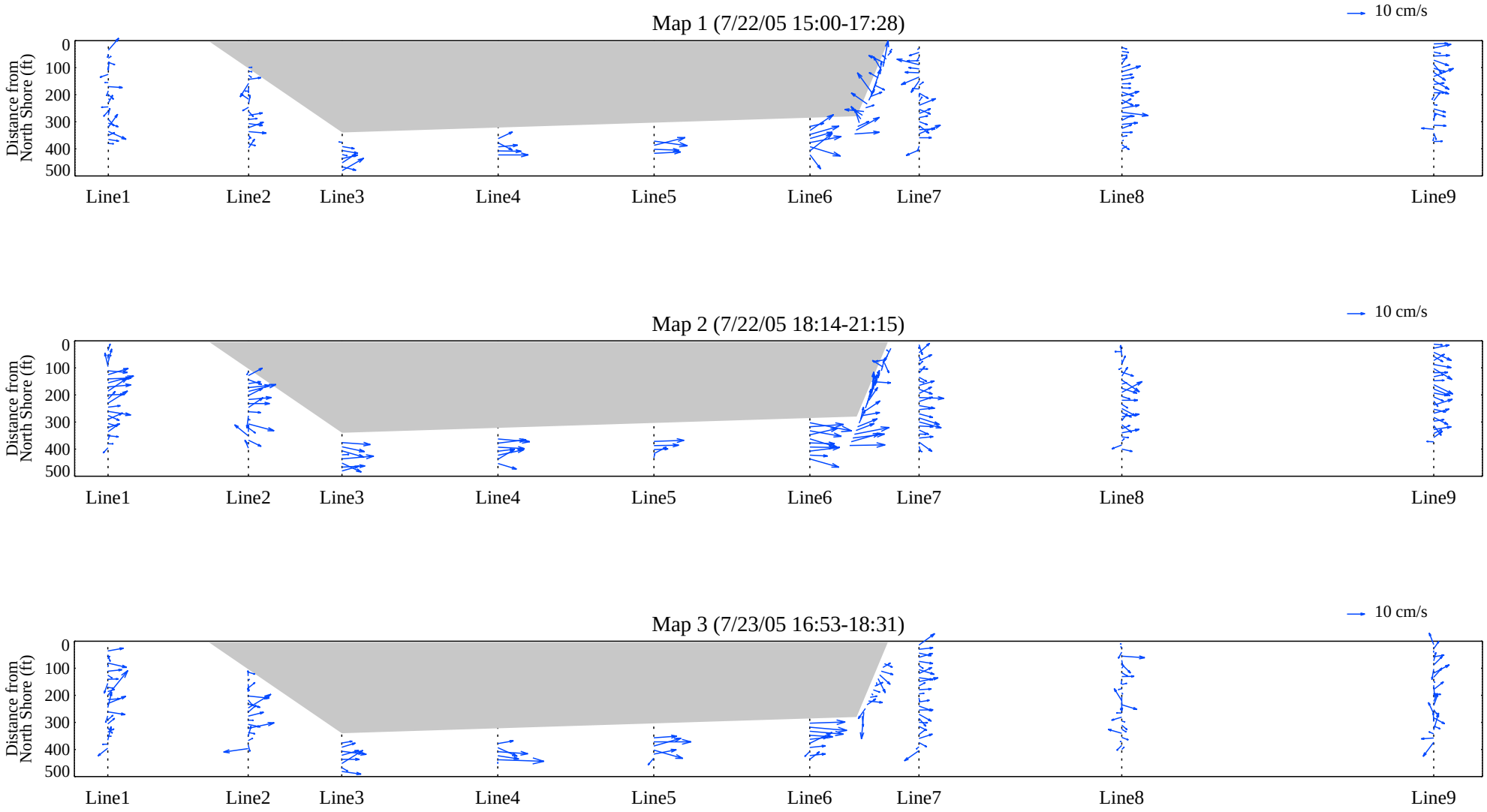


**Figure P-3c. Vector Diagrams for ADCP Velocity Measurements at 1.2 Meters for Mapping 1, 2, and 3**

*Shaded area represents portion of river enclosed by containment system.*

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## Depth = 1.2 m

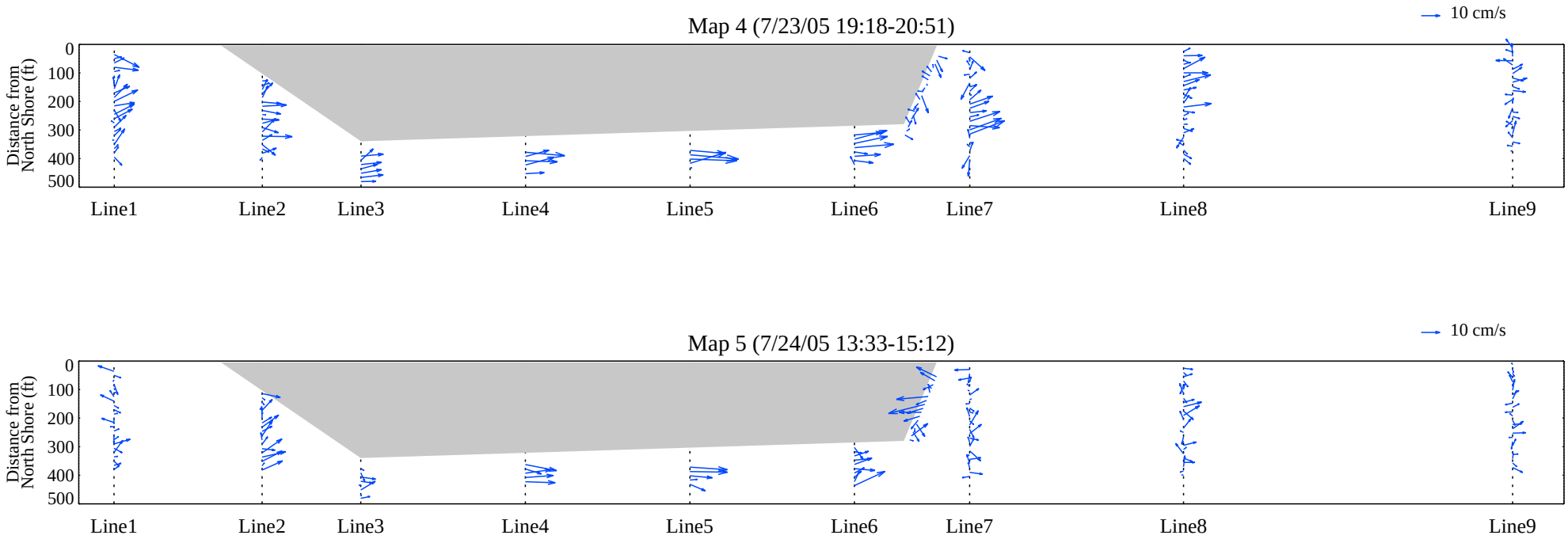


**Figure P-3d. Vector Diagrams for ADCP Velocity Measurements at 1.2 Meters for Mapping 4 and 5**

*Shaded area represents portion of river enclosed by containment system.*

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Tue May 16 17:31:56 2006

## Depth = 1.6 m

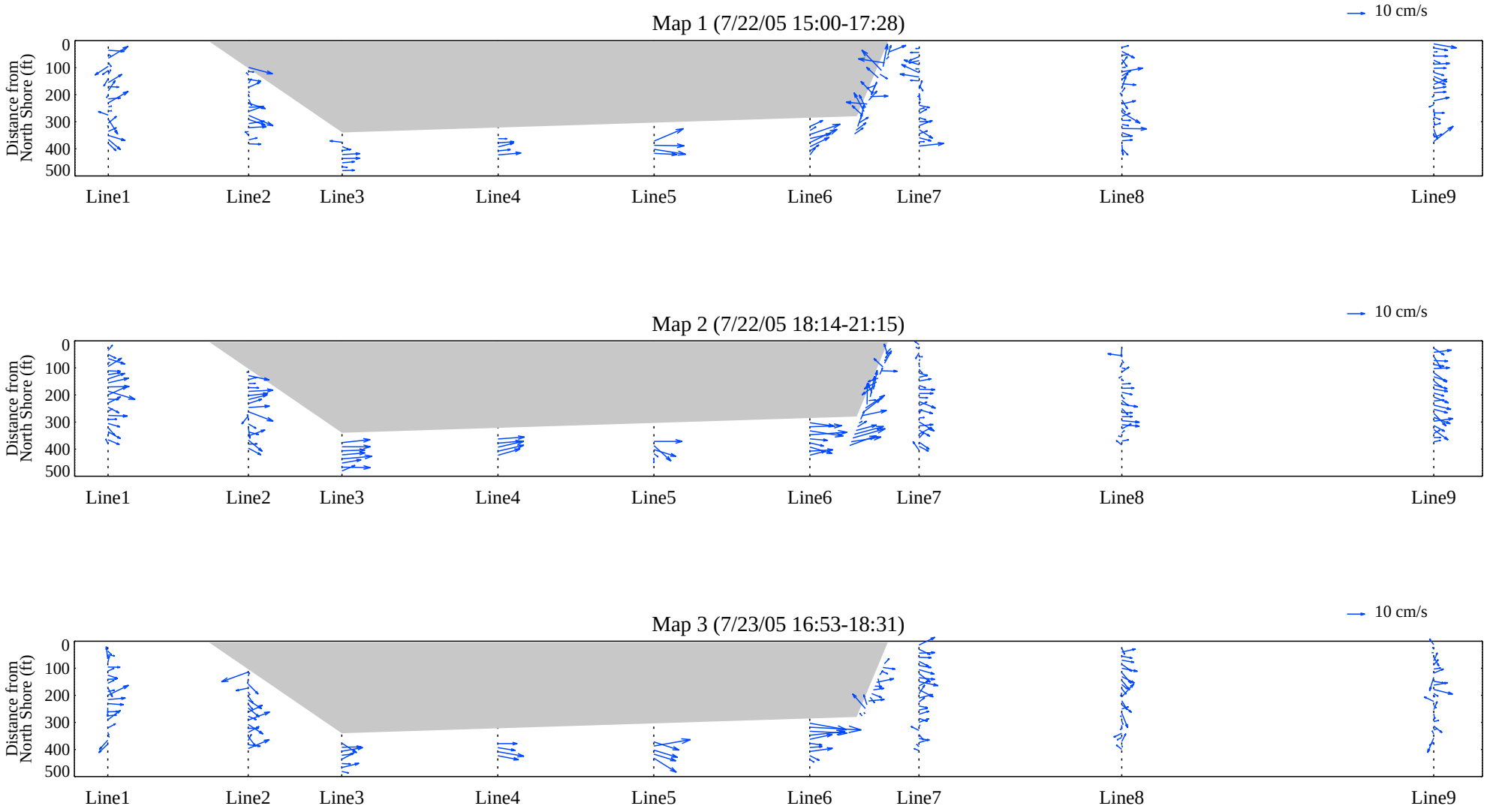


**Figure P-3e. Vector Diagrams for ADCP Velocity Measurements at 1.6 Meters for Mapping 1, 2, and 3**

*Shaded area represents portion of river enclosed by containment system.*

rm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_P3_trans_vect_byDepth.pro
Tue May 16 17:31:56 2006

## Depth = 1.6 m

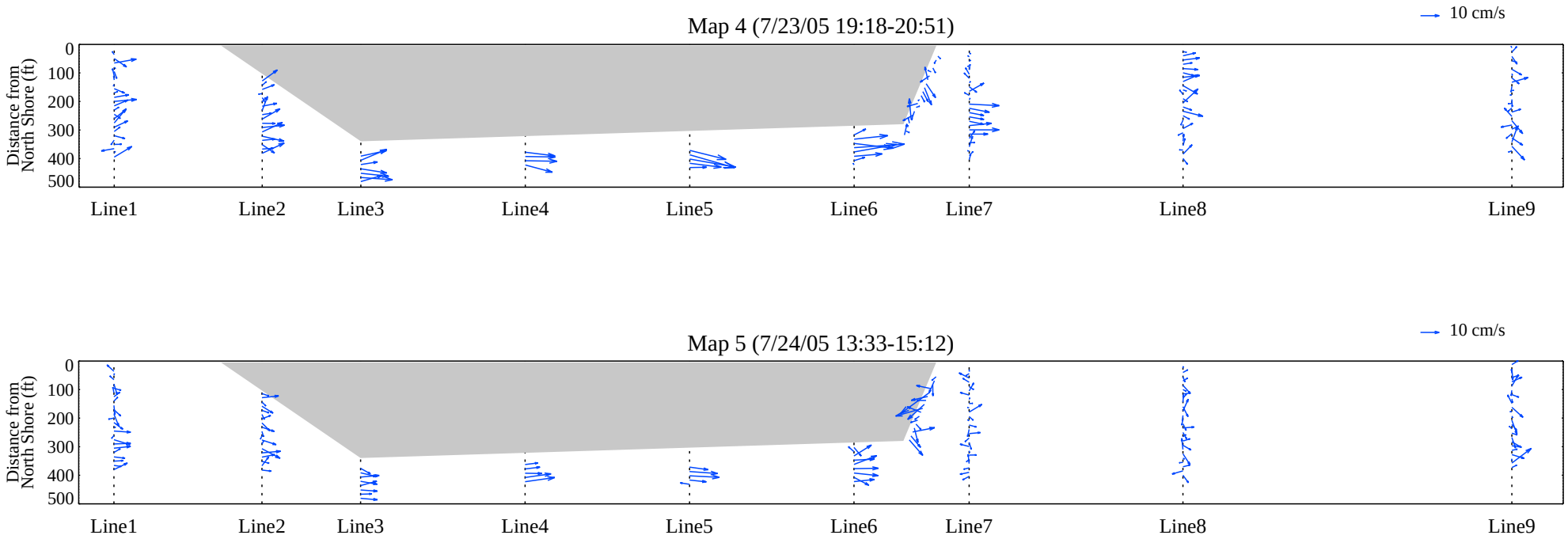


**Figure P-3f. Vector Diagrams for ADCP Velocity Measurements at 1.6 Meters for Mapping 4 and 5**

*Shaded area represents portion of river enclosed by containment system.*

rm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_P3_trans_vect_byDepth.pro
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## Depth = 2.0 m

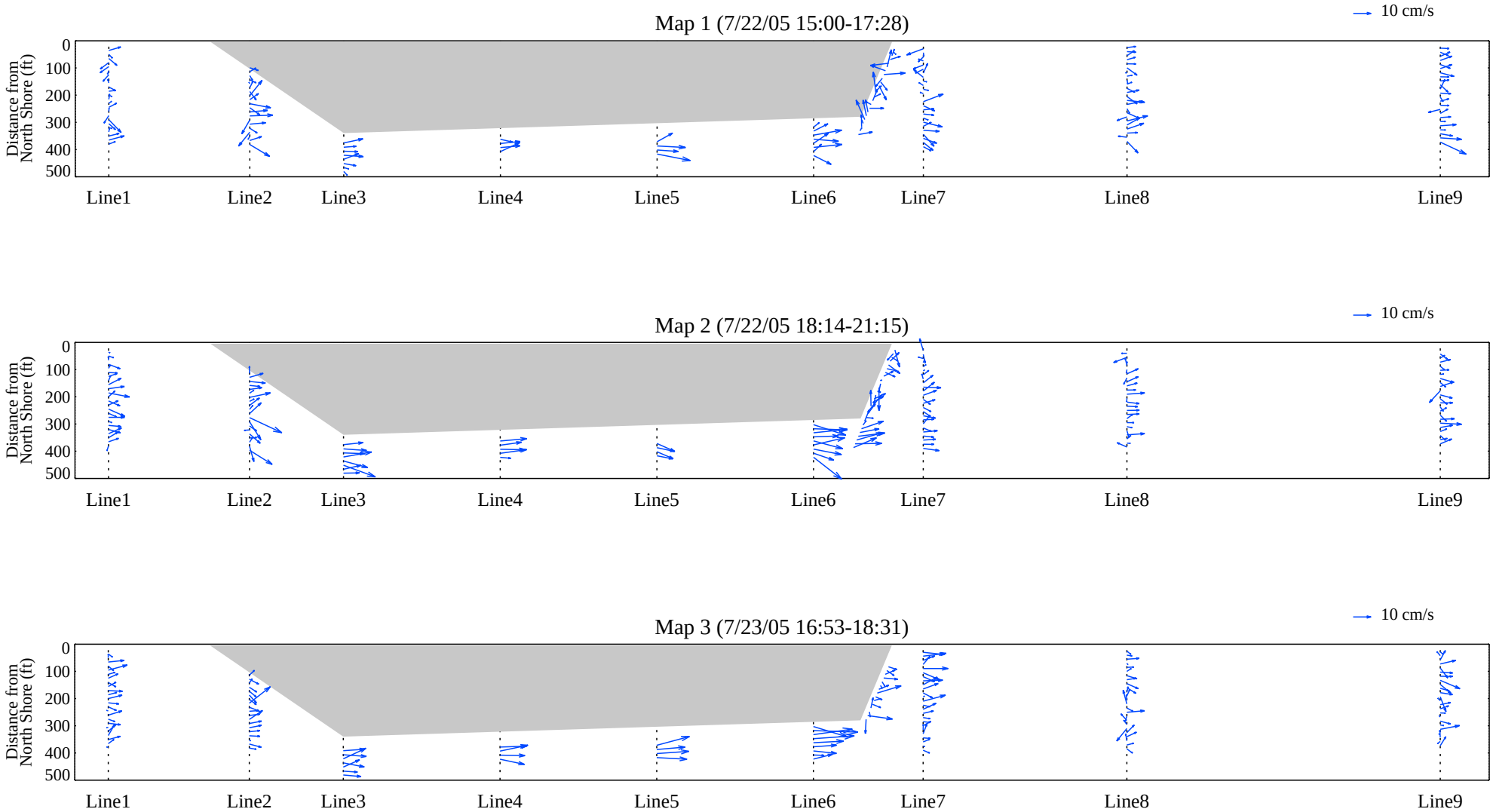


**Figure P-3g. Vector Diagrams for ADCP Velocity Measurements at 2.0 Meters for Mapping 1, 2, and 3**

*Shaded area represents portion of river enclosed by containment system.*

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Tue May 16 17:31:57 2006

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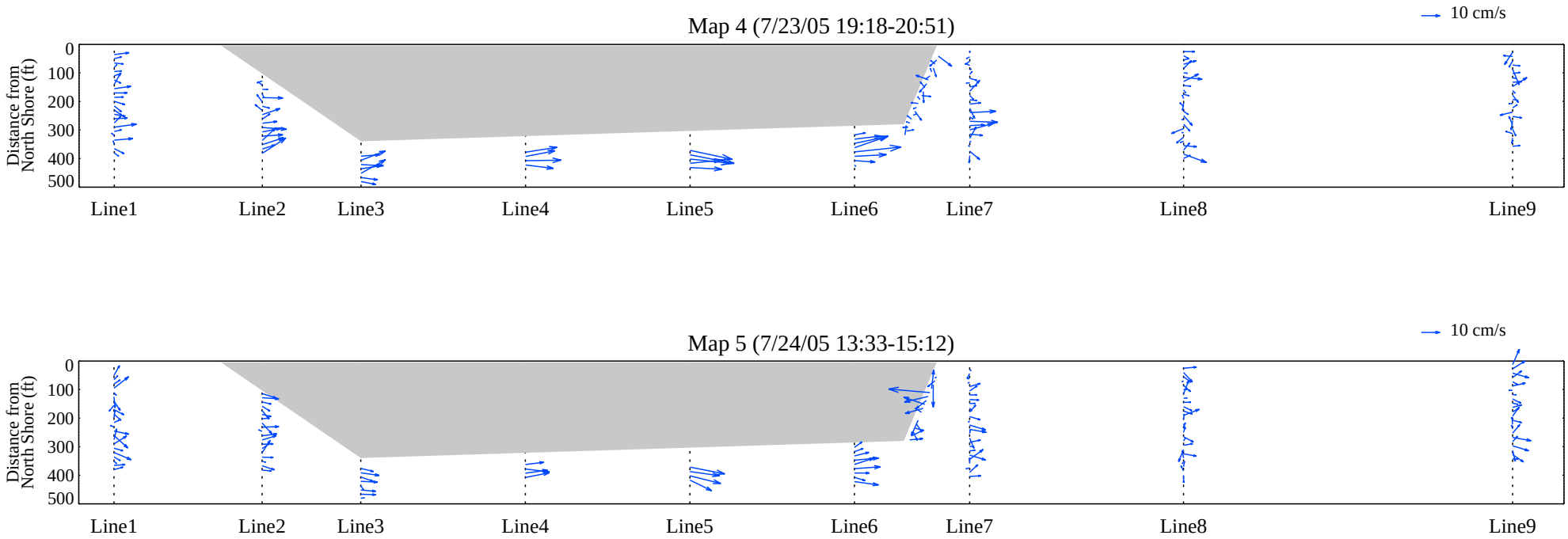


**Figure P-3h. Vector Diagrams for ADCP Velocity Measurements at 2.0 Meters for Mapping 4 and 5**

*Shaded area represents portion of river enclosed by containment system.*

rm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_P3_trans_vect_byDepth.pro
Tue May 16 17:31:57 2006

## Depth = 2.4 m

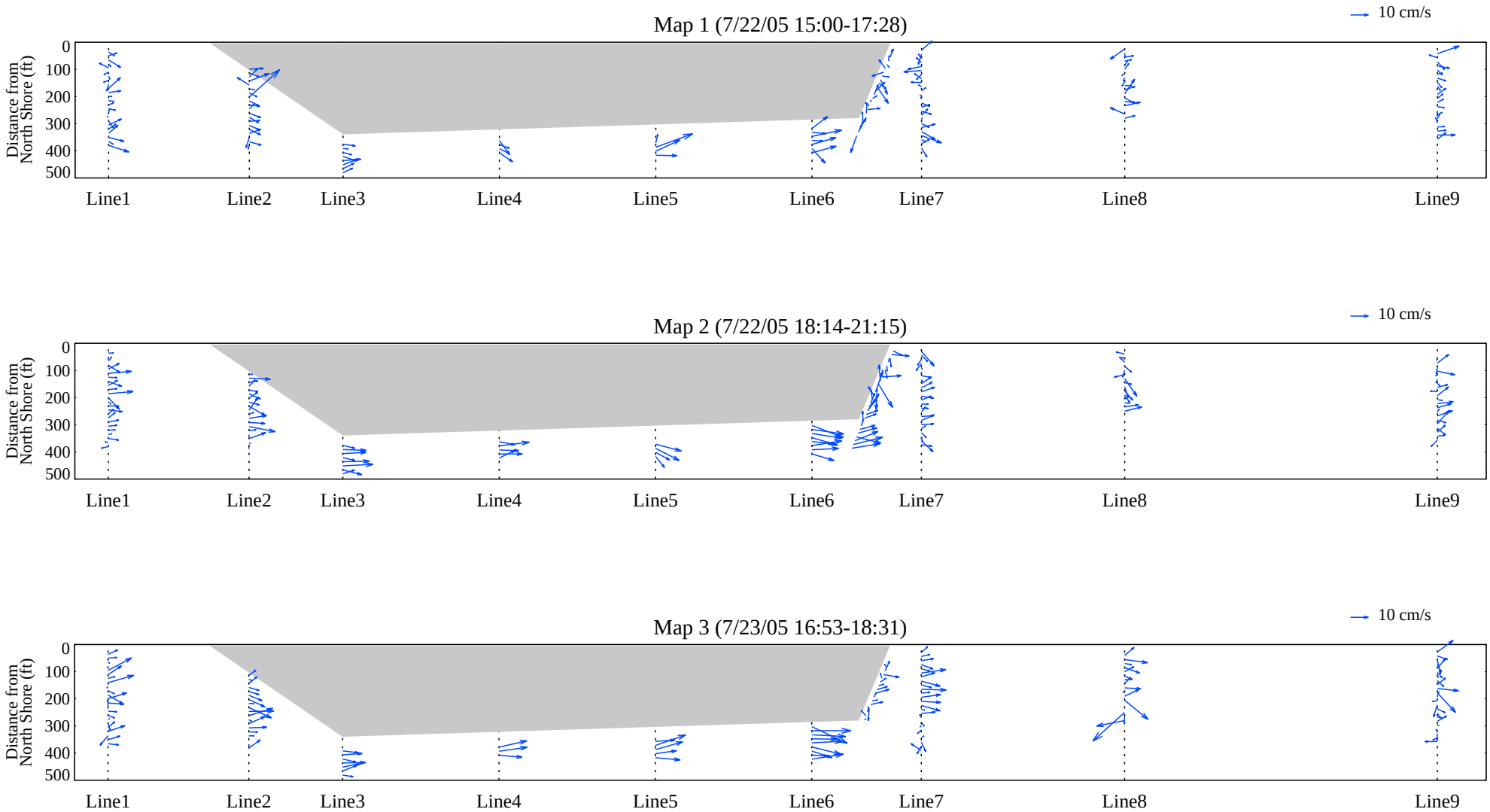


**Figure P-3i. Vector Diagrams for ADCP Velocity Measurements at 2.4 Meters for Mapping 1, 2, and 3**

*Shaded area represents portion of river enclosed by containment system.*

rm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_P3_trans_vect_byDepth.pro
Tue May 16 17:31:57 2006

## Depth = 2.4 m

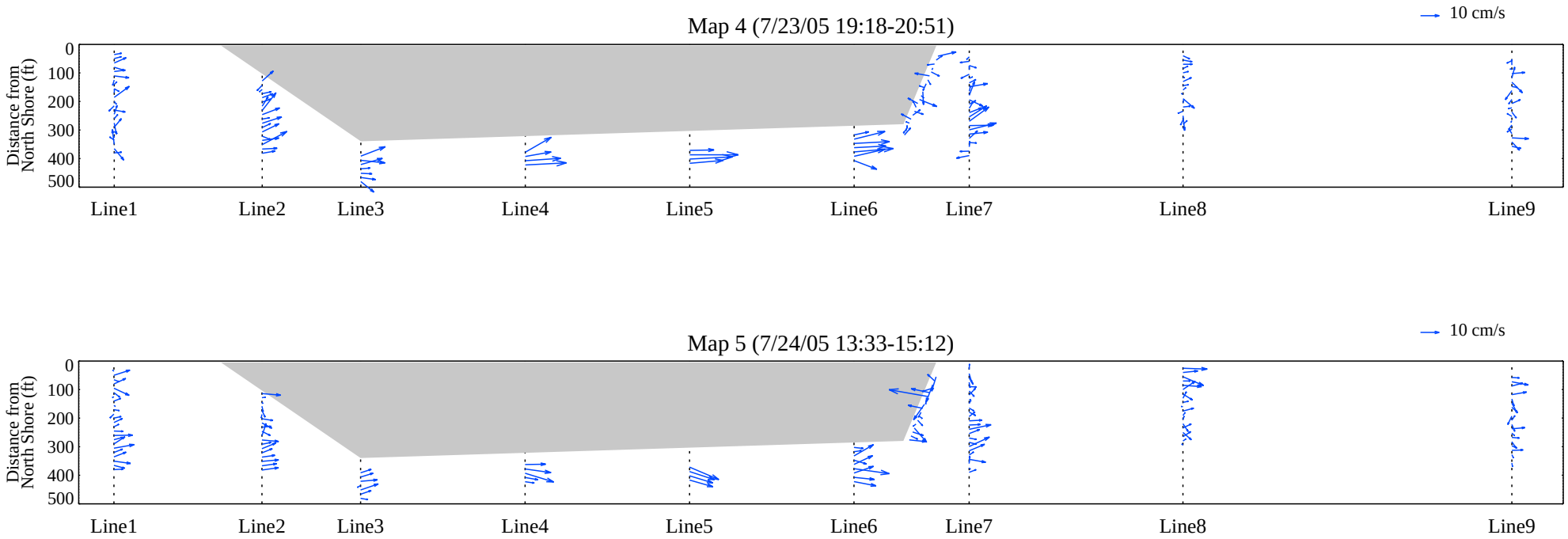


**Figure P-3j. Vector Diagrams for ADCP Velocity Measurements at 2.4 Meters for Mapping 4 and 5**

*Shaded area represents portion of river enclosed by containment system.*

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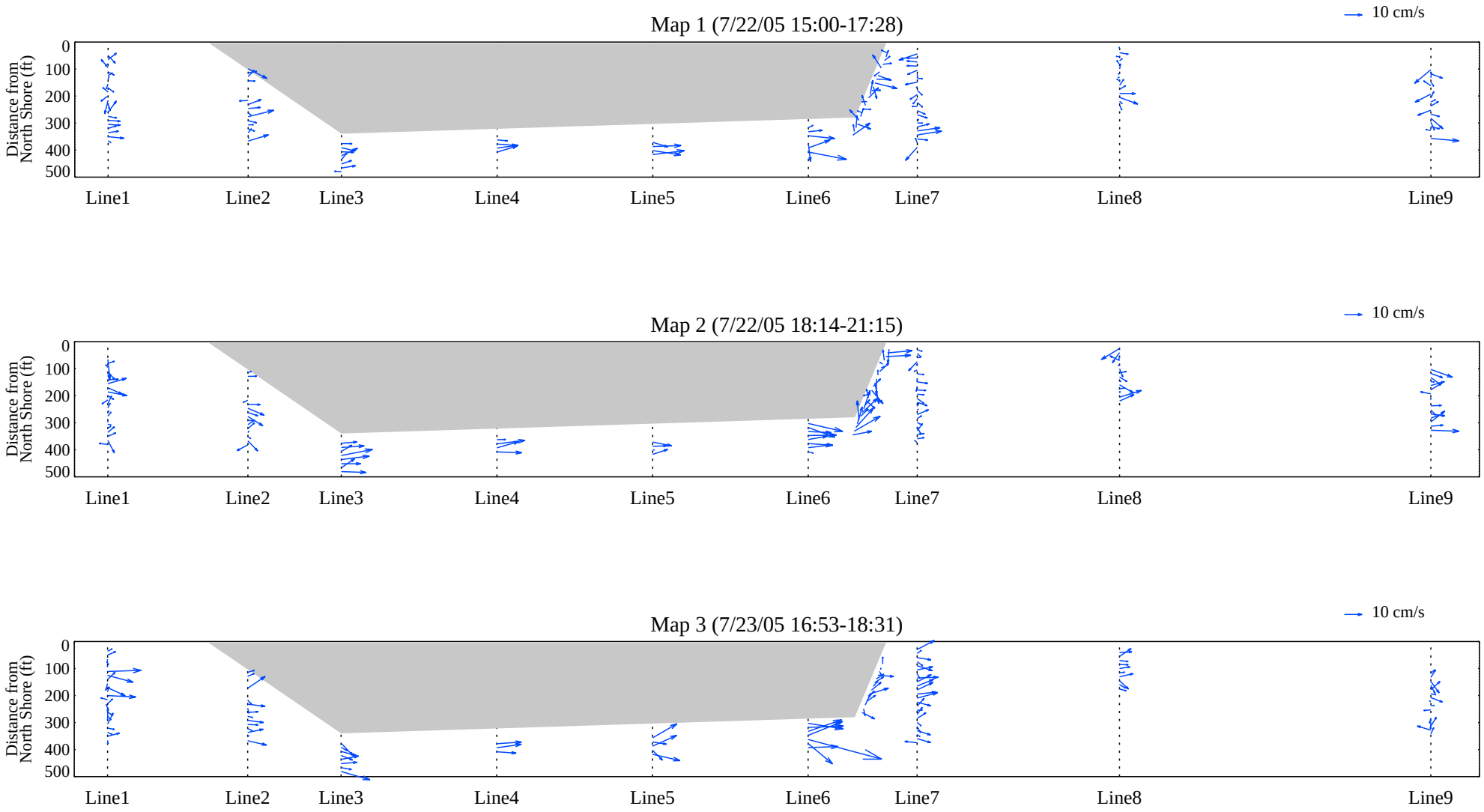


**Figure P-3k. Vector Diagrams for ADCP Velocity Measurements at 2.8 Meters for Mapping 1, 2, and 3**

*Shaded area represents portion of river enclosed by containment system.*

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## Depth = 2.8 m

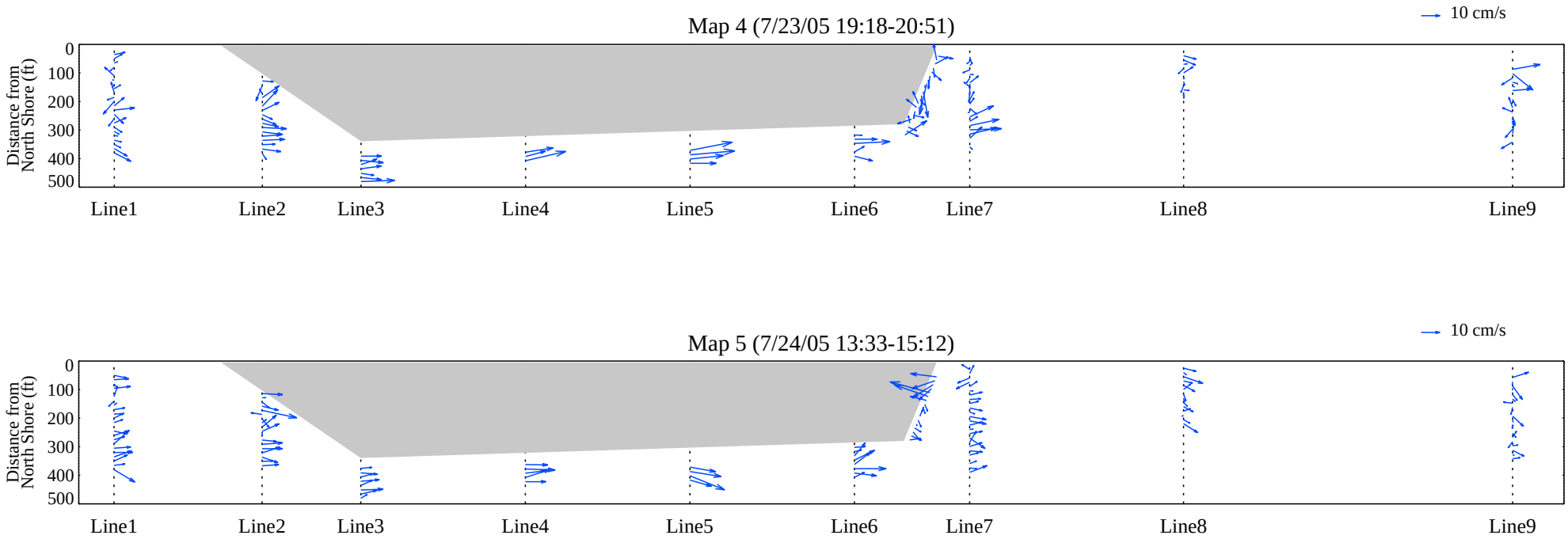


**Figure P-3l. Vector Diagrams for ADCP Velocity Measurements at 2.8 Meters for Mapping 4 and 5**

*Shaded area represents portion of river enclosed by containment system.*

rm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_P3_trans_vect_byDepth.pro
Tue May 16 17:31:57 2006

## Depth = 3.2 m

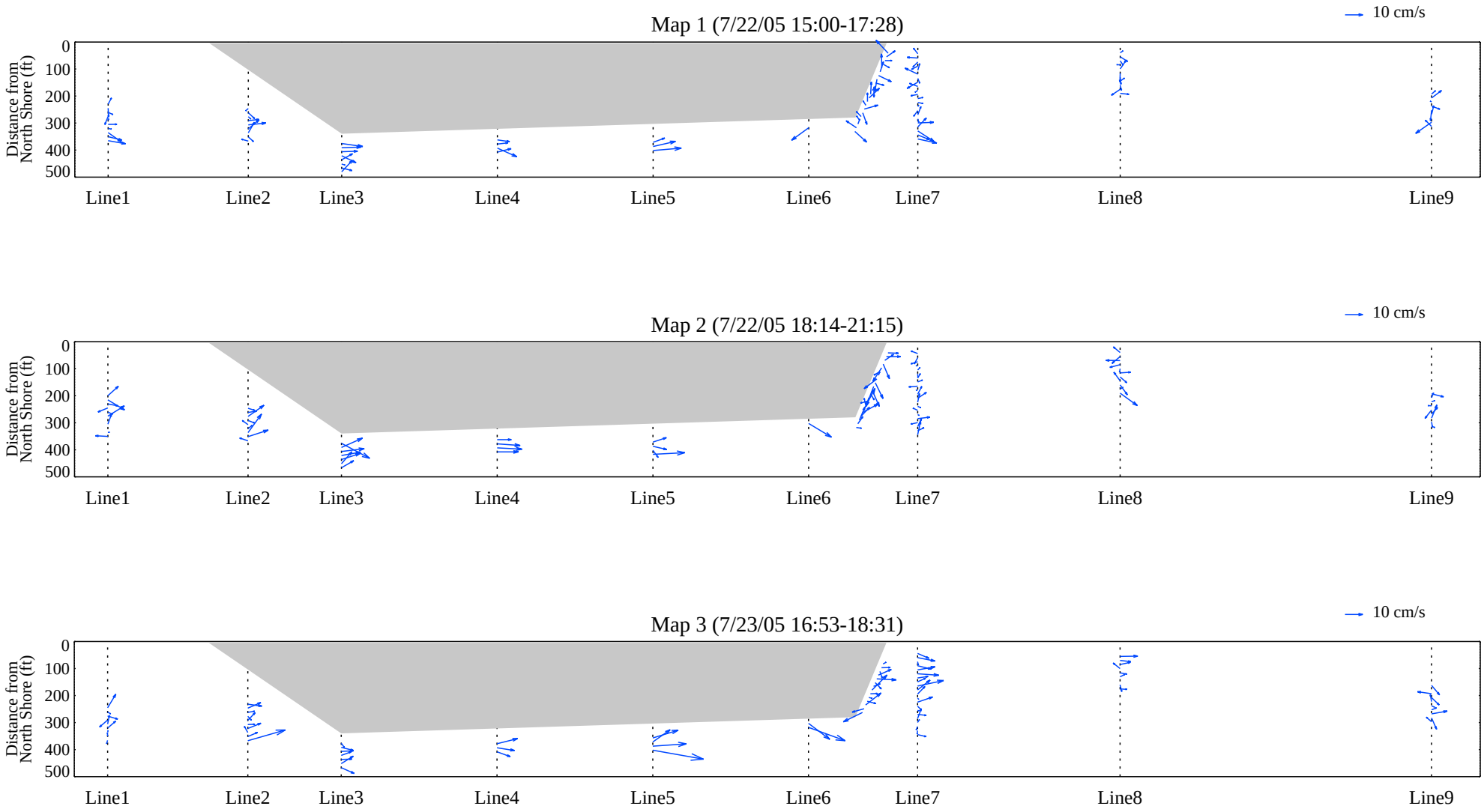


**Figure P-3m. Vector Diagrams for ADCP Velocity Measurements at 3.2 Meters for Mapping 1, 2, and 3**

*Shaded area represents portion of river enclosed by containment system.*

rm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_P3_trans_vect_byDepth.pro
Tue May 16 17:31:57 2006

## Depth = 3.2 m

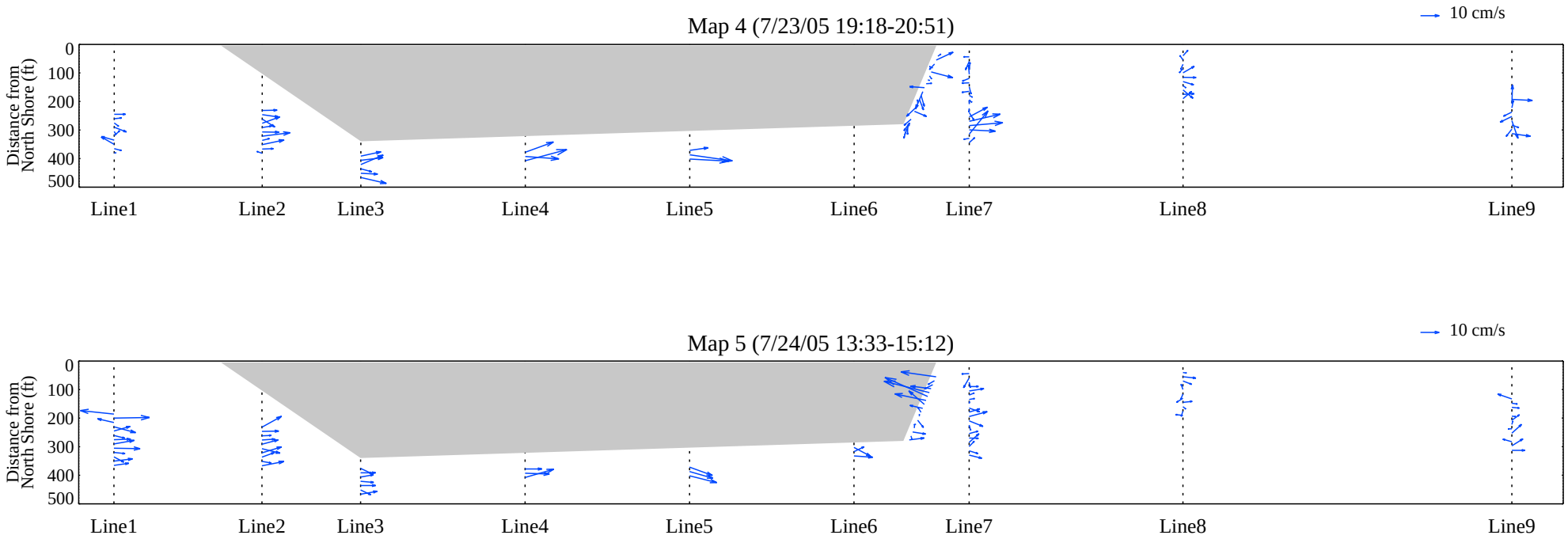


**Figure P-3n. Vector Diagrams for ADCP Velocity Measurements at 3.2 Meters for Mapping 4 and 5**

*Shaded area represents portion of river enclosed by containment system.*

rm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_P3_trans_vect_byDepth.pro
Tue May 16 17:31:57 2006

## Depth = 3.6 m

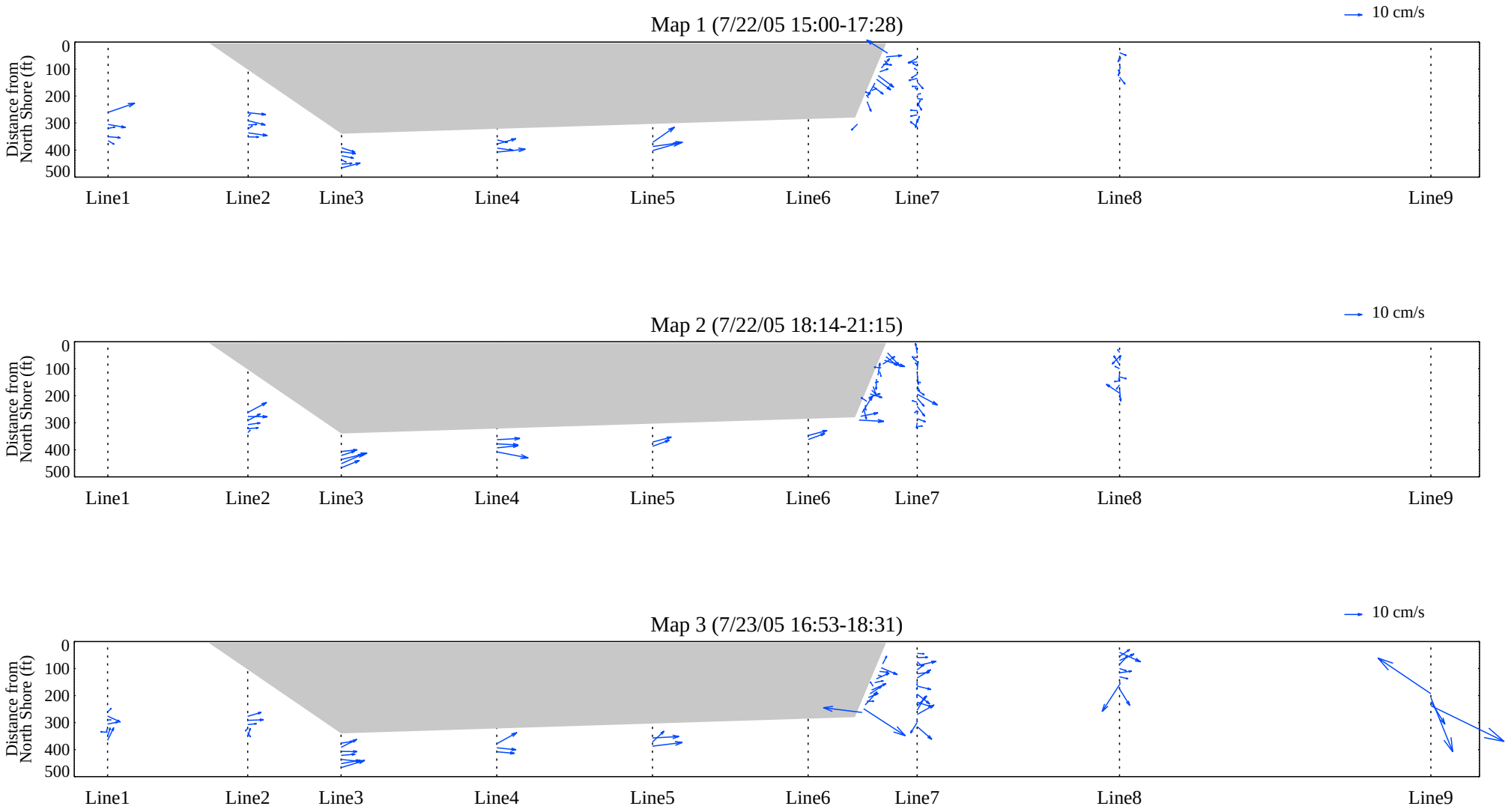


**Figure P-3o. Vector Diagrams for ADCP Velocity Measurements at 3.6 Meters for Mapping 1, 2, and 3**

*Shaded area represents portion of river enclosed by containment system.*

rm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_P3_trans_vect_byDepth.pro
Tue May 16 17:31:57 2006

## Depth = 3.6 m

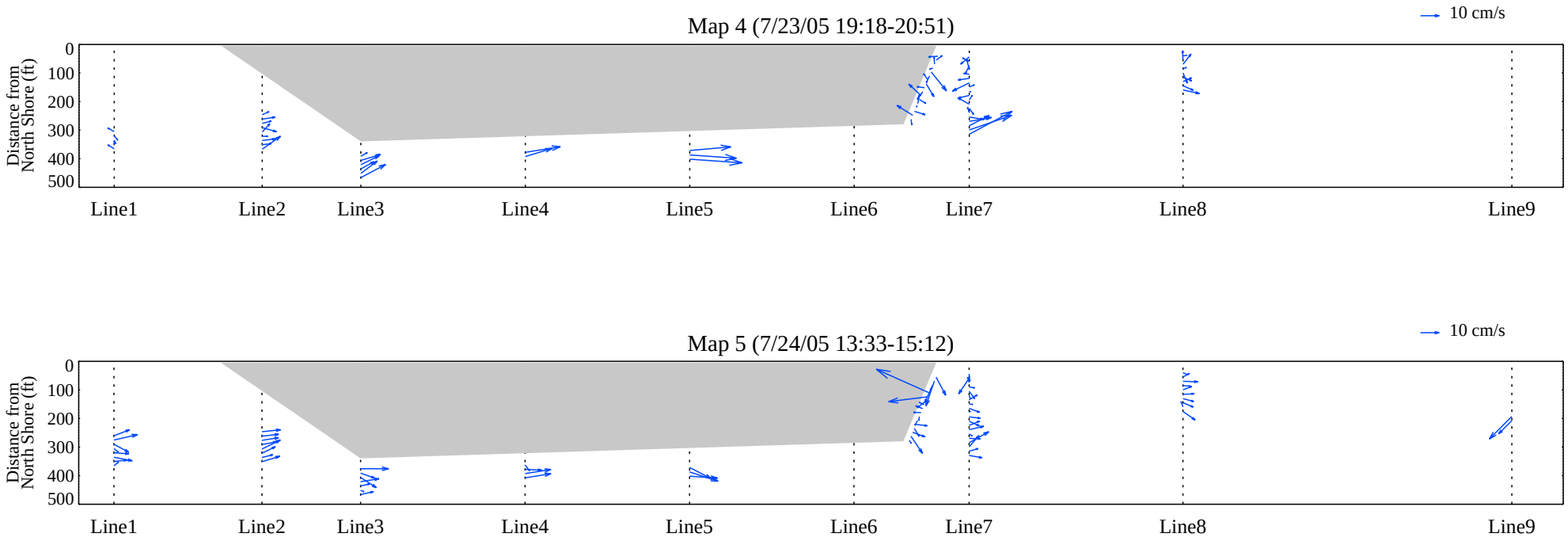


**Figure P-3p. Vector Diagrams for ADCP Velocity Measurements at 3.6 Meters for Mapping 4 and 5**

*Shaded area represents portion of river enclosed by containment system.*

rm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_P3_trans_vect_byDepth.pro
Tue May 16 17:31:57 2006

## Depth = 4.0 m

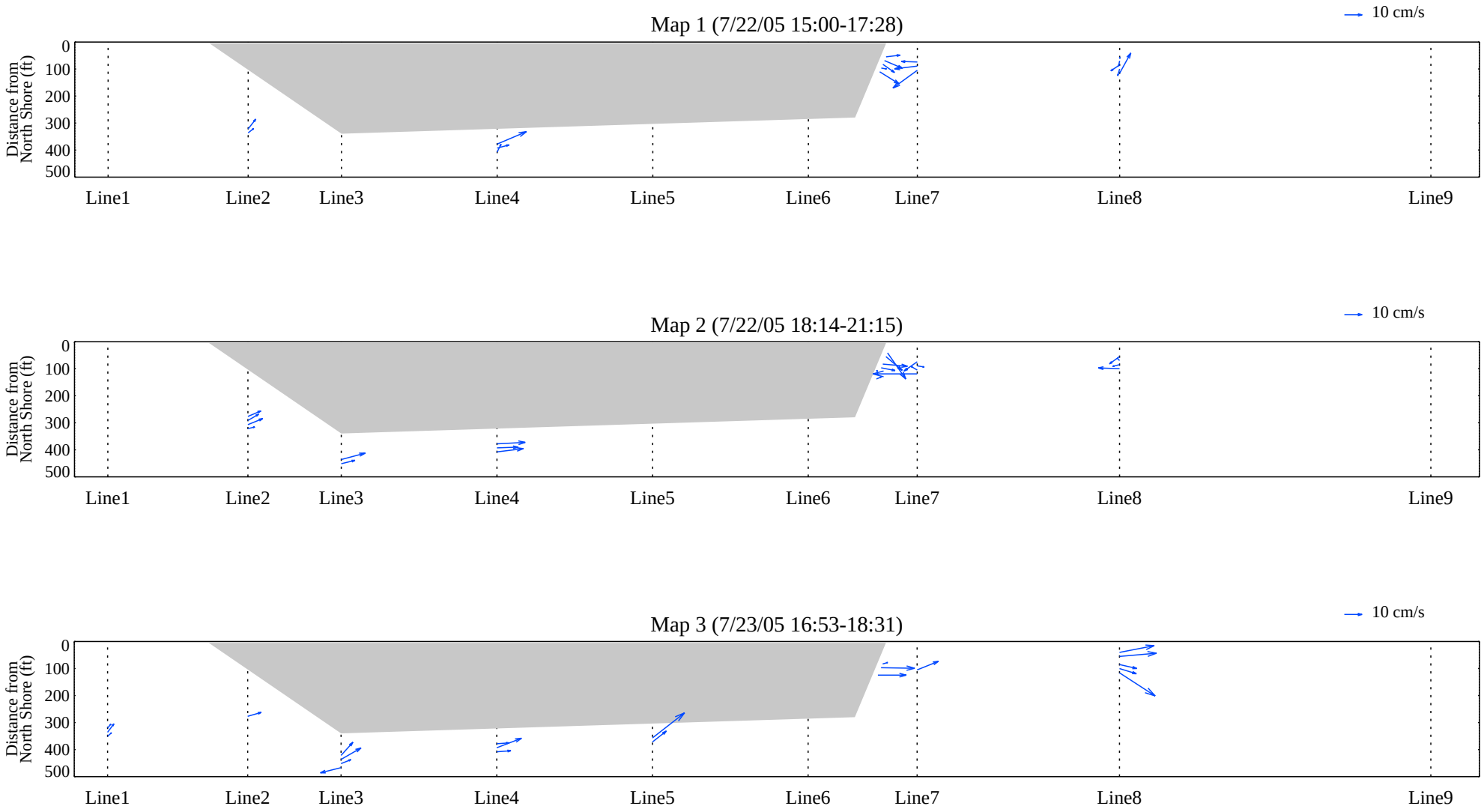


**Figure P-3q. Vector Diagrams for ADCP Velocity Measurements at 4.0 Meters for Mapping 1, 2, and 3**

*Shaded area represents portion of river enclosed by containment system.*

rm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_P3_trans_vect_byDepth.pro
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## Depth = 4.0 m

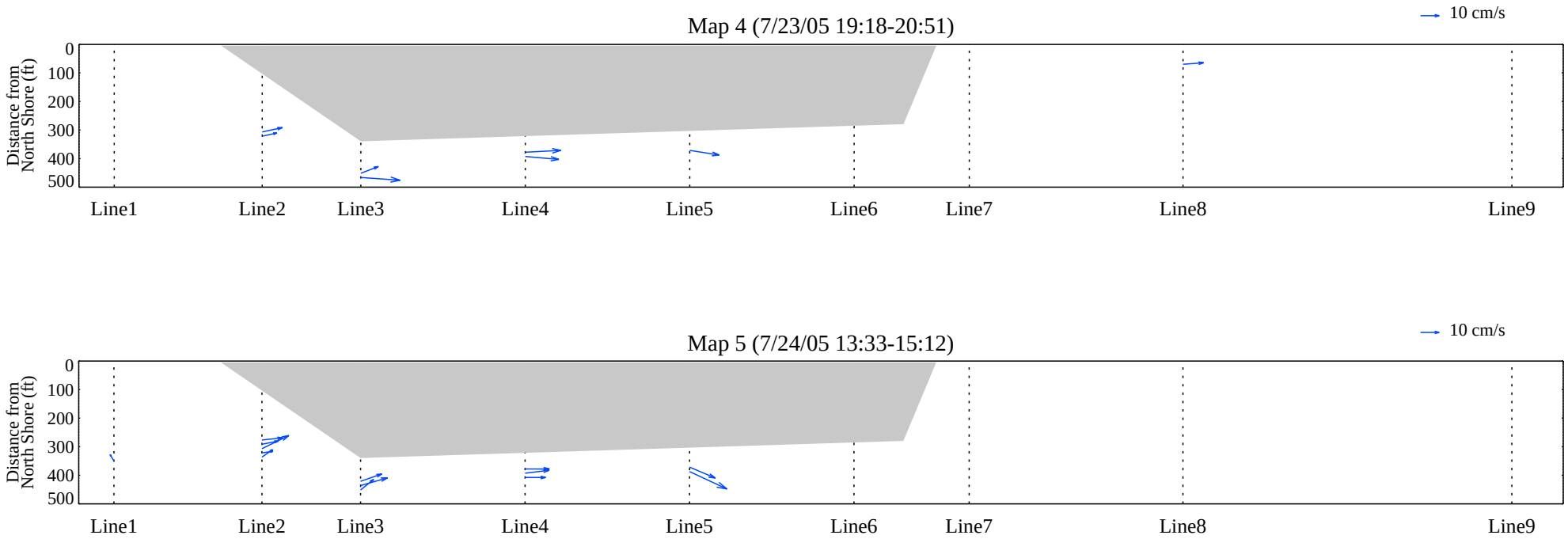


**Figure P-3r. Vector Diagrams for ADCP Velocity Measurements at 4.0 Meters for Mapping 4 and 5**

*Shaded area represents portion of river enclosed by containment system.*

rm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_P3_trans_vect_byDepth.pro
Tue May 16 17:31:57 2006

## Depth = 4.4 m

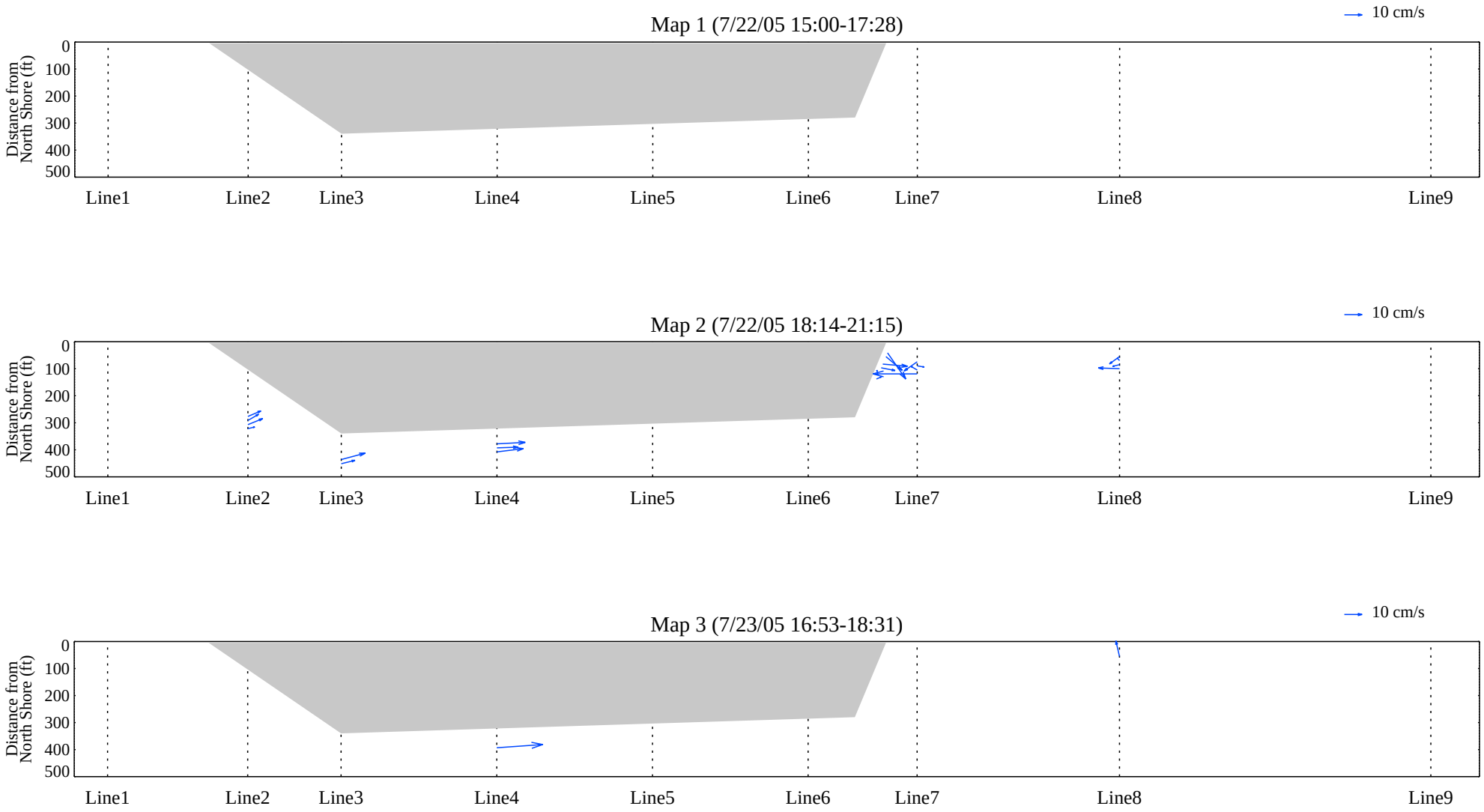


**Figure P-3s. Vector Diagrams for ADCP Velocity Measurements at 4.4 Meters for Mapping 1, 2, and 3**

*Shaded area represents portion of river enclosed by containment system.*

rm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_P3_trans_vect_byDepth.pro
Tue May 16 17:31:57 2006

## Depth = 4.4 m

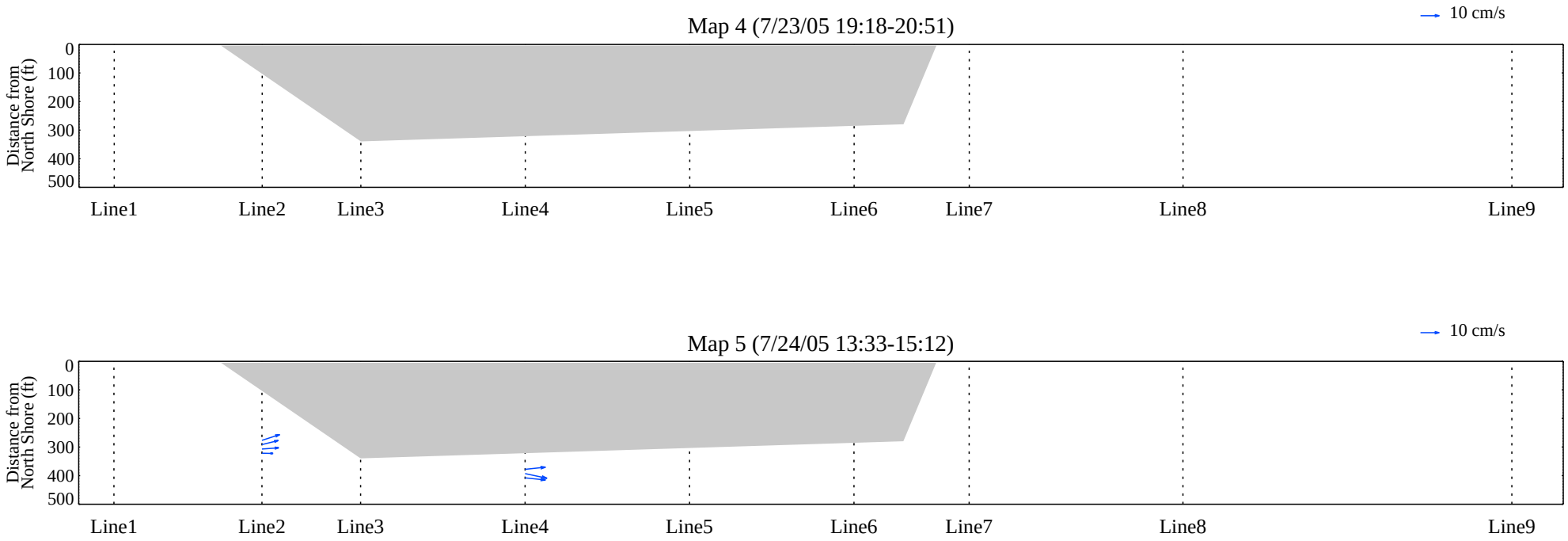


**Figure P-3t. Vector Diagrams for ADCP Velocity Measurements at 4.4 Meters for Mapping 4 and 5**

*Shaded area represents portion of river enclosed by containment system.*

rm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_P3_trans_vect_byDepth.pro
Tue May 16 17:31:57 2006

# Grasse River

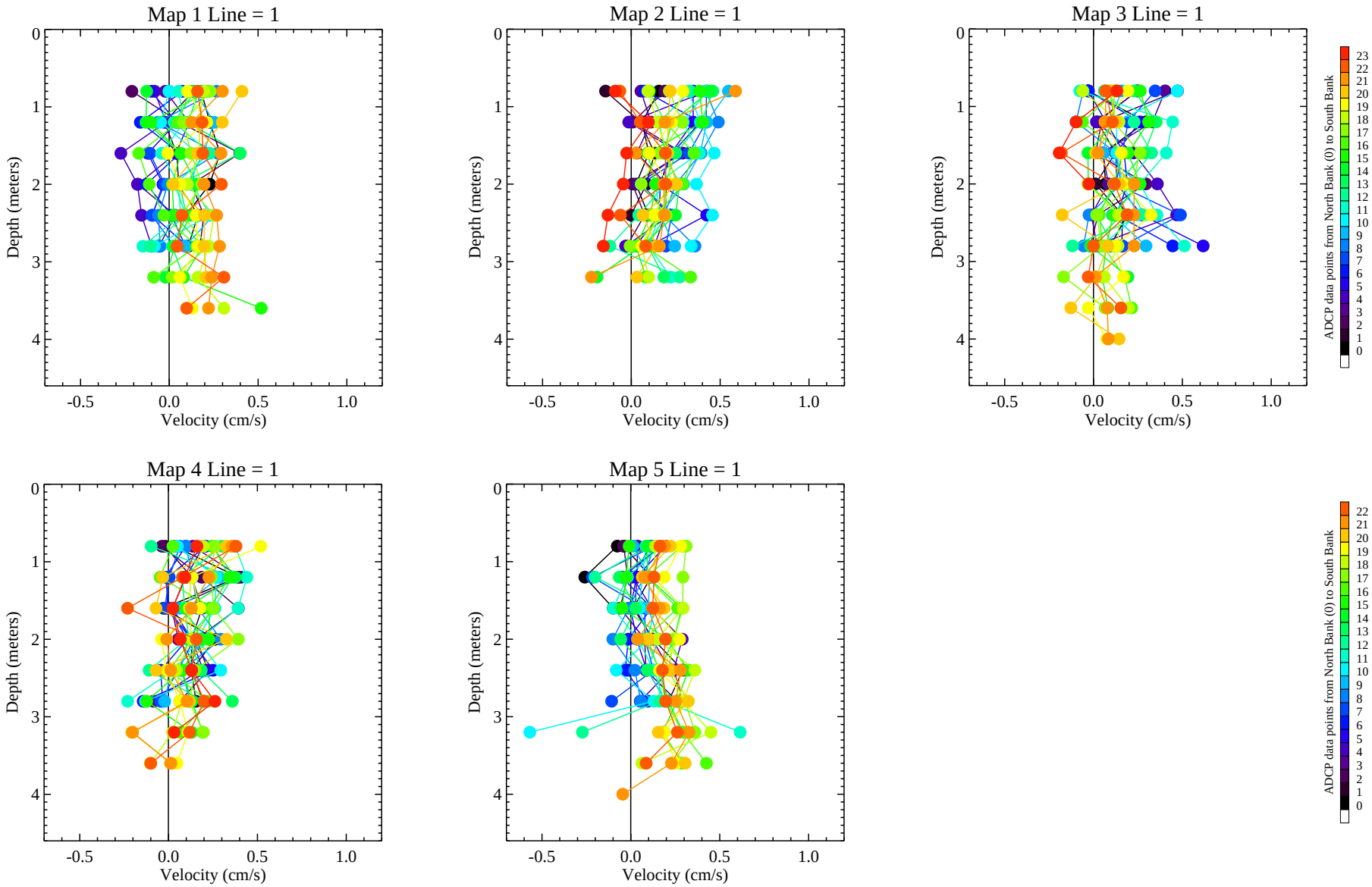


**Figure P-4a. Vertical and Horizontal Velocity Distributions Measured Along Line 1 During the July 2005 Velocity Study**

*Positive U represents flow towards downstream; negative U represents flow towards upstream.*

rrm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p4_adcp_vel_plot.pro
Tue May 16 17:37:14 2006

## Grasse River

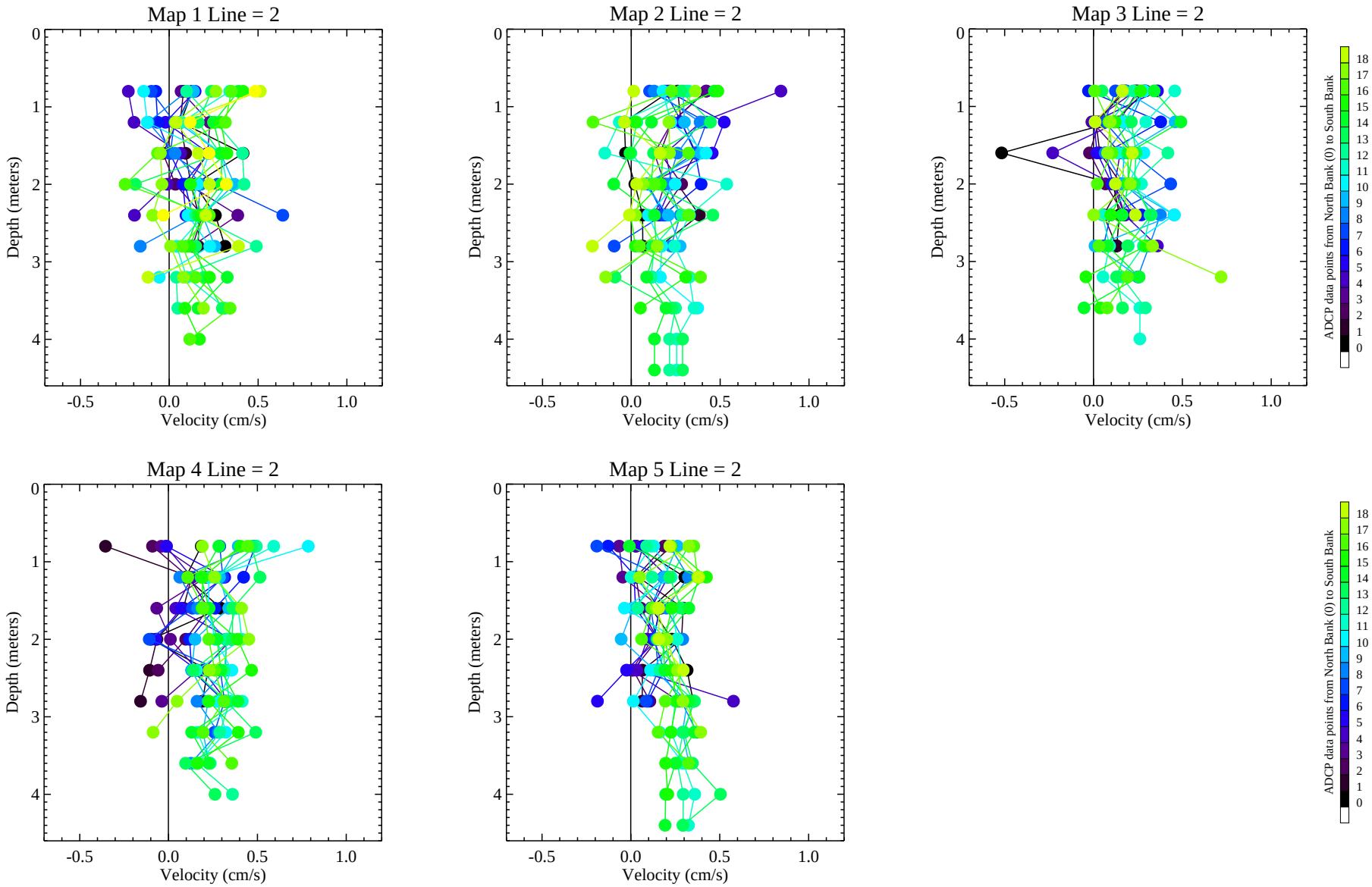


**Figure P-4b. Vertical and Horizontal Velocity Distributions Measured Along Line 2 During the July 2005 Velocity Study**

*Positive U represents flow towards downstream; negative U represents flow towards upstream.*

rrm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p4_adcp_vel_plot.pro
Tue May 16 17:37:14 2006

# Grasse River

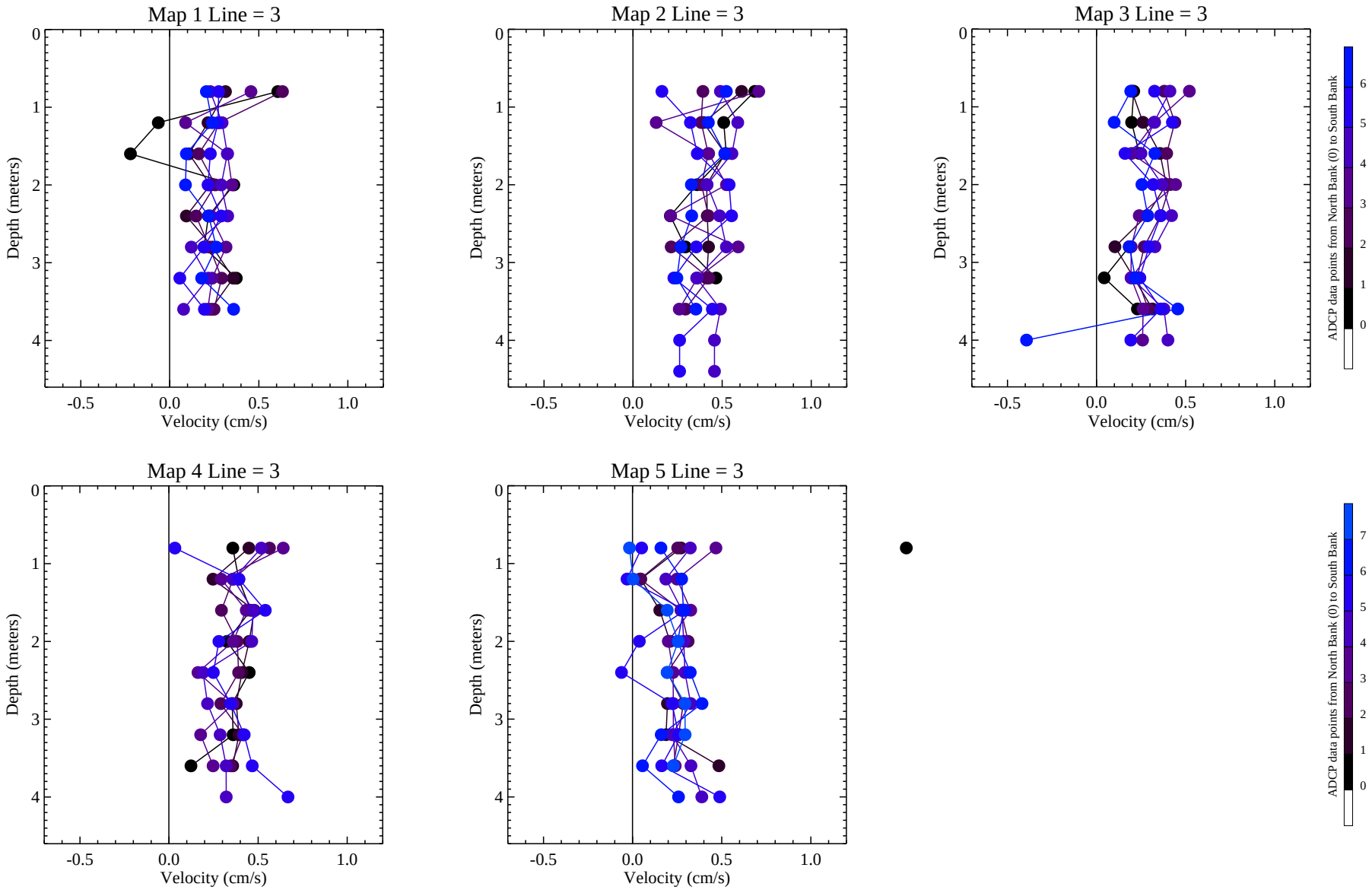


**Figure P-4c. Vertical and Horizontal Velocity Distributions Measured Along Line 3 During the July 2005 Velocity Study**

*Positive U represents flow towards downstream; negative U represents flow towards upstream.*

rrm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p4_adcp_vel_plot.pro
Tue May 16 17:37:14 2006

# Grasse River

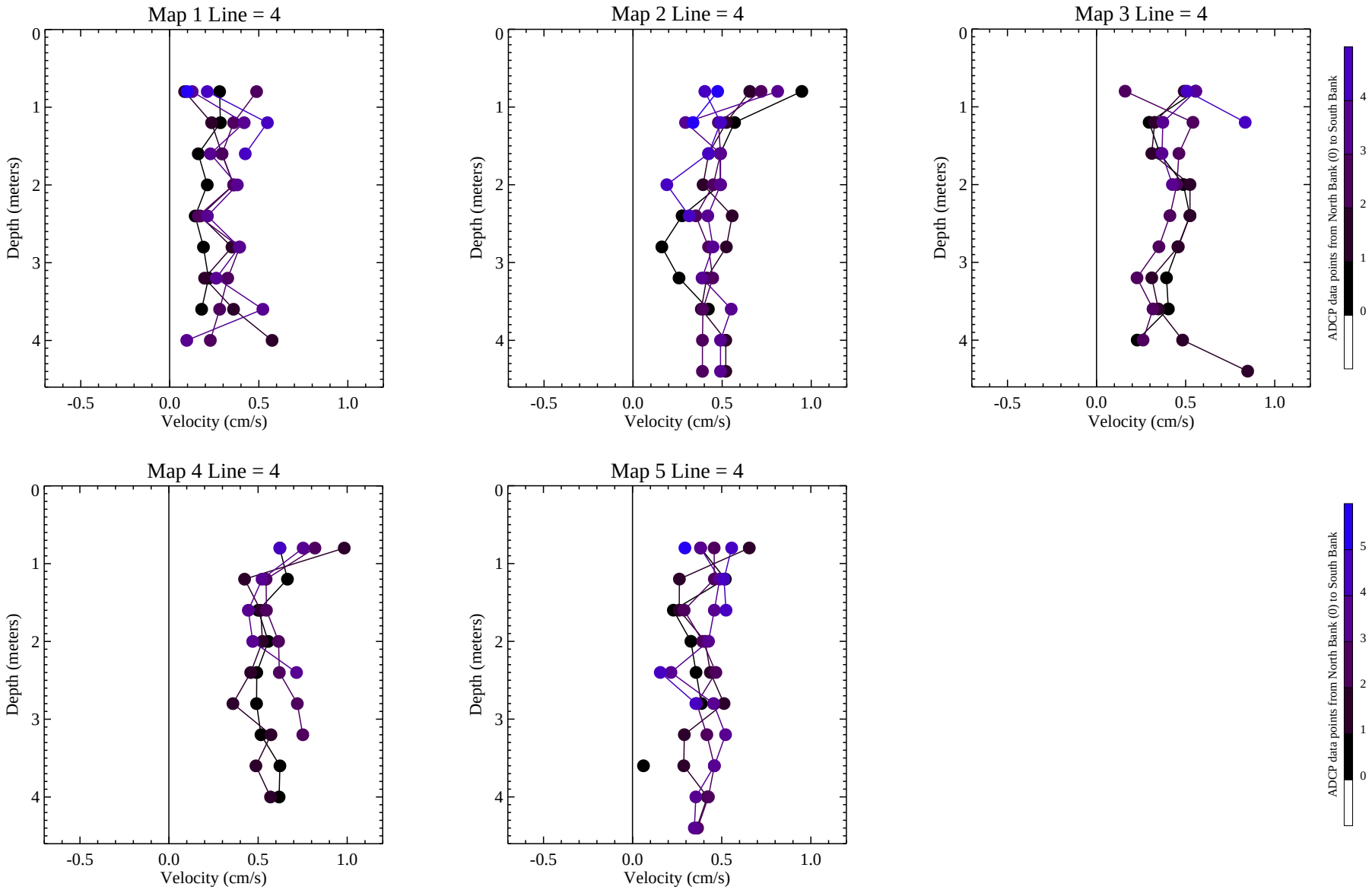


**Figure P-4d. Vertical and Horizontal Velocity Distributions Measured Along Line 4 During the July 2005 Velocity Study**

*Positive U represents flow towards downstream; negative U represents flow towards upstream.*

rrm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p4_adcp_vel_plot.pro
Tue May 16 17:37:14 2006

# Grasse River

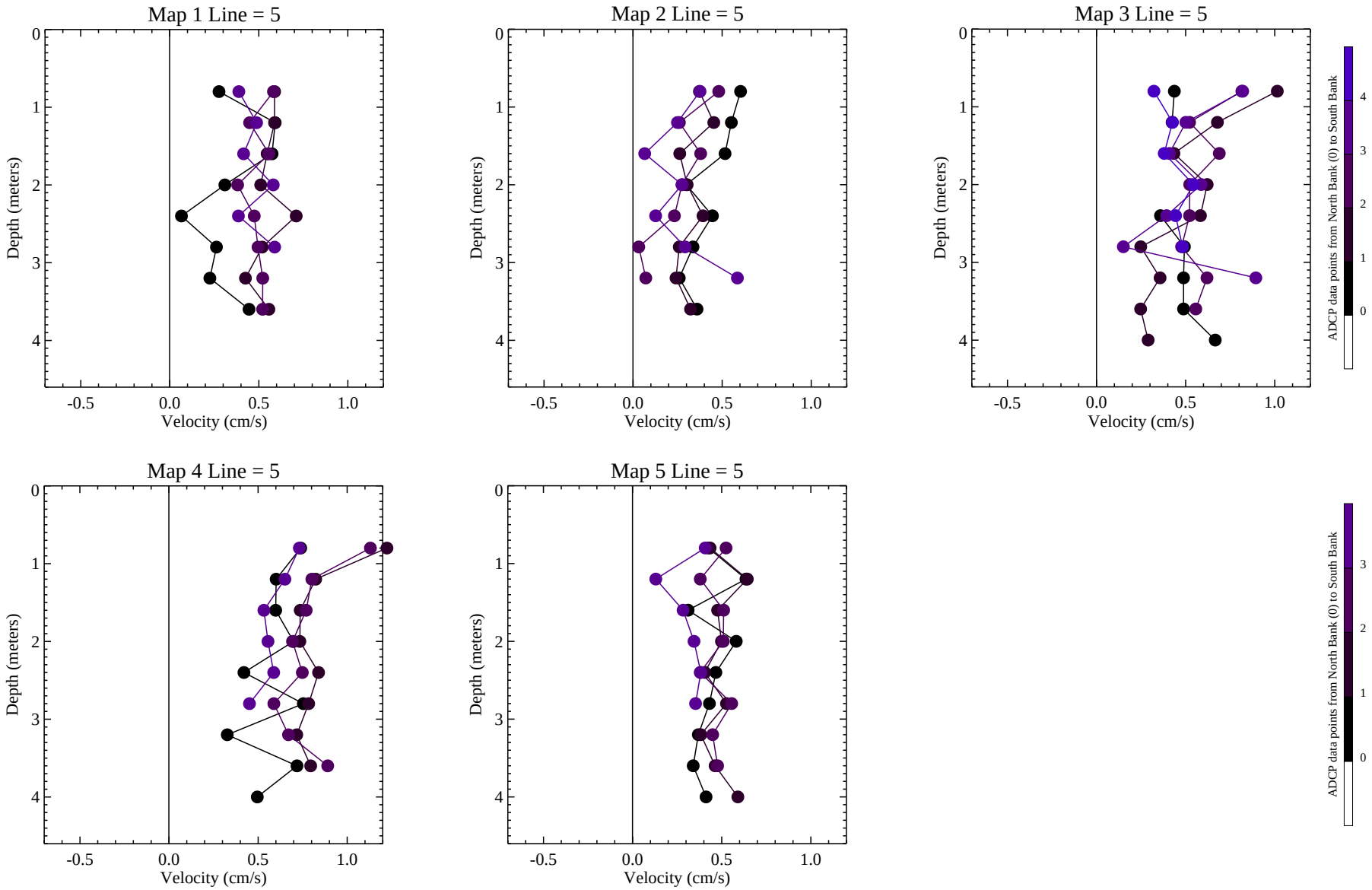


**Figure P-4e. Vertical and Horizontal Velocity Distributions Measured Along Line 5 During the July 2005 Velocity Study**

*Positive U represents flow towards downstream; negative U represents flow towards upstream.*

rrm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p4_adcp_vel_plot.pro
Tue May 16 17:37:14 2006

# Grasse River

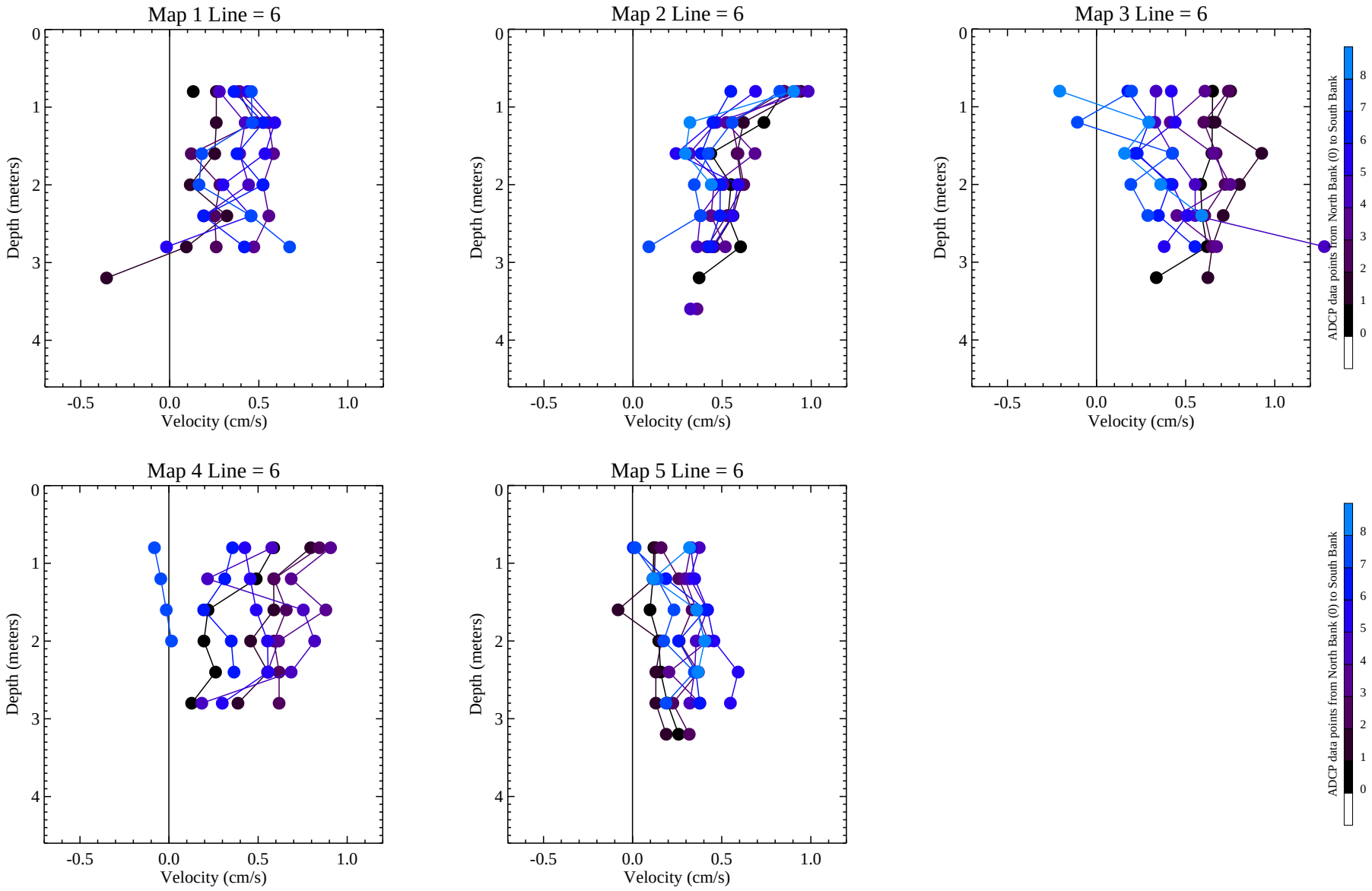


**Figure P-4f. Vertical and Horizontal Velocity Distributions Measured Along Line 6 During the July 2005 Velocity Study**

*Positive U represents flow towards downstream; negative U represents flow towards upstream.*

rrm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p4_adcp_vel_plot.pro
Tue May 16 17:37:14 2006

# Grasse River

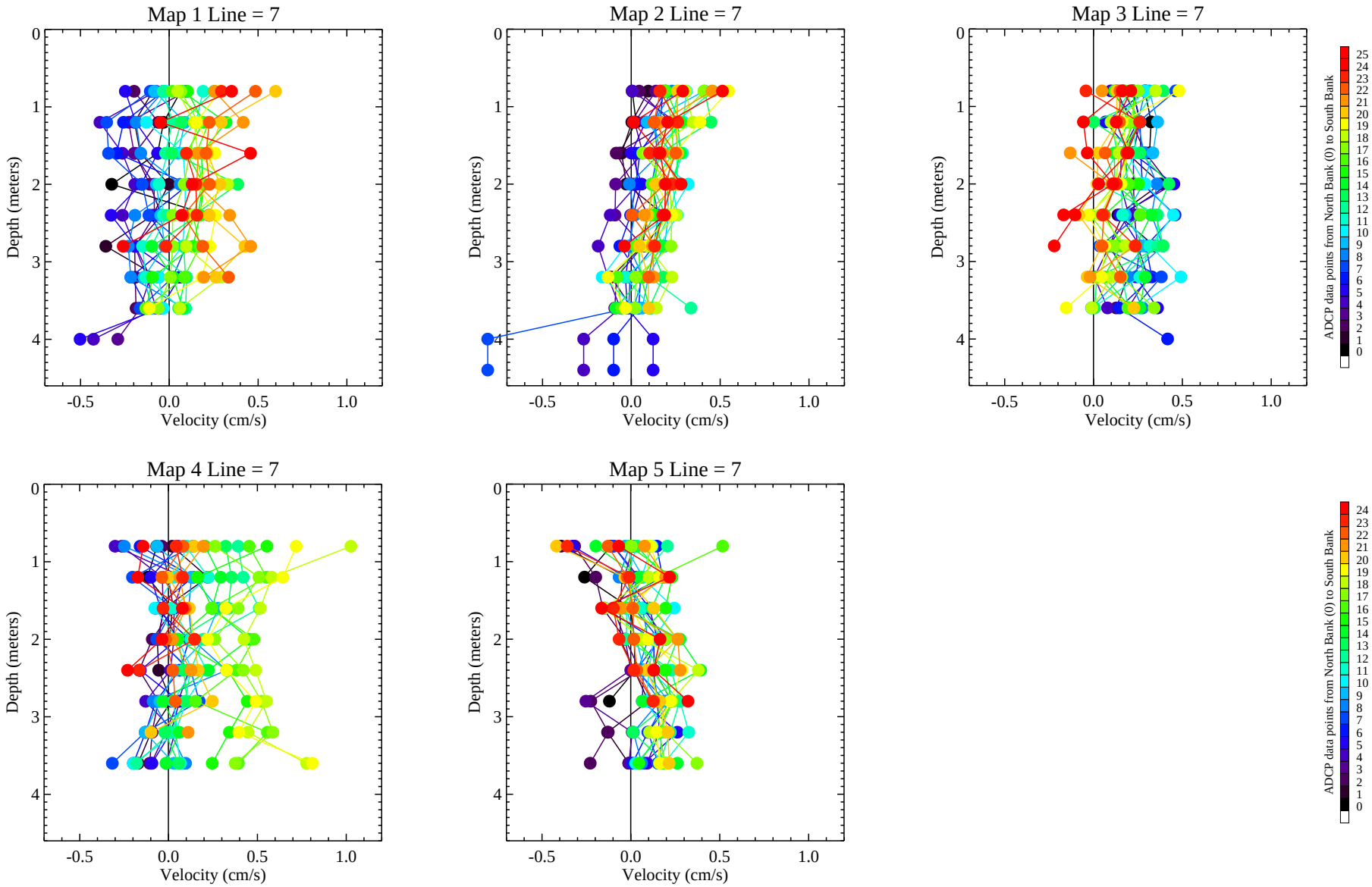


**Figure P-4g. Vertical and Horizontal Velocity Distributions Measured Along Line 7 During the July 2005 Velocity Study**

*Positive U represents flow towards downstream; negative U represents flow towards upstream.*

rrm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p4_adcp_vel_plot.pro
Tue May 16 17:37:14 2006

# Grasse River

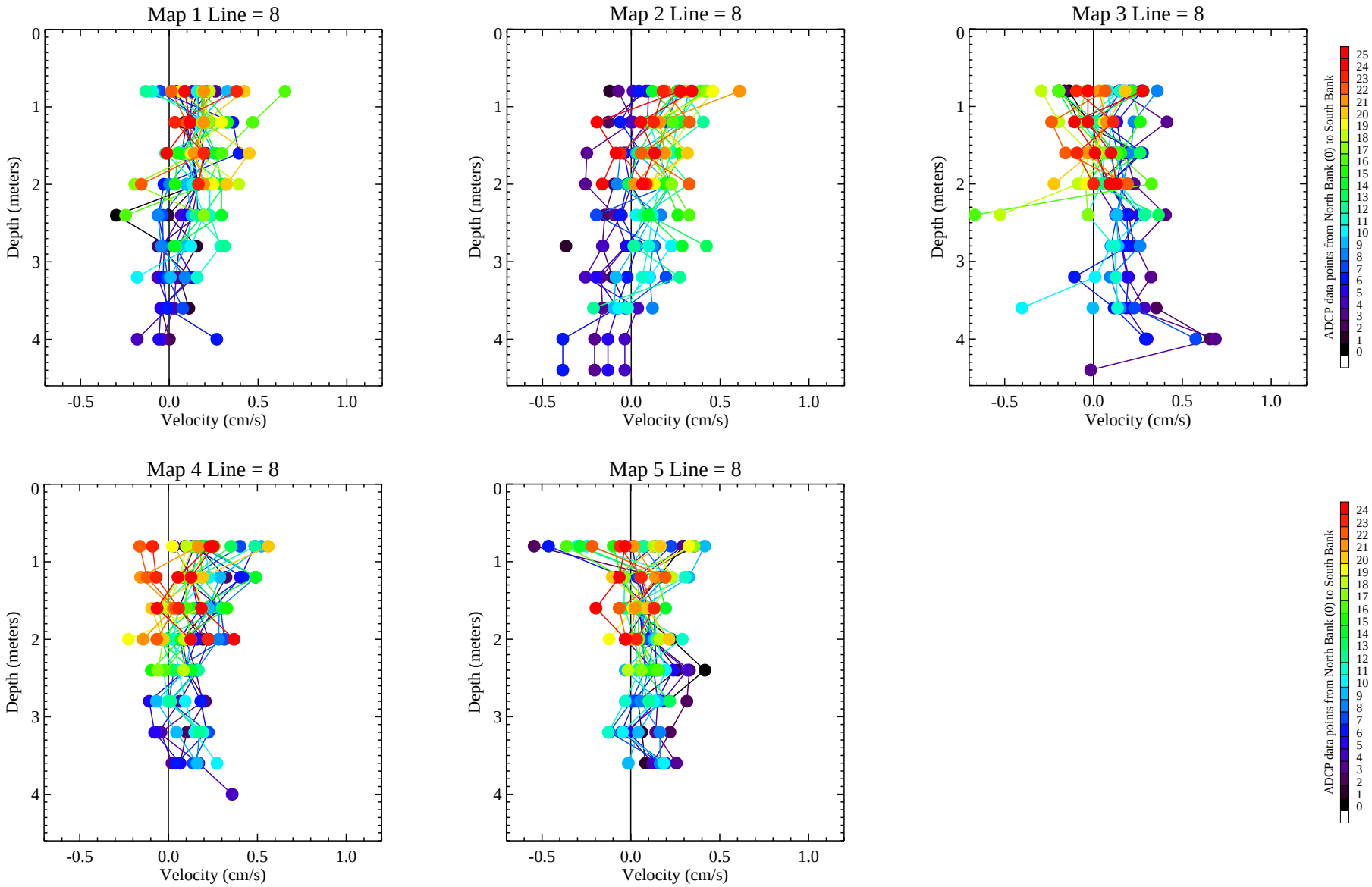


**Figure P-4h. Vertical and Horizontal Velocity Distributions Measured Along Line 8 During the July 2005 Velocity Study**

*Positive U represents flow towards downstream; negative U represents flow towards upstream.*

rrm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p4_adcp_vel_plot.pro
Tue May 16 17:37:14 2006

# Grasse River

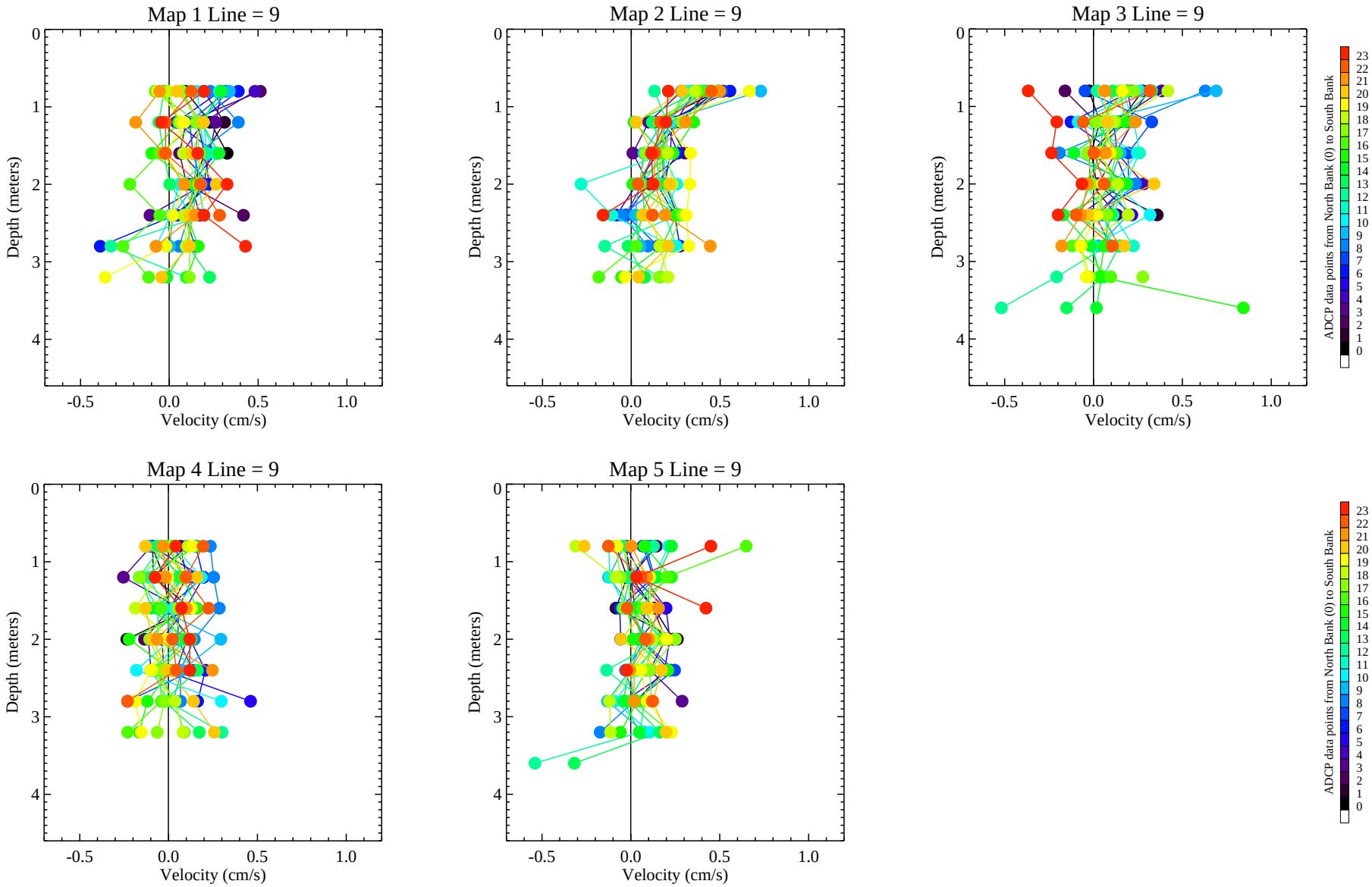


**Figure P-4i. Vertical and Horizontal Velocity Distributions Measured Along Line 9 During the July 2005 Velocity Study**

*Positive U represents flow towards downstream; negative U represents flow towards upstream.*

rrm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p4_adcp_vel_plot.pro
Tue May 16 17:37:15 2006

# Grasse River

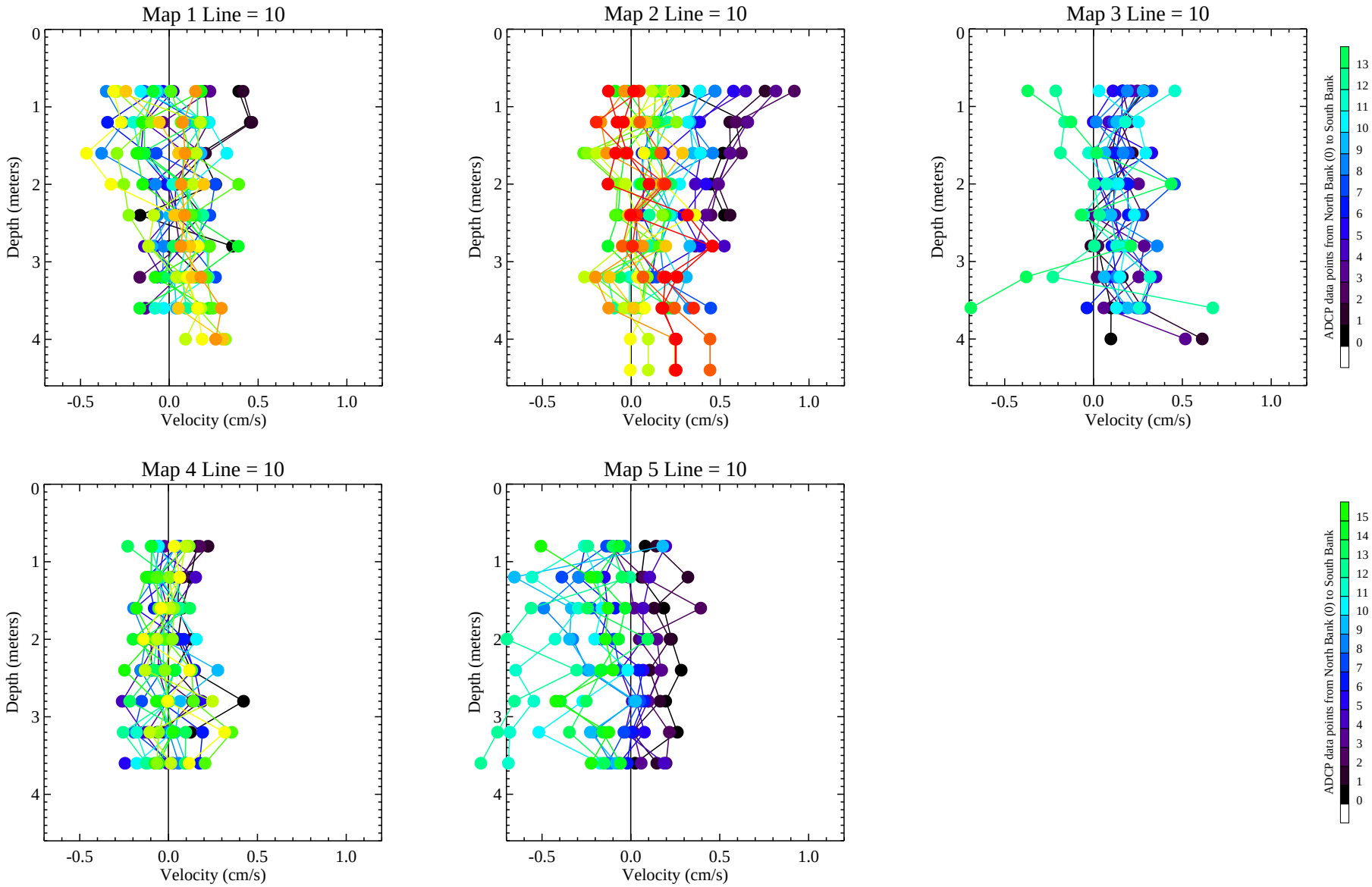


**Figure P-4j. Vertical and Horizontal Velocity Distributions Measured Along Line 10 During the July 2005 Velocity Study**

*Positive U represents flow towards downstream; negative U represents flow towards upstream.*

rrm - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p4_adcp_vel_plot.pro
Tue May 16 17:37:15 2006

# Line 1

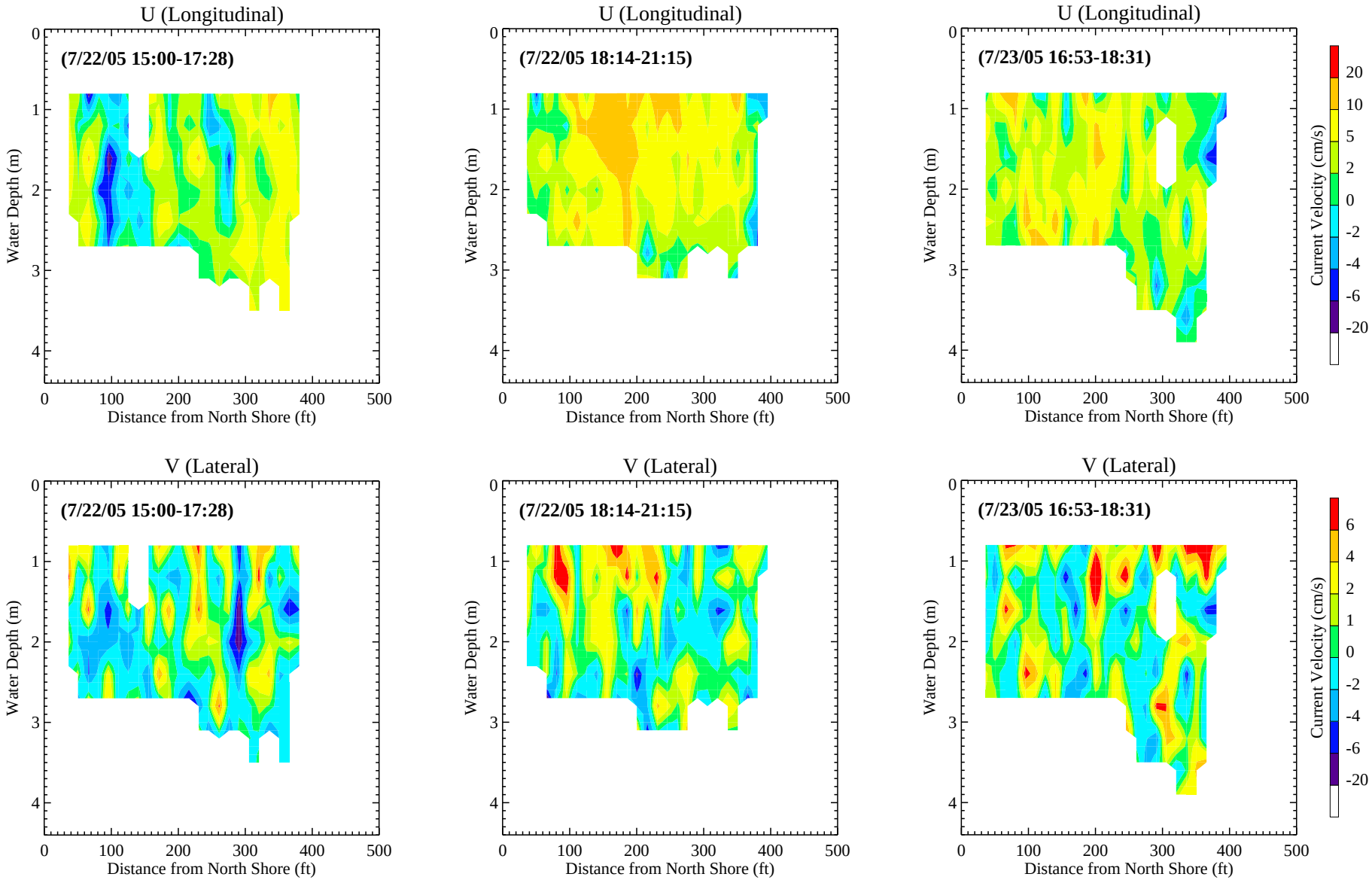


**Figure P-5a. Lateral and Longitudinal Velocity Measurements Taken Along Line 1 (Mapping 1, 2, and 3)**

*Positive U, color red, represents flow towards downstream; positive V represents flow towards northern shore.*

wk - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p5_transect_contour.pro
Tue May 16 17:32:29 2006

# Line 1

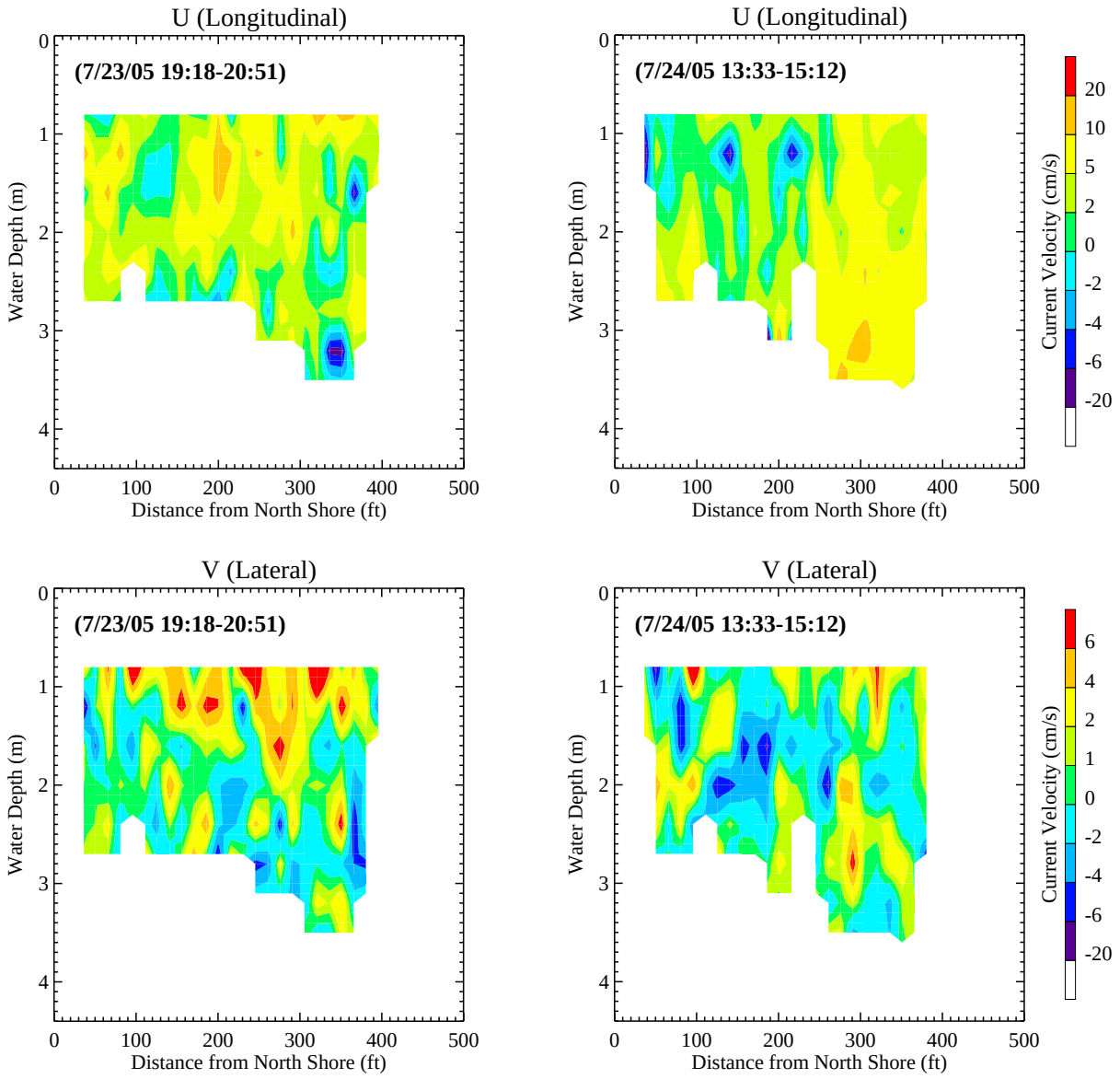


**Figure P-5b. Lateral and Longitudinal Velocity Measurements Taken Along Line 1 (Mapping 4 and 5)**

*Positive U, color red, represents flow towards downstream; positive V represents flow towards northern shore.*

wk - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p5_transect_contour.pro
Tue May 16 17:32:29 2006

## Line 2

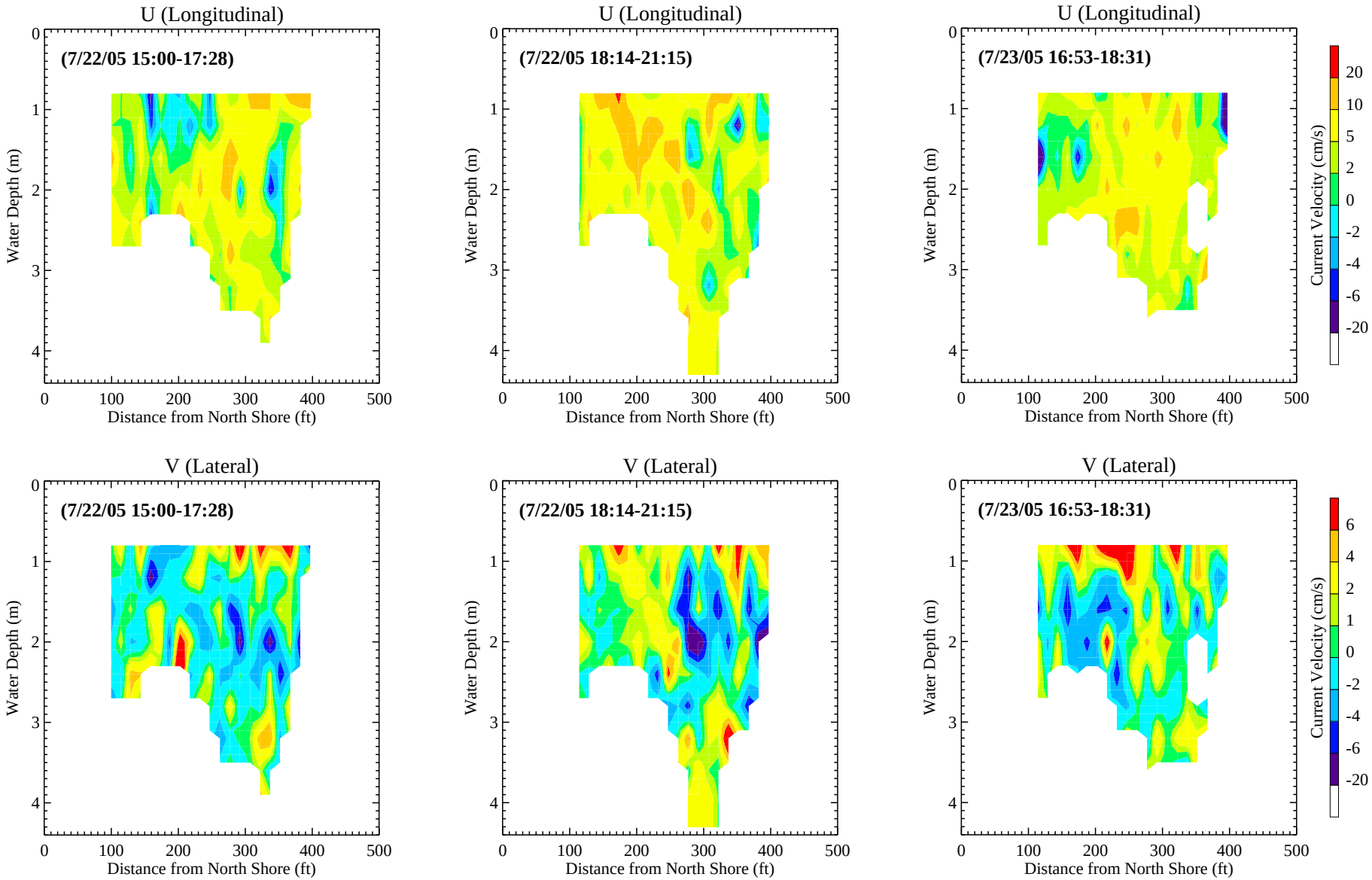


**Figure P-5c. Lateral and Longitudinal Velocity Measurements Taken Along Line 2 (Mapping 1, 2, and 3)**

*Positive U, color red, represents flow towards downstream; positive V represents flow towards northern shore.*

wk - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p5_transect_contour.pro
Tue May 16 17:32:29 2006

# Line 2

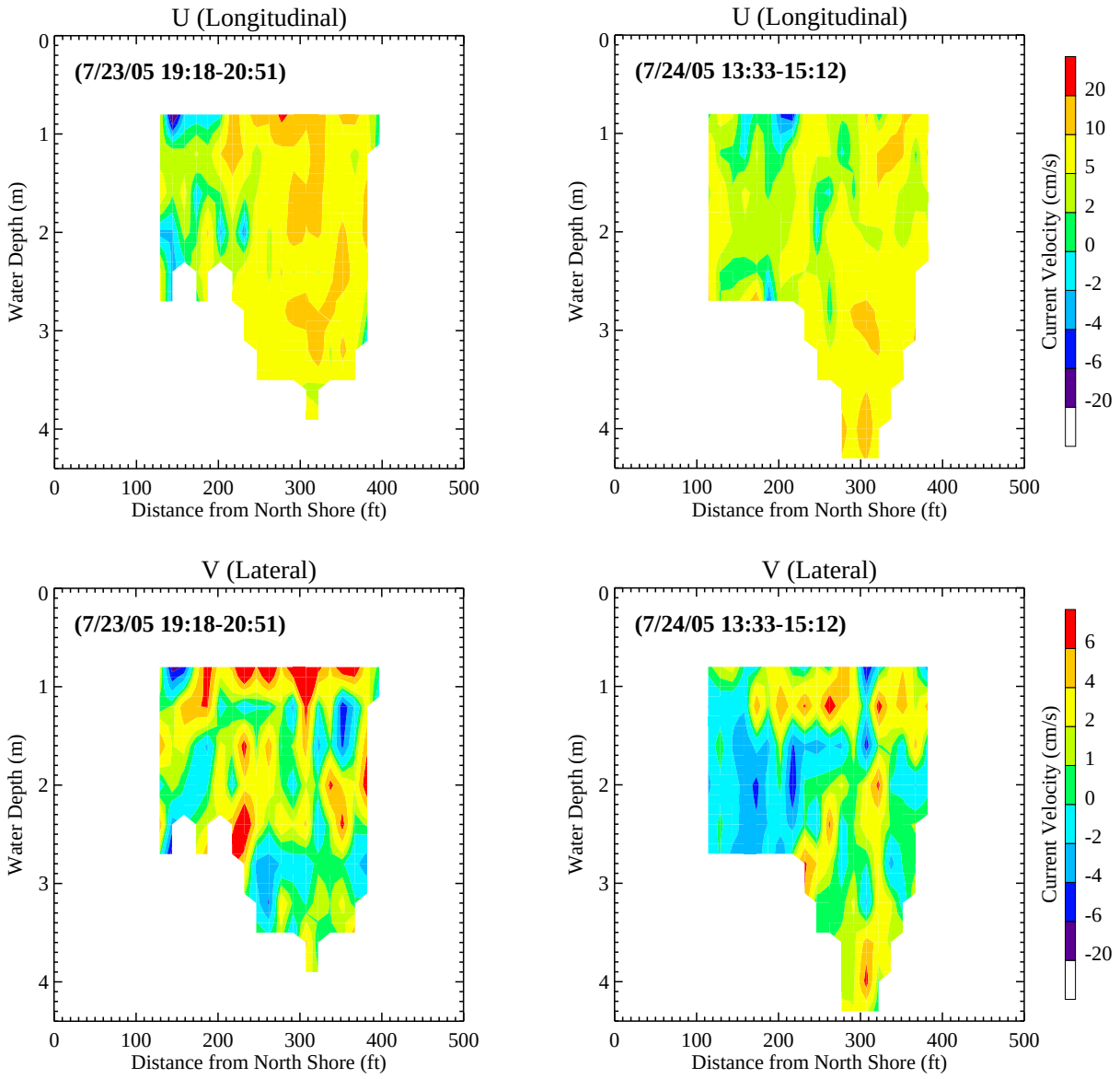


**Figure P-5d. Lateral and Longitudinal Velocity Measurements Taken Along Line 2 (Mapping 4 and 5)**

*Positive U, color red, represents flow towards downstream; positive V represents flow towards northern shore.*

wk - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p5_transect_contour.pro
Tue May 16 17:32:29 2006

## Line 3

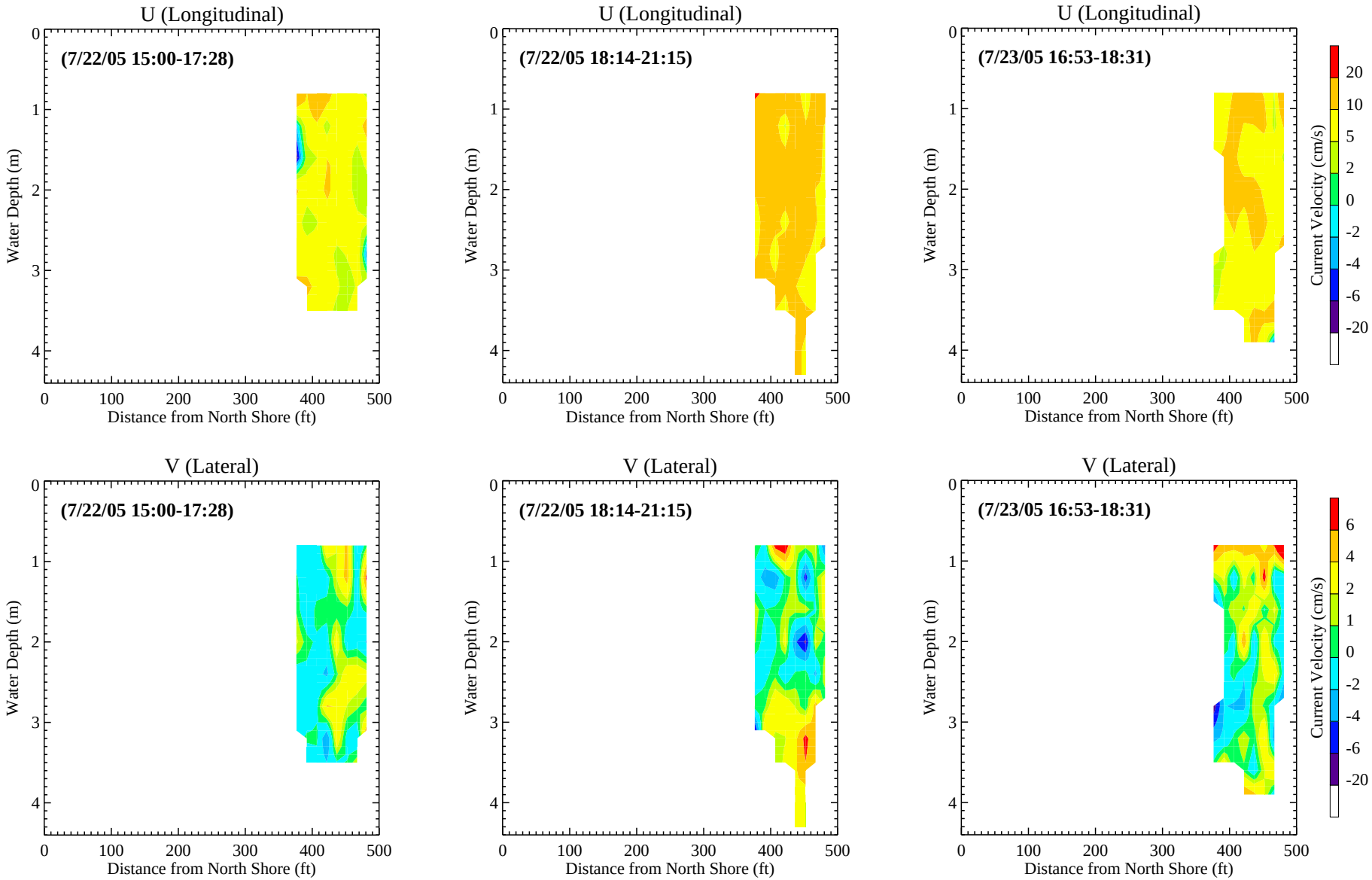


**Figure P-5e. Lateral and Longitudinal Velocity Measurements Taken Along Line 3 (Mapping 1, 2, and 3)**

*Positive U, color red, represents flow towards downstream; positive V represents flow towards northern shore.*

wk - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p5_transect_contour.pro
Tue May 16 17:32:29 2006

# Line 3

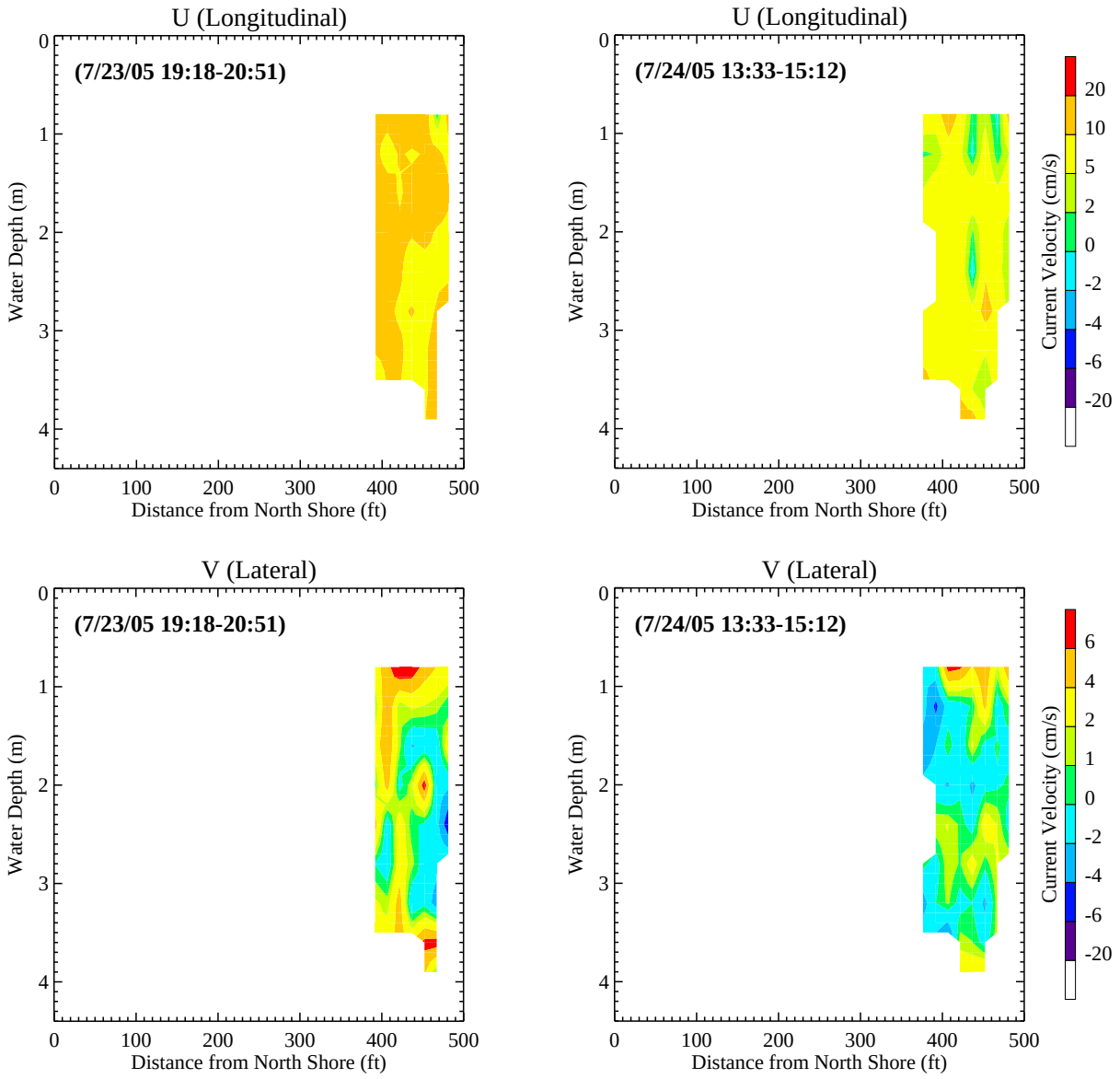


**Figure P-5f. Lateral and Longitudinal Velocity Measurements Taken Along Line 3 (Mapping 4 and 5)**

*Positive U, color red, represents flow towards downstream; positive V represents flow towards northern shore.*

# Line 4

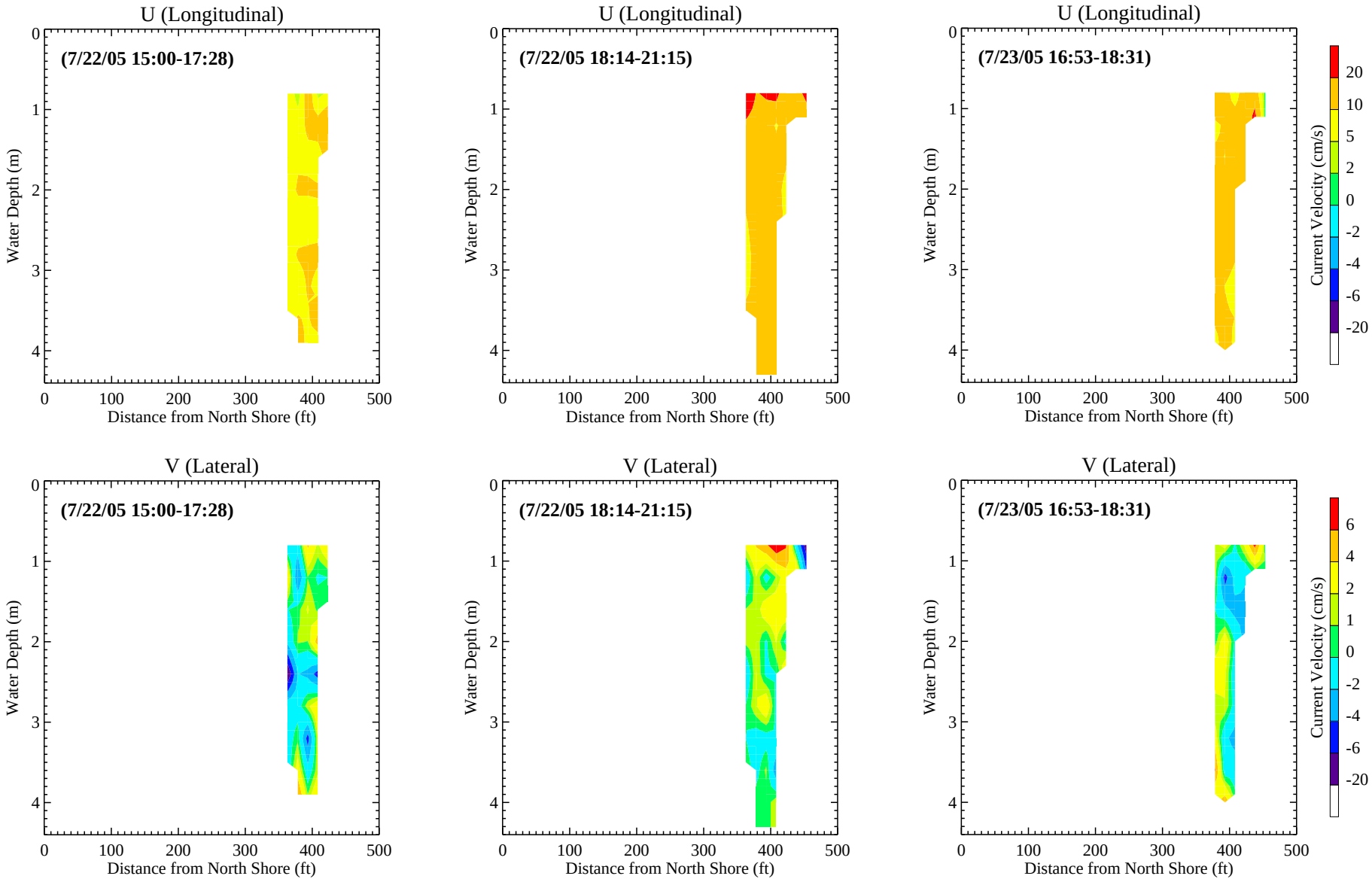


**Figure P-5g. Lateral and Longitudinal Velocity Measurements Taken Along Line 4 (Mapping 1, 2, and 3)**

*Positive U, color red, represents flow towards downstream; positive V represents flow towards northern shore.*

wk - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p5_transect_contour.pro
Tue May 16 17:32:29 2006

# Line 4

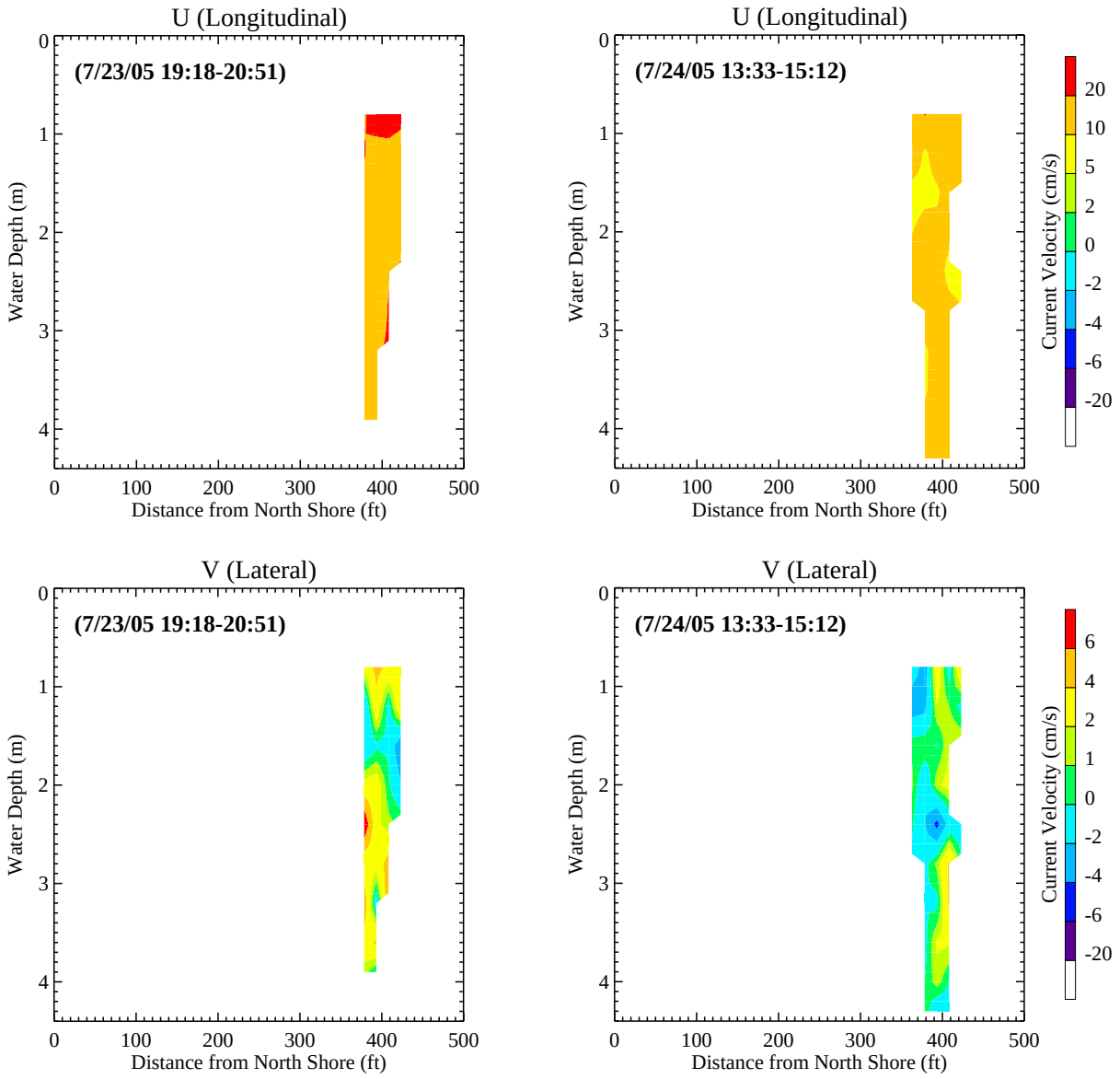


**Figure P-5h. Lateral and Longitudinal Velocity Measurements Taken Along Line 4 (Mapping 4 and 5)**

*Positive U, color red, represents flow towards downstream; positive V represents flow towards northern shore.*

wk - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p5_transect_contour.pro
Tue May 16 17:32:29 2006

## Line 5

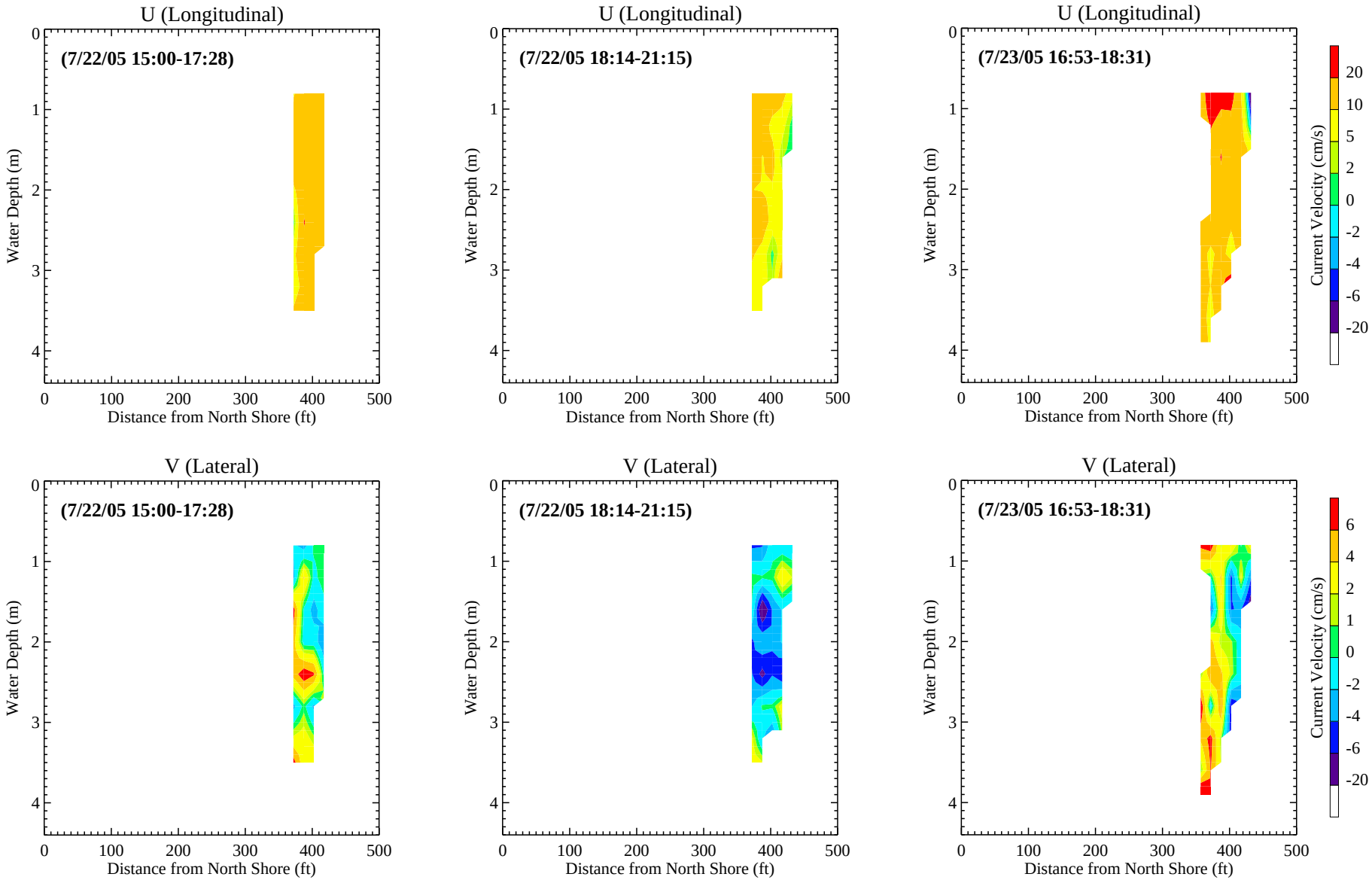


**Figure P-5i. Lateral and Longitudinal Velocity Measurements Taken Along Line 5 (Mapping 1, 2, and 3)**

*Positive U, color red, represents flow towards downstream; positive V represents flow towards northern shore.*

wk - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p5_transect_contour.pro
Tue May 16 17:32:29 2006

# Line 5

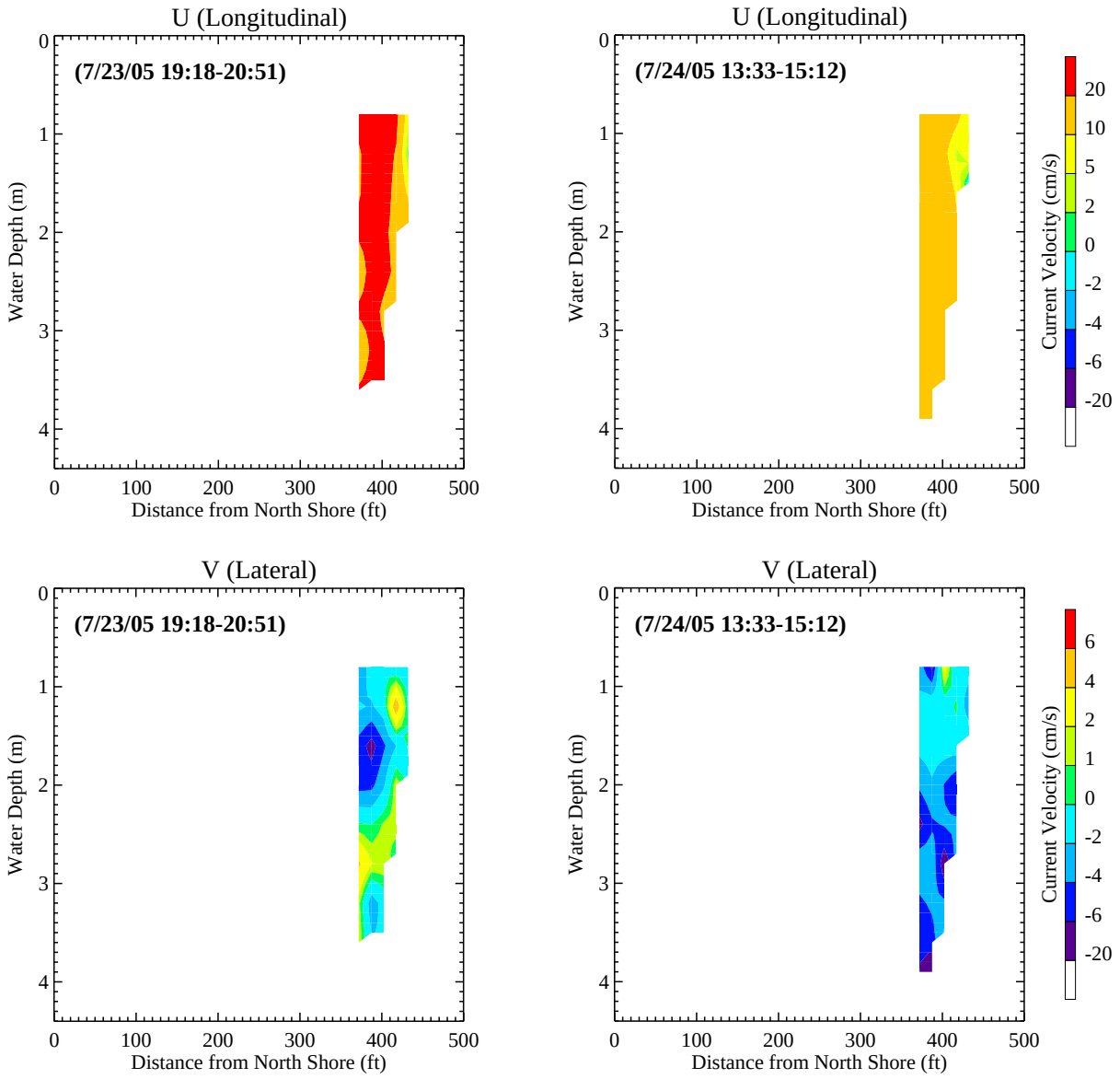


**Figure P-5j. Lateral and Longitudinal Velocity Measurements Taken Along Line 5 (Mapping 4 and 5)**

*Positive U, color red, represents flow towards downstream; positive V represents flow towards northern shore.*

wk - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p5_transect_contour.pro
Tue May 16 17:32:29 2006

# Line 6

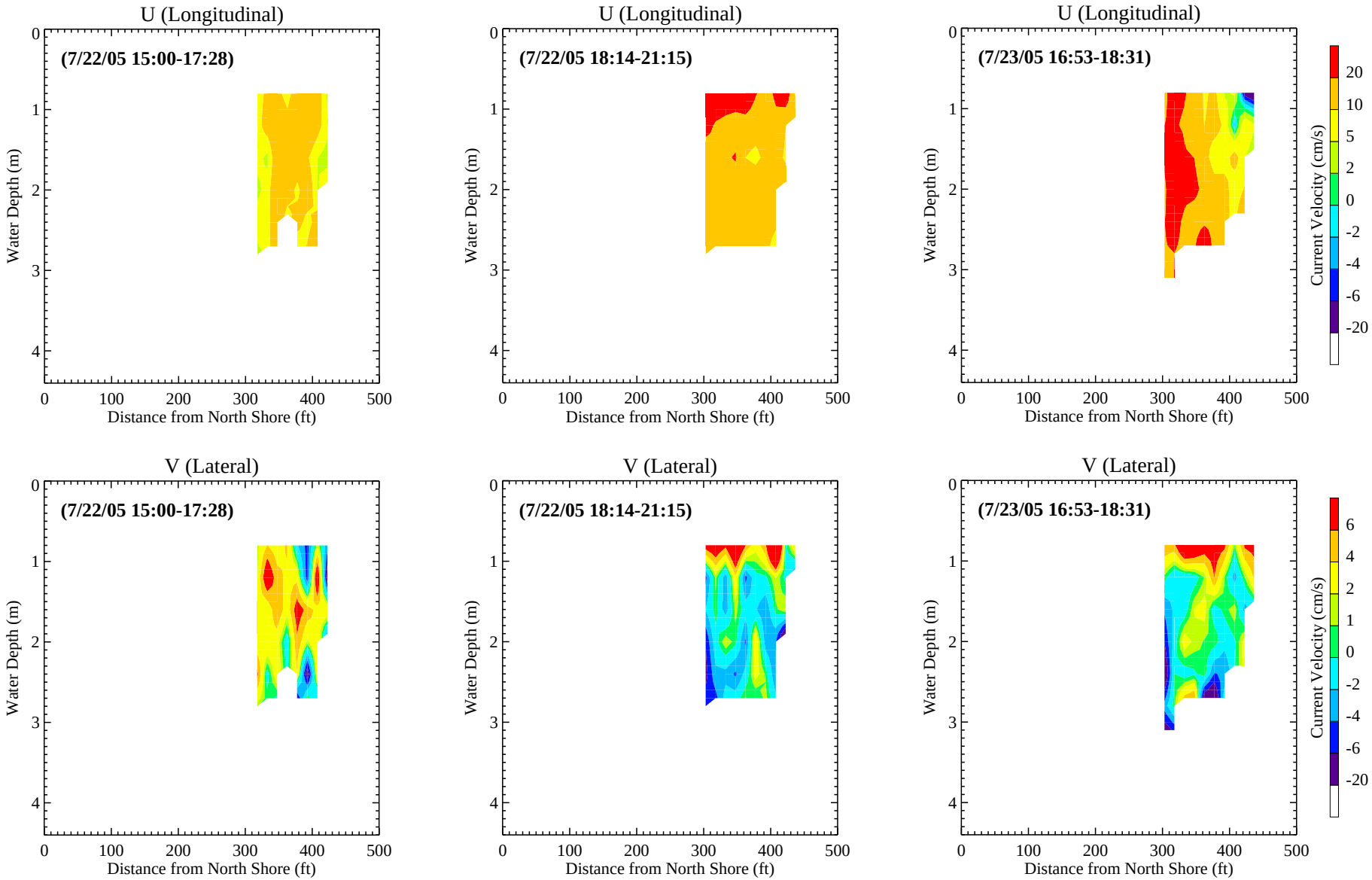


**Figure P-5k. Lateral and Longitudinal Velocity Measurements Taken Along Line 6 (Mapping 1, 2, and 3)**

*Positive U, color red, represents flow towards downstream; positive V represents flow towards northern shore.*

wk - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p5_transect_contour.pro
Tue May 16 17:32:29 2006

# Line 6

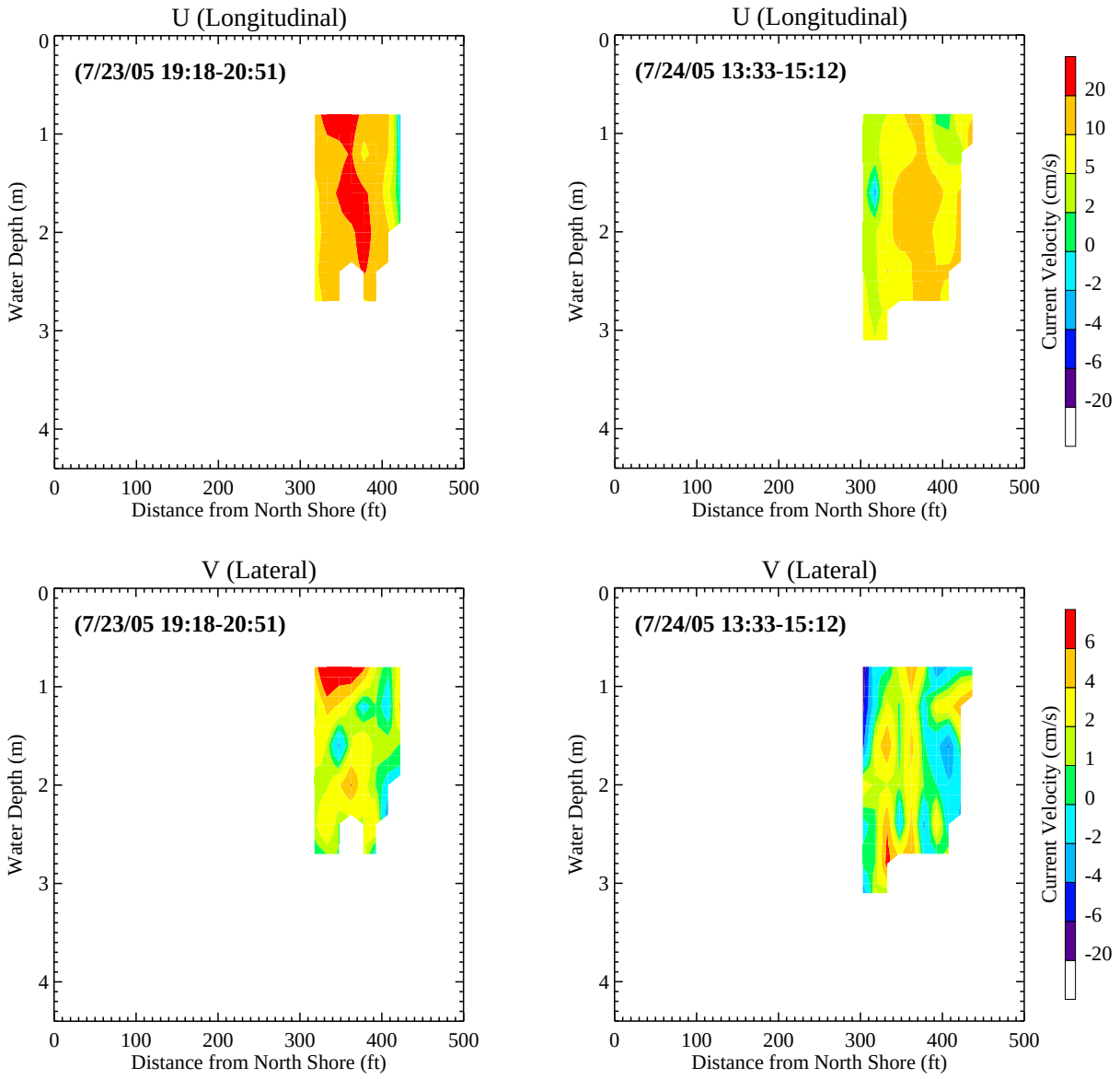


**Figure P-5l. Lateral and Longitudinal Velocity Measurements Taken Along Line 6 (Mapping 4 and 5)**

*Positive U, color red, represents flow towards downstream; positive V represents flow towards northern shore.*

wk - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p5_transect_contour.pro
Tue May 16 17:32:29 2006

# Line 7

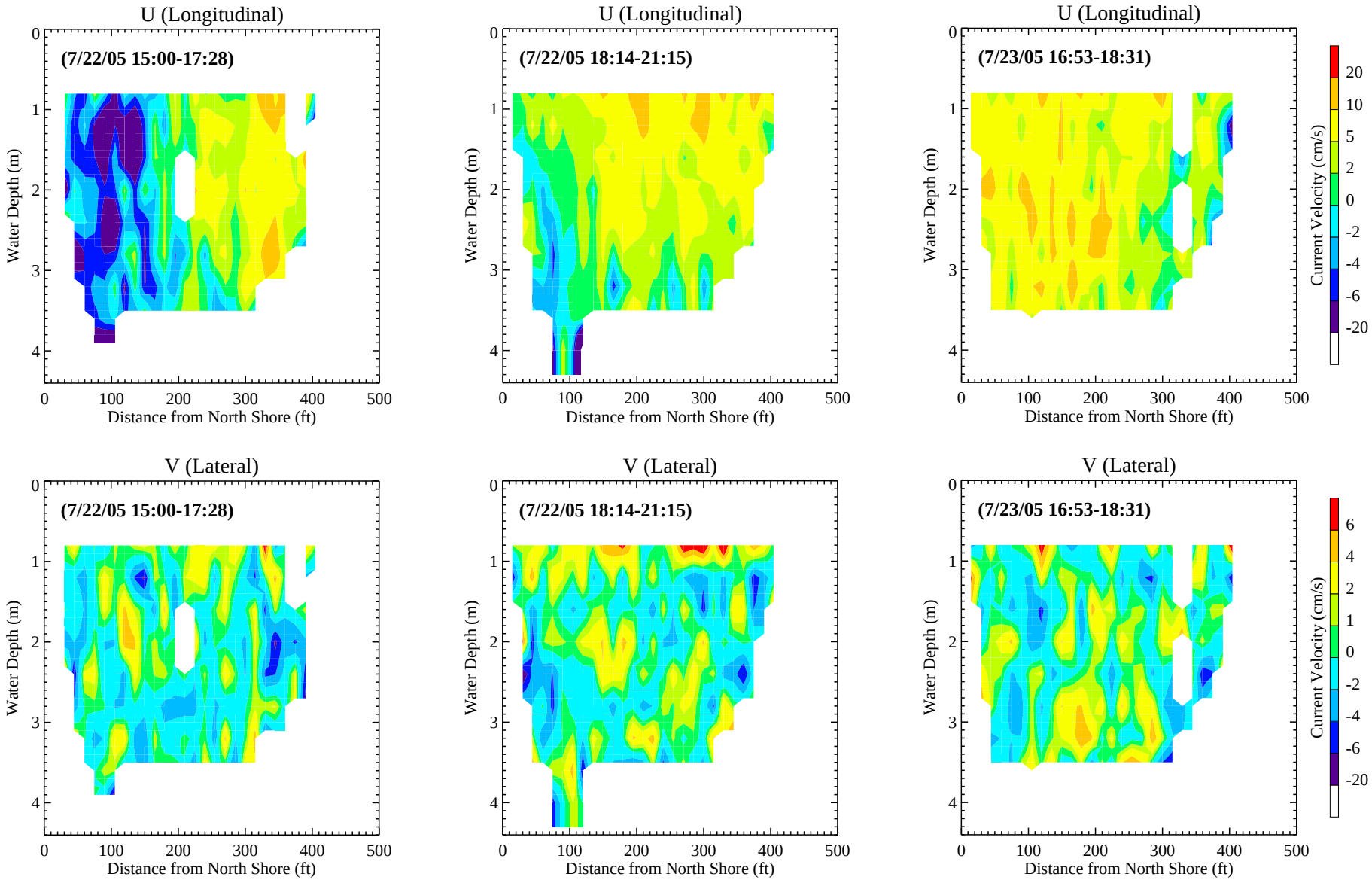


**Figure P-5m. Lateral and Longitudinal Velocity Measurements Taken Along Line 7 (Mapping 1, 2, and 3)**

*Positive U, color red, represents flow towards downstream; positive V represents flow towards northern shore.*

wk - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p5_transect_contour.pro
Tue May 16 17:32:29 2006

# Line 7

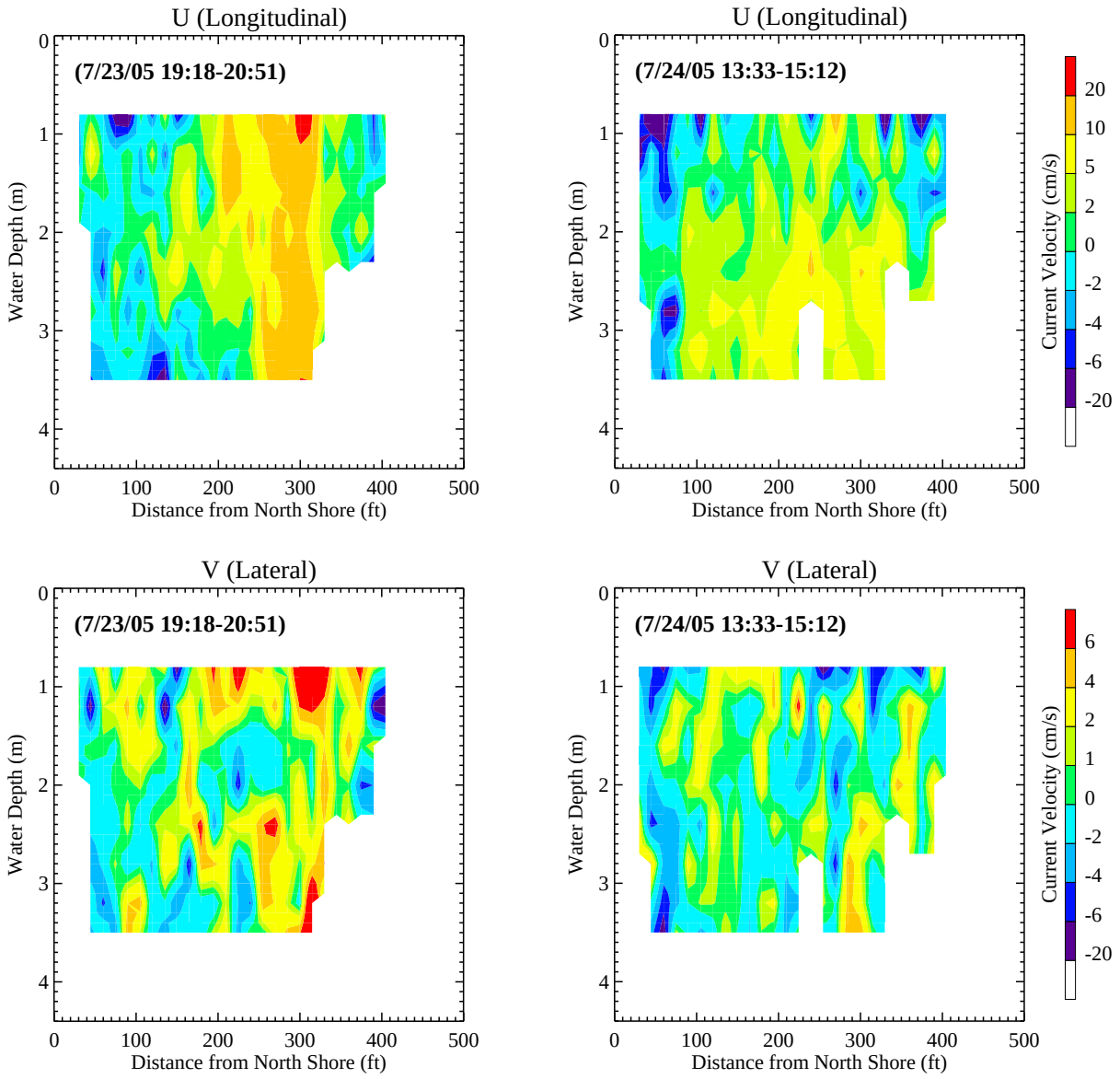


**Figure P-5n. Lateral and Longitudinal Velocity Measurements Taken Along Line 7 (Mapping 4 and 5)**

*Positive U, color red, represents flow towards downstream; positive V represents flow towards northern shore.*

wk - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p5_transect_contour.pro
Tue May 16 17:32:29 2006

# Line 8

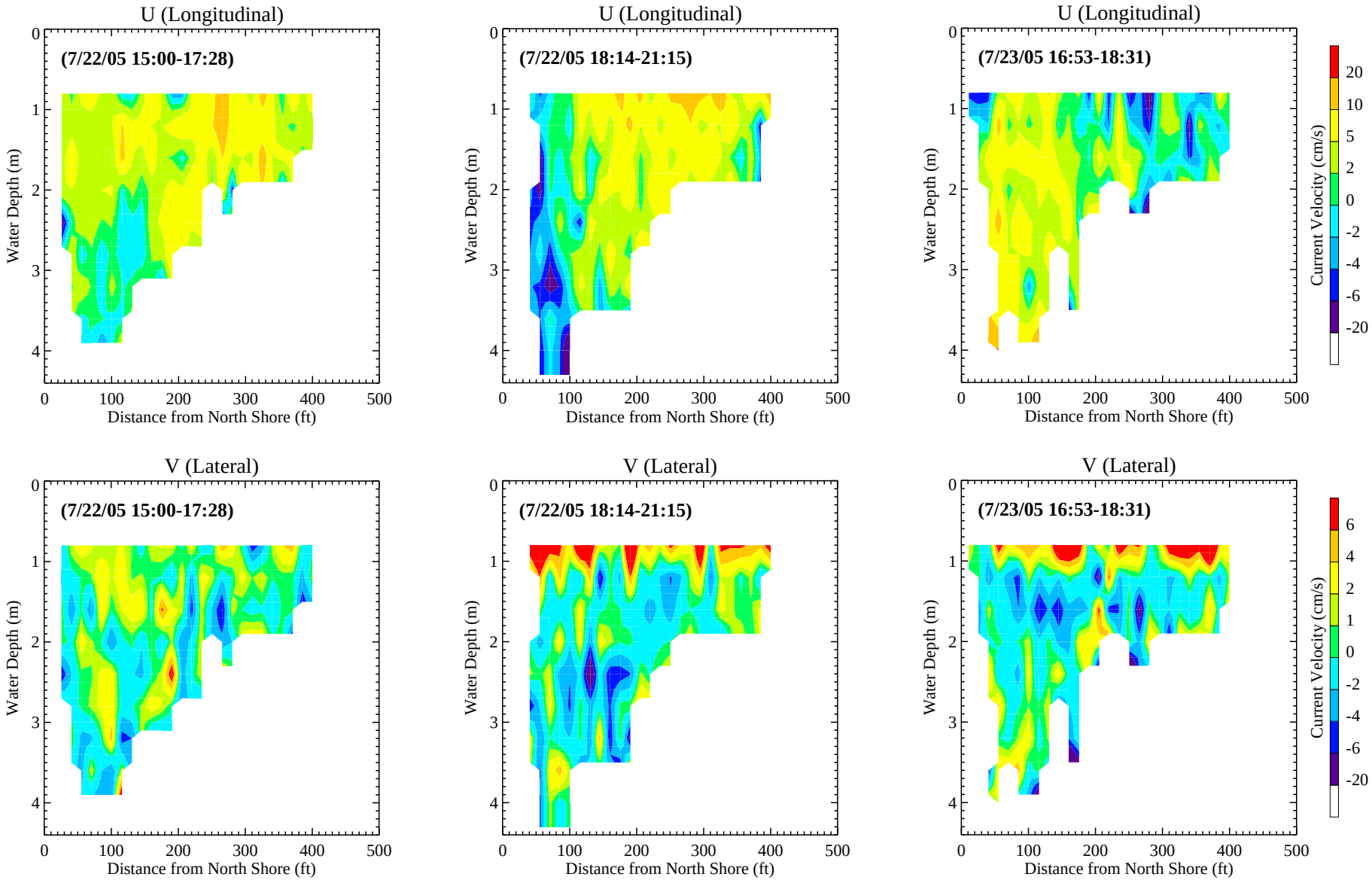


**Figure P-5o. Lateral and Longitudinal Velocity Measurements Taken Along Line 8 (Mapping 1, 2, and 3)**

*Positive U, color red, represents flow towards downstream; positive V represents flow towards northern shore.*

wk - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p5_transect_contour.pro
Tue May 16 17:32:29 2006

# Line 8

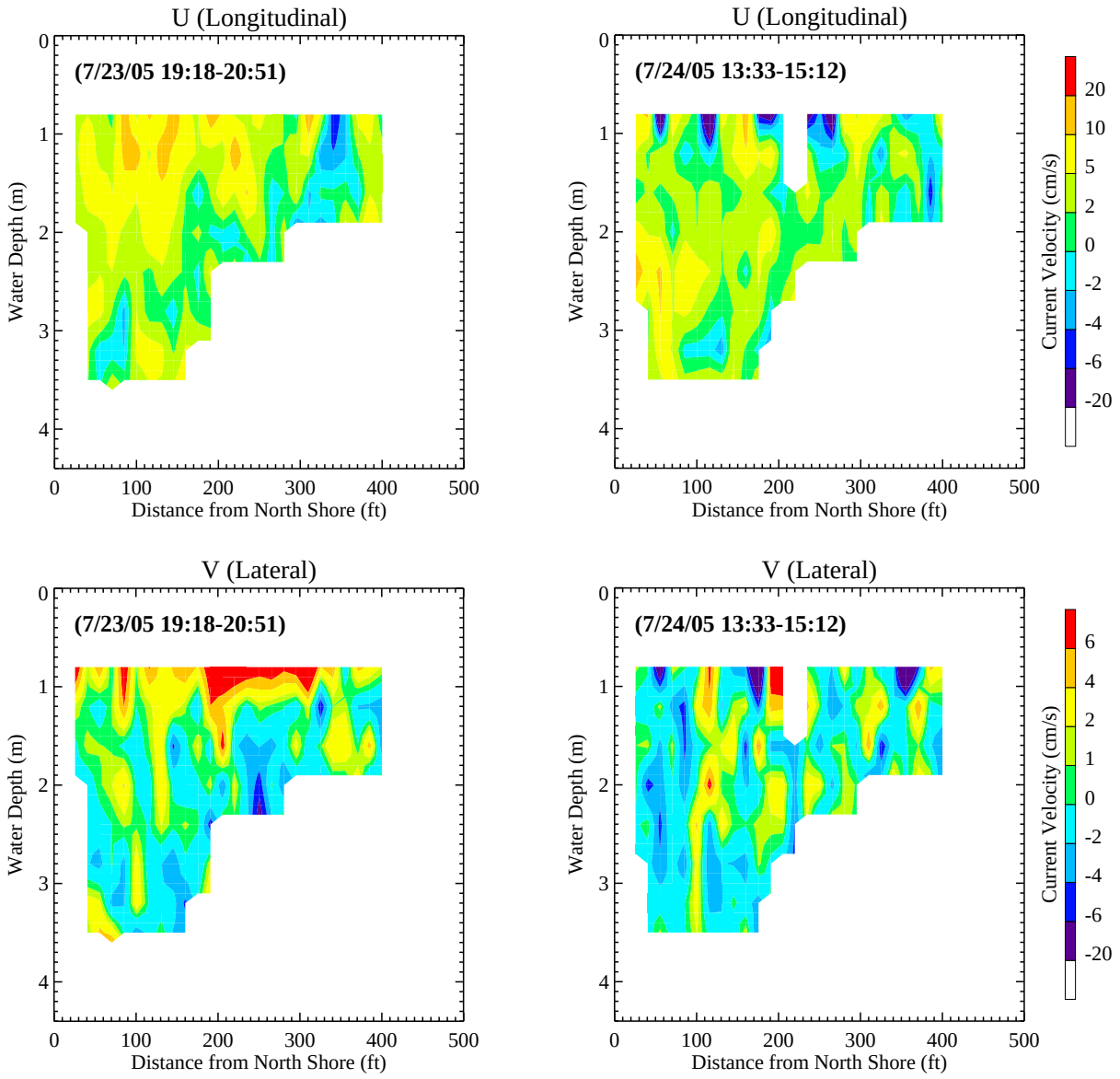


**Figure P-5p. Lateral and Longitudinal Velocity Measurements Taken Along Line 8 (Mapping 4 and 5)**

*Positive U, color red, represents flow towards downstream; positive V represents flow towards northern shore.*

wk - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p5_transect_contour.pro
Tue May 16 17:32:29 2006

# Line 9

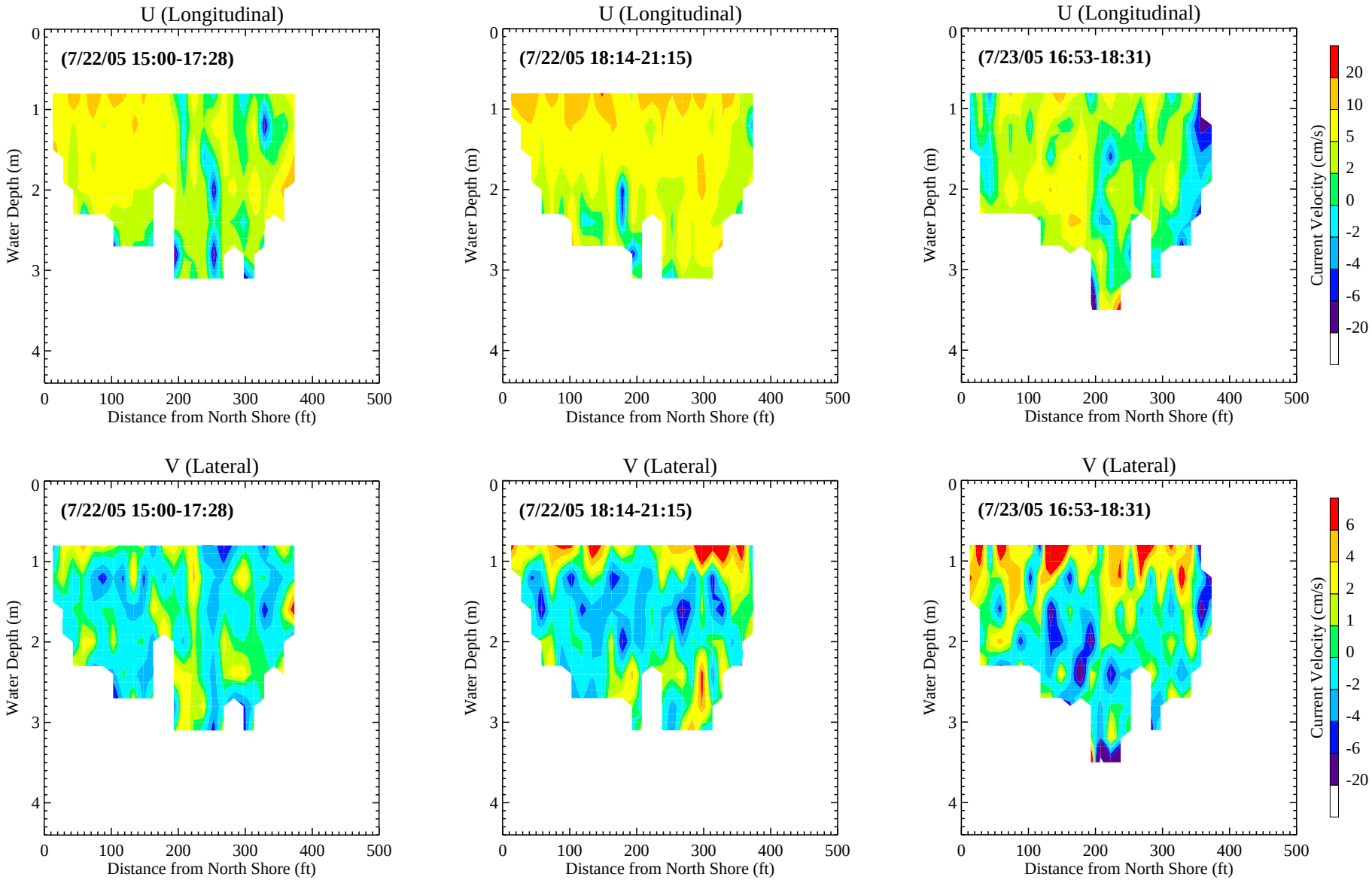


**Figure P-5q. Lateral and Longitudinal Velocity Measurements Taken Along Line 9 (Mapping 1, 2, and 3)**

*Positive U, color red, represents flow towards downstream; positive V represents flow towards northern shore.*

wk - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p5_transect_contour.pro
Tue May 16 17:32:29 2006

# Line 9

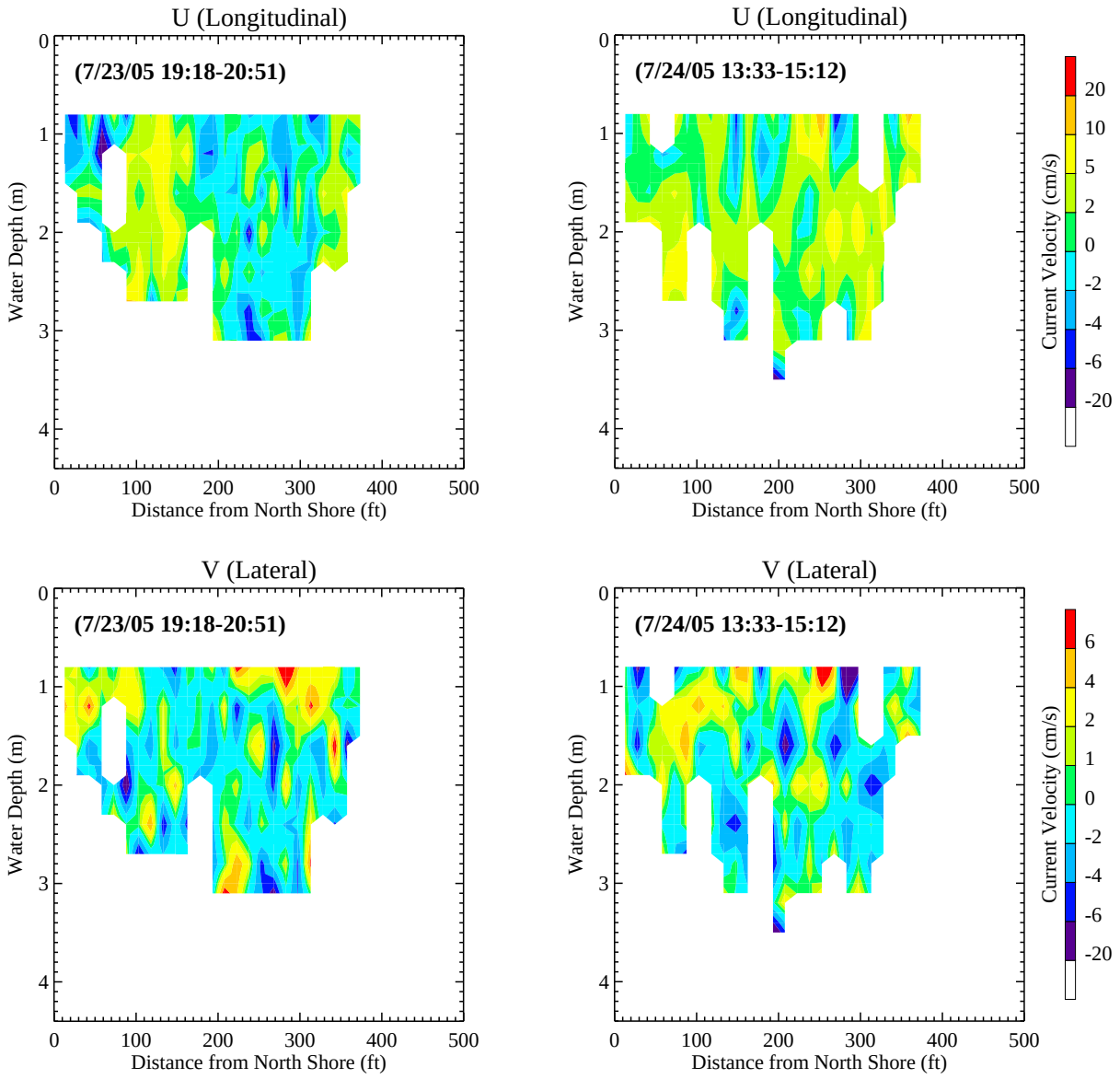


**Figure P-5r. Lateral and Longitudinal Velocity Measurements Taken Along Line 9 (Mapping 4 and 5)**

*Positive U, color red, represents flow towards downstream; positive V represents flow towards northern shore.*

# Line 10

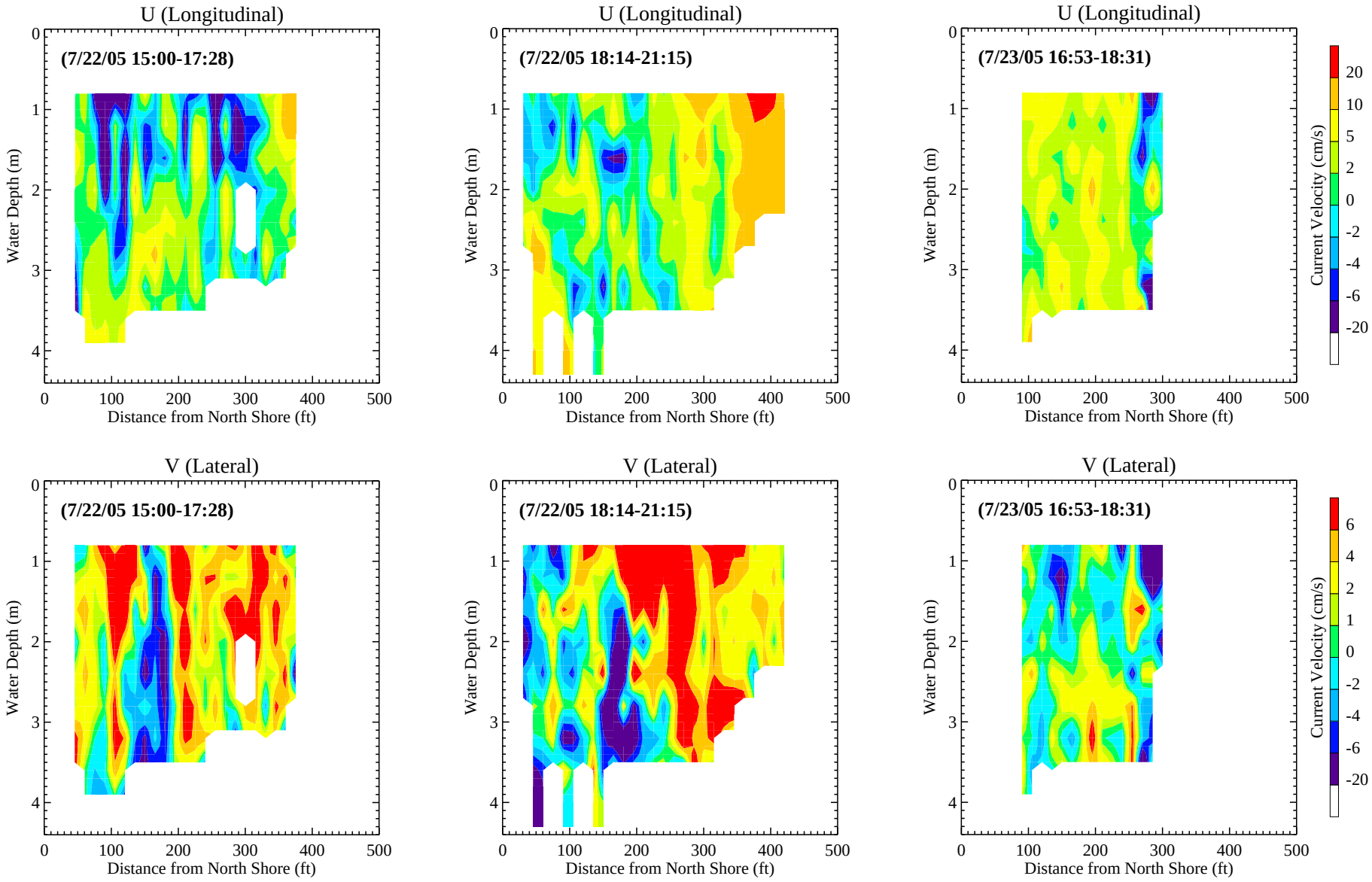


**Figure P-5s. Lateral and Longitudinal Velocity Measurements Taken Along Line 10 (Mapping 1, 2, and 3)**

*Positive U, color red, represents flow towards downstream; positive V represents flow towards northern shore.*

wk - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p5_transect_contour.pro
Tue May 16 17:32:30 2006

# Line 10

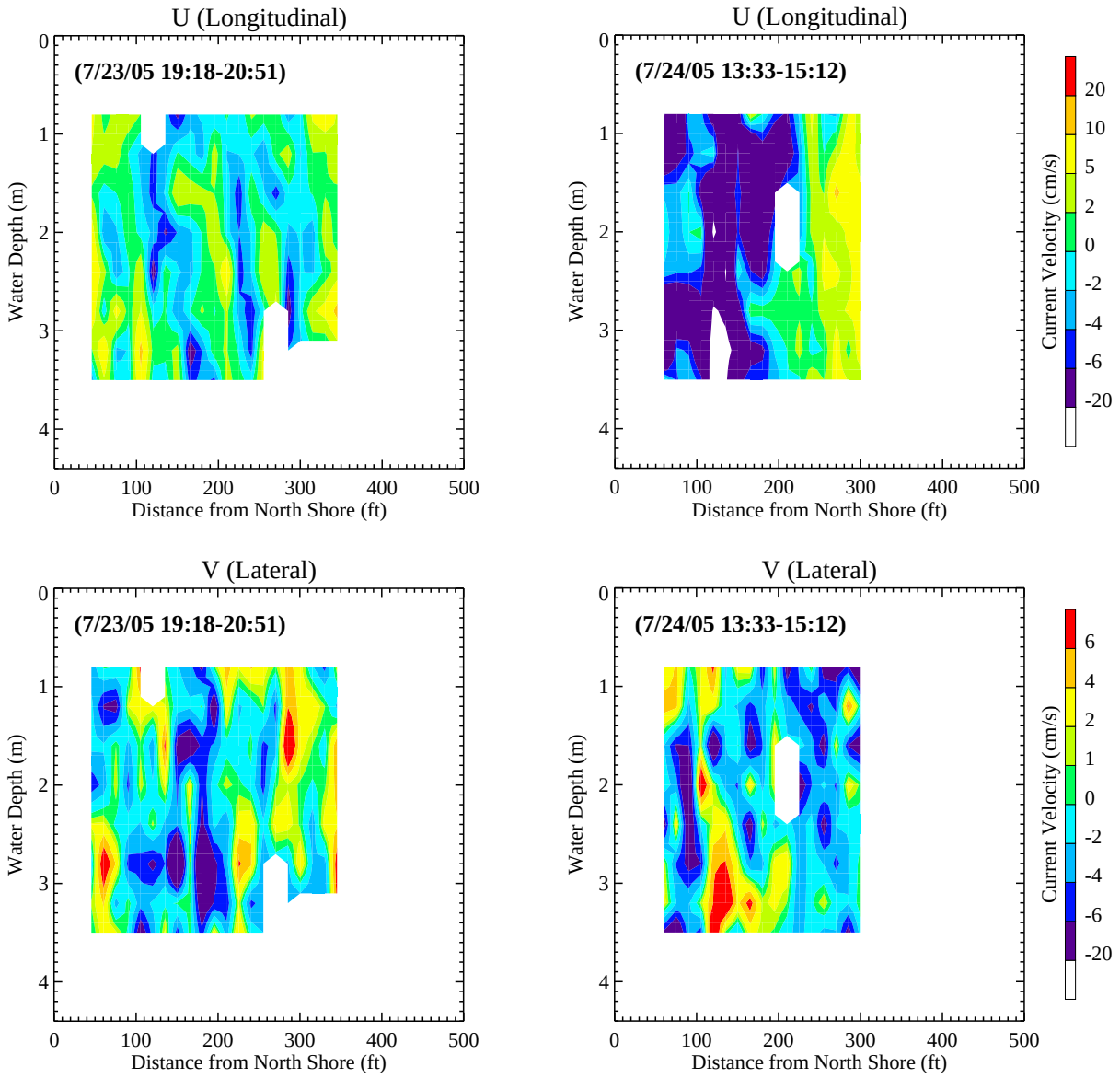


**Figure P-5t. Lateral and Longitudinal Velocity Measurements Taken Along Line 10 (Mapping 4 and 5)**

*Positive U, color red, represents flow towards downstream; positive V represents flow towards northern shore.*

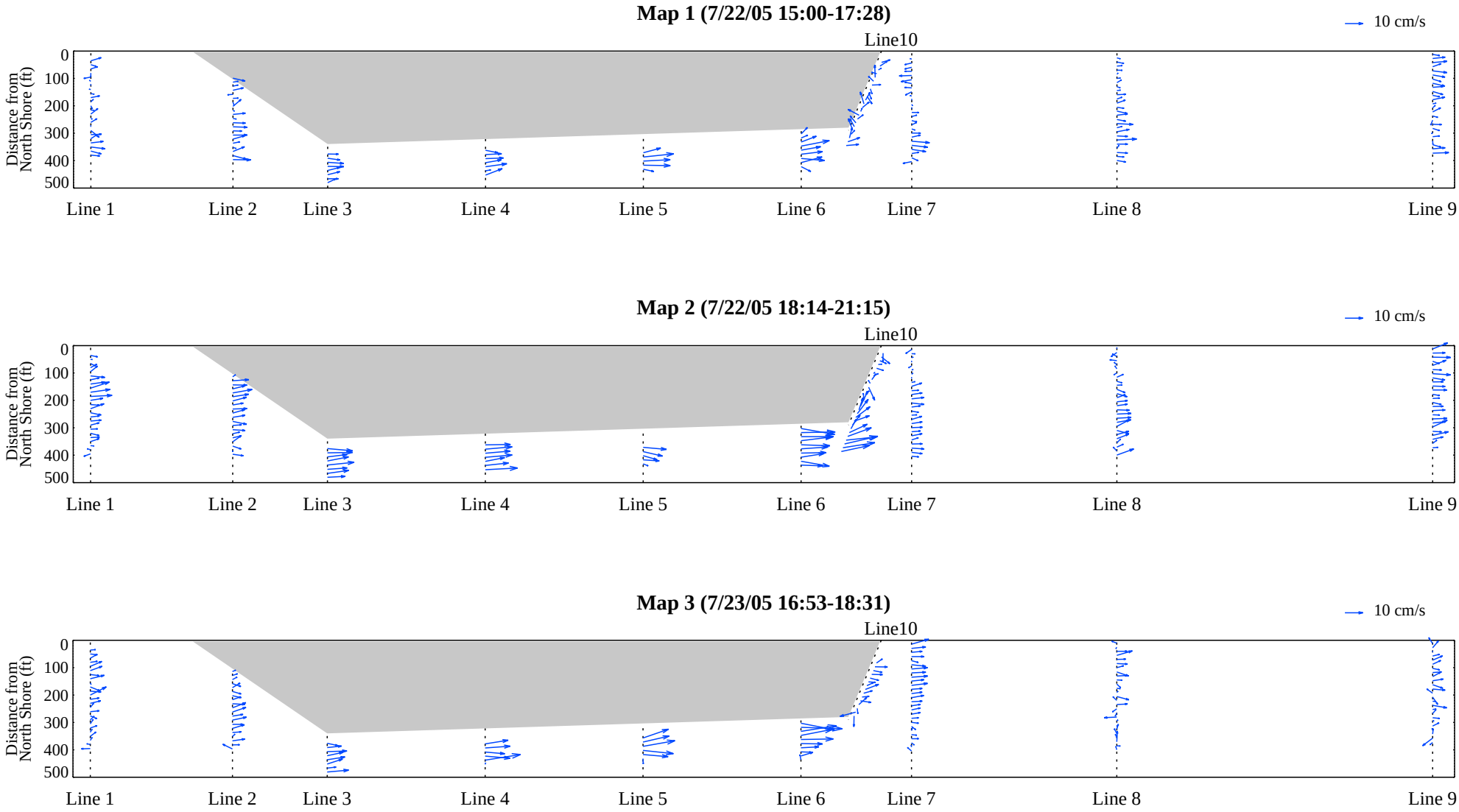


**Figure P-6a. Vertically Averaged Velocity Fields for Mapping 1, 2, and 3**

*Shaded area represents portion of river enclosed by containment system.*

wk - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p6_trans_vector.pro
Tue May 16 17:33:41 2006

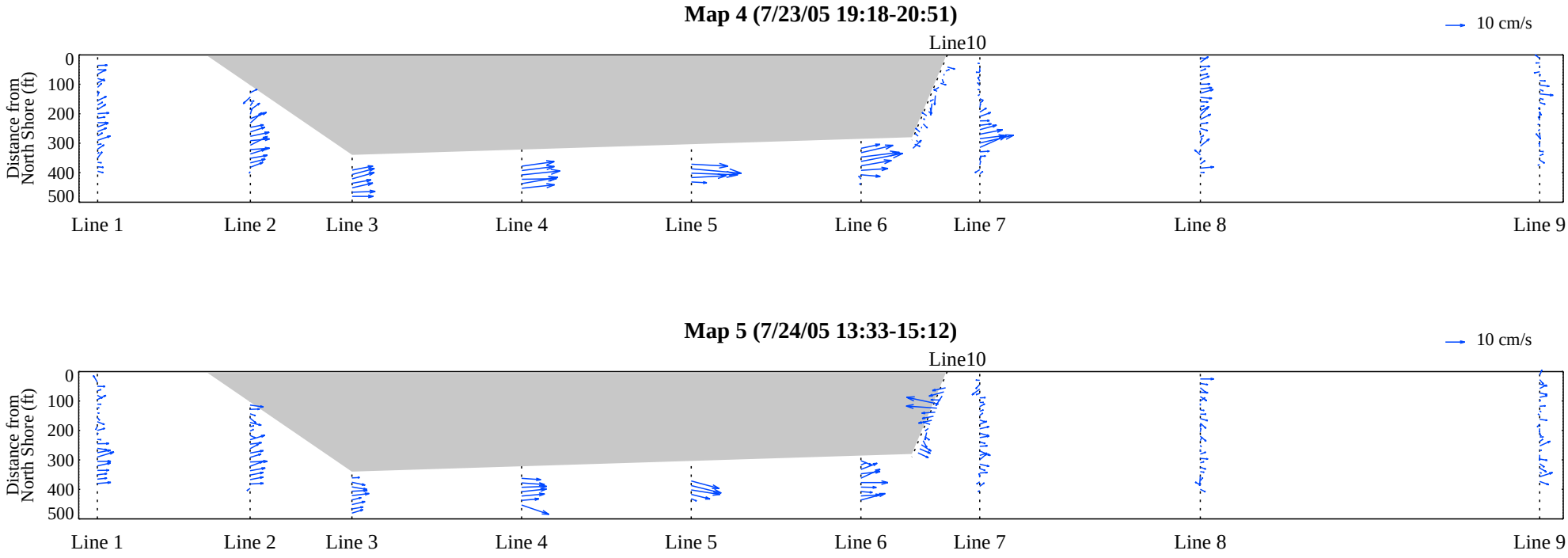


**Figure P-6b. Vertically Averaged Velocity Fields for Mapping 4 and 5**

*Shaded area represents portion of river enclosed by containment system.*

wk - K:\ALCgra\documents\051227_ROP_report\Appendix\AppendixP_decks\fig_p6_trans_vector.pro
Tue May 16 17:33:41 2006

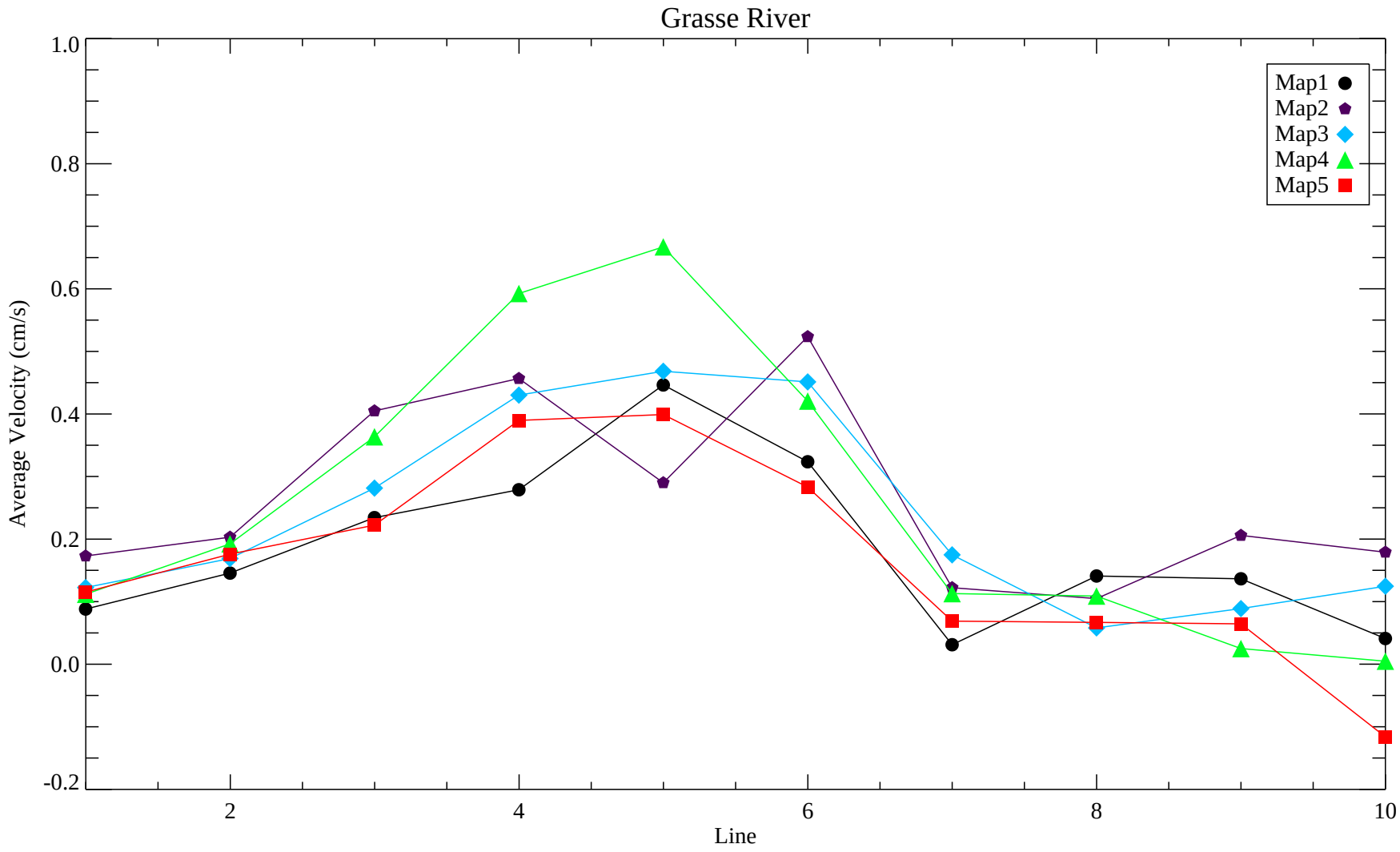


**Figure P-7. Vertically Averaged Velocities Measured During July 2005 Velocity Study**

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Tue May 16 17:34:11 2006

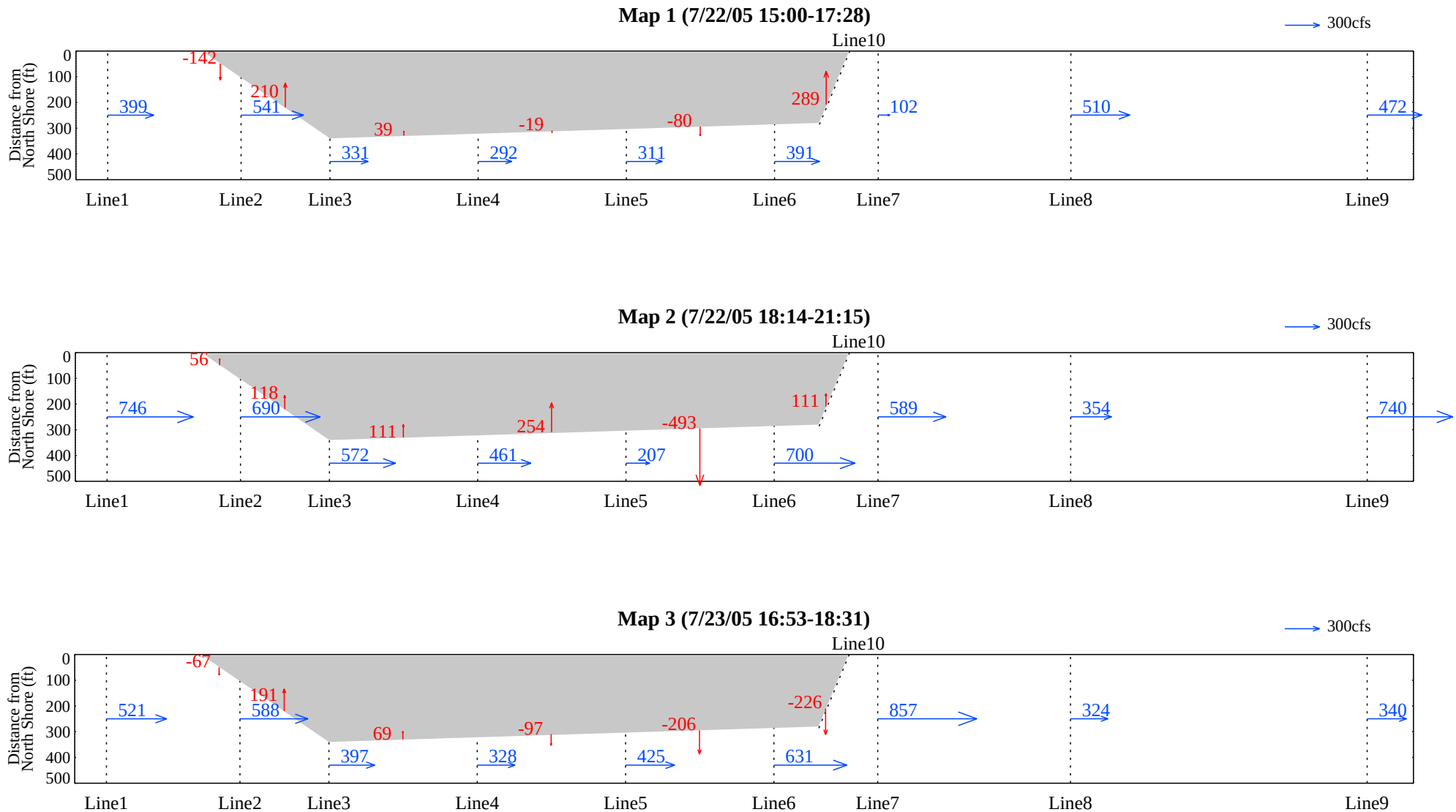


**Figure P-8a. ROPS Work Area Flow Balance for Mapping 1, 2, and 3**

Flows computed using velocity data and 2003 multibeam bathymetry data.

*Positive longitudinal flow represents flow downstream; positive lateral flow represents flow into the silt curtain (calculated by a horizontal flow balance).*

*Shaded area represents portion of river enclosed by containment system.*

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Tue May 16 17:34:39 2006

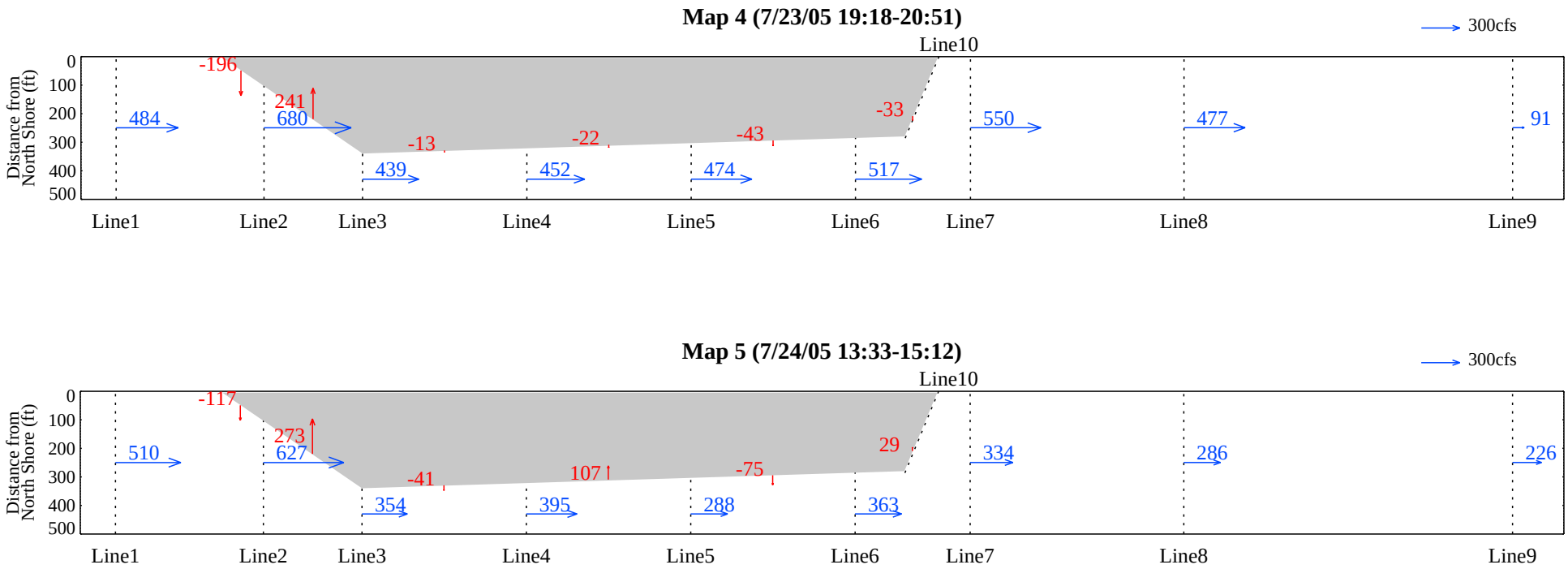


**Figure P-8b. ROPS Work Area Flow Balance for Mapping 4 and 5**

Flows computed using velocity data and 2003 multibeam bathymetry data.

*Positive longitudinal flow represents flow downstream; positive lateral flow represents flow into the silt curtain (calculated by a horizontal flow balance). Shaded area represents portion of river enclosed by containment system.*

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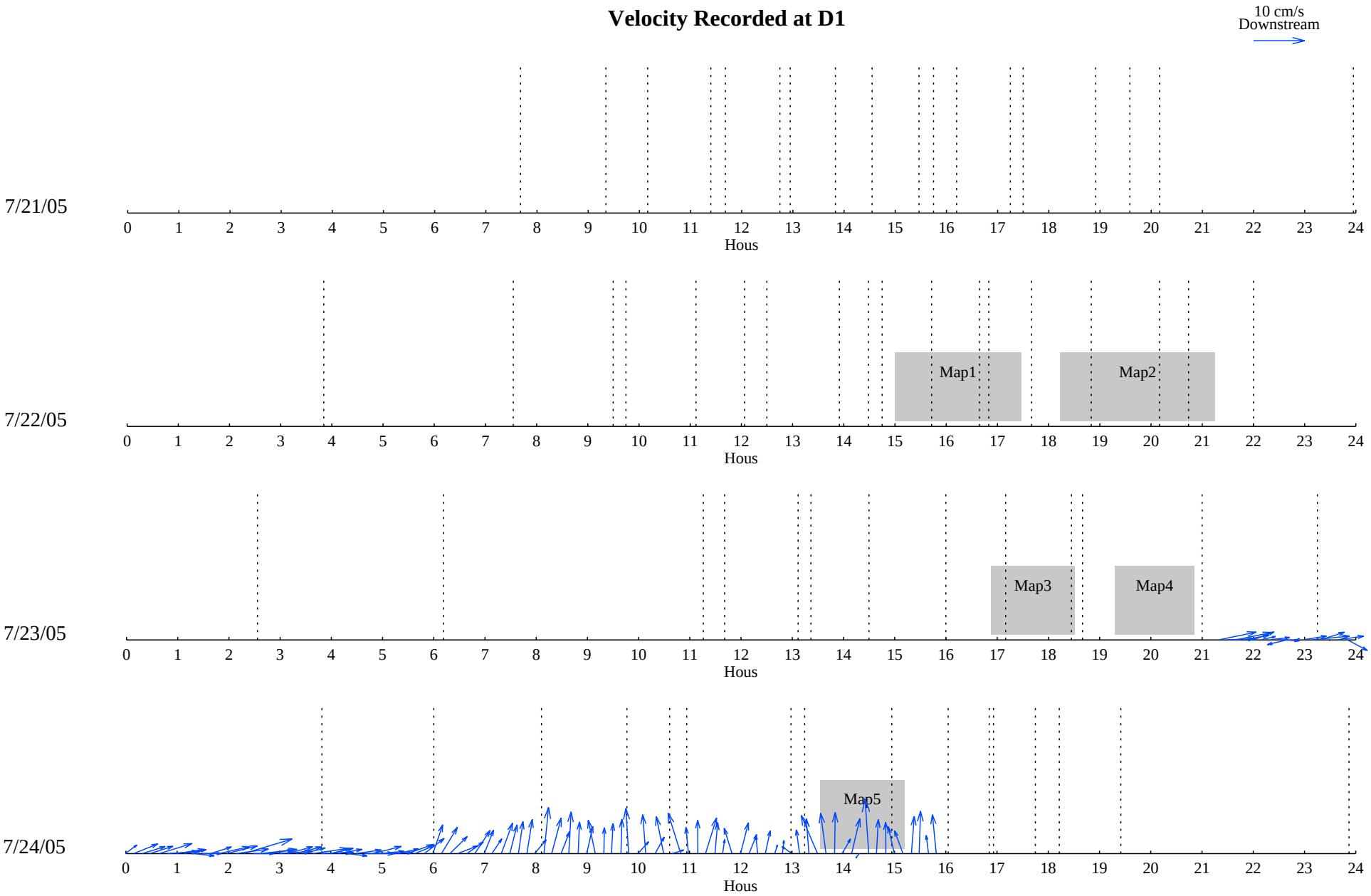


**Figure P-9a. Time Series of Velocities Measured at D1 During July 2005**

Velocities measured approximately 1 foot from the river bottom.

*Positive X direction towards downstream; positive Y direction towards northern shore. Dashed lines represent estimated times of water release from Snell Lock.*

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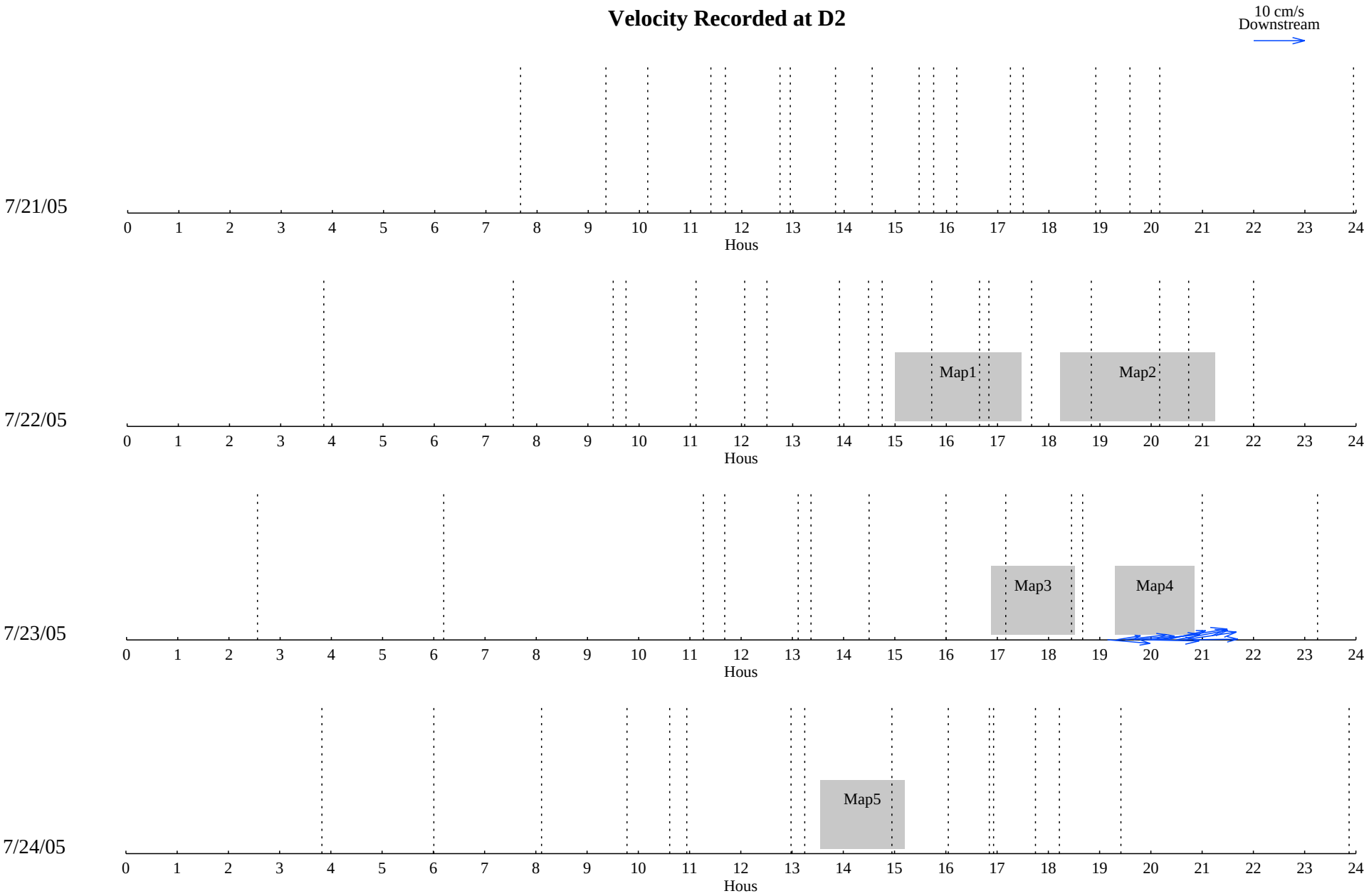


**Figure P-9b. Time Series of Velocities Measured at D2 During July 2005**

Velocities measured approximately 1 foot from the river bottom.

*Positive X direction towards downstream; positive Y direction towards northern shore. Dashed lines represent estimated times of water release from Snell Lock.*

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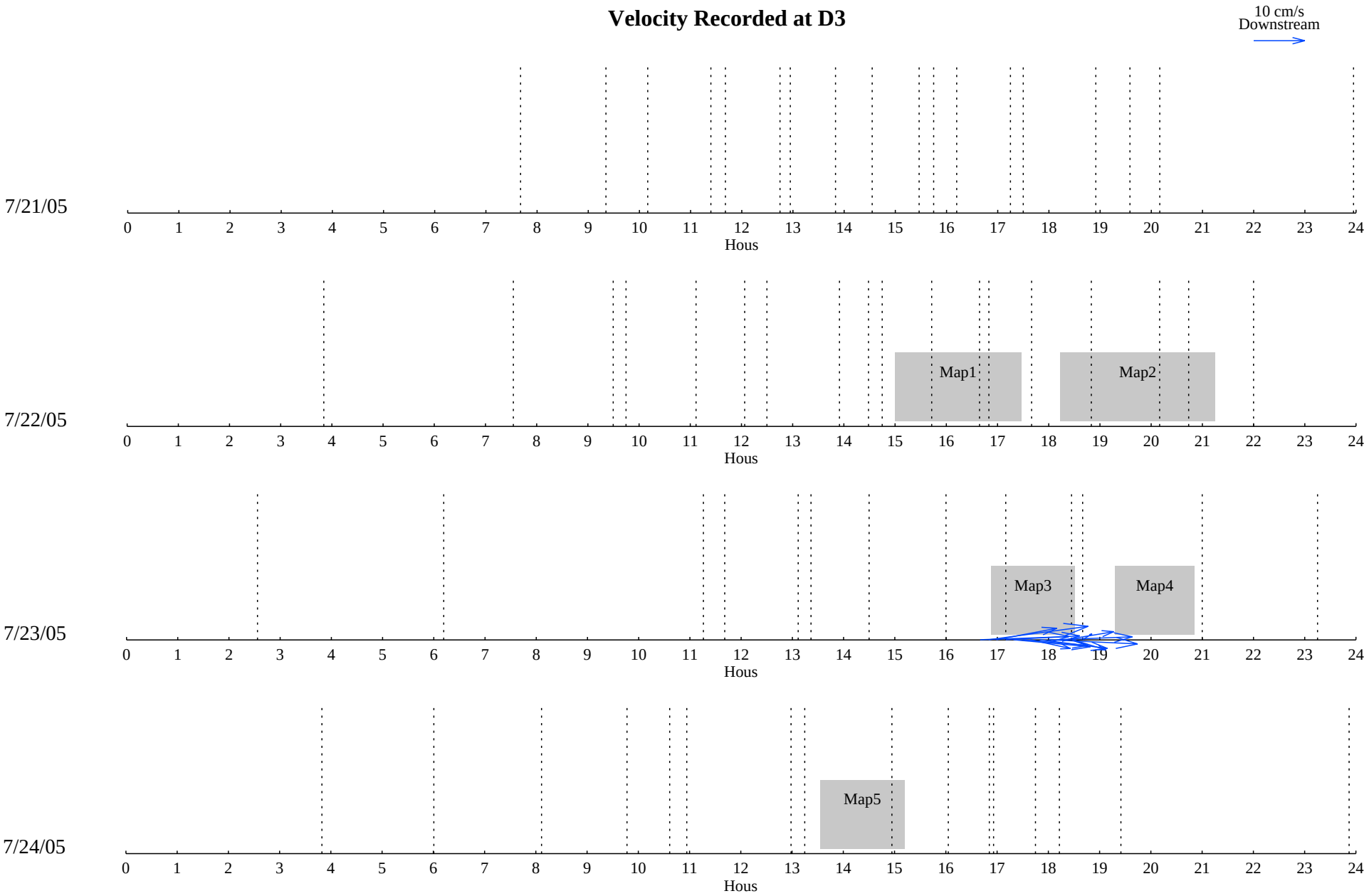


**Figure P-9c. Time Series of Velocities Measured at D3 During July 2005**

Velocities measured approximately 1 foot from the river bottom.

*Positive X direction towards downstream; positive Y direction towards northern shore. Dashed lines represent estimated times of water release from Snell Lock.*

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Tue May 16 17:35:59 2006

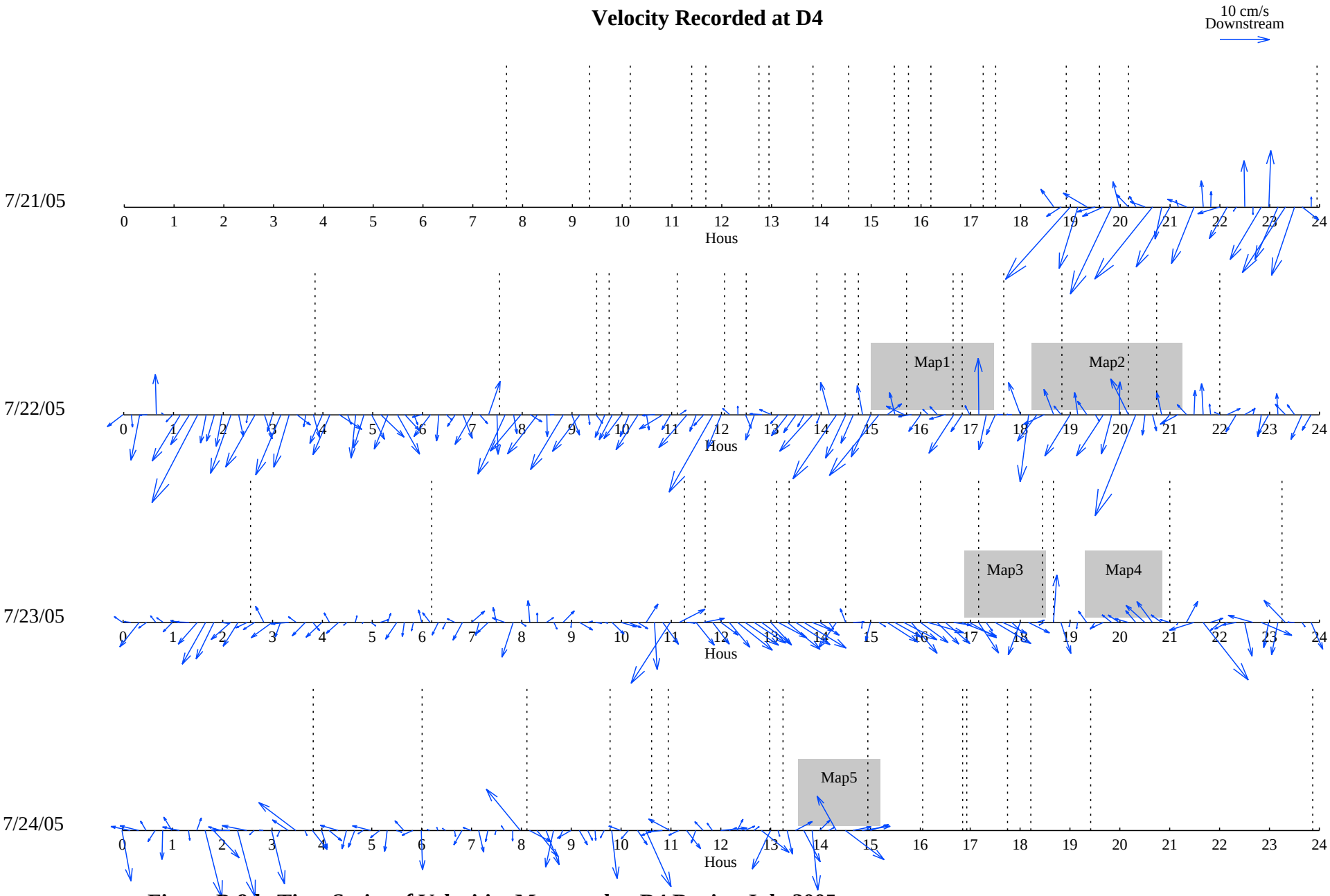


**Figure P-9d. Time Series of Velocities Measured at D4 During July 2005**

Velocities measured approximately 1 foot from the river bottom.

*Positive X direction towards downstream; positive Y direction towards northern shore. Dashed lines represent estimated times of water release from Snell Lock.*

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