

OU3
2011 DREDGE AREAS AND
RESIDUAL DREDGE AREAS 1 of 3

LEGEND

- 2011 DREDGE AREA
- 2011 RESIDUAL DREDGE AREA
- 2011 DREDGE AREA
- 2010 DREDGE AREA
- DMU BOUNDARY
- DMU NUMBER

SCALE (1" = 300')



SITE NOTES

1. HORIZONTAL CONTROL IS REFERENCED TO THE NAD83 WISCONSIN STATE PLANE COORDINATE SYSTEM (WISCONSIN CENTRAL ZONE)
2. VERTICAL DATUM IS REFERENCED TO NAVD 88.
3. AREAS SHOWN REPRESENT THE DREDGE LIMITS DERIVED FROM THE DESIGN FILES FROM ANCHOR QEA.

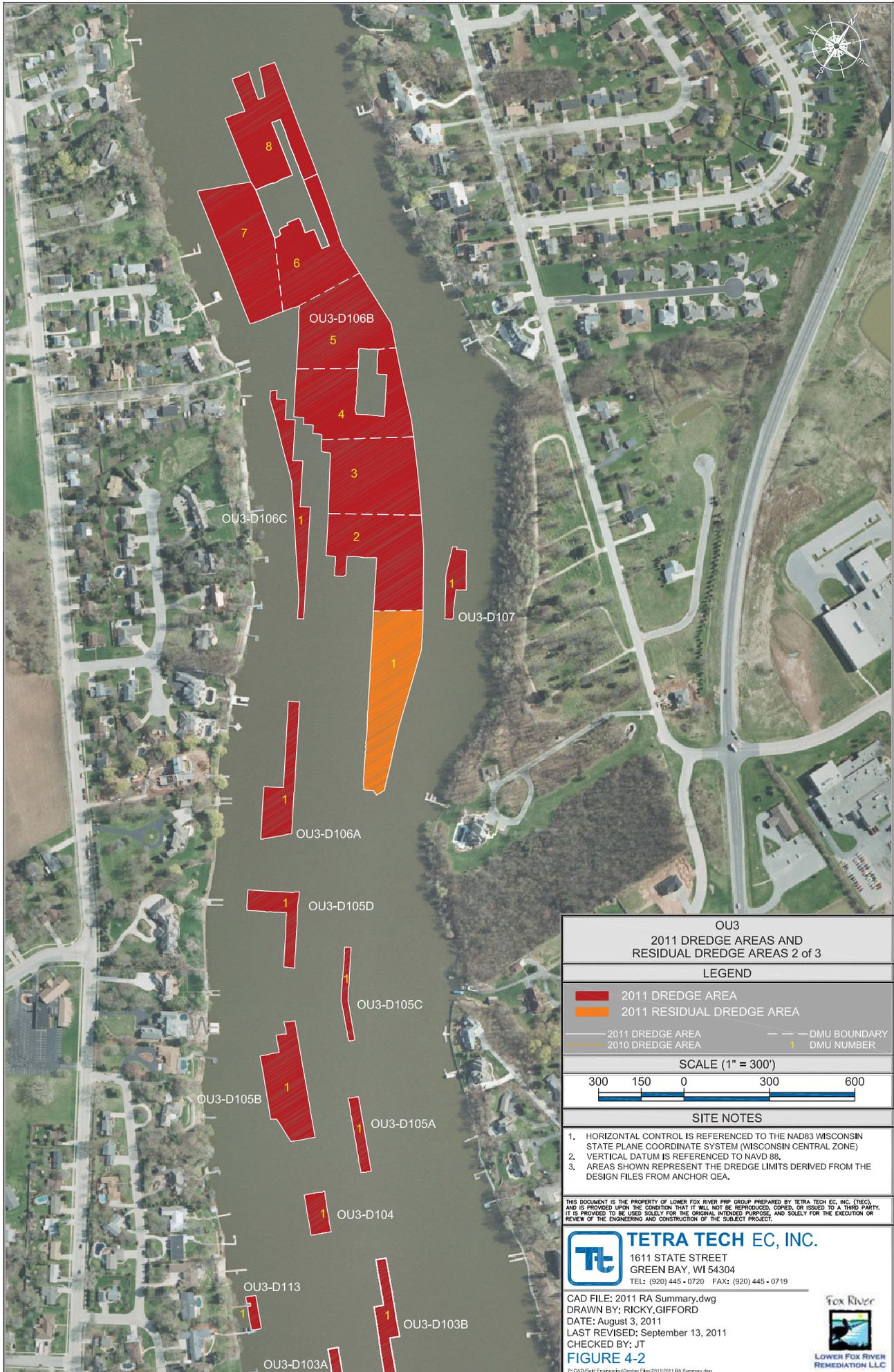
THIS DOCUMENT IS THE PROPERTY OF LOWER FOX RIVER PHR GROUP PREPARED BY TETRA TECH EC, INC. (TTEC), AND IS PROVIDED UPON THE CONDITION THAT IT WILL NOT BE REPRODUCED, COPIED, OR ISSUED TO A THIRD PARTY. IT IS PROVIDED TO BE USED SOLELY FOR THE ORIGINAL INTENDED PURPOSE, AND SOLELY FOR THE EXECUTION OR REVIEW OF THE ENGINEERING AND CONSTRUCTION OF THE SUBJECT PROJECT.

TETRA TECH EC, INC.
 1611 STATE STREET
 GREEN BAY, WI 54304
 TEL: (920) 445 - 0720 FAX: (920) 445 - 0719

CAD FILE: 2011 RA Summary.dwg
 DRAWN BY: RICKY, GIFFORD
 DATE: August 3, 2011
 LAST REVISED: September 13, 2011
 CHECKED BY: JT

FIGURE 4-1

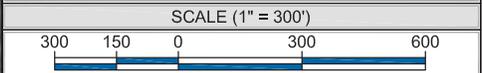




**OU3
2011 DREDGE AREAS AND
RESIDUAL DREDGE AREAS 2 of 3**

LEGEND

	2011 DREDGE AREA		DMU BOUNDARY
	2011 RESIDUAL DREDGE AREA		DMU NUMBER
	2011 DREDGE AREA		
	2010 DREDGE AREA		



- SITE NOTES**
- HORIZONTAL CONTROL IS REFERENCED TO THE NAD83 WISCONSIN STATE PLANE COORDINATE SYSTEM (WISCONSIN CENTRAL ZONE)
 - VERTICAL DATUM IS REFERENCED TO NAVD 88.
 - AREAS SHOWN REPRESENT THE DREDGE LIMITS DERIVED FROM THE DESIGN FILES FROM ANCHOR QEA.

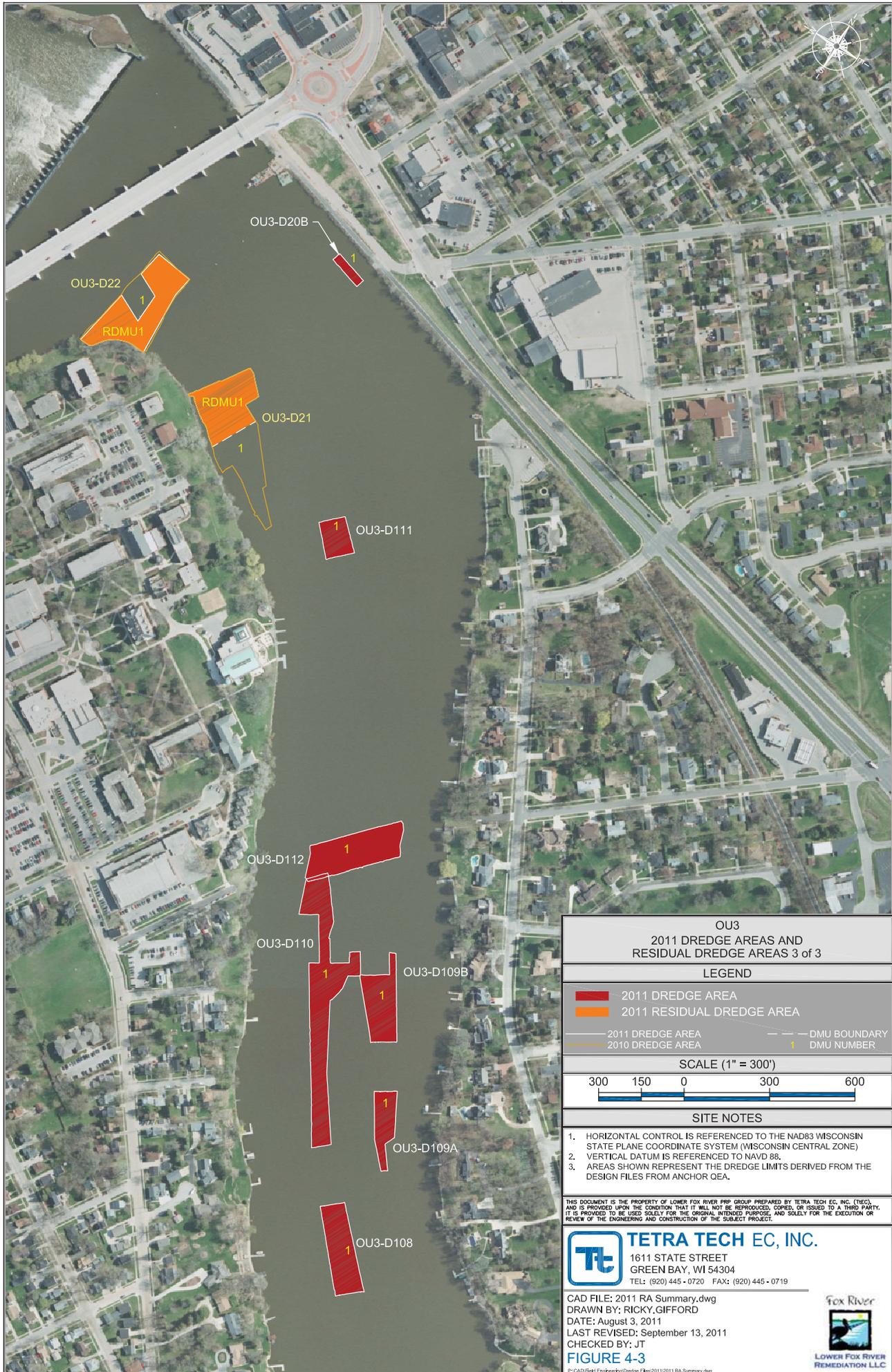
THIS DOCUMENT IS THE PROPERTY OF LOWER FOX RIVER PHR GROUP PREPARED BY TETRA TECH EC, INC. (TTEC), AND IS PROVIDED UPON THE CONDITION THAT IT WILL NOT BE REPRODUCED, COPIED, OR ISSUED TO A THIRD PARTY. IT IS PROVIDED TO BE USED SOLELY FOR THE ORIGINAL INTENDED PURPOSE, AND SOLELY FOR THE EXECUTION OR REVIEW OF THE ENGINEERING AND CONSTRUCTION OF THE SUBJECT PROJECT.

TETRA TECH EC, INC.
 1611 STATE STREET
 GREEN BAY, WI 54304
 TEL: (920) 445 - 0720 FAX: (920) 445 - 0719

CAD FILE: 2011 RA Summary.dwg
 DRAWN BY: RICKY GIFFORD
 DATE: August 3, 2011
 LAST REVISED: September 13, 2011
 CHECKED BY: JT

FIGURE 4-2

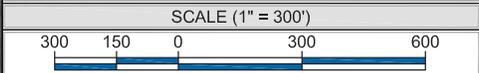




**OU3
2011 DREDGE AREAS AND
RESIDUAL DREDGE AREAS 3 of 3**

LEGEND

	2011 DREDGE AREA		2011 RESIDUAL DREDGE AREA
	2011 DREDGE AREA		2010 DREDGE AREA
	DMU BOUNDARY		DMU NUMBER



- SITE NOTES**
- HORIZONTAL CONTROL IS REFERENCED TO THE NAD83 WISCONSIN STATE PLANE COORDINATE SYSTEM (WISCONSIN CENTRAL ZONE)
 - VERTICAL DATUM IS REFERENCED TO NAVD 88.
 - AREAS SHOWN REPRESENT THE DREDGE LIMITS DERIVED FROM THE DESIGN FILES FROM ANCHOR QEA.

THIS DOCUMENT IS THE PROPERTY OF LOWER FOX RIVER PHR GROUP PREPARED BY TETRA TECH EC, INC. (TTEC), AND IS PROVIDED UPON THE CONDITION THAT IT WILL NOT BE REPRODUCED, COPIED, OR ISSUED TO A THIRD PARTY. IT IS PROVIDED TO BE USED SOLELY FOR THE ORIGINAL INTENDED PURPOSE, AND SOLELY FOR THE EXECUTION OR REVIEW OF THE ENGINEERING AND CONSTRUCTION OF THE SUBJECT PROJECT.

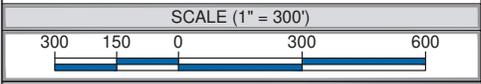
TETRA TECH EC, INC.
 1611 STATE STREET
 GREEN BAY, WI 54304
 TEL: (920) 445 - 0720 FAX: (920) 445 - 0719

CAD FILE: 2011 RA Summary.dwg
 DRAWN BY: RICKY, GIFFORD
 DATE: August 3, 2011
 LAST REVISED: September 13, 2011
 CHECKED BY: JT



**OU3
2011 SAND COVER AND
RESIDUAL SAND COVER AREAS 1 of 4**

LEGEND	
	2011 SAND COVER AREAS
	2011 RESIDUAL SAND COVER AREAS



- SITE NOTES**
1. HORIZONTAL CONTROL IS REFERENCED TO THE NAD83 WISCONSIN STATE PLANE COORDINATE SYSTEM (WISCONSIN CENTRAL ZONE)
 2. VERTICAL DATUM IS REFERENCED TO NAVD 88.
 3. AREAS SHOWN REPRESENT THE AS-BUILT LIMITS OF THE SPREADER LANES AND SAND COVER PLACEMENT.

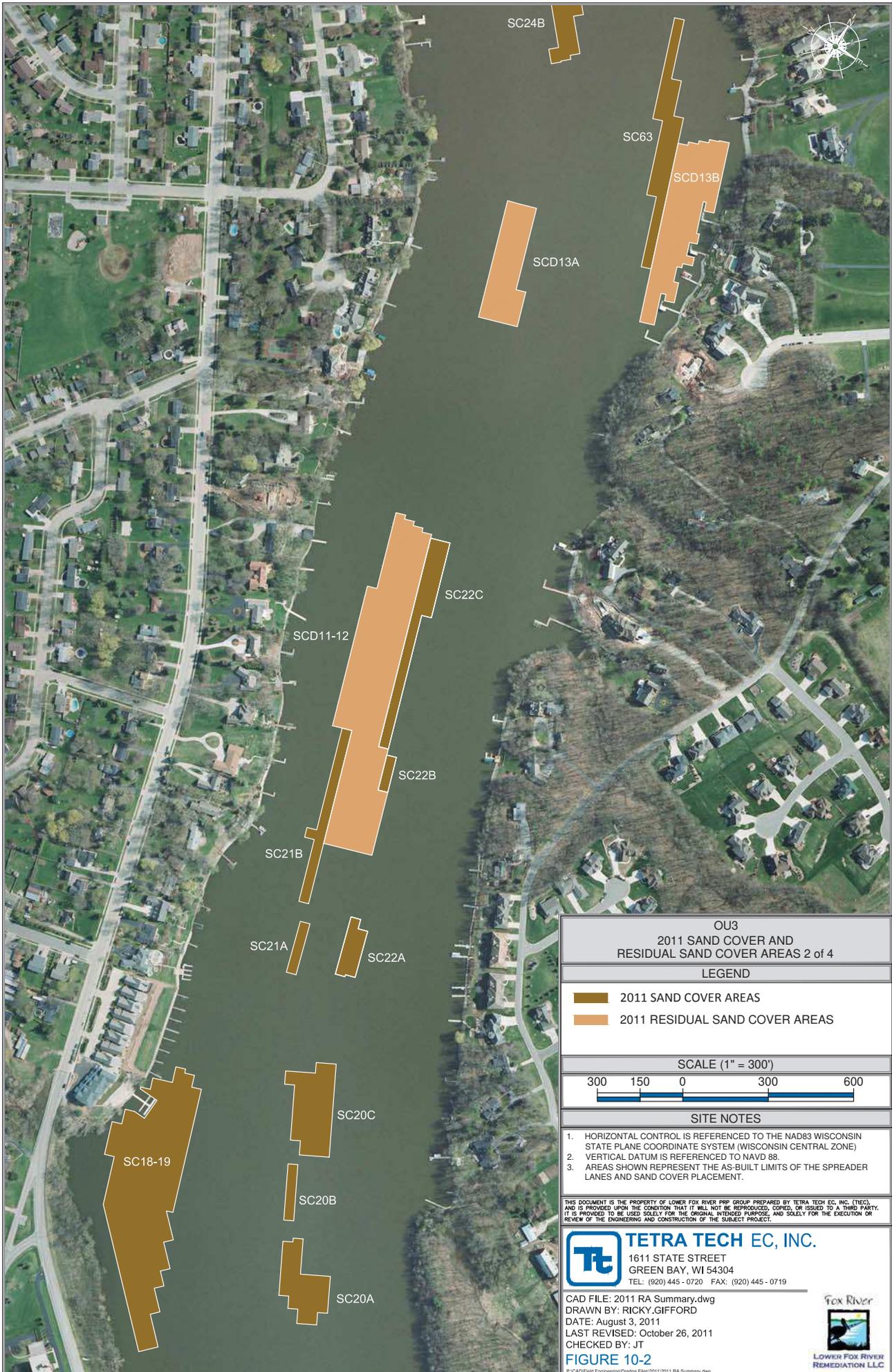
THIS DOCUMENT IS THE PROPERTY OF LOWER FOX RIVER PRP GROUP PREPARED BY TETRA TECH EC, INC. (TTEC), AND IS PROVIDED UPON THE CONDITION THAT IT WILL NOT BE REPRODUCED, COPIED, OR ISSUED TO A THIRD PARTY. IT IS PROVIDED TO BE USED SOLELY FOR THE ORIGINAL INTENDED PURPOSE, AND SOLELY FOR THE EXECUTION OR REVIEW OF THE ENGINEERING AND CONSTRUCTION OF THE SUBJECT PROJECT.

TETRA TECH EC, INC.
 1611 STATE STREET
 GREEN BAY, WI 54304
 TEL: (920) 445 - 0720 FAX: (920) 445 - 0719

CAD FILE: 2011 RA Summary.dwg
 DRAWN BY: RICKY.GIFFORD
 DATE: August 3, 2011
 LAST REVISED: October 26, 2011
 CHECKED BY: JT

FIGURE 10-1

©-CAD/Field Engineering Drafts 2011 2011 RA Summary.dwg

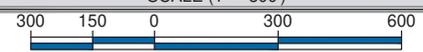


OU3
2011 SAND COVER AND
RESIDUAL SAND COVER AREAS 2 of 4

LEGEND

- 2011 SAND COVER AREAS
- 2011 RESIDUAL SAND COVER AREAS

SCALE (1" = 300')



SITE NOTES

1. HORIZONTAL CONTROL IS REFERENCED TO THE NAD83 WISCONSIN STATE PLANE COORDINATE SYSTEM (WISCONSIN CENTRAL ZONE)
2. VERTICAL DATUM IS REFERENCED TO NAVD 88.
3. AREAS SHOWN REPRESENT THE AS-BUILT LIMITS OF THE SPREADER LANES AND SAND COVER PLACEMENT.

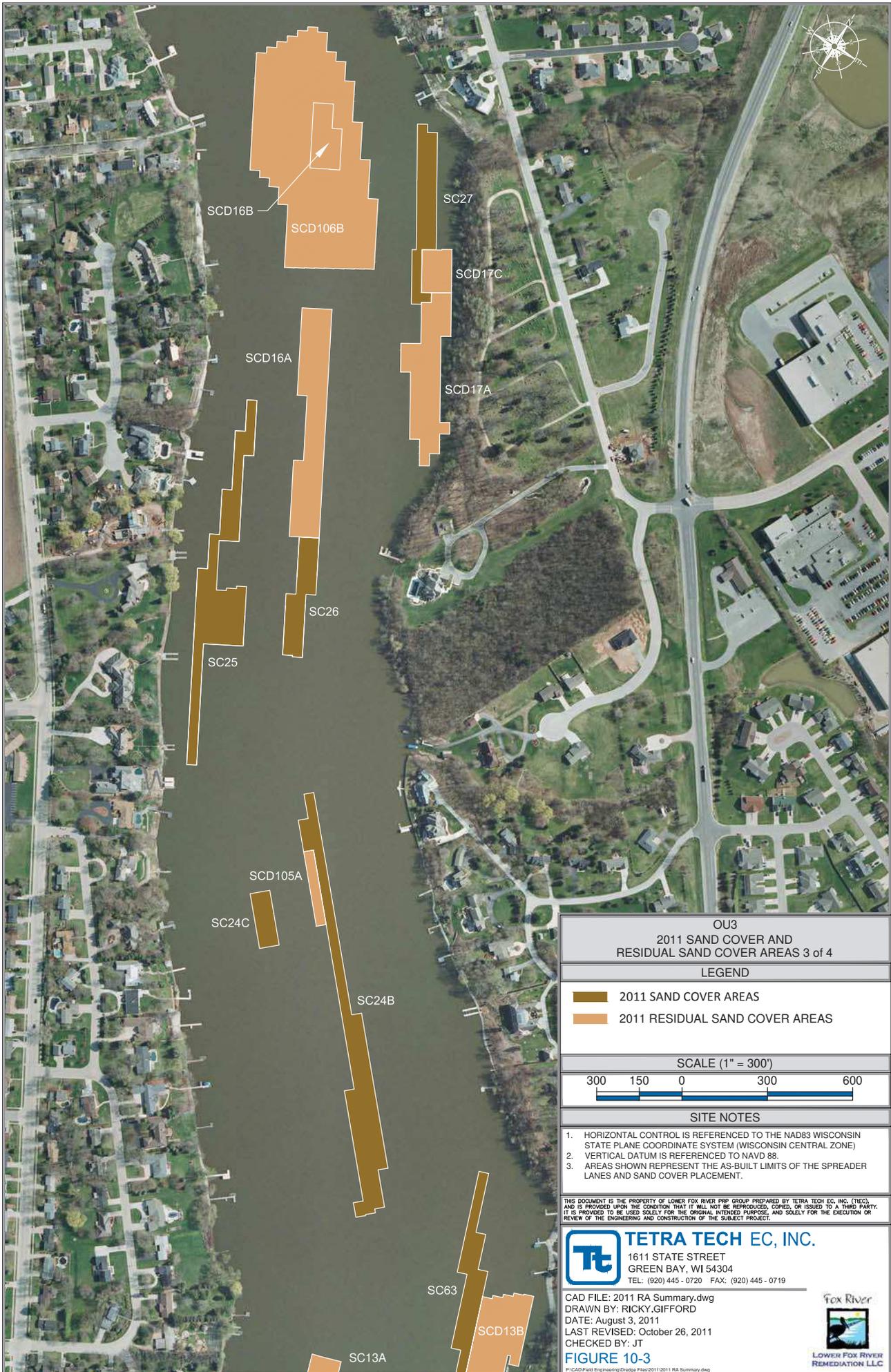
THIS DOCUMENT IS THE PROPERTY OF LOWER FOX RIVER PRP GROUP PREPARED BY TETRA TECH EC, INC. (TTEC), AND IS PROVIDED UPON THE CONDITION THAT IT WILL NOT BE REPRODUCED, COPIED, OR ISSUED TO A THIRD PARTY. IT IS PROVIDED TO BE USED SOLELY FOR THE ORIGINAL INTENDED PURPOSE, AND SOLELY FOR THE EXECUTION OR REVIEW OF THE ENGINEERING AND CONSTRUCTION OF THE SUBJECT PROJECT.

TETRA TECH EC, INC.
 1611 STATE STREET
 GREEN BAY, WI 54304
 TEL: (920) 445 - 0720 FAX: (920) 445 - 0719

CAD FILE: 2011 RA Summary.dwg
 DRAWN BY: RICKY.GIFFORD
 DATE: August 3, 2011
 LAST REVISED: October 26, 2011
 CHECKED BY: JT

FIGURE 10-2





OU3
2011 SAND COVER AND
RESIDUAL SAND COVER AREAS 3 of 4

LEGEND

- 2011 SAND COVER AREAS
- 2011 RESIDUAL SAND COVER AREAS

SCALE (1" = 300')



SITE NOTES

1. HORIZONTAL CONTROL IS REFERENCED TO THE NAD83 WISCONSIN STATE PLANE COORDINATE SYSTEM (WISCONSIN CENTRAL ZONE)
2. VERTICAL DATUM IS REFERENCED TO NAVD 88.
3. AREAS SHOWN REPRESENT THE AS-BUILT LIMITS OF THE SPREADER LANES AND SAND COVER PLACEMENT.

THIS DOCUMENT IS THE PROPERTY OF LOWER FOX RIVER PRP GROUP PREPARED BY TETRA TECH EC, INC. (TTEC), AND IS PROVIDED UPON THE CONDITION THAT IT WILL NOT BE REPRODUCED, COPIED, OR ISSUED TO A THIRD PARTY. IT IS PROVIDED TO BE USED SOLELY FOR THE ORIGINAL INTENDED PURPOSE, AND SOLELY FOR THE EXECUTION OR REVIEW OF THE ENGINEERING AND CONSTRUCTION OF THE SUBJECT PROJECT.

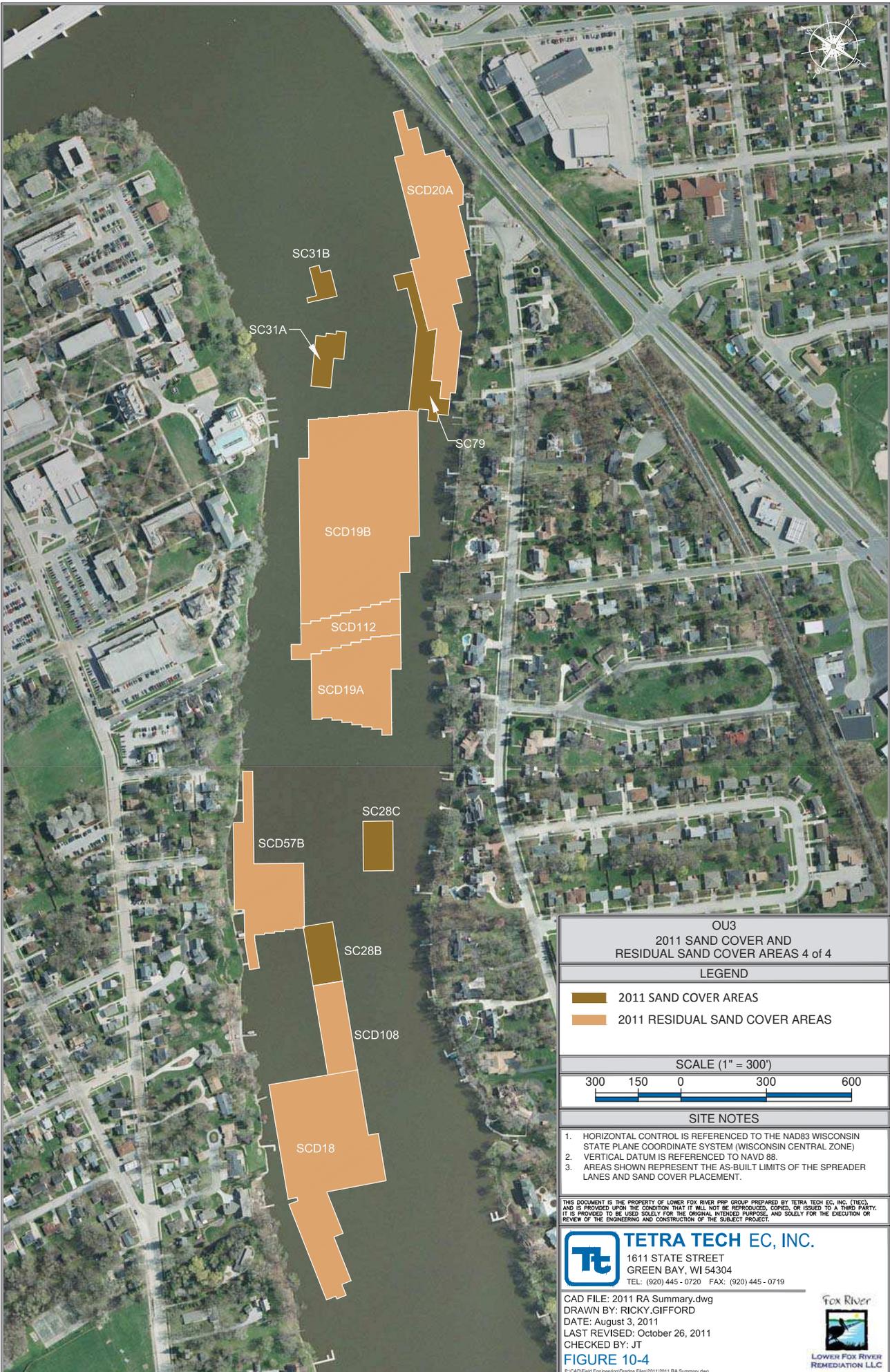
TETRA TECH EC, INC.
 1611 STATE STREET
 GREEN BAY, WI 54304
 TEL: (920) 445-0720 FAX: (920) 445-0719

CAD FILE: 2011 RA Summary.dwg
 DRAWN BY: RICKY.GIFFORD
 DATE: August 3, 2011
 LAST REVISED: October 26, 2011
 CHECKED BY: JT

FIGURE 10-3

P:\CAD\Plant Engineering\Drawings\Files\2011\RA Summary.dwg





OU3
2011 SAND COVER AND
RESIDUAL SAND COVER AREAS 4 of 4

LEGEND

- 2011 SAND COVER AREAS
- 2011 RESIDUAL SAND COVER AREAS

SCALE (1" = 300')



SITE NOTES

1. HORIZONTAL CONTROL IS REFERENCED TO THE NAD83 WISCONSIN STATE PLANE COORDINATE SYSTEM (WISCONSIN CENTRAL ZONE)
2. VERTICAL DATUM IS REFERENCED TO NAVD 88.
3. AREAS SHOWN REPRESENT THE AS-BUILT LIMITS OF THE SPREADER LANES AND SAND COVER PLACEMENT.

THIS DOCUMENT IS THE PROPERTY OF LOWER FOX RIVER PRP GROUP PREPARED BY TETRA TECH EC, INC. (TTEC), AND IS PROVIDED UPON THE CONDITION THAT IT WILL NOT BE REPRODUCED, COPIED, OR ISSUED TO A THIRD PARTY. IT IS PROVIDED TO BE USED SOLELY FOR THE ORIGINAL INTENDED PURPOSE, AND SOLELY FOR THE EXECUTION OR REVIEW OF THE ENGINEERING AND CONSTRUCTION OF THE SUBJECT PROJECT.

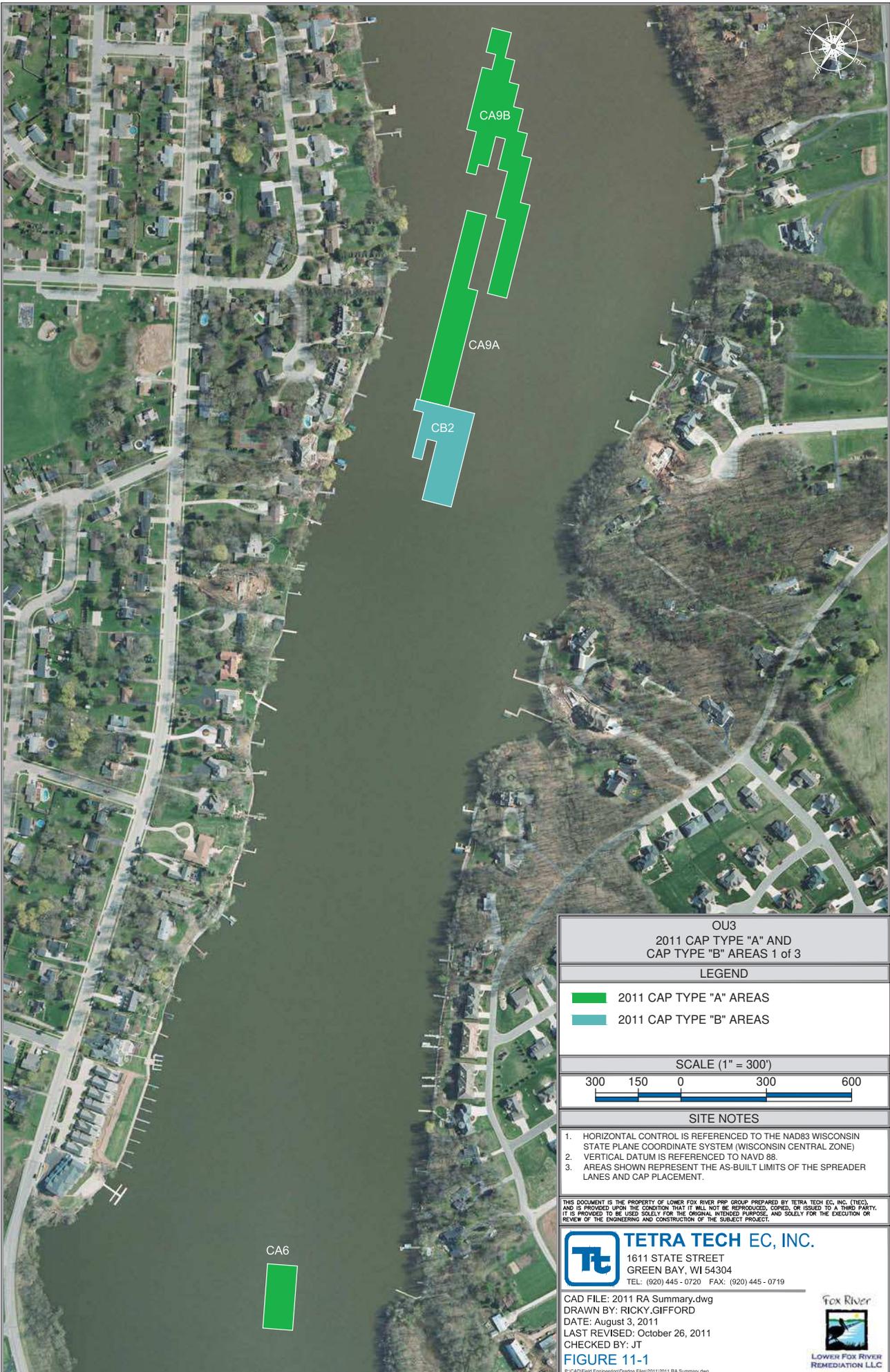
TETRA TECH EC, INC.
 1611 STATE STREET
 GREEN BAY, WI 54304
 TEL: (920) 445-0720 FAX: (920) 445-0719

CAD FILE: 2011 RA Summary.dwg
 DRAWN BY: RICKY.GIFFORD
 DATE: August 3, 2011
 LAST REVISED: October 26, 2011
 CHECKED BY: JT

FIGURE 10-4



LOWER FOX RIVER
REMEDATION LLC



OU3
2011 CAP TYPE "A" AND
CAP TYPE "B" AREAS 1 of 3

LEGEND

- 2011 CAP TYPE "A" AREAS
- 2011 CAP TYPE "B" AREAS

SCALE (1" = 300')



SITE NOTES

1. HORIZONTAL CONTROL IS REFERENCED TO THE NAD83 WISCONSIN STATE PLANE COORDINATE SYSTEM (WISCONSIN CENTRAL ZONE)
2. VERTICAL DATUM IS REFERENCED TO NAVD 88.
3. AREAS SHOWN REPRESENT THE AS-BUILT LIMITS OF THE SPREADER LANES AND CAP PLACEMENT.

THIS DOCUMENT IS THE PROPERTY OF LOWER FOX RIVER PRP GROUP PREPARED BY TETRA TECH EC, INC. (TTEC), AND IS PROVIDED UPON THE CONDITION THAT IT WILL NOT BE REPRODUCED, COPIED, OR ISSUED TO A THIRD PARTY. IT IS PROVIDED TO BE USED SOLELY FOR THE ORIGINAL INTENDED PURPOSE, AND SOLELY FOR THE EXECUTION OR REVIEW OF THE ENGINEERING AND CONSTRUCTION OF THE SUBJECT PROJECT.

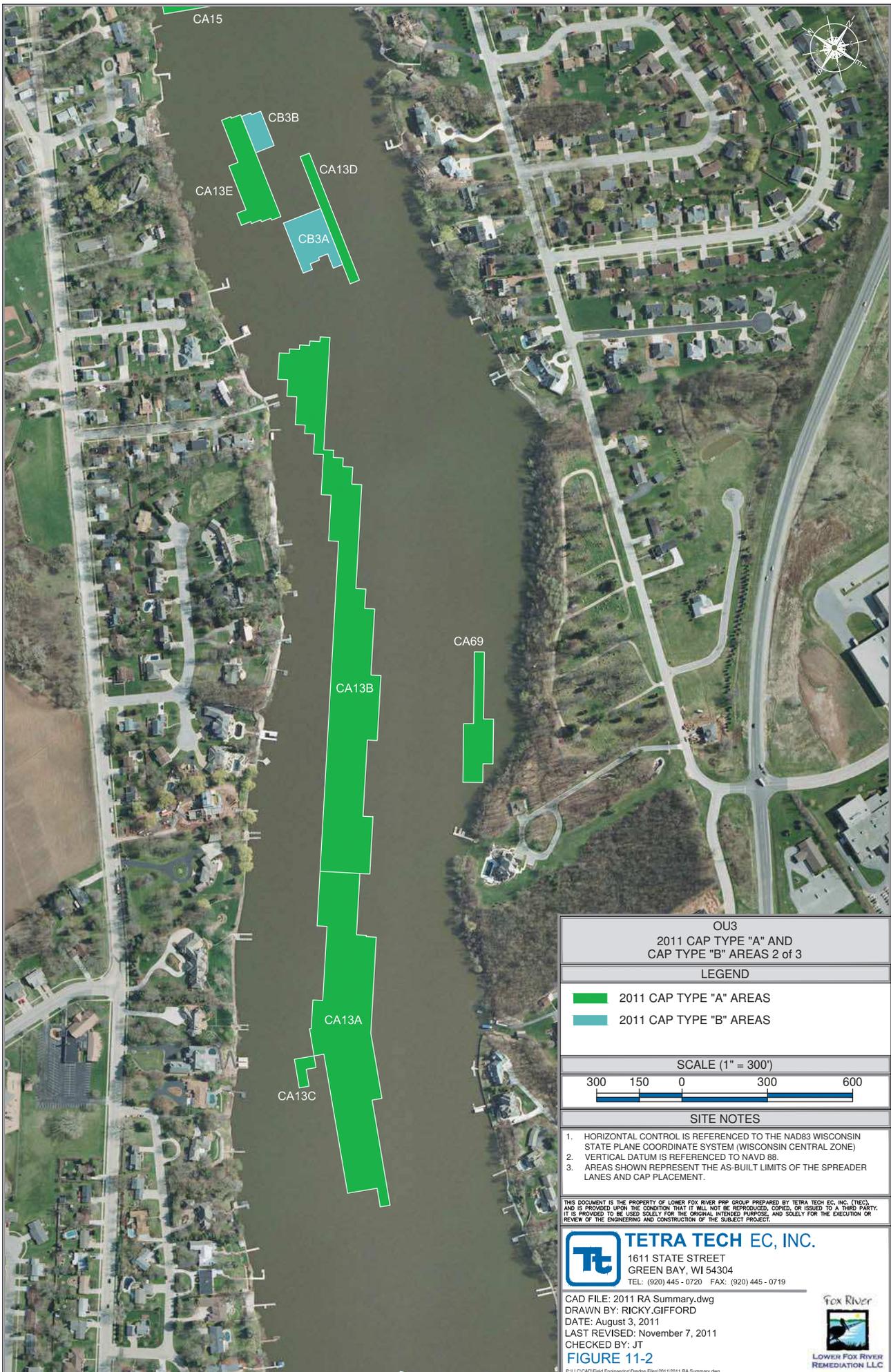
TETRA TECH EC, INC.
 1611 STATE STREET
 GREEN BAY, WI 54304
 TEL: (920) 445-0720 FAX: (920) 445-0719

CAD FILE: 2011 RA Summary.dwg
 DRAWN BY: RICKY.GIFFORD
 DATE: August 3, 2011
 LAST REVISED: October 26, 2011
 CHECKED BY: JT

FIGURE 11-1



CA6



OU3
2011 CAP TYPE "A" AND
CAP TYPE "B" AREAS 2 of 3

LEGEND

- 2011 CAP TYPE "A" AREAS
- 2011 CAP TYPE "B" AREAS

SCALE (1" = 300')



SITE NOTES

1. HORIZONTAL CONTROL IS REFERENCED TO THE NAD83 WISCONSIN STATE PLANE COORDINATE SYSTEM (WISCONSIN CENTRAL ZONE)
2. VERTICAL DATUM IS REFERENCED TO NAVD 88.
3. AREAS SHOWN REPRESENT THE AS-BUILT LIMITS OF THE SPREADER LANES AND CAP PLACEMENT.

THIS DOCUMENT IS THE PROPERTY OF LOWER FOX RIVER PRP GROUP PREPARED BY TETRA TECH EC, INC. (TTEC), AND IS PROVIDED UPON THE CONDITION THAT IT WILL NOT BE REPRODUCED, COPIED, OR ISSUED TO A THIRD PARTY. IT IS PROVIDED TO BE USED SOLELY FOR THE ORIGINAL INTENDED PURPOSE, AND SOLELY FOR THE EXECUTION OR REVIEW OF THE ENGINEERING AND CONSTRUCTION OF THE SUBJECT PROJECT.

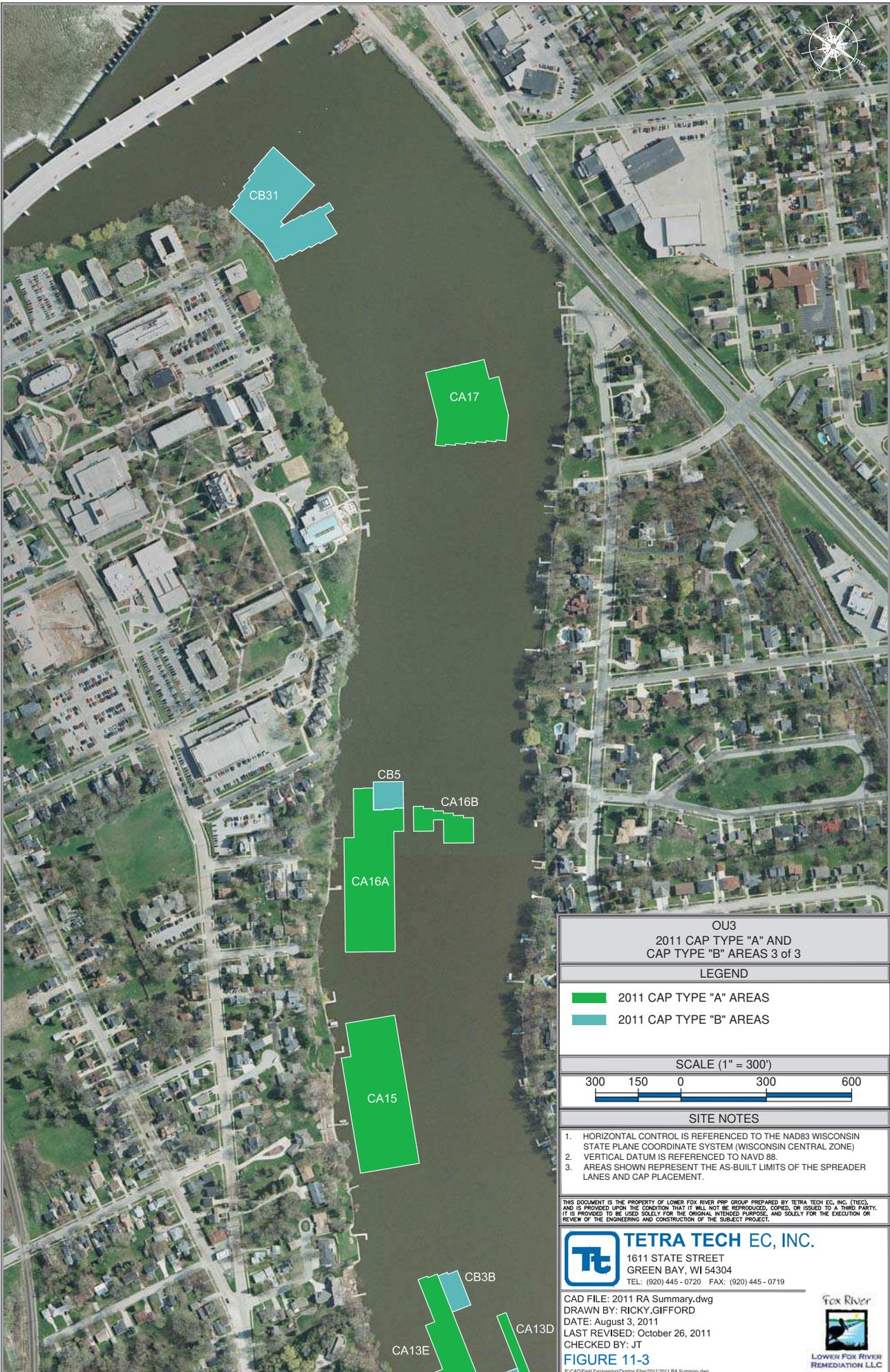
TETRA TECH EC, INC.
1611 STATE STREET
GREEN BAY, WI 54304
TEL: (920) 445 - 0720 FAX: (920) 445 - 0719

CAD FILE: 2011 RA Summary.dwg
DRAWN BY: RICKY.GIFFORD
DATE: August 3, 2011
LAST REVISED: November 7, 2011
CHECKED BY: JT

FIGURE 11-2

#11-LLCAD-Field Engineering-Dredge Files\2011\2011 RA Summary.dwg





OU3
 2011 CAP TYPE "A" AND
 CAP TYPE "B" AREAS 3 of 3

LEGEND

- 2011 CAP TYPE "A" AREAS
- 2011 CAP TYPE "B" AREAS

SCALE (1" = 300')



SITE NOTES

1. HORIZONTAL CONTROL IS REFERENCED TO THE NAD83 WISCONSIN STATE PLANE COORDINATE SYSTEM (WISCONSIN CENTRAL ZONE)
2. VERTICAL DATUM IS REFERENCED TO NAVD 88.
3. AREAS SHOWN REPRESENT THE AS-BUILT LIMITS OF THE SPREADER LANES AND CAP PLACEMENT.

THIS DOCUMENT IS THE PROPERTY OF LOWER FOX RIVER PRP GROUP PREPARED BY TETRA TECH EC, INC. (TTEC), AND IS PROVIDED UPON THE CONDITION THAT IT WILL NOT BE REPRODUCED, COPIED, OR ISSUED TO A THIRD PARTY. IT IS PROVIDED TO BE USED SOLELY FOR THE ORIGINAL INTENDED PURPOSE, AND SOLELY FOR THE EXECUTION OR REVIEW OF THE ENGINEERING AND CONSTRUCTION OF THE SUBJECT PROJECT.



TETRA TECH EC, INC.
 1611 STATE STREET
 GREEN BAY, WI 54304
 TEL: (920) 445 - 0720 FAX: (920) 445 - 0719

CAD FILE: 2011 RA Summary.dwg
 DRAWN BY: RICKY.GIFFORD
 DATE: August 3, 2011
 LAST REVISED: October 26, 2011
 CHECKED BY: JT

FIGURE 11-3

©-CAD/Field Engineering/Design Files/2011/2011 RA Summary.dwg



**LOWER FOX RIVER
 REMEDIATION LLC**

**Table 4-2
2011 QA Survey Volume Removed by Area**

Area	Total Volume Removed*	Target Volume Including Allowable Overcut	Dredge Area Completed**
OU3-D100	2,598	1,888	Yes
OU3-D101	39	11	Yes
OU3-D102	1,788	1,372	Yes
OU3-D103A	2,467	2,268	Yes
OU3-D103B	1,230	1,167	Yes
OU3-D104	290	309	Yes
OU3-D105A	223	251	Yes
OU3-D105B	1,947	1,777	Yes
OU3-D105C	151	86	Yes
OU3-D106A	970	1,123	Yes
OU3-D106B ^{††}	41,711	39,961	Yes
OU3-D106C	1,057	1,023	Yes
OU3-D107	315	367	Yes
OU3-D108	947	671	Yes
OU3-D109A [±]	-23	38	Yes
OU3-D109B	71	646	Yes
OU3-D110	2,218	2,112	Yes
OU3-D111	137	314	Yes
OU3-D20B	27	41	Yes
OU3-D112	1,844	1,689	Yes
OU3-D113	124	143	Yes
OU3-D21	1,433	2,282	Yes
OU3-D22	1,740	1,974	Yes
OU4-D23	14,987	123,367	No**
OU4-D23 [†]	2,469	123,367	No
OU4-D24 [†]	48,611	92,914	No
OU4-D27A [†]	37,988	79,783	No
OU4-D27B [†]	29,527	42,829	No
OU4-D27D [†]	12,341	12,974	No
OU4-D27E [†]	1,598	1,987	No
OU4-D27F [†]	9,749	11,324	No
OU4-D30A [†]	5,919	8,687	No
OU4-D91 [†]	8,288	9,113	No

* Total Volume Removed is the sum of the RAL volume removed, overdredge volume removed, and Beyond overdredge volume removed.

** Areas have met 90% completion criteria based on comparison of post-dredge bathymetric surface to the approved Neat Line design surface; no post-dredge confirmation samples have been collected.

[†] Not dredged to the approved neat line design surface. Dredge area D23 is included in Table 4-2 twice because part of it was dredged to the approved neat line design surface and part of it was not, i.e., it was production dredged only.

^{††} Includes residual dredge volumes

[±] The negative values shown in the table above are a result of the post-dredge bathymetry being higher in elevation than the pre-dredge bathymetry.



- Ensuring appropriate QC samples were analyzed at the required frequencies, and the results met performance criteria as outlined in the applicable QAPP Worksheets.
- Determining laboratory data qualifiers were applied as specified in the methodologies and/or QAPP.
- Reviewing sample names on COCs to verify the correct sample protocol had been adhered to.

4.5 Summary of Dredging 2011

Dredging was a critical part of the remediation of OU2-5 in 2011. As stated previously, dredging operations began in OU4 area D27A on April 18, and concluded for the season on August 10. Hydraulic dredging was performed in either a production mode, using the 12-inch dredge, or final pass mode on the approved neat line design surface, using one or two 8-inch dredges. Depending on the DMU, multiple passes may have been required to achieve final elevation by the 8-inch dredges. Appendix D contains tables indicating actual quantities of material dredged from all areas worked in during 2011.

Table D-1, 2011 Dredge Areas Summary, lists the dredge areas and DMUs completed through 2011 in which RAL material was removed to the modeled neat line or confirmed high subgrade.

Based on subsequent post-dredge confirmation sampling, each area included on Table D-1 was either determined to be complete or, in some cases, additional dredging was performed or a sand cover applied. Statistical information on the percentage of DMUs requiring no further action following removal to the neat line, additional dredging, or the application of a sand cover are also included on Table D-1.

Table D-2, 2011 Production Summary, includes verified removal quantity data for all areas dredged during 2011. Table D-2 also includes the dates on which final QA surveys were conducted, design data, dredge data (including high subgrade and overdredge volumes), and area data (including the percentage of design surface elevation achieved).

4.5.1 Total Sediment Volume Removed

The volume of *in situ* sediment removed has been measured and tracked using hydrographic survey techniques. Pre-dredge and post-dredge surveys were processed and compared to one another in order to calculate overall volume of sediment removed. Table 4-4 presents the total volume (including overdredge) removed from OU3 and OU4 in 2011.

**Table 4-4
Volume of *In Situ* Sediment Removed in 2011**

OU	Production Volume Removed ¹ (cy)	Completion Volume Removed ² (cy)	RAL Volume Removed ³ (cy)
OU3	0	63,931	40,249
OU4	156,491	14,987	148,664
Total	156,491	78,918	197,322
Totals	235,409		

¹Production Volume Removed is the actual volume removed plus the actual overcut volume removed in areas not meeting the 90% completion criterion. It does not include the volume removed beneath the Allowable Overcut Elevation.

²Completion Volume Removed is the actual volume removed plus the actual overcut volume removed in areas that do meet the 90% completion criterion. It does not include the volume removed beneath the Allowable Overcut Elevation.

³RAL Volume Removed is the actual volume removed and does not include any Allowable Overcut Volume removed or volume removed below the Allowable Overcut Elevation.

