



**CIVIL ENGINEERING STUDIES**

Illinois Center for Transportation Series No. 21-007

UILU-ENG-2021-2007

ISSN: 0197-9191

# **Inventory and Statistical Characterization of Inorganic Soil Constituents in Illinois: Appendices**

Prepared By

**Andrew Anderson**

**Mark Yacucci**

Prairie Research Institute

Illinois State Geological Survey

University of Illinois at Urbana-Champaign

Research Report No. FHWA-ICT-21-007

A report of the findings of

**ICT PROJECT R27-183-HS**

**Evaluation of On-site and In Situ Treatment  
Alternatives for Contaminated Soils**

<https://doi.org/10.36501/0197-9191/21-007>

---

**Illinois Center for Transportation**

**June 2021**





# TECHNICAL REPORT DOCUMENTATION PAGE

<b>1. Report No.</b> FHWA-ICT-21-007		<b>2. Government Accession No.</b> N/A		<b>3. Recipient's Catalog No.</b> N/A	
<b>4. Title and Subtitle</b> Inventory and Statistical Characterization of Inorganic Soil Constituents in Illinois: Appendices				<b>5. Report Date</b> June 2021	
				<b>6. Performing Organization Code</b> N/A	
<b>7. Authors</b> Andrew Anderson and Mark Yacucci				<b>8. Performing Organization Report No.</b> ICT-21-007 UILU-2021-2007	
<b>9. Performing Organization Name and Address</b> Illinois Center for Transportation Department of Civil and Environmental Engineering University of Illinois at Urbana-Champaign 205 North Mathews Avenue, MC-250 Urbana, IL 61801				<b>10. Work Unit No.</b> N/A	
				<b>11. Contract or Grant No.</b> R27-183-HS	
<b>12. Sponsoring Agency Name and Address</b> Illinois Department of Transportation (SPR) Bureau of Research 126 East Ash Street Springfield, IL 62704				<b>13. Type of Report and Period Covered</b> Task 1 report 2/1/18–5/31/21	
				<b>14. Sponsoring Agency Code</b>	
<b>15. Supplementary Notes</b> Conducted in cooperation with the U.S. Department of Transportation, Federal Highway Administration. A complementary <a href="#">report</a> and <a href="#">Regulated Substances Library data</a> are available for this report.					
<b>16. Abstract</b> This report presents detailed histograms of data from the Regulated Substances Library (RSL) developed by the Illinois Department of Transportation (IDOT). RSL data are provided for state and IDOT region, IDOT district, and county spatial subsets to examine the spatial variability and its relationship to thresholds defining natural background concentrations. The RSL is comprised of surficial soil chemistry data obtained from rights-of-way (ROW) subsurface soil sampling conducted for routine preliminary site investigations. A selection of 22 inorganic soil analytes are examined in this report: Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Na, Tl, V, and Zn. RSL database summary statistics, mean, median, minimum, maximum, 5th percentile, and 95th percentile, are determined for Illinois counties and for recognized environmental concern, non-recognized environmental concern, and de minimis site contamination classifications.					
<b>17. Key Words</b> Planning and Design, Environmental Quality, Risk Assessment			<b>18. Distribution Statement</b> No restrictions. This document is available through the National Technical Information Service, Springfield, VA 22161.		
<b>19. Security Classif. (of this report)</b> Unclassified		<b>20. Security Classif. (of this page)</b> Unclassified		<b>21. No. of Pages</b> 961	<b>22. Price</b> N/A



# ACKNOWLEDGMENT, DISCLAIMER, MANUFACTURERS' NAMES

This publication is based on the results of **ICT-R27-183-HS: Evaluation of On-site and In Situ Treatment Alternatives for Contaminated Soils**. ICT-R27-183-HS was conducted in cooperation with the Illinois Center for Transportation; the Illinois Department of Transportation; and the U.S. Department of Transportation, Federal Highway Administration.

Members of the Technical Review Panel (TRP) were the following:

- Doug Dirks, TRP Co-Chair, IDOT
- Jim Curtis, TRP Co-Chair, IDOT
- Brendan Dutmer, Highland Community College
- Jim Mueller, Provectus Environmental Products, Inc.
- Megan Swanson, IDOT
- Doug Liniger, IDOT
- Dan Wakefield, IDOT
- Viraj Perera, IDOT
- Tyler Petersen, IDOT
- Bart Sherer, IDOT
- Heather Shoup, IDOT
- JD Stevenson, FHWA
- Kyle Rominger, Illinois Environmental Protection Agency (IEPA)
- Greg Dunn, IEPA
- Amanda Hohner, Washington State University (WSU)
- Xianming Shi, WSU
- Idil Deniz Akin, WSU
- Richard Watts, WSU
- Austin Pelletier, WSU
- Taiwo Akinleye WSU
- Indranil Chowdhury, WSU

The contents of this report reflect the view of the authors, who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Illinois Center for Transportation, the Illinois Department of Transportation, or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation.

Trademark or manufacturers' names appear in this report only because they are considered essential to the object of this document and do not constitute an endorsement of product by the Federal Highway Administration, the Illinois Department of Transportation, or the Illinois Center for Transportation.

# TABLE OF CONTENTS

APPENDICES .....	1
REFERENCES .....	10
APPENDIX A. ANALYTE ANALYSIS: ALUMINUM .....	12
A.1 ALUMINUM REC.....	12
A.2 ALUMINUM NON-REC .....	25
A.3 ALUMINUM DE MINIMIS.....	36
APPENDIX B. ANALYTE ANALYSIS: ANTIMONY .....	47
B.1 ANTIMONY REC .....	47
B.2 ANTIMONY NON-REC .....	67
B.3 ANTIMONY DE MINIMIS.....	79
APPENDIX C. ANALYTE ANALYSIS: ARSENIC .....	91
C.1 ARSENIC REC.....	91
C.2 ARSENIC NON-REC.....	111
C.3 ARSENIC DE MINIMIS .....	123
APPENDIX D. ANALYTE ANALYSIS: BARIUM .....	135
D.1 BARIUM REC .....	135
D.2 BARIUM NON-REC.....	155
D.3 BARIUM DE MINIMIS .....	167
APPENDIX E. ANALYTE ANALYSIS: BERYLLIUM.....	179
E.1 BERYLLIUM REC .....	179
E.2 BERYLLIUM NON-REC .....	199
E.3 BERYLLIUM DE MINIMIS.....	211
APPENDIX F. ANALYTE ANALYSIS: CADMIUM .....	223
F.1 CADMIUM REC.....	223
F.2 CADMIUM NON-REC.....	243
F.3 CADMIUM DE MINIMIS .....	255

<b>APPENDIX G. ANALYTE ANALYSIS: CALCIUM.....</b>	<b>267</b>
G.1 CALCIUM REC .....	267
G.2 CALCIUM NON-REC .....	286
G.3 CALCIUM DE MINIMIS .....	298
<b>APPENDIX H. ANALYTE ANALYSIS: CHROMIUM .....</b>	<b>310</b>
H.1 CHROMIUM REC .....	310
H.2 CHROMIUM NON-REC.....	330
H.3 CHROMIUM DE MINIMIS .....	342
<b>APPENDIX I. ANALYTE ANALYSIS: COBALT .....</b>	<b>354</b>
I.1 COBALT REC.....	354
I.2 COBALT NON-REC.....	374
I.3 COBALT DE MINIMIS .....	386
<b>APPENDIX J. ANALYTE ANALYSIS: COPPER.....</b>	<b>398</b>
J.1 COPPER REC .....	398
J.2 COPPER NON-REC .....	418
J.3 COPPER DE MINIMIS .....	430
<b>APPENDIX K. ANALYTE ANALYSIS: IRON.....</b>	<b>442</b>
K.1 IRON REC .....	442
K.2 IRON NON-REC .....	462
K.3 IRON DE MINIMIS.....	474
<b>APPENDIX L. ANALYTE ANALYSIS: LEAD .....</b>	<b>486</b>
L.1 LEAD REC .....	486
L.2 LEAD NON-REC.....	506
L.3 LEAD DE MINIMIS .....	518
<b>APPENDIX M. ANALYTE ANALYSIS: MAGNESIUM .....</b>	<b>530</b>
M.1 MAGNESIUM REC.....	530
M.2 MAGNESIUM NON-REC.....	550
M.3 MAGNESIUM DE MINIMIS .....	562

<b>APPENDIX N. ANALYTE ANALYSIS: MANGANESE .....</b>	<b>574</b>
N.1 MANGANESE REC.....	574
N.2 MANGANESE NON-REC.....	594
N.3 MANGANESE DE MINIMIS .....	606
<b>APPENDIX O. ANALYTE ANALYSIS: MERCURY .....</b>	<b>618</b>
O.1 MERCURY REC.....	618
O.2 MERCURY NON-REC.....	638
O.3 MERCURY DE MINIMIS .....	650
<b>APPENDIX P. ANALYTE ANALYSIS: NICKEL.....</b>	<b>662</b>
P.1 NICKEL REC .....	662
P.2 NICKEL NON-REC .....	682
P.3 NICKEL DE MINIMIS .....	694
<b>APPENDIX Q. ANALYTE ANALYSIS: POTASSIUM .....</b>	<b>706</b>
Q.1 POTASSIUM REC .....	706
Q.2 POTASSIUM NON-REC .....	721
Q.3 POTASSIUM DE MINIMIS .....	732
<b>APPENDIX R. ANALYTE ANALYSIS: SELENIUM .....</b>	<b>744</b>
R.1 SELENIUM REC.....	744
R.2 SELENIUM NON-REC.....	764
R.3 SELENIUM DE MINIMIS .....	776
<b>APPENDIX S. ANALYTE ANALYSIS: SODIUM .....</b>	<b>788</b>
S.1 SODIUM REC.....	788
S.2 SODIUM NON-REC.....	806
S.3 SODIUM DE MINIMIS.....	818
<b>APPENDIX T. ANALYTE ANALYSIS: THALLIUM .....</b>	<b>830</b>
T.1 THALLIUM REC.....	830
T.2 THALLIUM NON-REC.....	850
T.3 THALLIUM DE MINIMIS .....	862

**APPENDIX U. ANALYTE ANALYSIS: VANADIUM..... 874**

**U.1 VANADIUM REC ..... 874**

**U.2 VANADIUM NON-REC ..... 894**

**U.3 VANADIUM DE MINIMIS ..... 906**

**APPENDIX V. ANALYTE ANALYSIS: ZINC ..... 918**

**V.1 ZINC REC..... 918**

**V.2 ZINC NON-REC..... 938**

**V.3 ZINC DE MINIMIS ..... 950**

## LIST OF FIGURES

Figure 1. IDOT Region and District Map.....	3
Figure 2. Metropolitan Statistical Areas (MSA) counties in Illinois shown with dotted hatching. All choropleth maps in the main report and appendix apply dotted hatching to indicate MSA counties. ....	5
Figure 3. Diagram of the 95% confidence interval of the median, as shown by the notch. Figure 3 is modified from SAS® 9.4 Graph Template Language, Copyright © 2016, SAS Institute Inc., USA. All Rights Reserved. Reproduced with permission of SAS Institute Inc, Cary, NC. ....	9
Figure 4. Boxplot diagram of a nearly normal distribution compared with the probability density function for a normal distribution. IQR is interquartile range, Q1 is first quartile, and Q3 is third quartile. From Galarnyk (2018). Used with permission of the author. ....	9
Figure 5. Histogram of RSL aluminum concentrations, REC (mg/kg) .....	13
Figure 6. Histogram of RSL aluminum concentrations by IDOT Region, REC (mg/kg) .....	15
Figure 7. Boxplot of RSL aluminum concentrations by IDOT Region, REC (mg/kg) .....	16
Figure 8. Histogram of RSL aluminum concentrations by IDOT District, REC (mg/kg), part 1 .....	17
Figure 9. Histogram of RSL aluminum concentrations by IDOT District, REC (mg/kg), part 2 .....	18
Figure 10. Boxplot of RSL aluminum concentrations by IDOT District, REC (mg/kg) .....	19
Figure 11. Histogram of RSL aluminum concentrations by Illinois county, REC (mg/kg), part 1 .....	20
Figure 12. Histogram of RSL aluminum concentrations by Illinois county, REC (mg/kg), part 2 .....	21
Figure 13. Histogram of RSL aluminum concentrations by Illinois county, REC (mg/kg), part 3 .....	22
Figure 14. Map of RSL aluminum 95 <sup>th</sup> percentile concentration by Illinois county, REC (mg/kg) .....	23
Figure 15. Map of RSL aluminum sample quantity by Illinois county, REC (mg/kg) .....	24
Figure 16. Histogram of RSL aluminum concentrations, Non-REC (mg/kg).....	26
Figure 17. Histogram of RSL aluminum concentrations by IDOT Region, Non-REC (mg/kg).....	28
Figure 18. Boxplot of RSL aluminum concentrations by IDOT Region, Non-REC (mg/kg).....	29
Figure 19. Histogram of RSL aluminum concentrations by IDOT District, Non-REC (mg/kg), part 1 .....	30
Figure 20. Histogram of RSL aluminum concentrations by IDOT District, Non-REC (mg/kg), part 2 .....	31
Figure 21. Boxplot of RSL aluminum concentrations by IDOT District, Non-REC (mg/kg) .....	32
Figure 22. Histogram of RSL aluminum concentrations by Illinois county, Non-REC (mg/kg) .....	33
Figure 23. Map of RSL aluminum 95 <sup>th</sup> percentile concentration by Illinois county, Non-REC (mg/kg) .....	34
Figure 24. Map of RSL aluminum sample quantity by Illinois county, Non-REC (mg/kg).....	35



Figure 25. Histogram of RSL aluminum concentrations, de minimis (mg/kg) .....	37
Figure 26. Histogram of RSL aluminum concentrations by IDOT Region, de minimis (mg/kg) .....	39
Figure 27. Boxplot of RSL aluminum concentrations by IDOT Region, de minimis (mg/kg) .....	40
Figure 28. Histogram of RSL aluminum concentrations by IDOT District, de minimis (mg/kg), part 1..	41
Figure 29. Histogram of RSL aluminum concentrations by IDOT District, de minimis (mg/kg), part 2..	42
Figure 30. Boxplot of RSL aluminum concentrations by IDOT District, de minimis (mg/kg) .....	43
Figure 31. Histogram of RSL aluminum concentrations by Illinois county, de minimis (mg/kg) .....	44
Figure 32. Map of RSL aluminum 95th percentile concentration by Illinois county, de minimis (mg/kg) .....	45
Figure 33. Map of RSL aluminum sample quantity by Illinois county, de minimis (mg/kg) .....	46
Figure 34. Histogram of RSL antimony concentrations, REC (mg/kg) .....	48
Figure 35. Histogram of RSL antimony concentrations by IDOT Region, REC (mg/kg) .....	50
Figure 36. Boxplot of RSL antimony concentrations by IDOT Region, REC (mg/kg) .....	51
Figure 37. Histogram of RSL antimony concentrations by IDOT District, REC (mg/kg), part 1.....	52
Figure 38. Histogram of RSL antimony concentrations by IDOT District, REC (mg/kg), part 2.....	53
Figure 39. Boxplot of RSL antimony concentrations by IDOT District, REC (mg/kg) .....	54
Figure 40. Histogram of RSL antimony concentrations by Illinois county, REC (mg/kg), part 1.....	55
Figure 41. Histogram of RSL antimony concentrations by Illinois county, REC (mg/kg), part 2.....	56
Figure 42. Histogram of RSL antimony concentrations by Illinois county, REC (mg/kg), part 3.....	57
Figure 43. Histogram of RSL antimony concentrations by Illinois county, REC (mg/kg), part 4.....	58
Figure 44. Histogram of RSL antimony concentrations by Illinois county, REC (mg/kg), part 5.....	59
Figure 45. Histogram of RSL antimony concentrations by Illinois county, REC (mg/kg), part 6.....	60
Figure 46. Histogram of RSL antimony concentrations by Illinois county, REC (mg/kg), part 7.....	61
Figure 47. Histogram of RSL antimony concentrations by Illinois county, REC (mg/kg), part 8.....	62
Figure 48. Histogram of RSL antimony concentrations by Illinois county, REC (mg/kg), part 9.....	63
Figure 49. Histogram of RSL antimony concentrations by Illinois county, REC (mg/kg), part 10.....	64
Figure 50. Map of RSL antimony 95th percentile concentration by Illinois county, REC (mg/kg).....	65
Figure 51. Map of RSL antimony sample quantity by Illinois county, REC (mg/kg) .....	66
Figure 52. Histogram of RSL antimony concentrations, Non-REC (mg/kg) .....	68
Figure 53. Histogram of RSL antimony concentrations by IDOT Region, Non-REC (mg/kg).....	70

Figure 54. Boxplot of RSL antimony concentrations by IDOT Region, Non-REC (mg/kg).....	71
Figure 55. Histogram of RSL antimony concentrations by IDOT District, Non-REC (mg/kg), part 1 .....	72
Figure 56. Histogram of RSL antimony concentrations by IDOT District, Non-REC (mg/kg), part 2 .....	73
Figure 57. Boxplot of RSL antimony concentrations by IDOT District, Non-REC (mg/kg) .....	74
Figure 58. Histogram of RSL antimony concentrations by Illinois county, Non-REC (mg/kg), part 1 ....	75
Figure 59. Histogram of RSL antimony concentrations by Illinois county, Non-REC (mg/kg), part 2 ....	76
Figure 60. Map of RSL antimony 95th percentile concentration by Illinois county, Non-REC (mg/kg) .	77
Figure 61. Map of RSL antimony sample quantity by Illinois county, Non-REC (mg/kg).....	78
Figure 62. Histogram of RSL antimony concentrations, de minimis (mg/kg) .....	80
Figure 63. Histogram of RSL antimony concentrations by IDOT Region, de minimis (mg/kg) .....	82
Figure 64. Boxplot of RSL antimony concentrations by IDOT Region, de minimis (mg/kg) .....	83
Figure 65. Histogram of RSL antimony concentrations by IDOT District, de minimis (mg/kg), part 1...	84
Figure 66. Histogram of RSL antimony concentrations by IDOT District, de minimis (mg/kg), part 2...	85
Figure 67. Boxplot of RSL antimony concentrations by IDOT District, de minimis (mg/kg) .....	86
Figure 68. Histogram of RSL antimony concentrations by Illinois county, de minimis (mg/kg), part 1.	87
Figure 69. Histogram of RSL antimony concentrations by Illinois county, de minimis (mg/kg), part 2.	88
Figure 70. Map of RSL antimony 95th percentile concentration by Illinois county, de minimis (mg/kg) .....	89
Figure 71. Map of RSL antimony sample quantity by Illinois county, de minimis (mg/kg) .....	90
Figure 72. Histogram of RSL arsenic concentrations, REC (mg/kg) .....	92
Figure 73. Histogram of RSL arsenic concentrations by IDOT Region, REC (mg/kg) .....	94
Figure 74. Boxplot of RSL arsenic concentrations by IDOT Region, REC (mg/kg) .....	95
Figure 75. Histogram of RSL arsenic concentrations by IDOT District, REC (mg/kg), part 1 .....	96
Figure 76. Histogram of RSL arsenic concentrations by IDOT District, REC (mg/kg), part 2 .....	97
Figure 77. Boxplot of RSL arsenic concentrations by IDOT District, REC (mg/kg).....	98
Figure 78. Histogram of RSL arsenic concentrations by Illinois county, REC (mg/kg), part 1.....	99
Figure 79. Histogram of RSL arsenic concentrations by Illinois county, REC (mg/kg), part 2.....	100
Figure 80. Histogram of RSL arsenic concentrations by Illinois county, REC (mg/kg), part 3.....	101
Figure 81. Histogram of RSL arsenic concentrations by Illinois county, REC (mg/kg), part 4.....	102
Figure 82. Histogram of RSL arsenic concentrations by Illinois county, REC (mg/kg), part 5.....	103

Figure 83. Histogram of RSL arsenic concentrations by Illinois county, REC (mg/kg), part 6.....	104
Figure 84. Histogram of RSL arsenic concentrations by Illinois county, REC (mg/kg), part 7.....	105
Figure 85. Histogram of RSL arsenic concentrations by Illinois county, REC (mg/kg), part 8.....	106
Figure 86. Histogram of RSL arsenic concentrations by Illinois county, REC (mg/kg), part 9.....	107
Figure 87. Histogram of RSL arsenic concentrations by Illinois county, REC (mg/kg), part 10.....	108
Figure 88. Map of RSL arsenic 95th percentile concentration by Illinois county, REC (mg/kg) .....	109
Figure 89. Map of RSL arsenic sample quantity by Illinois county, REC (mg/kg) .....	110
Figure 90. Histogram of RSL arsenic concentrations, Non-REC (mg/kg) .....	112
Figure 91. Histogram of RSL arsenic concentrations by IDOT Region, Non-REC (mg/kg) .....	114
Figure 92. Boxplot of RSL arsenic concentrations by IDOT Region, Non-REC (mg/kg) .....	115
Figure 93. Histogram of RSL arsenic concentrations by IDOT District, Non-REC (mg/kg), part 1 .....	116
Figure 94. Histogram of RSL arsenic concentrations by IDOT District, Non-REC (mg/kg), part 2 .....	117
Figure 95. Boxplot of RSL arsenic concentrations by IDOT District, Non-REC (mg/kg) .....	118
Figure 96. Histogram of RSL arsenic concentrations by Illinois county, Non-REC (mg/kg), part 1 .....	119
Figure 97. Histogram of RSL arsenic concentrations by Illinois county, Non-REC (mg/kg), part 2 .....	120
Figure 98. Map of RSL arsenic 95th percentile concentration by Illinois county, Non-REC (mg/kg)...	121
Figure 99. Map of RSL arsenic sample quantity by Illinois county, Non-REC (mg/kg) .....	122
Figure 100. Histogram of RSL arsenic concentrations, de minimis (mg/kg).....	124
Figure 101. Histogram of RSL arsenic concentrations by IDOT Region, de minimis (mg/kg) .....	126
Figure 102. Boxplot of RSL arsenic concentrations by IDOT Region, de minimis (mg/kg) .....	127
Figure 103. Histogram of RSL arsenic concentrations by IDOT District, de minimis (mg/kg), part 1 ..	128
Figure 104. Histogram of RSL arsenic concentrations by IDOT District, de minimis (mg/kg), part 2 ..	129
Figure 105. Boxplot of RSL arsenic concentrations by IDOT District, de minimis (mg/kg).....	130
Figure 106. Histogram of RSL arsenic concentrations by Illinois county, de minimis (mg/kg), part 1.	131
Figure 107. Histogram of RSL arsenic concentrations by Illinois county, de minimis (mg/kg), part 2.	132
Figure 108. Map of RSL arsenic 95th percentile concentration by Illinois county, de minimis (mg/kg) .....	133
Figure 109. Map of RSL arsenic sample quantity by Illinois county, de minimis (mg/kg) .....	134
Figure 110. Histogram of RSL barium concentrations, REC (mg/kg) .....	136
Figure 111. Histogram of RSL barium concentrations by IDOT Region, REC (mg/kg) .....	138

Figure 112. Boxplot of RSL barium concentrations by IDOT Region, REC (mg/kg) .....	139
Figure 113. Histogram of RSL barium concentrations by IDOT District, REC (mg/kg), part 1 .....	140
Figure 114. Histogram of RSL barium concentrations by IDOT District, REC (mg/kg), part 2 .....	141
Figure 115. Boxplot of RSL barium concentrations by IDOT District, REC (mg/kg).....	142
Figure 116. Histogram of RSL barium concentrations by Illinois county, REC (mg/kg), part 1.....	143
Figure 117. Histogram of RSL barium concentrations by Illinois county, REC (mg/kg), part 2.....	144
Figure 118. Histogram of RSL barium concentrations by Illinois county, REC (mg/kg), part 3.....	145
Figure 119. Histogram of RSL barium concentrations by Illinois county, REC (mg/kg), part 4.....	146
Figure 120. Histogram of RSL barium concentrations by Illinois county, REC (mg/kg), part 5.....	147
Figure 121. Histogram of RSL barium concentrations by Illinois county, REC (mg/kg), part 6.....	148
Figure 122. Histogram of RSL barium concentrations by Illinois county, REC (mg/kg), part 7.....	149
Figure 123. Histogram of RSL barium concentrations by Illinois county, REC (mg/kg), part 8.....	150
Figure 124. Histogram of RSL barium concentrations by Illinois county, REC (mg/kg), part 9.....	151
Figure 125. Histogram of RSL barium concentrations by Illinois county, REC (mg/kg), part 10.....	152
Figure 126. Map of RSL barium 95th percentile concentration by Illinois county, REC (mg/kg).....	153
Figure 127. Map of RSL barium sample quantity by Illinois county, REC (mg/kg) .....	154
Figure 128. Histogram of RSL barium concentrations, Non-REC (mg/kg) .....	156
Figure 129. Histogram of RSL barium concentrations by IDOT Region, Non-REC (mg/kg) .....	158
Figure 130. Boxplot of RSL barium concentrations by IDOT Region, Non-REC (mg/kg) .....	159
Figure 131. Histogram of RSL barium concentrations by IDOT District, Non-REC (mg/kg), part 1.....	160
Figure 132. Histogram of RSL barium concentrations by IDOT District, Non-REC (mg/kg), part 2.....	161
Figure 133. Boxplot of RSL barium concentrations by IDOT District, Non-REC (mg/kg) .....	162
Figure 134. Histogram of RSL barium concentrations by Illinois county, Non-REC (mg/kg), part 1 ....	163
Figure 135. Histogram of RSL barium concentrations by Illinois county, Non-REC (mg/kg), part 2 ....	164
Figure 136. Map of RSL barium 95th percentile concentration by Illinois county, Non-REC (mg/kg) .	165
Figure 137. Map of RSL barium sample quantity by Illinois county, Non-REC (mg/kg) .....	166
Figure 138. Histogram of RSL barium concentrations, de minimis (mg/kg).....	168
Figure 139. Histogram of RSL barium concentrations by IDOT Region, de minimis (mg/kg).....	170
Figure 140. Boxplot of RSL barium concentrations by IDOT Region, de minimis (mg/kg) .....	171
Figure 141. Histogram of RSL barium concentrations by IDOT District, de minimis (mg/kg), part 1 ..	172

Figure 142. Histogram of RSL barium concentrations by IDOT District, de minimis (mg/kg), part 2 ..	173
Figure 143. Boxplot of RSL barium concentrations by IDOT District, de minimis (mg/kg) .....	174
Figure 144. Histogram of RSL barium concentrations by Illinois county, de minimis (mg/kg), part 1.	175
Figure 145. Histogram of RSL barium concentrations by Illinois county, de minimis (mg/kg), part 2.	176
Figure 146. Map of RSL barium 95th percentile concentration by Illinois county, de minimis (mg/kg) .....	177
Figure 147. Map of RSL barium sample quantity by Illinois county, de minimis (mg/kg) .....	178
Figure 148. Histogram of RSL beryllium concentrations, REC (mg/kg) .....	180
Figure 149. Histogram of RSL beryllium concentrations by IDOT Region, REC (mg/kg) .....	182
Figure 150. Boxplot of RSL beryllium concentrations by IDOT Region, REC (mg/kg) .....	183
Figure 151. Histogram of RSL beryllium concentrations by IDOT District, REC (mg/kg), part 1 .....	184
Figure 152. Histogram of RSL beryllium concentrations by IDOT District, REC (mg/kg), part 2 .....	185
Figure 153. Boxplot of RSL beryllium concentrations by IDOT District, REC (mg/kg) .....	186
Figure 154. Histogram of RSL beryllium concentrations by Illinois county, REC (mg/kg), part 1 .....	187
Figure 155. Histogram of RSL beryllium concentrations by Illinois county, REC (mg/kg), part 2 .....	188
Figure 156. Histogram of RSL beryllium concentrations by Illinois county, REC (mg/kg), part 3 .....	189
Figure 157. Histogram of RSL beryllium concentrations by Illinois county, REC (mg/kg), part 4 .....	190
Figure 158. Histogram of RSL beryllium concentrations by Illinois county, REC (mg/kg), part 5 .....	191
Figure 159. Histogram of RSL beryllium concentrations by Illinois county, REC (mg/kg), part 6 .....	192
Figure 160. Histogram of RSL beryllium concentrations by Illinois county, REC (mg/kg), part 7 .....	193
Figure 161. Histogram of RSL beryllium concentrations by Illinois county, REC (mg/kg), part 8 .....	194
Figure 162. Histogram of RSL beryllium concentrations by Illinois county, REC (mg/kg), part 9 .....	195
Figure 163. Histogram of RSL beryllium concentrations by Illinois county, REC (mg/kg), part 10 .....	196
Figure 164. Map of RSL beryllium 95th percentile concentration by Illinois county, REC (mg/kg) .....	197
Figure 165. Map of RSL beryllium sample quantity by Illinois county, REC (mg/kg) .....	198
Figure 166. Histogram of RSL beryllium concentrations, Non-REC (mg/kg) .....	200
Figure 167. Histogram of RSL beryllium concentrations by IDOT Region, Non-REC (mg/kg) .....	202
Figure 168. Boxplot of RSL beryllium concentrations by IDOT Region, Non-REC (mg/kg) .....	203
Figure 169. Histogram of RSL beryllium concentrations by IDOT District, Non-REC (mg/kg), part 1 ..	204
Figure 170. Histogram of RSL beryllium concentrations by IDOT District, Non-REC (mg/kg), part 2 ..	205

Figure 171. Boxplot of RSL beryllium concentrations by IDOT District, Non-REC (mg/kg) .....	206
Figure 172. Histogram of RSL beryllium concentrations by Illinois county, Non-REC (mg/kg), part 1	207
Figure 173. Histogram of RSL beryllium concentrations by Illinois county, Non-REC (mg/kg), part 2	208
Figure 174. Map of RSL beryllium 95th percentile concentration by Illinois county, Non-REC (mg/kg) .....	209
Figure 175. Map of RSL beryllium sample quantity by Illinois county, Non-REC (mg/kg).....	210
Figure 176. Histogram of RSL beryllium concentrations, de minimis (mg/kg) .....	212
Figure 177. Histogram of RSL beryllium concentrations by IDOT Region, de minimis (mg/kg) .....	214
Figure 178. Boxplot of RSL beryllium concentrations by IDOT Region, de minimis (mg/kg).....	215
Figure 179. Histogram of RSL beryllium concentrations by IDOT District, de minimis (mg/kg), part 12	16
Figure 180. Histogram of RSL beryllium concentrations by IDOT District, de minimis (mg/kg), part 2	17
Figure 181. Boxplot of RSL beryllium concentrations by IDOT District, de minimis (mg/kg) .....	218
Figure 182. Histogram of RSL beryllium concentrations by Illinois county, de minimis (mg/kg), part 1 .....	219
Figure 183. Histogram of RSL beryllium concentrations by Illinois county, de minimis (mg/kg), part 2 .....	220
Figure 184. Map of RSL beryllium 95th percentile concentration by Illinois county, de minimis (mg/kg) .....	221
Figure 185. Map of RSL beryllium sample quantity by Illinois county, de minimis (mg/kg) .....	222
Figure 186. Histogram of RSL cadmium concentrations, REC (mg/kg).....	224
Figure 187. Histogram of RSL cadmium concentrations by IDOT Region, REC (mg/kg).....	226
Figure 188. Boxplot of RSL cadmium concentrations by IDOT Region, REC (mg/kg).....	227
Figure 189. Histogram of RSL cadmium concentrations by IDOT District, REC (mg/kg), part 1 .....	228
Figure 190. Histogram of RSL cadmium concentrations by IDOT District, REC (mg/kg), part 2 .....	229
Figure 191. Boxplot of RSL cadmium concentrations by IDOT District, REC (mg/kg) .....	230
Figure 192. Histogram of RSL cadmium concentrations by Illinois county, REC (mg/kg), part 1 .....	231
Figure 193. Histogram of RSL cadmium concentrations by Illinois county, REC (mg/kg), part 2 .....	232
Figure 194. Histogram of RSL cadmium concentrations by Illinois county, REC (mg/kg), part 3 .....	233
Figure 195. Histogram of RSL cadmium concentrations by Illinois county, REC (mg/kg), part 4 .....	234
Figure 196. Histogram of RSL cadmium concentrations by Illinois county, REC (mg/kg), part 5 .....	235
Figure 197. Histogram of RSL cadmium concentrations by Illinois county, REC (mg/kg), part 6 .....	236

Figure 198. Histogram of RSL cadmium concentrations by Illinois county, REC (mg/kg), part 7 .....	237
Figure 199. Histogram of RSL cadmium concentrations by Illinois county, REC (mg/kg), part 8 .....	238
Figure 200. Histogram of RSL cadmium concentrations by Illinois county, REC (mg/kg), part 9 .....	239
Figure 201. Histogram of RSL cadmium concentrations by Illinois county, REC (mg/kg), part 10 .....	240
Figure 202. Map of RSL cadmium 95th percentile concentration by Illinois county, REC (mg/kg) .....	241
Figure 203. Map of RSL cadmium sample quantity by Illinois county, REC (mg/kg).....	242
Figure 204. Histogram of RSL cadmium concentrations, Non-REC (mg/kg).....	244
Figure 205. Histogram of RSL cadmium concentrations by IDOT Region, Non-REC (mg/kg).....	246
Figure 206. Boxplot of RSL cadmium concentrations by IDOT Region, Non-REC (mg/kg) .....	247
Figure 207. Histogram of RSL cadmium concentrations by IDOT District, Non-REC (mg/kg), part 1 ..	248
Figure 208. Histogram of RSL cadmium concentrations by IDOT District, Non-REC (mg/kg), part 2 ..	249
Figure 209. Boxplot of RSL cadmium concentrations by IDOT District, Non-REC (mg/kg).....	250
Figure 210. Histogram of RSL cadmium concentrations by Illinois county, Non-REC (mg/kg), part 1.	251
Figure 211. Histogram of RSL cadmium concentrations by Illinois county, Non-REC (mg/kg), part 2.	252
Figure 212. Map of RSL cadmium 95th percentile concentration by Illinois county, Non-REC (mg/kg) .....	253
Figure 213. Map of RSL cadmium sample quantity by Illinois county, Non-REC (mg/kg).....	254
Figure 214. Histogram of RSL cadmium concentrations, de minimis (mg/kg) .....	256
Figure 215. Histogram of RSL cadmium concentrations by IDOT Region, de minimis (mg/kg).....	258
Figure 216. Boxplot of RSL cadmium concentrations by IDOT Region, de minimis (mg/kg).....	259
Figure 217. Histogram of RSL cadmium concentrations by IDOT District, de minimis (mg/kg), part 1260	
Figure 218. Histogram of RSL cadmium concentrations by IDOT District, de minimis (mg/kg), part 2261	
Figure 219. Boxplot of RSL cadmium concentrations by IDOT District, de minimis (mg/kg) .....	262
Figure 220. Histogram of RSL cadmium concentrations by Illinois county, de minimis (mg/kg), part 1 .....	263
Figure 221. Histogram of RSL cadmium concentrations by Illinois county, de minimis (mg/kg), part 1 .....	264
Figure 222. Map of RSL cadmium 95th percentile concentration by Illinois county, de minimis (mg/kg) .....	265
Figure 223. Map of RSL cadmium sample quantity by Illinois county, de minimis (mg/kg) .....	266
Figure 224. Histogram of RSL calcium concentrations, REC (mg/kg) .....	268

Figure 225. Histogram of RSL calcium concentrations by IDOT Region, REC (mg/kg) .....	270
Figure 226. Boxplot of RSL calcium concentrations by IDOT Region, REC (mg/kg) .....	271
Figure 227. Histogram of RSL calcium concentrations by IDOT District, REC (mg/kg), part 1 .....	272
Figure 228. Histogram of RSL calcium concentrations by IDOT District, REC (mg/kg), part 2 .....	273
Figure 229. Boxplot of RSL calcium concentrations by IDOT District, REC (mg/kg) .....	274
Figure 230. Histogram of RSL calcium concentrations by Illinois county, REC (mg/kg), part 1 .....	275
Figure 231. Histogram of RSL calcium concentrations by Illinois county, REC (mg/kg), part 2 .....	276
Figure 232. Histogram of RSL calcium concentrations by Illinois county, REC (mg/kg), part 3 .....	277
Figure 233. Histogram of RSL calcium concentrations by Illinois county, REC (mg/kg), part 4 .....	278
Figure 234. Histogram of RSL calcium concentrations by Illinois county, REC (mg/kg), part 5 .....	279
Figure 235. Histogram of RSL calcium concentrations by Illinois county, REC (mg/kg), part 6 .....	280
Figure 236. Histogram of RSL calcium concentrations by Illinois county, REC (mg/kg), part 7 .....	281
Figure 237. Histogram of RSL calcium concentrations by Illinois county, REC (mg/kg), part 8 .....	282
Figure 238. Histogram of RSL calcium concentrations by Illinois county, REC (mg/kg), part 9 .....	283
Figure 239. Map of RSL calcium 95th percentile concentration by Illinois county, REC (mg/kg) .....	284
Figure 240. Map of RSL calcium sample quantity by Illinois county, REC (mg/kg) .....	285
Figure 241. Histogram of RSL calcium concentrations, Non-REC (mg/kg) .....	287
Figure 242. Histogram of RSL calcium concentrations by IDOT Region, Non-REC (mg/kg) .....	289
Figure 243. Boxplot of RSL calcium concentrations by IDOT Region, Non-REC (mg/kg) .....	290
Figure 244. Histogram of RSL calcium concentrations by IDOT District, Non-REC (mg/kg), part 1 .....	291
Figure 245. Histogram of RSL calcium concentrations by IDOT District, Non-REC (mg/kg), part 2 .....	292
Figure 246. Boxplot of RSL calcium concentrations by IDOT District, Non-REC (mg/kg) .....	293
Figure 247. Histogram of RSL calcium concentrations by Illinois county, Non-REC (mg/kg), part 1 ...	294
Figure 248. Histogram of RSL calcium concentrations by Illinois county, Non-REC (mg/kg), part 2 ...	295
Figure 249. Map of RSL calcium 95th percentile concentration by Illinois county, Non-REC (mg/kg)	296
Figure 250. Map of RSL calcium sample quantity by Illinois county, Non-REC (mg/kg) .....	297
Figure 251. Histogram of RSL calcium concentrations, de minimis (mg/kg) .....	299
Figure 252. Histogram of RSL calcium concentrations by IDOT Region, de minimis (mg/kg) .....	301
Figure 253. Boxplot of RSL calcium concentrations by IDOT Region, de minimis (mg/kg) .....	302
Figure 254. Histogram of RSL calcium concentrations by IDOT District, de minimis (mg/kg), part 1..	303



Figure 255. Histogram of RSL calcium concentrations by IDOT District, de minimis (mg/kg), part 2..	304
Figure 256. Boxplot of RSL calcium concentrations by IDOT District, de minimis (mg/kg) .....	305
Figure 257. Histogram of RSL calcium concentrations by Illinois county, de minimis (mg/kg), part 1	306
Figure 258. Histogram of RSL calcium concentrations by Illinois county, de minimis (mg/kg), part 2	307
Figure 259. Map of RSL calcium 95th percentile concentration by Illinois county, de minimis (mg/kg) .....	308
Figure 260. Map of RSL calcium sample quantity by Illinois county, de minimis (mg/kg) .....	309
Figure 261. Histogram of RSL chromium concentrations, REC (mg/kg) .....	311
Figure 262. Histogram of RSL chromium concentrations by IDOT Region, REC (mg/kg) .....	313
Figure 263. Boxplot of RSL chromium concentrations by IDOT Region, REC (mg/kg) .....	314
Figure 264. Histogram of RSL chromium concentrations by IDOT District, REC (mg/kg), part 1.....	315
Figure 265. Histogram of RSL chromium concentrations by IDOT District, REC (mg/kg), part 2.....	316
Figure 266. Boxplot of RSL chromium concentrations by IDOT District, REC (mg/kg).....	317
Figure 267. Histogram of RSL chromium concentrations by Illinois county, REC (mg/kg), part 1 .....	318
Figure 268. Histogram of RSL chromium concentrations by Illinois county, REC (mg/kg), part 2 .....	319
Figure 269. Histogram of RSL chromium concentrations by Illinois county, REC (mg/kg), part 3 .....	320
Figure 270. Histogram of RSL chromium concentrations by Illinois county, REC (mg/kg), part 4 .....	321
Figure 271. Histogram of RSL chromium concentrations by Illinois county, REC (mg/kg), part 5 .....	322
Figure 272. Histogram of RSL chromium concentrations by Illinois county, REC (mg/kg), part 6 .....	323
Figure 273. Histogram of RSL chromium concentrations by Illinois county, REC (mg/kg), part 7 .....	324
Figure 274. Histogram of RSL chromium concentrations by Illinois county, REC (mg/kg), part 8 .....	325
Figure 275. Histogram of RSL chromium concentrations by Illinois county, REC (mg/kg), part 9 .....	326
Figure 276. Histogram of RSL chromium concentrations by Illinois county, REC (mg/kg), part 10 .....	327
Figure 277. Map of RSL chromium 95th percentile concentration by Illinois county, REC (mg/kg)....	328
Figure 278. Map of RSL chromium sample quantity by Illinois county, REC (mg/kg) .....	329
Figure 279. Histogram of RSL chromium concentrations, Non-REC (mg/kg) .....	331
Figure 280. Histogram of RSL chromium concentrations by IDOT Region, Non-REC (mg/kg) .....	333
Figure 281. Boxplot of RSL chromium concentrations by IDOT Region, Non-REC (mg/kg).....	334
Figure 282. Histogram of RSL chromium concentrations by IDOT District, Non-REC (mg/kg), part 1.	335
Figure 283. Histogram of RSL chromium concentrations by IDOT District, Non-REC (mg/kg), part 2.	336

Figure 284. Boxplot of RSL chromium concentrations by IDOT District, Non-REC (mg/kg) .....	337
Figure 285. Histogram of RSL chromium concentrations by Illinois county, Non-REC (mg/kg), part 1	338
Figure 286. Histogram of RSL chromium concentrations by Illinois county, Non-REC (mg/kg), part 2	339
Figure 287. Map of RSL chromium 95th percentile concentration by Illinois county, Non-REC (mg/kg) .....	340
Figure 288. Map of RSL chromium sample quantity by Illinois county, Non-REC (mg/kg) .....	341
Figure 289. Histogram of RSL chromium concentrations, de minimis (mg/kg) .....	343
Figure 290. Histogram of RSL chromium concentrations by IDOT Region, de minimis (mg/kg) .....	345
Figure 291. Boxplot of RSL chromium concentrations by IDOT Region, de minimis (mg/kg) .....	346
Figure 292. Histogram of RSL chromium concentrations by IDOT District, de minimis (mg/kg), part 1 .....	347
Figure 293. Histogram of RSL chromium concentrations by IDOT District, de minimis (mg/kg), part 2 .....	348
Figure 294. Boxplot of RSL chromium concentrations by IDOT District, de minimis (mg/kg) .....	349
Figure 295. Histogram of RSL chromium concentrations by Illinois county, de minimis (mg/kg), part 1 .....	350
Figure 296. Histogram of RSL chromium concentrations by Illinois county, de minimis (mg/kg), part 2 .....	351
Figure 297. Map of RSL chromium 95th percentile concentration by Illinois county, de minimis (mg/kg).....	352
Figure 298. Map of RSL chromium sample quantity by Illinois county, de minimis (mg/kg) .....	353
Figure 299. Histogram of RSL cobalt concentrations, REC (mg/kg) .....	355
Figure 300. Histogram of RSL cobalt concentrations by IDOT Region, REC (mg/kg).....	357
Figure 301. Boxplot of RSL cobalt concentrations by IDOT Region, REC (mg/kg).....	358
Figure 302. Histogram of RSL cobalt concentrations by IDOT District, REC (mg/kg), part 1 .....	359
Figure 303. Histogram of RSL cobalt concentrations by IDOT District, REC (mg/kg), part 2 .....	360
Figure 304. Boxplot of RSL cobalt concentrations by IDOT District, REC (mg/kg) .....	361
Figure 305. Histogram of RSL cobalt concentrations by Illinois county, REC (mg/kg), part 1 .....	362
Figure 306. Histogram of RSL cobalt concentrations by Illinois county, REC (mg/kg), part 2 .....	363
Figure 307. Histogram of RSL cobalt concentrations by Illinois county, REC (mg/kg), part 3 .....	364
Figure 308. Histogram of RSL cobalt concentrations by Illinois county, REC (mg/kg), part 4 .....	365

Figure 309. Histogram of RSL cobalt concentrations by Illinois county, REC (mg/kg), part 5 .....	366
Figure 310. Histogram of RSL cobalt concentrations by Illinois county, REC (mg/kg), part 6 .....	367
Figure 311. Histogram of RSL cobalt concentrations by Illinois county, REC (mg/kg), part 7 .....	368
Figure 312. Histogram of RSL cobalt concentrations by Illinois county, REC (mg/kg), part 8 .....	369
Figure 313. Histogram of RSL cobalt concentrations by Illinois county, REC (mg/kg), part 9 .....	370
Figure 314. Histogram of RSL cobalt concentrations by Illinois county, REC (mg/kg), part 10 .....	371
Figure 315. Map of RSL cobalt 95th percentile concentration by Illinois county, REC (mg/kg) .....	372
Figure 316. Map of RSL cobalt sample quantity by Illinois county, REC (mg/kg) .....	373
Figure 317. Histogram of RSL cobalt concentrations, Non-REC (mg/kg).....	375
Figure 318. Histogram of RSL cobalt concentrations by IDOT Region, Non-REC (mg/kg) .....	377
Figure 319. Boxplot of RSL cobalt concentrations by IDOT Region, Non-REC (mg/kg) .....	378
Figure 320. Histogram of RSL cobalt concentrations by IDOT District, Non-REC (mg/kg), part 1 .....	379
Figure 321. Histogram of RSL cobalt concentrations by IDOT District, Non-REC (mg/kg), part 2 .....	380
Figure 322. Boxplot of RSL cobalt concentrations by IDOT District, Non-REC (mg/kg).....	381
Figure 323. Histogram of RSL cobalt concentrations by Illinois county, Non-REC (mg/kg), part 1 .....	382
Figure 324. Histogram of RSL cobalt concentrations by Illinois county, Non-REC (mg/kg), part 2 .....	383
Figure 325. Map of RSL cobalt 95th percentile concentration by Illinois county, Non-REC (mg/kg) ..	384
Figure 326. Map of RSL cobalt sample quantity by Illinois county, Non-REC (mg/kg).....	385
Figure 327. Histogram of RSL cobalt concentrations, de minimis (mg/kg) .....	387
Figure 328. Histogram of RSL cobalt concentrations by IDOT Region, de minimis (mg/kg) .....	389
Figure 329. Boxplot of RSL cobalt concentrations by IDOT Region, de minimis (mg/kg).....	390
Figure 330. Histogram of RSL cobalt concentrations by IDOT District, de minimis (mg/kg), part 1 ....	391
Figure 331. Histogram of RSL cobalt concentrations by IDOT District, de minimis (mg/kg), part 2 ....	392
Figure 332. Boxplot of RSL cobalt concentrations by IDOT District, de minimis (mg/kg) .....	393
Figure 333. Histogram of RSL cobalt concentrations by Illinois county, de minimis (mg/kg), part 1 ..	394
Figure 334. Histogram of RSL cobalt concentrations by Illinois county, de minimis (mg/kg), part 2 ..	395
Figure 335. Map of RSL cobalt 95th percentile concentration by Illinois county, de minimis (mg/kg)	396
Figure 336. Map of RSL cobalt sample quantity by Illinois county, de minimis (mg/kg) .....	397
Figure 337. Histogram of RSL copper concentrations, REC (mg/kg) .....	399
Figure 338. Histogram of RSL copper concentrations by IDOT Region, REC (mg/kg) .....	401

Figure 339. Boxplot of RSL copper concentrations by IDOT Region, REC (mg/kg) .....	402
Figure 340. Histogram of RSL copper concentrations by IDOT District, REC (mg/kg), part 1 .....	403
Figure 341. Histogram of RSL copper concentrations by IDOT District, REC (mg/kg), part 2 .....	404
Figure 342. Boxplot of RSL copper concentrations by IDOT District, REC (mg/kg) .....	405
Figure 343. Histogram of RSL copper concentrations by Illinois county, REC (mg/kg), part 1 .....	406
Figure 344. Histogram of RSL copper concentrations by Illinois county, REC (mg/kg), part 2 .....	407
Figure 345. Histogram of RSL copper concentrations by Illinois county, REC (mg/kg), part 3 .....	408
Figure 346. Histogram of RSL copper concentrations by Illinois county, REC (mg/kg), part 4 .....	409
Figure 347. Histogram of RSL copper concentrations by Illinois county, REC (mg/kg), part 5 .....	410
Figure 348. Histogram of RSL copper concentrations by Illinois county, REC (mg/kg), part 6 .....	411
Figure 349. Histogram of RSL copper concentrations by Illinois county, REC (mg/kg), part 7 .....	412
Figure 350. Histogram of RSL copper concentrations by Illinois county, REC (mg/kg), part 8 .....	413
Figure 351. Histogram of RSL copper concentrations by Illinois county, REC (mg/kg), part 9 .....	414
Figure 352. Histogram of RSL copper concentrations by Illinois county, REC (mg/kg), part 10 .....	415
Figure 353. Map of RSL copper 95th percentile concentration by Illinois county, REC (mg/kg) .....	416
Figure 354. Map of RSL copper sample quantity by Illinois county, REC (mg/kg) .....	417
Figure 355. Histogram of RSL copper concentrations, Non-REC (mg/kg) .....	419
Figure 356. Histogram of RSL copper concentrations by IDOT Region, Non-REC (mg/kg) .....	421
Figure 357. Boxplot of RSL copper concentrations by IDOT Region, Non-REC (mg/kg) .....	422
Figure 358. Histogram of RSL copper concentrations by IDOT District, Non-REC (mg/kg), part 1 .....	423
Figure 359. Histogram of RSL copper concentrations by IDOT District, Non-REC (mg/kg), part 2 .....	424
Figure 360. Boxplot of RSL copper concentrations by IDOT District, Non-REC (mg/kg) .....	425
Figure 361. Histogram of RSL copper concentrations by Illinois county, Non-REC (mg/kg), part 1 ....	426
Figure 362. Histogram of RSL copper concentrations by Illinois county, Non-REC (mg/kg), part 2 ....	427
Figure 363. Map of RSL copper 95th percentile concentration by Illinois county, Non-REC (mg/kg) .	428
Figure 364. Map of RSL copper sample quantity by Illinois county, Non-REC (mg/kg) .....	429
Figure 365. Histogram of RSL copper concentrations, de minimis (mg/kg) .....	431
Figure 366. Histogram of RSL copper concentrations by IDOT Region, de minimis (mg/kg) .....	433
Figure 367. Boxplot of RSL copper concentrations by IDOT Region, de minimis (mg/kg) .....	434
Figure 368. Histogram of RSL copper concentrations by IDOT District, de minimis (mg/kg), part 1 ..	435

Figure 369. Histogram of RSL copper concentrations by IDOT District, de minimis (mg/kg), part 2...	436
Figure 370. Boxplot of RSL copper concentrations by IDOT District, de minimis (mg/kg) .....	437
Figure 371. Histogram of RSL copper concentrations by Illinois county, de minimis (mg/kg), part 1.	438
Figure 372. Histogram of RSL copper concentrations by Illinois county, de minimis (mg/kg), part 2.	439
Figure 373. Map of RSL copper 95th percentile concentration by Illinois county, de minimis (mg/kg) .....	440
Figure 374. Map of RSL copper sample quantity by Illinois county, de minimis (mg/kg) .....	441
Figure 375. Histogram of RSL iron concentrations, REC (mg/kg) .....	443
Figure 376. Histogram of RSL iron concentrations by IDOT Region, REC (mg/kg) .....	445
Figure 377. Boxplot of RSL iron concentrations by IDOT Region, REC (mg/kg) .....	446
Figure 378. Histogram of RSL iron concentrations by IDOT District, REC (mg/kg), part 1 .....	447
Figure 379. Histogram of RSL iron concentrations by IDOT District, REC (mg/kg), part 2 .....	448
Figure 380. Boxplot of RSL iron concentrations by IDOT District, REC (mg/kg) .....	449
Figure 381. Histogram of RSL iron concentrations by Illinois county, REC (mg/kg), part 1 .....	450
Figure 382. Histogram of RSL iron concentrations by Illinois county, REC (mg/kg), part 2 .....	451
Figure 383. Histogram of RSL iron concentrations by Illinois county, REC (mg/kg), part 3 .....	452
Figure 384. Histogram of RSL iron concentrations by Illinois county, REC (mg/kg), part 4 .....	453
Figure 385. Histogram of RSL iron concentrations by Illinois county, REC (mg/kg), part 5 .....	454
Figure 386. Histogram of RSL iron concentrations by Illinois county, REC (mg/kg), part 6 .....	455
Figure 387. Histogram of RSL iron concentrations by Illinois county, REC (mg/kg), part 7 .....	456
Figure 388. Histogram of RSL iron concentrations by Illinois county, REC (mg/kg), part 8 .....	457
Figure 389. Histogram of RSL iron concentrations by Illinois county, REC (mg/kg), part 9 .....	458
Figure 390. Histogram of RSL iron concentrations by Illinois county, REC (mg/kg), part 10 .....	459
Figure 391. Map of RSL iron 95th percentile concentration by Illinois county, REC (mg/kg) .....	460
Figure 392. Map of RSL iron sample quantity by Illinois county, REC (mg/kg) .....	461
Figure 393. Histogram of RSL iron concentrations, Non-REC (mg/kg) .....	463
Figure 394. Histogram of RSL iron concentrations by IDOT Region, Non-REC (mg/kg) .....	465
Figure 395. Boxplot of RSL iron concentrations by IDOT Region, Non-REC (mg/kg) .....	466
Figure 396. Histogram of RSL iron concentrations by IDOT District, Non-REC (mg/kg), part 1 .....	467
Figure 397. Histogram of RSL iron concentrations by IDOT District, Non-REC (mg/kg), part 2 .....	468

Figure 398. Boxplot of RSL iron concentrations by IDOT District, Non-REC (mg/kg) .....	469
Figure 399. Histogram of RSL iron concentrations by Illinois county, Non-REC (mg/kg), part 1 .....	470
Figure 400. Histogram of RSL iron concentrations by Illinois county, Non-REC (mg/kg), part 2 .....	471
Figure 401. Map of RSL iron 95th percentile concentration by Illinois county, Non-REC (mg/kg) .....	472
Figure 402. Map of RSL iron sample quantity by Illinois county, Non-REC (mg/kg) .....	473
Figure 403. Histogram of RSL iron concentrations, de minimis (mg/kg) .....	475
Figure 404. Histogram of RSL iron concentrations by IDOT Region, de minimis (mg/kg) .....	477
Figure 405. Boxplot of RSL iron concentrations by IDOT Region, de minimis (mg/kg) .....	478
Figure 406. Histogram of RSL iron concentrations by IDOT District, de minimis (mg/kg), part 1 .....	479
Figure 407. Histogram of RSL iron concentrations by IDOT District, de minimis (mg/kg), part 2 .....	480
Figure 408. Boxplot of RSL iron concentrations by IDOT District, de minimis (mg/kg) .....	481
Figure 409. Histogram of RSL iron concentrations by Illinois county, de minimis (mg/kg), part 1 .....	482
Figure 410. Histogram of RSL iron concentrations by Illinois county, de minimis (mg/kg), part 2 .....	483
Figure 411. Map of RSL iron 95th percentile concentration by Illinois county, de minimis (mg/kg) ..	484
Figure 412. Map of RSL iron sample quantity by Illinois county, de minimis (mg/kg) .....	485
Figure 413. Histogram of RSL lead concentrations, REC (mg/kg) .....	487
Figure 414. Histogram of RSL lead concentrations by IDOT Region, REC (mg/kg) .....	489
Figure 415. Boxplot of RSL lead concentrations by IDOT Region, REC (mg/kg) .....	490
Figure 416. Histogram of RSL lead concentrations by IDOT District, REC (mg/kg), part 1 .....	491
Figure 417. Histogram of RSL lead concentrations by IDOT District, REC (mg/kg), part 2 .....	492
Figure 418. Boxplot of RSL lead concentrations by IDOT District, REC (mg/kg) .....	493
Figure 419. Histogram of RSL lead concentrations by Illinois county, REC (mg/kg), part 1 .....	494
Figure 420. Histogram of RSL lead concentrations by Illinois county, REC (mg/kg), part 2 .....	495
Figure 421. Histogram of RSL lead concentrations by Illinois county, REC (mg/kg), part 3 .....	496
Figure 422. Histogram of RSL lead concentrations by Illinois county, REC (mg/kg), part 4 .....	497
Figure 423. Histogram of RSL lead concentrations by Illinois county, REC (mg/kg), part 5 .....	498
Figure 424. Histogram of RSL lead concentrations by Illinois county, REC (mg/kg), part 6 .....	499
Figure 425. Histogram of RSL lead concentrations by Illinois county, REC (mg/kg), part 7 .....	500
Figure 426. Histogram of RSL lead concentrations by Illinois county, REC (mg/kg), part 8 .....	501
Figure 427. Histogram of RSL lead concentrations by Illinois county, REC (mg/kg), part 9 .....	502

Figure 428. Histogram of RSL lead concentrations by Illinois county, REC (mg/kg), part 10 .....	503
Figure 429. Map of RSL lead 95th percentile concentration by Illinois county, REC (mg/kg) .....	504
Figure 430. Map of RSL lead sample quantity by Illinois county, REC (mg/kg).....	505
Figure 431. Histogram of RSL lead concentrations, Non-REC (mg/kg).....	507
Figure 432. Histogram of RSL lead concentrations by IDOT Region, Non-REC (mg/kg).....	509
Figure 433. Boxplot of RSL lead concentrations by IDOT Region, Non-REC (mg/kg) .....	510
Figure 434. Histogram of RSL lead concentrations by IDOT District, Non-REC (mg/kg), part 1 .....	511
Figure 435. Histogram of RSL lead concentrations by IDOT District, Non-REC (mg/kg), part 2 .....	512
Figure 436. Boxplot of RSL lead concentrations by IDOT District, Non-REC (mg/kg).....	513
Figure 437. Histogram of RSL lead concentrations by Illinois county, Non-REC (mg/kg), part 1 .....	514
Figure 438. Histogram of RSL lead concentrations by Illinois county, Non-REC (mg/kg), part 2 .....	515
Figure 439. Map of RSL lead 95th percentile concentration by Illinois county, Non-REC (mg/kg) .....	516
Figure 440. Map of RSL lead sample quantity by Illinois county, Non-REC (mg/kg).....	517
Figure 441. Histogram of RSL lead concentrations, de minimis (mg/kg) .....	519
Figure 442. Histogram of RSL lead concentrations by IDOT Region, de minimis (mg/kg) .....	521
Figure 443. Boxplot of RSL lead concentrations by IDOT Region, de minimis (mg/kg).....	522
Figure 444. Histogram of RSL lead concentrations by IDOT District, de minimis (mg/kg), part 1 .....	523
Figure 445. Histogram of RSL lead concentrations by IDOT District, de minimis (mg/kg), part 2 .....	524
Figure 446. Boxplot of RSL lead concentrations by IDOT District, de minimis (mg/kg) .....	525
Figure 447. Histogram of RSL lead concentrations by Illinois county, de minimis (mg/kg), part 1 .....	526
Figure 448. Histogram of RSL lead concentrations by Illinois county, de minimis (mg/kg), part 2 .....	527
Figure 449. Map of RSL lead 95th percentile concentration by Illinois county, de minimis (mg/kg) ..	528
Figure 450. Map of RSL lead sample quantity by Illinois county, de minimis (mg/kg) .....	529
Figure 451. Histogram of RSL magnesium concentrations, REC (mg/kg) .....	531
Figure 452. Histogram of RSL magnesium concentrations by IDOT Region, REC (mg/kg) .....	533
Figure 453. Boxplot of RSL magnesium concentrations by IDOT Region, REC (mg/kg) .....	534
Figure 454. Histogram of RSL magnesium concentrations by IDOT District, REC (mg/kg), part 1 .....	535
Figure 455. Histogram of RSL magnesium concentrations by IDOT District, REC (mg/kg), part 2 .....	536
Figure 456. Boxplot of RSL magnesium concentrations by IDOT District, REC (mg/kg).....	537
Figure 457. Histogram of RSL magnesium concentrations by Illinois county, REC (mg/kg), part 1 ....	538

Figure 458. Histogram of RSL magnesium concentrations by Illinois county, REC (mg/kg), part 2.....	539
Figure 459. Histogram of RSL magnesium concentrations by Illinois county, REC (mg/kg), part 3.....	540
Figure 460. Histogram of RSL magnesium concentrations by Illinois county, REC (mg/kg), part 4.....	541
Figure 461. Histogram of RSL magnesium concentrations by Illinois county, REC (mg/kg), part 5.....	542
Figure 462. Histogram of RSL magnesium concentrations by Illinois county, REC (mg/kg), part 6.....	543
Figure 463. Histogram of RSL magnesium concentrations by Illinois county, REC (mg/kg), part 7.....	544
Figure 464. Histogram of RSL magnesium concentrations by Illinois county, REC (mg/kg), part 8.....	545
Figure 465. Histogram of RSL magnesium concentrations by Illinois county, REC (mg/kg), part 9.....	546
Figure 466. Histogram of RSL magnesium concentrations by Illinois county, REC (mg/kg), part 10...	547
Figure 467. Map of RSL magnesium 95th percentile concentration by Illinois county, REC (mg/kg)..	548
Figure 468. Map of RSL magnesium sample quantity by Illinois county, REC (mg/kg) .....	549
Figure 469. Histogram of RSL magnesium concentrations, Non-REC (mg/kg) .....	551
Figure 470. Histogram of RSL magnesium concentrations by IDOT Region, Non-REC (mg/kg) .....	553
Figure 471. Boxplot of RSL magnesium concentrations by IDOT Region, Non-REC (mg/kg).....	554
Figure 472. Histogram of RSL magnesium concentrations by IDOT District, Non-REC (mg/kg), part 1555	
Figure 473. Histogram of RSL magnesium concentrations by IDOT District, Non-REC (mg/kg), part 2556	
Figure 474. Boxplot of RSL magnesium concentrations by IDOT District, Non-REC (mg/kg) .....	557
Figure 475. Histogram of RSL magnesium concentrations by Illinois county, Non-REC (mg/kg), part 1 .....	558
Figure 476. Histogram of RSL magnesium concentrations by Illinois county, Non-REC (mg/kg), part 2 .....	559
Figure 477. Map of RSL magnesium 95th percentile concentration by Illinois county, Non-REC (mg/kg) .....	560
Figure 478. Map of RSL magnesium sample quantity by Illinois county, Non-REC (mg/kg) .....	561
Figure 479. Histogram of RSL magnesium concentrations, de minimis (mg/kg) .....	563
Figure 480. Histogram of RSL magnesium concentrations by IDOT Region, de minimis (mg/kg) .....	565
Figure 481. Boxplot of RSL magnesium concentrations by IDOT Region, de minimis (mg/kg) .....	566
Figure 482. Histogram of RSL magnesium concentrations by IDOT District, de minimis (mg/kg), part 1 .....	567
Figure 483. Histogram of RSL magnesium concentrations by IDOT District, de minimis (mg/kg), part 2 .....	568



Figure 484. Boxplot of RSL magnesium concentrations by IDOT District, de minimis (mg/kg).....	569
Figure 485. Histogram of RSL magnesium concentrations by Illinois county, de minimis (mg/kg), part 1 .....	570
Figure 486. Histogram of RSL magnesium concentrations by Illinois county, de minimis (mg/kg), part 2 .....	571
Figure 487. Map of RSL magnesium 95th percentile concentration by Illinois county, de minimis (mg/kg).....	572
Figure 488. Map of RSL magnesium sample quantity by Illinois county, de minimis (mg/kg) .....	573
Figure 489. Histogram of RSL manganese concentrations, REC (mg/kg) .....	575
Figure 490. Histogram of RSL manganese concentrations by IDOT Region, REC (mg/kg) .....	577
Figure 491. Boxplot of RSL manganese concentrations by IDOT Region, REC (mg/kg) .....	578
Figure 492. Histogram of RSL manganese concentrations by IDOT District, REC (mg/kg), part 1 .....	579
Figure 493. Histogram of RSL manganese concentrations by IDOT District, REC (mg/kg), part 2 .....	580
Figure 494. Boxplot of RSL manganese concentrations by IDOT District, REC (mg/kg) .....	581
Figure 495. Histogram of RSL manganese concentrations by Illinois county, REC (mg/kg), part 1 .....	582
Figure 496. Histogram of RSL manganese concentrations by Illinois county, REC (mg/kg), part 2 .....	583
Figure 497. Histogram of RSL manganese concentrations by Illinois county, REC (mg/kg), part 3 .....	584
Figure 498. Histogram of RSL manganese concentrations by Illinois county, REC (mg/kg), part 4 .....	585
Figure 499. Histogram of RSL manganese concentrations by Illinois county, REC (mg/kg), part 5 .....	586
Figure 500. Histogram of RSL manganese concentrations by Illinois county, REC (mg/kg), part 6 .....	587
Figure 501. Histogram of RSL manganese concentrations by Illinois county, REC (mg/kg), part 7 .....	588
Figure 502. Histogram of RSL manganese concentrations by Illinois county, REC (mg/kg), part 8 .....	589
Figure 503. Histogram of RSL manganese concentrations by Illinois county, REC (mg/kg), part 9 .....	590
Figure 504. Histogram of RSL manganese concentrations by Illinois county, REC (mg/kg), part 10 ...	591
Figure 505. Map of RSL manganese 95th percentile concentration by Illinois county, REC (mg/kg) ..	592
Figure 506. Map of RSL manganese sample quantity by Illinois county, REC (mg/kg) .....	593
Figure 507. Histogram of RSL manganese concentrations, Non-REC (mg/kg) .....	595
Figure 508. Histogram of RSL manganese concentrations by IDOT Region, Non-REC (mg/kg).....	597
Figure 509. Boxplot of RSL manganese concentrations by IDOT Region, Non-REC (mg/kg).....	598
Figure 510. Histogram of RSL manganese concentrations by IDOT District, Non-REC (mg/kg), part 15	599

Figure 511. Histogram of RSL manganese concentrations by IDOT District, Non-REC (mg/kg), part 2	600
Figure 512. Boxplot of RSL manganese concentrations by IDOT District, Non-REC (mg/kg) .....	601
Figure 513. Histogram of RSL manganese concentrations by Illinois county, Non-REC (mg/kg), part 1 .....	602
Figure 514. Histogram of RSL manganese concentrations by Illinois county, Non-REC (mg/kg), part 2 .....	603
Figure 515. Map of RSL manganese 95th percentile concentration by Illinois county, Non-REC (mg/kg) .....	604
Figure 516. Map of RSL manganese sample quantity by Illinois county, Non-REC (mg/kg).....	605
Figure 517. Histogram of RSL manganese concentrations, de minimis (mg/kg) .....	607
Figure 518. Histogram of RSL manganese concentrations by IDOT Region, de minimis (mg/kg) .....	609
Figure 519. Boxplot of RSL manganese concentrations by IDOT Region, de minimis (mg/kg) .....	610
Figure 520. Histogram of RSL manganese concentrations by IDOT District, de minimis (mg/kg), part 1 .....	611
Figure 521. Histogram of RSL manganese concentrations by IDOT District, de minimis (mg/kg), part 2 .....	612
Figure 522. Boxplot of RSL manganese concentrations by IDOT District, de minimis (mg/kg) .....	613
Figure 523. Histogram of RSL manganese concentrations by Illinois county, de minimis (mg/kg), part 1 .....	614
Figure 524. Histogram of RSL manganese concentrations by Illinois county, de minimis (mg/kg), part 2 .....	615
Figure 525. Map of RSL manganese 95th percentile concentration by Illinois county, de minimis (mg/kg).....	616
Figure 526. Map of RSL manganese sample quantity by Illinois county, de minimis (mg/kg) .....	617
Figure 527. Histogram of RSL mercury concentrations, REC (mg/kg) .....	619
Figure 528. Histogram of RSL mercury concentrations by IDOT Region, REC (mg/kg) .....	621
Figure 529. Boxplot of RSL mercury concentrations by IDOT Region, REC (mg/kg) .....	622
Figure 530. Histogram of RSL mercury concentrations by IDOT District, REC (mg/kg), part 1.....	623
Figure 531. Histogram of RSL mercury concentrations by IDOT District, REC (mg/kg), part 2.....	624
Figure 532. Boxplot of RSL mercury concentrations by IDOT District, REC (mg/kg) .....	625
Figure 533. Histogram of RSL mercury concentrations by Illinois county, REC (mg/kg), part 1 .....	626
Figure 534. Histogram of RSL mercury concentrations by Illinois county, REC (mg/kg), part 2 .....	627

Figure 535. Histogram of RSL mercury concentrations by Illinois county, REC (mg/kg), part 3 .....	628
Figure 536. Histogram of RSL mercury concentrations by Illinois county, REC (mg/kg), part 4 .....	629
Figure 537. Histogram of RSL mercury concentrations by Illinois county, REC (mg/kg), part 5 .....	630
Figure 538. Histogram of RSL mercury concentrations by Illinois county, REC (mg/kg), part 6 .....	631
Figure 539. Histogram of RSL mercury concentrations by Illinois county, REC (mg/kg), part 7 .....	632
Figure 540. Histogram of RSL mercury concentrations by Illinois county, REC (mg/kg), part 8 .....	633
Figure 541. Histogram of RSL mercury concentrations by Illinois county, REC (mg/kg), part 9 .....	634
Figure 542. Histogram of RSL mercury concentrations by Illinois county, REC (mg/kg), part 10 .....	635
Figure 543. Map of RSL mercury 95th percentile concentration by Illinois county, REC (mg/kg) .....	636
Figure 544. Map of RSL mercury sample quantity by Illinois county, REC (mg/kg) .....	637
Figure 545. Histogram of RSL mercury concentrations, Non-REC (mg/kg) .....	639
Figure 546. Histogram of RSL mercury concentrations by IDOT Region, Non-REC (mg/kg) .....	641
Figure 547. Boxplot of RSL mercury concentrations by IDOT Region, Non-REC (mg/kg) .....	642
Figure 548. Histogram of RSL mercury concentrations by IDOT District, Non-REC (mg/kg), part 1 ....	643
Figure 549. Histogram of RSL mercury concentrations by IDOT District, Non-REC (mg/kg), part 2 ....	644
Figure 550. Boxplot of RSL mercury concentrations by IDOT District, Non-REC (mg/kg) .....	645
Figure 551. Histogram of RSL mercury concentrations by Illinois county, Non-REC (mg/kg), part 1 ..	646
Figure 552. Histogram of RSL mercury concentrations by Illinois county, Non-REC (mg/kg), part 2 ..	647
Figure 553. Map of RSL mercury 95th percentile concentration by Illinois county, Non-REC (mg/kg)	648
Figure 554. Map of RSL mercury sample quantity by Illinois county, Non-REC (mg/kg) .....	649
Figure 555. Histogram of RSL mercury concentrations, de minimis (mg/kg) .....	651
Figure 556. Histogram of RSL mercury concentrations by IDOT Region, de minimis (mg/kg) .....	653
Figure 557. Boxplot of RSL mercury concentrations by IDOT Region, de minimis (mg/kg) .....	654
Figure 558. Histogram of RSL mercury concentrations by IDOT District, de minimis (mg/kg), part 1	655
Figure 559. Histogram of RSL mercury concentrations by IDOT District, de minimis (mg/kg), part 2	656
Figure 560. Boxplot of RSL mercury concentrations by IDOT District, de minimis (mg/kg) .....	657
Figure 561. Histogram of RSL mercury concentrations by Illinois county, de minimis (mg/kg), part 1 .....	658
Figure 562. Histogram of RSL mercury concentrations by Illinois county, de minimis (mg/kg), part 2 .....	659

Figure 563. Map of RSL mercury 95th percentile concentration by Illinois county, de minimis (mg/kg)	660
Figure 564. Map of RSL mercury sample quantity by Illinois county, de minimis (mg/kg)	661
Figure 565. Histogram of RSL nickel concentrations, REC (mg/kg)	663
Figure 566. Histogram of RSL nickel concentrations by IDOT Region, REC (mg/kg)	665
Figure 567. Boxplot of RSL nickel concentrations by IDOT Region, REC (mg/kg)	666
Figure 568. Histogram of RSL nickel concentrations by IDOT District, REC (mg/kg), part 1	667
Figure 569. Histogram of RSL nickel concentrations by IDOT District, REC (mg/kg), part 2	668
Figure 570. Boxplot of RSL nickel concentrations by IDOT District, REC (mg/kg)	669
Figure 571. Histogram of RSL nickel concentrations by Illinois county, REC (mg/kg), part 1	670
Figure 572. Histogram of RSL nickel concentrations by Illinois county, REC (mg/kg), part 2	671
Figure 573. Histogram of RSL nickel concentrations by Illinois county, REC (mg/kg), part 3	672
Figure 574. Histogram of RSL nickel concentrations by Illinois county, REC (mg/kg), part 4	673
Figure 575. Histogram of RSL nickel concentrations by Illinois county, REC (mg/kg), part 5	674
Figure 576. Histogram of RSL nickel concentrations by Illinois county, REC (mg/kg), part 6	675
Figure 577. Histogram of RSL nickel concentrations by Illinois county, REC (mg/kg), part 7	676
Figure 578. Histogram of RSL nickel concentrations by Illinois county, REC (mg/kg), part 8	677
Figure 579. Histogram of RSL nickel concentrations by Illinois county, REC (mg/kg), part 9	678
Figure 580. Histogram of RSL nickel concentrations by Illinois county, REC (mg/kg), part 10	679
Figure 581. Map of RSL nickel 95th percentile concentration by Illinois county, REC (mg/kg)	680
Figure 582. Map of RSL nickel sample quantity by Illinois county, REC (mg/kg)	681
Figure 583. Histogram of RSL nickel concentrations, Non-REC (mg/kg)	683
Figure 584. Histogram of RSL nickel concentrations by IDOT Region, Non-REC (mg/kg)	685
Figure 585. Boxplot of RSL nickel concentrations by IDOT Region, Non-REC (mg/kg)	686
Figure 586. Histogram of RSL nickel concentrations by IDOT District, Non-REC (mg/kg), part 1	687
Figure 587. Histogram of RSL nickel concentrations by IDOT District, Non-REC (mg/kg), part 2	688
Figure 588. Boxplot of RSL nickel concentrations by IDOT District, Non-REC (mg/kg)	689
Figure 589. Histogram of RSL nickel concentrations by Illinois county, Non-REC (mg/kg), part 1	690
Figure 590. Histogram of RSL nickel concentrations by Illinois county, Non-REC (mg/kg), part 2	691
Figure 591. Map of RSL nickel 95th percentile concentration by Illinois county, Non-REC (mg/kg)	692

Figure 592. Map of RSL nickel sample quantity by Illinois county, Non-REC (mg/kg) .....	693
Figure 593. Histogram of RSL nickel concentrations, de minimis (mg/kg) .....	695
Figure 594. Histogram of RSL nickel concentrations by IDOT Region, de minimis (mg/kg) .....	697
Figure 595. Boxplot of RSL nickel concentrations by IDOT Region, de minimis (mg/kg) .....	698
Figure 596. Histogram of RSL nickel concentrations by IDOT District, de minimis (mg/kg), part 1 ....	699
Figure 597. Histogram of RSL nickel concentrations by IDOT District, de minimis (mg/kg), part 2 ....	700
Figure 598. Boxplot of RSL nickel concentrations by IDOT District, de minimis (mg/kg) .....	701
Figure 599. Histogram of RSL nickel concentrations by Illinois county, de minimis (mg/kg), part 1...	702
Figure 600. Histogram of RSL nickel concentrations by Illinois county, de minimis (mg/kg), part 2...	703
Figure 601. Map of RSL nickel 95th percentile concentration by Illinois county, de minimis (mg/kg)	704
Figure 602. Map of RSL nickel sample quantity by Illinois county, de minimis (mg/kg) .....	705
Figure 603. Histogram of RSL potassium concentrations, REC (mg/kg) .....	707
Figure 604. Histogram of RSL potassium concentrations by IDOT Region, REC (mg/kg) .....	709
Figure 605. Boxplot of RSL potassium concentrations by IDOT Region, REC (mg/kg) .....	710
Figure 606. Histogram of RSL potassium concentrations by IDOT District, REC (mg/kg), part 1 .....	711
Figure 607. Histogram of RSL potassium concentrations by IDOT District, REC (mg/kg), part 2 .....	712
Figure 608. Boxplot of RSL potassium concentrations by IDOT District, REC (mg/kg) .....	713
Figure 609. Histogram of RSL potassium concentrations by Illinois county, REC (mg/kg), part 1.....	714
Figure 610. Histogram of RSL potassium concentrations by Illinois county, REC (mg/kg), part 2.....	715
Figure 611. Histogram of RSL potassium concentrations by Illinois county, REC (mg/kg), part 3.....	716
Figure 612. Histogram of RSL potassium concentrations by Illinois county, REC (mg/kg), part 4.....	717
Figure 613. Histogram of RSL potassium concentrations by Illinois county, REC (mg/kg), part 5.....	718
Figure 614. Map of RSL potassium 95th percentile concentration by Illinois county, REC (mg/kg)....	719
Figure 615. Map of RSL potassium sample quantity by Illinois county, REC (mg/kg) .....	720
Figure 616. Histogram of RSL potassium concentrations, Non-REC (mg/kg) .....	722
Figure 617. Histogram of RSL potassium concentrations by IDOT Region, Non-REC (mg/kg) .....	724
Figure 618. Boxplot of RSL potassium concentrations by IDOT Region, Non-REC (mg/kg) .....	725
Figure 619. Histogram of RSL potassium concentrations by IDOT District, Non-REC (mg/kg), part 1.	726
Figure 620. Histogram of RSL potassium concentrations by IDOT District, Non-REC (mg/kg), part 2.	727
Figure 621. Boxplot of RSL potassium concentrations by IDOT District, Non-REC (mg/kg) .....	728

Figure 622. Histogram of RSL potassium concentrations by Illinois county, Non-REC (mg/kg) .....	729
Figure 623. Map of RSL potassium 95th percentile concentration by Illinois county, Non-REC (mg/kg) .....	730
Figure 624. Map of RSL potassium sample quantity by Illinois county, Non-REC (mg/kg) .....	731
Figure 625. Histogram of RSL potassium concentrations, de minimis (mg/kg) .....	733
Figure 626. Histogram of RSL potassium concentrations by IDOT Region, de minimis (mg/kg) .....	735
Figure 627. Boxplot of RSL potassium concentrations by IDOT Region, de minimis (mg/kg) .....	736
Figure 628. Histogram of RSL potassium concentrations by IDOT District, de minimis (mg/kg), part 1 .....	737
Figure 629. Histogram of RSL potassium concentrations by IDOT District, de minimis (mg/kg), part 2 .....	738
Figure 630. Boxplot of RSL potassium concentrations by IDOT District, de minimis (mg/kg) .....	739
Figure 631. Histogram of RSL potassium concentrations by Illinois county, de minimis (mg/kg), part 1 .....	740
Figure 632. Histogram of RSL potassium concentrations by Illinois county, de minimis (mg/kg), part 2 .....	741
Figure 633. Map of RSL potassium 95th percentile concentration by Illinois county, de minimis (mg/kg) .....	742
Figure 634. Map of RSL potassium sample quantity by Illinois county, de minimis (mg/kg) .....	743
Figure 635. Histogram of RSL selenium concentrations, REC (mg/kg) .....	745
Figure 636. Histogram of RSL selenium concentrations by IDOT Region, REC (mg/kg) .....	747
Figure 637. Boxplot of RSL selenium concentrations by IDOT Region, REC (mg/kg) .....	748
Figure 638. Histogram of RSL selenium concentrations by IDOT District, REC (mg/kg), part 1 .....	749
Figure 639. Histogram of RSL selenium concentrations by IDOT District, REC (mg/kg), part 2 .....	750
Figure 640. Boxplot of RSL selenium concentrations by IDOT District, REC (mg/kg) .....	751
Figure 641. Histogram of RSL selenium concentrations by Illinois county, REC (mg/kg), part 1 .....	752
Figure 642. Histogram of RSL selenium concentrations by Illinois county, REC (mg/kg), part 2 .....	753
Figure 643. Histogram of RSL selenium concentrations by Illinois county, REC (mg/kg), part 3 .....	754
Figure 644. Histogram of RSL selenium concentrations by Illinois county, REC (mg/kg), part 4 .....	755
Figure 645. Histogram of RSL selenium concentrations by Illinois county, REC (mg/kg), part 5 .....	756
Figure 646. Histogram of RSL selenium concentrations by Illinois county, REC (mg/kg), part 6 .....	757

Figure 647. Histogram of RSL selenium concentrations by Illinois county, REC (mg/kg), part 7.....	758
Figure 648. Histogram of RSL selenium concentrations by Illinois county, REC (mg/kg), part 8.....	759
Figure 649. Histogram of RSL selenium concentrations by Illinois county, REC (mg/kg), part 9.....	760
Figure 650. Histogram of RSL selenium concentrations by Illinois county, REC (mg/kg), part 10.....	761
Figure 651. Map of RSL selenium 95th percentile concentration by Illinois county, REC (mg/kg).....	762
Figure 652. Map of RSL selenium sample quantity by Illinois county, REC (mg/kg) .....	763
Figure 653. Histogram of RSL selenium concentrations, Non-REC (mg/kg) .....	765
Figure 654. Histogram of RSL selenium concentrations by IDOT Region, Non-REC (mg/kg) .....	767
Figure 655. Boxplot of RSL selenium concentrations by IDOT Region, Non-REC (mg/kg) .....	768
Figure 656. Histogram of RSL selenium concentrations by IDOT District, Non-REC (mg/kg), part 1...	769
Figure 657. Histogram of RSL selenium concentrations by IDOT District, Non-REC (mg/kg), part 2...	770
Figure 658. Boxplot of RSL selenium concentrations by IDOT District, Non-REC (mg/kg) .....	771
Figure 659. Histogram of RSL selenium concentrations by Illinois county, Non-REC (mg/kg), part 1.	772
Figure 660. Histogram of RSL selenium concentrations by Illinois county, Non-REC (mg/kg), part 2.	773
Figure 661. Map of RSL selenium 95th percentile concentration by Illinois county, Non-REC (mg/kg) .....	774
Figure 662. Map of RSL selenium sample quantity by Illinois county, Non-REC (mg/kg) .....	775
Figure 663. Histogram of RSL selenium concentrations, de minimis (mg/kg).....	777
Figure 664. Histogram of RSL selenium concentrations by IDOT Region, de minimis (mg/kg) .....	779
Figure 665. Boxplot of RSL selenium concentrations by IDOT Region, de minimis (mg/kg) .....	780
Figure 666. Histogram of RSL selenium concentrations by IDOT District, de minimis (mg/kg), part 1	781
Figure 667. Histogram of RSL selenium concentrations by IDOT District, de minimis (mg/kg), part 2	782
Figure 668. Boxplot of RSL selenium concentrations by IDOT District, de minimis (mg/kg).....	783
Figure 669. Histogram of RSL selenium concentrations by Illinois county, de minimis (mg/kg), part 1 .....	784
Figure 670. Histogram of RSL selenium concentrations by Illinois county, de minimis (mg/kg), part 2 .....	785
Figure 671. Map of RSL selenium 95th percentile concentration by Illinois county, de minimis (mg/kg) .....	786
Figure 672. Map of RSL selenium sample quantity by Illinois county, de minimis (mg/kg) .....	787
Figure 673. Histogram of RSL sodium concentrations, REC (mg/kg).....	789

Figure 674. Histogram of RSL sodium concentrations by IDOT Region, REC (mg/kg) .....	791
Figure 675. Boxplot of RSL sodium concentrations by IDOT Region, REC (mg/kg) .....	792
Figure 676. Histogram of RSL sodium concentrations by IDOT District, REC (mg/kg), part 1 .....	793
Figure 677. Histogram of RSL sodium concentrations by IDOT District, REC (mg/kg), part 2 .....	794
Figure 678. Boxplot of RSL sodium concentrations by IDOT District, REC (mg/kg) .....	795
Figure 679. Histogram of RSL sodium concentrations by Illinois county, REC (mg/kg), part 1 .....	796
Figure 680. Histogram of RSL sodium concentrations by Illinois county, REC (mg/kg), part 2 .....	797
Figure 681. Histogram of RSL sodium concentrations by Illinois county, REC (mg/kg), part 3 .....	798
Figure 682. Histogram of RSL sodium concentrations by Illinois county, REC (mg/kg), part 4 .....	799
Figure 683. Histogram of RSL sodium concentrations by Illinois county, REC (mg/kg), part 5 .....	800
Figure 684. Histogram of RSL sodium concentrations by Illinois county, REC (mg/kg), part 6 .....	801
Figure 685. Histogram of RSL sodium concentrations by Illinois county, REC (mg/kg), part 7 .....	802
Figure 686. Histogram of RSL sodium concentrations by Illinois county, REC (mg/kg), part 8 .....	803
Figure 687. Map of RSL sodium 95th percentile concentration by Illinois county, REC (mg/kg) .....	804
Figure 688. Map of RSL sodium sample quantity by Illinois county, REC (mg/kg) .....	805
Figure 689. Histogram of RSL sodium concentrations, Non-REC (mg/kg) .....	807
Figure 690. Histogram of RSL sodium concentrations by IDOT Region, Non-REC (mg/kg) .....	809
Figure 691. Boxplot of RSL sodium concentrations by IDOT Region, Non-REC (mg/kg) .....	810
Figure 692. Histogram of RSL sodium concentrations by IDOT District, Non-REC (mg/kg), part 1 .....	811
Figure 693. Histogram of RSL sodium concentrations by IDOT District, Non-REC (mg/kg), part 2 .....	812
Figure 694. Boxplot of RSL sodium concentrations by IDOT District, Non-REC (mg/kg) .....	813
Figure 695. Histogram of RSL sodium concentrations by Illinois county, Non-REC (mg/kg), part 1 ....	814
Figure 696. Histogram of RSL sodium concentrations by Illinois county, Non-REC (mg/kg), part 2 ....	815
Figure 697. Map of RSL sodium 95th percentile concentration by Illinois county, Non-REC (mg/kg)	816
Figure 698. Map of RSL sodium sample quantity by Illinois county, Non-REC (mg/kg) .....	817
Figure 699. Histogram of RSL sodium concentrations, de minimis (mg/kg) .....	819
Figure 700. Histogram of RSL sodium concentrations by IDOT Region, de minimis (mg/kg) .....	821
Figure 701. Boxplot of RSL sodium concentrations by IDOT Region, de minimis (mg/kg) .....	822
Figure 702. Histogram of RSL sodium concentrations by IDOT District, de minimis (mg/kg), part 1 ..	823
Figure 703. Histogram of RSL sodium concentrations by IDOT District, de minimis (mg/kg), part 2 ..	824



Figure 704. Boxplot of RSL sodium concentrations by IDOT District, de minimis (mg/kg) .....	825
Figure 705. Histogram of RSL sodium concentrations by Illinois county, de minimis (mg/kg), part 1	826
Figure 706. Histogram of RSL sodium concentrations by Illinois county, de minimis (mg/kg), part 2	827
Figure 707. Map of RSL sodium 95th percentile concentration by Illinois county, de minimis (mg/kg) .....	828
Figure 708. Map of RSL sodium sample quantity by Illinois county, de minimis (mg/kg).....	829
Figure 709. Histogram of RSL thallium concentrations, REC (mg/kg) .....	831
Figure 710. Histogram of RSL thallium concentrations by IDOT Region, REC (mg/kg) .....	833
Figure 711. Boxplot of RSL thallium concentrations by IDOT Region, REC (mg/kg).....	834
Figure 712. Histogram of RSL thallium concentrations by IDOT District, REC (mg/kg), part 1 .....	835
Figure 713. Histogram of RSL thallium concentrations by IDOT District, REC (mg/kg), part 2 .....	836
Figure 714. Boxplot of RSL thallium concentrations by IDOT District, REC (mg/kg) .....	837
Figure 715. Histogram of RSL thallium concentrations by Illinois county, REC (mg/kg), part 1 .....	838
Figure 716. Histogram of RSL thallium concentrations by Illinois county, REC (mg/kg), part 2 .....	839
Figure 717. Histogram of RSL thallium concentrations by Illinois county, REC (mg/kg), part 3 .....	840
Figure 718. Histogram of RSL thallium concentrations by Illinois county, REC (mg/kg), part 4 .....	841
Figure 719. Histogram of RSL thallium concentrations by Illinois county, REC (mg/kg), part 5 .....	842
Figure 720. Histogram of RSL thallium concentrations by Illinois county, REC (mg/kg), part 6 .....	843
Figure 721. Histogram of RSL thallium concentrations by Illinois county, REC (mg/kg), part 7 .....	844
Figure 722. Histogram of RSL thallium concentrations by Illinois county, REC (mg/kg), part 8 .....	845
Figure 723. Histogram of RSL thallium concentrations by Illinois county, REC (mg/kg), part 9 .....	846
Figure 724. Histogram of RSL thallium concentrations by Illinois county, REC (mg/kg), part 10 .....	847
Figure 725. Map of RSL thallium 95th percentile concentration by Illinois county, REC (mg/kg) .....	848
Figure 726. Map of RSL thallium sample quantity by Illinois county, REC (mg/kg) .....	849
Figure 727. Histogram of RSL thallium concentrations, Non-REC (mg/kg) .....	851
Figure 728. Histogram of RSL thallium concentrations by IDOT Region, Non-REC (mg/kg).....	853
Figure 729. Boxplot of RSL thallium concentrations by IDOT Region, Non-REC (mg/kg) .....	854
Figure 730. Histogram of RSL thallium concentrations by IDOT District, Non-REC (mg/kg), part 1 ....	855
Figure 731. Histogram of RSL thallium concentrations by IDOT District, Non-REC (mg/kg), part 2 ....	856
Figure 732. Boxplot of RSL thallium concentrations by IDOT District, Non-REC (mg/kg) .....	857

Figure 733. Histogram of RSL thallium concentrations by Illinois county, Non-REC (mg/kg), part 1 ..	858
Figure 734. Histogram of RSL thallium concentrations by Illinois county, Non-REC (mg/kg), part 2 ..	859
Figure 735. Map of RSL thallium 95th percentile concentration by Illinois county, Non-REC (mg/kg)	860
Figure 736. Map of RSL thallium sample quantity by Illinois county, Non-REC (mg/kg).....	861
Figure 737. Histogram of RSL thallium concentrations, de minimis (mg/kg) .....	863
Figure 738. Histogram of RSL thallium concentrations by IDOT Region, de minimis (mg/kg) .....	865
Figure 739. Boxplot of RSL thallium concentrations by IDOT Region, de minimis (mg/kg) .....	866
Figure 740. Histogram of RSL thallium concentrations by IDOT District, de minimis (mg/kg), part 1.	867
Figure 741. Histogram of RSL thallium concentrations by IDOT District, de minimis (mg/kg), part 2.	868
Figure 742. Boxplot of RSL thallium concentrations by IDOT District, de minimis (mg/kg) .....	869
Figure 743. Histogram of RSL thallium concentrations by Illinois county, de minimis (mg/kg), part 18	70
Figure 744. Histogram of RSL thallium concentrations by Illinois county, de minimis (mg/kg), part 28	71
Figure 745. Map of RSL thallium 95th percentile concentration by Illinois county, de minimis (mg/kg) .....	872
Figure 746. Map of RSL thallium sample quantity by Illinois county, de minimis (mg/kg) .....	873
Figure 747. Histogram of RSL vanadium concentrations, REC (mg/kg).....	875
Figure 748. Histogram of RSL vanadium concentrations by IDOT Region, REC (mg/kg).....	877
Figure 749. Boxplot of RSL vanadium concentrations by IDOT Region, REC (mg/kg) .....	878
Figure 750. Histogram of RSL vanadium concentrations by IDOT District, REC (mg/kg), part 1 .....	879
Figure 751. Histogram of RSL vanadium concentrations by IDOT District, REC (mg/kg), part 2 .....	880
Figure 752. Boxplot of RSL vanadium concentrations by IDOT District, REC (mg/kg).....	881
Figure 753. Histogram of RSL vanadium concentrations by Illinois county, REC (mg/kg), part 1 .....	882
Figure 754. Histogram of RSL vanadium concentrations by Illinois county, REC (mg/kg), part 2 .....	883
Figure 755. Histogram of RSL vanadium concentrations by Illinois county, REC (mg/kg), part 3 .....	884
Figure 756. Histogram of RSL vanadium concentrations by Illinois county, REC (mg/kg), part 4 .....	885
Figure 757. Histogram of RSL vanadium concentrations by Illinois county, REC (mg/kg), part 5 .....	886
Figure 758. Histogram of RSL vanadium concentrations by Illinois county, REC (mg/kg), part 6 .....	887
Figure 759. Histogram of RSL vanadium concentrations by Illinois county, REC (mg/kg), part 7 .....	888
Figure 760. Histogram of RSL vanadium concentrations by Illinois county, REC (mg/kg), part 8 .....	889
Figure 761. Histogram of RSL vanadium concentrations by Illinois county, REC (mg/kg), part 9 .....	890

Figure 762. Histogram of RSL vanadium concentrations by Illinois county, REC (mg/kg), part 10 .....	891
Figure 763. Map of RSL vanadium 95th percentile concentration by Illinois county, REC (mg/kg) ....	892
Figure 764. Map of RSL vanadium sample quantity by Illinois county, REC (mg/kg).....	893
Figure 765. Histogram of RSL vanadium concentrations, Non-REC (mg/kg).....	895
Figure 766. Histogram of RSL vanadium concentrations by IDOT Region, Non-REC (mg/kg) .....	897
Figure 767. Boxplot of RSL vanadium concentrations by IDOT Region, Non-REC (mg/kg) .....	898
Figure 768. Histogram of RSL vanadium concentrations by IDOT District, Non-REC (mg/kg), part 1 .	899
Figure 769. Histogram of RSL vanadium concentrations by IDOT District, Non-REC (mg/kg), part 2 .	900
Figure 770. Boxplot of RSL vanadium concentrations by IDOT District, Non-REC (mg/kg).....	901
Figure 771. Histogram of RSL vanadium concentrations by Illinois county, Non-REC (mg/kg), part 1	902
Figure 772. Histogram of RSL vanadium concentrations by Illinois county, Non-REC (mg/kg), part 2	903
Figure 773. Map of RSL vanadium 95th percentile concentration by Illinois county, Non-REC (mg/kg) .....	904
Figure 774. Map of RSL vanadium sample quantity by Illinois county, Non-REC (mg/kg) .....	905
Figure 775. Histogram of RSL vanadium concentrations, de minimis (mg/kg).....	907
Figure 776. Histogram of RSL vanadium concentrations by IDOT Region, de minimis (mg/kg).....	909
Figure 777. Boxplot of RSL vanadium concentrations by IDOT Region, de minimis (mg/kg) .....	910
Figure 778. Histogram of RSL vanadium concentrations by IDOT District, de minimis (mg/kg), part 1 .....	911
Figure 779. Histogram of RSL vanadium concentrations by IDOT District, de minimis (mg/kg), part 2 .....	912
Figure 780. Boxplot of RSL vanadium concentrations by IDOT District, de minimis (mg/kg) .....	913
Figure 781. Histogram of RSL vanadium concentrations by Illinois county, de minimis (mg/kg), part 1 .....	914
Figure 782. Histogram of RSL vanadium concentrations by Illinois county, de minimis (mg/kg), part 2 .....	915
Figure 783. Map of RSL vanadium 95th percentile concentration by Illinois county, de minimis (mg/kg) .....	916
Figure 784. Map of RSL vanadium sample quantity by Illinois county, de minimis (mg/kg).....	917
Figure 785. Histogram of RSL zinc concentrations, REC (mg/kg) .....	919
Figure 786. Histogram of RSL zinc concentrations by IDOT Region, REC (mg/kg) .....	921

Figure 787. Boxplot of RSL zinc concentrations by IDOT Region, REC (mg/kg) .....	922
Figure 788. Histogram of RSL zinc concentrations by IDOT District, REC (mg/kg), part 1.....	923
Figure 789. Histogram of RSL zinc concentrations by IDOT District, REC (mg/kg), part 2.....	924
Figure 790. Boxplot of RSL zinc concentrations by IDOT District, REC (mg/kg).....	925
Figure 791. Histogram of RSL zinc concentrations by Illinois county, REC (mg/kg), part 1.....	926
Figure 792. Histogram of RSL zinc concentrations by Illinois county, REC (mg/kg), part 2.....	927
Figure 793. Histogram of RSL zinc concentrations by Illinois county, REC (mg/kg), part 3.....	928
Figure 794. Histogram of RSL zinc concentrations by Illinois county, REC (mg/kg), part 4.....	929
Figure 795. Histogram of RSL zinc concentrations by Illinois county, REC (mg/kg), part 5.....	930
Figure 796. Histogram of RSL zinc concentrations by Illinois county, REC (mg/kg), part 6.....	931
Figure 797. Histogram of RSL zinc concentrations by Illinois county, REC (mg/kg), part 7.....	932
Figure 798. Histogram of RSL zinc concentrations by Illinois county, REC (mg/kg), part 8.....	933
Figure 799. Histogram of RSL zinc concentrations by Illinois county, REC (mg/kg), part 9.....	934
Figure 800. Histogram of RSL zinc concentrations by Illinois county, REC (mg/kg), part 10.....	935
Figure 801. Map of RSL zinc 95th percentile concentration by Illinois county, REC (mg/kg).....	936
Figure 802. Map of RSL zinc sample quantity by Illinois county, REC (mg/kg) .....	937
Figure 803. Histogram of RSL zinc concentrations, Non-REC (mg/kg) .....	939
Figure 804. Histogram of RSL zinc concentrations by IDOT Region, Non-REC (mg/kg) .....	941
Figure 805. Boxplot of RSL zinc concentrations by IDOT Region, Non-REC (mg/kg).....	942
Figure 806. Histogram of RSL zinc concentrations by IDOT District, Non-REC (mg/kg), part 1.....	943
Figure 807. Histogram of RSL zinc concentrations by IDOT District, Non-REC (mg/kg), part 2.....	944
Figure 808. Boxplot of RSL zinc concentrations by IDOT District, Non-REC (mg/kg) .....	945
Figure 809. Histogram of RSL zinc concentrations by Illinois county, Non-REC (mg/kg), part 1.....	946
Figure 810. Histogram of RSL zinc concentrations by Illinois county, Non-REC (mg/kg), part 2.....	947
Figure 811. Map of RSL zinc 95th percentile concentration by Illinois county, Non-REC (mg/kg).....	948
Figure 812. Map of RSL zinc sample quantity by Illinois county, Non-REC (mg/kg) .....	949
Figure 813. Histogram of RSL zinc concentrations, de minimis (mg/kg).....	951
Figure 814. Histogram of RSL zinc concentrations by IDOT Region, de minimis (mg/kg) .....	953
Figure 815. Boxplot of RSL zinc concentrations by IDOT Region, de minimis (mg/kg) .....	954
Figure 816. Histogram of RSL zinc concentrations by IDOT District, de minimis (mg/kg), part 1.....	955

Figure 817. Histogram of RSL zinc concentrations by IDOT District, de minimis (mg/kg), part 2.....	956
Figure 818. Boxplot of RSL zinc concentrations by IDOT District, de minimis (mg/kg).....	957
Figure 819. Histogram of RSL zinc concentrations by Illinois county, de minimis (mg/kg), part 1.....	958
Figure 820. Histogram of RSL zinc concentrations by Illinois county, de minimis (mg/kg), part 2.....	959
Figure 821. Map of RSL zinc 95th percentile concentration by Illinois county, de minimis (mg/kg)...	960
Figure 822. Map of RSL zinc sample quantity by Illinois county, de minimis (mg/kg) .....	961



## APPENDICES

The figures in this document support the analysis and discussion presented in the ICT report [\*Inventory and Statistical Characterization of Inorganic Soil Constituents in Illinois\*](#) (Anderson & Yacucci, 2021a). The appendices should not be reviewed independently of the main report and are presently separately due to their length. The appendices contain figures for the 22 inorganic soil analytes, including the six priority analytes presented in the main report.

Statistical analysis results are presented for the IDOT Regulated Substances Library (RSL) for selected Illinois inorganic soil analytes and are presented for various spatial data subsets including Illinois Department of Transportation (IDOT) region, IDOT district, and county in separate figures. Spatial subsets are shown in Figure 1 and listed in Table 1. The RSL is comprised of surficial soil chemistry data obtained from rights-of-way (ROW) sampling conducted for routine preliminary site investigations in preparation for potential road construction activities. The report is a statistical analysis of RSL data and, as such, makes no determination as to the validity of the RSL as a source of natural background soil data. Were RSL data to be applied as the natural background, additional supporting justification would need to be provided, the source of which is beyond the scope of this study. Samples may be composed of natural soils, disturbed soils, or placed materials and may contain elevated concentrations of soil analytes if anthropogenic contamination is present. A selection of 22 soil analytes are examined in the present study: aluminum (Al), antimony (Sb), arsenic (As), barium (Ba), beryllium (Be), cadmium (Cd), calcium (Ca), chromium (Cr), cobalt (Co), copper (Cu), iron (Fe), lead (Pb), magnesium (Mg), manganese (Mn), mercury (Hg), nickel (Ni), potassium (K), selenium (Se), sodium (Na), thallium (Tl), vanadium (V), and zinc (Zn). The RSL database at a 95% confidence level is compared with current standards defined by the 1994 IEPA Tiered Approach to Corrective Action Objectives (TACO) standards and proposed thresholds suggested in Circular 590 for defining naturally occurring soil concentrations for the selected analytes. Refer to the main report for further discussion and analysis of the RSL database. The main report presents tabular results for 22 inorganic soil analytes (mean, median, min, max, 5th percentile, 95th percentile) and detailed discussion of six priority analytes.

The 95% confidence level was defined in this study as the 95th percentile of a ranked list of RSL soil concentration data for a given analyte. This approach did not assume a data distribution, and specifically, it did not assume the data were normality distributed. The 95% confidence level was uniformly applied to the analysis of all analytes in the RSL database to provide consistency with the findings of Cahill (2017). The 95th percentile was calculated in this report by using the “NumPy” Python library and the percentile function. The 95% confidence level is labeled on all histogram plots as “95th percentile” and shown with a black dashed line.

Current natural background concentration levels of soil constituents, as determined by the Illinois Environmental Protection Agency (IEPA) Office of Chemical Safety in 1994, applied a 50th percentile confidence level (median) to the data set of 275 data points, representing all 102 Illinois counties (IEPA, 1994). The current standard specifies separate values for metropolitan statistical area (MSA) and non-MSA counties: General, Section 742 APPENDIX A and General, Section 742 Table G of the Tiered Approach to Corrective Action Objectives (TACO) rules (Figure 2). MSA counties are denoted

with a dotted hatch pattern on all choropleth maps found in the main report (Anderson & Yacucci, 2021a) and appendices. The current background concentration levels on all figures in the main report and appendices are labeled as “*Background Curr*” and shown with a red dotted line on both histograms and boxplots

The RSL data were also compared with the 2019 IEPA-proposed revised standard for background concentration levels established at the 95th percentile confidence level for naturally occurring soils in Illinois. The 2019 IEPA-proposed revisions to this standard are based on previous studies of Illinois natural soils conducted by the United States Geological Survey (USGS) (Smith et al., 2013) and ISGS (Dreher & Follmer, 2004a, 2004b, 2004c, 2004d, 2005; Dreher, Follmer, & Zhang, 2002, 2003a, 2003b). The aforementioned studies and those conducted by Zhang and Frost (2002a, 2002b) are compiled and reviewed in an ISGS compendium on the inorganic chemical composition of Illinois soils, which includes 1,272 samples (Cahill, 2017). The proposed concentration levels on all figures in the main report and appendices are labeled as “*Background New*” and shown with a green dotted line on both histograms and boxplots.

The plotting conventions applied to boxplots are shown in Figure 3, indicating the statistical quartiles, and 95% confidence interval on the median. Note, the mean is not shown on boxplots presented in this analysis, as shown in Figure 3. The 95% confidence interval of the median is provided on all boxplots and is shown by an indented notch (see Figure 3). The confidence interval notch may extend beyond the interquartile range (IQR) for distributions with a greater uncertainty. The notch assists in making visual comparisons of distributions, as there is a strong likelihood that medians of the respective distributions are statistically different if the corresponding notches around the median do not overlap (Chambers et al., 1983). To clarify, the 95% confidence level discussed in reference to RSL database evaluation is not to be confused with the 95% confidence interval (defined range), as is commonly presented in association with a mean or median value.

A common threshold for potential outlier detection is the product of 1.5 and the IQR, as first proposed by Tukey (1977) to define “inner fences.” The IQR is defined as the difference between the third quartile (Q3 = 75th percentile) and the first quartile (Q1 = 25th percentile). In all boxplots presented in this study, the extent of the whiskers is defined as  $1.5 \times \text{IQR}$  (the Tukey fence), and the points present beyond these limits are labeled as potential outliers and represented as open circles. The selection of this threshold has become an accepted method of potential outlier detection because it identifies potential outliers as those beyond 2.698 standard deviations, resulting in approximately 0.7% of data points being labeled as potential outliers (<1%) for a normal distribution. Note that this convention for labeling potential outliers is applied only for purposes of visualization. Further analysis is required to confirm a potential outlier as an outlier datapoint. For data distributions with highly skewed data (e.g., strong positive skewness, as observed in several analytes), the percentage of data points labeled as potential outliers will vary from those stated previously for a normal distribution.

The RSL database from which the analysis in the main report and appendix figures are based is provided as a comma delimited value file (.csv): [Inventory and Statistical Characterization of Inorganic Soil Constituents in Illinois: Regulated Substances Library Data](#) (Anderson & Yacucci, 2021b). Note the



RSL database exceeds the maximum number of rows that can be read by MS Excel. The database can be read using Python, as performed in this analysis, as well as any other software designed for analysis of larger datasets such as MS Access. The RSL database fields are listed in Table 2, and Table 3 lists values for database field “Flag” as associated descriptions.

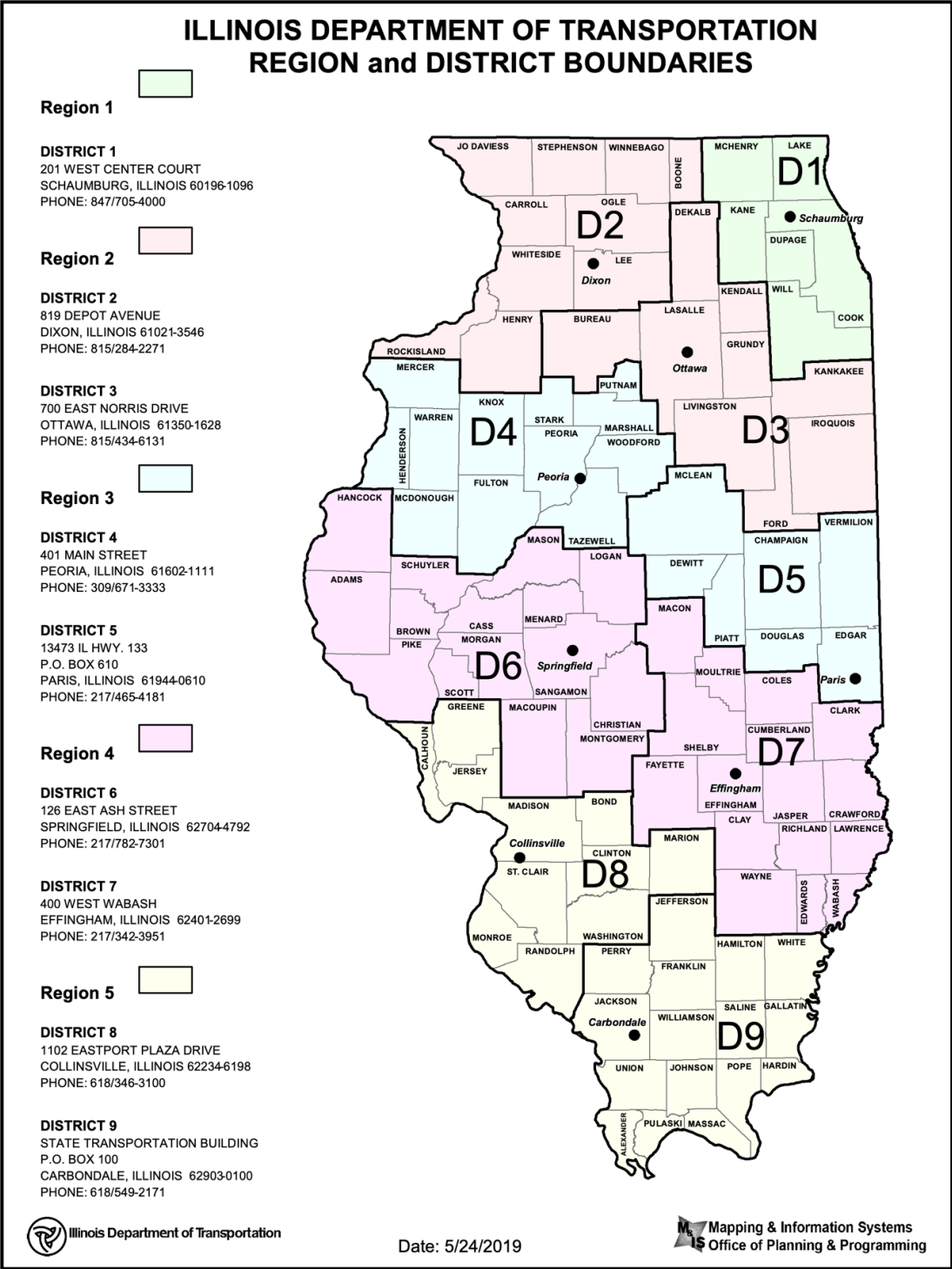
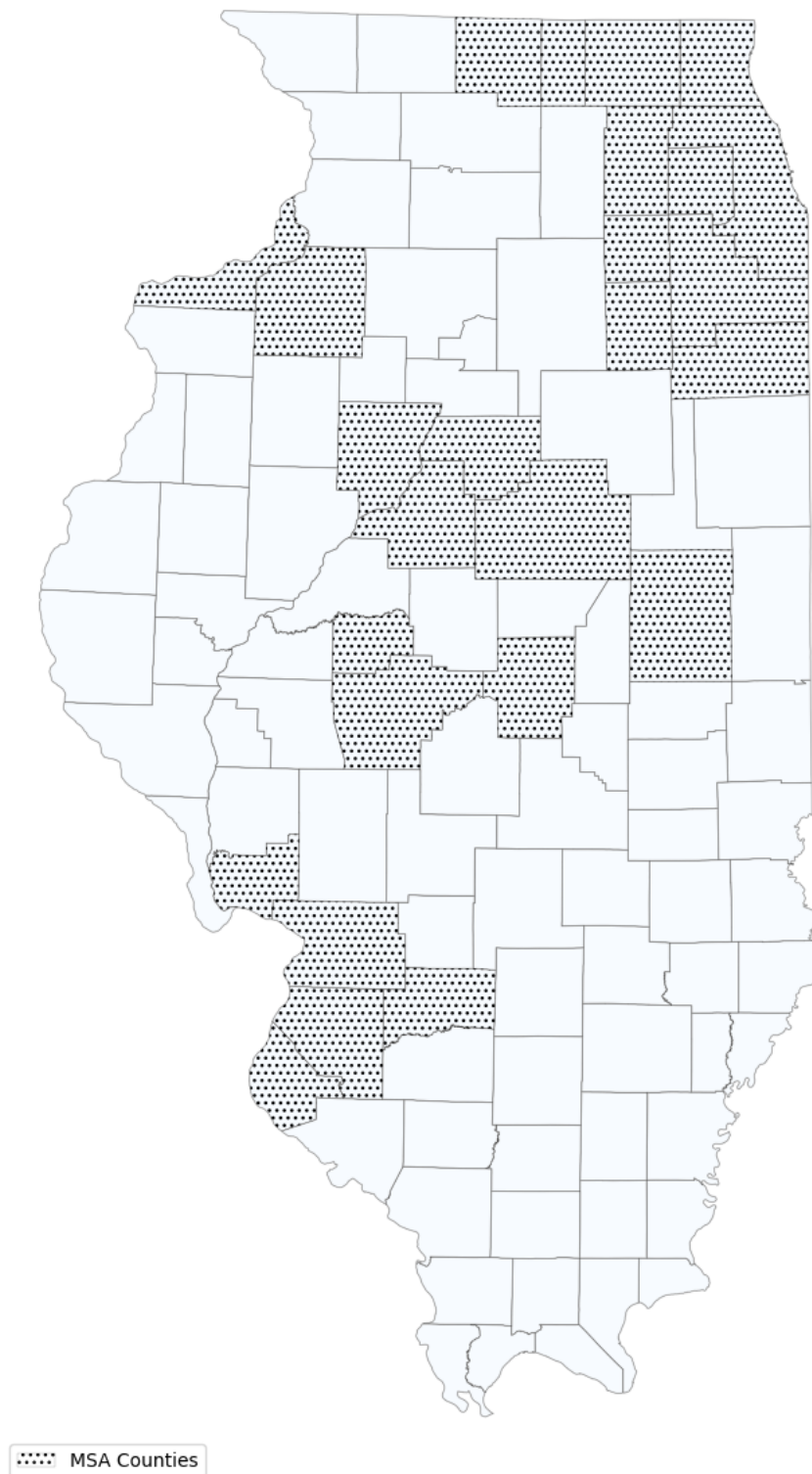


Figure 1. IDOT Region and District Map.

**Table 1. IDOT Region and District Areas by Illinois County**

<b>IDOT Region</b>	<b>IDOT District</b>	<b>Illinois Counties</b>
1	1	Cook, DuPage, Kane, Lake, McHenry, Will
2	2	Boone, Carroll, Henry, Jo Daviess, Lee, Ogle, Rock Island, Stephenson, Whiteside, Winnebago
	3	Bureau, Dekalb, Ford, Grundy, Iroquois, Kankakee, Kendall, LaSalle, Livingston
3	4	Fulton, Henderson, Knox, McDonough, Marshall, Mercer, Peoria, Putnam, Stark, Tazewell, Warren, Woodford
	5	Champaign, DeWitt, Douglas, Edgar, McLean, Piatt, Vermilion
4	6	Adams, Brown, Cass, Christian, Hancock, Logan, Macoupin, Mason, Menard, Montgomery, Morgan, Pike, Sangamon, Schuyler, Scott
	7	Clark, Clay, Coles, Crawford, Cumberland, Edwards, Effingham, Fayette, Jasper, Lawrence, Macon, Moultrie, Richland, Shelby, Wabash, Wayne
5	8	Bond, Calhoun, Clinton, Greene, Jersey, Madison, Marion, Monroe, Randolph, St. Clair, Washington
	9	Alexander, Franklin, Gallatin, Hamilton, Hardin, Jackson, Jefferson, Johnson, Massac, Perry, Pope, Pulaski, Saline, Union, White, Williamson



**Figure 2. Metropolitan Statistical Areas (MSA) counties in Illinois shown with dotted hatching. All choropleth maps in the main report and appendix apply dotted hatching to indicate MSA counties.**

**Table 2. Regulated Substances Library Database Fields**

<b>Parameters</b>	<b>Analytical Parameter Name</b>	<b>Example</b>	<b>Values</b>
CASNumber	CAS number for analytic parameter	7439-96-55	various
Parameter	soil analyte	Manganese, Total	various
LeachMethod	leaching method	TCLP	TCLP, SPLP, None
AnalyticalMethod	analysis method	6010B	various
Value	laboratory result value	3.45	various
ReportUnits	laboratory result units	mg/kg	mg/kg, mg/l, ug/kg, ug/l. pH unit: s.u., percent moisture: %
Flag	analytical data flags	B	See Table 2
ReportingLimit	laboratory reporting limit	1.3	various
MethodDetectionLimit	equipment detection limit	0.26	various
Detected	analyte detected	Y	Y, N
LabAnalysisDate	date analysis performed	2015-09-02	various
County	Illinois county for soil sample location	COOK	Illinois counties
DistrictNumber	IDOT district number for soil sample location	1	1, 2, 3, 4, 5, 6, 7, 8, 9
RECType	REC, Non-REC or de minimis property descriptor. If available, this information comes from Tables 1 through 3 of the PESA. Non-REC indicates the property is considered to contain no RECs and no de minimis conditions.	REC	REC, deMinimis, Non-REC, nan
SampleTop	top of sample interval	0	various
SampleBottom	bottom of sample interval	6	various
SampleDate	date sample collected	16-11-29	various
SampleMatrix	matrix type	soil	soil, sediment, sludge, groundwater, surface water, concrete

**Table 3. Regulated Substances Library Database Field 'Flag' Values**

<b>Analytical Data Flags</b>	<b>Flag Definition</b>
!	Laboratory is not accredited for this parameter.
*	LCS, LCSD, MS, MSD, SD or Surrogate is outside acceptance limits.
^	ICV, CCV, ICB, CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
+	MSA correlation coefficient is less than 0.995.
<	Not detected at or above the reporting limit
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
a	Benzo(a)anthracene and chrysene are unresolved due to matrix, result is reported as benzo(a)anthracene.
A	The tentatively identified compound is a suspected aldol-condensation product.
AP	Compounds have an altered pattern compared to the reference pattern within the expected retention time window. This may be due to interferences from non-target compounds, and/or due to different relative concentrations of the compounds.
B	Compound was found in the blank and sample.
b	Result Detected in the Unseeded Control blank (USB).
C	Pesticide identification was confirmed by GC/MS.
CI	The peak identified by the data system exhibited chromatographic interference that could not be resolved. There is reason to suspect there may be a high bias.
cn	Refer to Case Narrative for further detail
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries were not obtained due to the dilution.
E	Result exceeded calibration range.
F	Duplicate RPD exceeds the control limit
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
FT	This analysis was performed in the field by the sampler whose name appears on the attached Chain of Custody form.
g	Result fails applicable drinking water standards
h	Alternate peak selection upon analytical review.
H	Sample was prepped or analyzed beyond the specified holding time
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
I	Indicates the presence of an interference, recovery is not calculated.
ID	Analyte identified by RT & presence of single mass ion
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Analytical Data Flags	Flag Definition
K	Benzo (b&k) fluoranthene are unresolved due to matrix, result is reported as Benzo(b)fluoranthene.
L	A negative instrument reading had an absolute value greater than the reporting limit
N	This flag indicates the presumptive evidence of a compound.
ND	Compound not detected.
P	The %RPD between the primary and confirmation column/detector is >40%. The higher value has been reported
P1	The %Difference between the primary and confirmation column/detector is >40%. The higher value has been reported.
Q	Result was qualitatively confirmed, but not quantitated.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.
R	The instrument was not calibrated for this compound. A non-detect indicates that the characteristic ions were not present and the compound was not qualitatively identified. No controls were present to determine either sample preparation efficiency or the instrument sensitivity for the compound. As a result, the limit of detection is not known and the reported concentrations are estimates.
S	Result was determined by the Method of Standard Additions
s	Seeded Control Blank (SCB) Recovery High or Low
T	Result is a tentatively identified compound (TIC) and an estimated value.
U	Indicates the analyte was analyzed for but not detected.
vs	Reported analyte concentrations are below 200 ug/kg and may be biased low due to the sample not being collected according to 5035A-L low-level specifications.
W	PS: Post-digestion spike was outside control limits
y	Benzo(a)anthracene and chrysene are unresolved due to matrix, result is reported as chrysene.
Y	The chromatographic response resembles a typical fuel pattern.
Z	The chromatographic response does not resemble a typical fuel pattern.

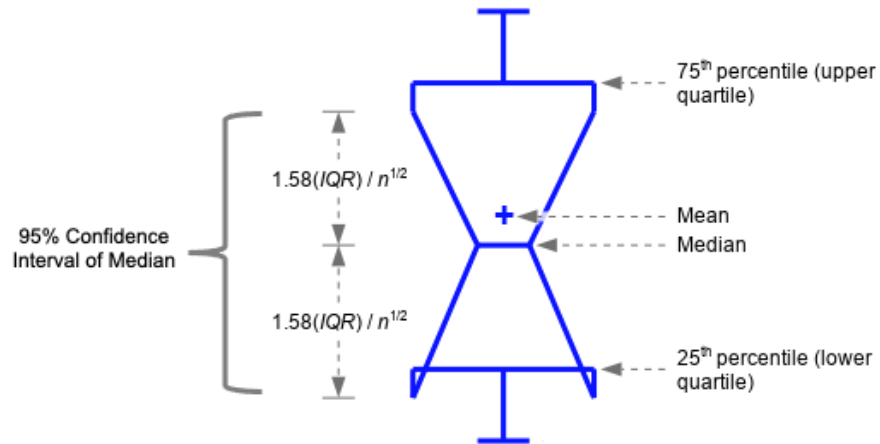


Figure 3. Diagram of the 95% confidence interval of the median, as shown by the notch. Figure 3 is modified from SAS® 9.4 Graph Template Language, Copyright © 2016, SAS Institute Inc., USA. All Rights Reserved. Reproduced with permission of SAS Institute Inc, Cary, NC.

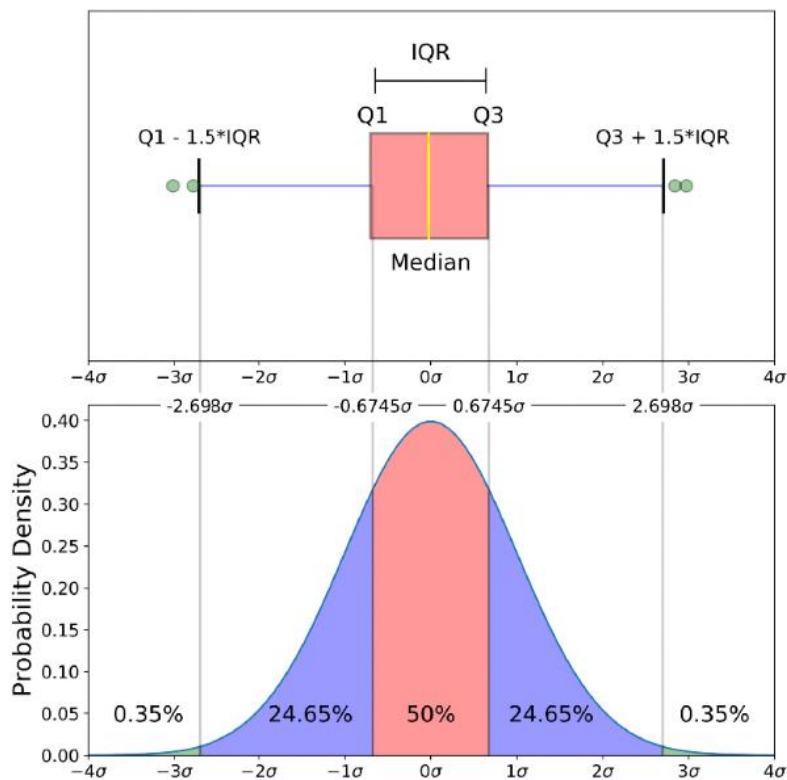


Figure 4. Boxplot diagram of a nearly normal distribution compared with the probability density function for a normal distribution. IQR is interquartile range, Q1 is first quartile, and Q3 is third quartile. From Galarnyk (2018). Used with permission of the author.

## REFERENCES

- Anderson, A., & Yacucci, M. (2021a). *Inventory and statistical characterization of inorganic soil constituents in Illinois* (Report No. FHWA-ICT-21-006). Illinois Center for Transportation. <https://doi.org/10.36501/0197-9191/21-006>
- Anderson, A., & Yacucci, M. (2021b). *Inventory and statistical characterization of inorganic soil constituents in Illinois: Regulated Substances Library Data* (Report No. FHWA-ICT-21-008). Illinois Center for Transportation. <https://doi.org/10.36501/0197-9191/21-008>
- Cahill, R. A. (2017). *Inorganic chemical composition of Illinois soils* (Circular 590). Champaign: Illinois State Geological Survey.
- Chambers, J. M., Cleveland, W. S., Kleiner, B., & Tukey, P. A. (1983). *Wadsworth Statistics/Probability Series: Graphical methods for data analysis*. Boston, MA: Duxbury.
- Dreher, G. B., & Follmer, L. R. (2004a). *A progress report on the description of the geology and chemical composition of soils in Illinois: Cores 52 through 76* (Open-File Series 2004-10). Champaign: Illinois State Geological Survey.
- Dreher, G. B., & Follmer, L. R. (2004b). *A progress report on the description of the geology and chemical composition of soils in Illinois: Cores 77 through 101* (Open-File Series 2004-11). Champaign: Illinois State Geological Survey.
- Dreher, G. B., & Follmer, L. R. (2004c). *A progress report on the description of the geology and chemical composition of soils in Illinois: Cores 102 through 126* (Open-File Series 2004-15). Champaign: Illinois State Geological Survey.
- Dreher, G. B., & Follmer, L. R. (2004d). Mercury content of Illinois soils: *Water, Air, and Soil Pollution*, 156, 299–315.
- Dreher, G. B., & Follmer, L. R. (2005). *A progress report on the description of the geology and chemical composition of soils in Illinois: Cores 127 through 137* (Open-File Series 2005-5). Champaign: Illinois State Geological Survey.
- Dreher, G. B., Follmer, L. R., & Zhang, Y. (2002). *A progress report on the description of the geology and chemical composition of soils in Illinois: Cores 1 through 10* (Open-File Series 2002-2). Champaign: Illinois State Geological Survey.
- Dreher, G. B., Follmer, L. R., & Zhang, Y. (2003a). *A progress report on the description of the geology and chemical composition of soils in Illinois: Cores 11 through 26* (Open-File Series 2003-1). Champaign: Illinois State Geological Survey.
- Dreher, G. B., Follmer, L. R., & Zhang, Y. (2003b). *A progress report on the description of the geology and chemical composition of soils in Illinois: Cores 27 through 51* (Open-File Series 2003-3). Champaign: Illinois State Geological Survey.
- Galarnyk, M. (2018, September 12). *Understanding boxplots*. Retrieved from *Towards Data Science*, <https://towardsdatascience.com/understanding-boxplots-5e2df7bcbd51>



- Illinois Environmental Protection Agency, Office of Chemical Safety (IEPA). (1994). *A summary of selected background conditions for inorganics in soil* (No. IEPA/ENV/94-161). Springfield: Illinois Environmental Protection Agency, Office of Chemical Safety.
- SAS Institute, Inc. (2016). In *SAS® 9.4 Graph template language: Reference* (5th ed.). Cary, NC: SAS Institute, Inc. Retrieved from <https://documentation.sas.com/?docsetId=grstatgraph&docsetTarget=titlepage.htm&docsetVersion=9.4&locale=en>
- Smith, D. B., Cannon, W. F., Woodruff, L. G., Solano, F., Kilburn, J. E., & Fey, D. L. (2013). *Geochemical and mineralogical data for soils of the conterminous United States*. Reston, VA: U.S. Geological Survey.
- Tukey, J. W. (1977). *Exploratory data analysis*. Boston, MA: Addison-Wesley.
- Zhang, Y., & Frost, J. K. (2002). *Regional distribution of selected elements in Illinois soils* (Environmental Geology 41). Champaign: Illinois State Geological Survey.

## **APPENDIX A. ANALYTE ANALYSIS: ALUMINUM**

### **A.1 ALUMINUM REC**

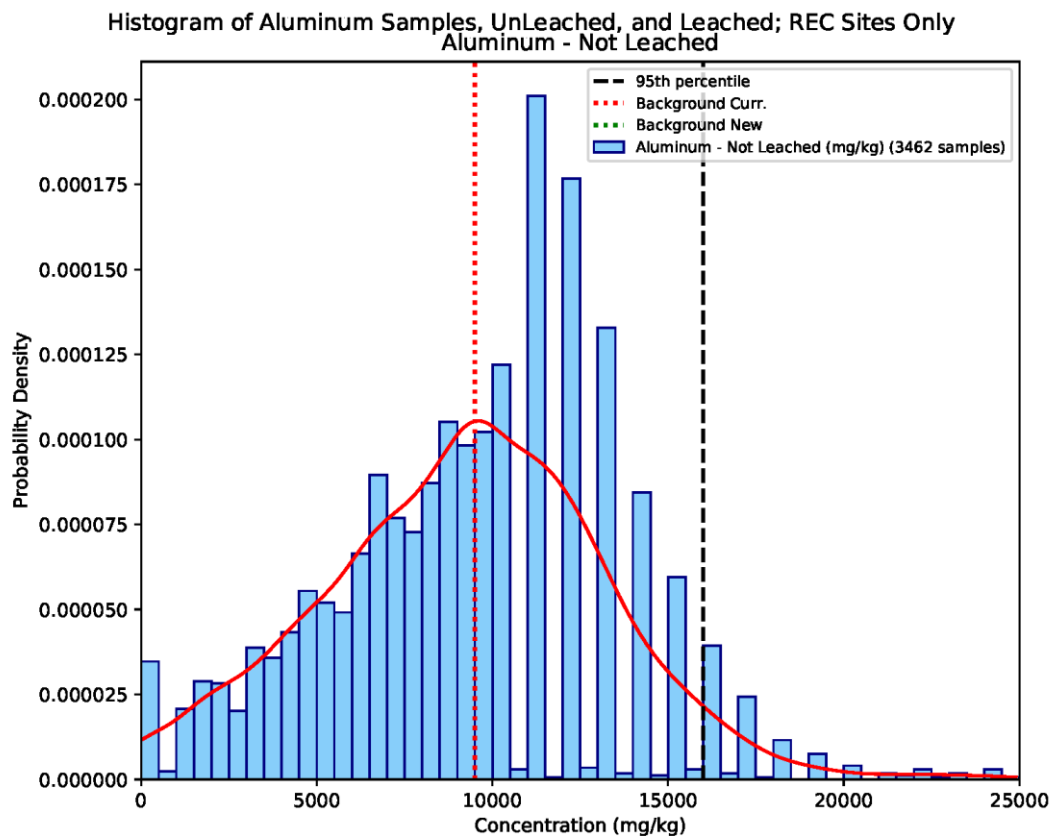


Figure 5. Histogram of RSL aluminum concentrations, REC (mg/kg)

Aluminum Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

# Aluminum Concentration by Region, page 1 of 1

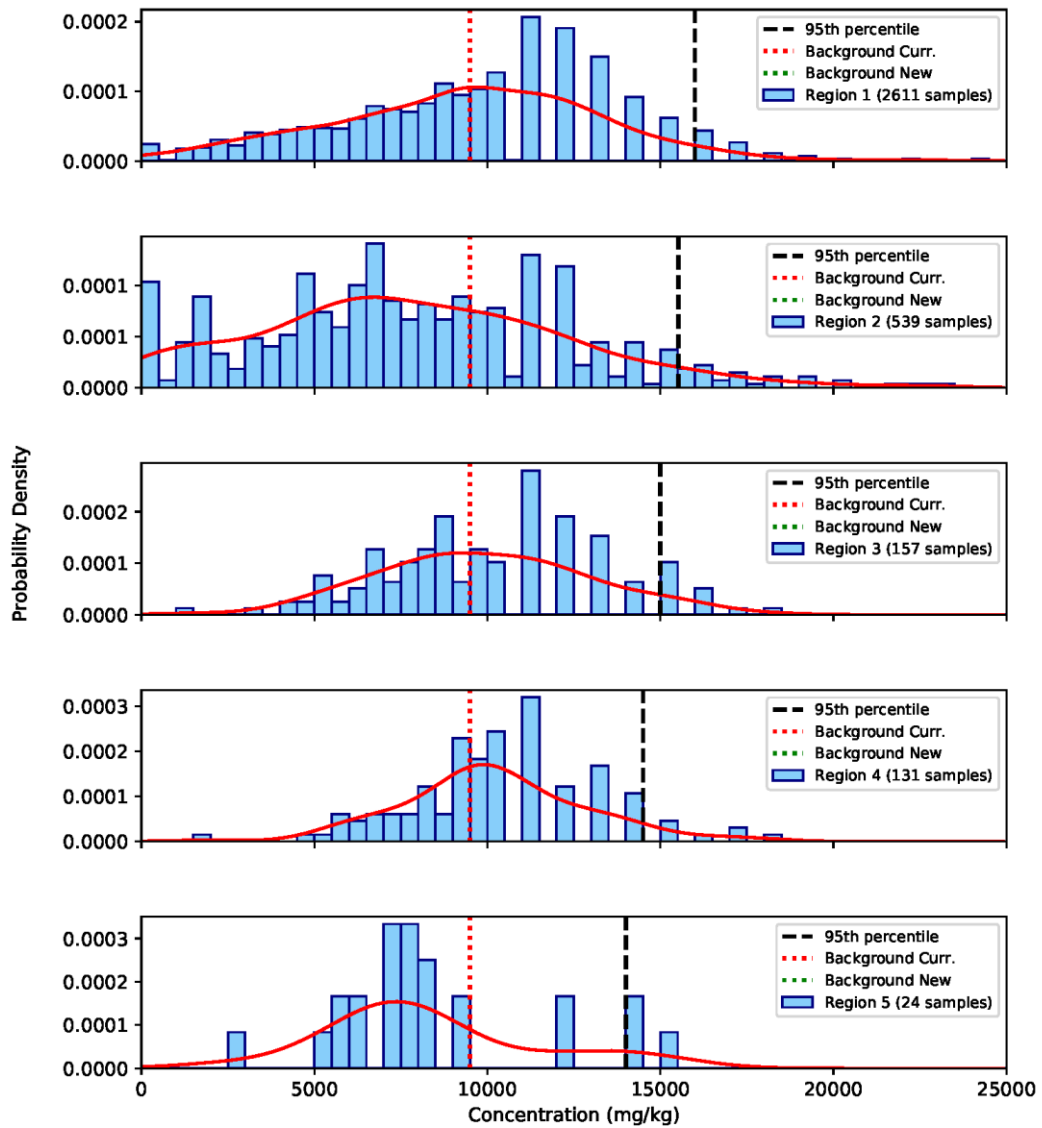
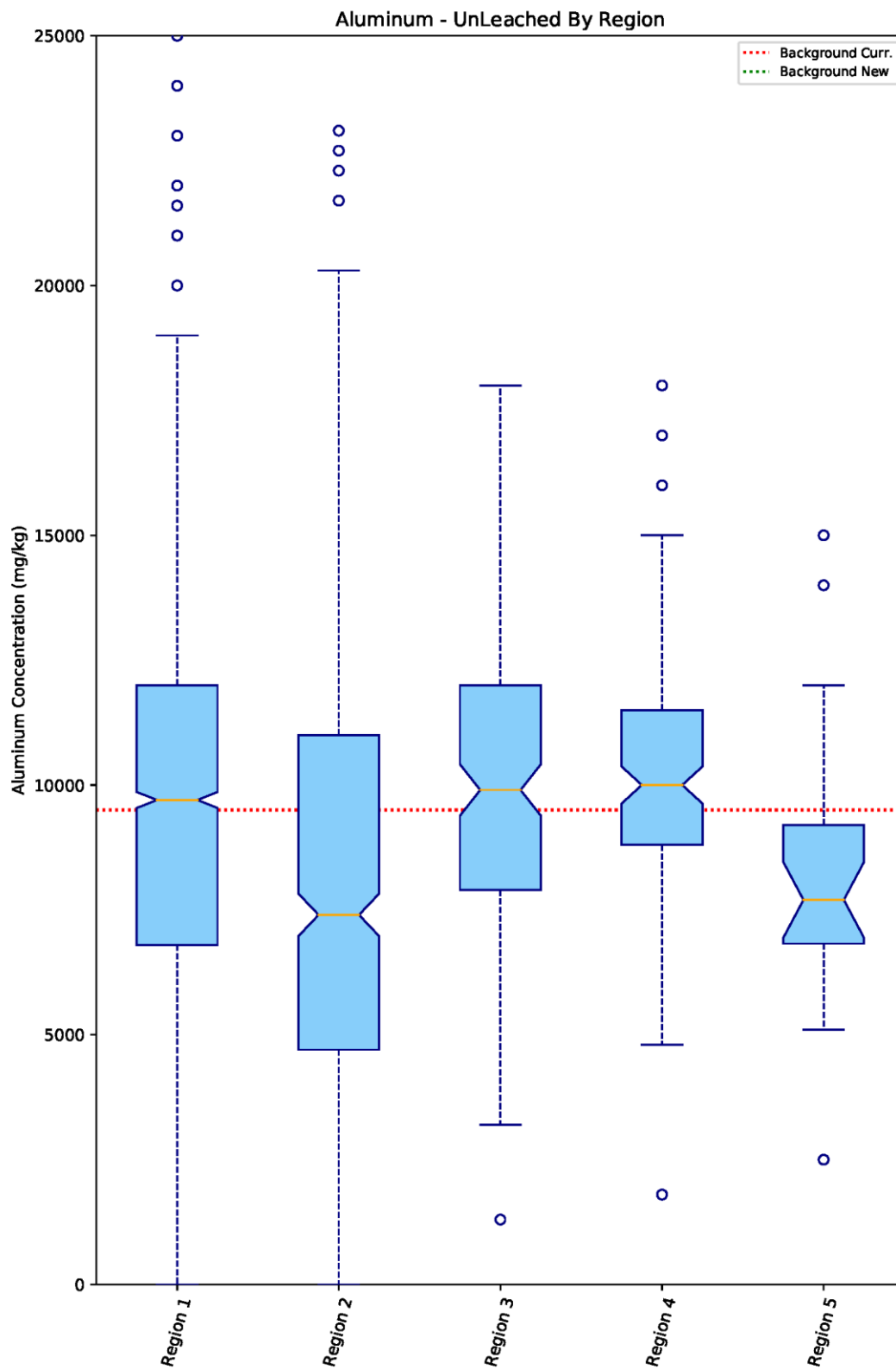


Figure 6. Histogram of RSL aluminum concentrations by IDOT Region, REC (mg/kg)



**Figure 7. Boxplot of RSL aluminum concentrations by IDOT Region, REC (mg/kg)**

### Aluminum Concentration by District, page 1 of 2

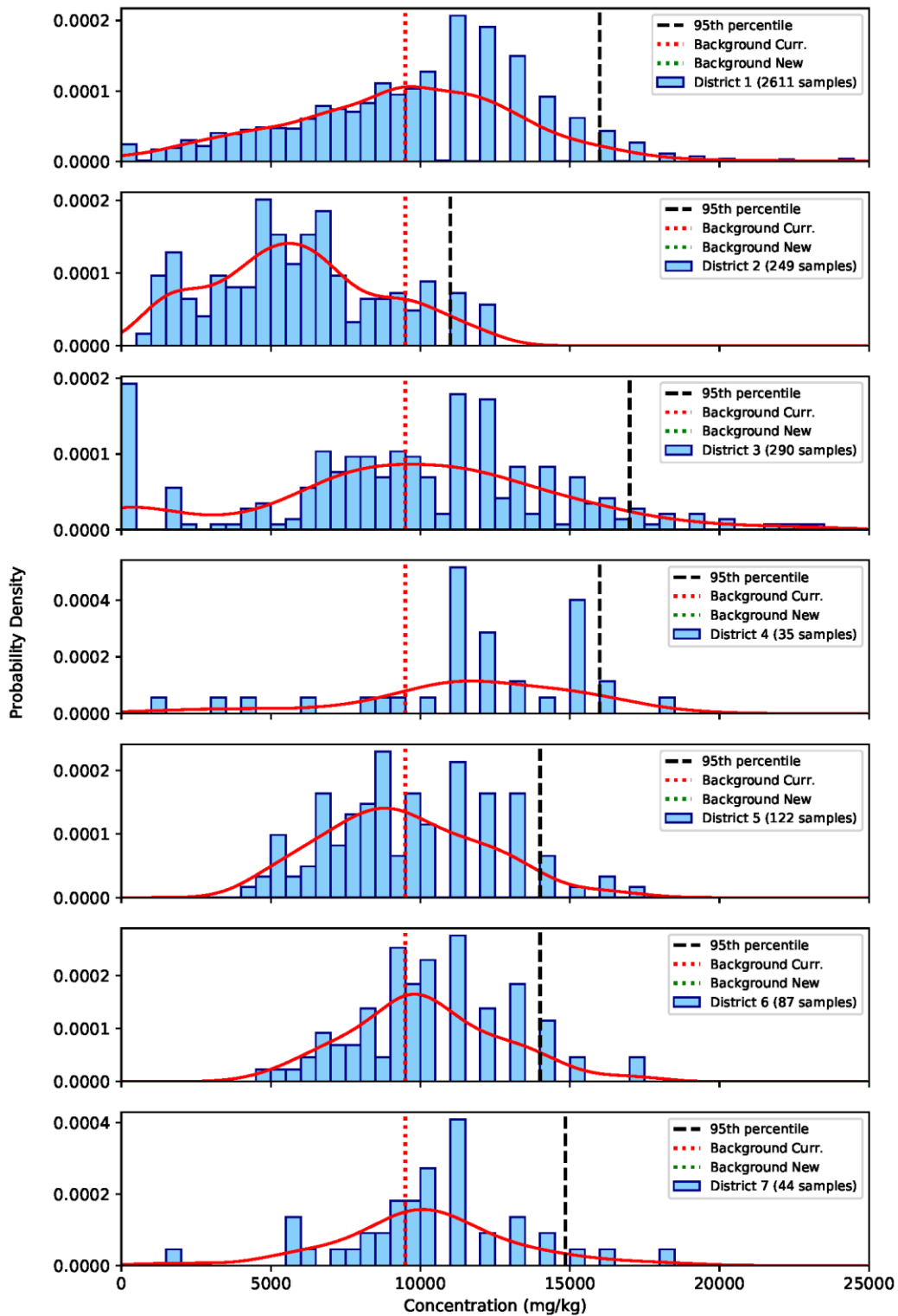


Figure 8. Histogram of RSL aluminum concentrations by IDOT District, REC (mg/kg), part 1

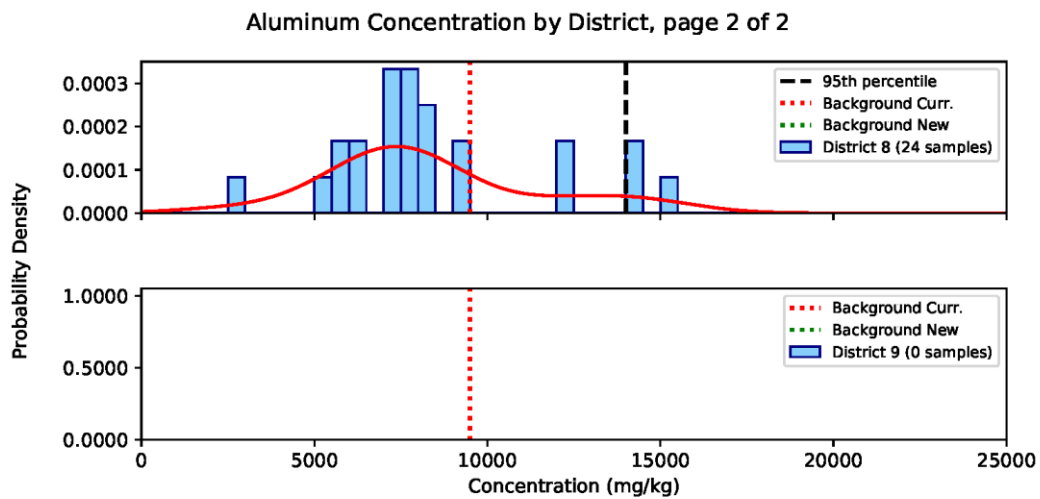


Figure 9. Histogram of RSL aluminum concentrations by IDOT District, REC (mg/kg), part 2



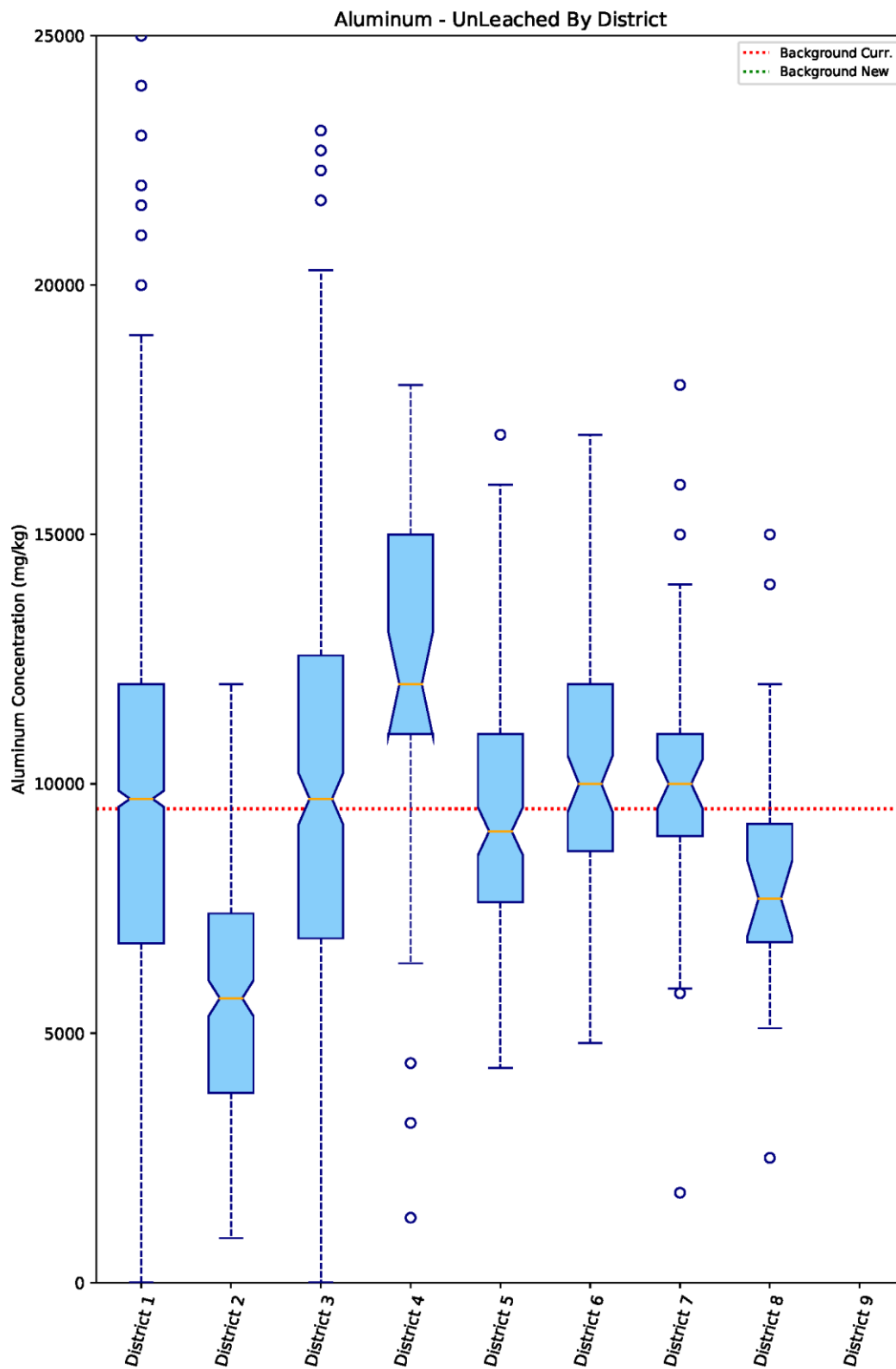


Figure 10. Boxplot of RSL aluminum concentrations by IDOT District, REC (mg/kg)

# Aluminum Concentration by County, page 1 of 3

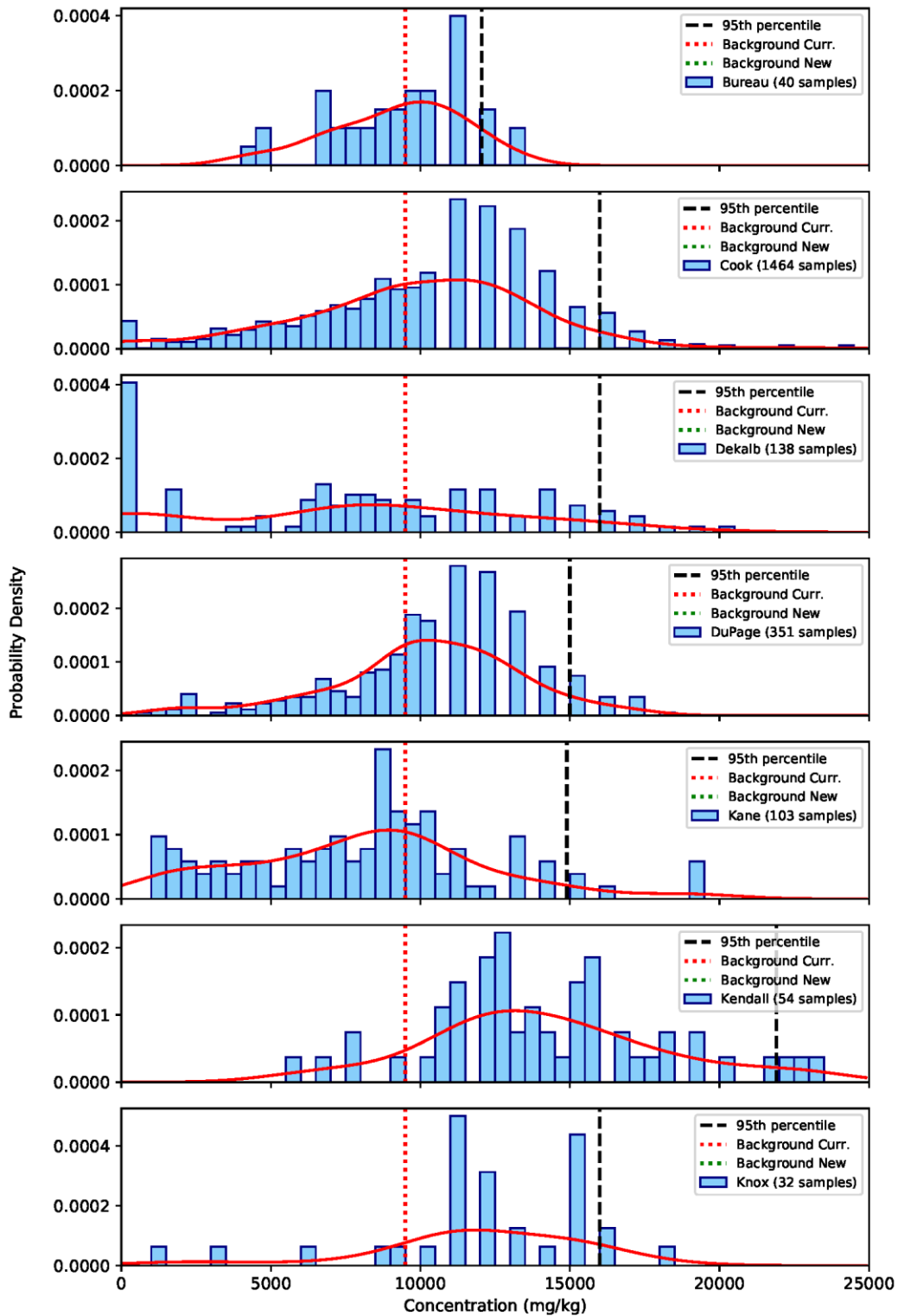


Figure 11. Histogram of RSL aluminum concentrations by Illinois county, REC (mg/kg), part 1

### Aluminum Concentration by County, page 2 of 3

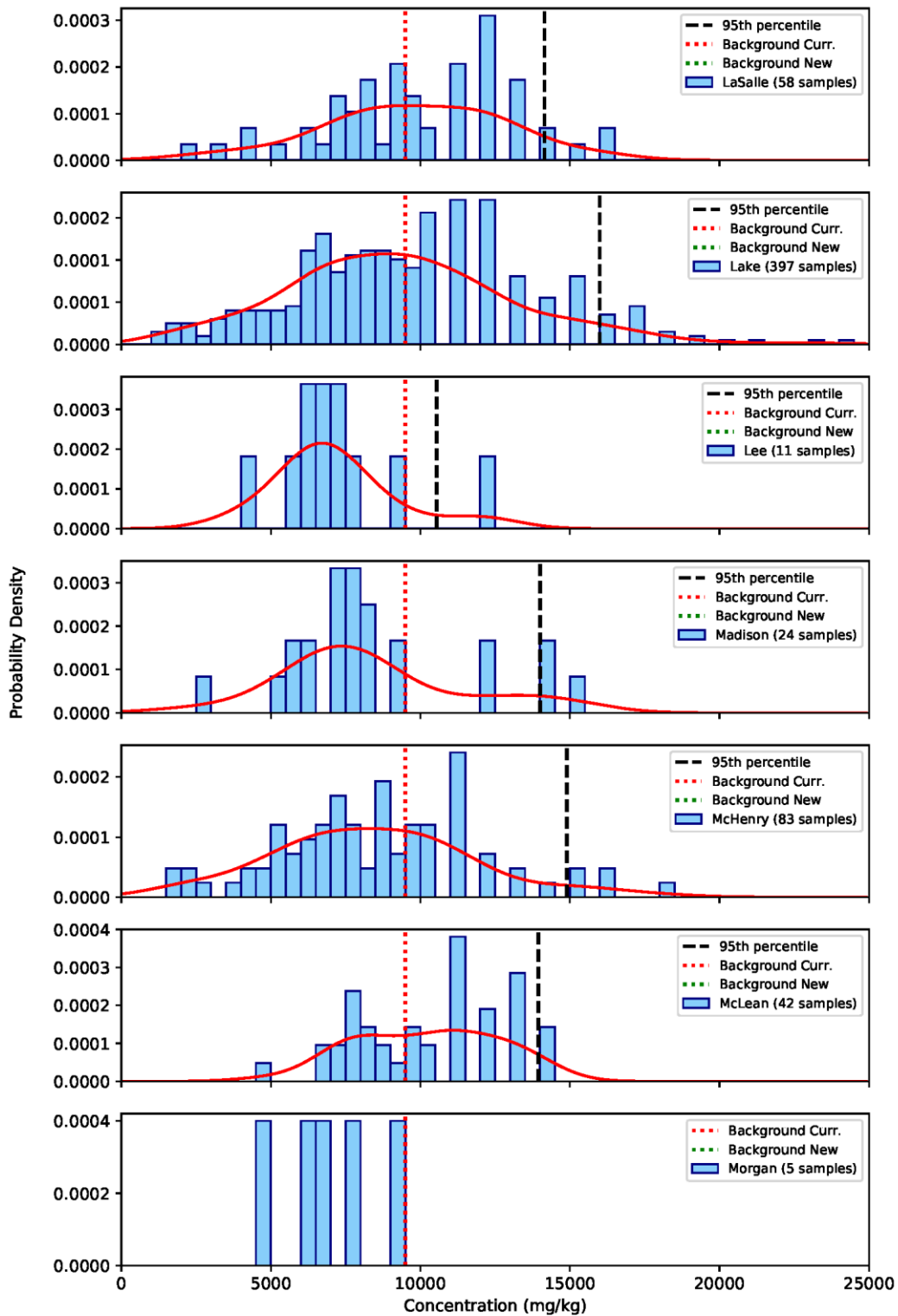


Figure 12. Histogram of RSL aluminum concentrations by Illinois county, REC (mg/kg), part 2

### Aluminum Concentration by County, page 3 of 3

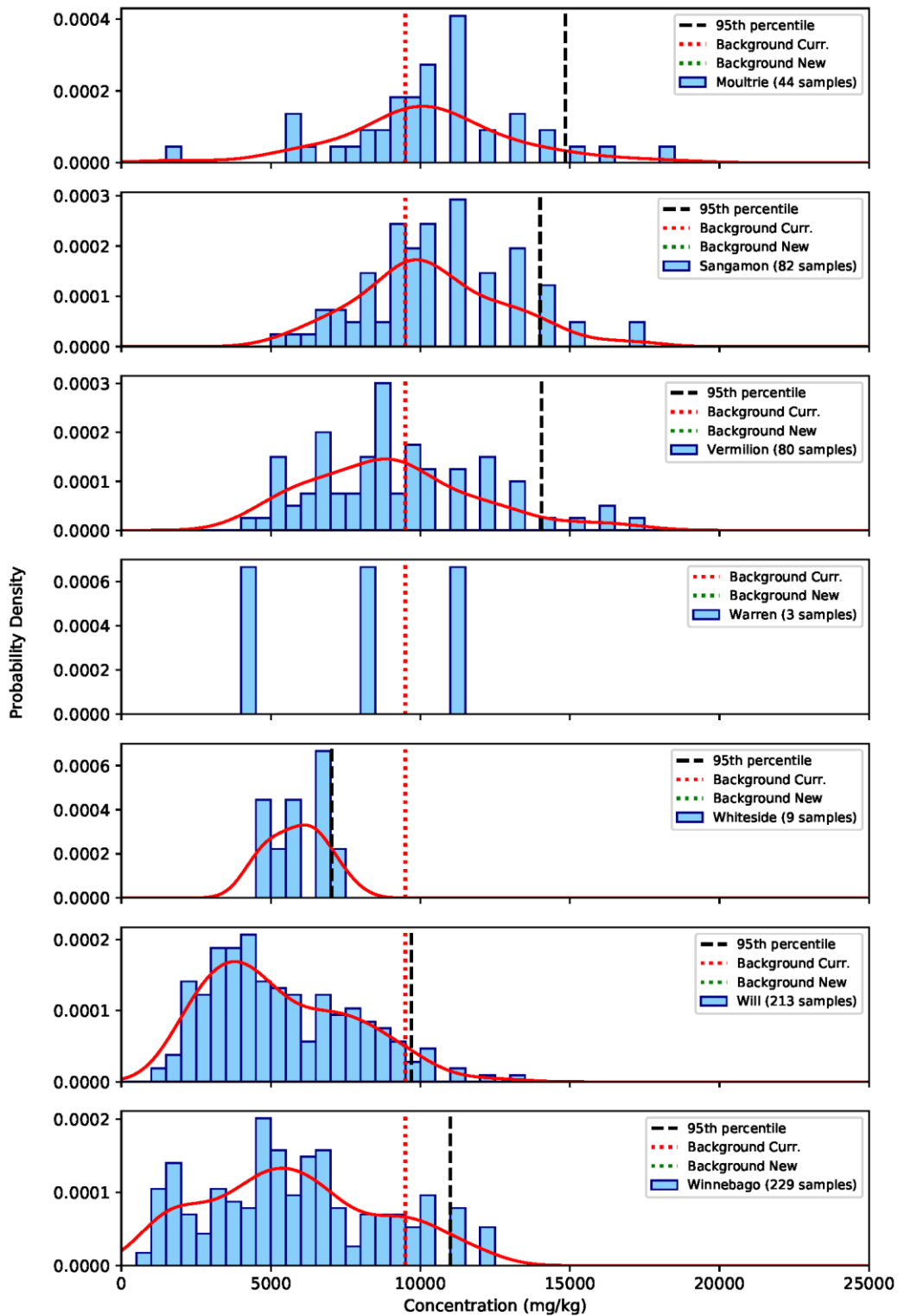


Figure 13. Histogram of RSL aluminum concentrations by Illinois county, REC (mg/kg), part 3

Aluminum Concentration for 95th Percentile by County: REC Sites

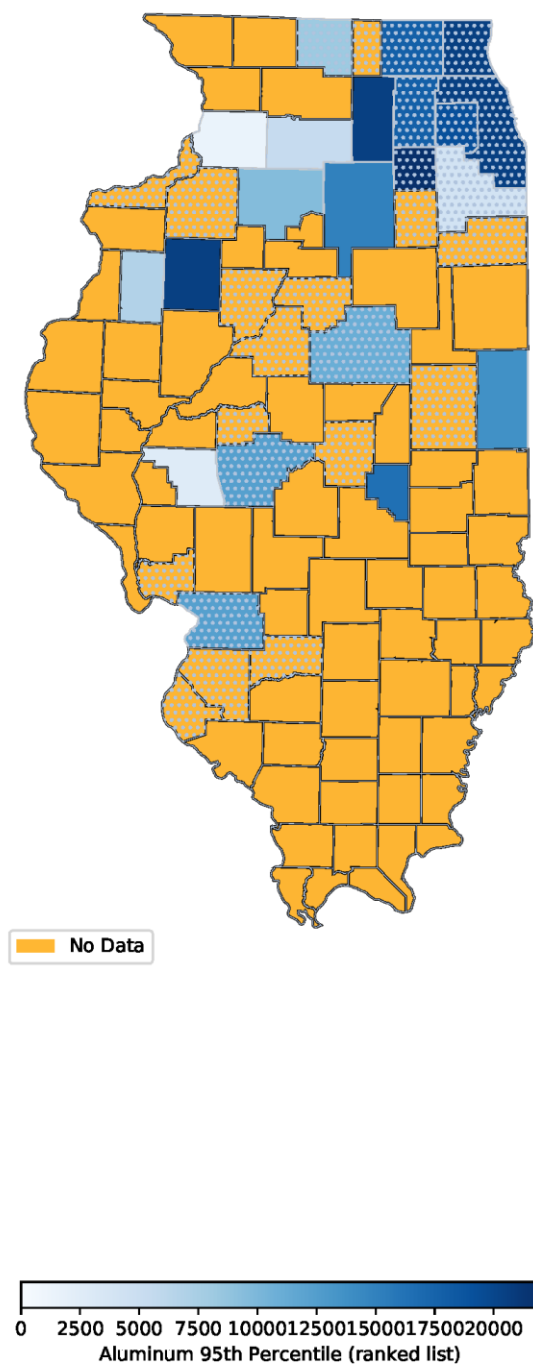


Figure 14. Map of RSL aluminum 95<sup>th</sup> percentile concentration by Illinois county, REC (mg/kg)

Number of Aluminum Samples by County: REC Sites

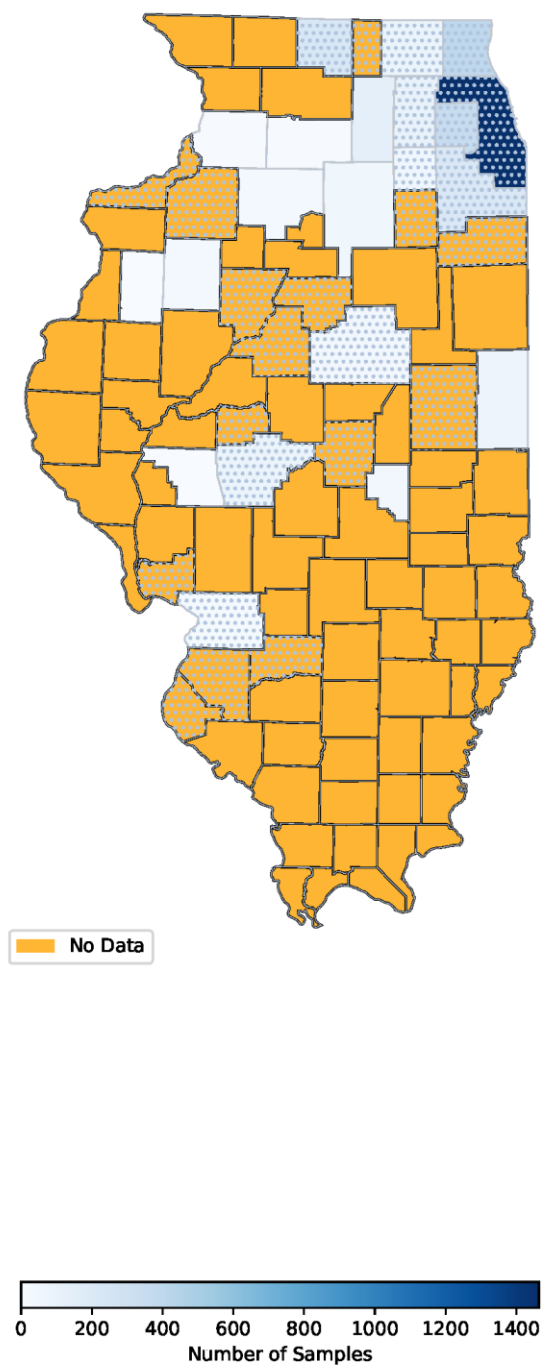


Figure 15. Map of RSL aluminum sample quantity by Illinois county, REC (mg/kg)

## **A.2 ALUMINUM NON-REC**

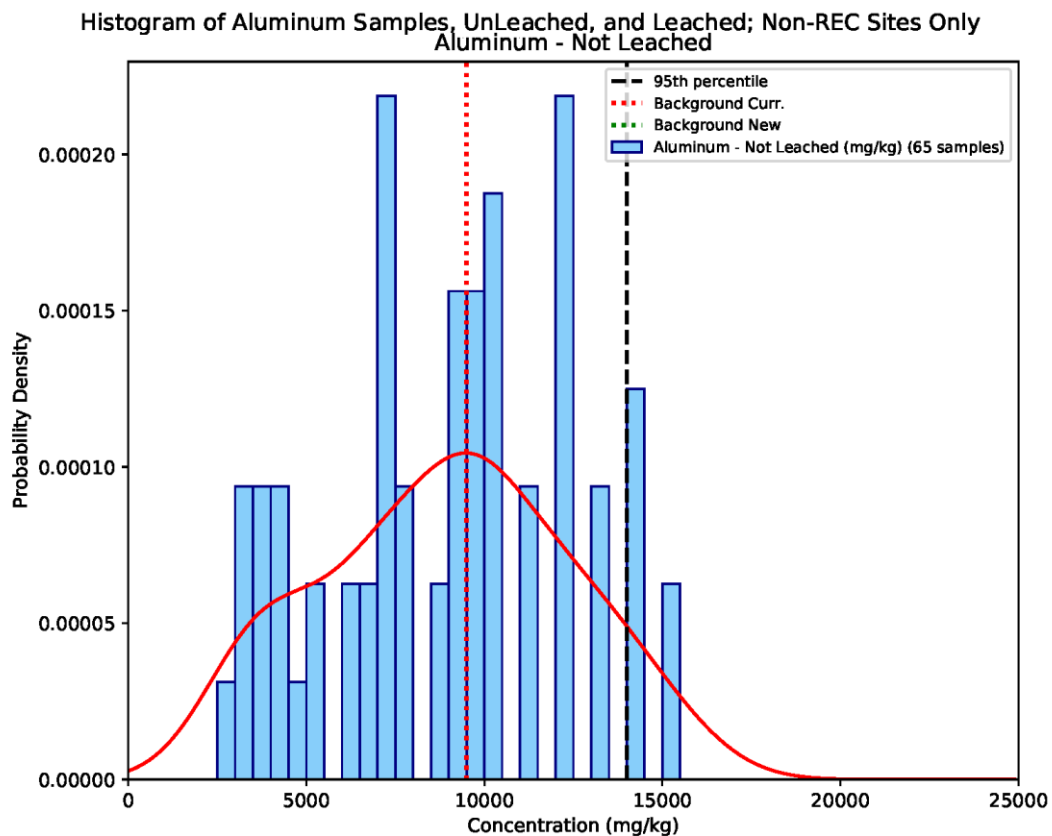


Figure 16. Histogram of RSL aluminum concentrations, Non-REC (mg/kg)



Aluminum Unleached Concentration (mg/kg)

1) Region

2) District

3) County

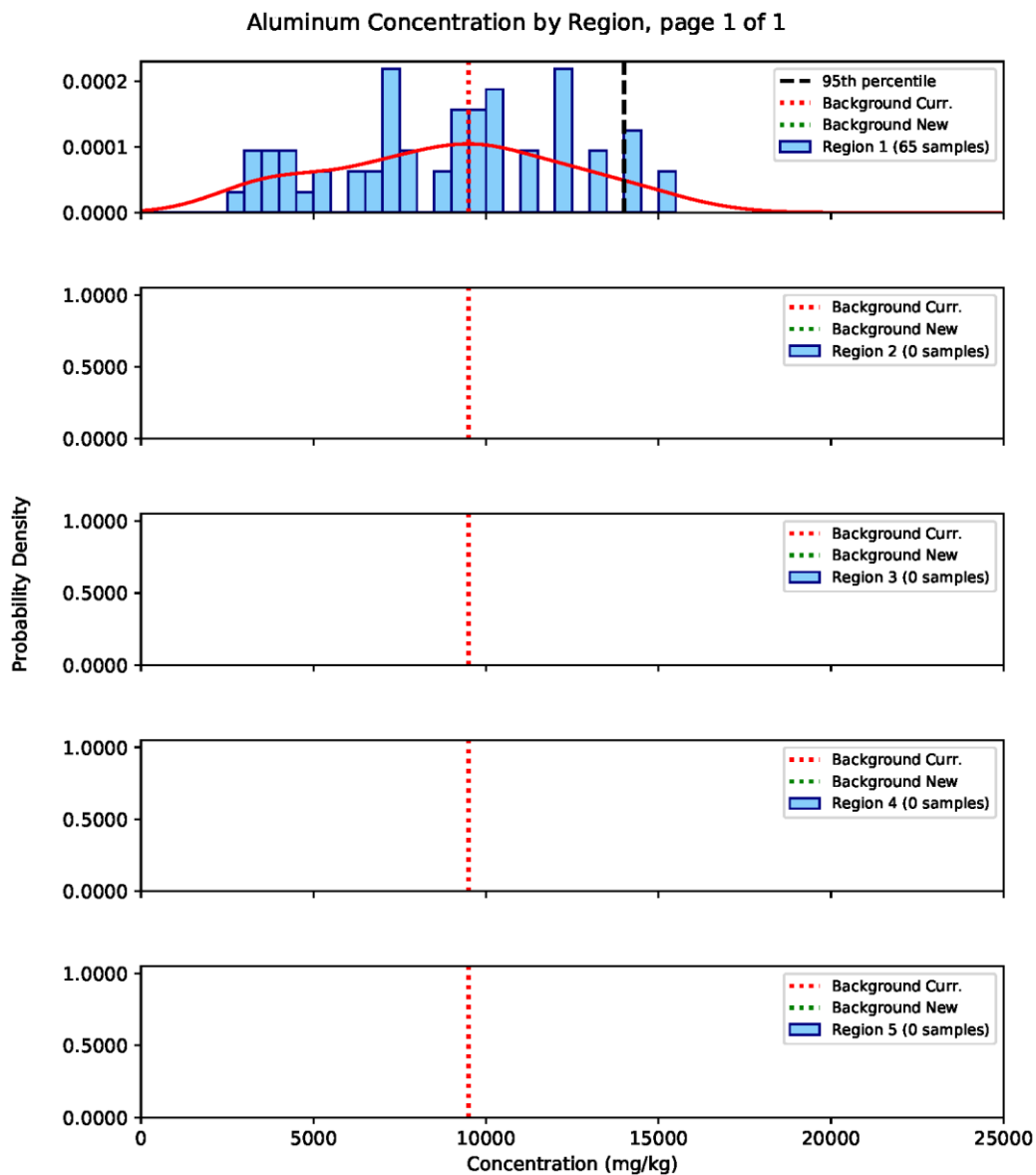


Figure 17. Histogram of RSL aluminum concentrations by IDOT Region, Non-REC (mg/kg)

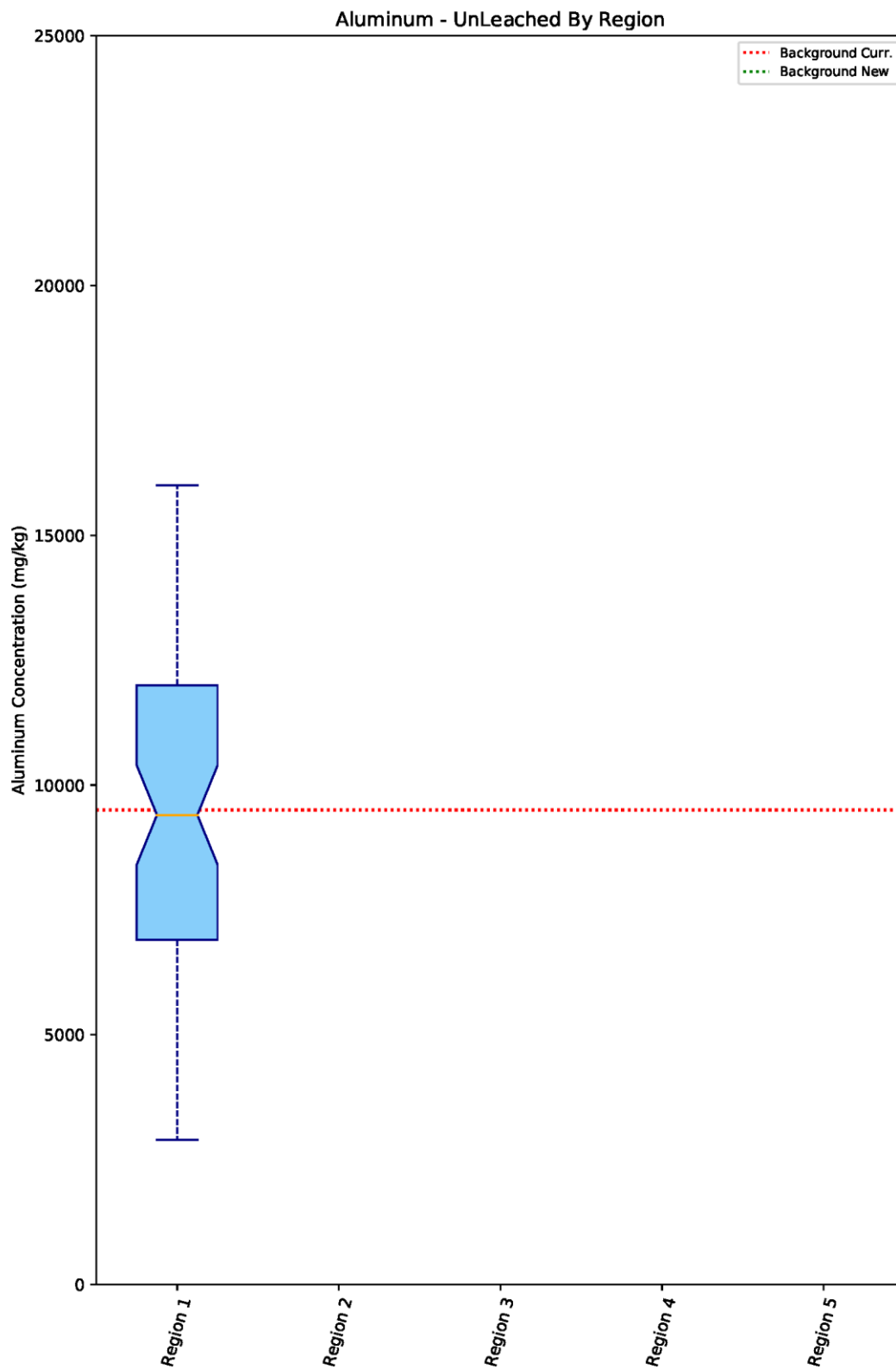


Figure 18. Boxplot of RSL aluminum concentrations by IDOT Region, Non-REC (mg/kg)

Aluminum Concentration by District, page 1 of 2

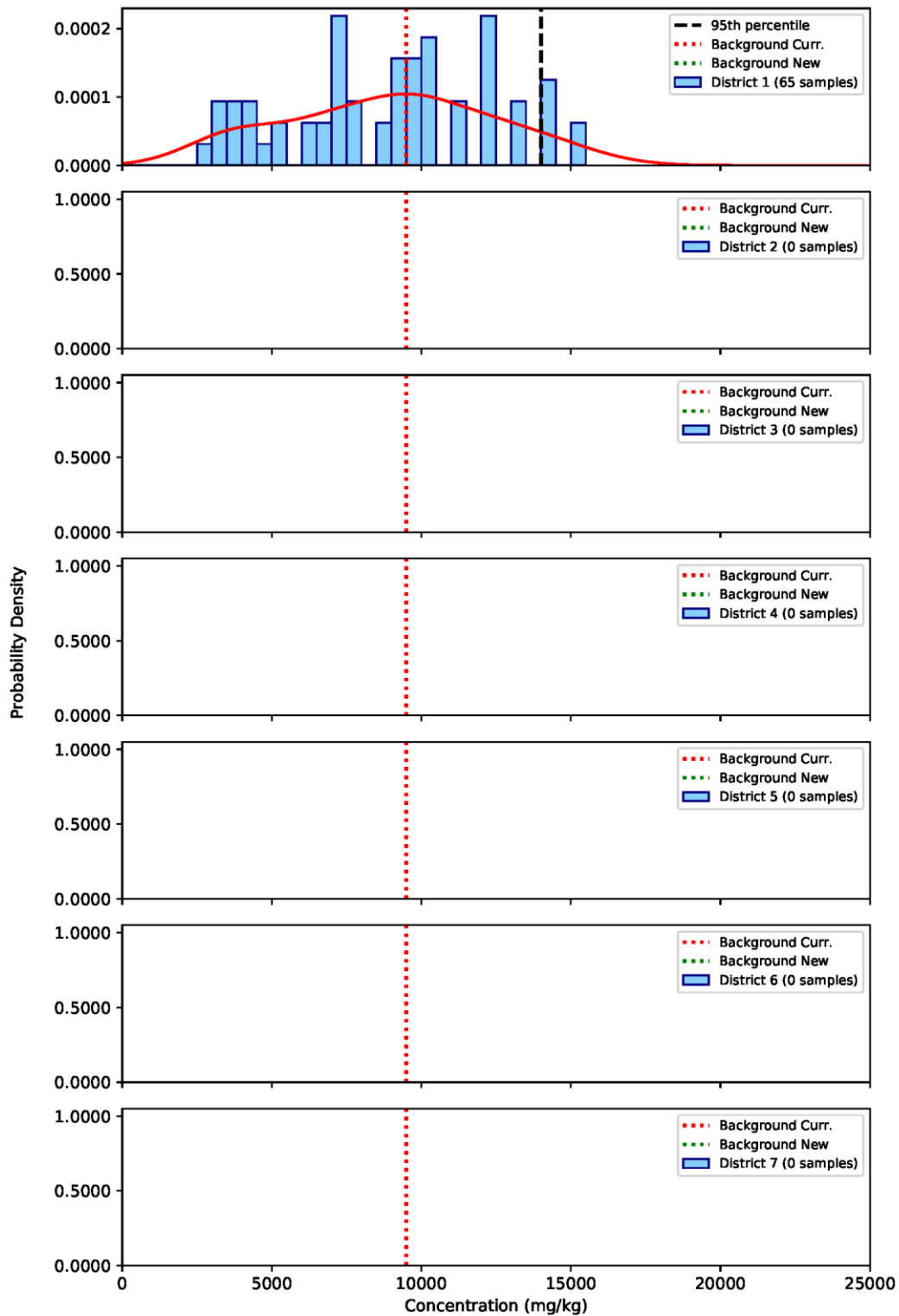


Figure 19. Histogram of RSL aluminum concentrations by IDOT District, Non-REC (mg/kg), part 1

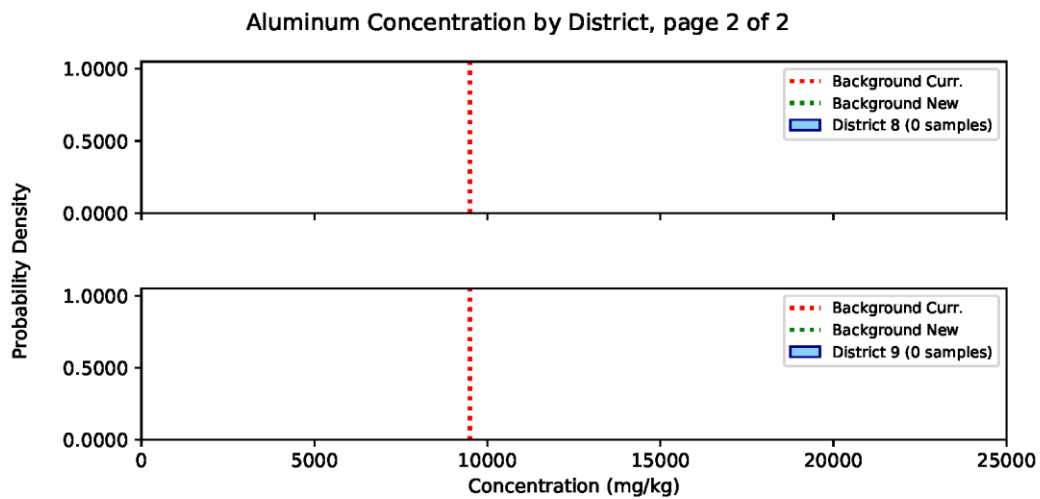
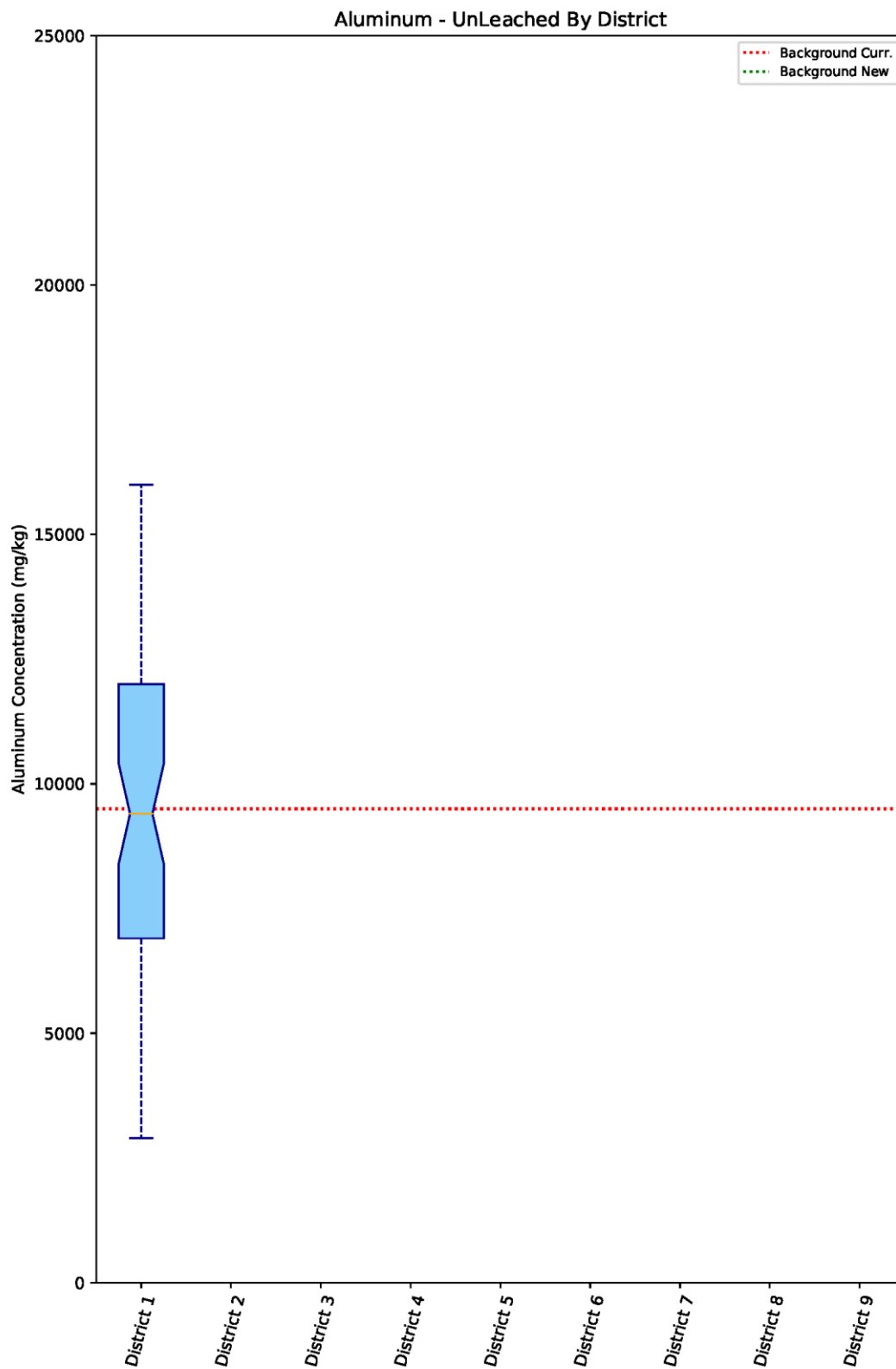


Figure 20. Histogram of RSL aluminum concentrations by IDOT District, Non-REC (mg/kg), part 2



**Figure 21. Boxplot of RSL aluminum concentrations by IDOT District, Non-REC (mg/kg)**

# Aluminum Concentration by County, page 1 of 1

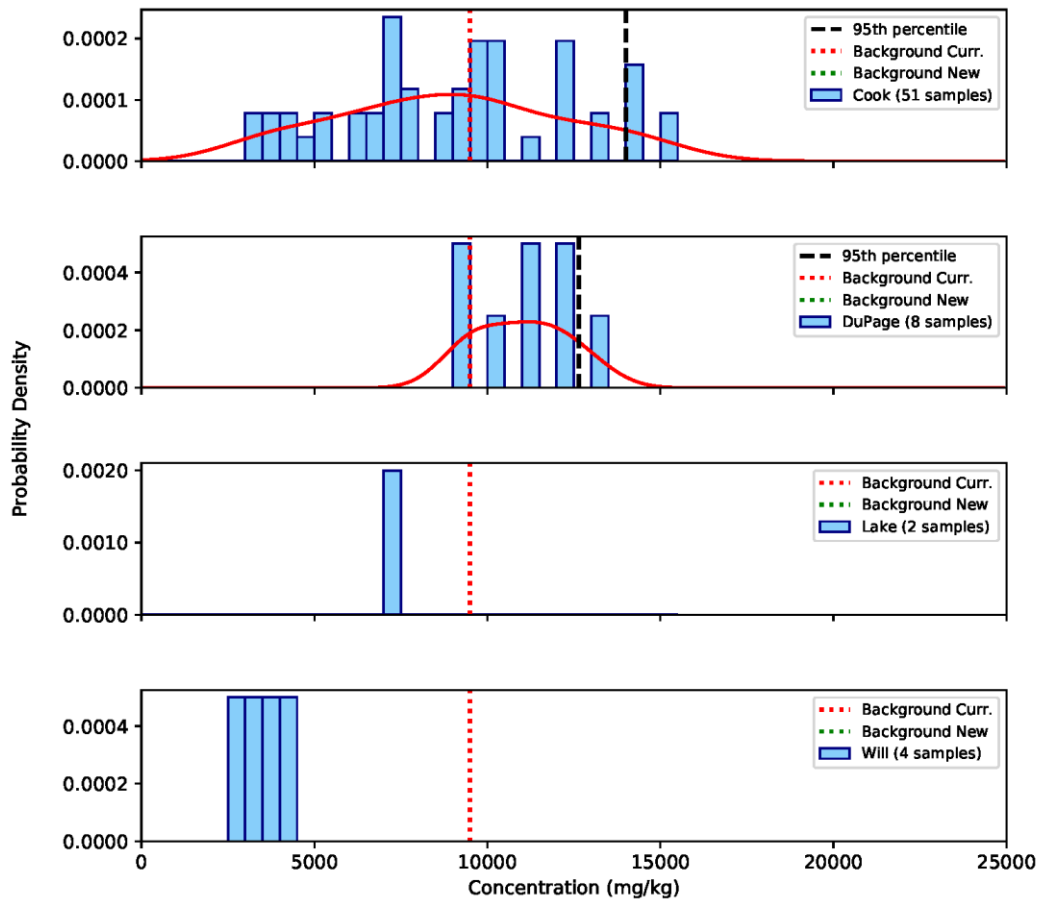


Figure 22. Histogram of RSL aluminum concentrations by Illinois county, Non-REC (mg/kg)

Aluminum Concentration for 95th Percentile by County: Non-REC Sites

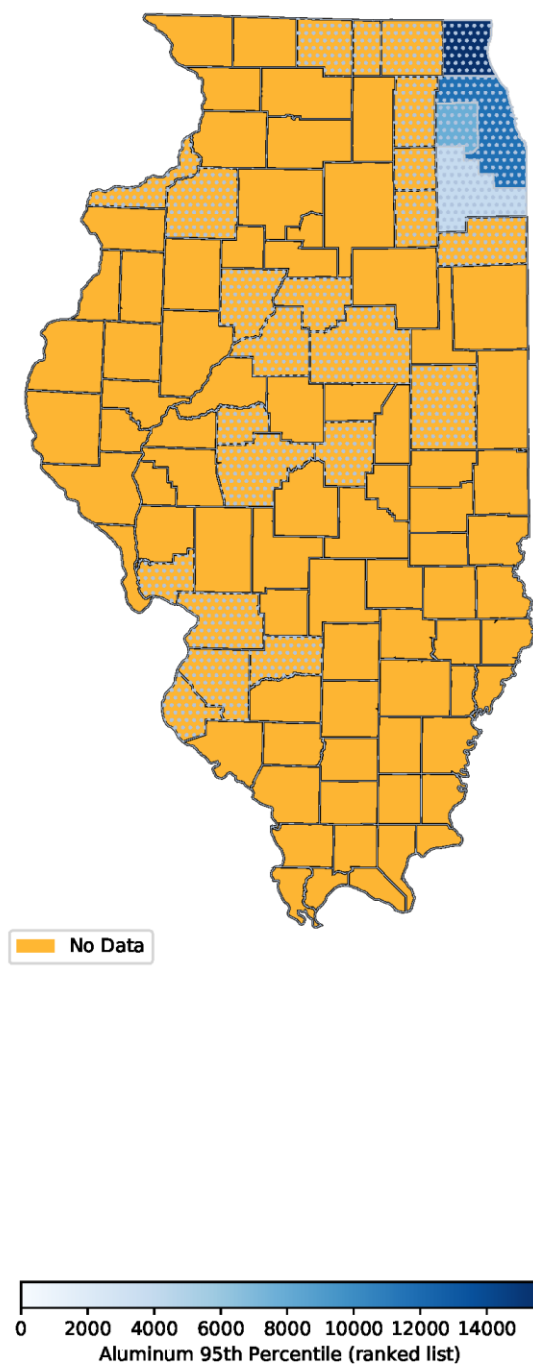


Figure 23. Map of RSL aluminum 95th percentile concentration by Illinois county, Non-REC (mg/kg)



Number of Aluminum Samples by County: Non-REC Sites

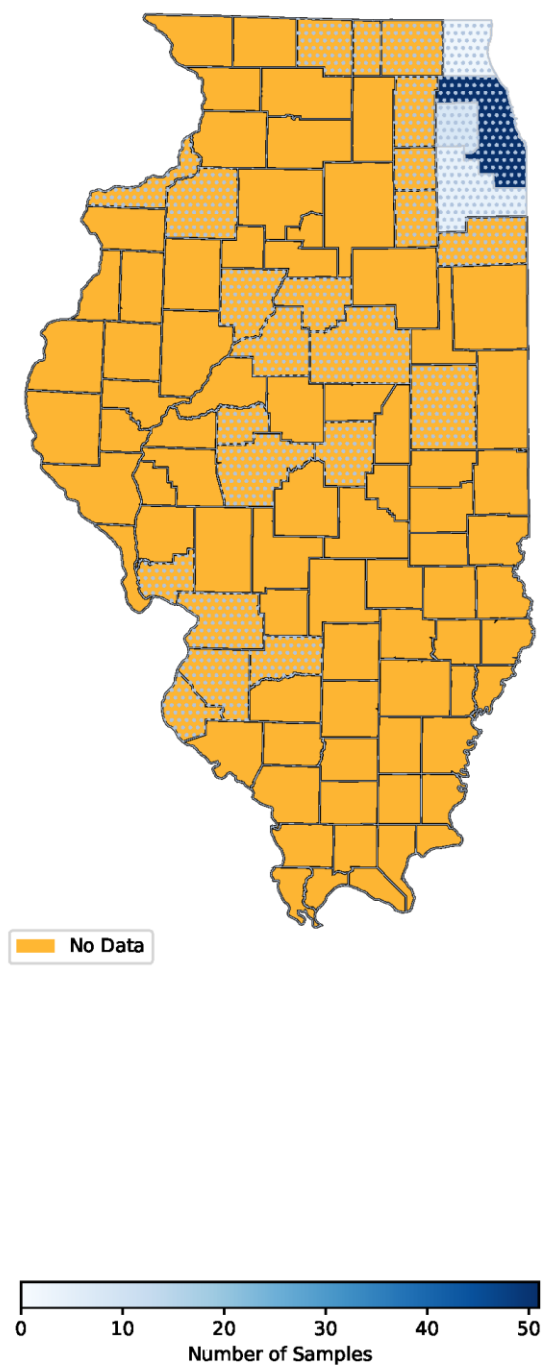


Figure 24. Map of RSL aluminum sample quantity by Illinois county, Non-REC (mg/kg)

### A.3 ALUMINUM DE MINIMIS

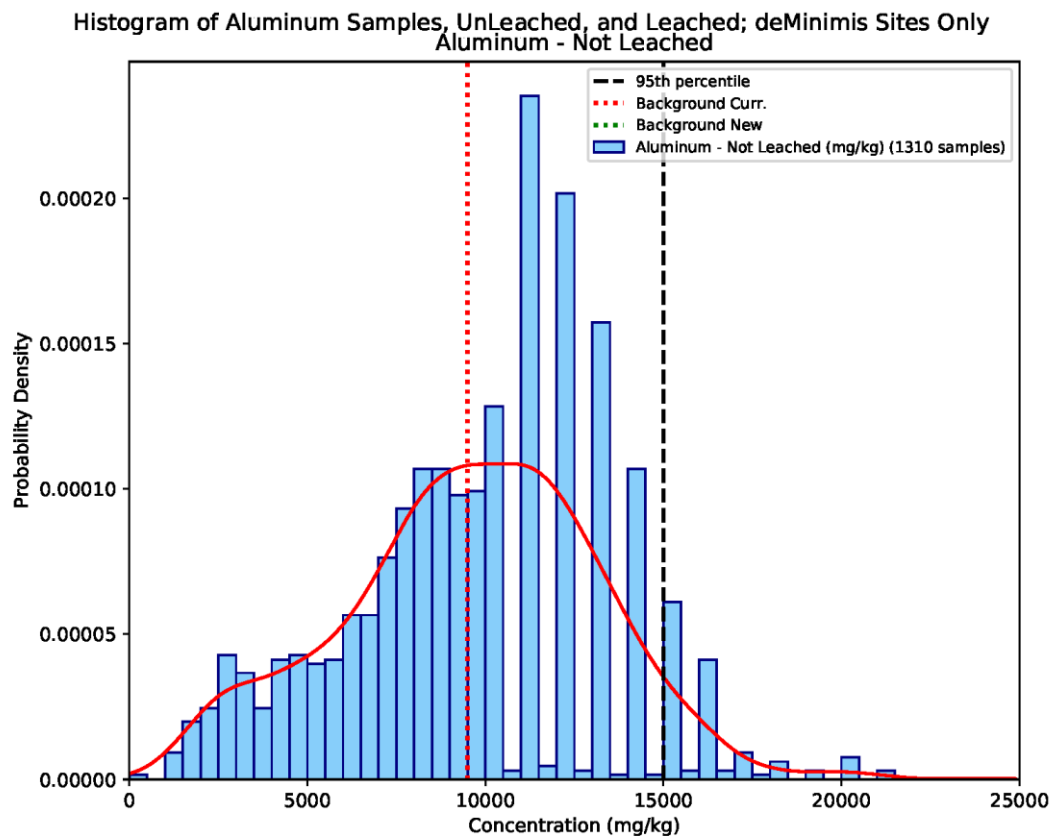


Figure 25. Histogram of RSL aluminum concentrations, de minimis (mg/kg)

Aluminum Unleached Concentration (mg/kg)

1) Region

2) District

3) County

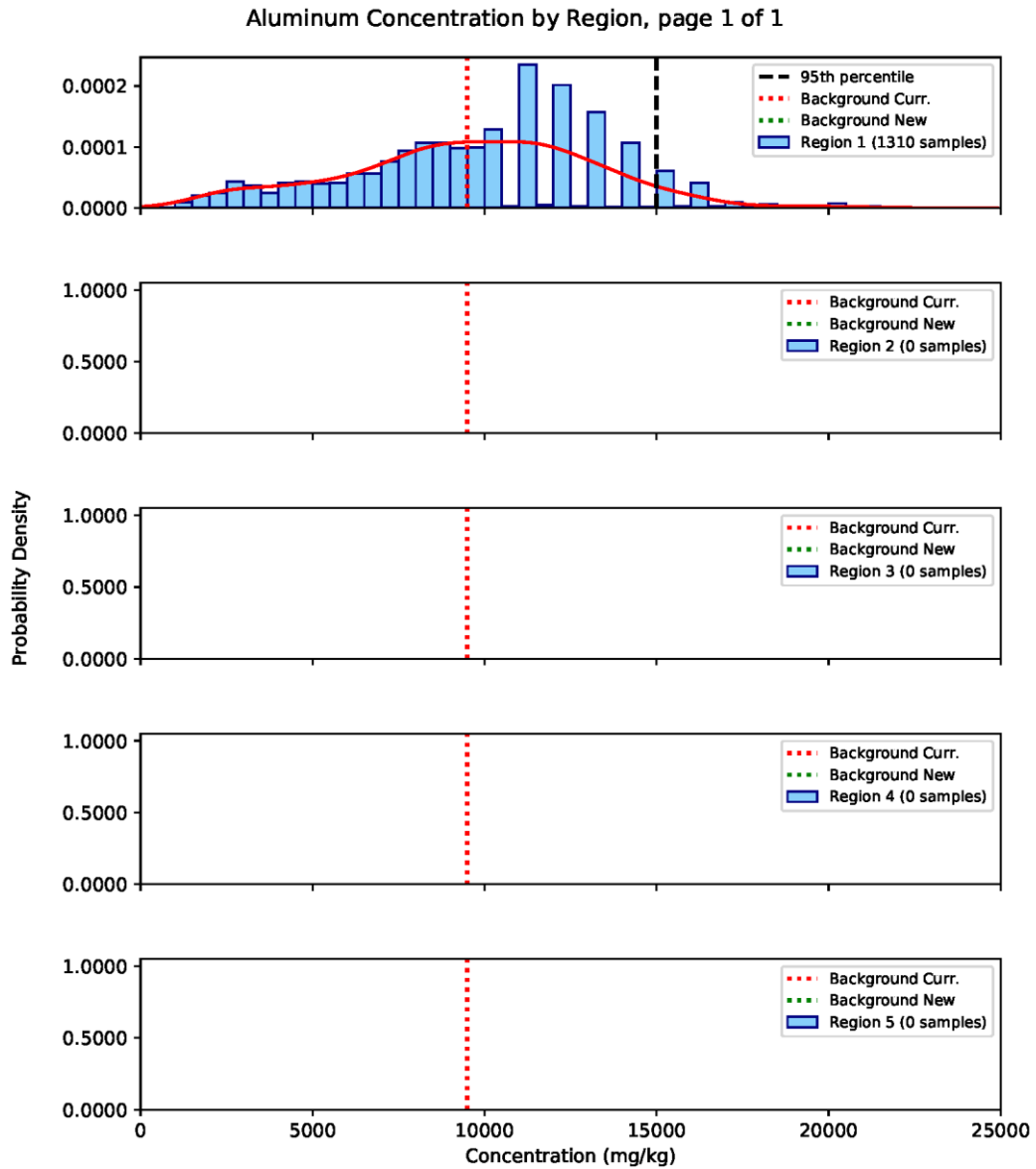


Figure 26. Histogram of RSL aluminum concentrations by IDOT Region, de minimis (mg/kg)

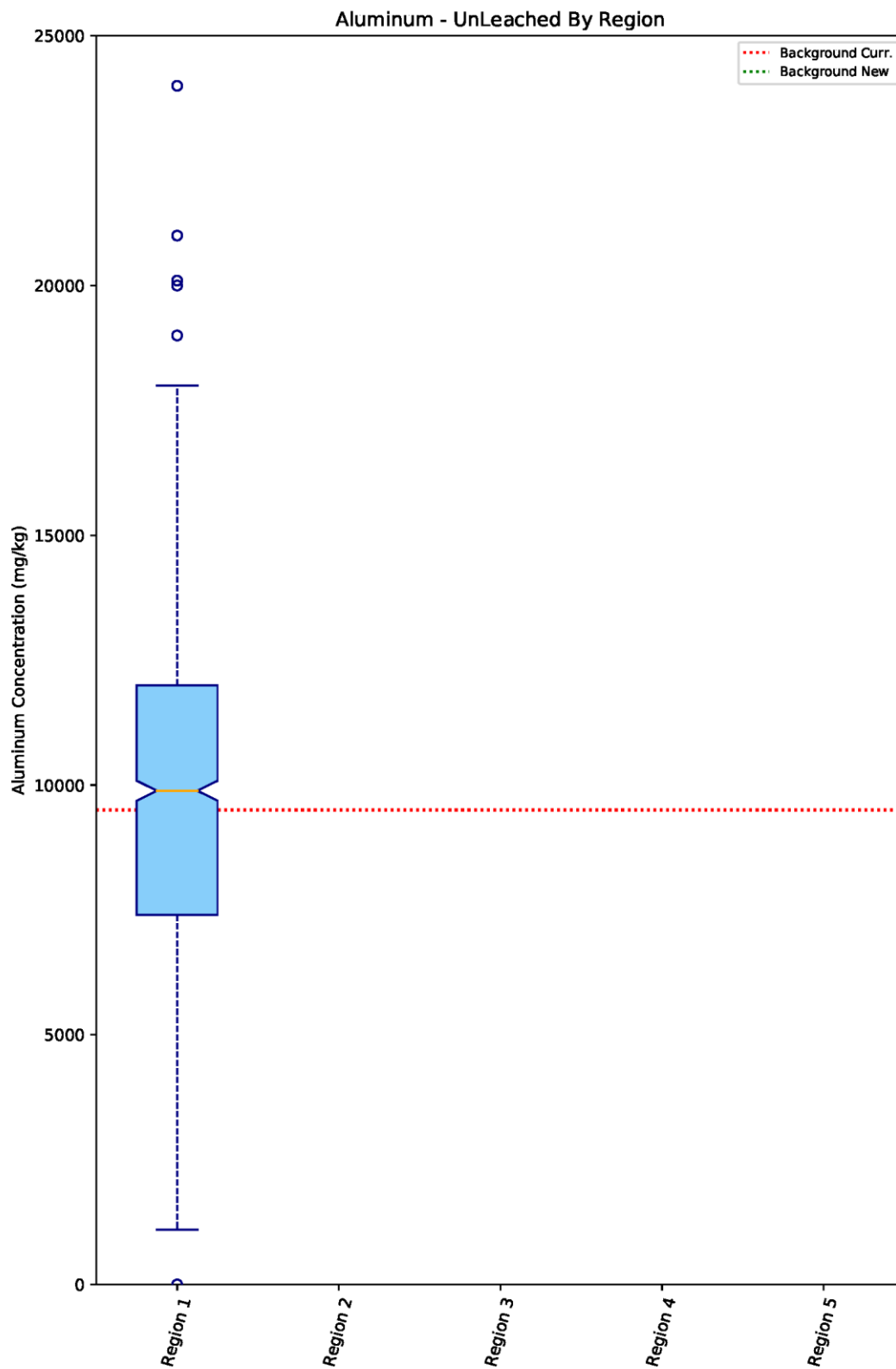


Figure 27. Boxplot of RSL aluminum concentrations by IDOT Region, de minimis (mg/kg)

Aluminum Concentration by District, page 1 of 2

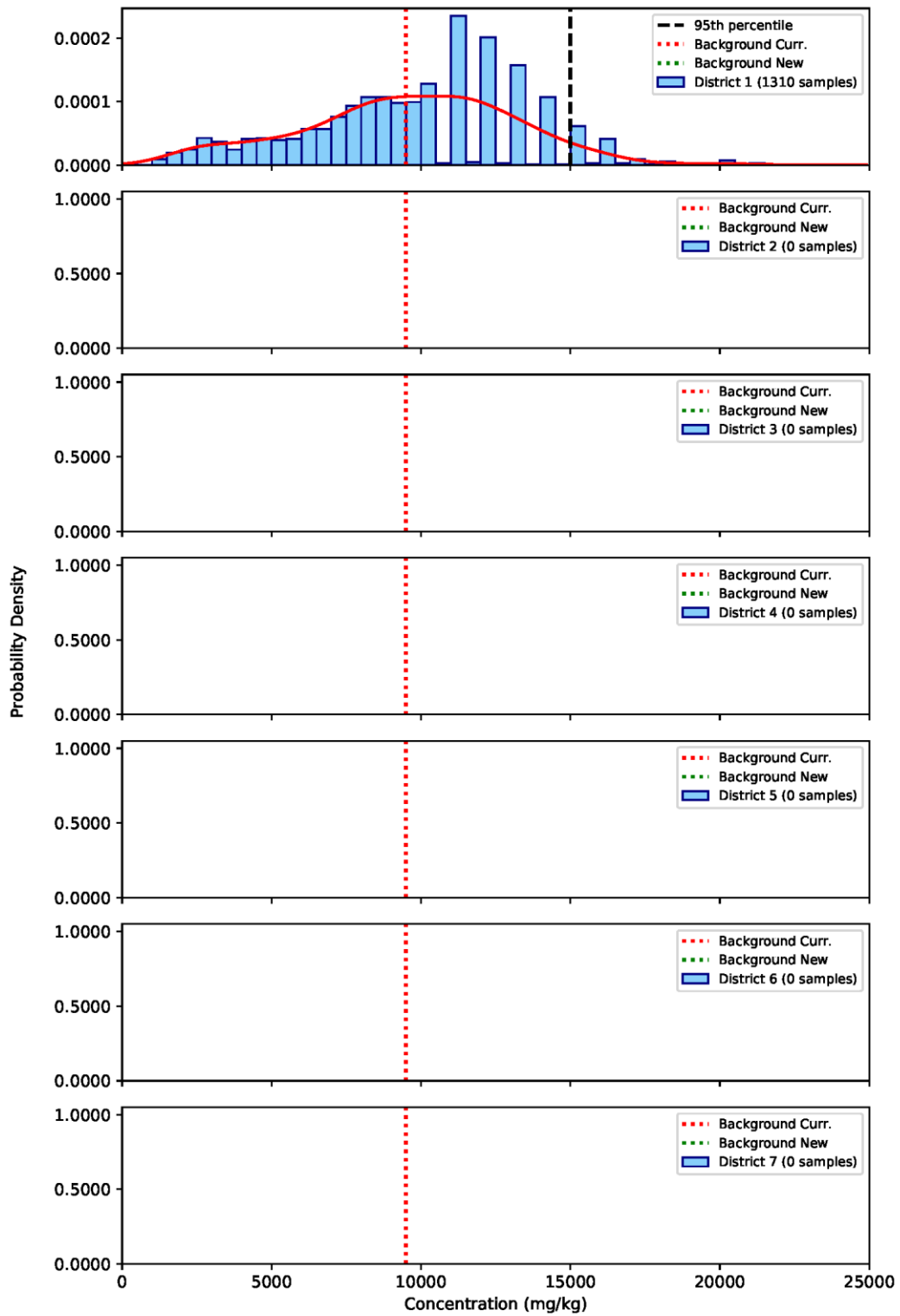


Figure 28. Histogram of RSL aluminum concentrations by IDOT District, de minimis (mg/kg), part 1

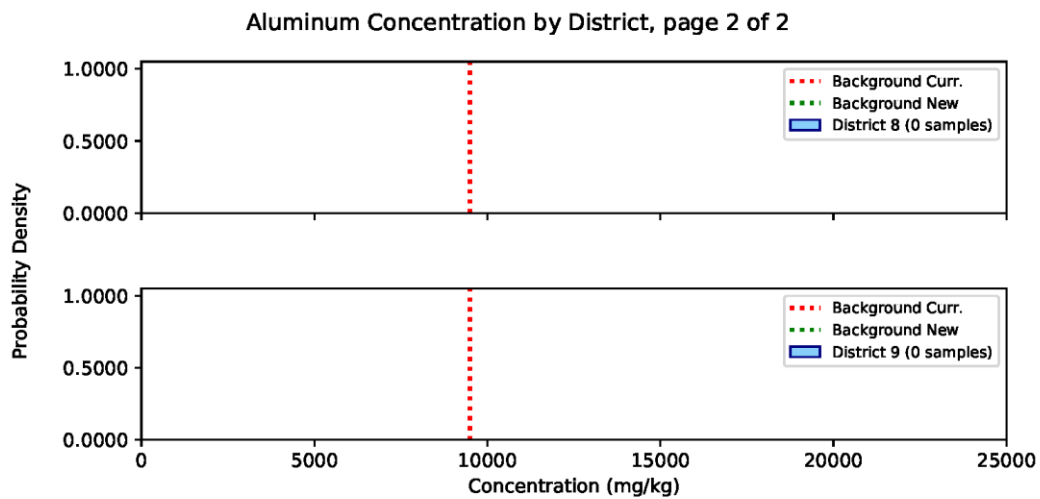


Figure 29. Histogram of RSL aluminum concentrations by IDOT District, de minimis (mg/kg), part 2



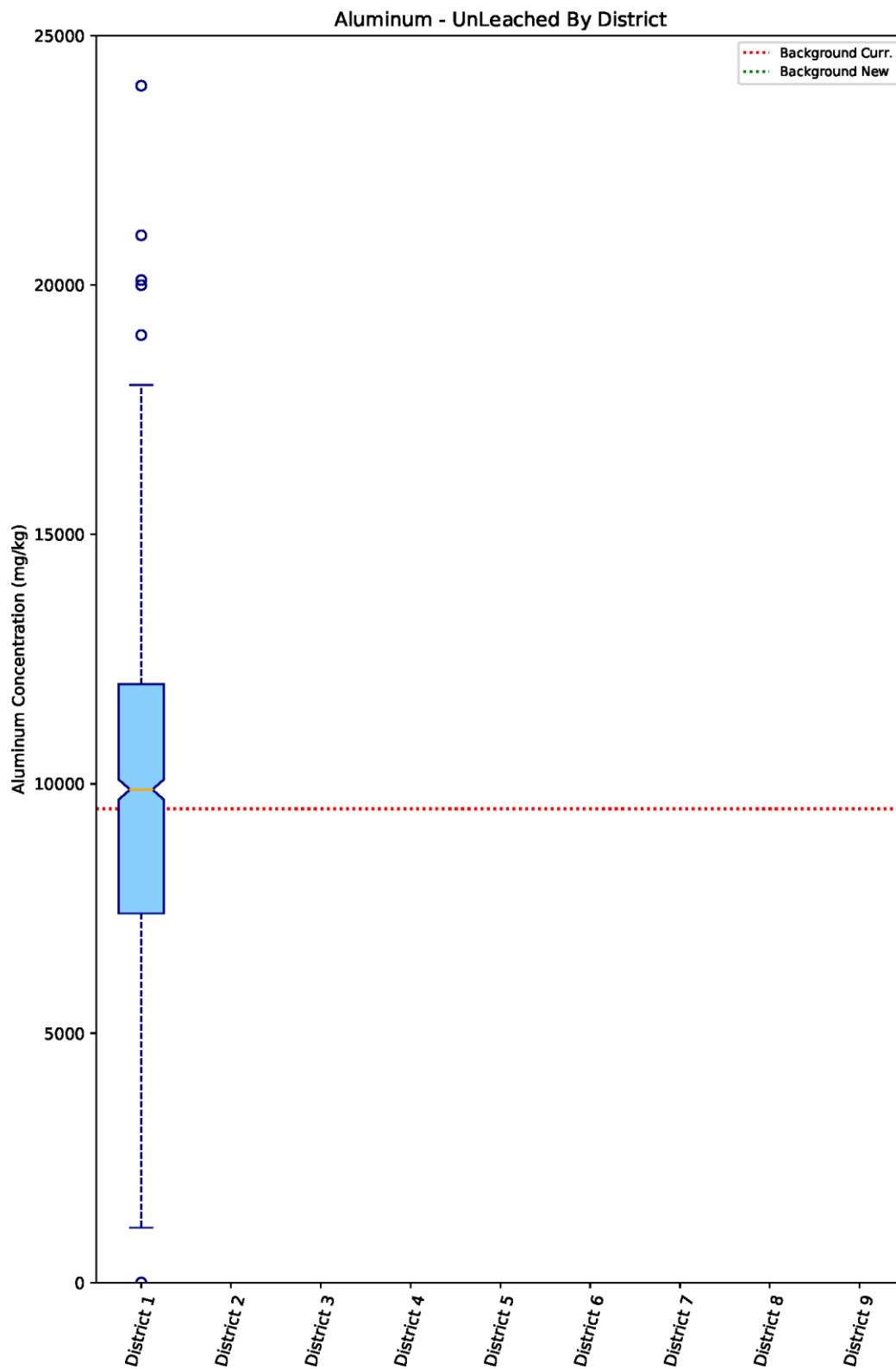


Figure 30. Boxplot of RSL aluminum concentrations by IDOT District, de minimis (mg/kg)

### Aluminum Concentration by County, page 1 of 1

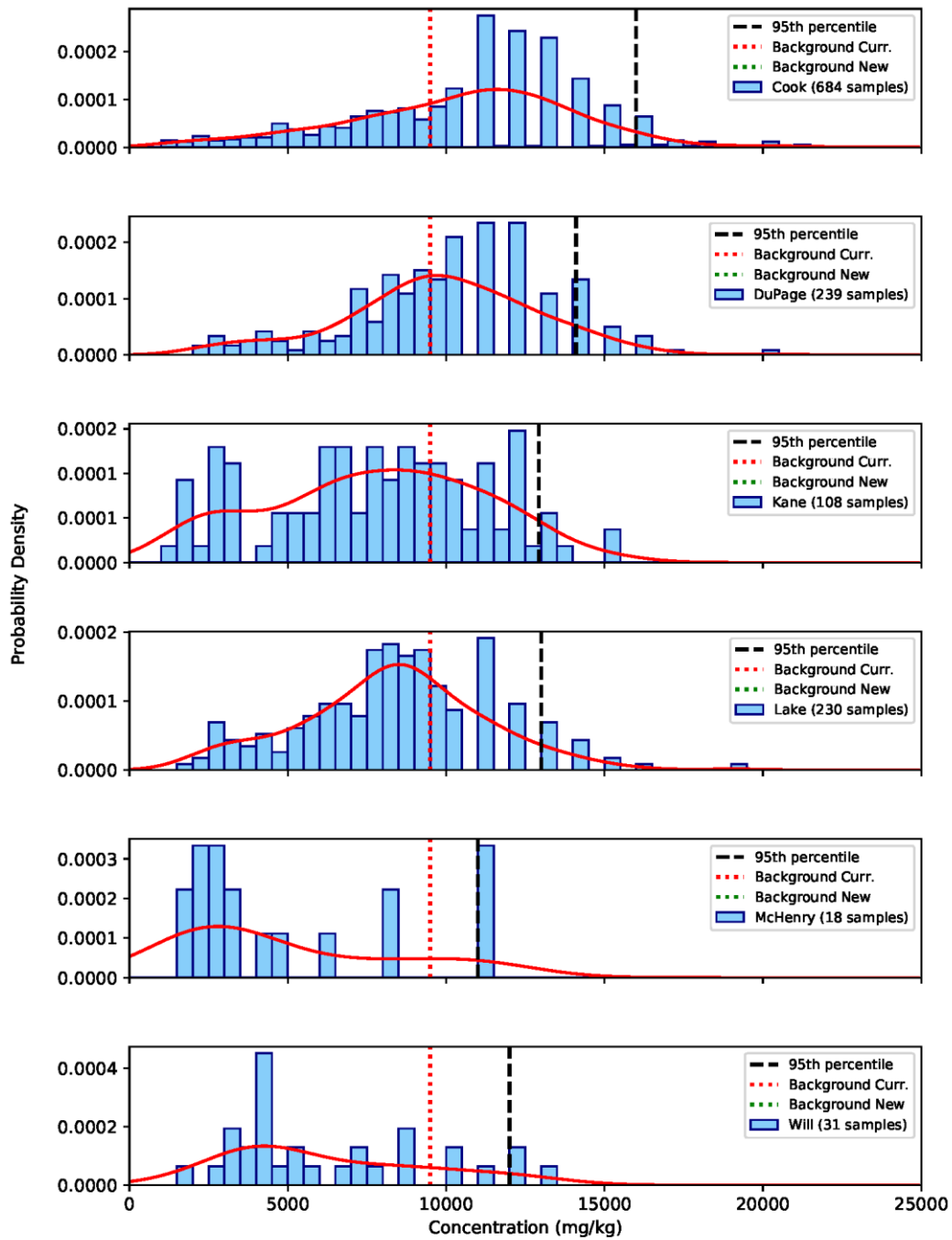


Figure 31. Histogram of RSL aluminum concentrations by Illinois county, de minimis (mg/kg)

Aluminum Concentration for 95th Percentile by County: deMinimis Sites

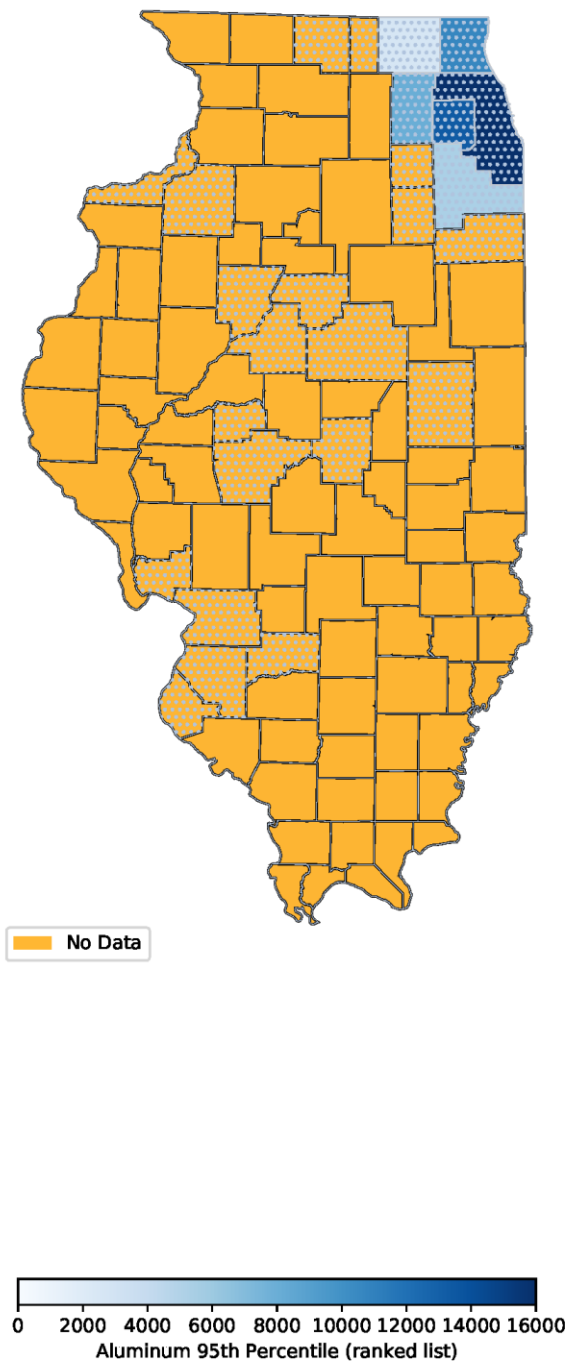
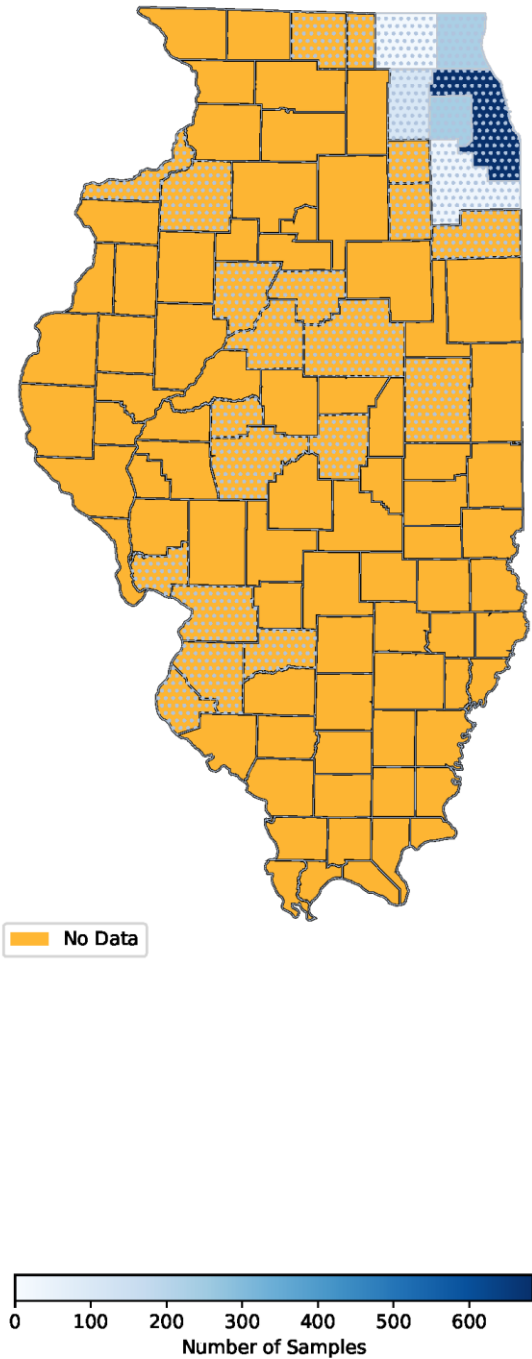


Figure 32. Map of RSL aluminum 95th percentile concentration by Illinois county, de minimis (mg/kg)

### Number of Aluminum Samples by County: deMinimis Sites



**Figure 33. Map of RSL aluminum sample quantity by Illinois county, de minimis (mg/kg)**

## **APPENDIX B. ANALYTE ANALYSIS: ANTIMONY**

### **B.1 ANTIMONY REC**

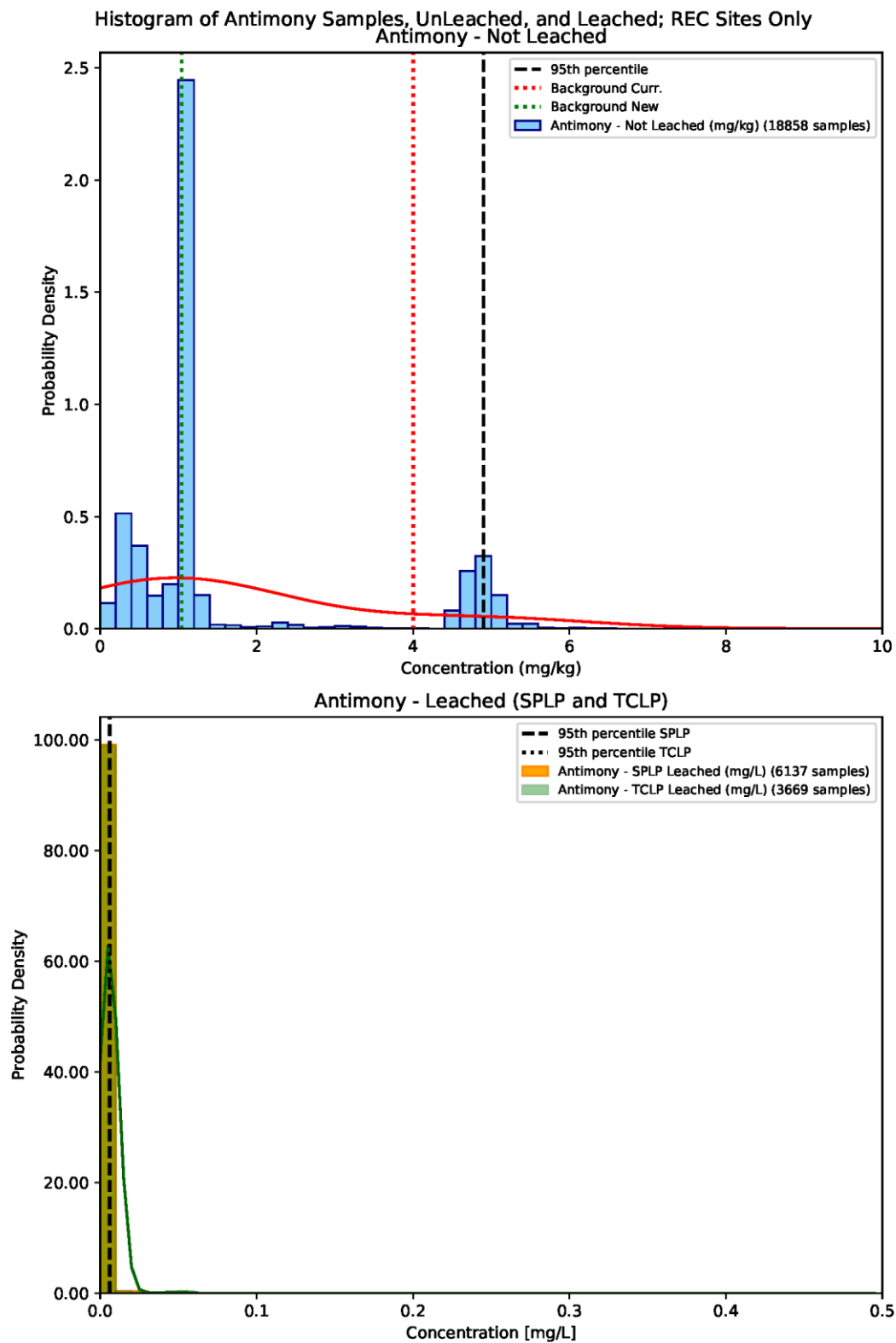


Figure 34. Histogram of RSL antimony concentrations, REC (mg/kg)

**Antimony Unleached Concentration (mg/kg)**

- 1) Region
- 2) District
- 3) County

Antimony Concentration by Region, page 1 of 1

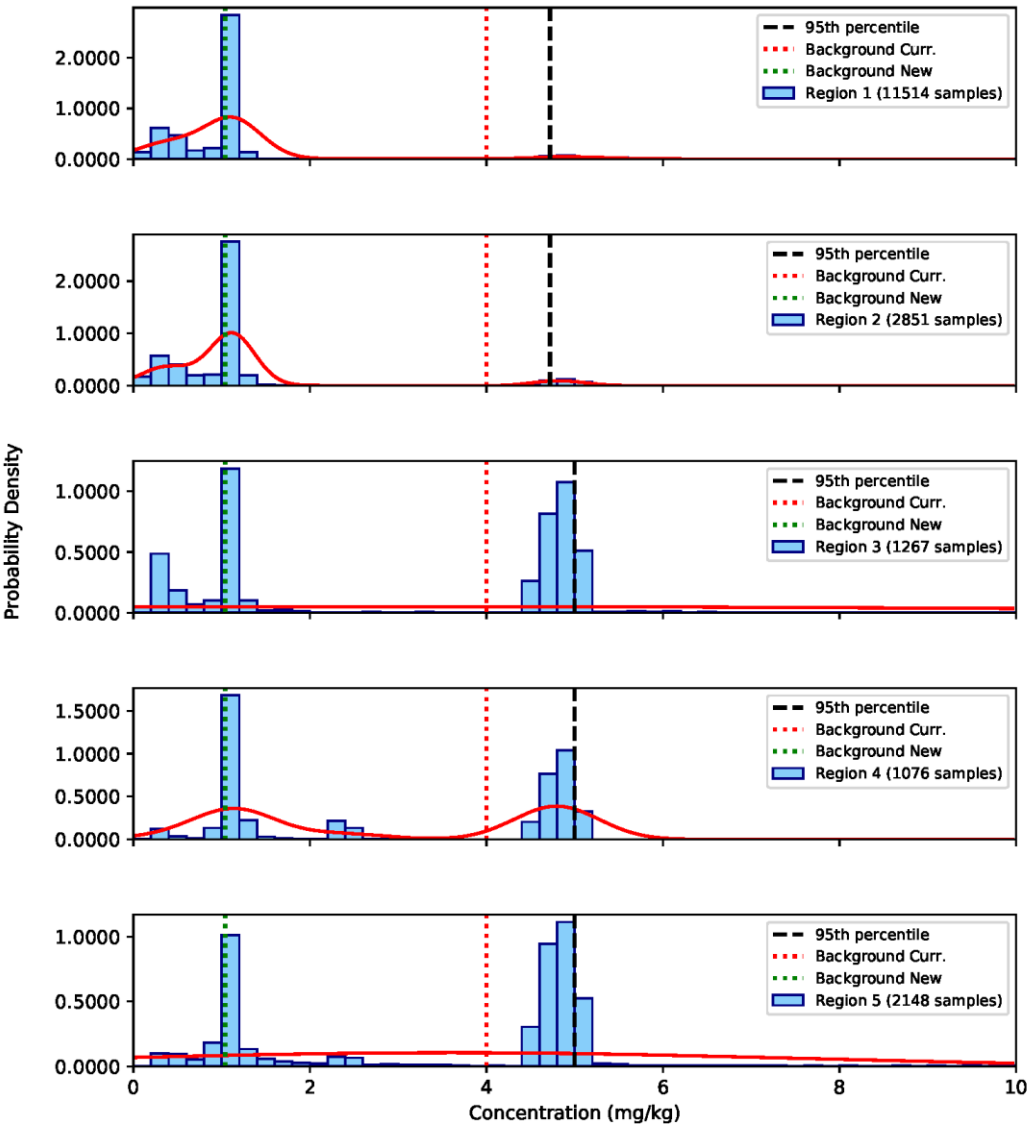


Figure 35. Histogram of RSL antimony concentrations by IDOT Region, REC (mg/kg)



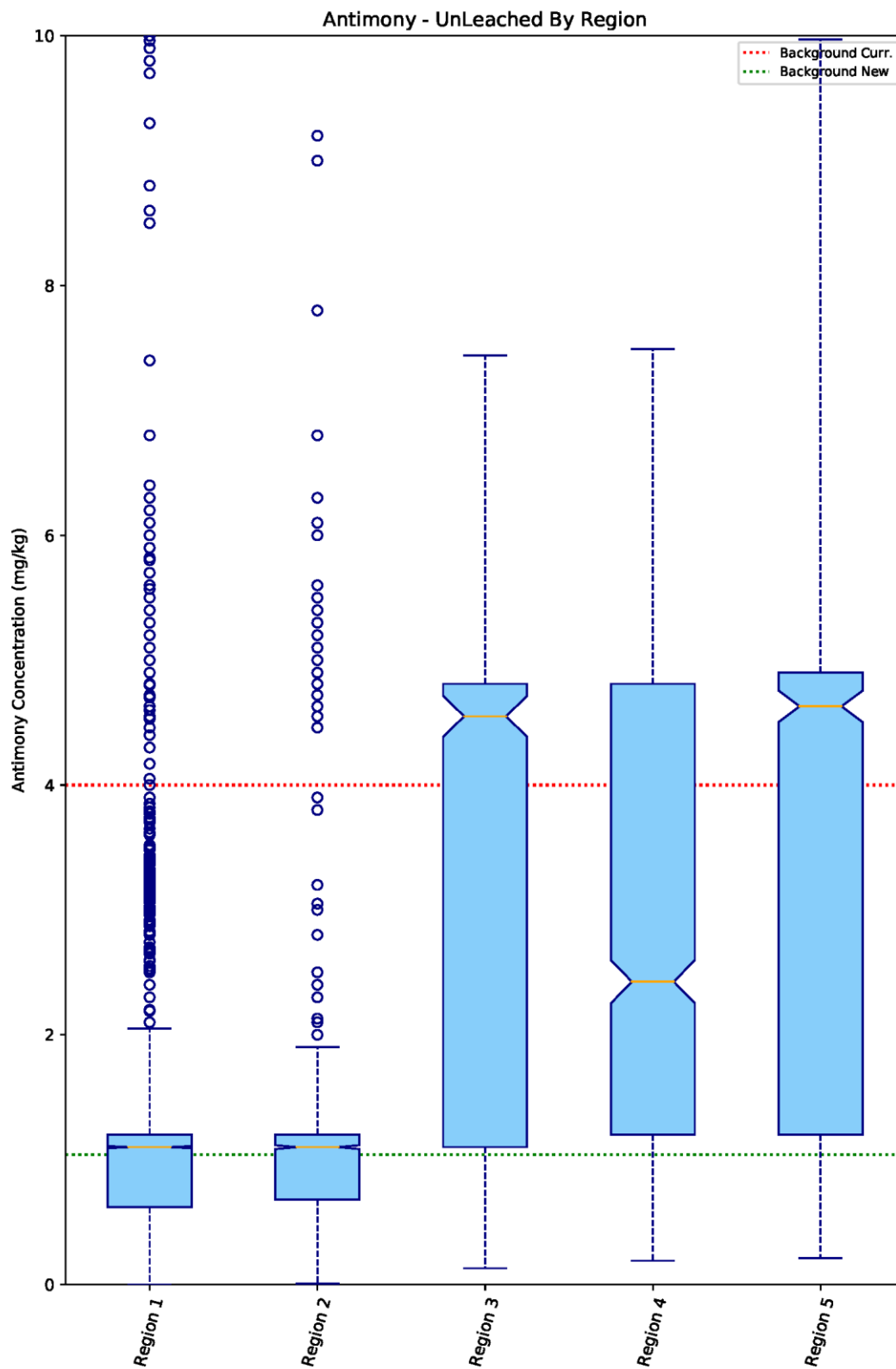


Figure 36. Boxplot of RSL antimony concentrations by IDOT Region, REC (mg/kg)

# Antimony Concentration by District, page 1 of 2

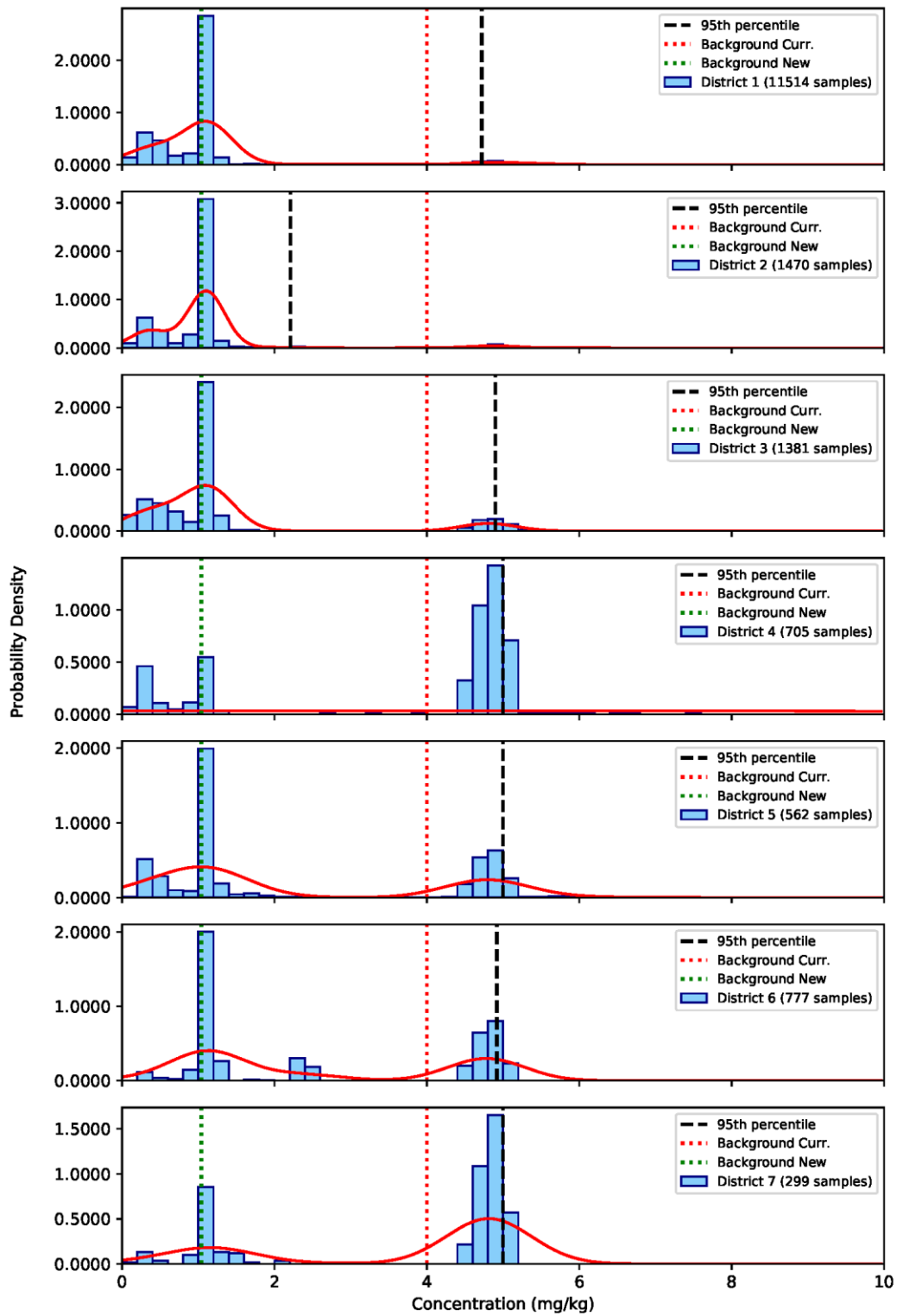


Figure 37. Histogram of RSL antimony concentrations by IDOT District, REC (mg/kg), part 1

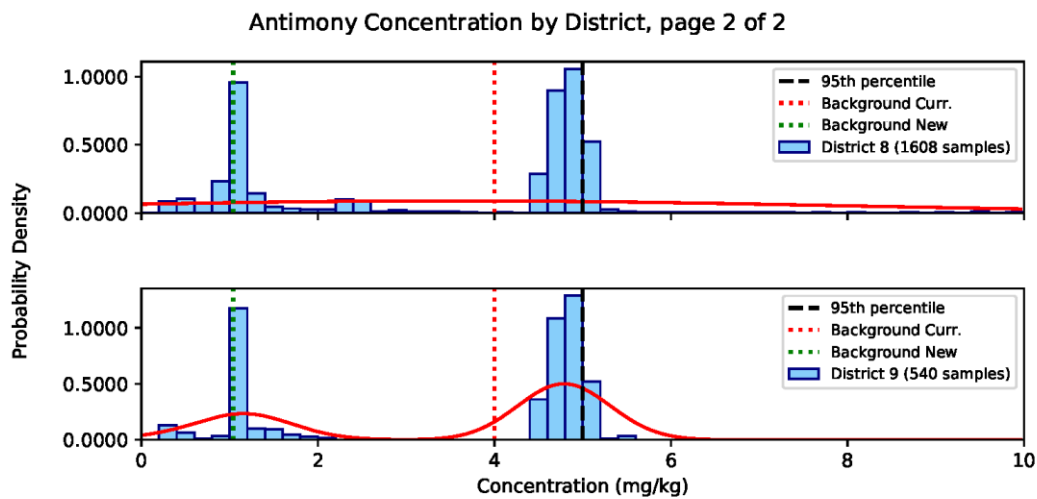


Figure 38. Histogram of RSL antimony concentrations by IDOT District, REC (mg/kg), part 2

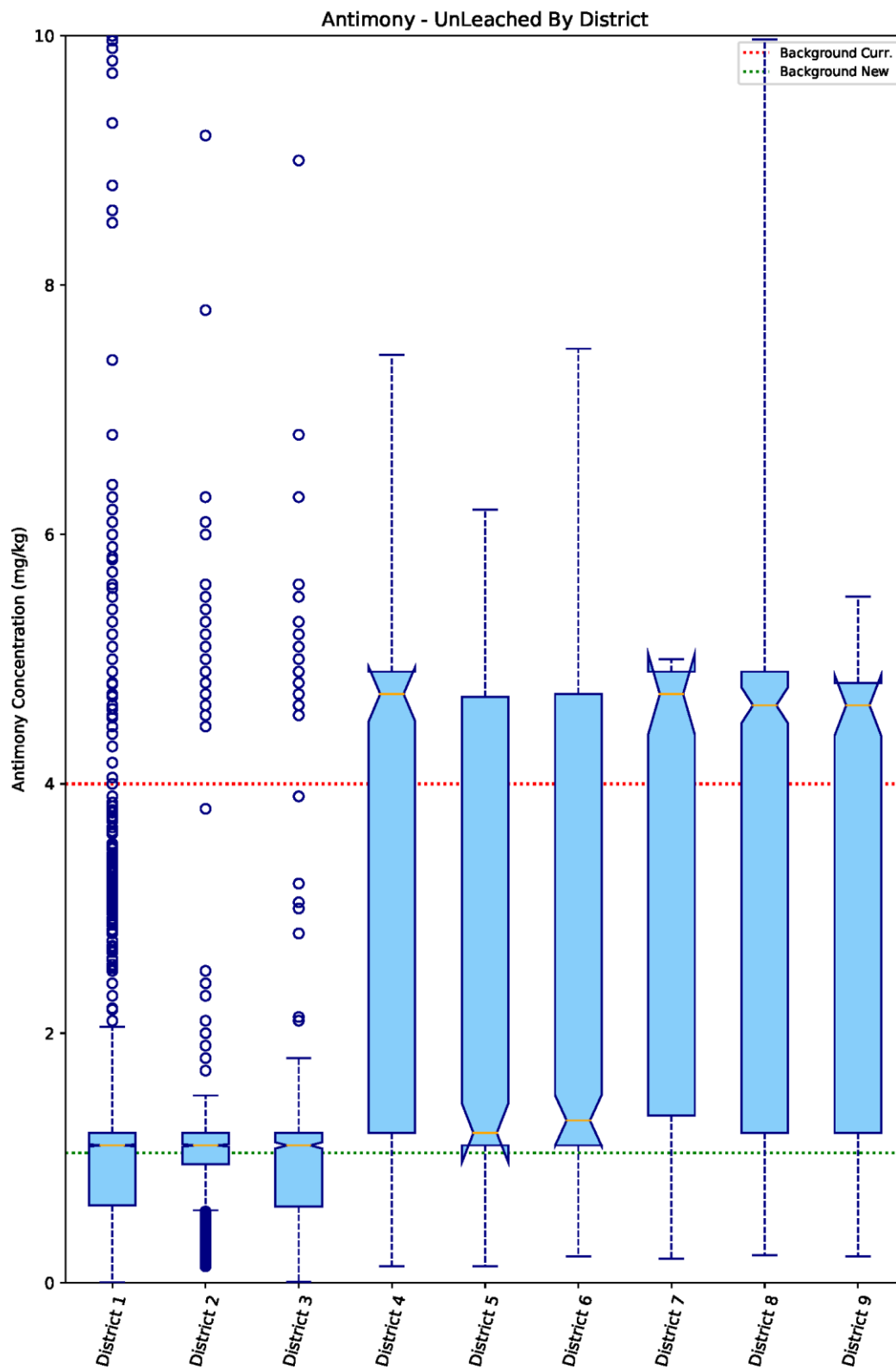


Figure 39. Boxplot of RSL antimony concentrations by IDOT District, REC (mg/kg)

# Antimony Concentration by County, page 1 of 10

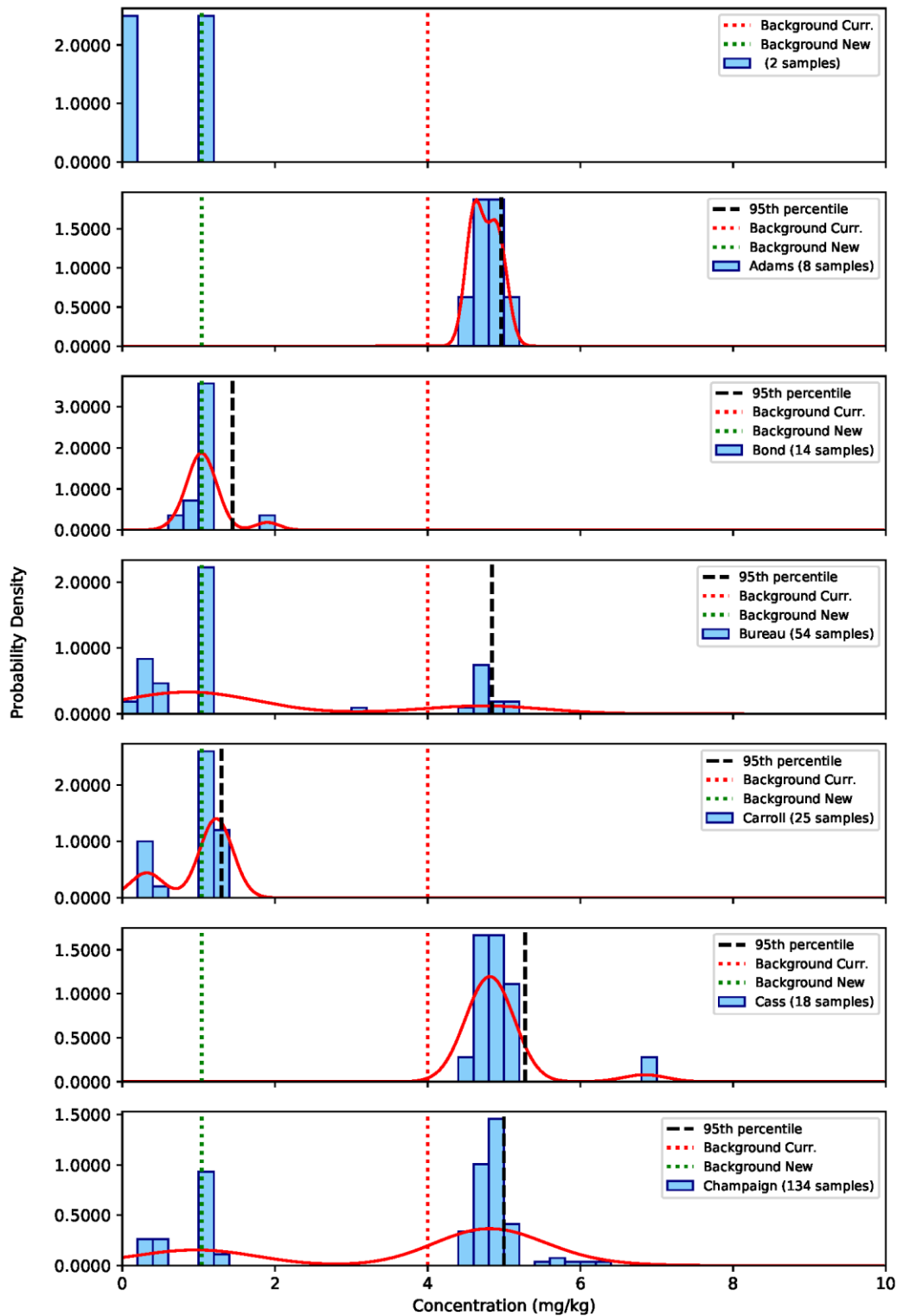


Figure 40. Histogram of RSL antimony concentrations by Illinois county, REC (mg/kg), part 1

Antimony Concentration by County, page 2 of 10

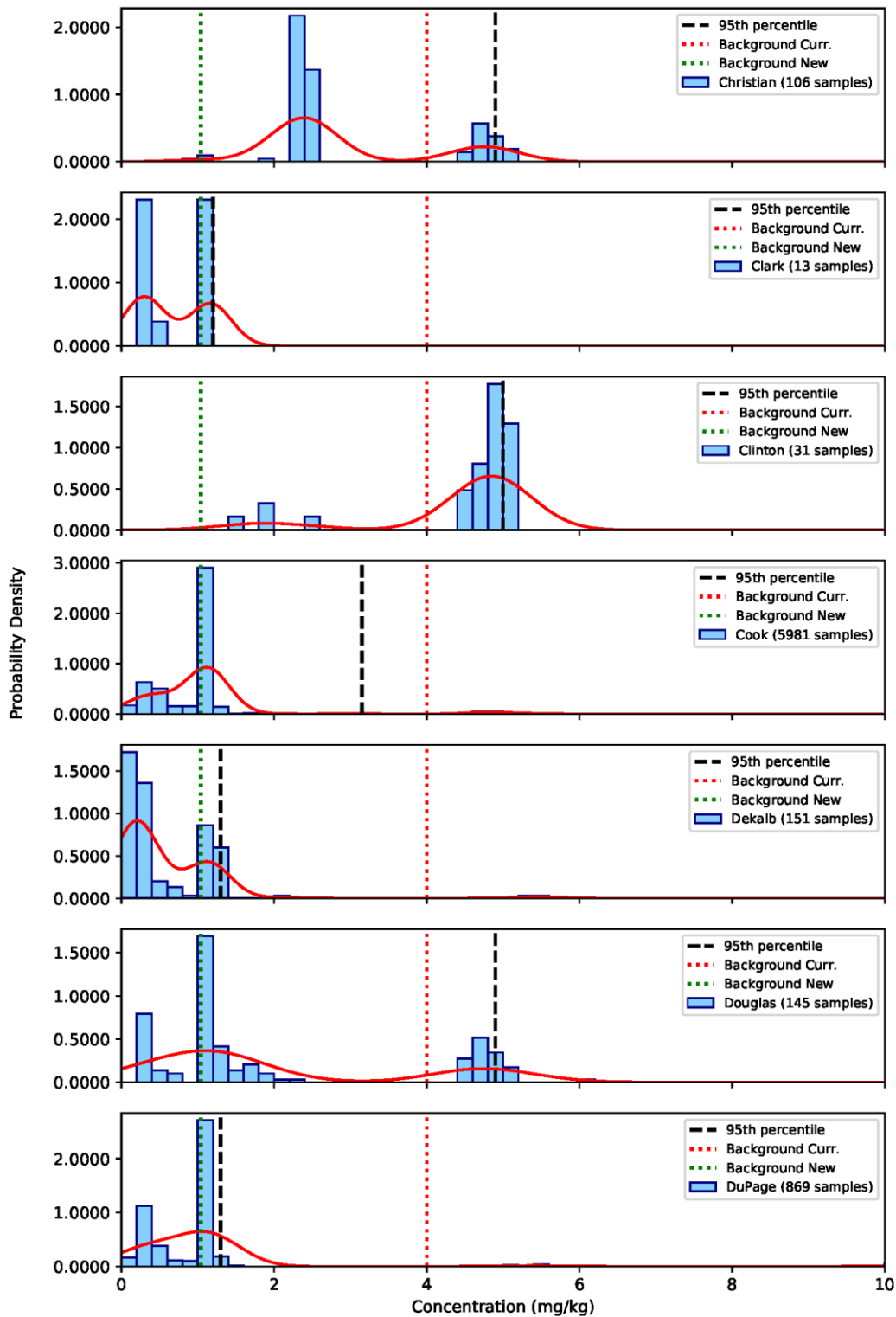


Figure 41. Histogram of RSL antimony concentrations by Illinois county, REC (mg/kg), part 2

# Antimony Concentration by County, page 3 of 10

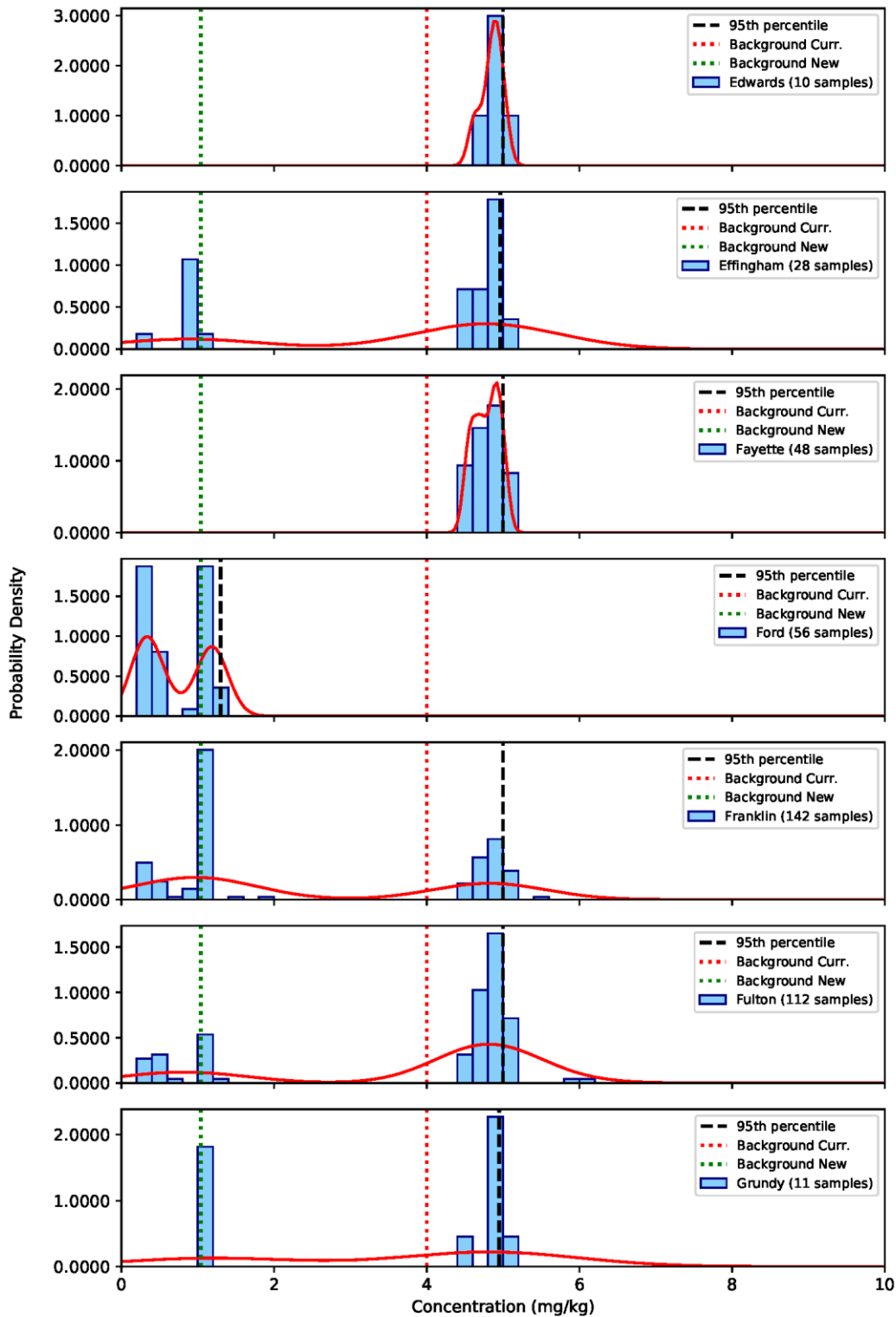


Figure 42. Histogram of RSL antimony concentrations by Illinois county, REC (mg/kg), part 3

# Antimony Concentration by County, page 4 of 10

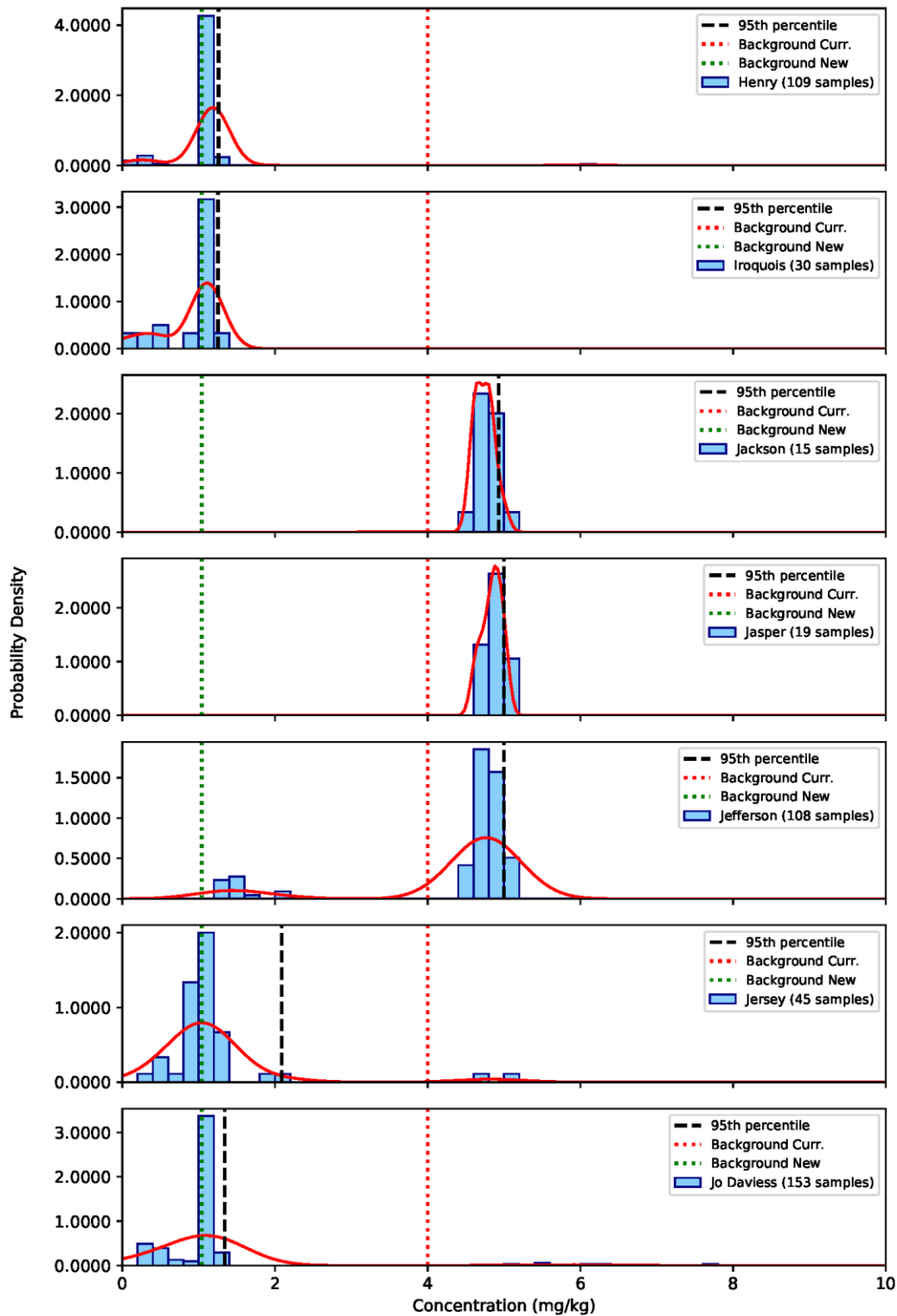


Figure 43. Histogram of RSL antimony concentrations by Illinois county, REC (mg/kg), part 4



# Antimony Concentration by County, page 5 of 10

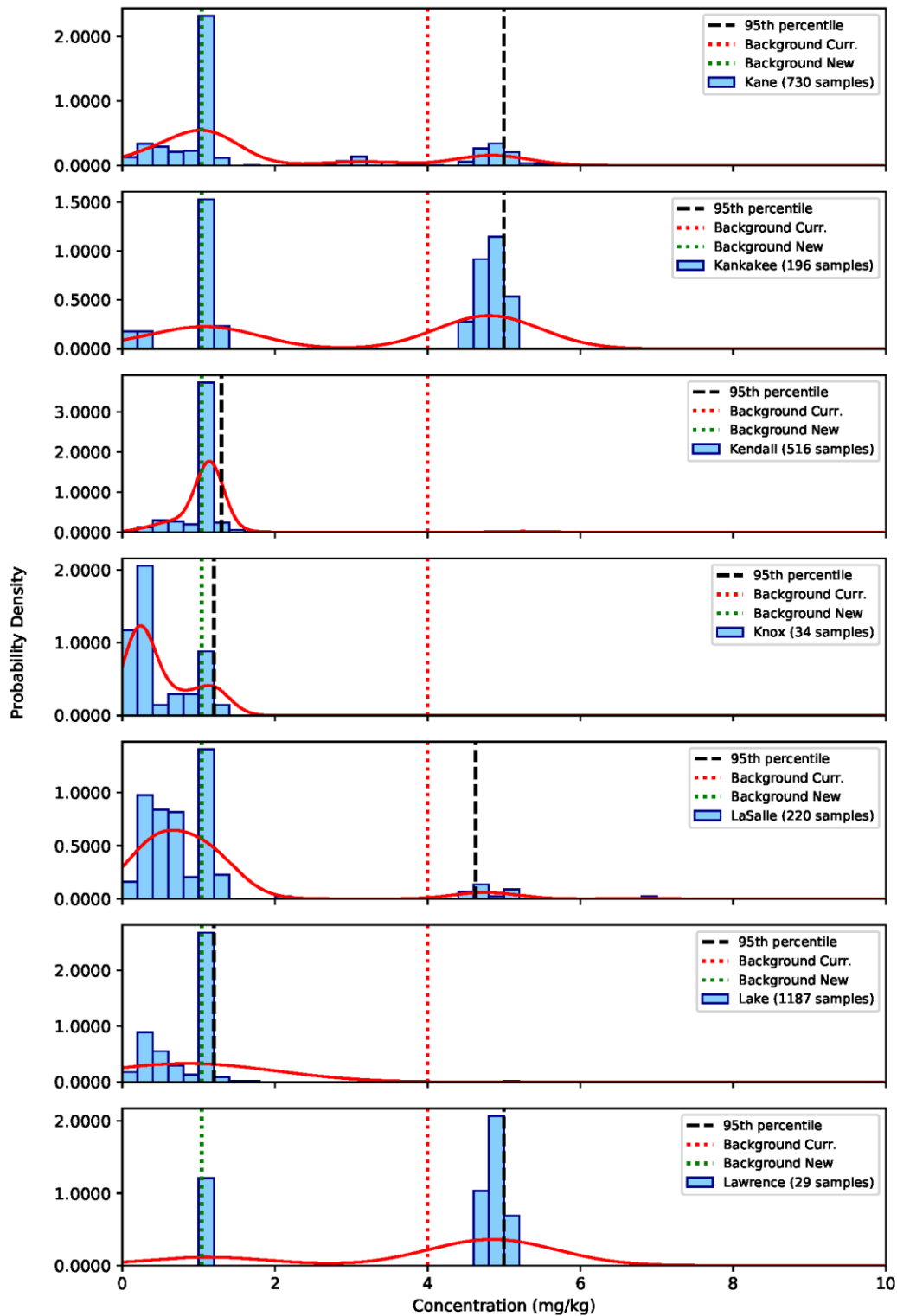


Figure 44. Histogram of RSL antimony concentrations by Illinois county, REC (mg/kg), part 5

# Antimony Concentration by County, page 6 of 10

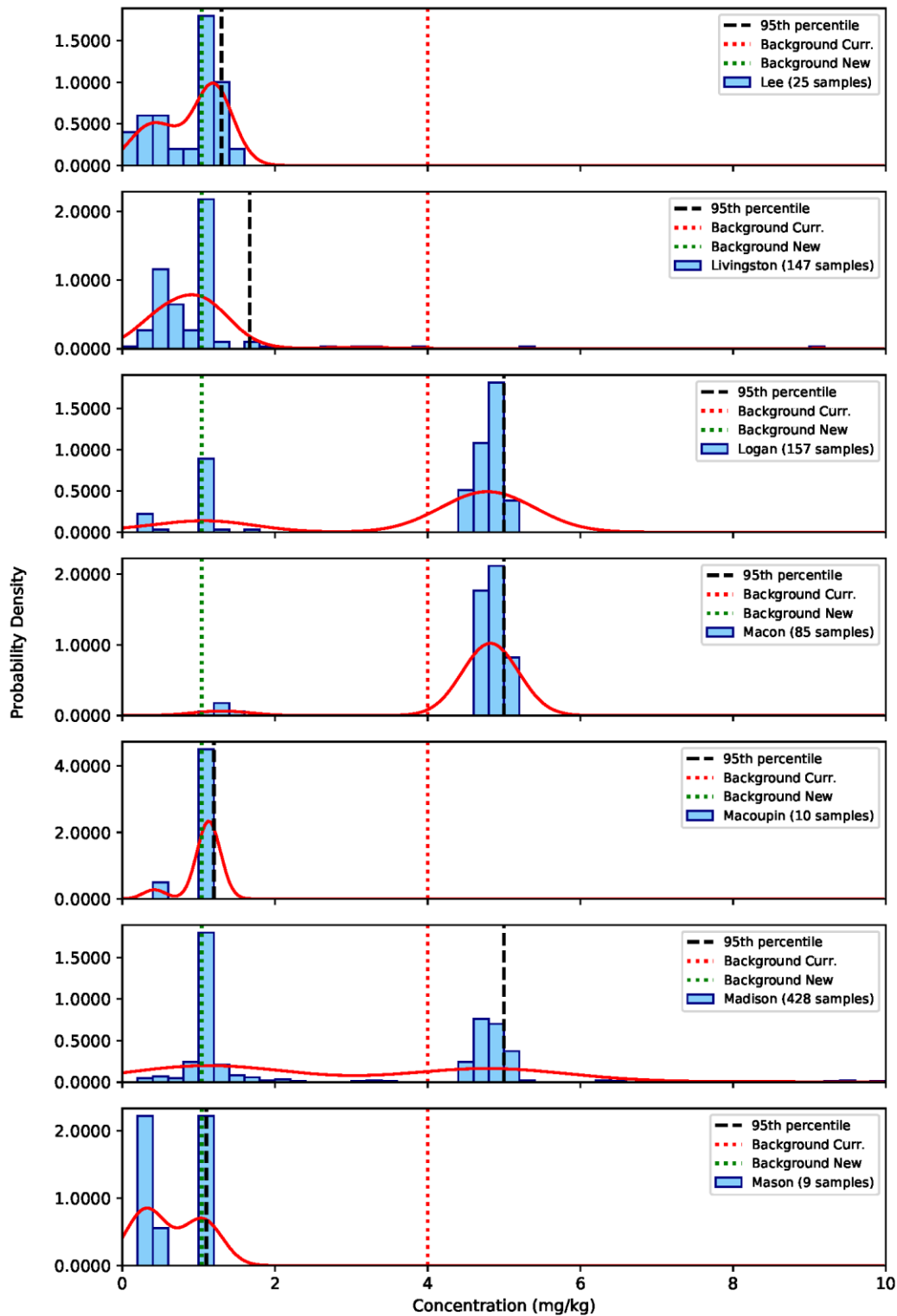


Figure 45. Histogram of RSL antimony concentrations by Illinois county, REC (mg/kg), part 6

Antimony Concentration by County, page 7 of 10

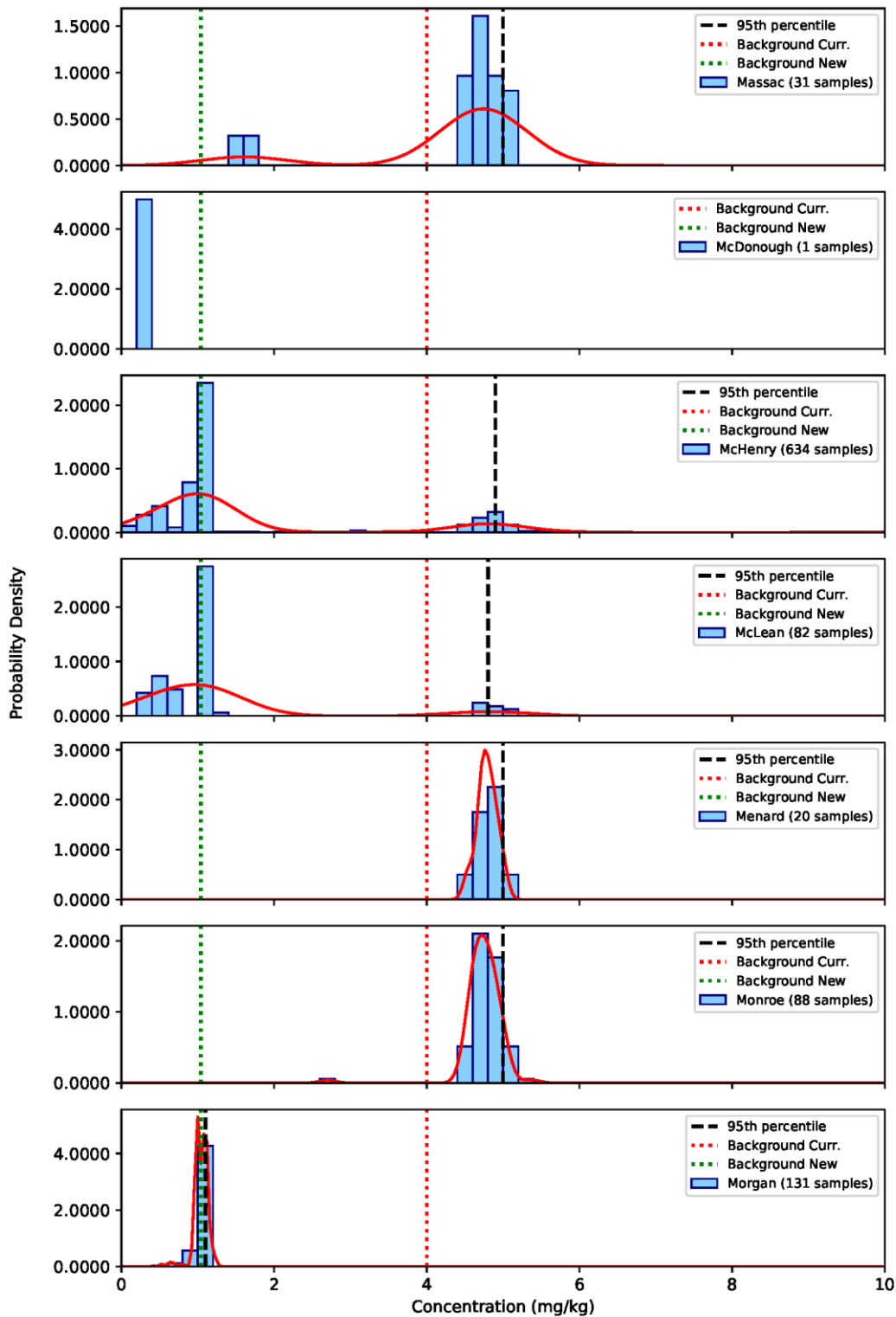


Figure 46. Histogram of RSL antimony concentrations by Illinois county, REC (mg/kg), part 7

# Antimony Concentration by County, page 8 of 10

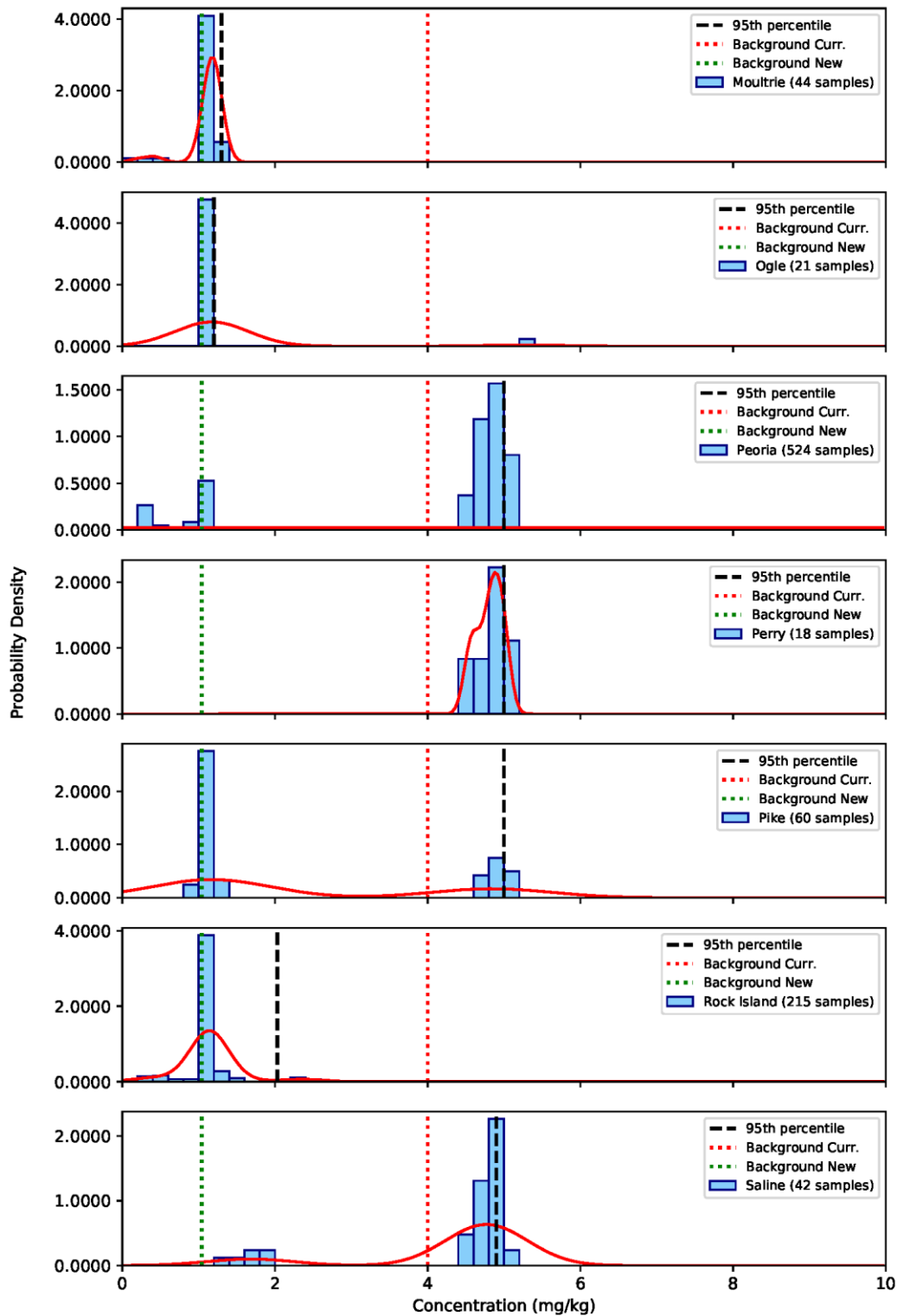


Figure 47. Histogram of RSL antimony concentrations by Illinois county, REC (mg/kg), part 8

# Antimony Concentration by County, page 9 of 10

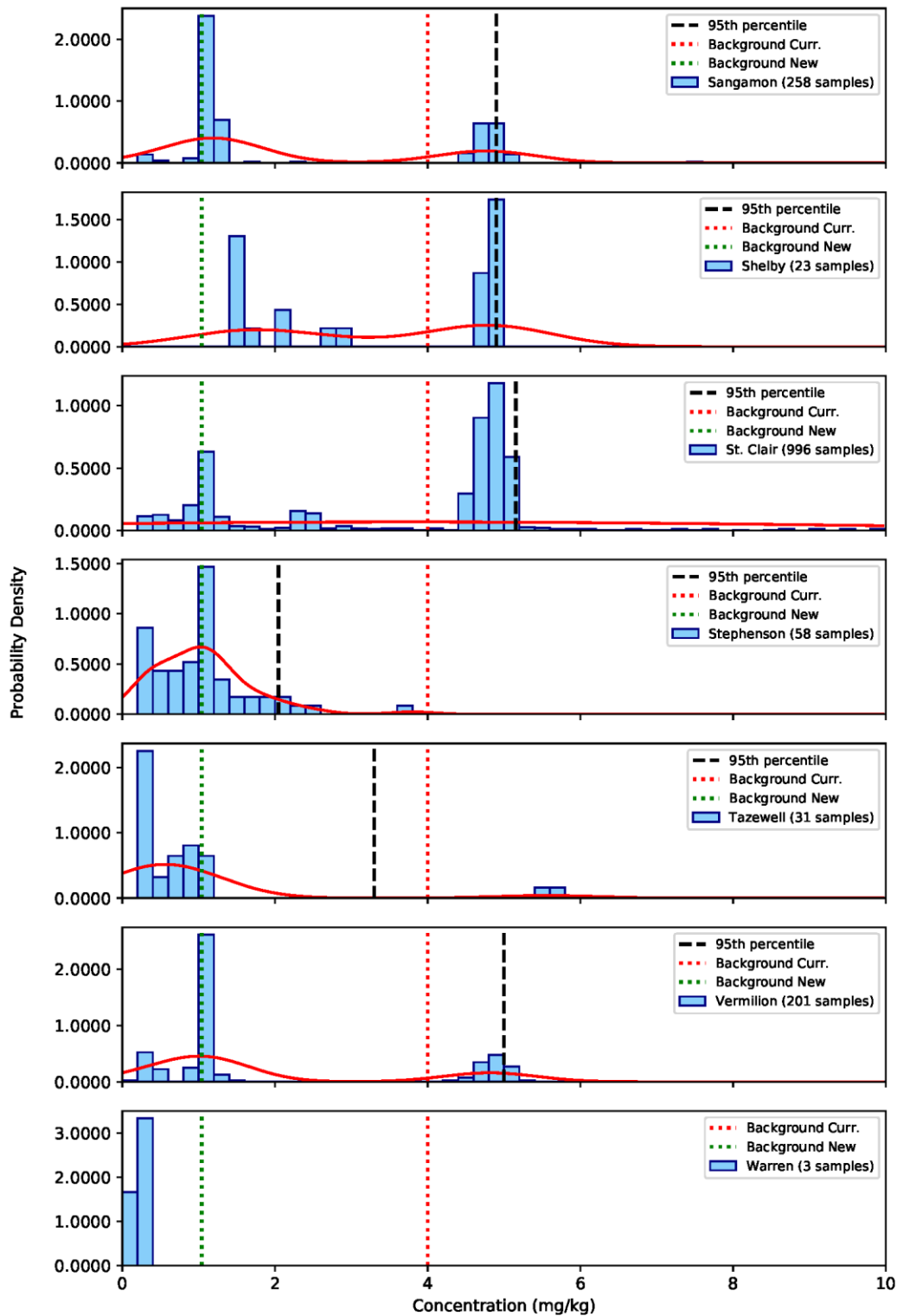


Figure 48. Histogram of RSL antimony concentrations by Illinois county, REC (mg/kg), part 9

# Antimony Concentration by County, page 10 of 10

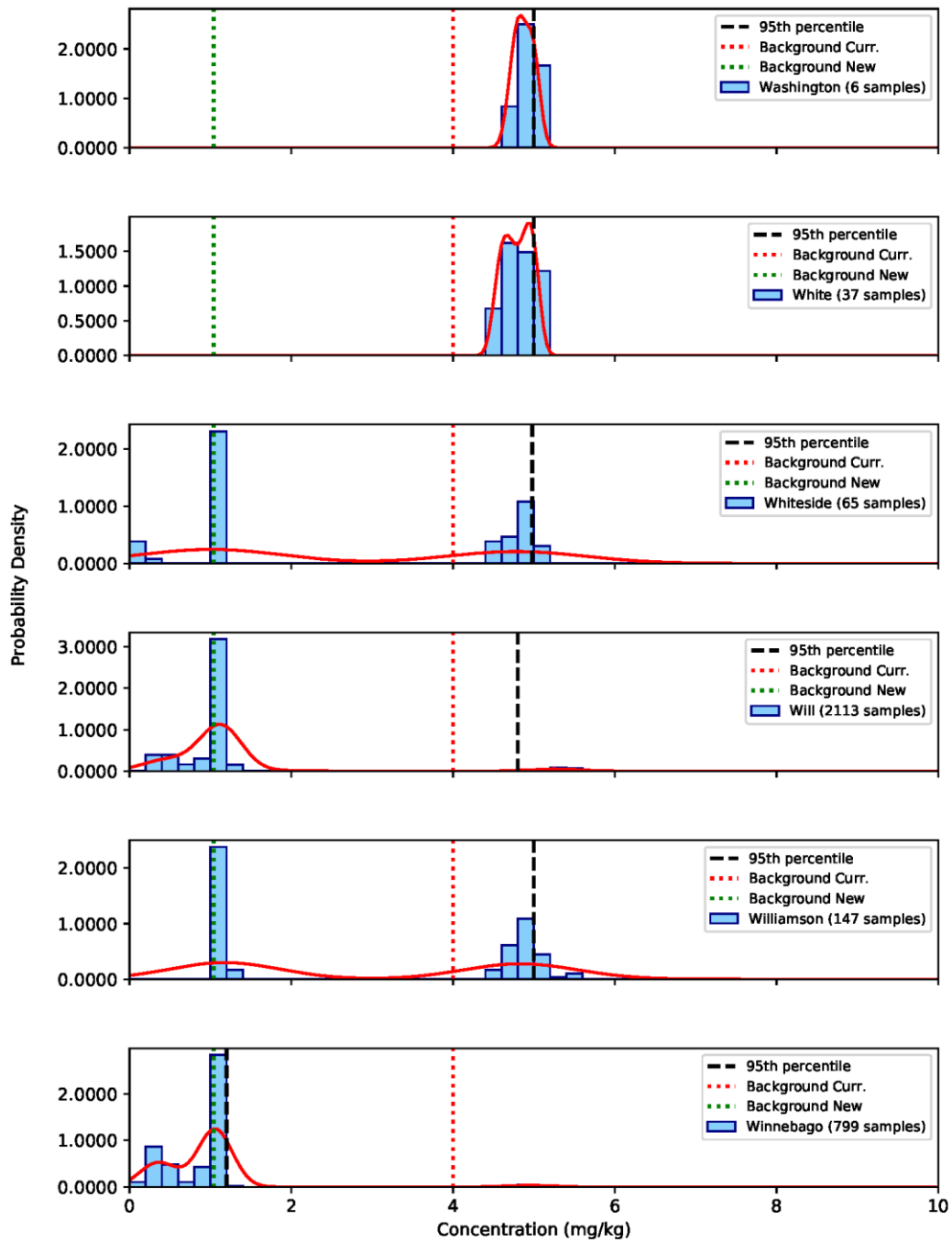


Figure 49. Histogram of RSL antimony concentrations by Illinois county, REC (mg/kg), part 10

A horizontal bar chart titled "Antimony 95th Percentile (ranked list)". The x-axis is labeled with values 0, 1, 2, 3, 4, and 5. The bar is a solid dark blue line that starts at 0 and extends to 0, indicating a value of 0.

65

Number of Antimony Samples by County: REC Sites

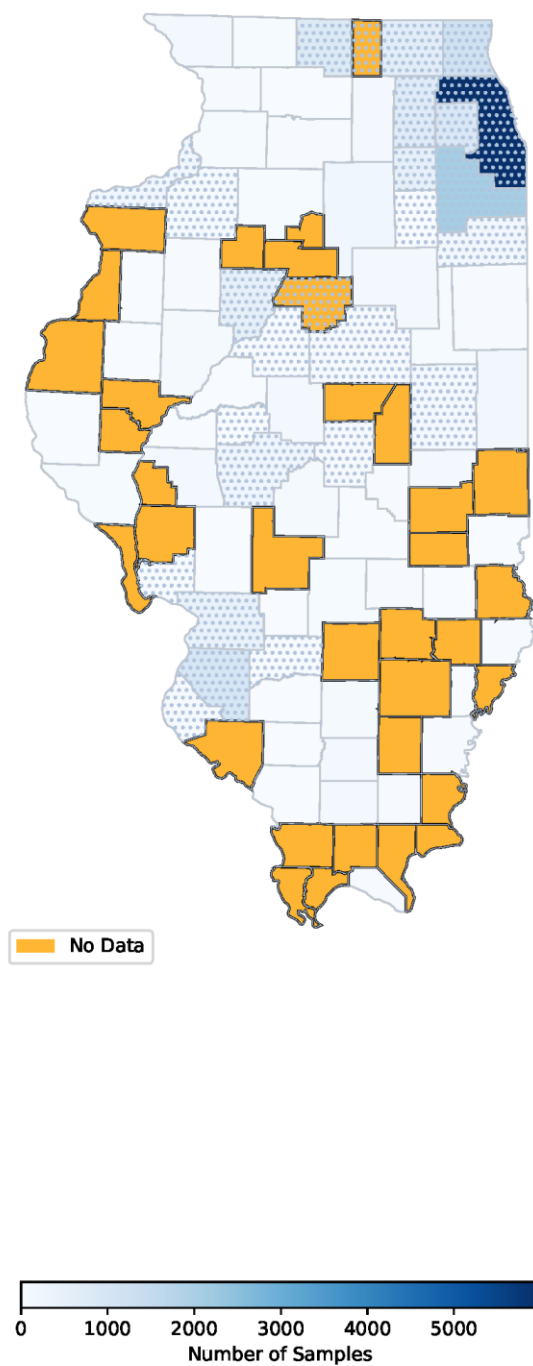


Figure 51. Map of RSL antimony sample quantity by Illinois county, REC (mg/kg)



## **B.2 ANTIMONY NON-REC**

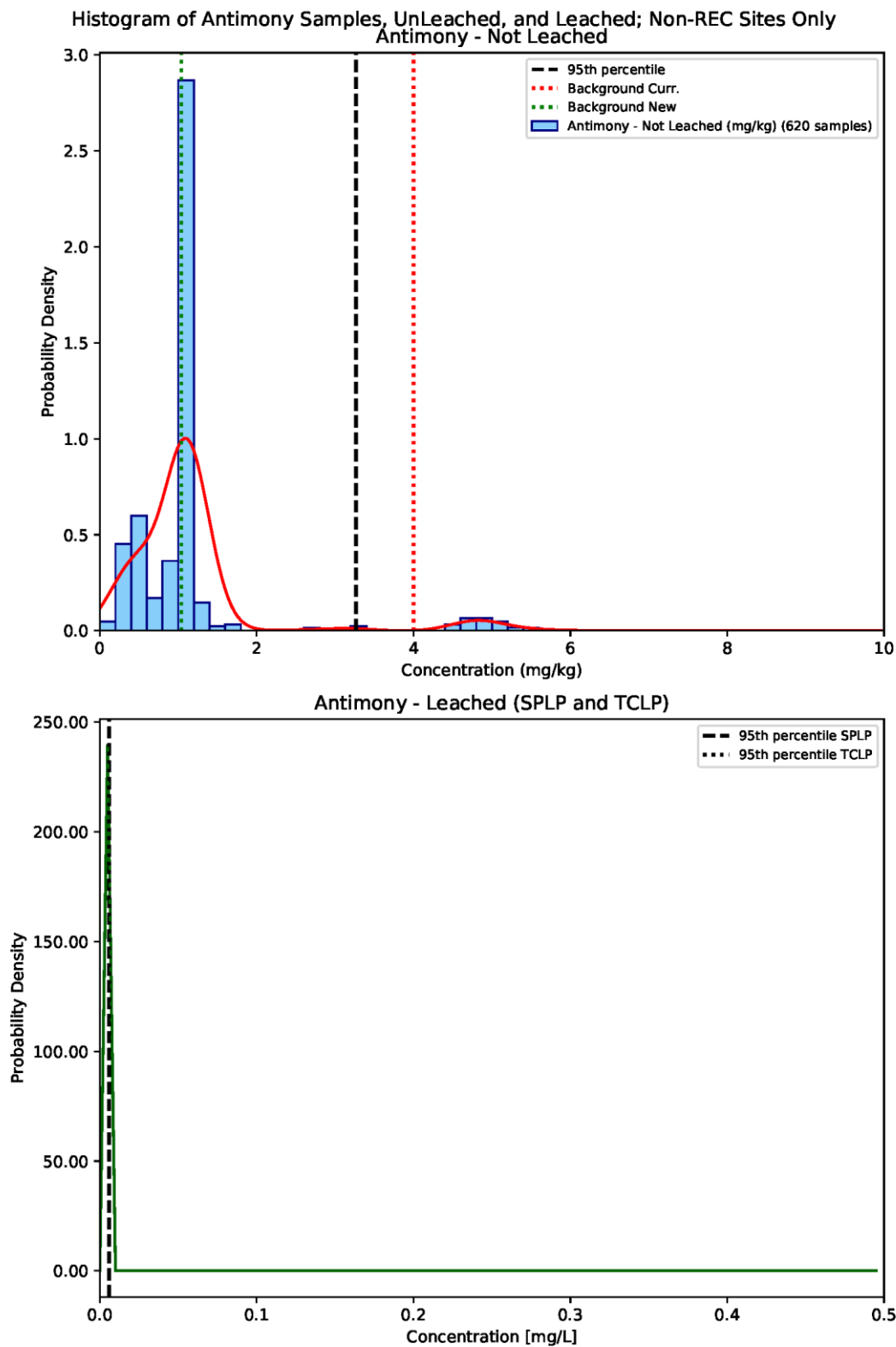


Figure 52. Histogram of RSL antimony concentrations, Non-REC (mg/kg)

**Antimony Unleached Concentration (mg/kg)**

1) Region

2) District

3) County

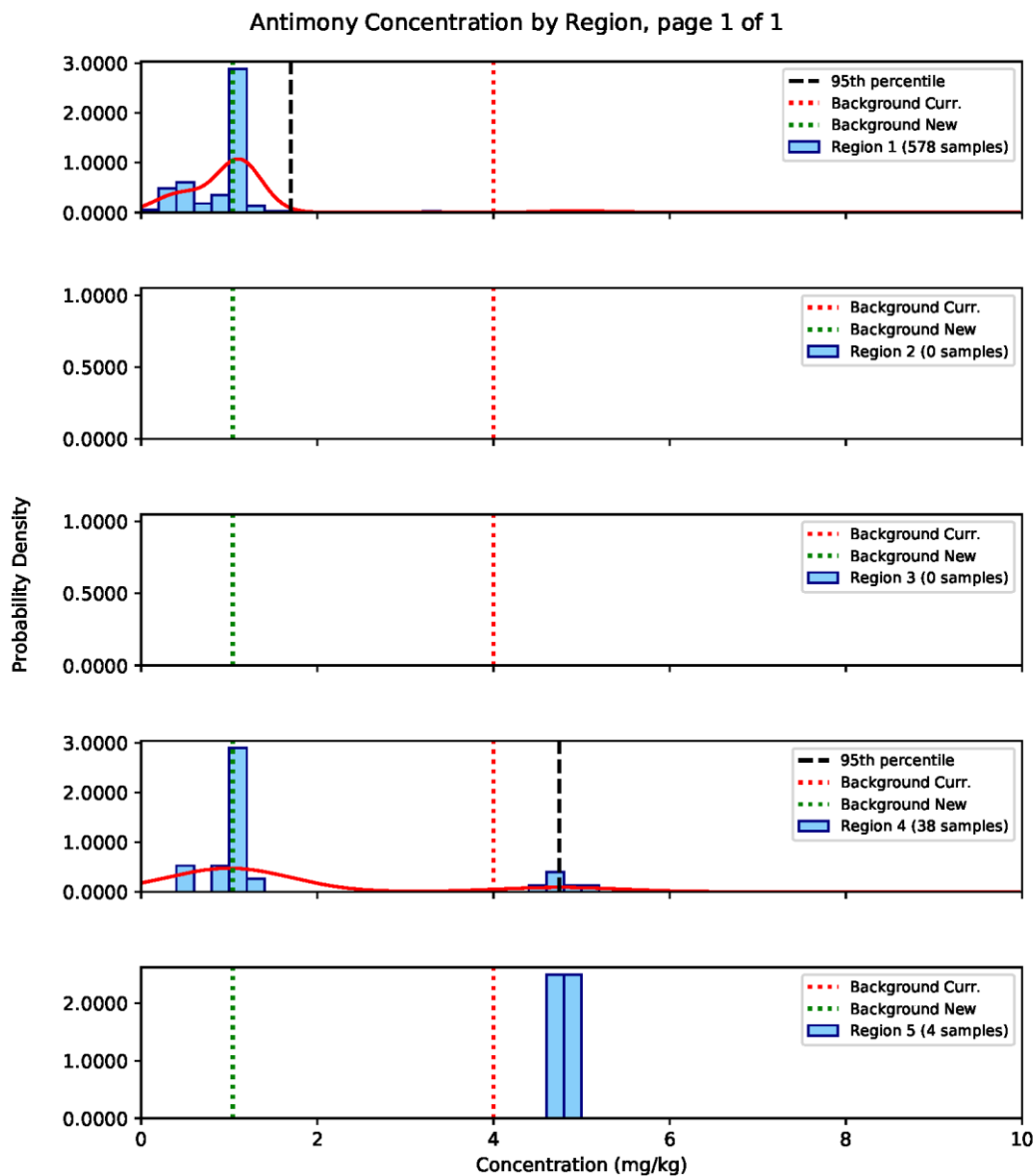
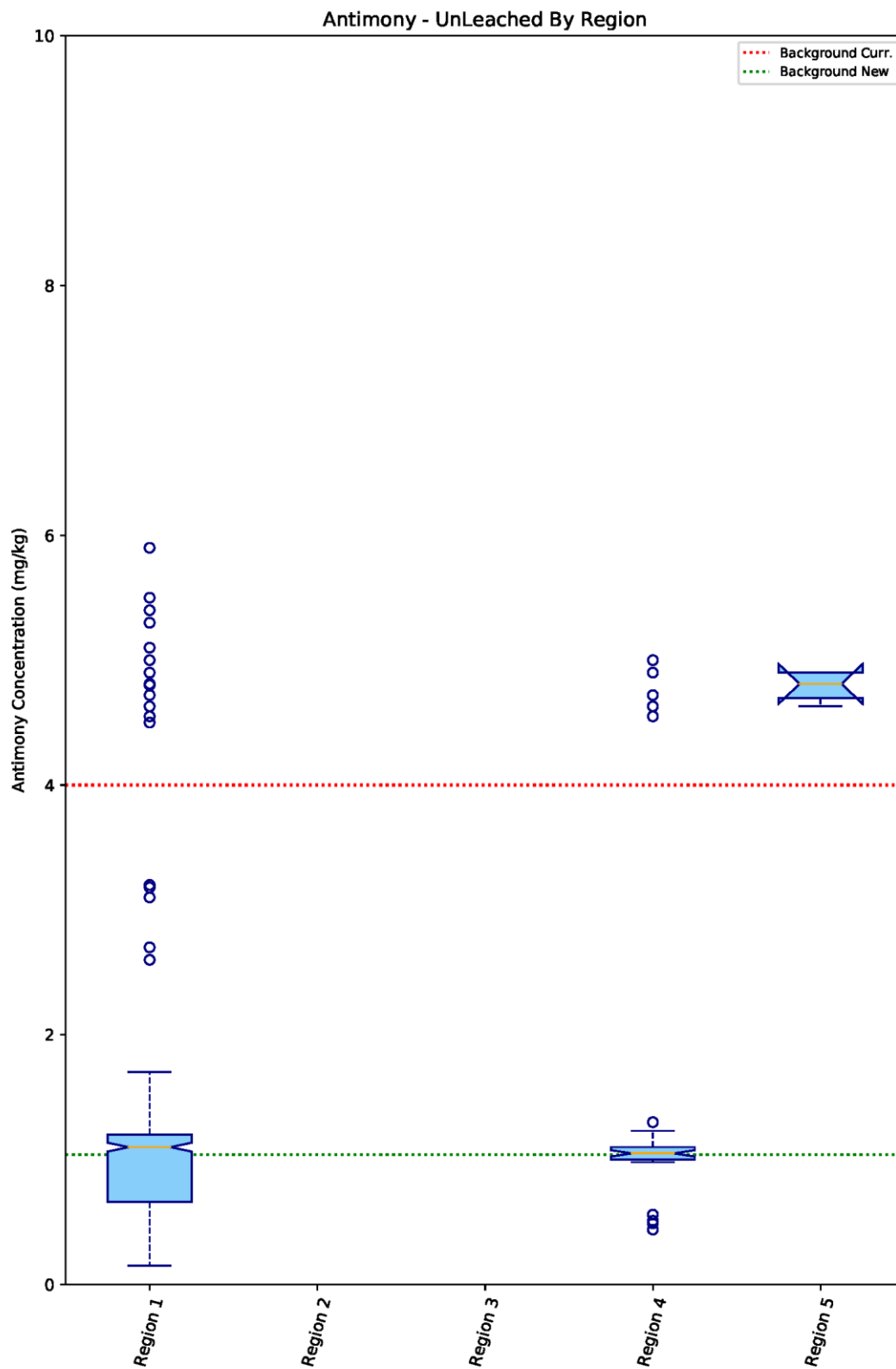


Figure 53. Histogram of RSL antimony concentrations by IDOT Region, Non-REC (mg/kg)



**Figure 54. Boxplot of RSL antimony concentrations by IDOT Region, Non-REC (mg/kg)**

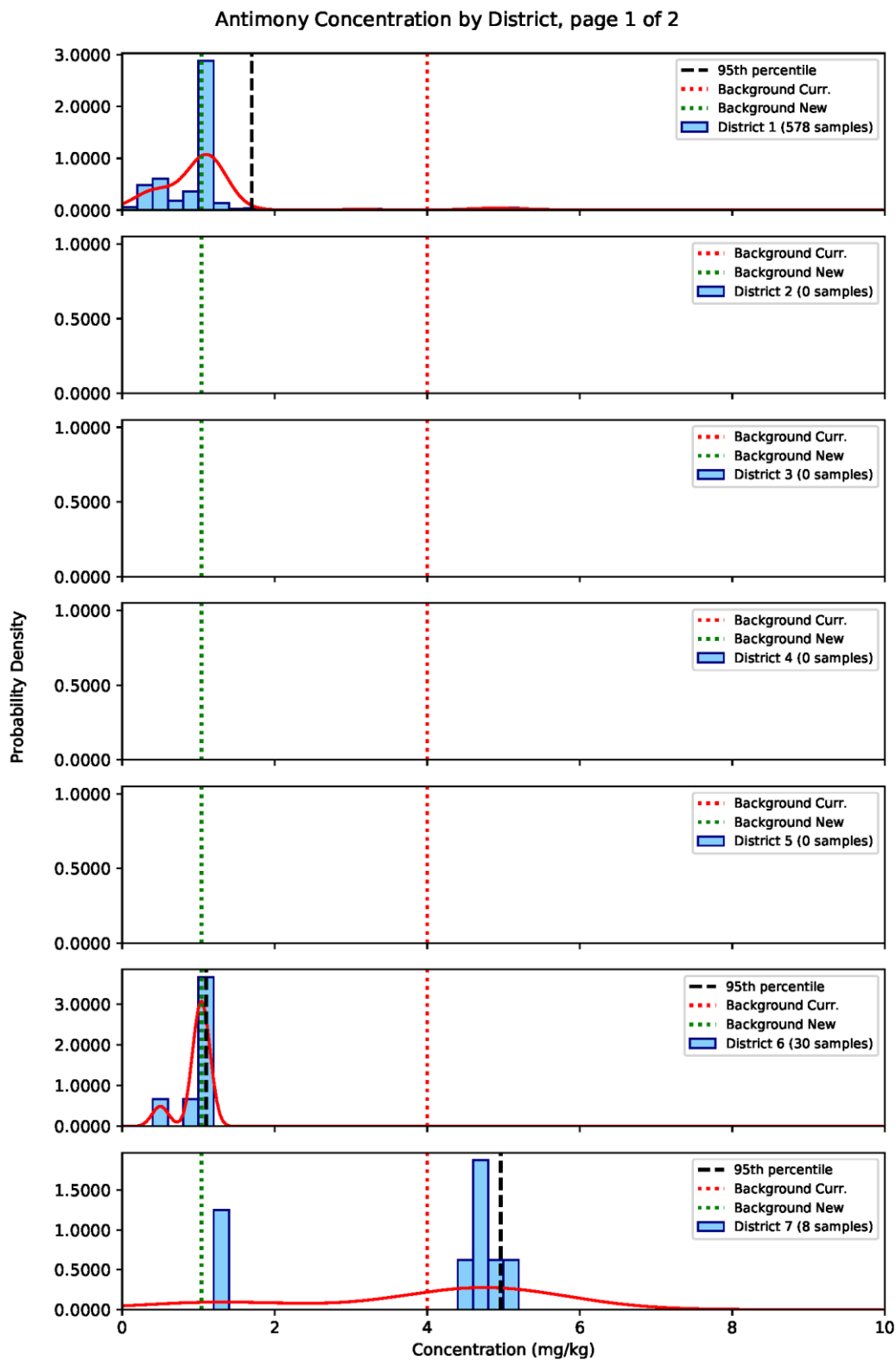


Figure 55. Histogram of RSL antimony concentrations by IDOT District, Non-REC (mg/kg), part 1

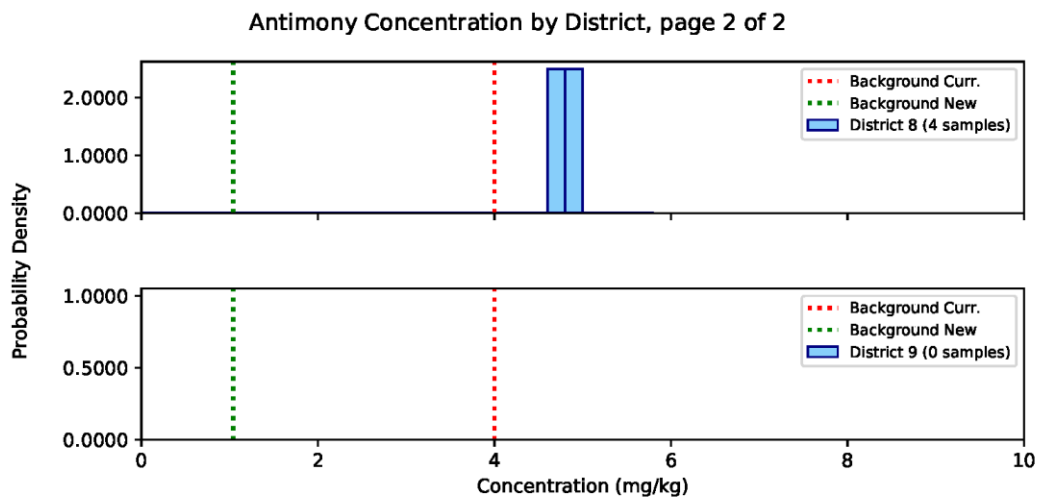


Figure 56. Histogram of RSL antimony concentrations by IDOT District, Non-REC (mg/kg), part 2

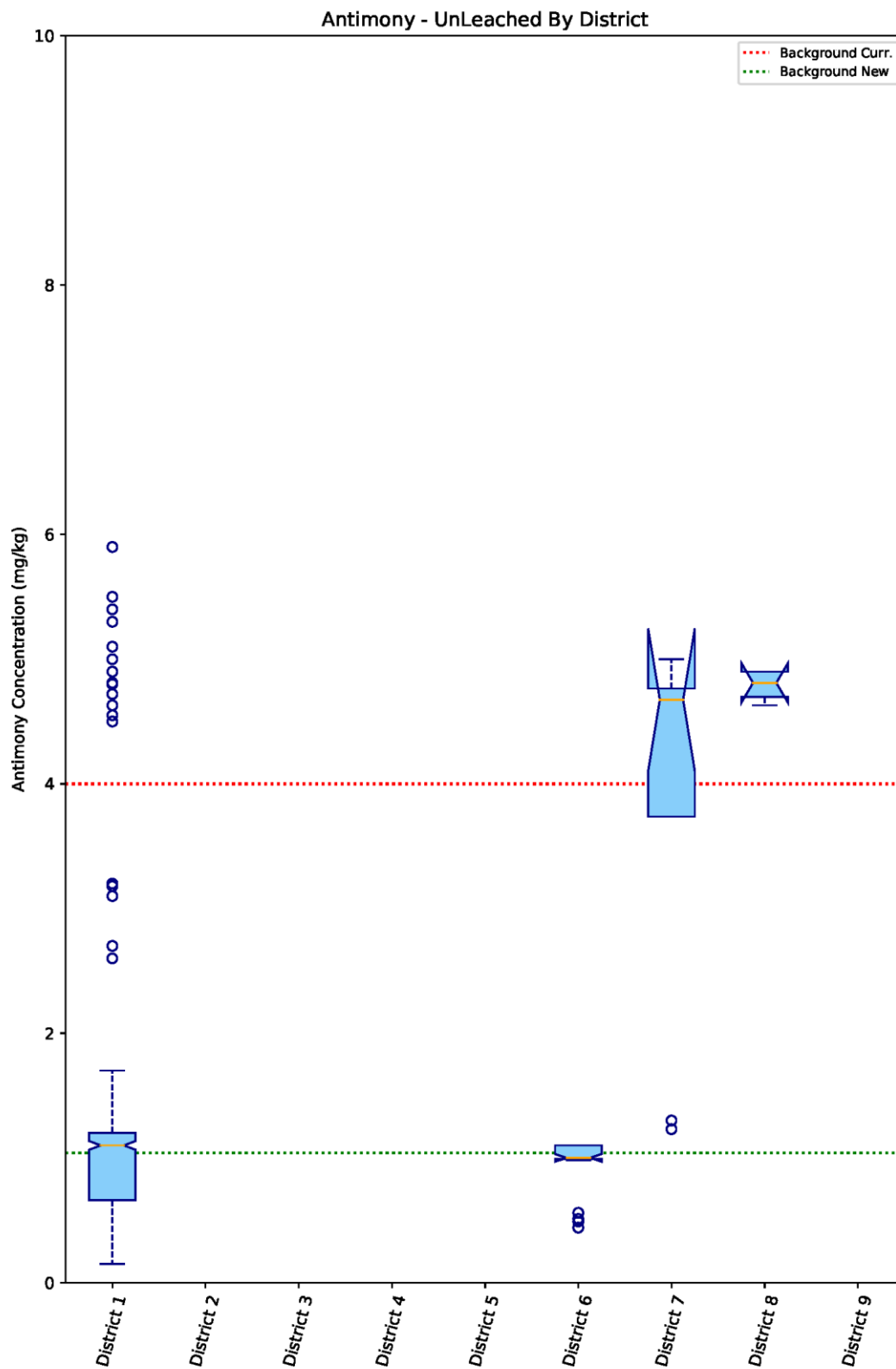


Figure 57. Boxplot of RSL antimony concentrations by IDOT District, Non-REC (mg/kg)



# Antimony Concentration by County, page 1 of 2

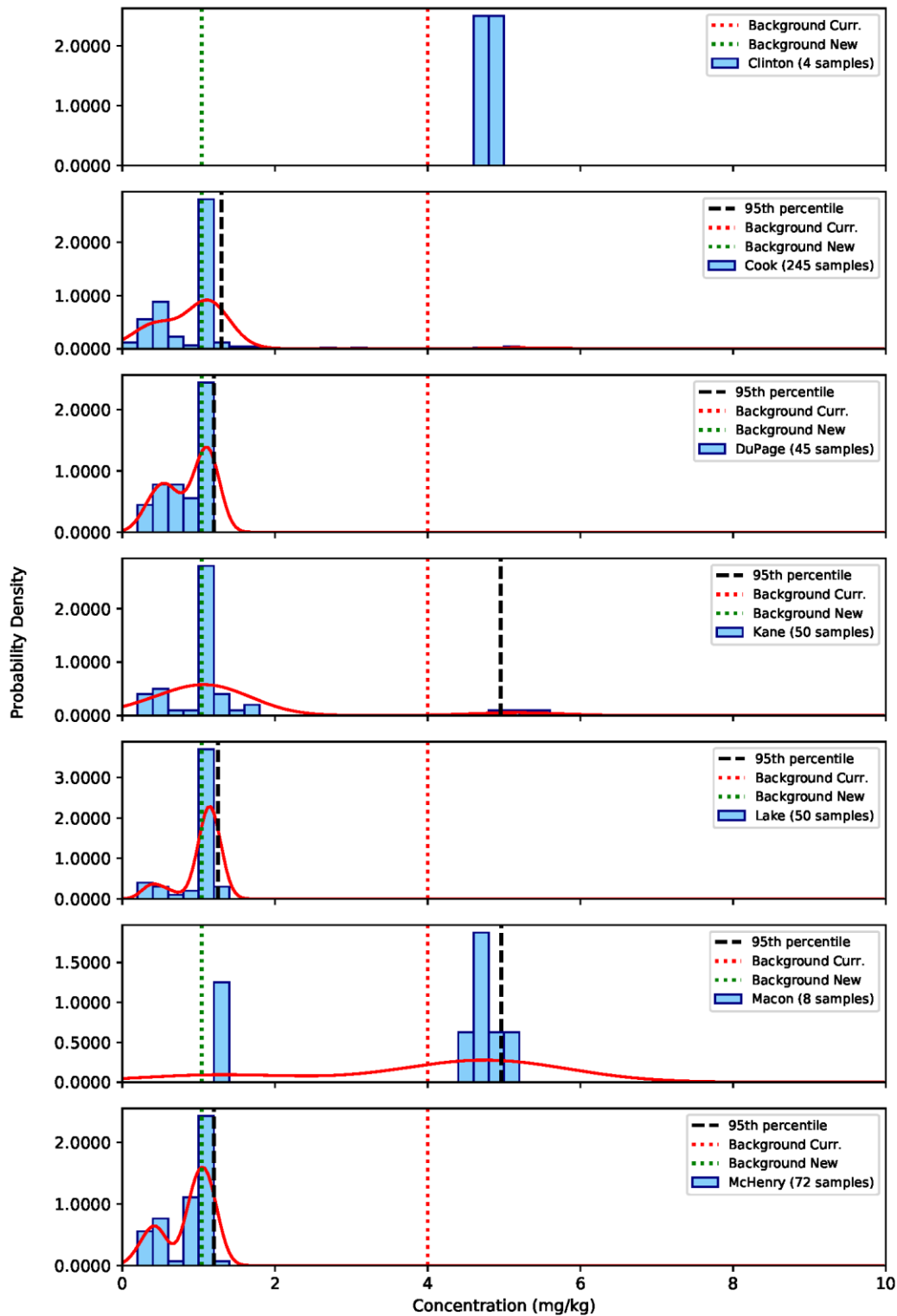


Figure 58. Histogram of RSL antimony concentrations by Illinois county, Non-REC (mg/kg), part 1

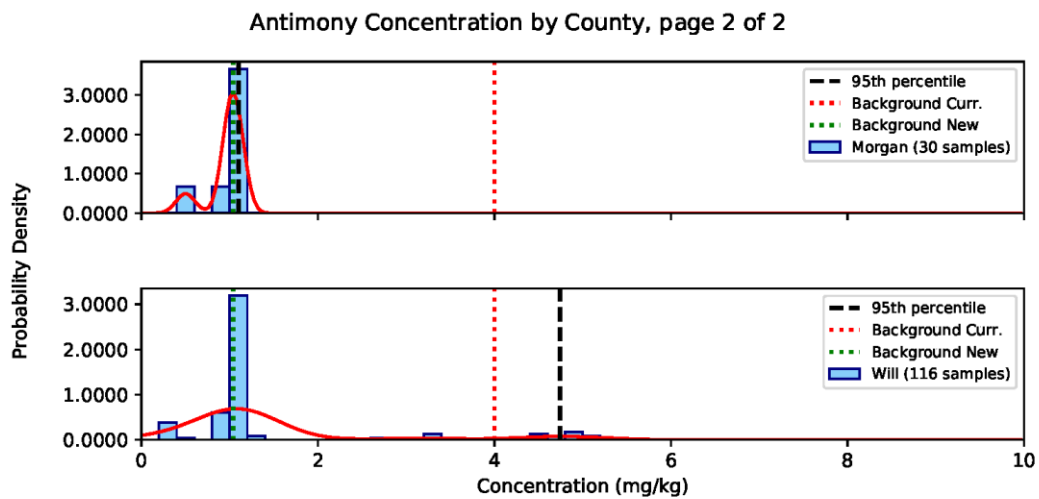


Figure 59. Histogram of RSL antimony concentrations by Illinois county, Non-REC (mg/kg), part 2

Antimony Concentration for 95th Percentile by County: Non-REC Sites

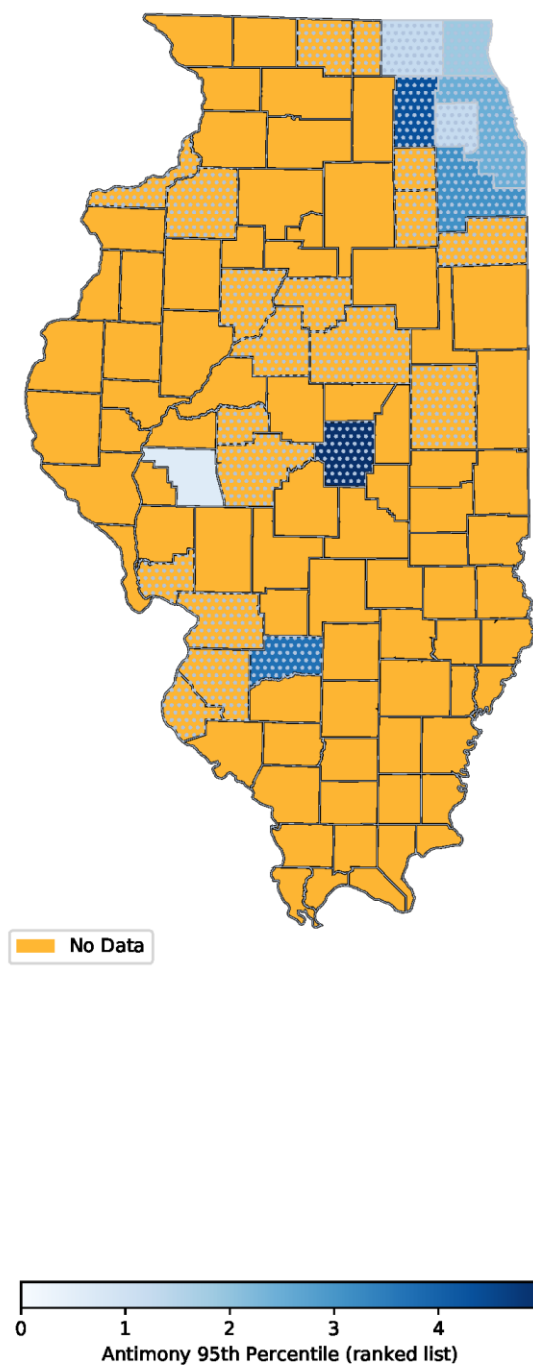


Figure 60. Map of RSL antimony 95th percentile concentration by Illinois county, Non-REC (mg/kg)

78

### **B.3 ANTIMONY DE MINIMIS**

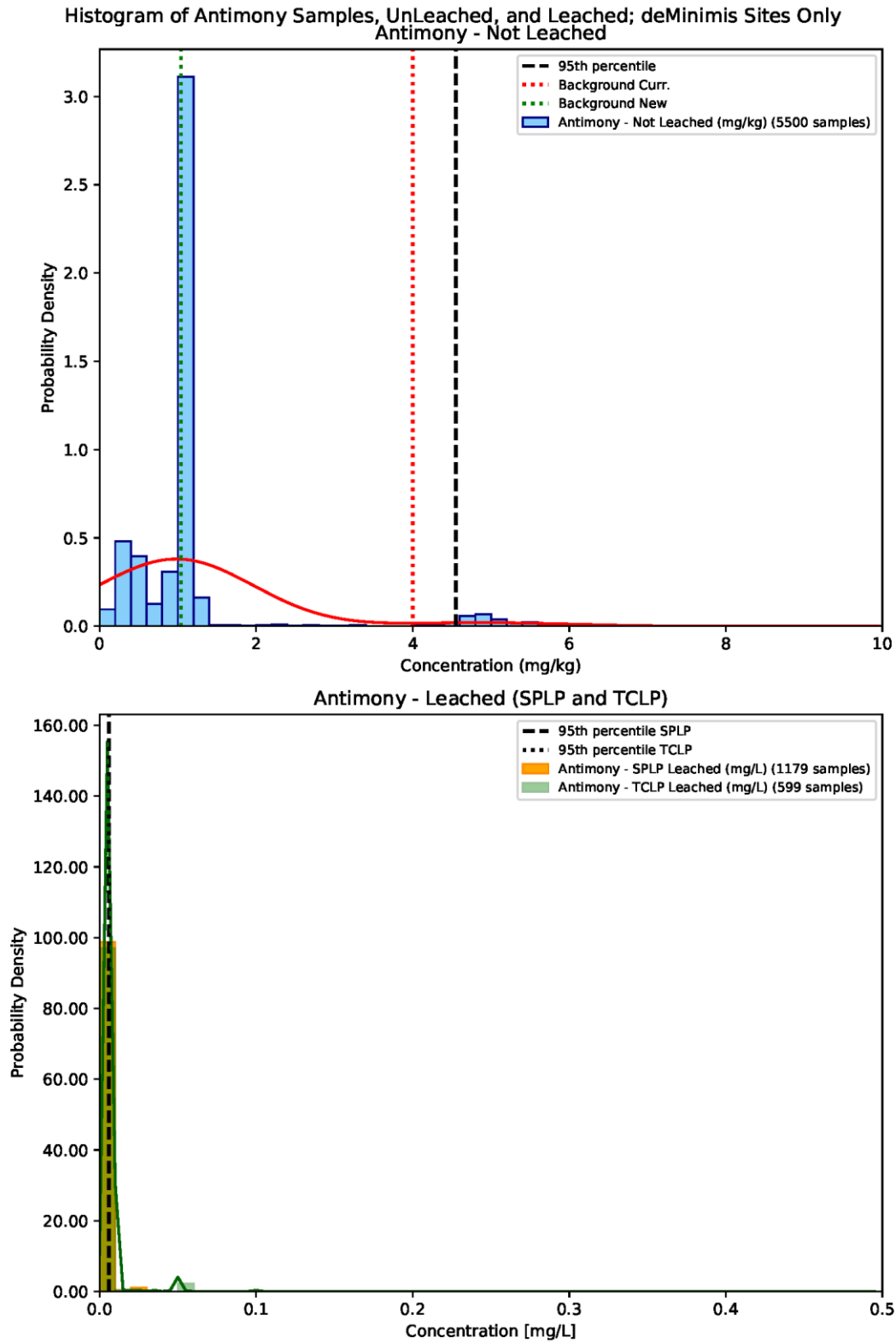


Figure 62. Histogram of RSL antimony concentrations, de minimis (mg/kg)

**Antimony Unleached Concentration (mg/kg)**

- 1) Region
- 2) District
- 3) County

Antimony Concentration by Region, page 1 of 1

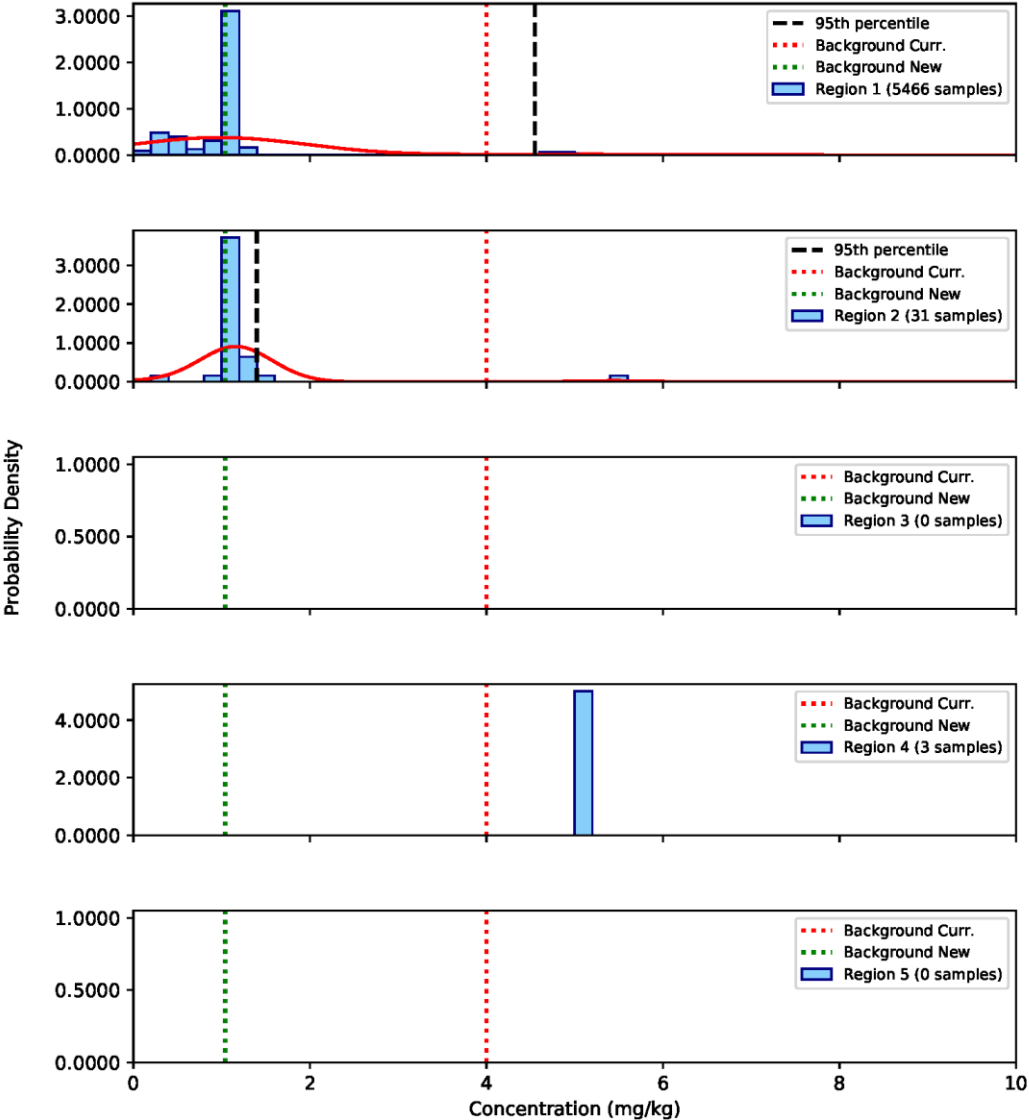


Figure 63. Histogram of RSL antimony concentrations by IDOT Region, de minimis (mg/kg)



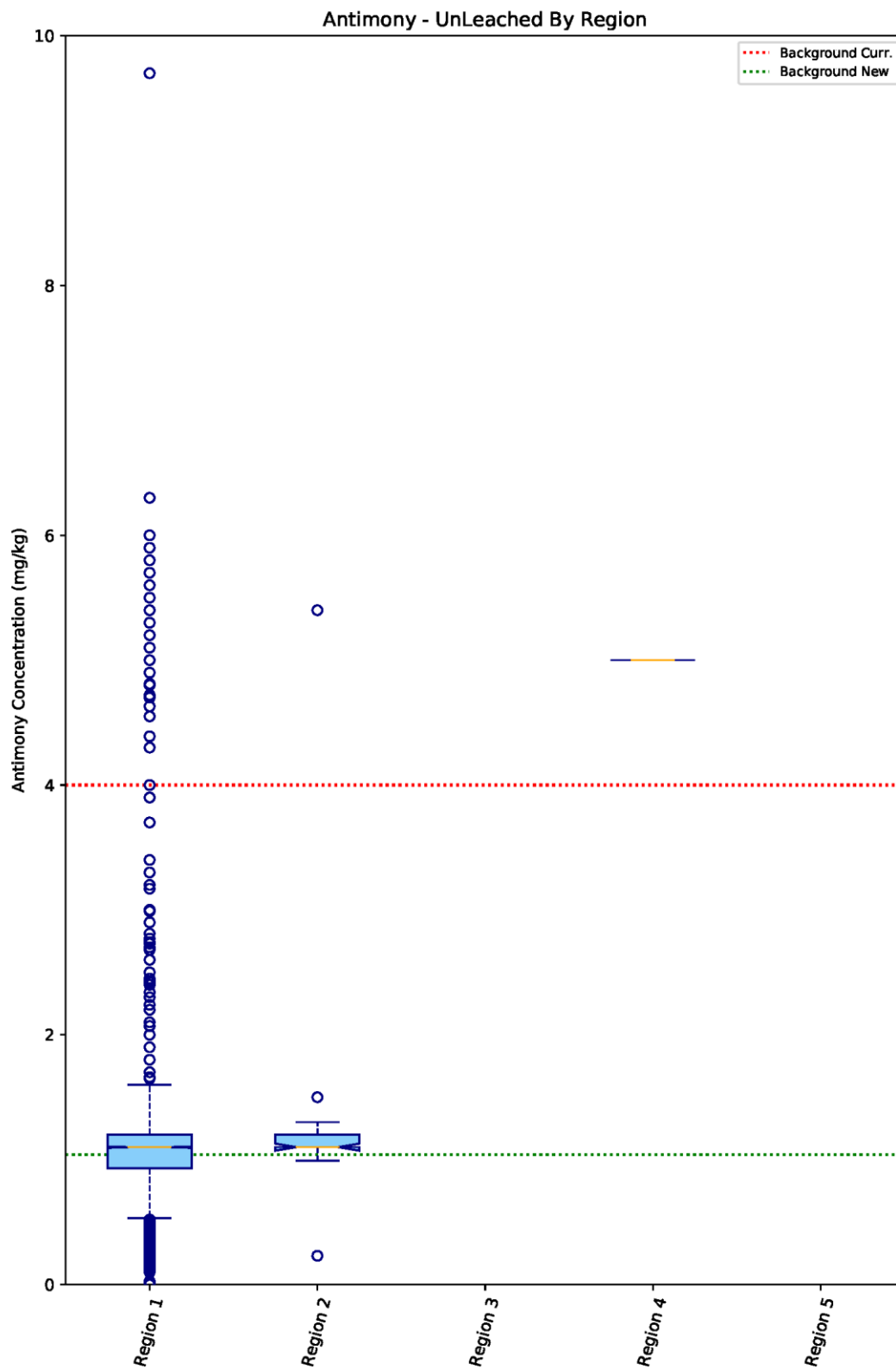


Figure 64. Boxplot of RSL antimony concentrations by IDOT Region, de minimis (mg/kg)

Antimony Concentration by District, page 1 of 2

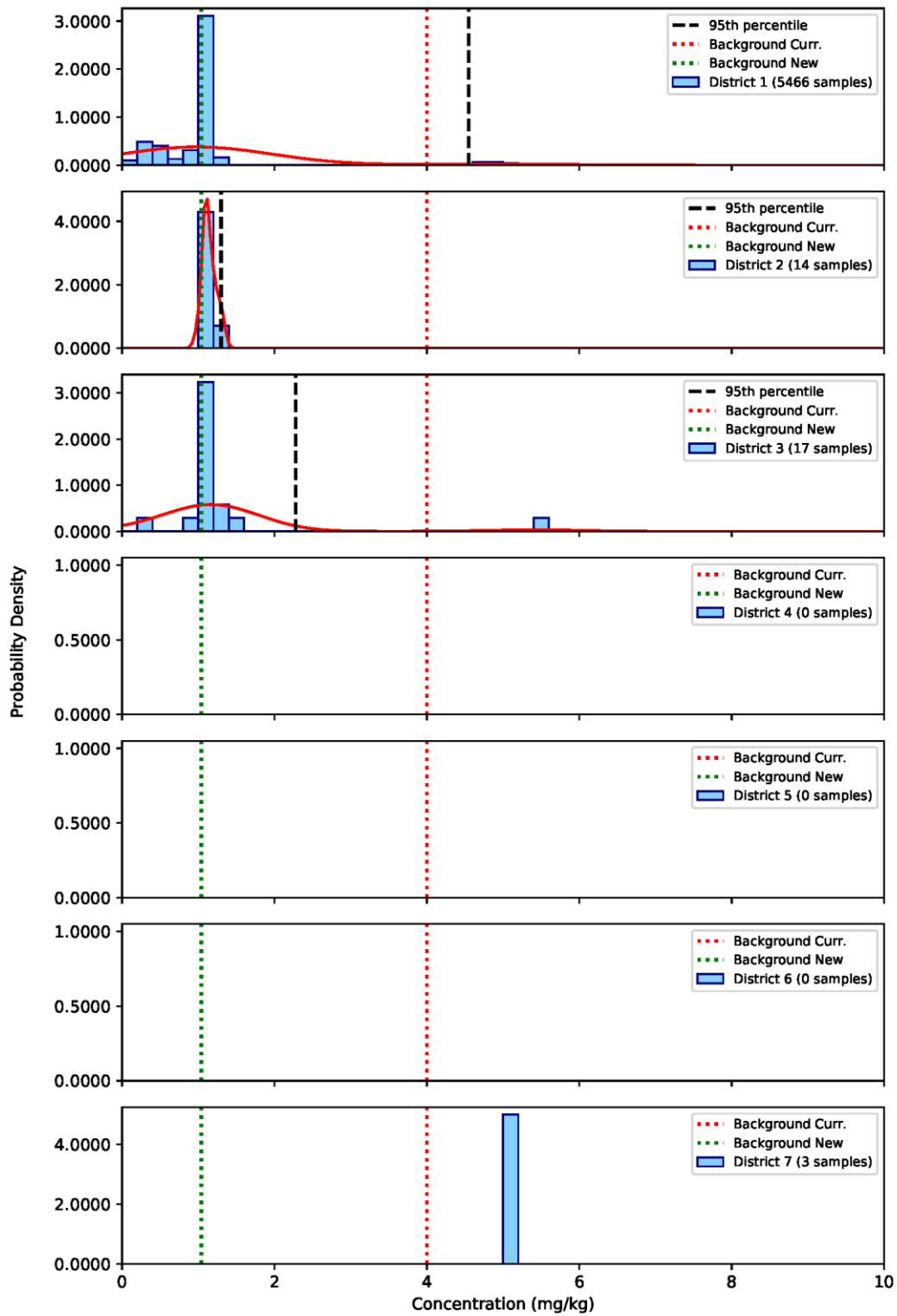


Figure 65. Histogram of RSL antimony concentrations by IDOT District, de minimis (mg/kg), part 1

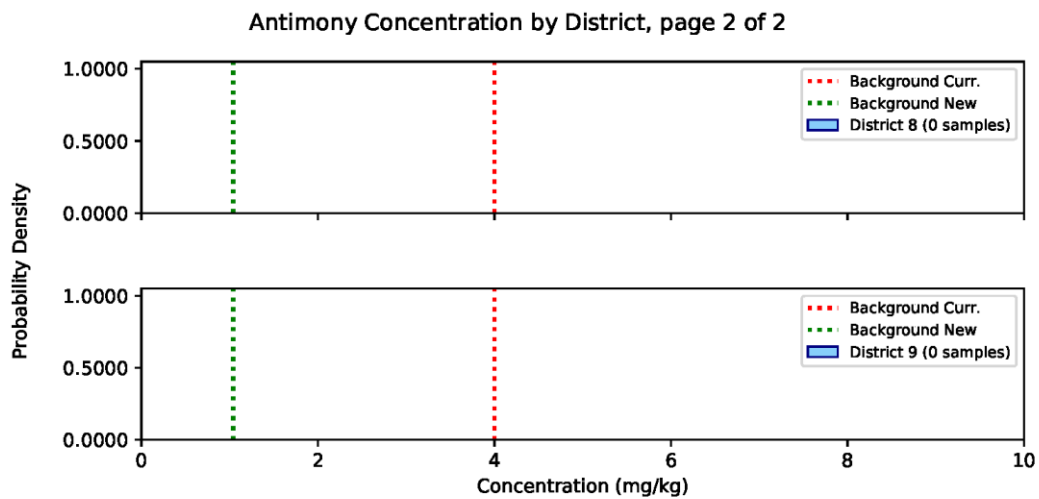
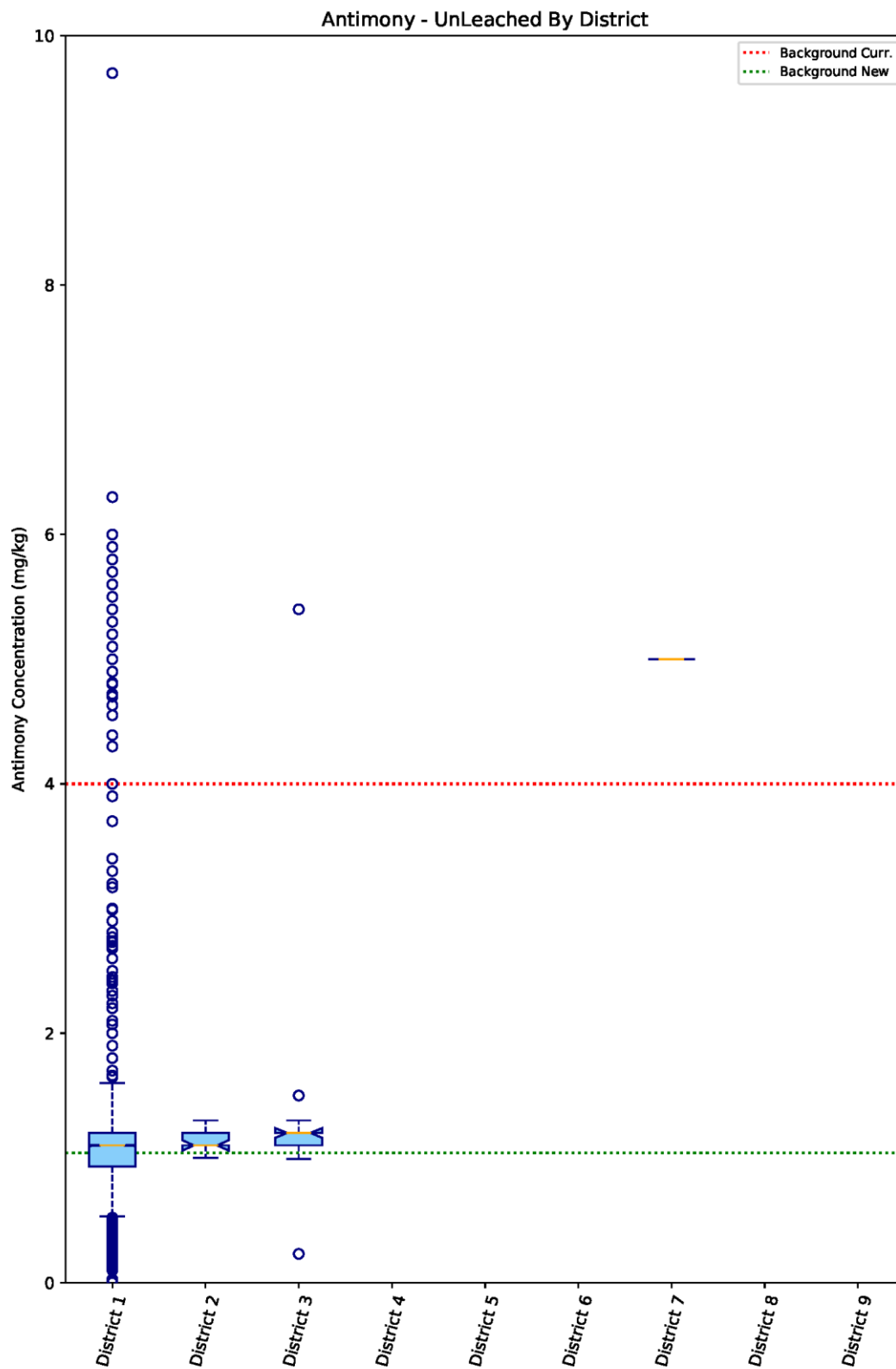


Figure 66. Histogram of RSL antimony concentrations by IDOT District, de minimis (mg/kg), part 2



**Figure 67. Boxplot of RSL antimony concentrations by IDOT District, de minimis (mg/kg)**

# Antimony Concentration by County, page 1 of 2

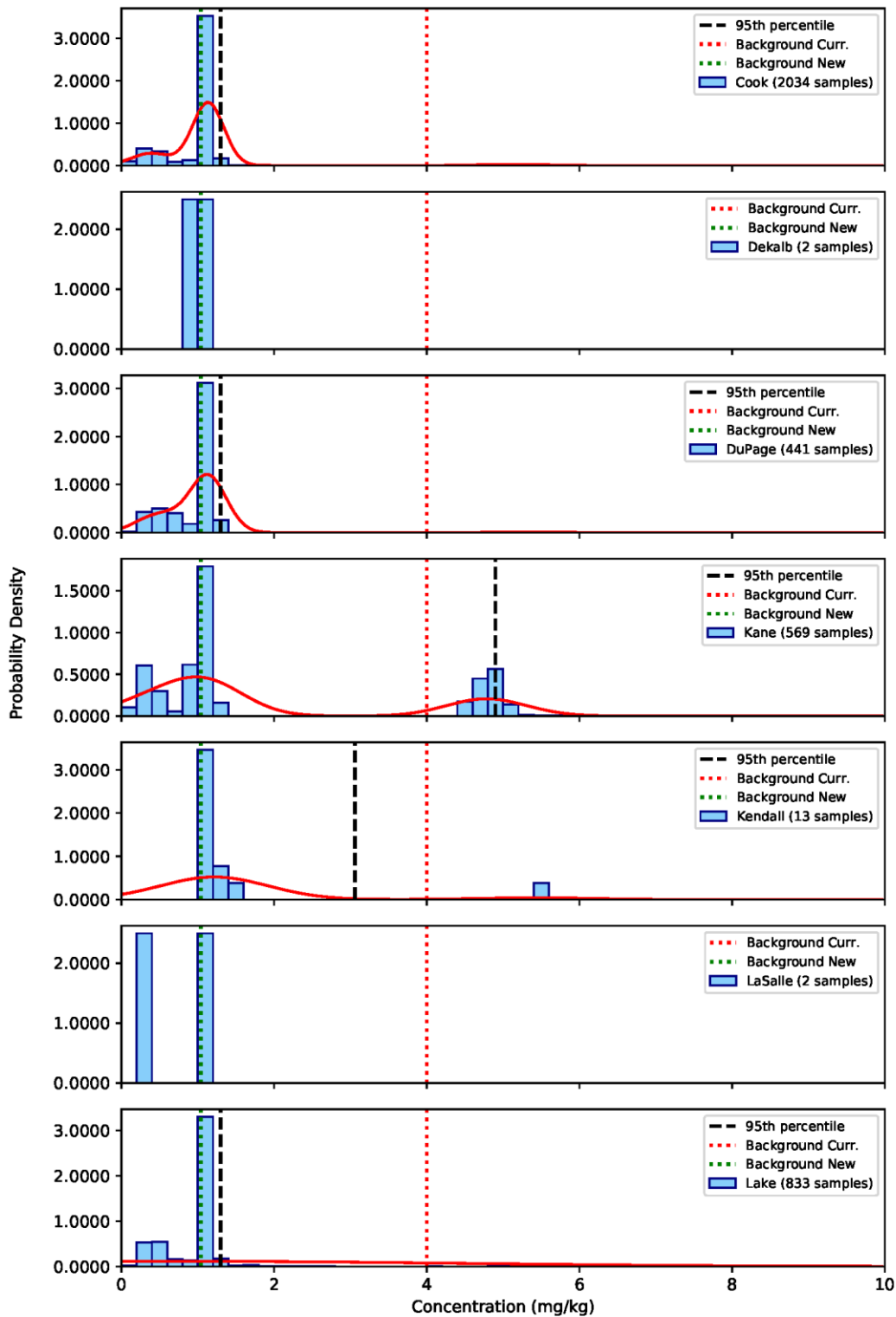


Figure 68. Histogram of RSL antimony concentrations by Illinois county, de minimis (mg/kg), part 1

Antimony Concentration by County, page 2 of 2

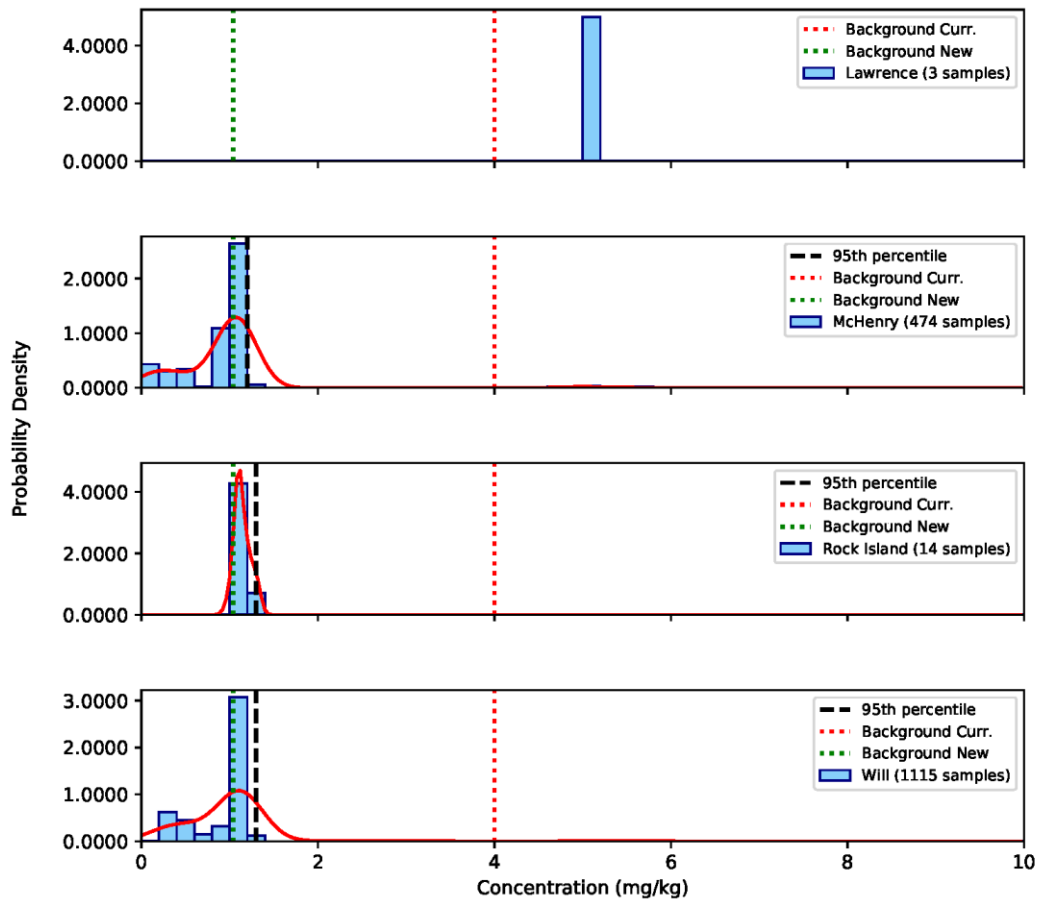
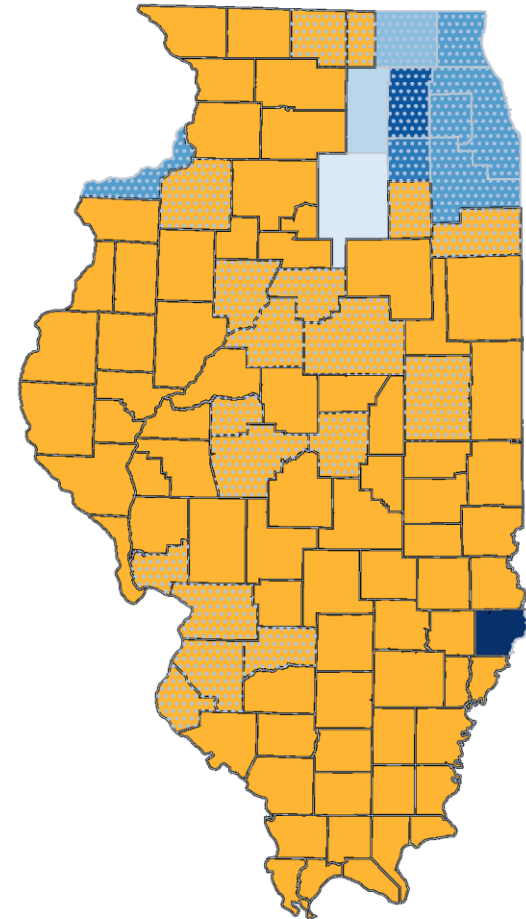


Figure 69. Histogram of RSL antimony concentrations by Illinois county, de minimis (mg/kg), part 2

### Antimony Concentration for 95th Percentile by County: deMinimis Sites



**Figure 70. Map of RSL antimony 95th percentile concentration by Illinois county, de minimis (mg/kg)**

Number of Antimony Samples by County: deMinimis Sites

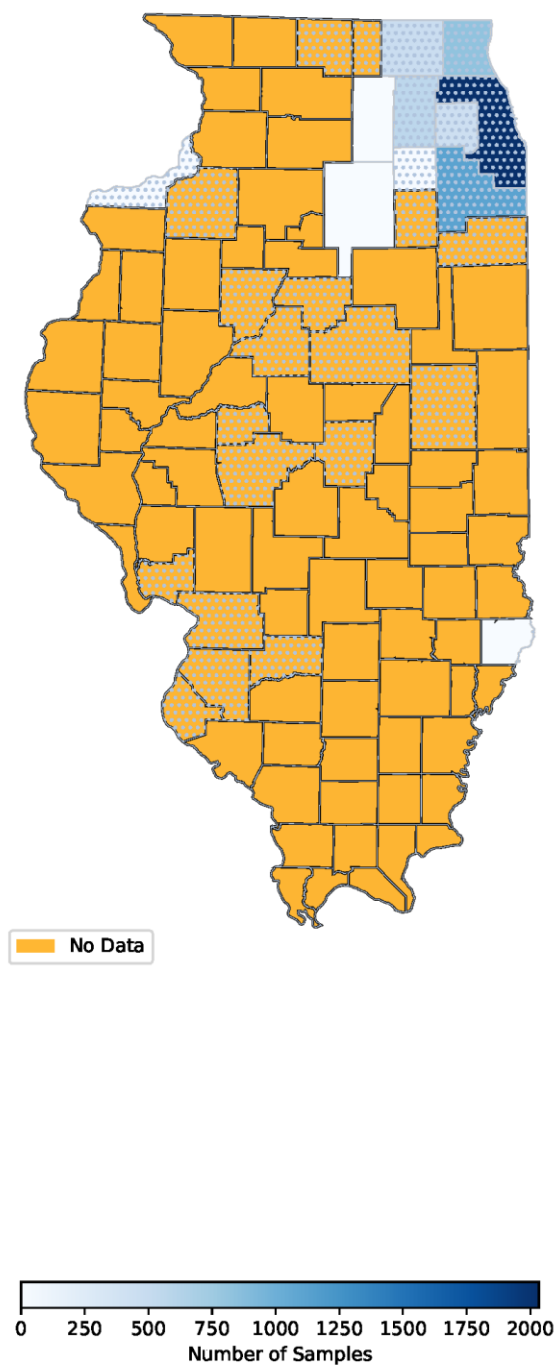
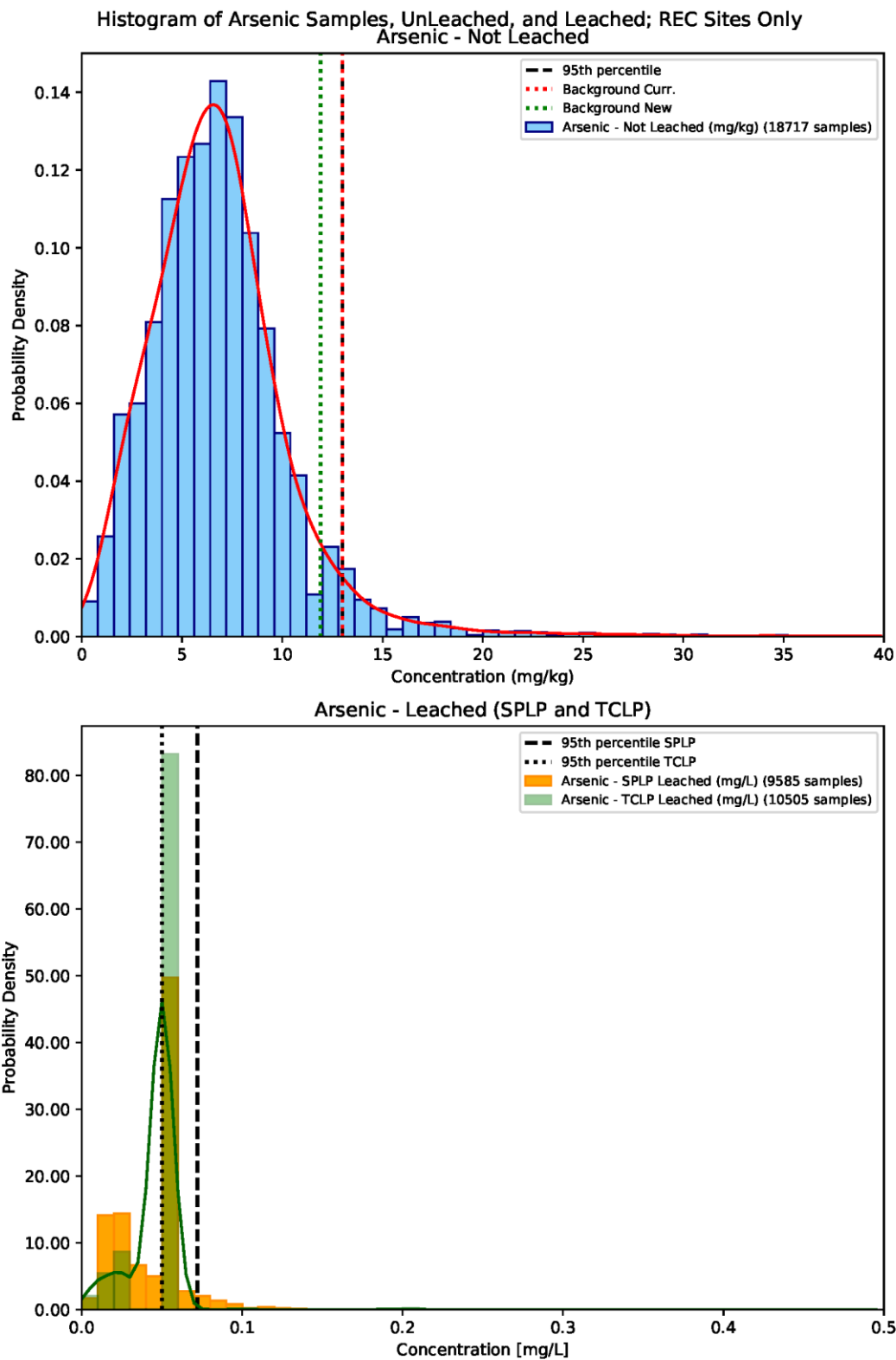


Figure 71. Map of RSL antimony sample quantity by Illinois county, de minimis (mg/kg)



## **APPENDIX C. ANALYTE ANALYSIS: ARSENIC**

### **C.1 ARSENIC REC**



**Figure 72. Histogram of RSL arsenic concentrations, REC (mg/kg)**

**Arsenic Unleached Concentration (mg/kg)**

1) Region

2) District

3) County

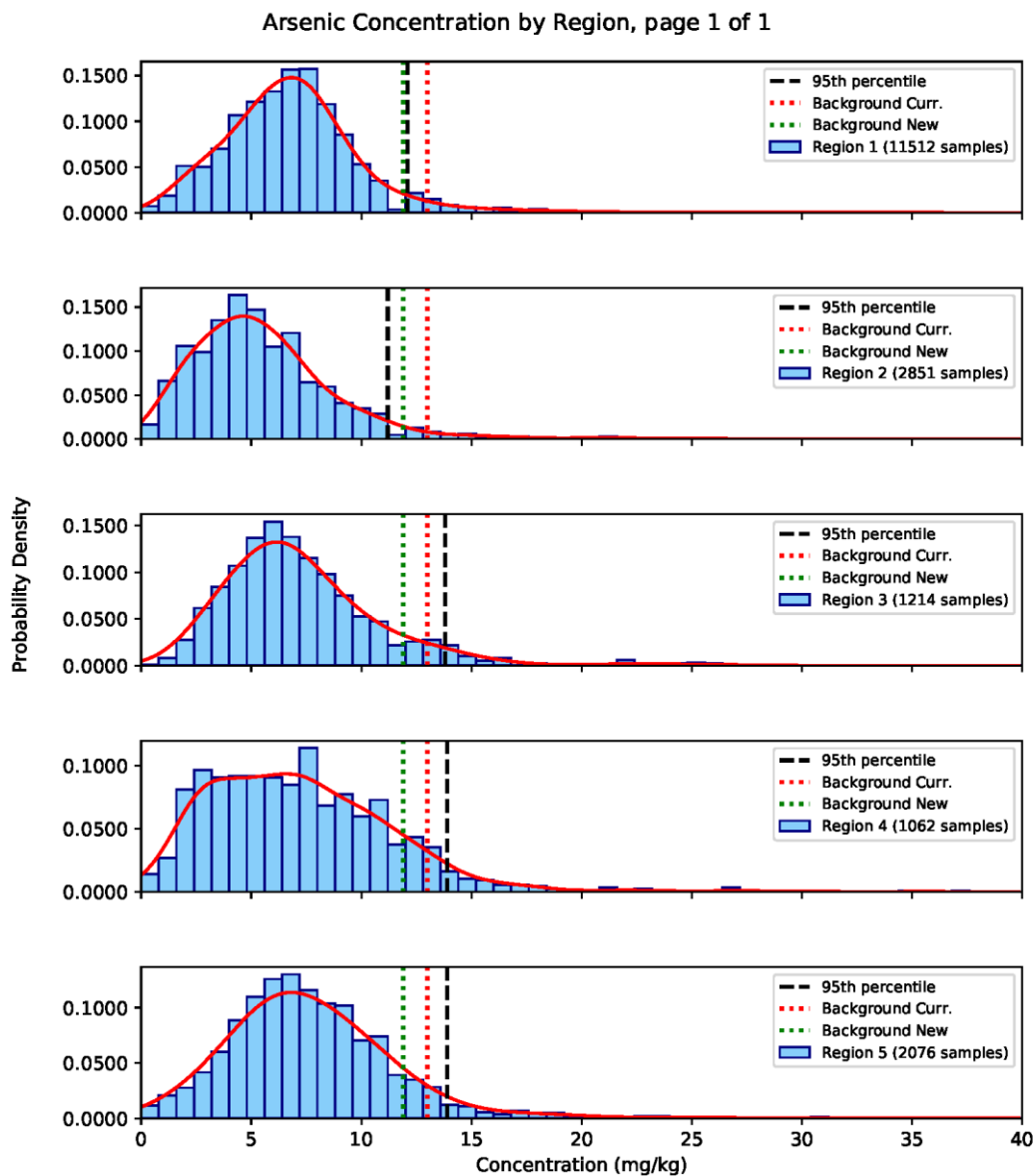
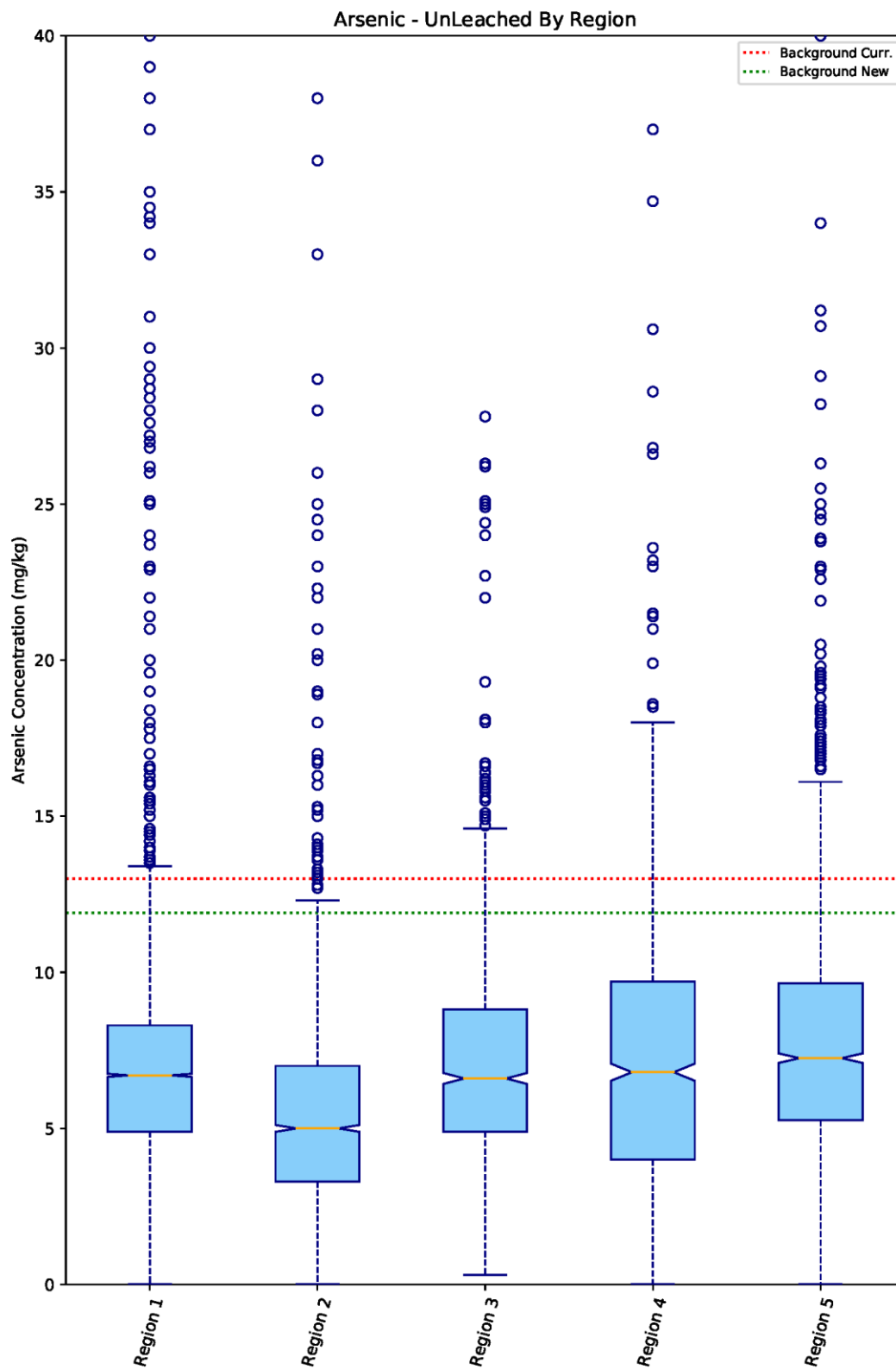


Figure 73. Histogram of RSL arsenic concentrations by IDOT Region, REC (mg/kg)



**Figure 74. Boxplot of RSL arsenic concentrations by IDOT Region, REC (mg/kg)**

# Arsenic Concentration by District, page 1 of 2

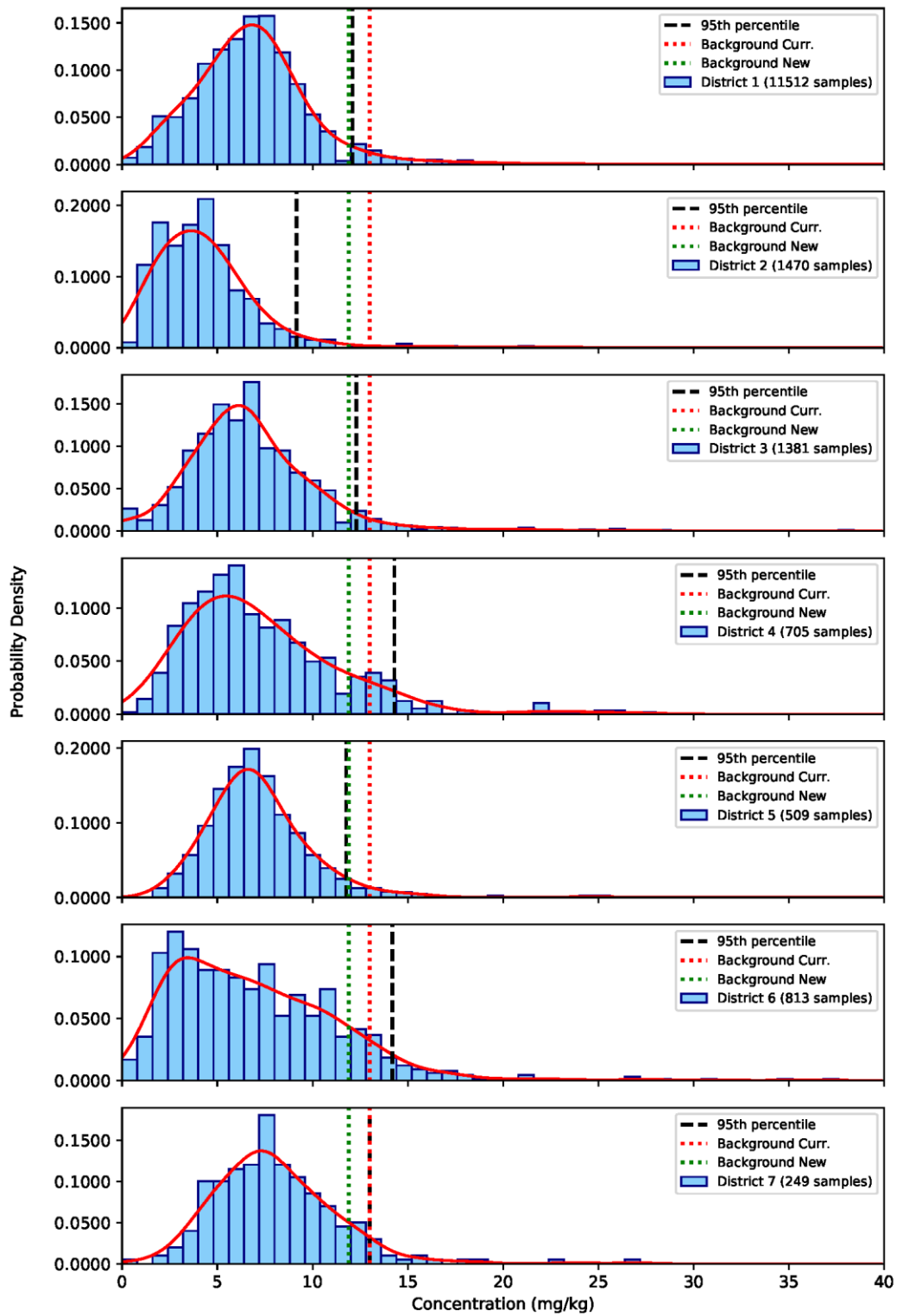


Figure 75. Histogram of RSL arsenic concentrations by IDOT District, REC (mg/kg), part 1

Arsenic Concentration by District, page 2 of 2

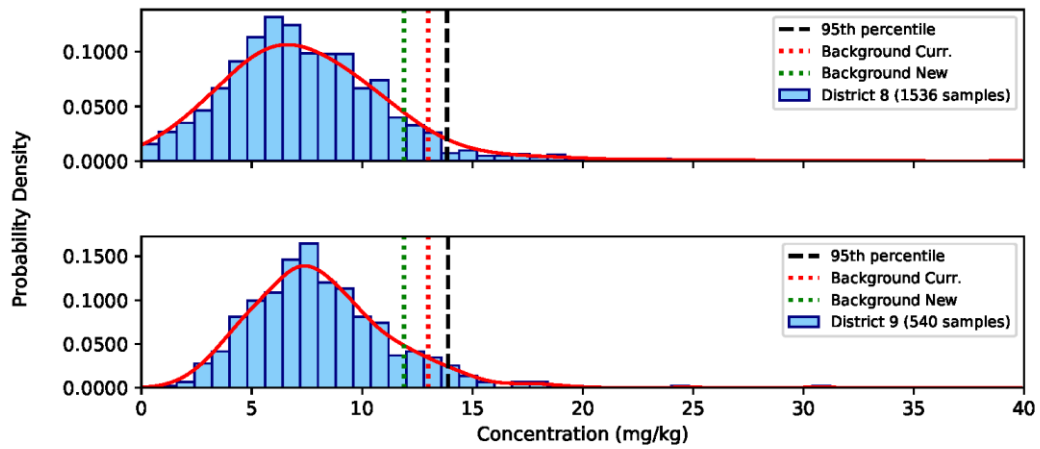
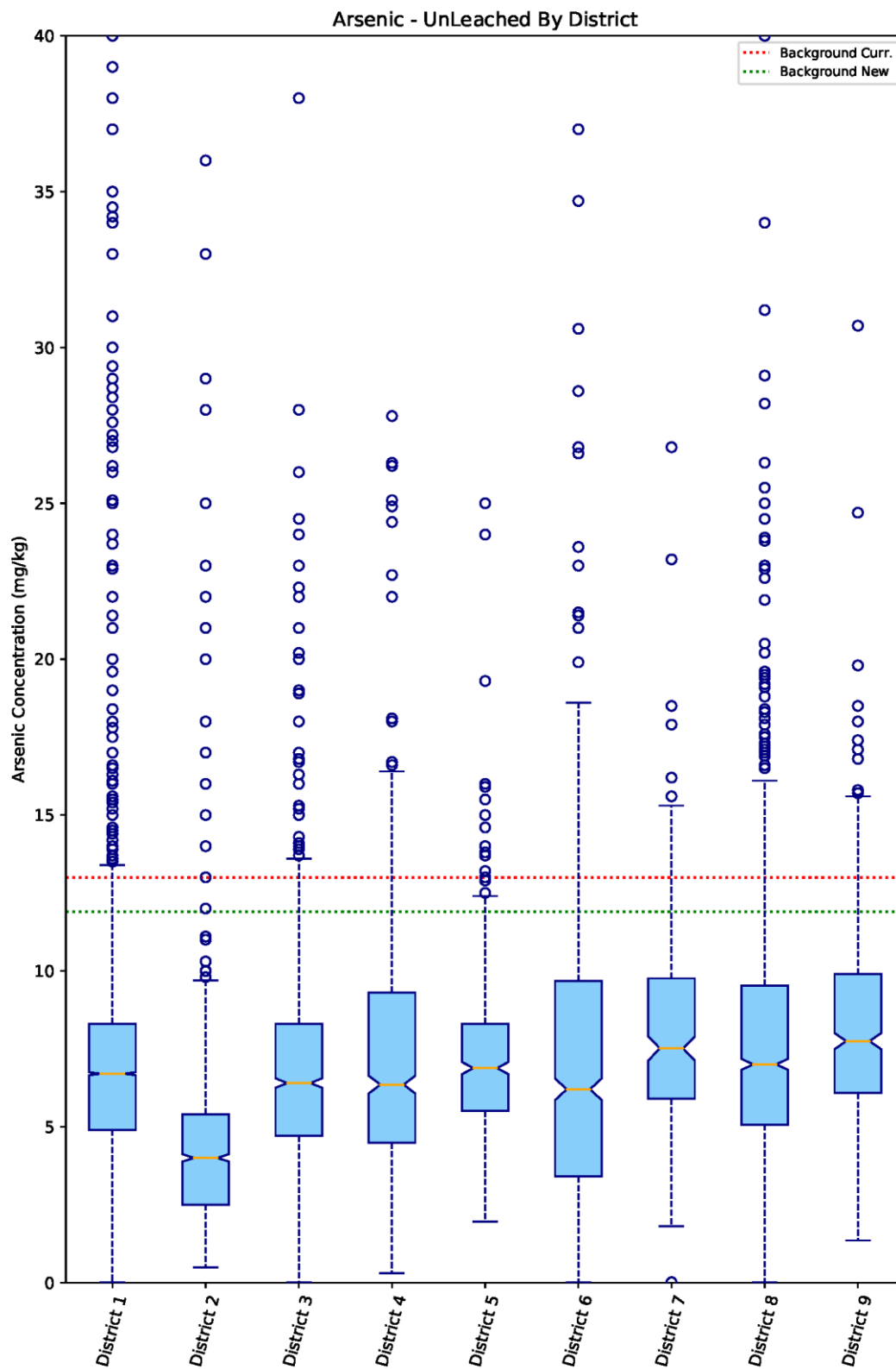


Figure 76. Histogram of RSL arsenic concentrations by IDOT District, REC (mg/kg), part 2



**Figure 77. Boxplot of RSL arsenic concentrations by IDOT District, REC (mg/kg)**



# Arsenic Concentration by County, page 1 of 10

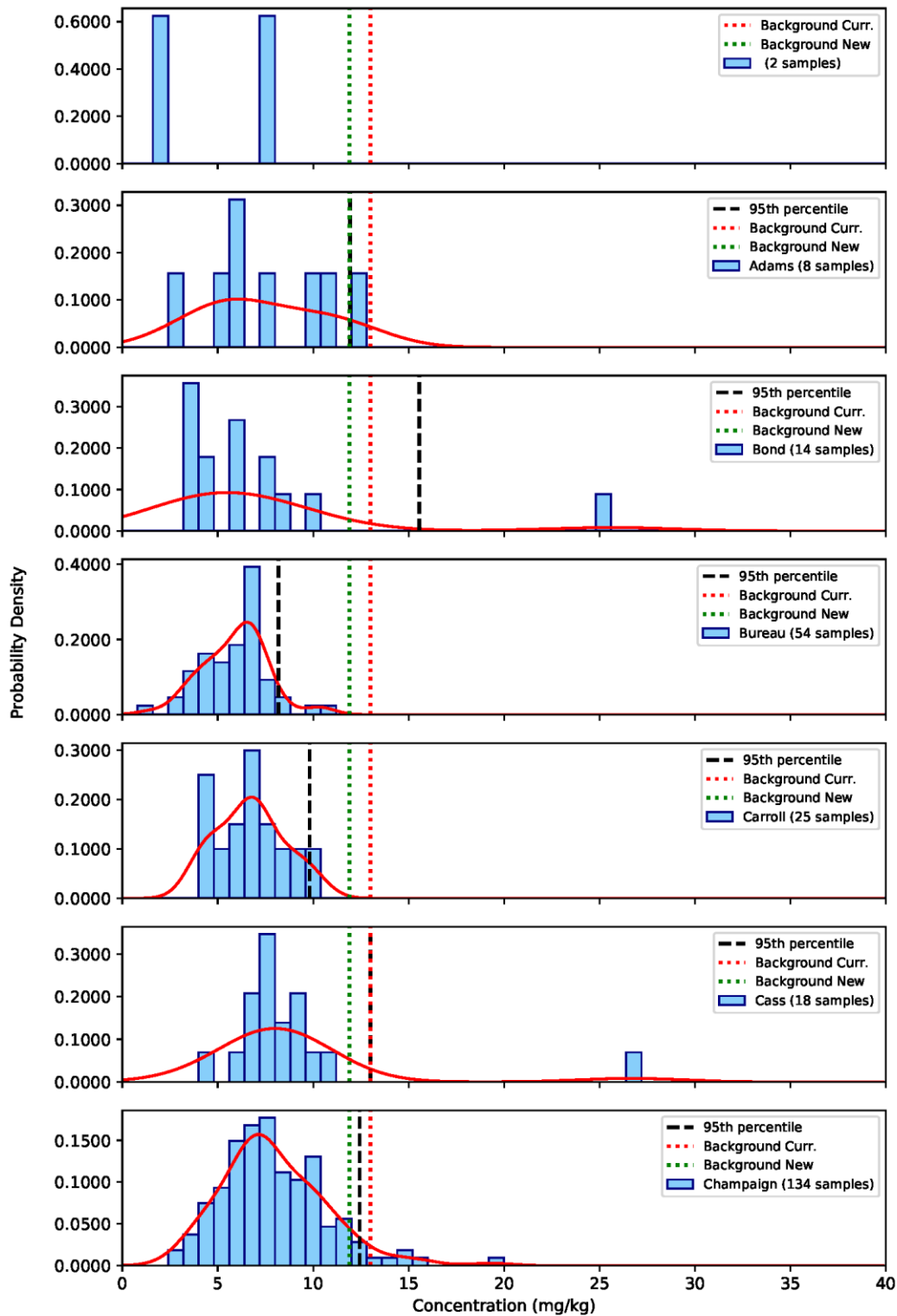


Figure 78. Histogram of RSL arsenic concentrations by Illinois county, REC (mg/kg), part 1

Arsenic Concentration by County, page 2 of 10

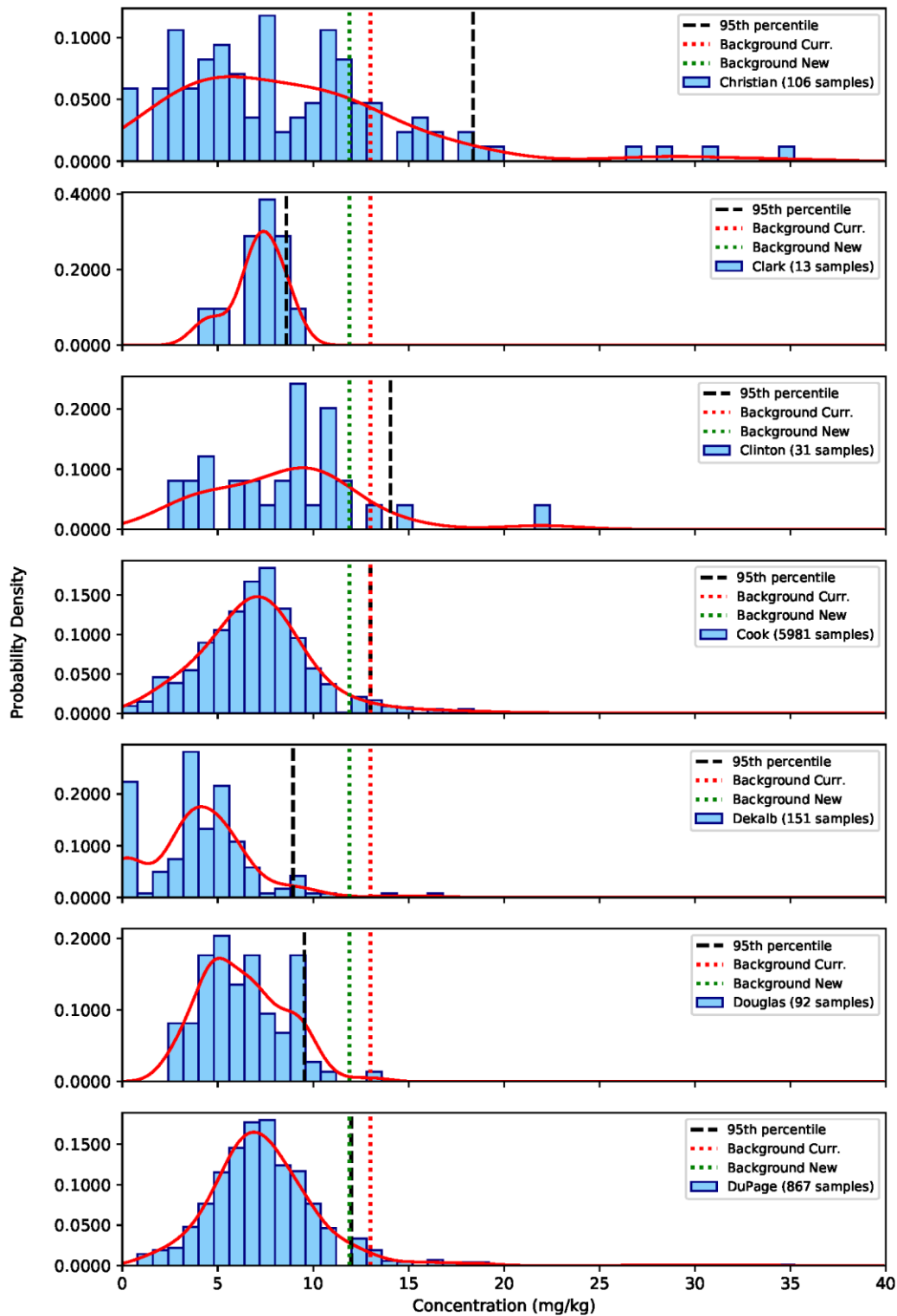


Figure 79. Histogram of RSL arsenic concentrations by Illinois county, REC (mg/kg), part 2

Arsenic Concentration by County, page 3 of 10

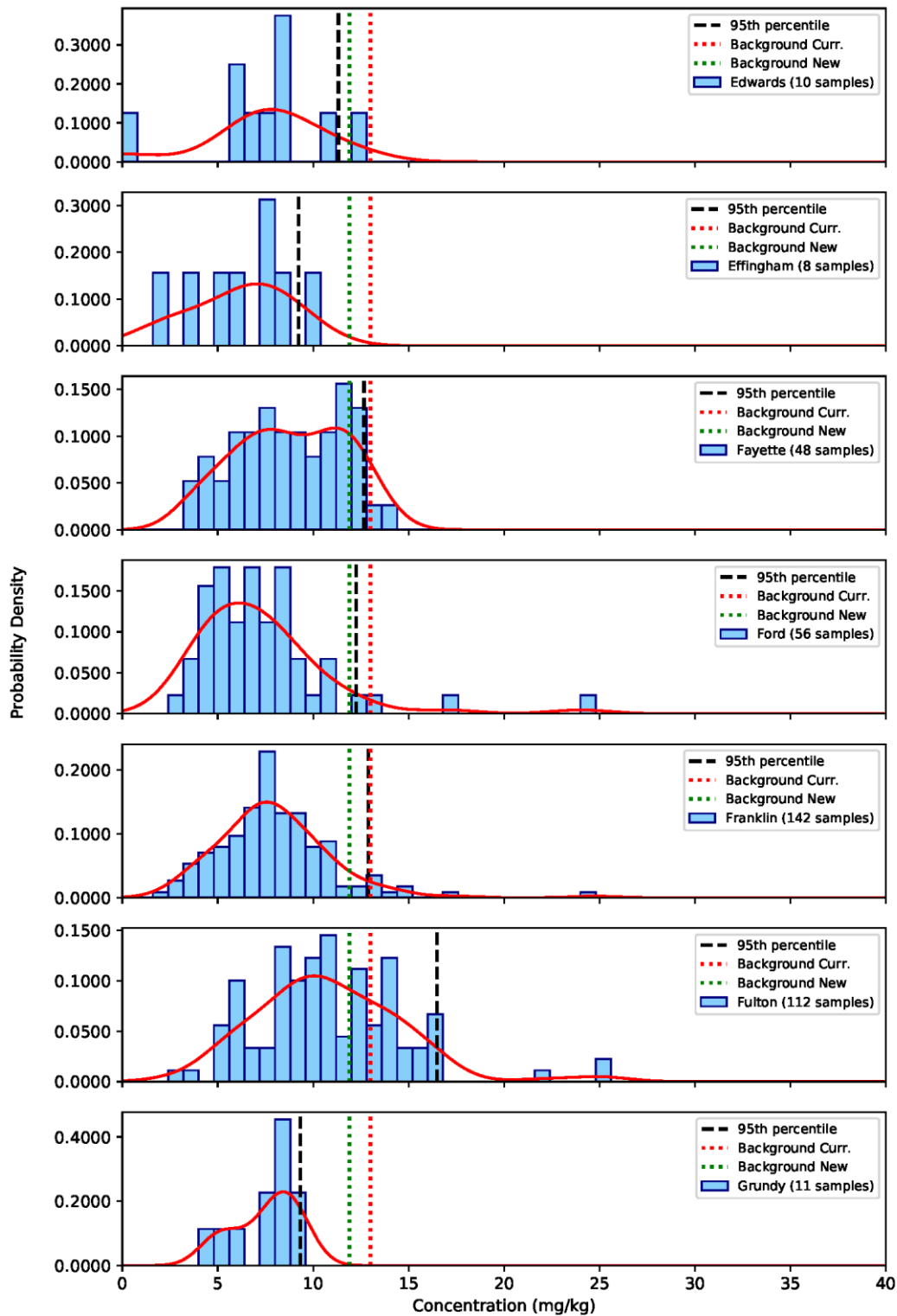


Figure 80. Histogram of RSL arsenic concentrations by Illinois county, REC (mg/kg), part 3

Arsenic Concentration by County, page 4 of 10

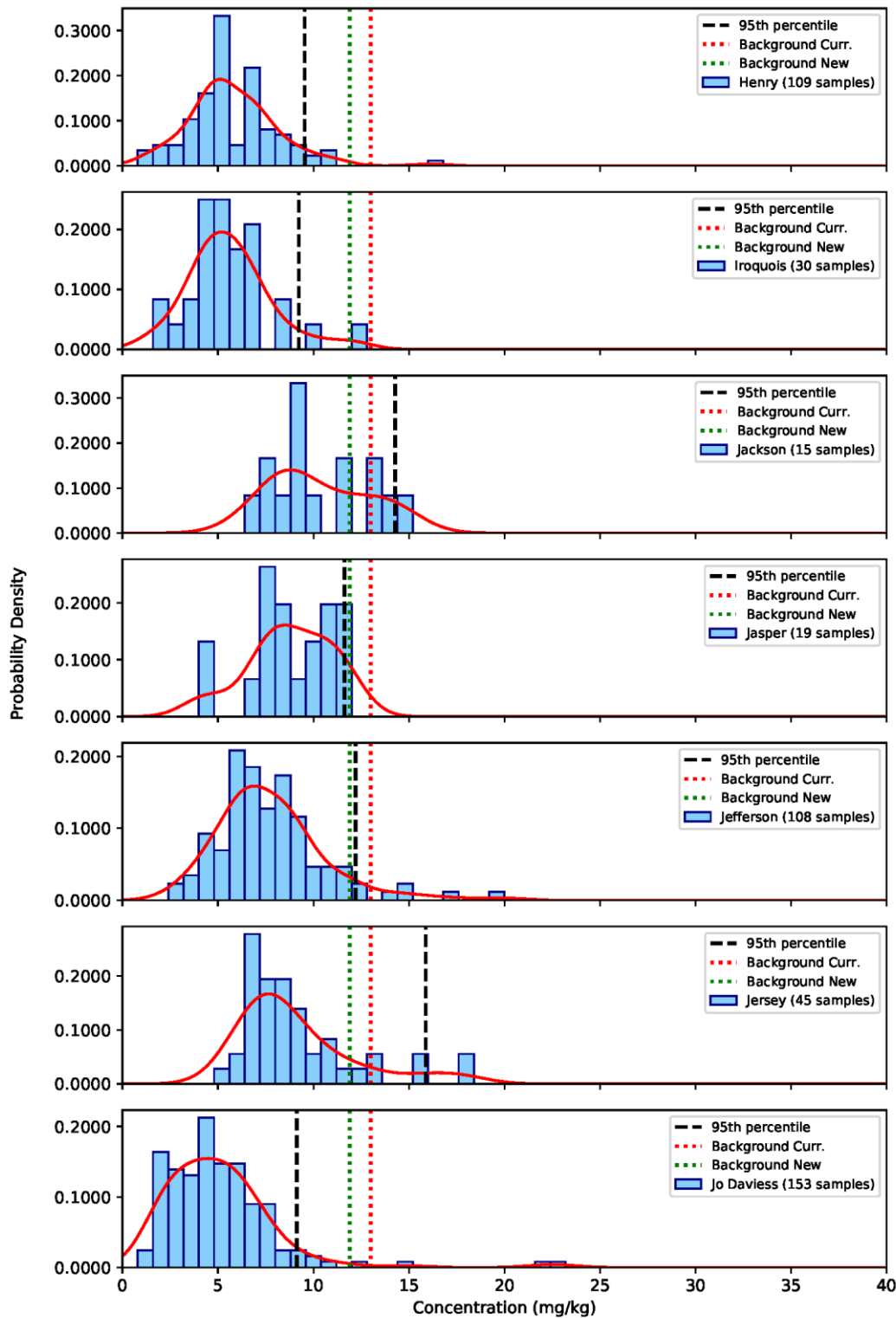


Figure 81. Histogram of RSL arsenic concentrations by Illinois county, REC (mg/kg), part 4

Arsenic Concentration by County, page 5 of 10

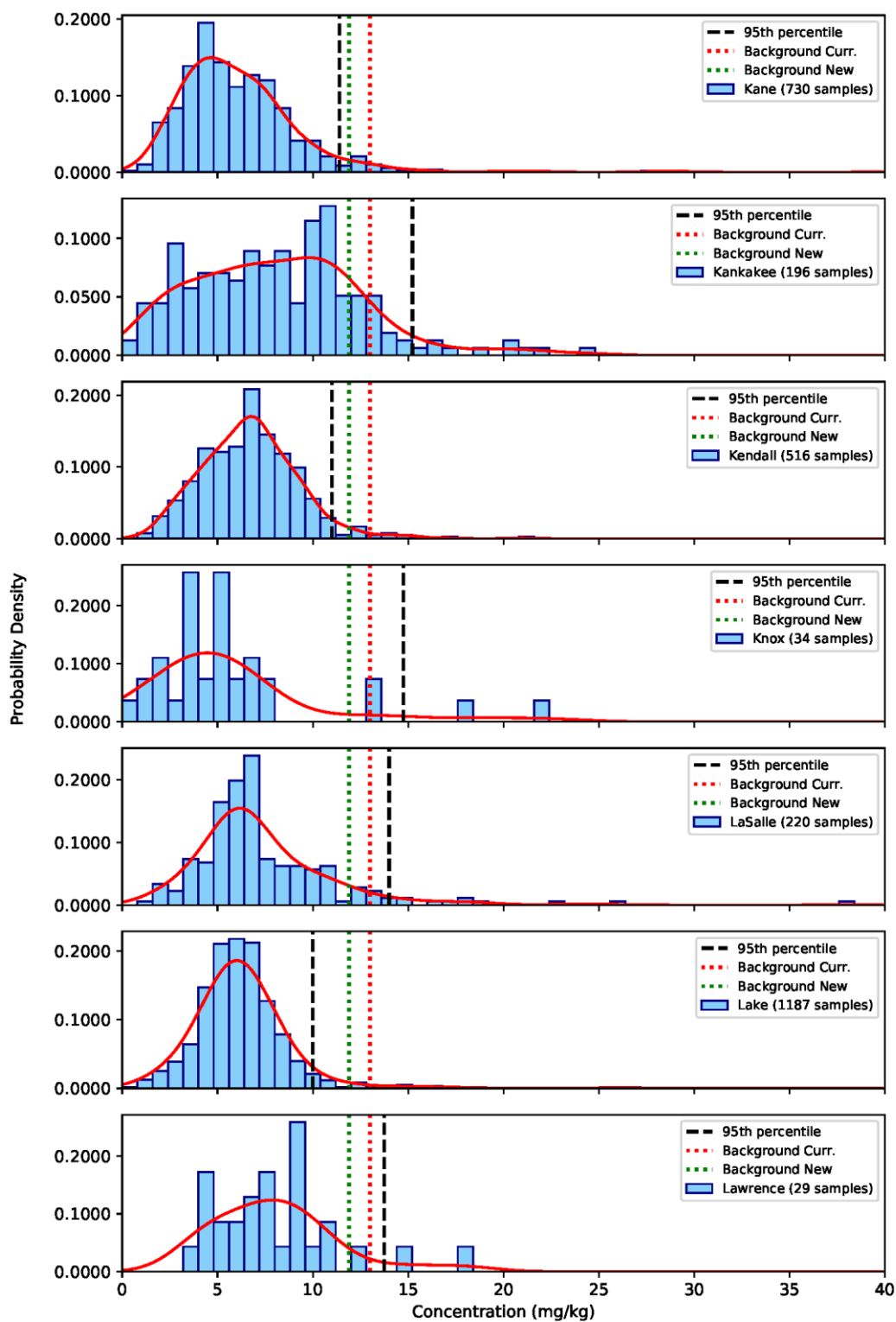


Figure 82. Histogram of RSL arsenic concentrations by Illinois county, REC (mg/kg), part 5

Arsenic Concentration by County, page 6 of 10

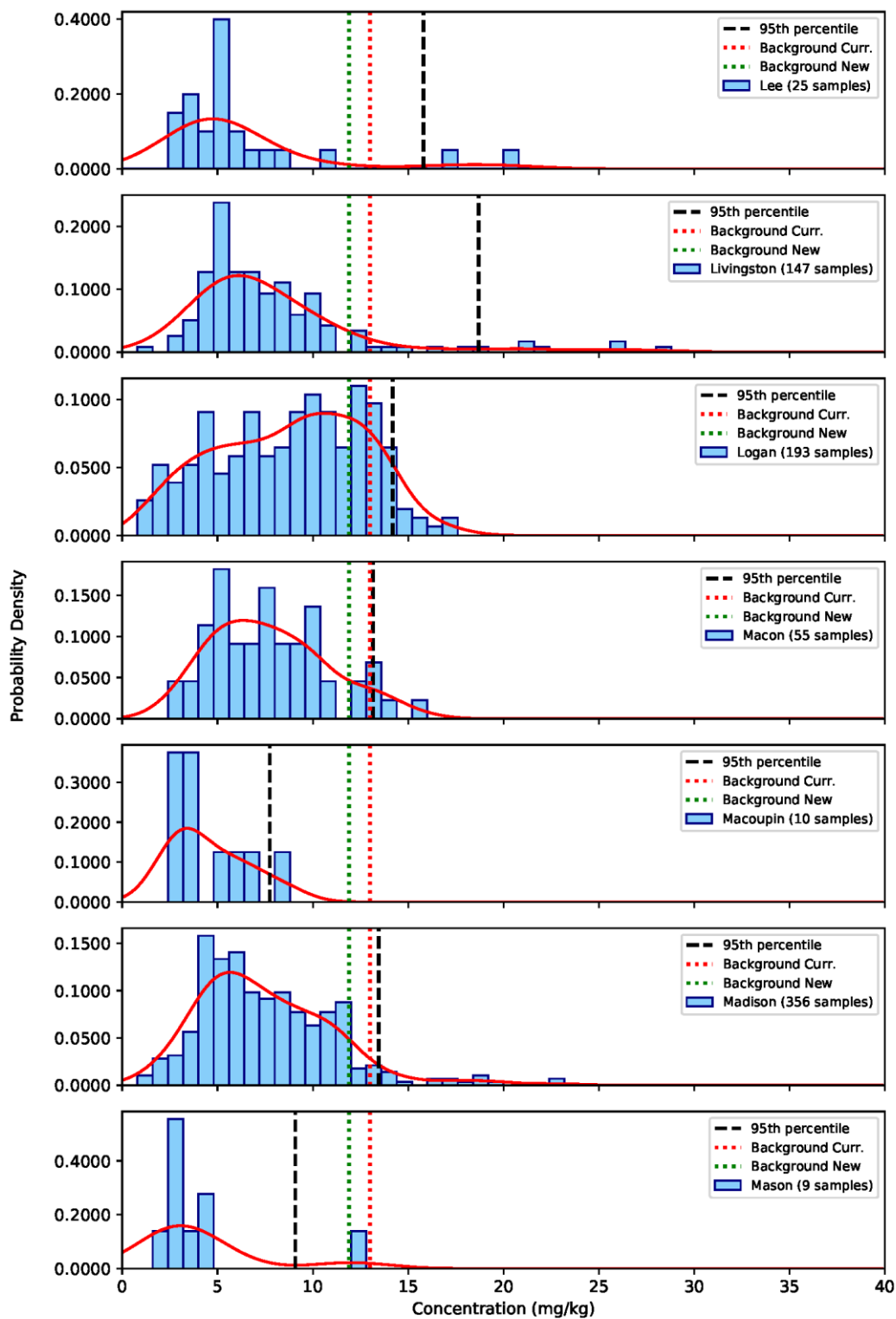


Figure 83. Histogram of RSL arsenic concentrations by Illinois county, REC (mg/kg), part 6

Arsenic Concentration by County, page 7 of 10

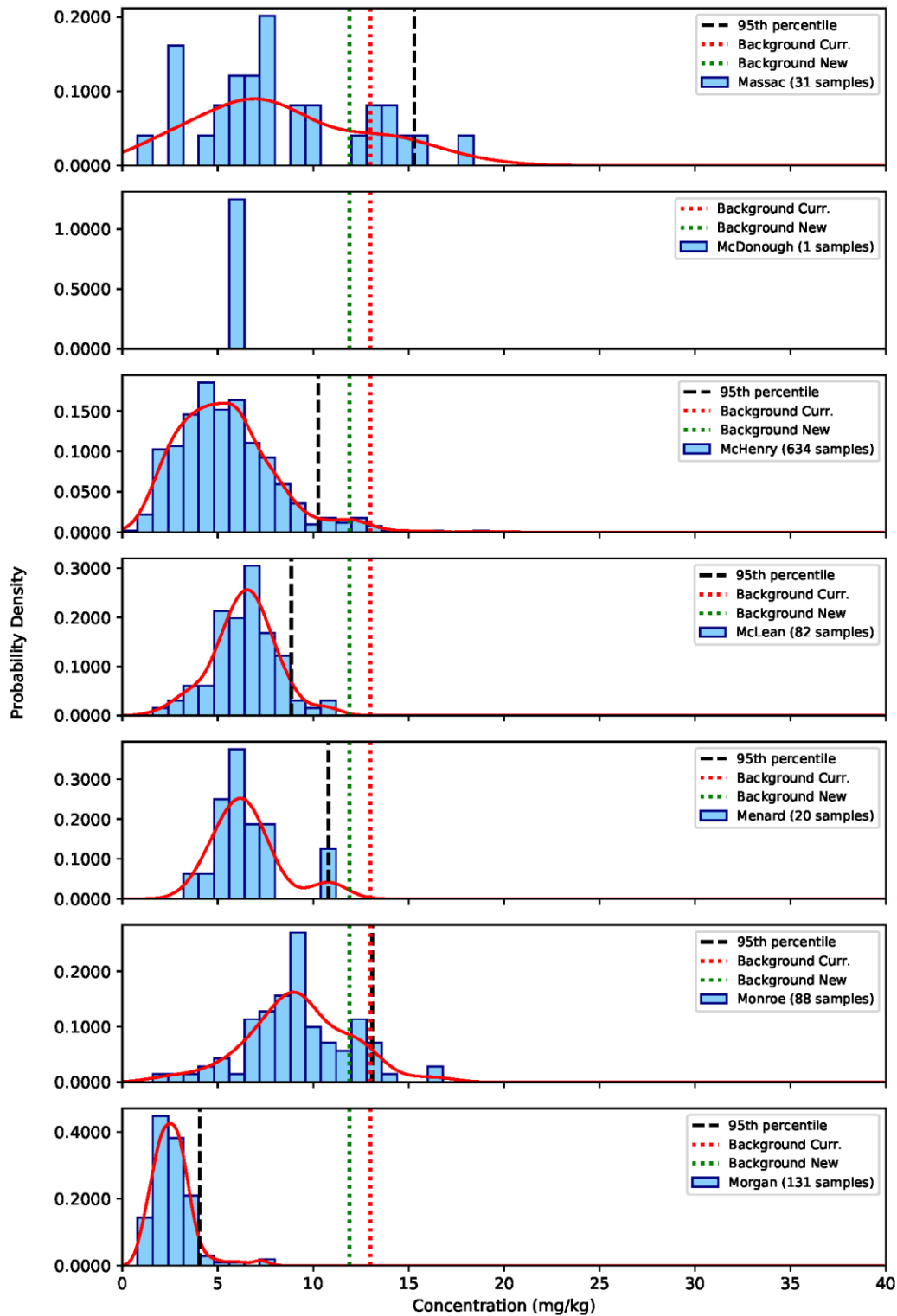


Figure 84. Histogram of RSL arsenic concentrations by Illinois county, REC (mg/kg), part 7

Arsenic Concentration by County, page 8 of 10

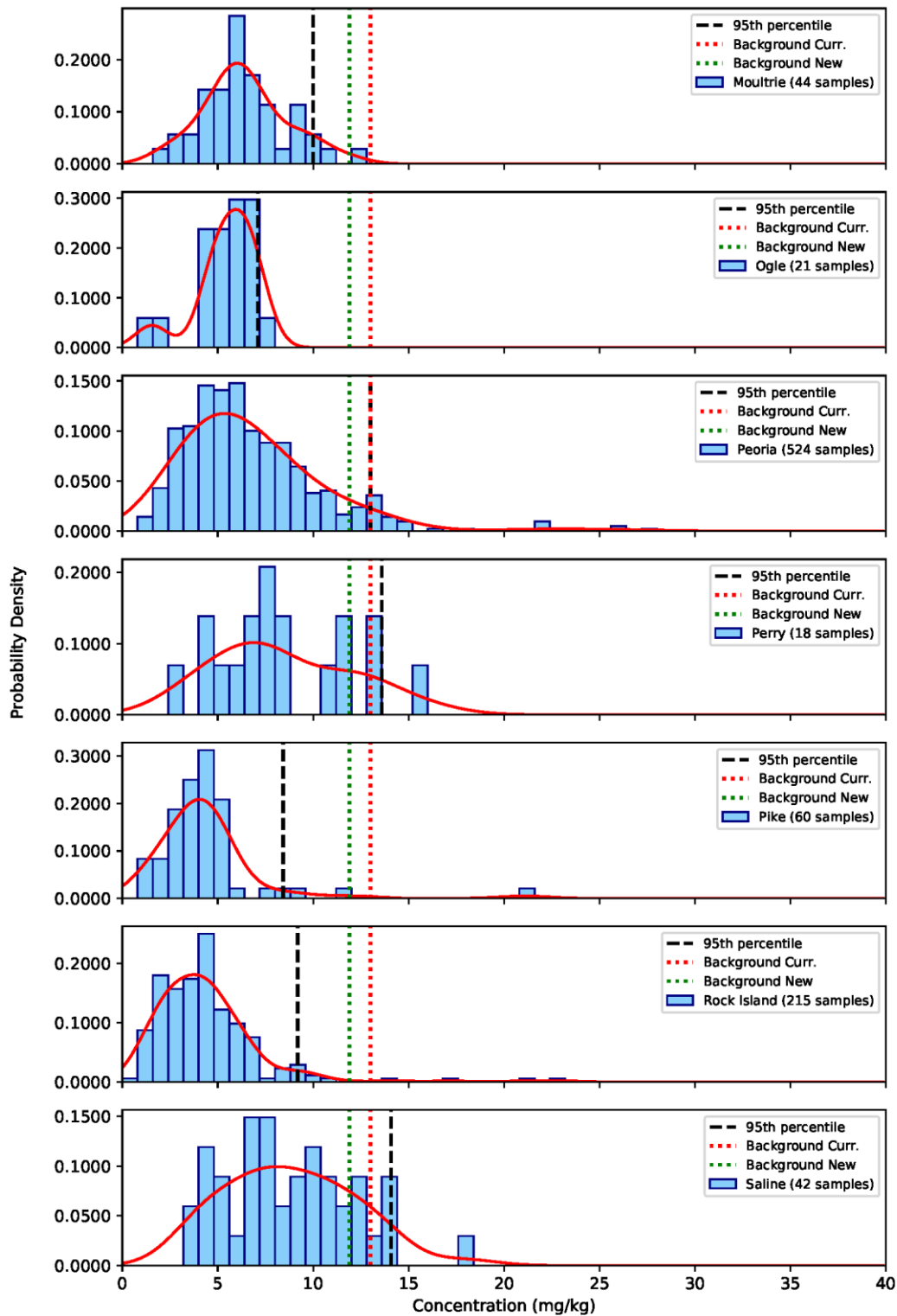


Figure 85. Histogram of RSL arsenic concentrations by Illinois county, REC (mg/kg), part 8



# Arsenic Concentration by County, page 9 of 10

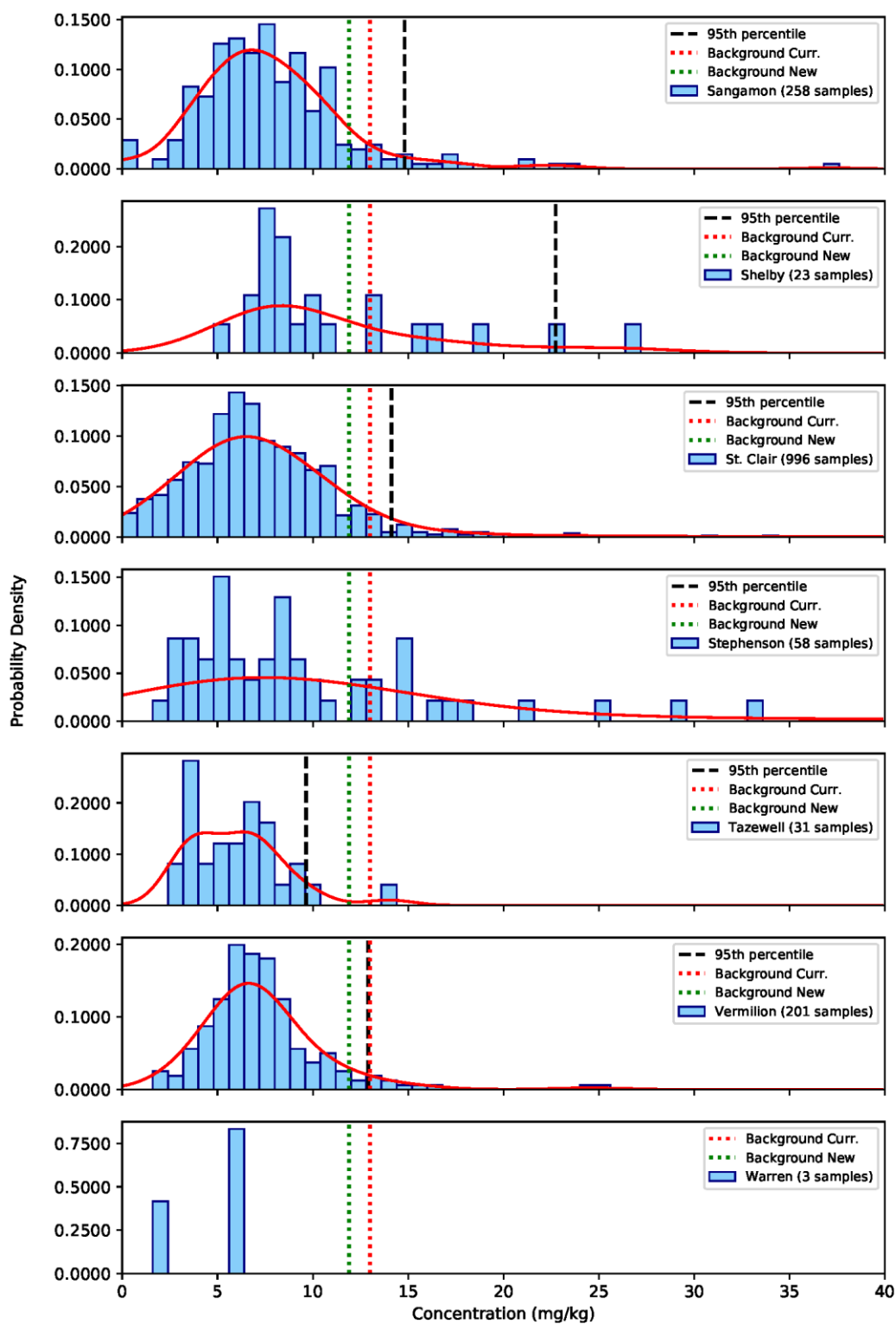


Figure 86. Histogram of RSL arsenic concentrations by Illinois county, REC (mg/kg), part 9

Arsenic Concentration by County, page 10 of 10

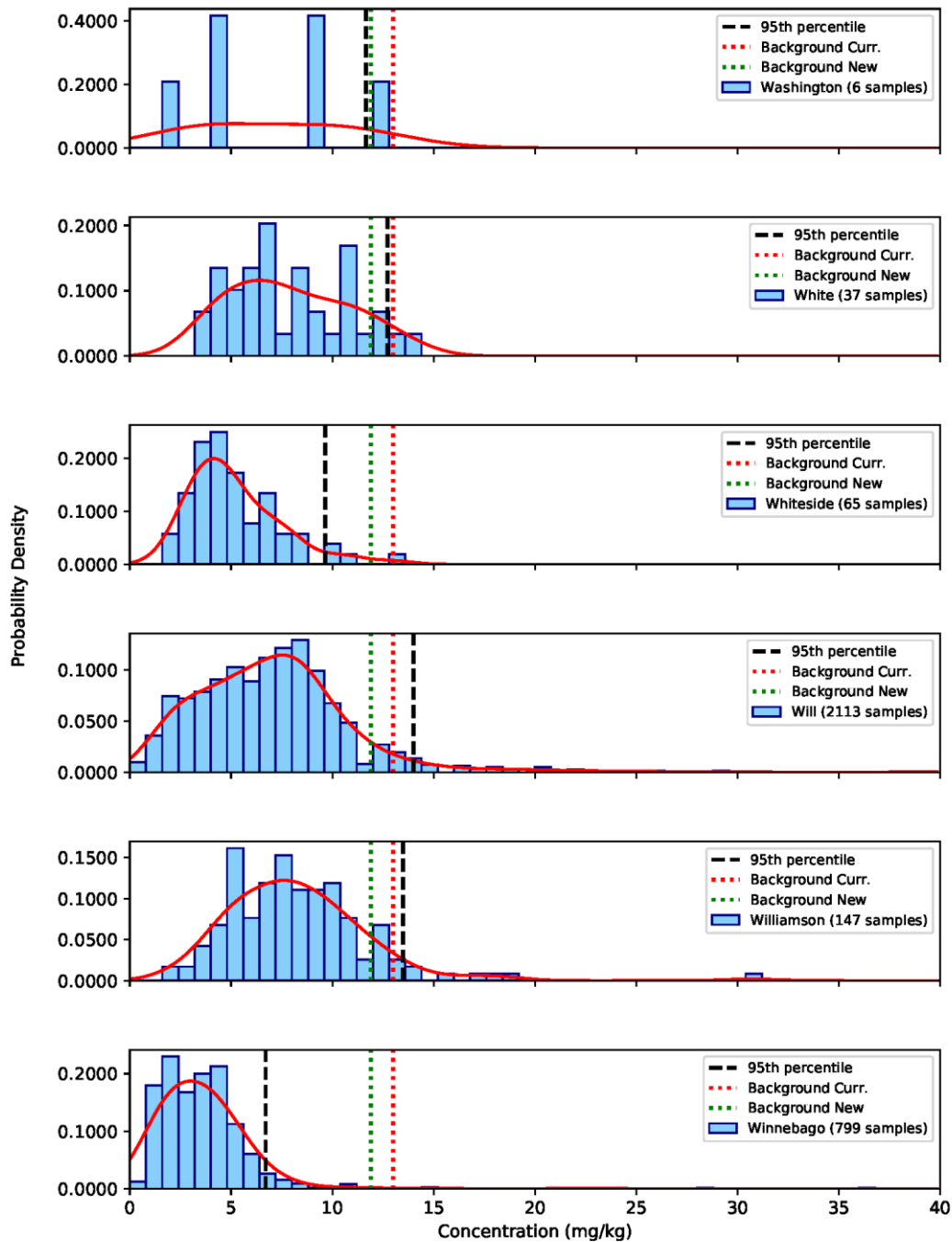


Figure 87. Histogram of RSL arsenic concentrations by Illinois county, REC (mg/kg), part 10

Arsenic Concentration for 95th Percentile by County: REC Sites

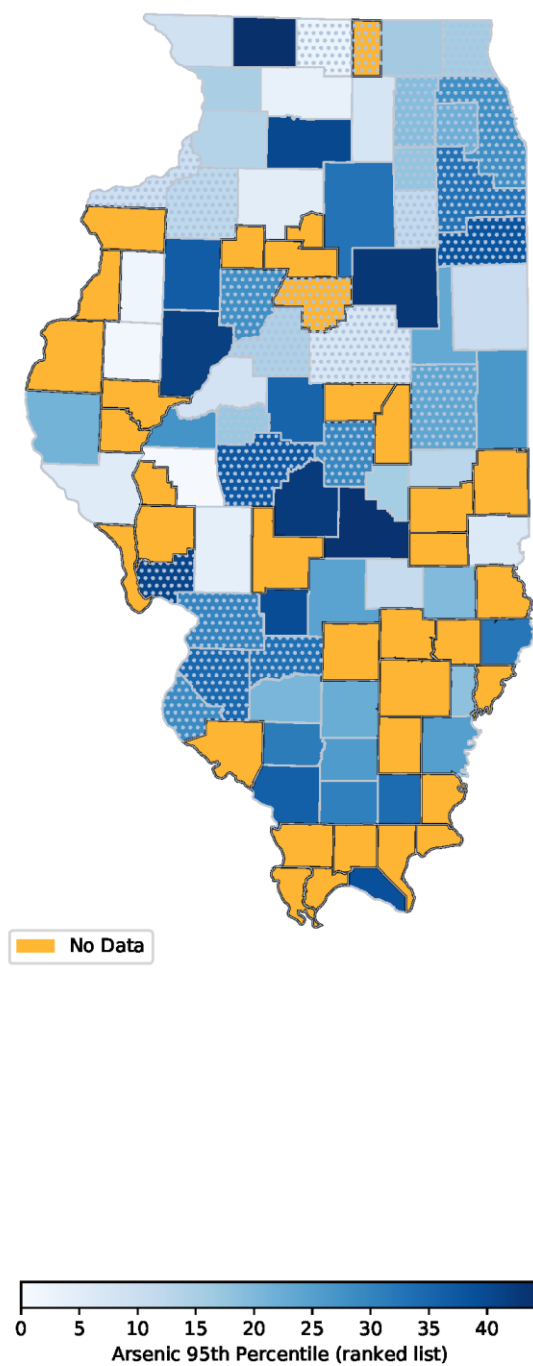


Figure 88. Map of RSL arsenic 95th percentile concentration by Illinois county, REC (mg/kg)

110

## C.2 ARSENIC NON-REC

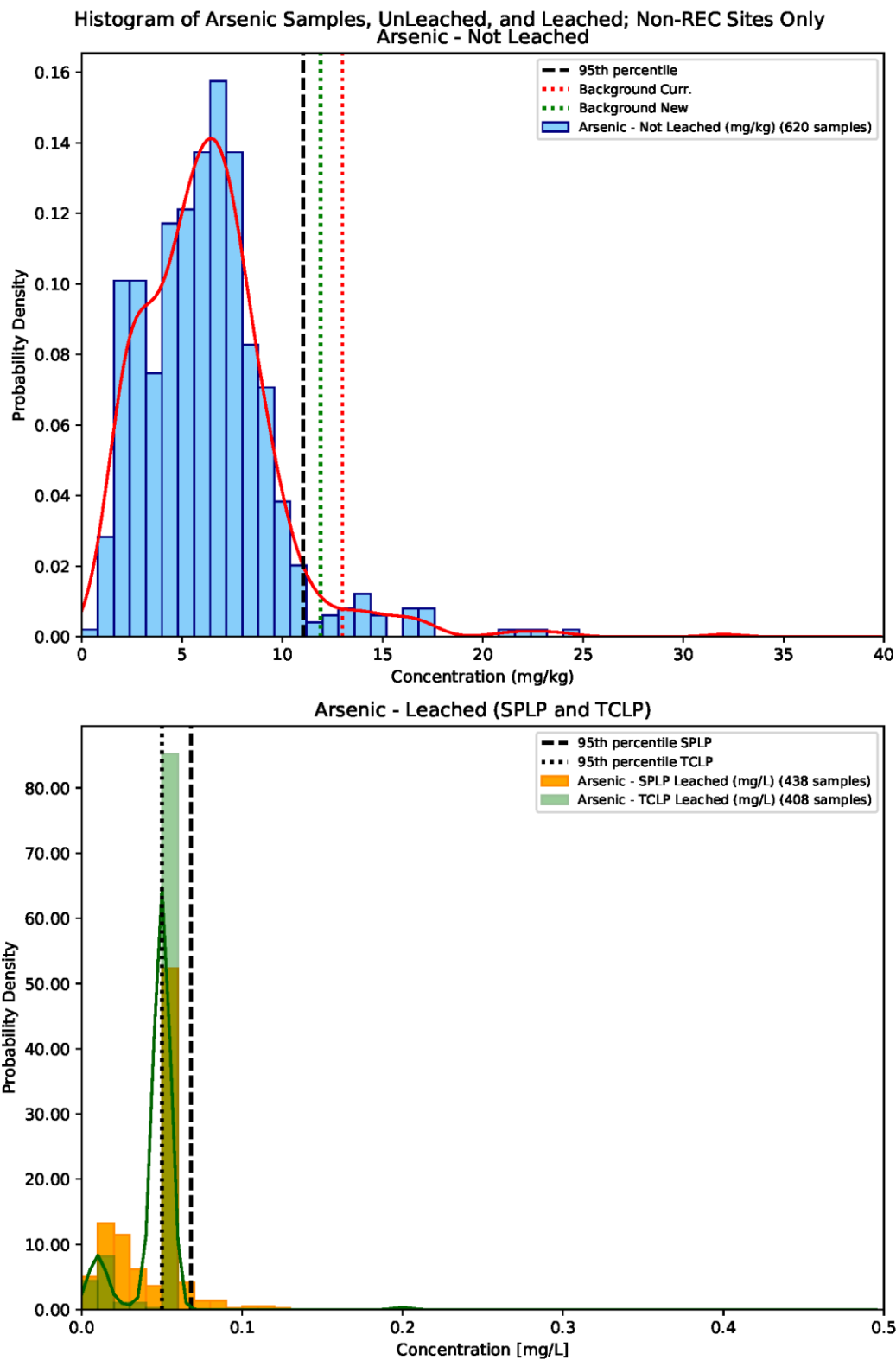


Figure 90. Histogram of RSL arsenic concentrations, Non-REC (mg/kg)

**Arsenic Unleached Concentration (mg/kg)**

- 1) Region
- 2) District
- 3) County

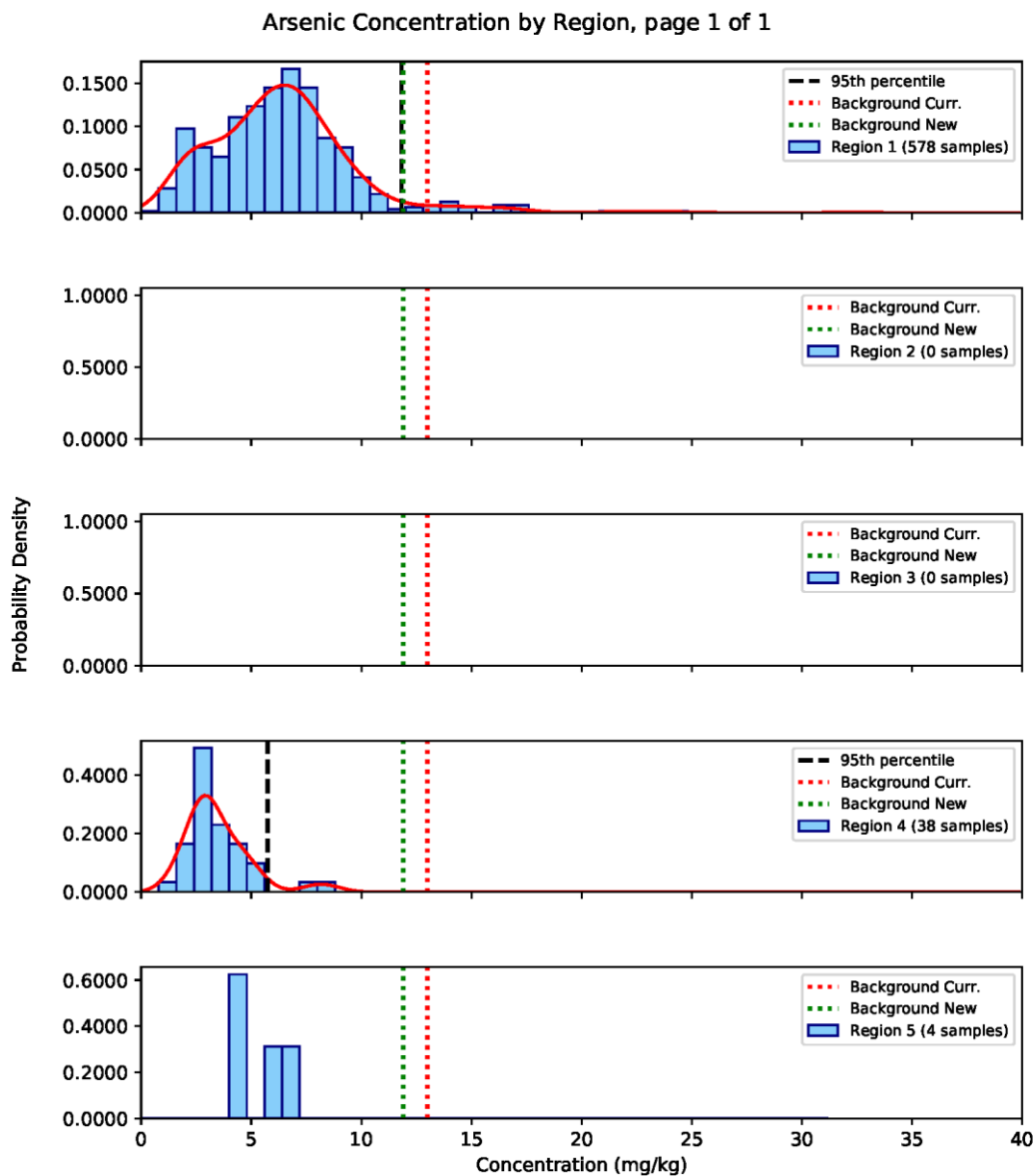
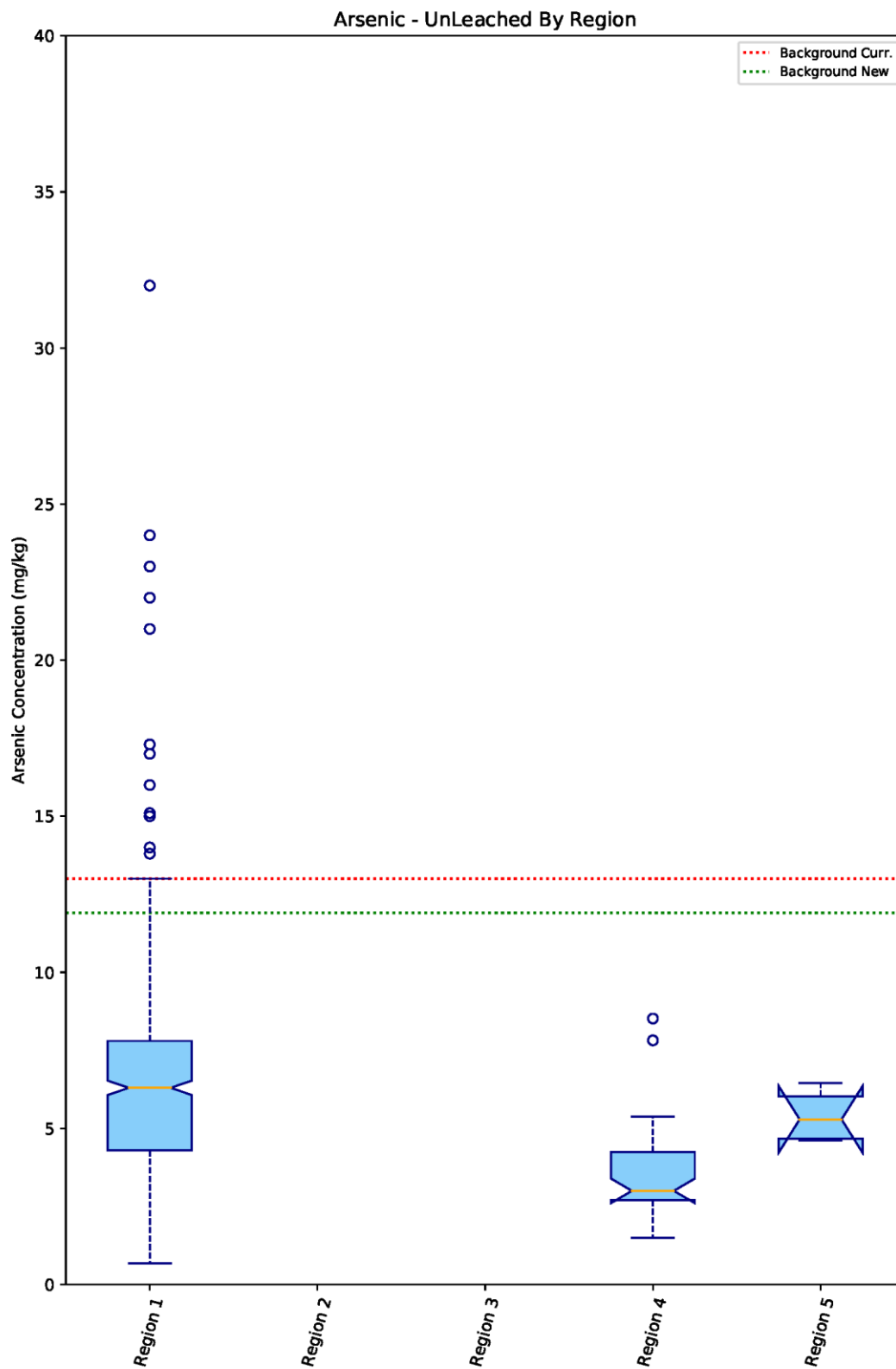


Figure 91. Histogram of RSL arsenic concentrations by IDOT Region, Non-REC (mg/kg)





**Figure 92. Boxplot of RSL arsenic concentrations by IDOT Region, Non-REC (mg/kg)**

Arsenic Concentration by District, page 1 of 2

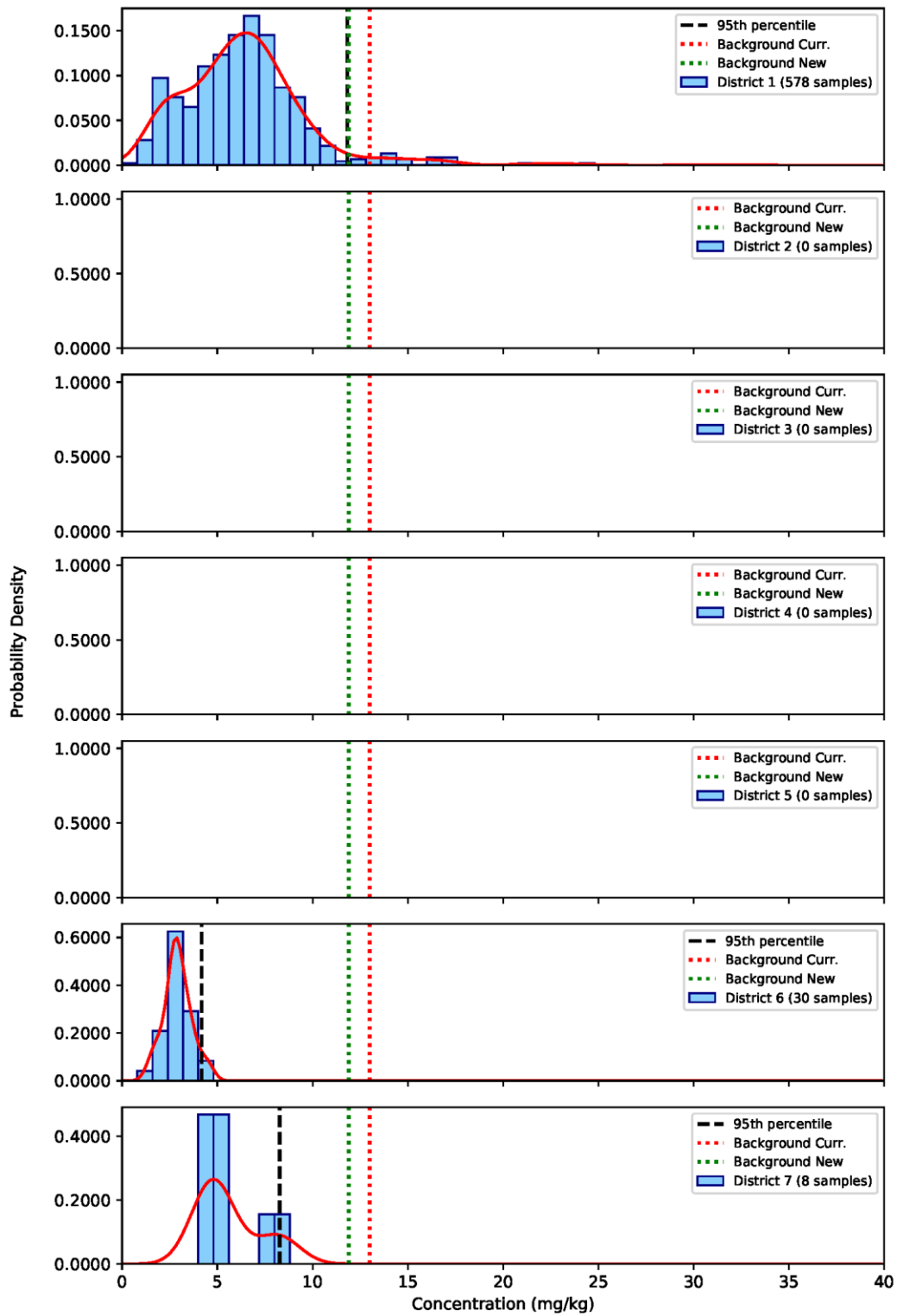


Figure 93. Histogram of RSL arsenic concentrations by IDOT District, Non-REC (mg/kg), part 1

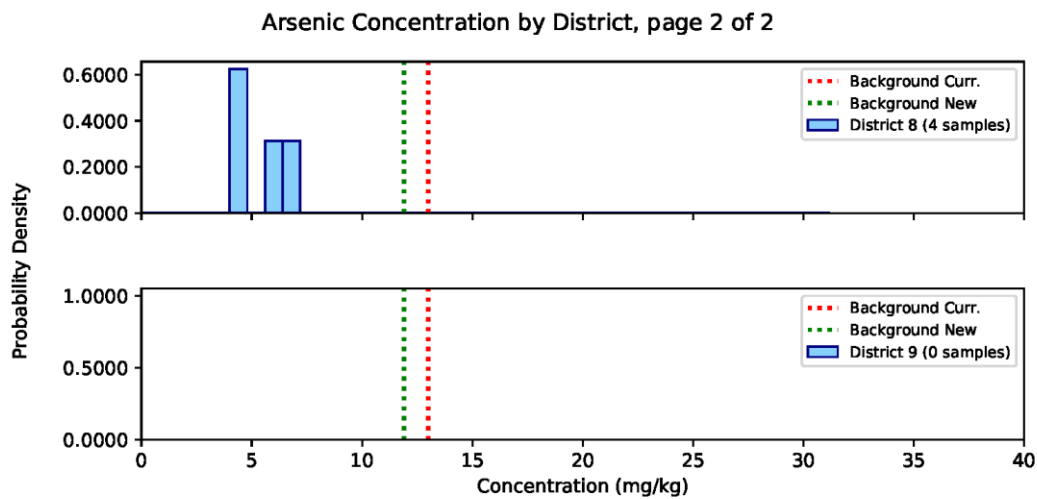
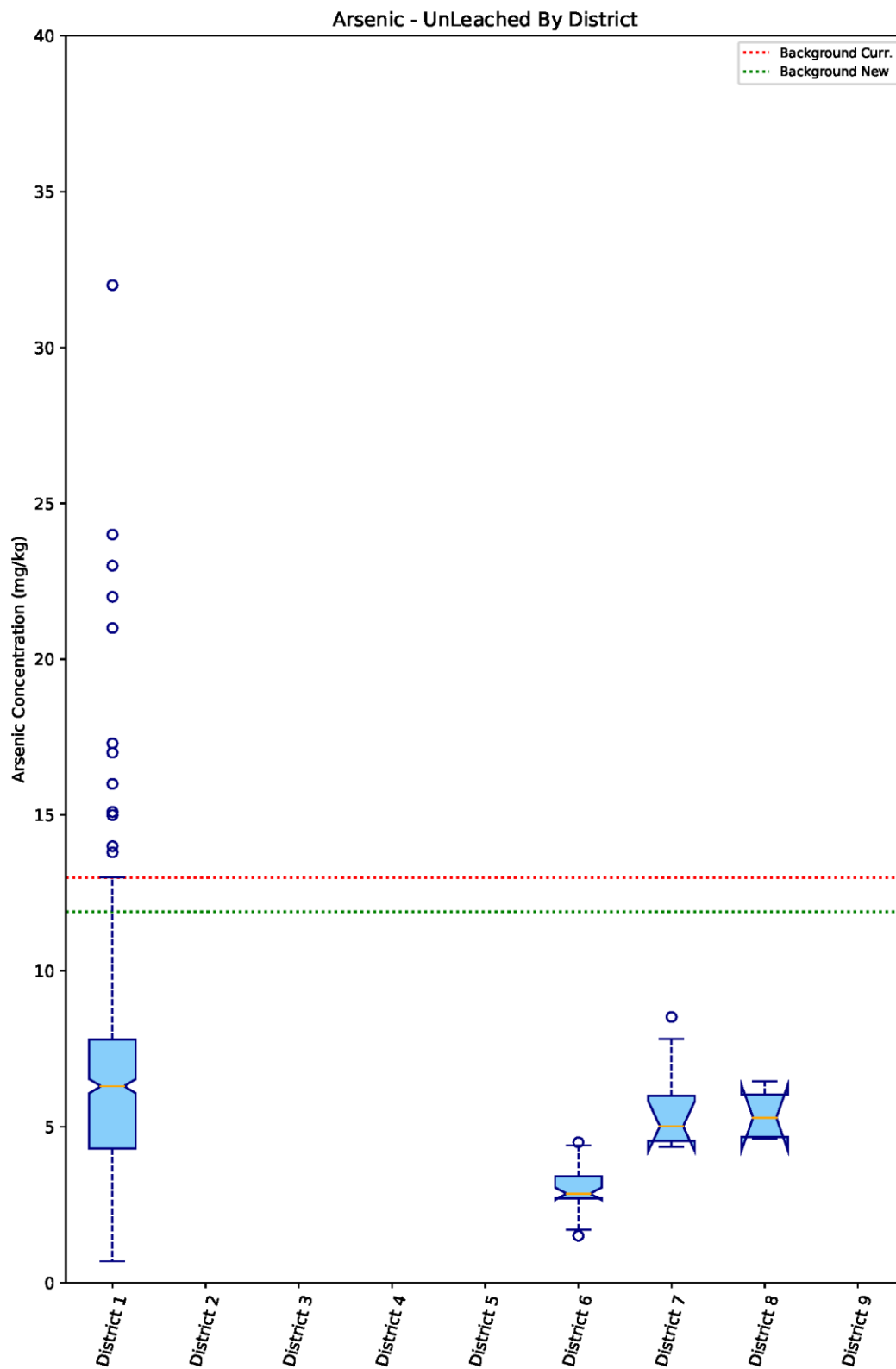


Figure 94. Histogram of RSL arsenic concentrations by IDOT District, Non-REC (mg/kg), part 2



**Figure 95. Boxplot of RSL arsenic concentrations by IDOT District, Non-REC (mg/kg)**

Arsenic Concentration by County, page 1 of 2

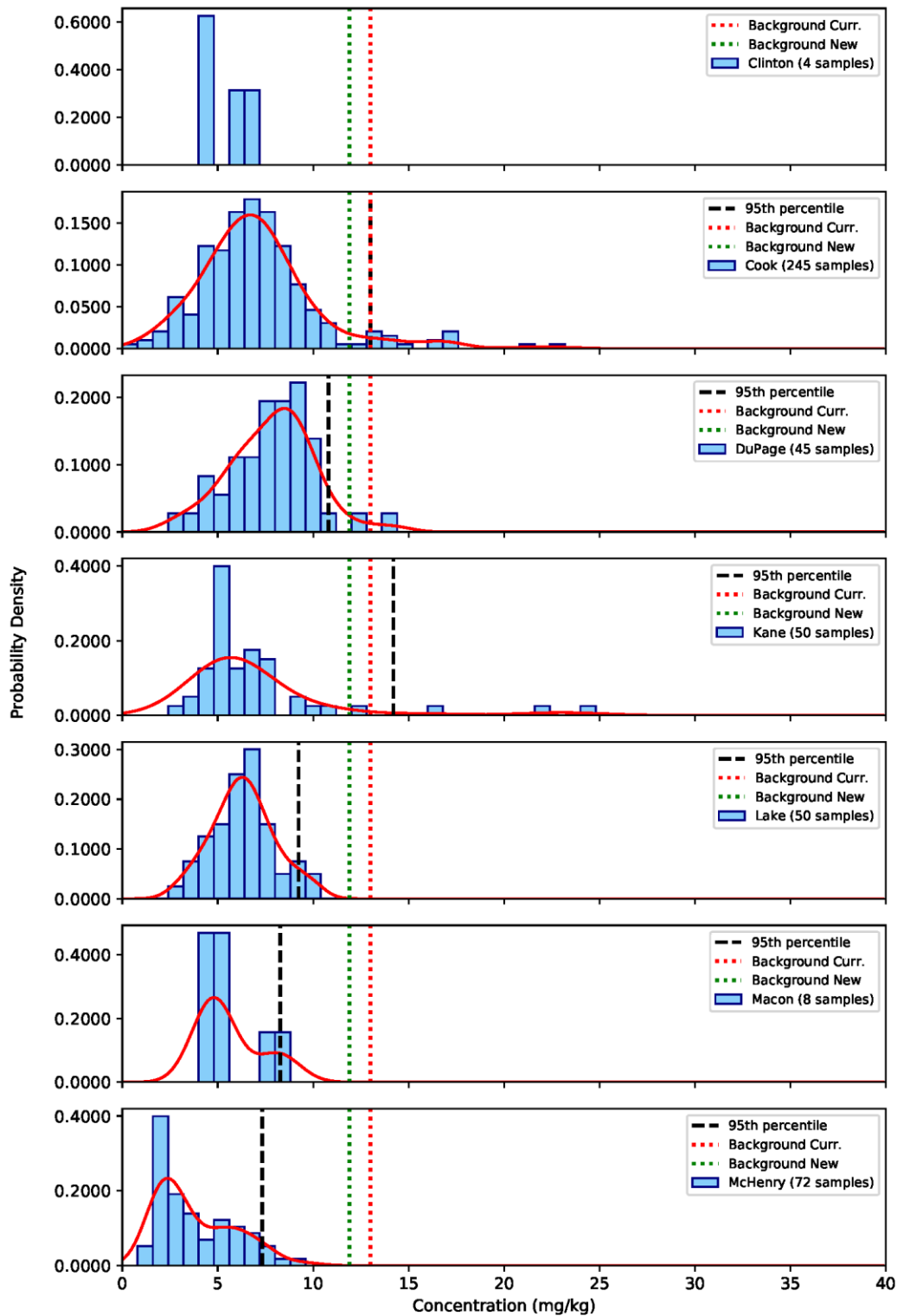


Figure 96. Histogram of RSL arsenic concentrations by Illinois county, Non-REC (mg/kg), part 1

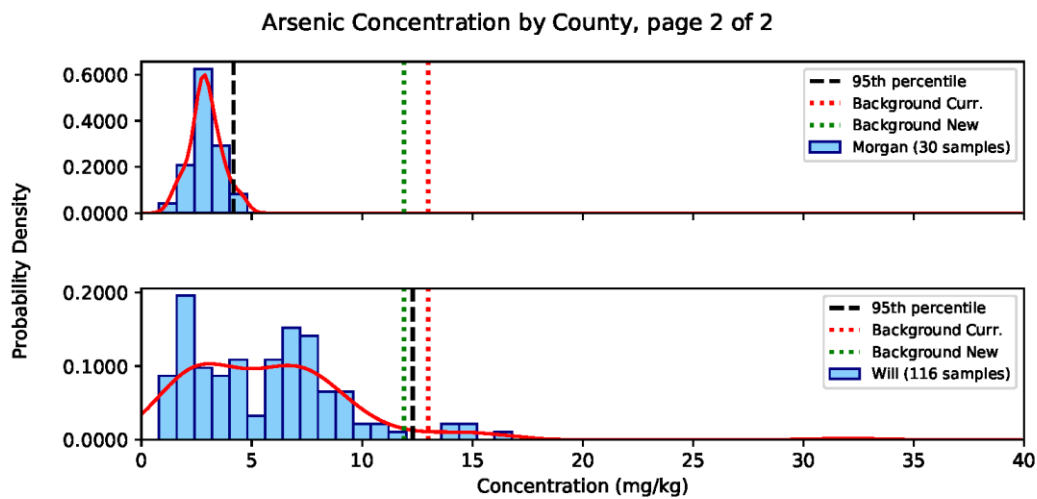


Figure 97. Histogram of RSL arsenic concentrations by Illinois county, Non-REC (mg/kg), part 2

Arsenic 95th Percentile (ranked list)

---

121

Number of Arsenic Samples by County: Non-REC Sites

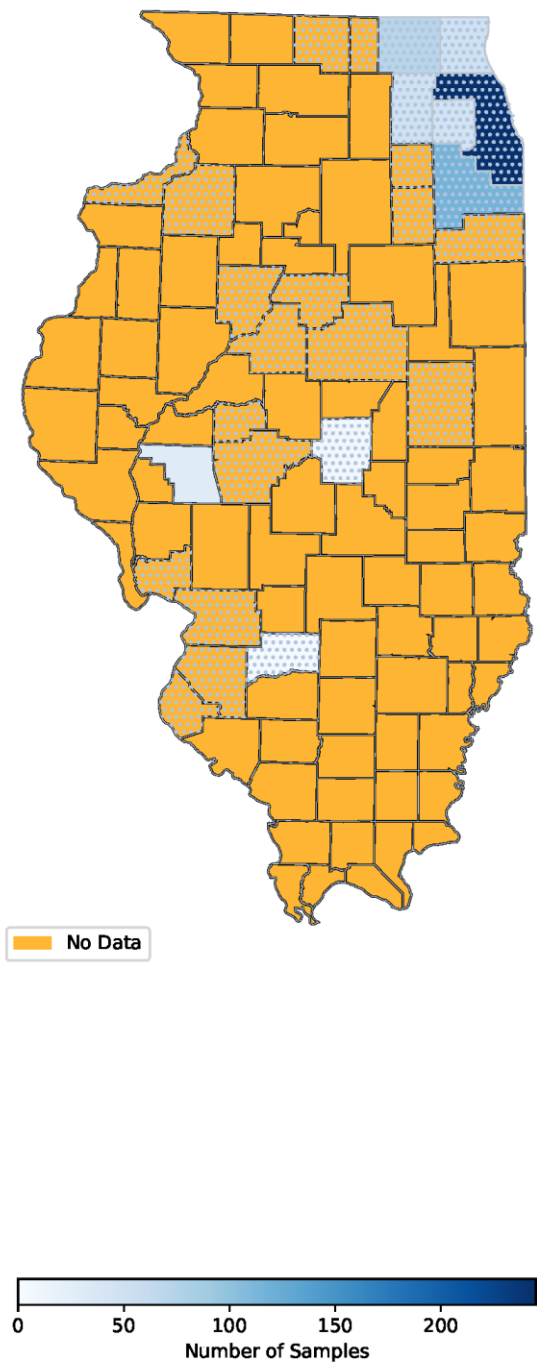
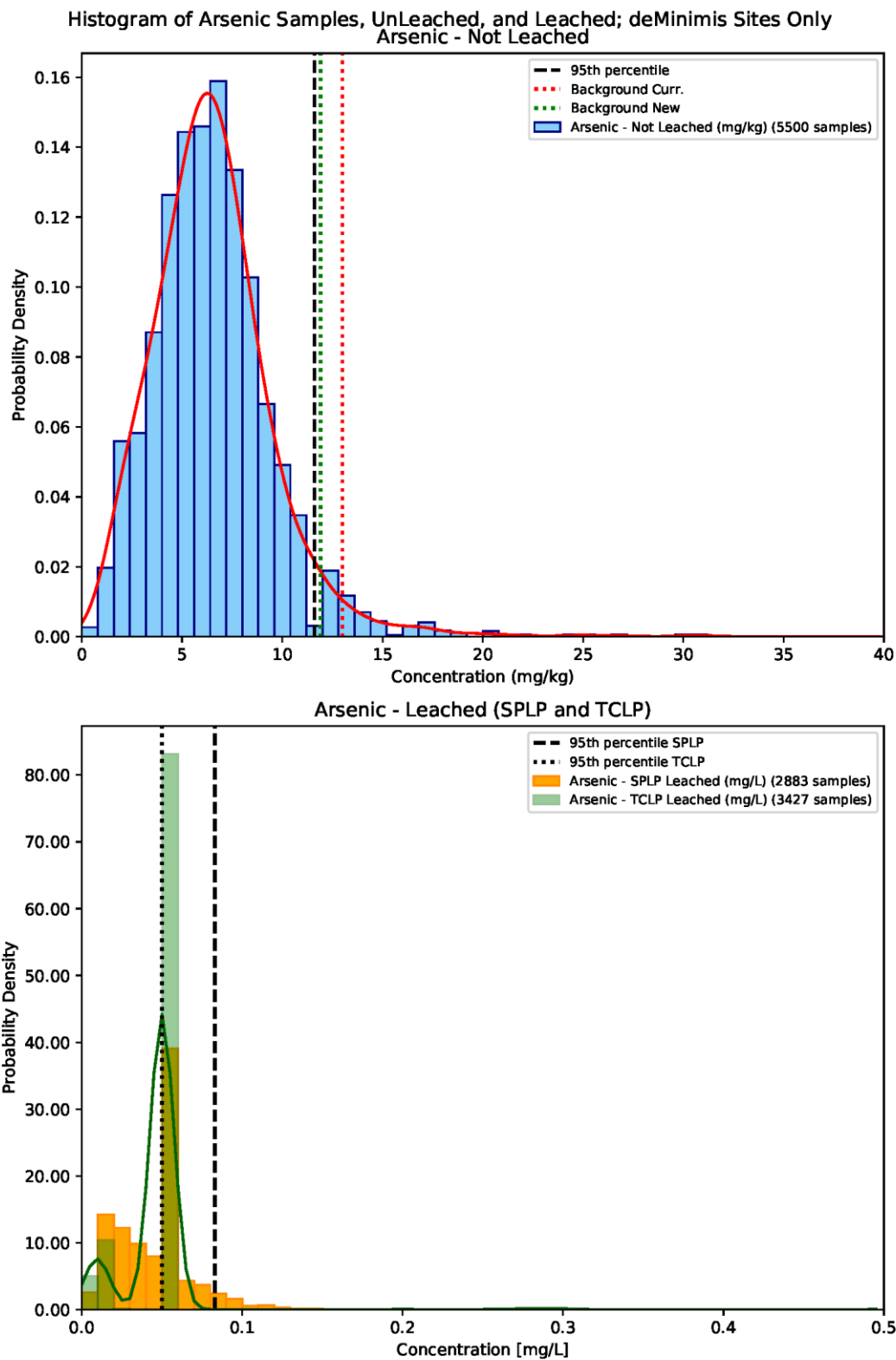


Figure 99. Map of RSL arsenic sample quantity by Illinois county, Non-REC (mg/kg)



### **C.3 ARSENIC DE MINIMIS**



**Figure 100. Histogram of RSL arsenic concentrations, de minimis (mg/kg)**

**Arsenic Unleached Concentration (mg/kg)**

- 1) Region
- 2) District
- 3) County

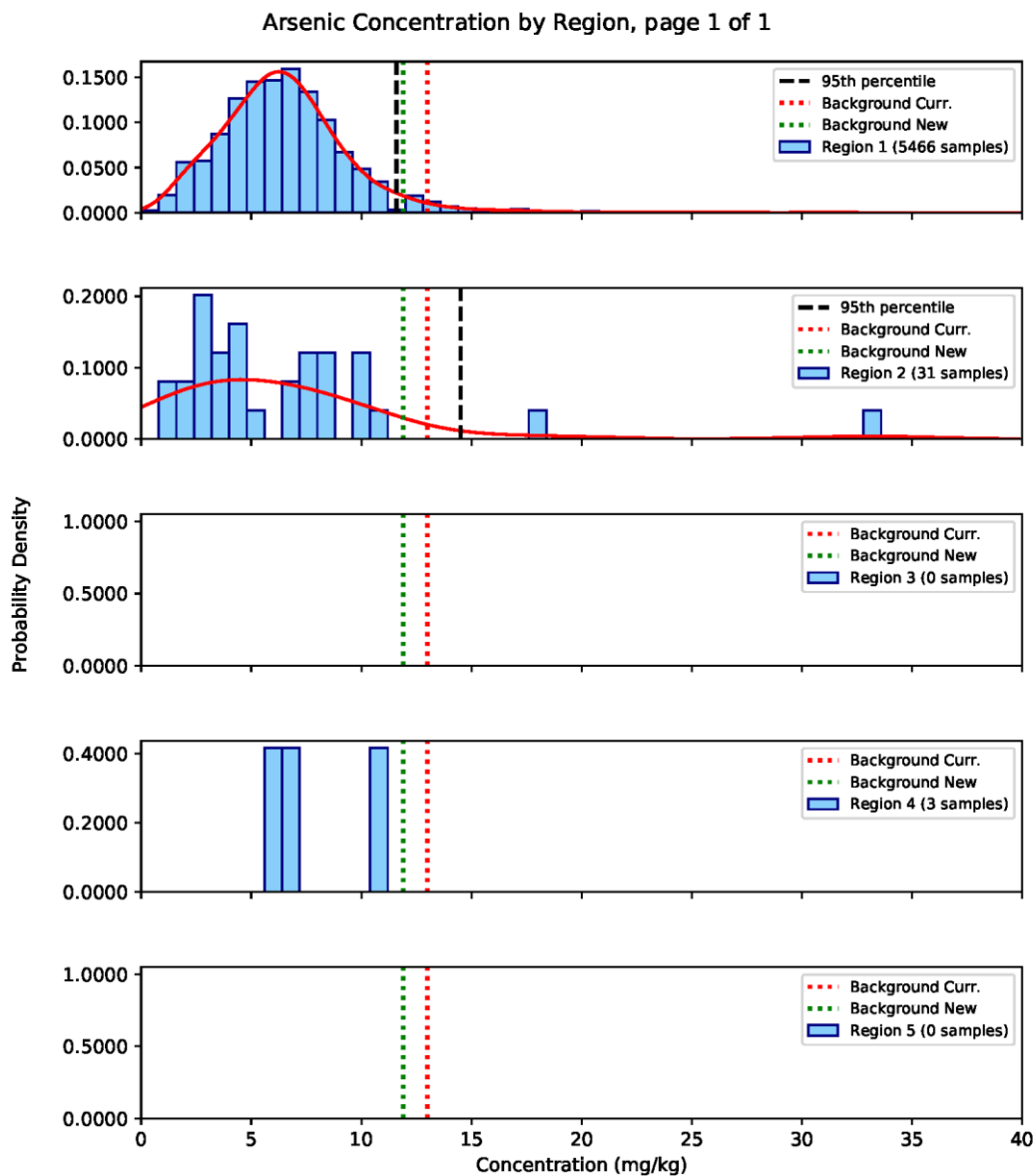
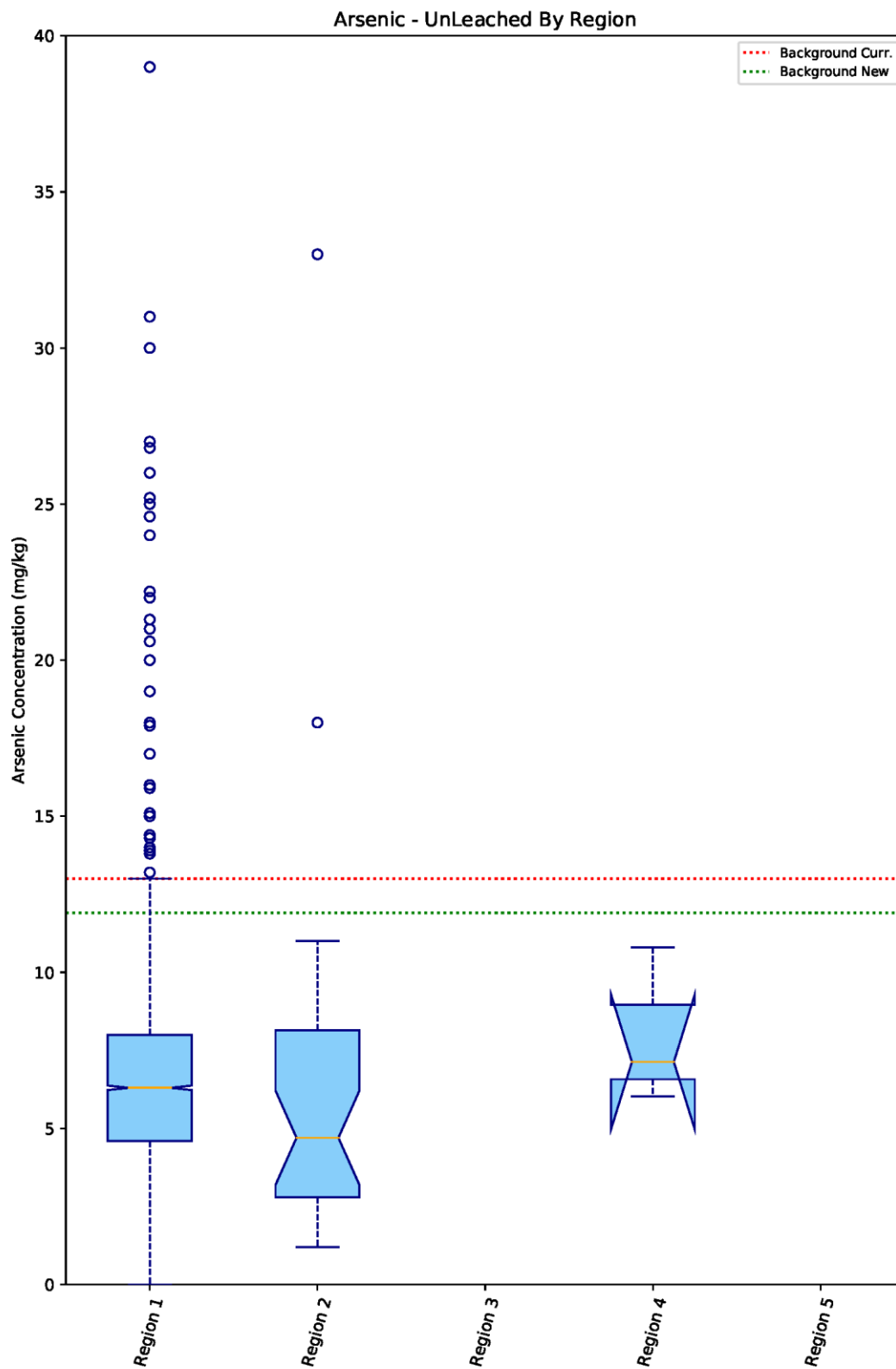


Figure 101. Histogram of RSL arsenic concentrations by IDOT Region, de minimis (mg/kg)



**Figure 102. Boxplot of RSL arsenic concentrations by IDOT Region, de minimis (mg/kg)**

Arsenic Concentration by District, page 1 of 2

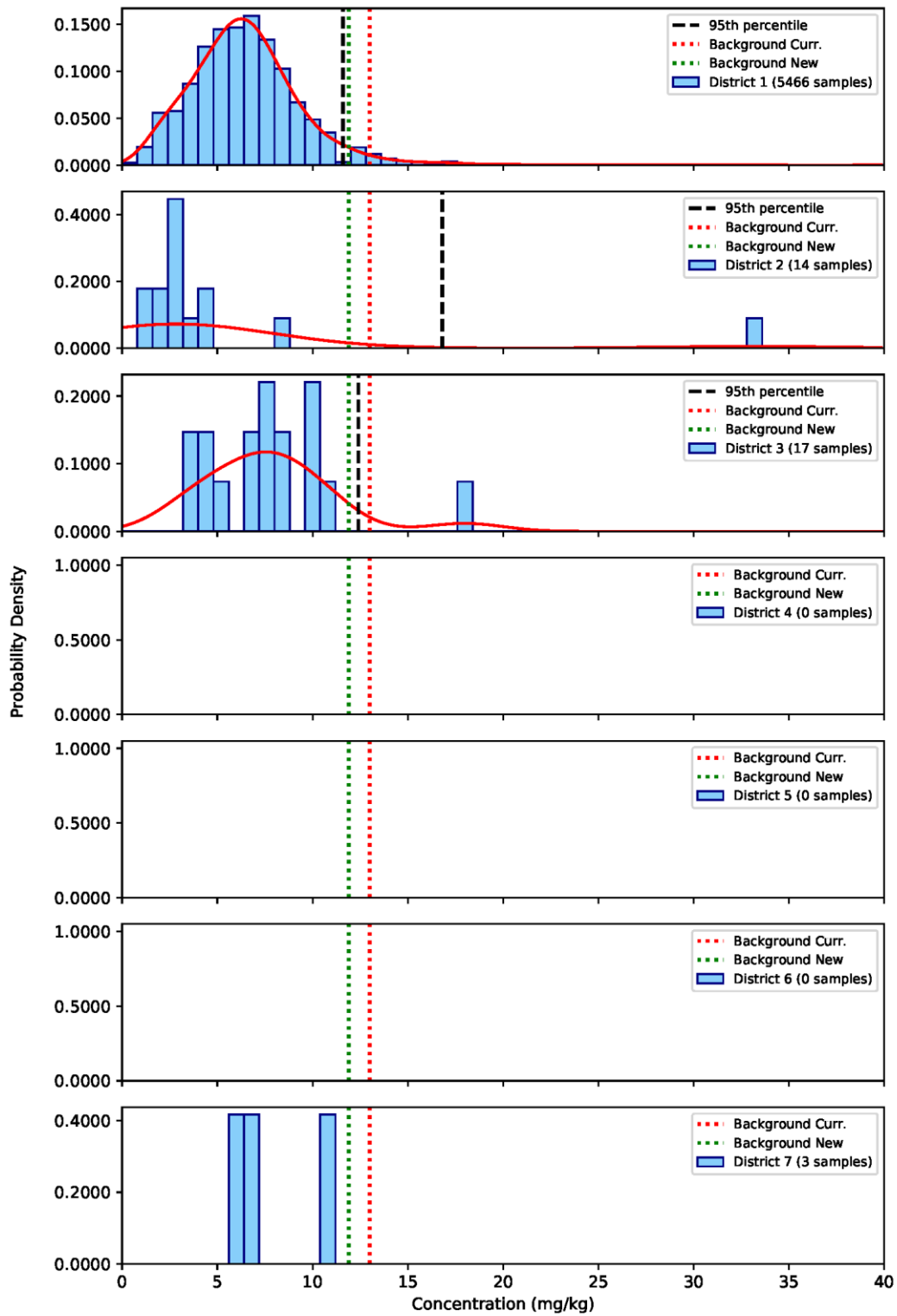


Figure 103. Histogram of RSL arsenic concentrations by IDOT District, de minimis (mg/kg), part 1

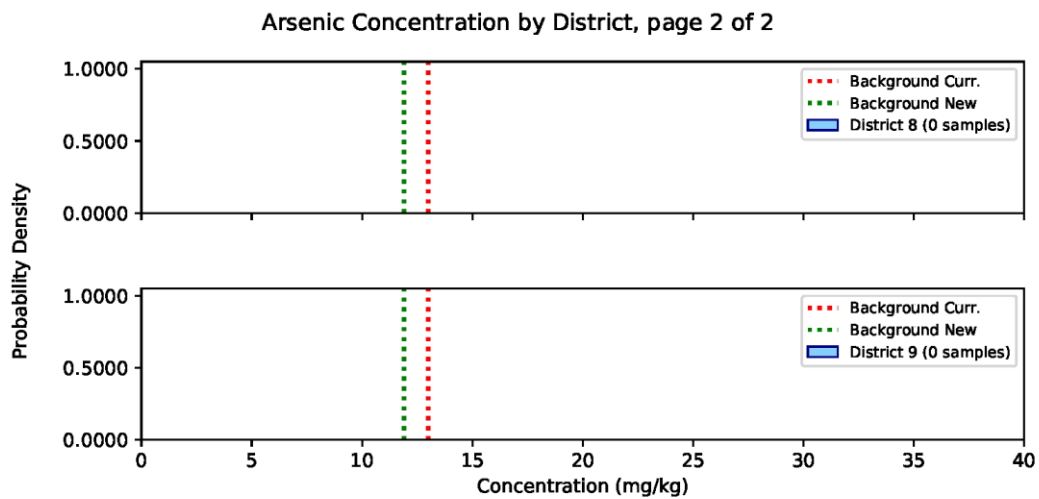


Figure 104. Histogram of RSL arsenic concentrations by IDOT District, de minimis (mg/kg), part 2

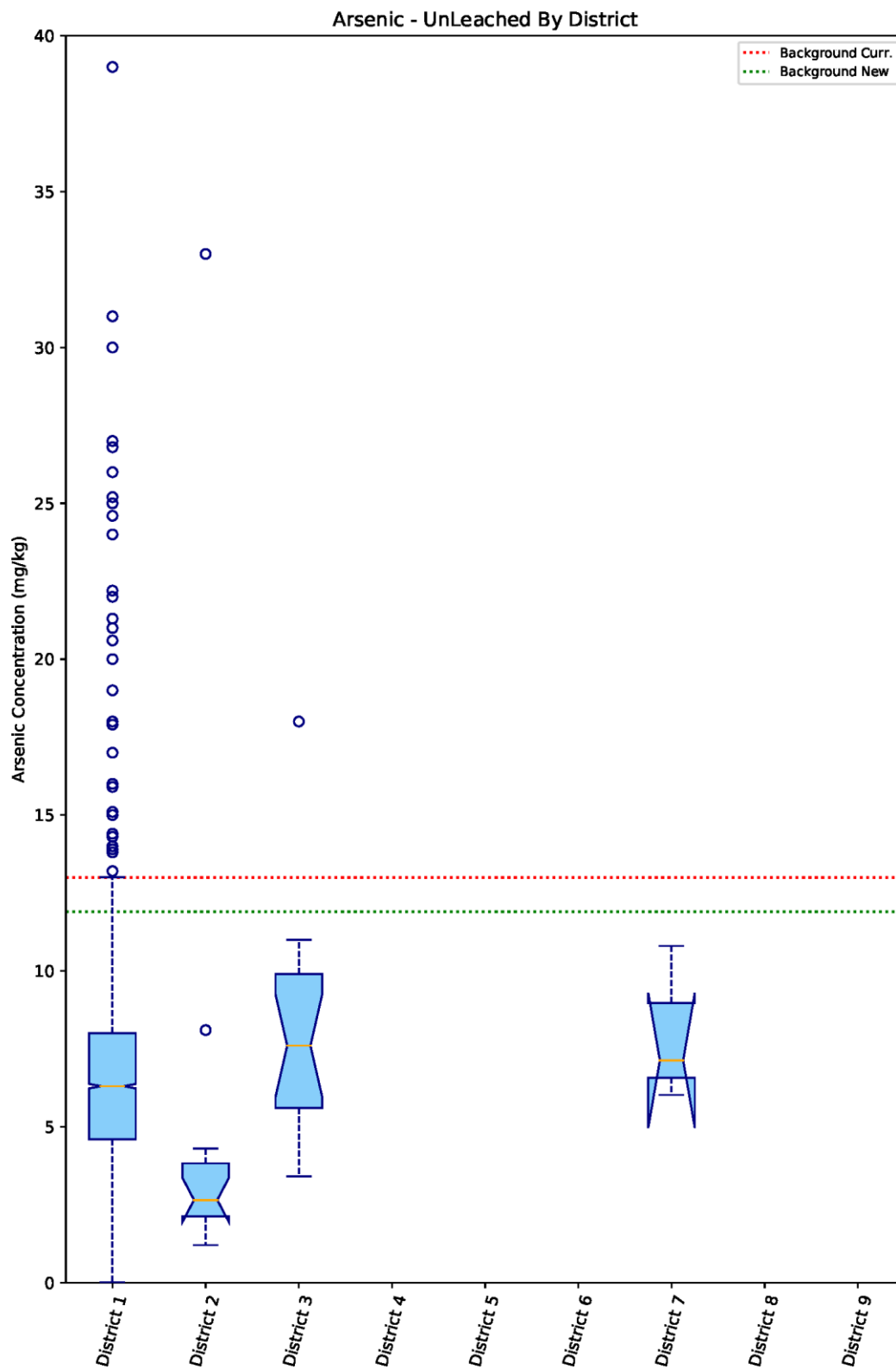


Figure 105. Boxplot of RSL arsenic concentrations by IDOT District, de minimis (mg/kg)



Arsenic Concentration by County, page 1 of 2

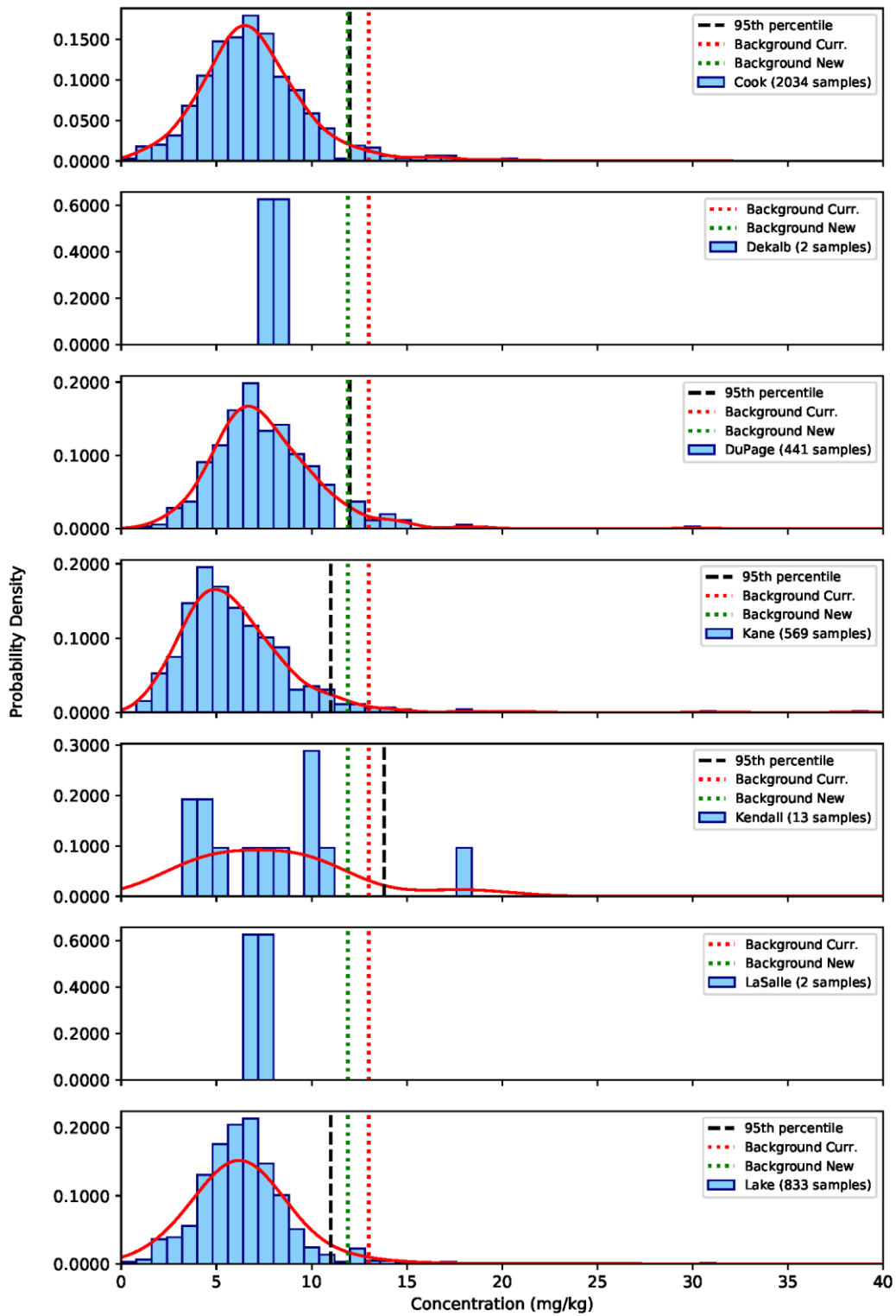


Figure 106. Histogram of RSL arsenic concentrations by Illinois county, de minimis (mg/kg), part 1

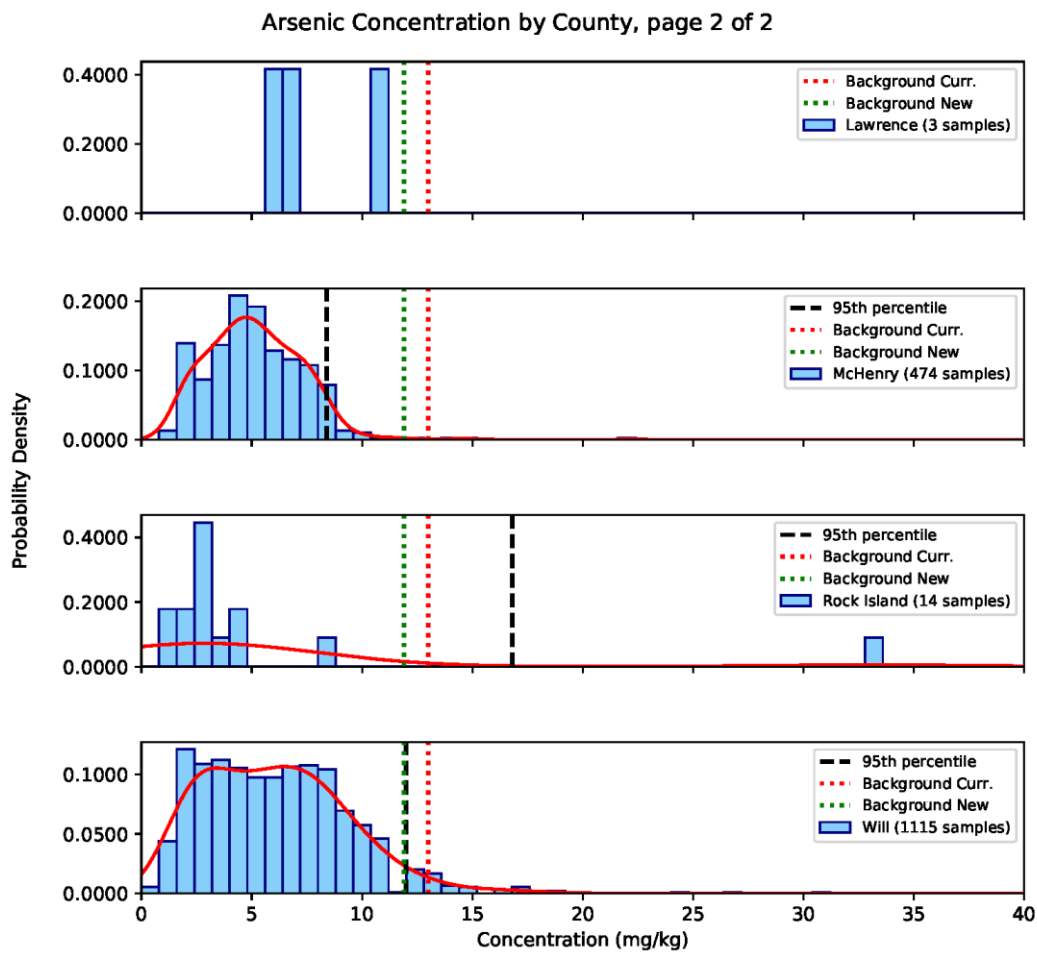


Figure 107. Histogram of RSL arsenic concentrations by Illinois county, de minimis (mg/kg), part 2

Arsenic Concentration for 95th Percentile by County: deMinimis Sites

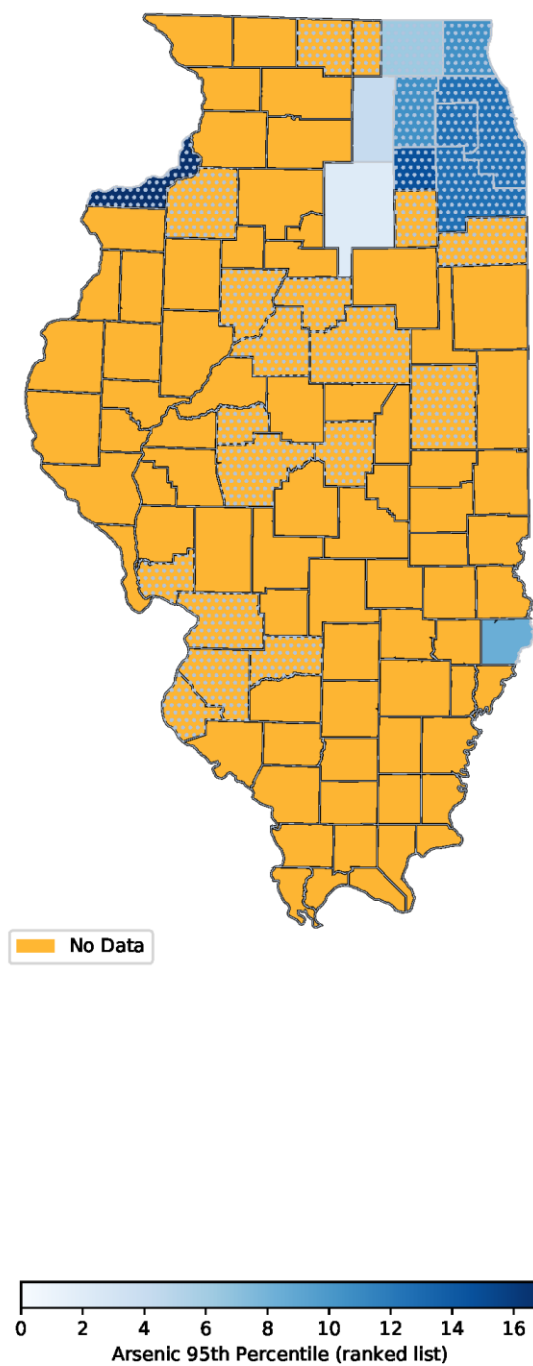


Figure 108. Map of RSL arsenic 95th percentile concentration by Illinois county, de minimis (mg/kg)

Number of Arsenic Samples by County: deMinimis Sites

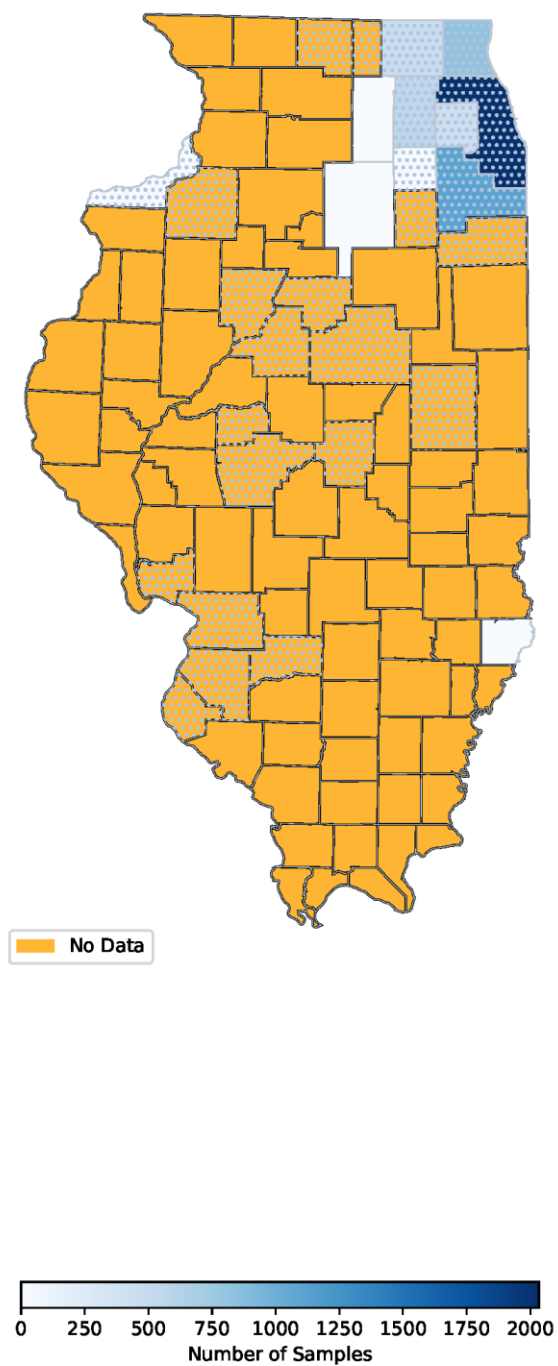


Figure 109. Map of RSL arsenic sample quantity by Illinois county, de minimis (mg/kg)

## **APPENDIX D. ANALYTE ANALYSIS: BARIUM**

### **D.1 BARIUM REC**

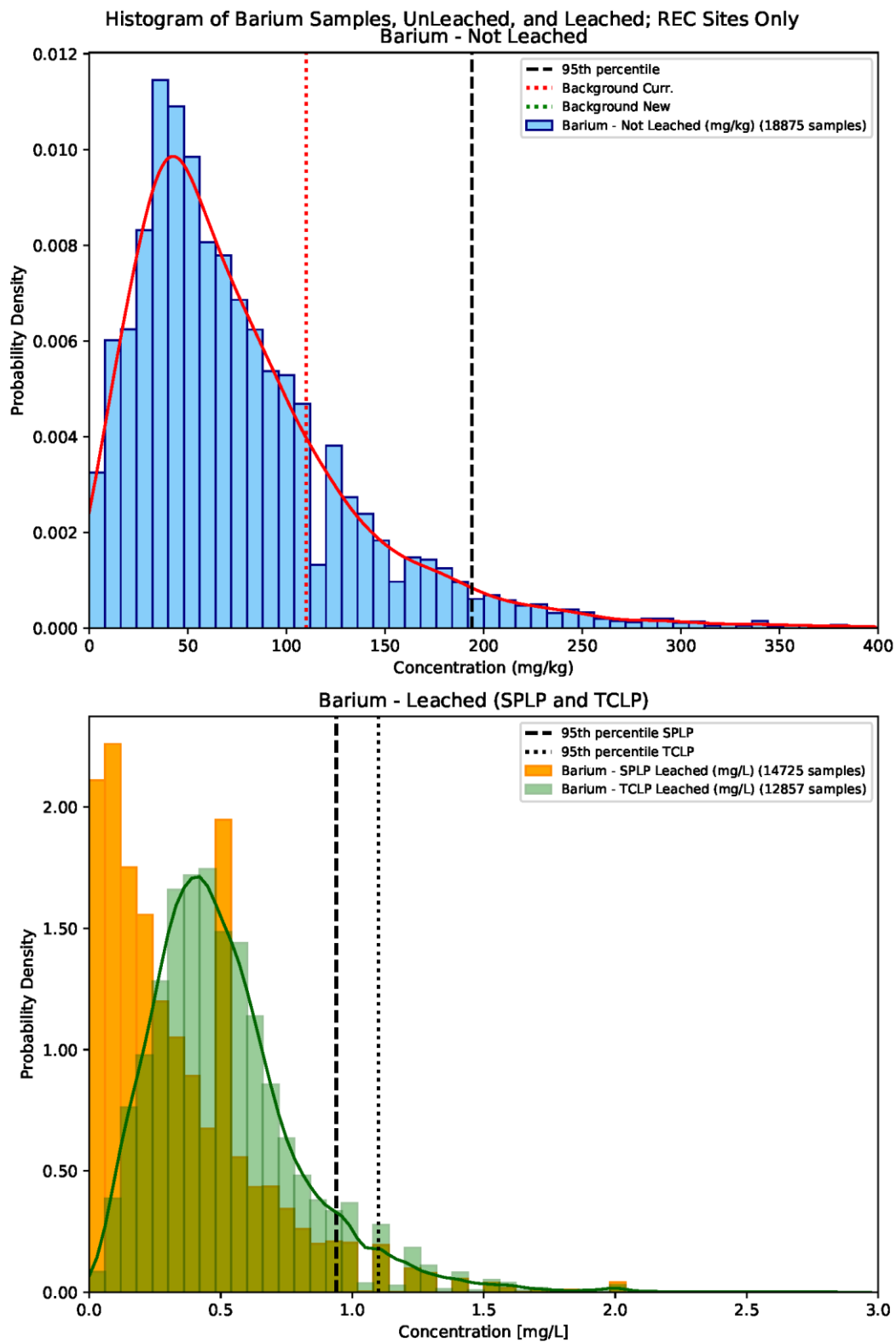


Figure 110. Histogram of RSL barium concentrations, REC (mg/kg)

Barium Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

Barium Concentration by Region, page 1 of 1

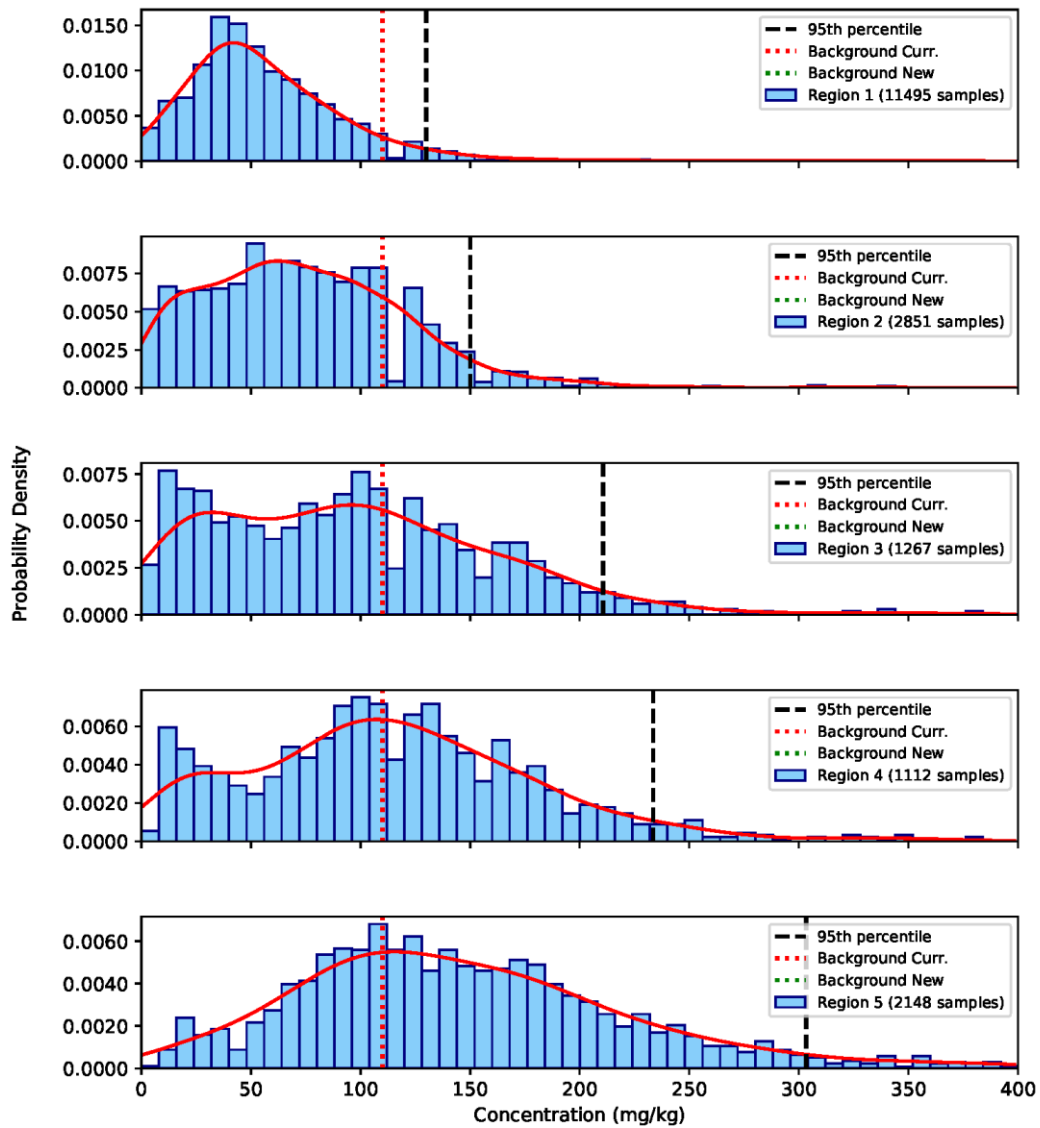


Figure 111. Histogram of RSL barium concentrations by IDOT Region, REC (mg/kg)



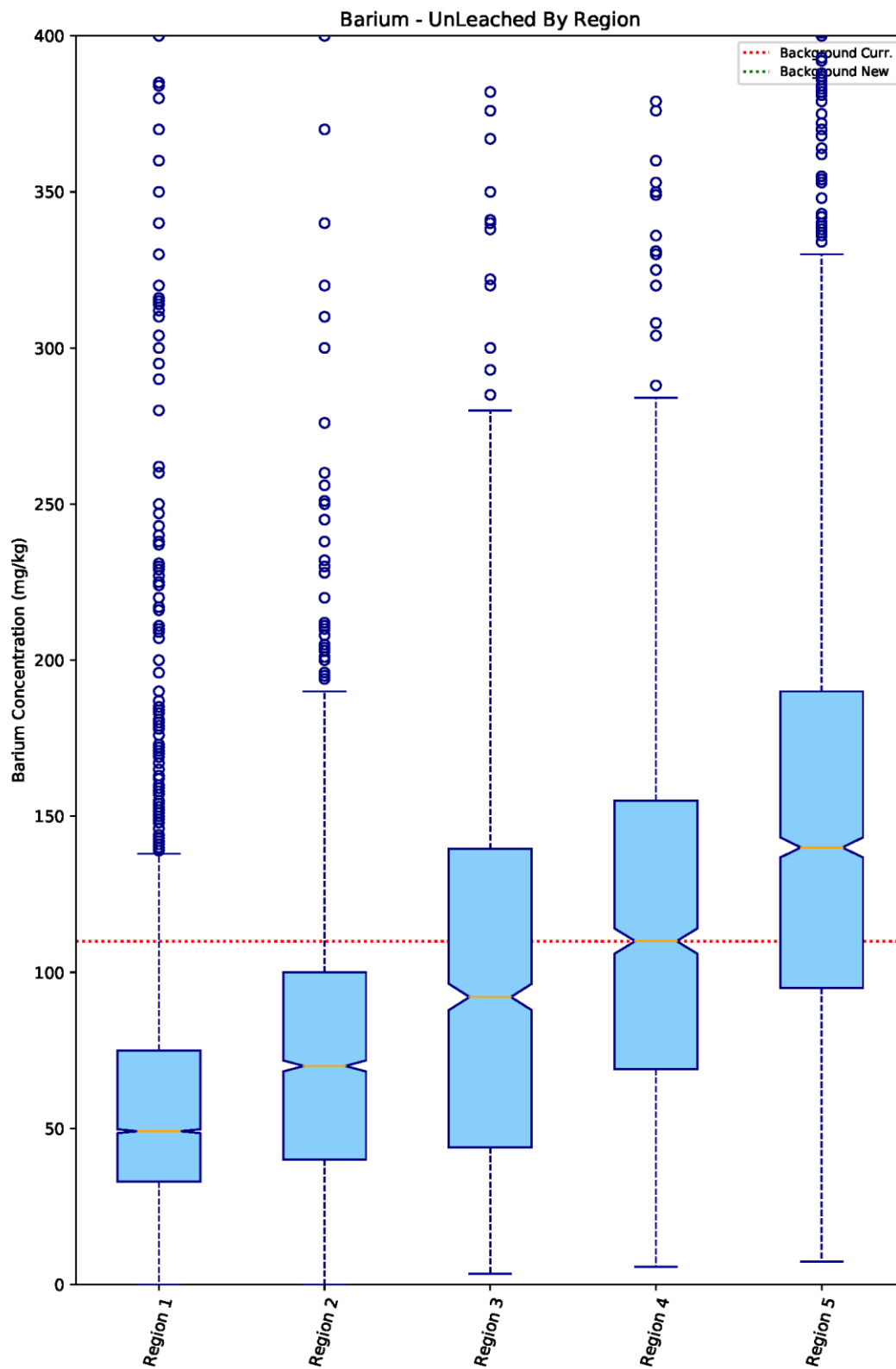


Figure 112. Boxplot of RSL barium concentrations by IDOT Region, REC (mg/kg)

Barium Concentration by District, page 1 of 2

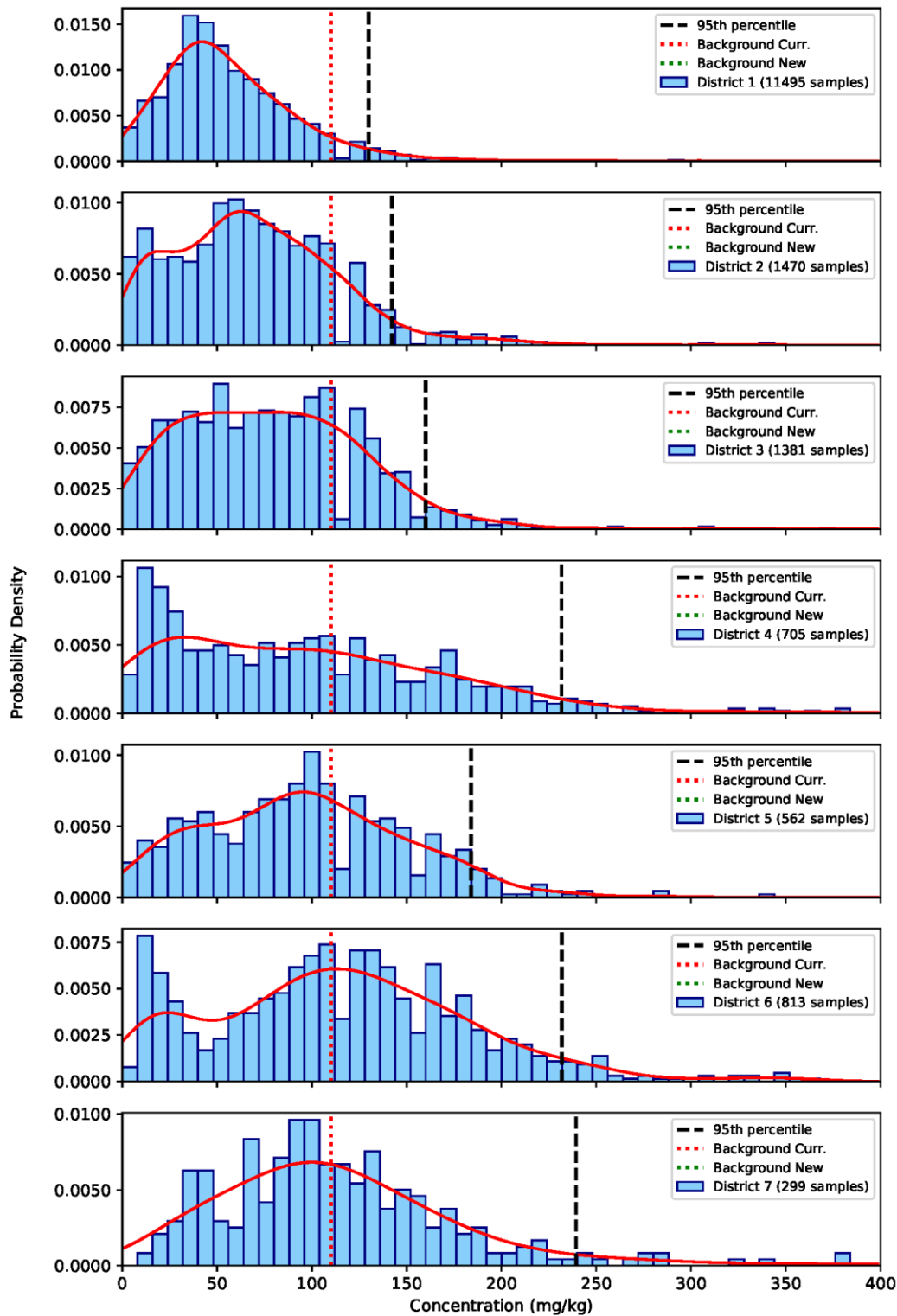


Figure 113. Histogram of RSL barium concentrations by IDOT District, REC (mg/kg), part 1

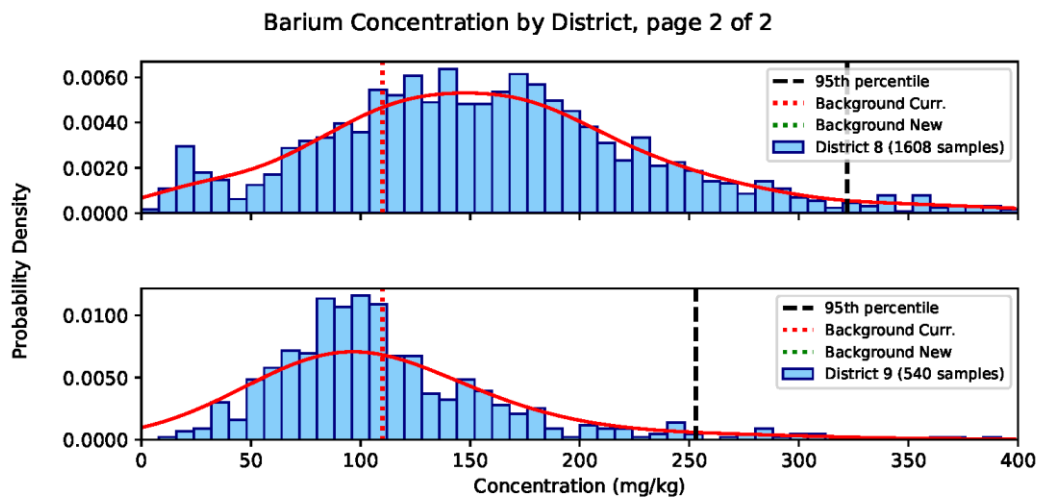


Figure 114. Histogram of RSL barium concentrations by IDOT District, REC (mg/kg), part 2

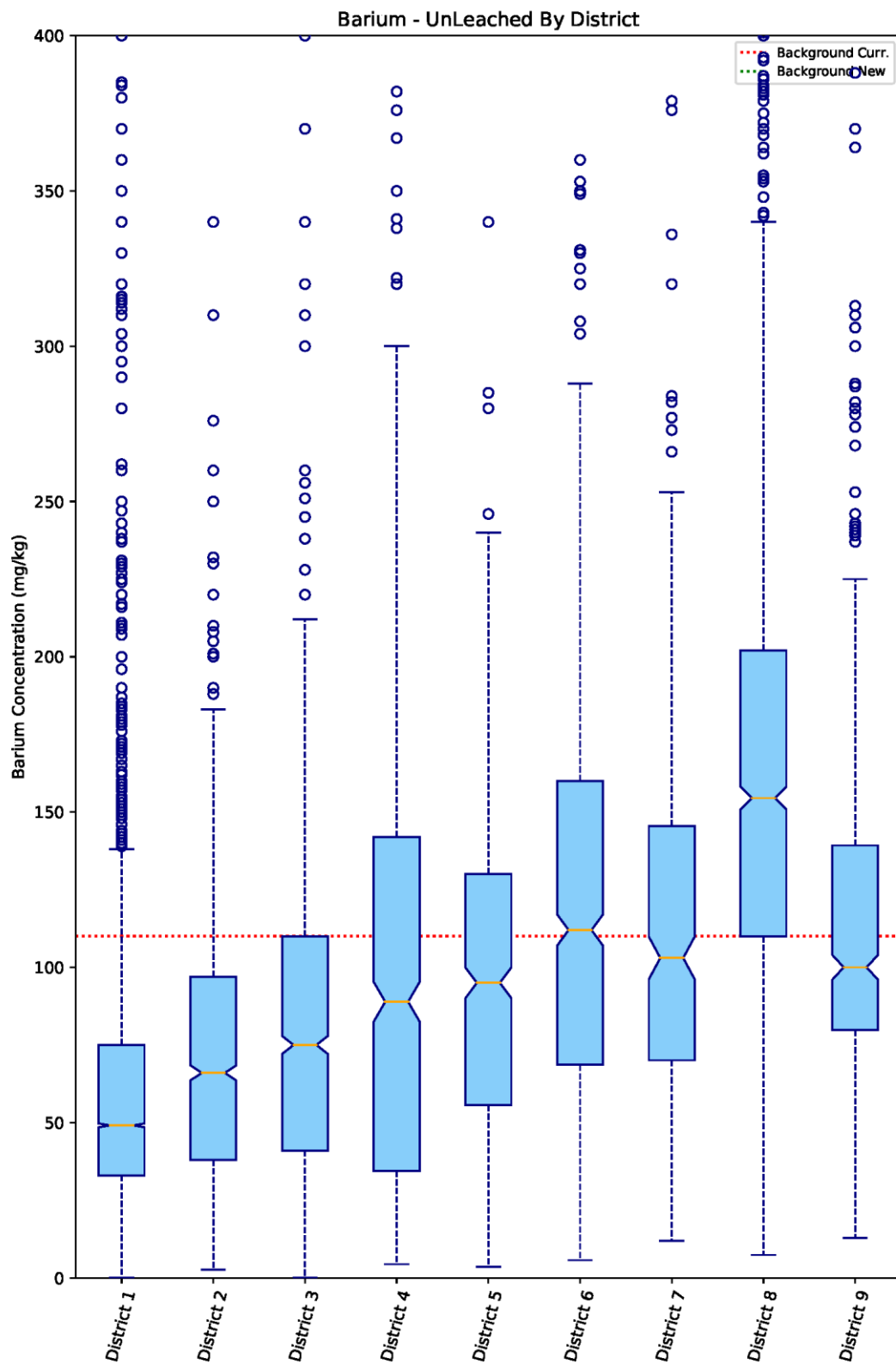


Figure 115. Boxplot of RSL barium concentrations by IDOT District, REC (mg/kg)

# Barium Concentration by County, page 1 of 10

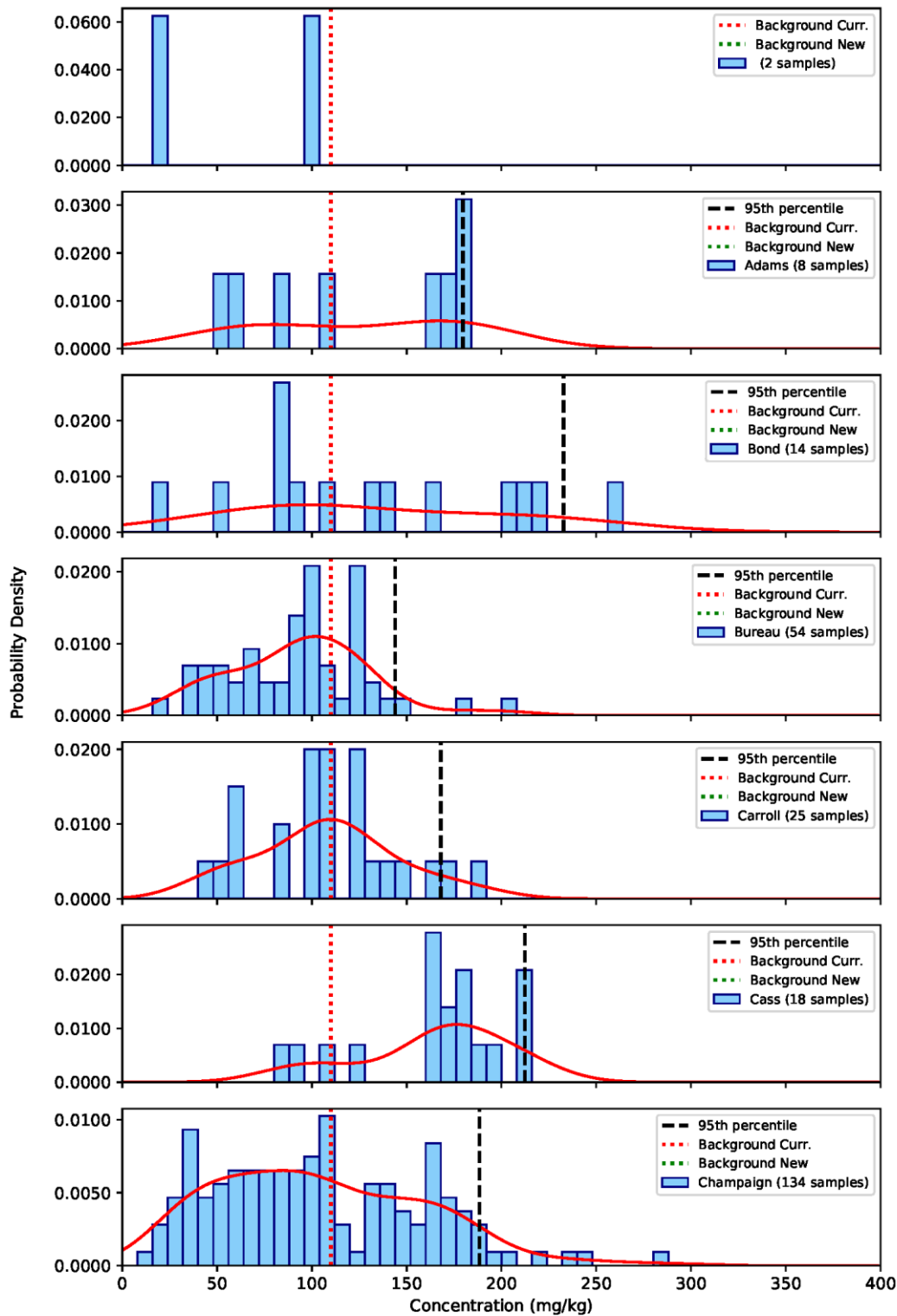


Figure 116. Histogram of RSL barium concentrations by Illinois county, REC (mg/kg), part 1

# Barium Concentration by County, page 2 of 10

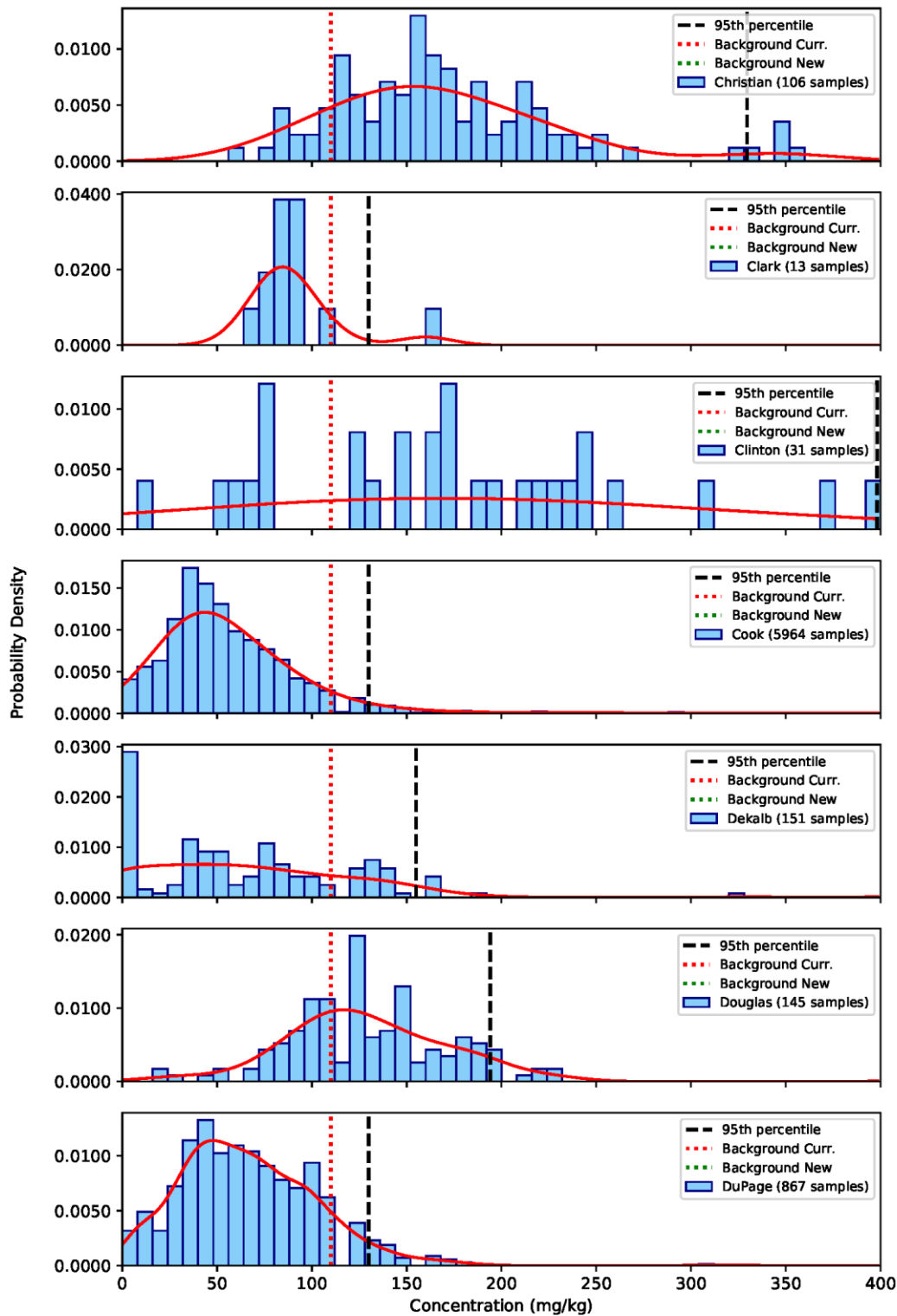


Figure 117. Histogram of RSL barium concentrations by Illinois county, REC (mg/kg), part 2

# Barium Concentration by County, page 3 of 10

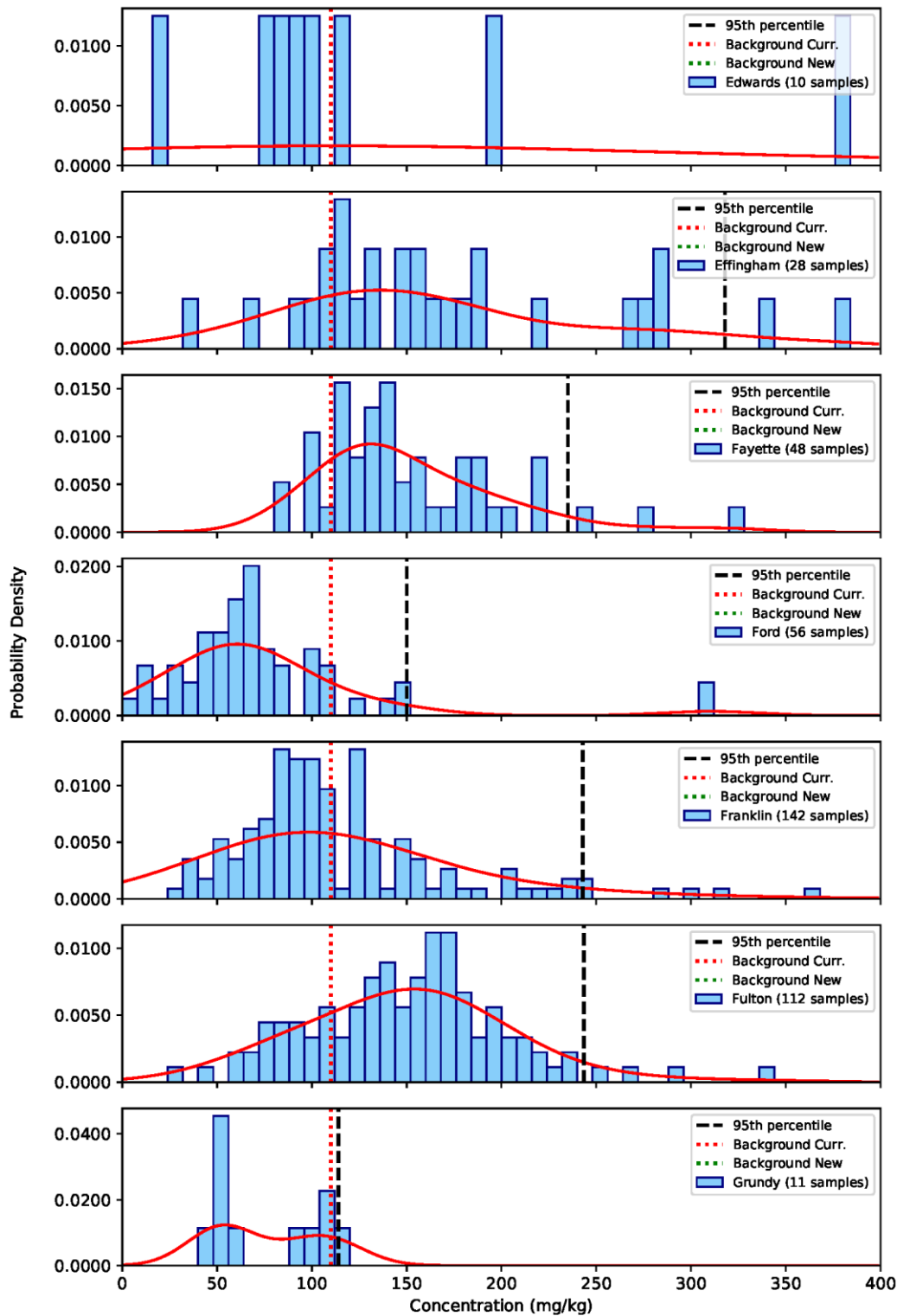


Figure 118. Histogram of RSL barium concentrations by Illinois county, REC (mg/kg), part 3

Barium Concentration by County, page 4 of 10

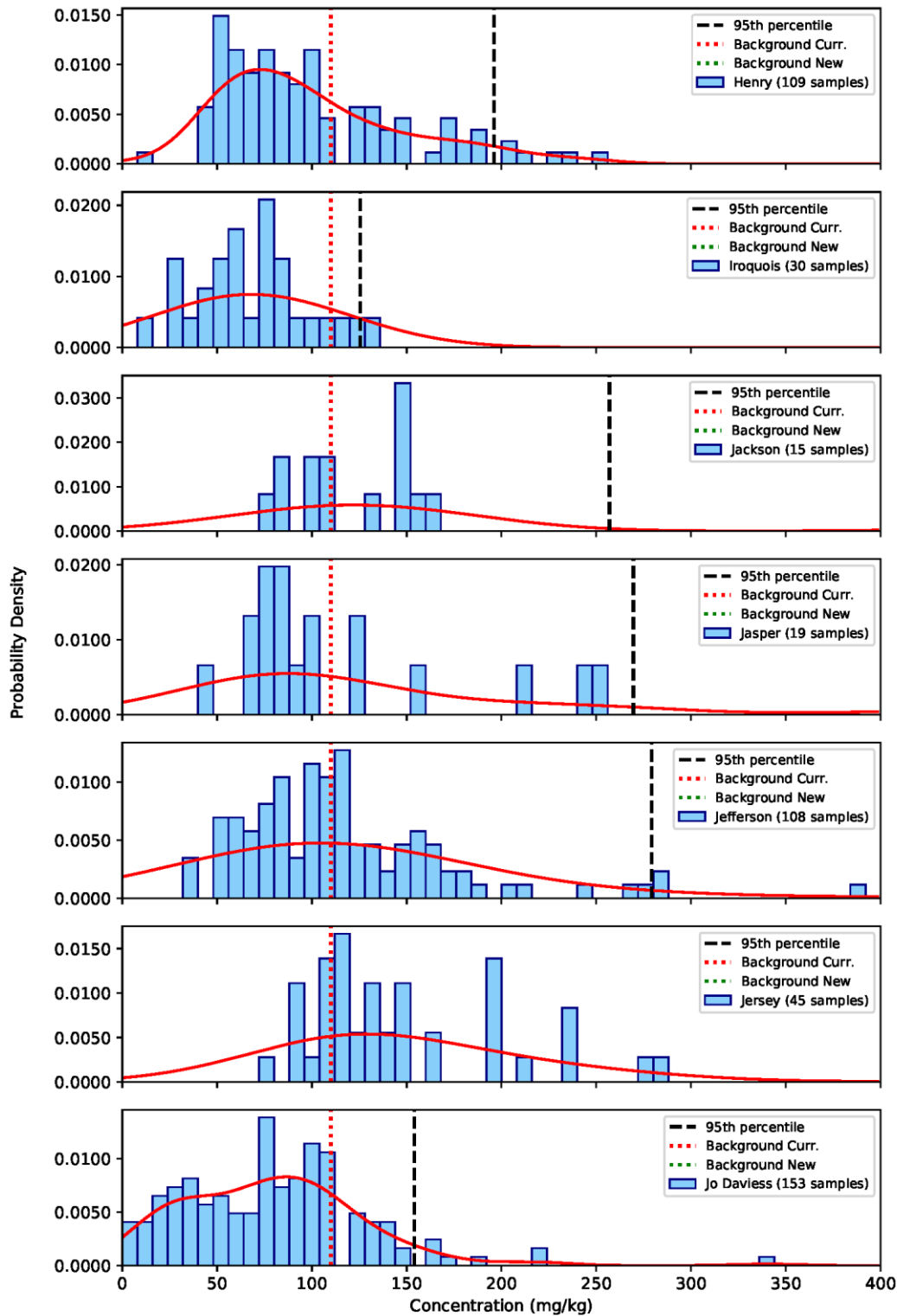


Figure 119. Histogram of RSL barium concentrations by Illinois county, REC (mg/kg), part 4



# Barium Concentration by County, page 5 of 10

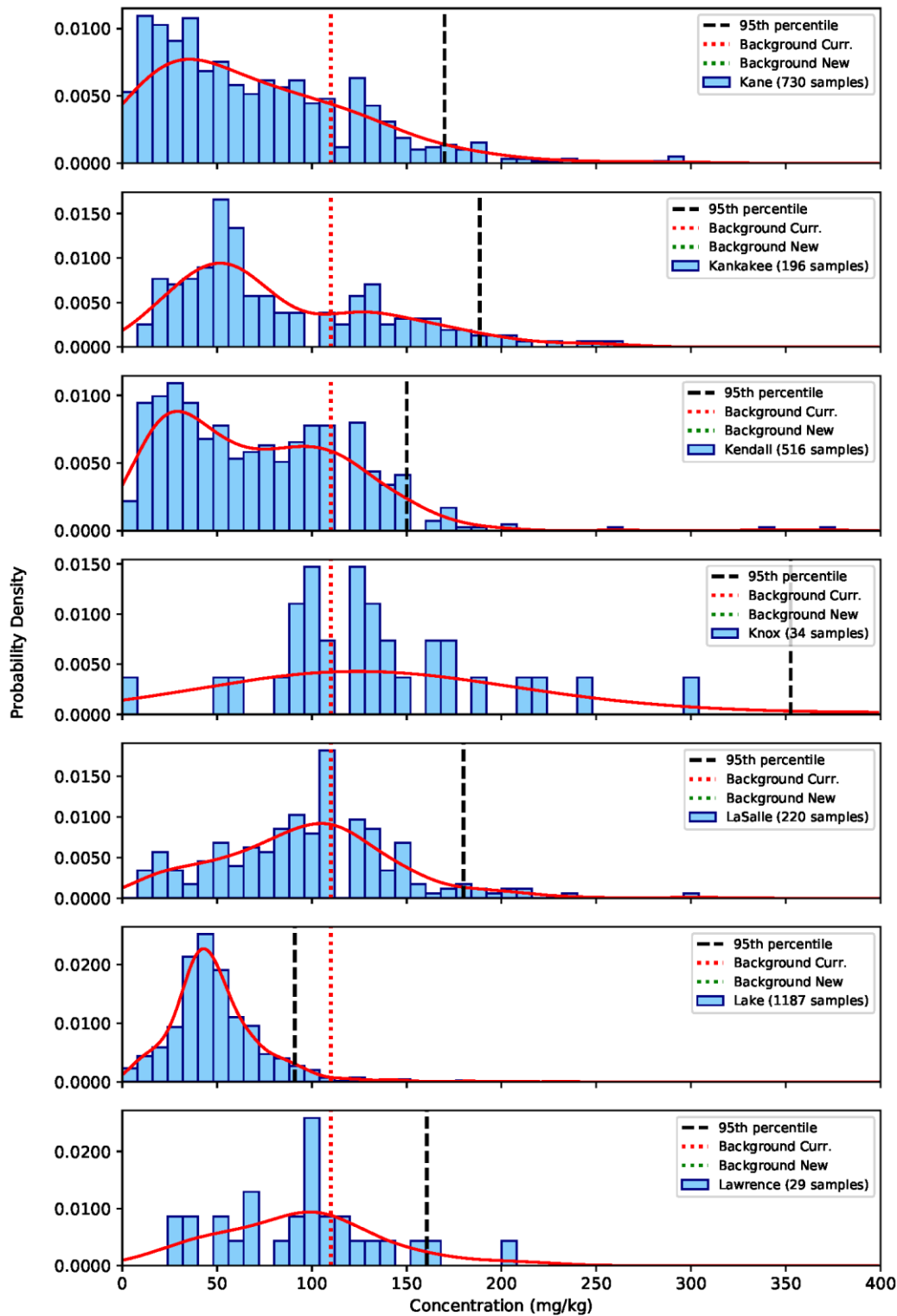


Figure 120. Histogram of RSL barium concentrations by Illinois county, REC (mg/kg), part 5

# Barium Concentration by County, page 6 of 10

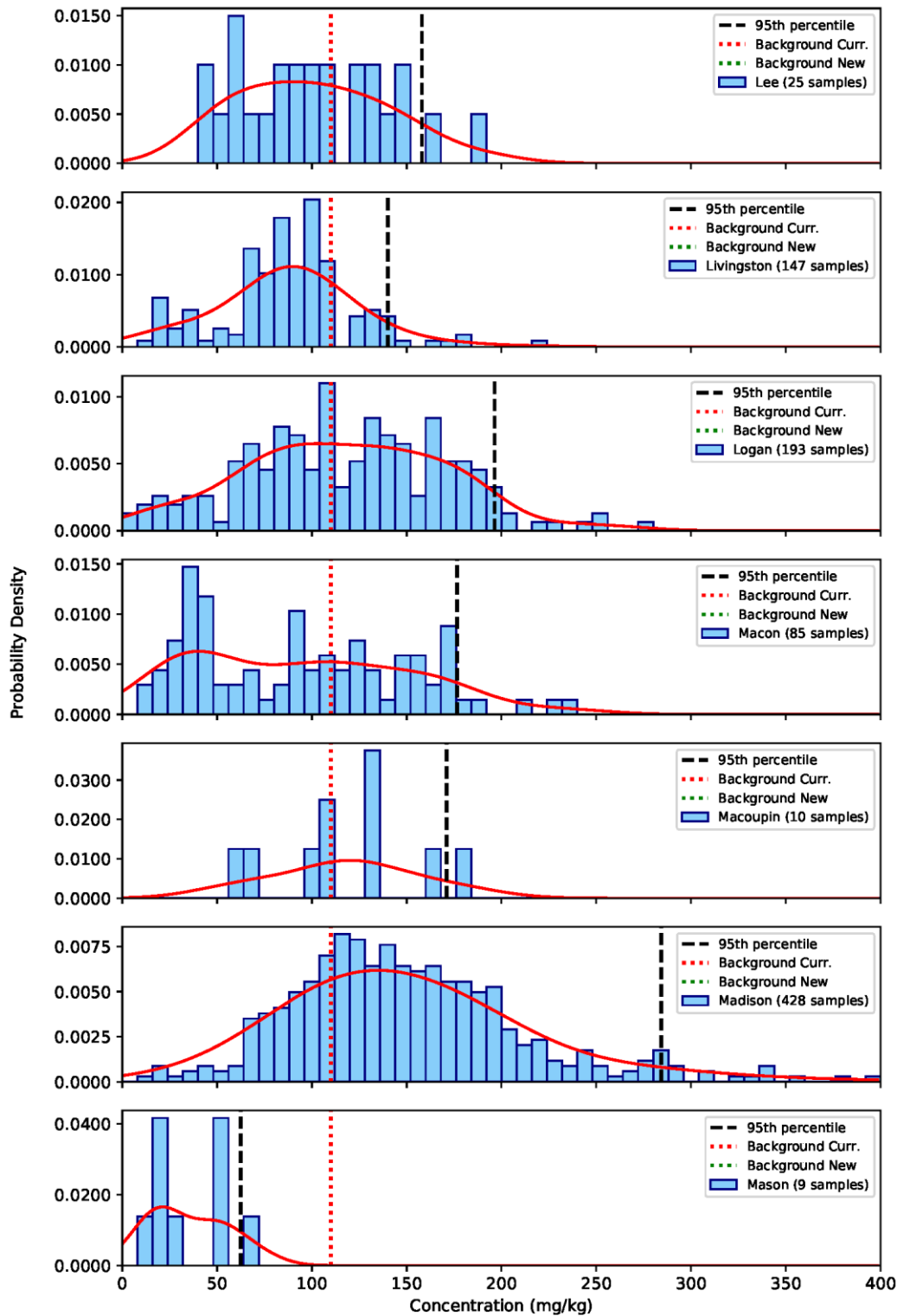


Figure 121. Histogram of RSL barium concentrations by Illinois county, REC (mg/kg), part 6

# Barium Concentration by County, page 7 of 10

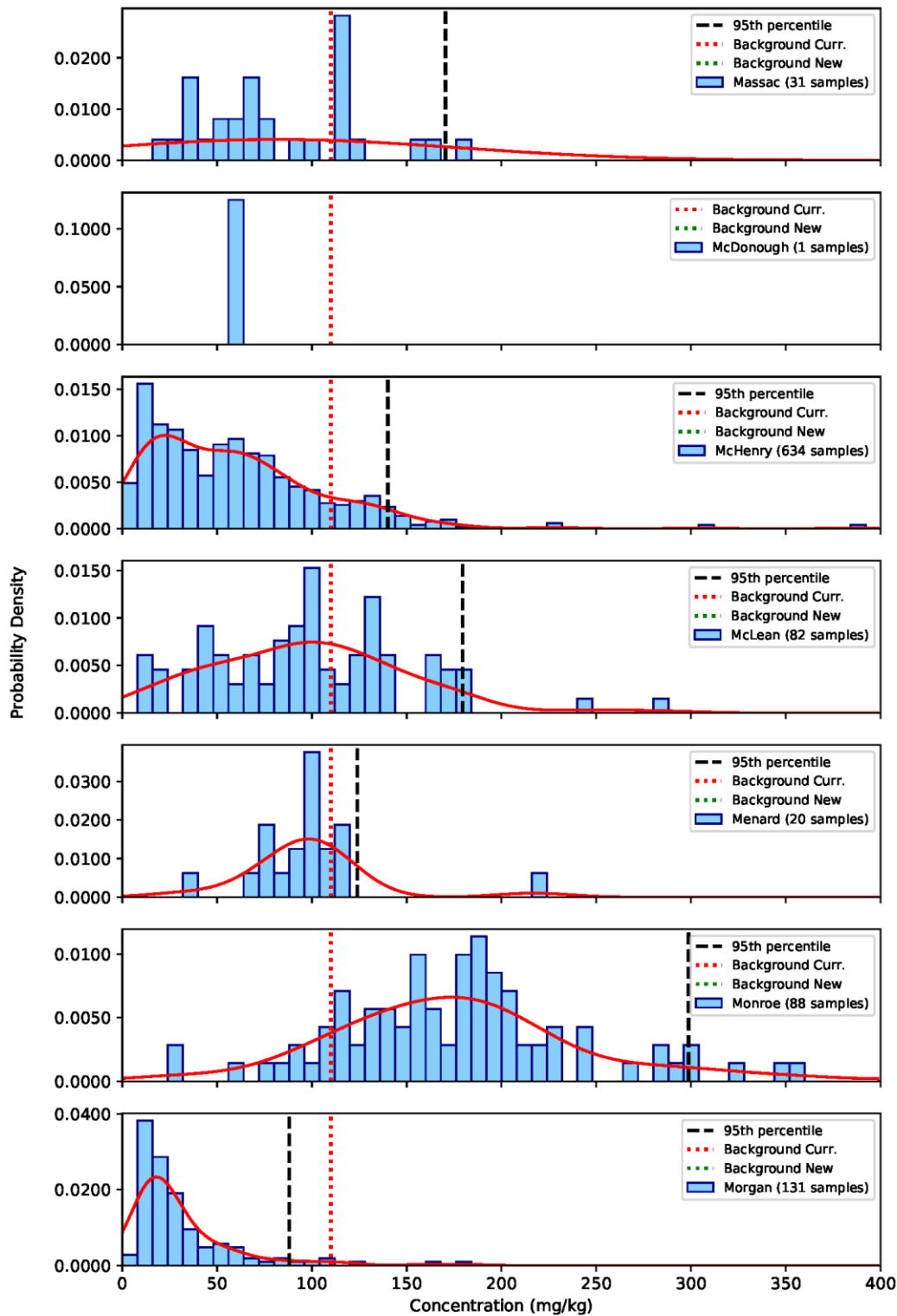


Figure 122. Histogram of RSL barium concentrations by Illinois county, REC (mg/kg), part 7

# Barium Concentration by County, page 8 of 10

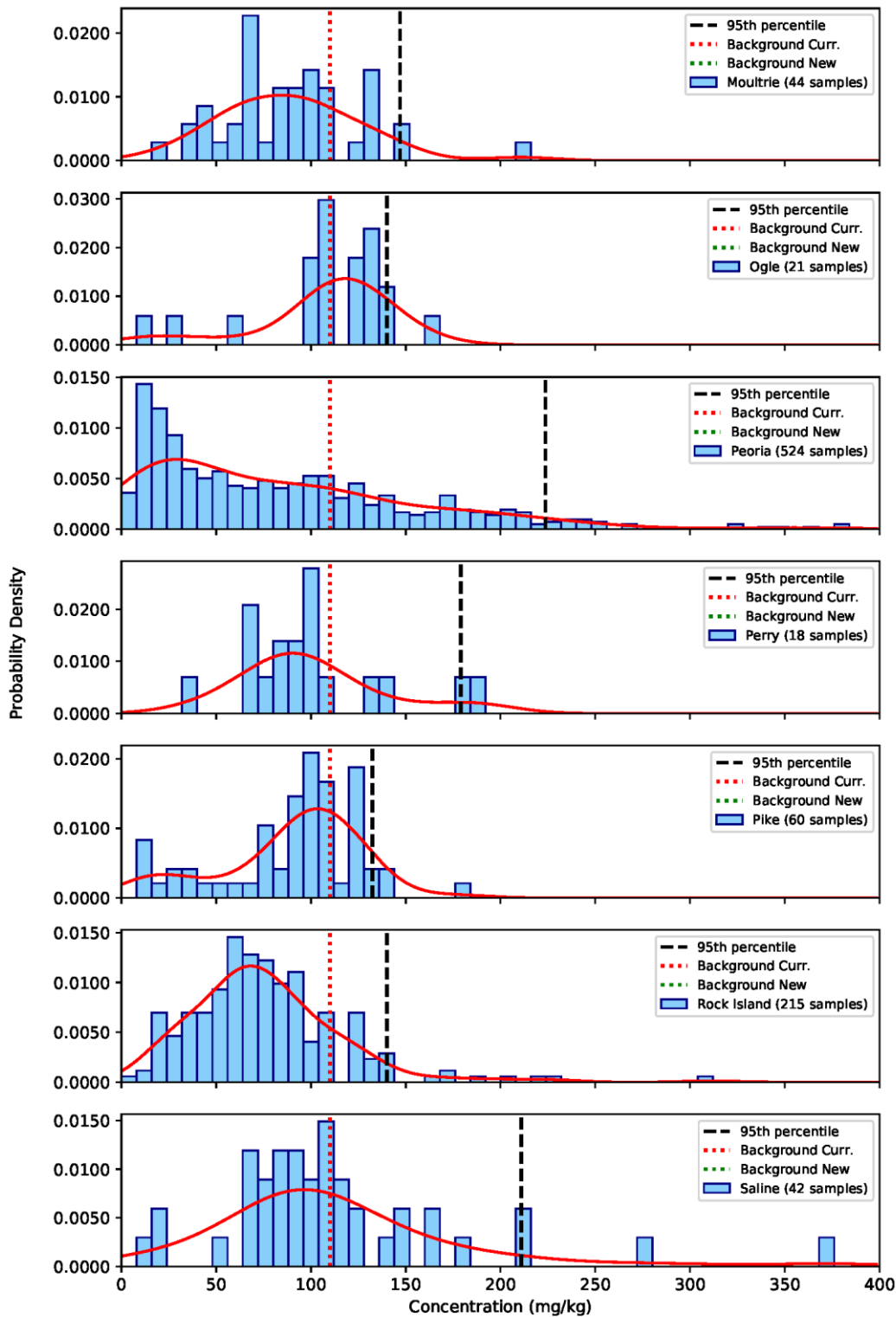


Figure 123. Histogram of RSL barium concentrations by Illinois county, REC (mg/kg), part 8

# Barium Concentration by County, page 9 of 10

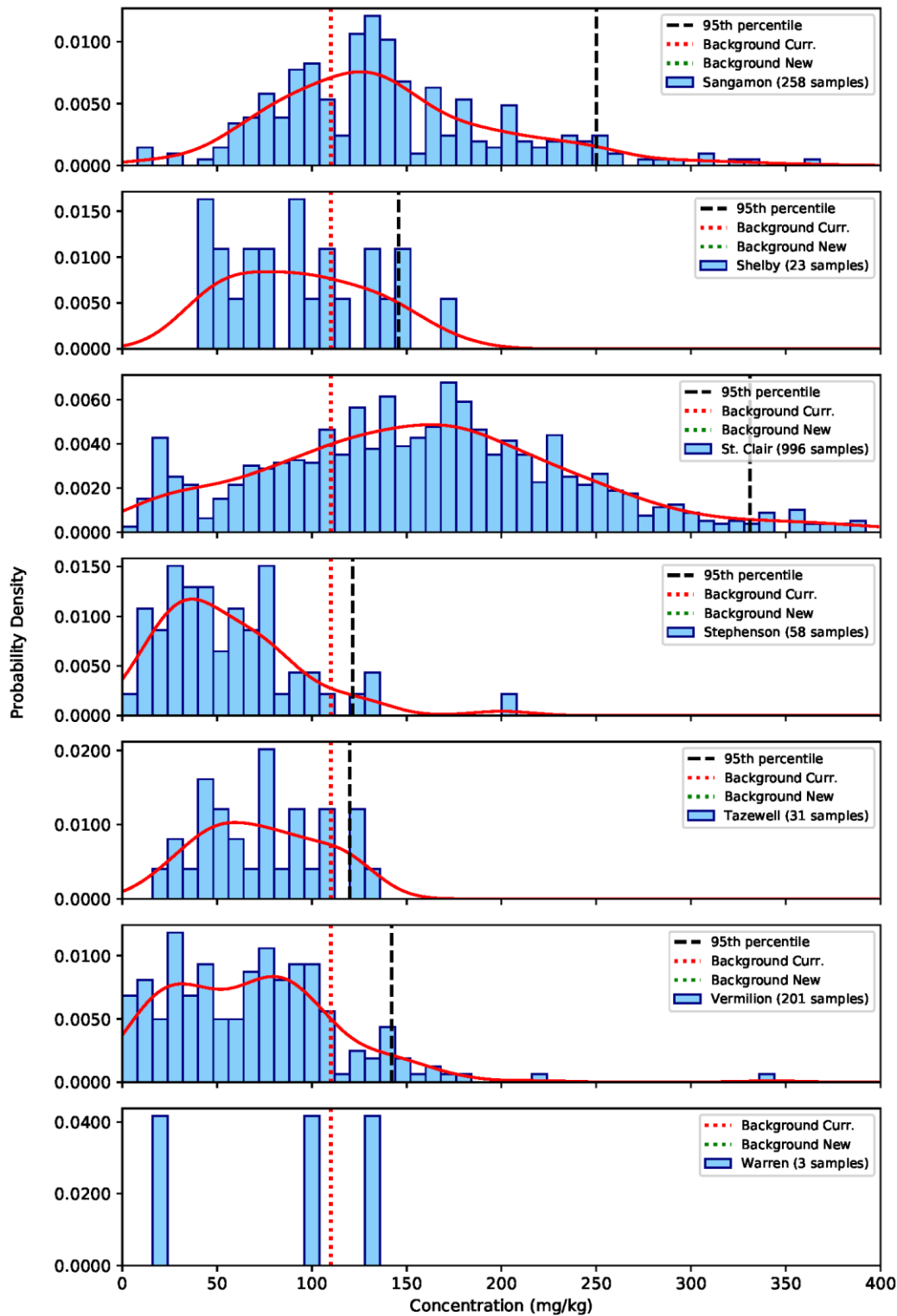


Figure 124. Histogram of RSL barium concentrations by Illinois county, REC (mg/kg), part 9

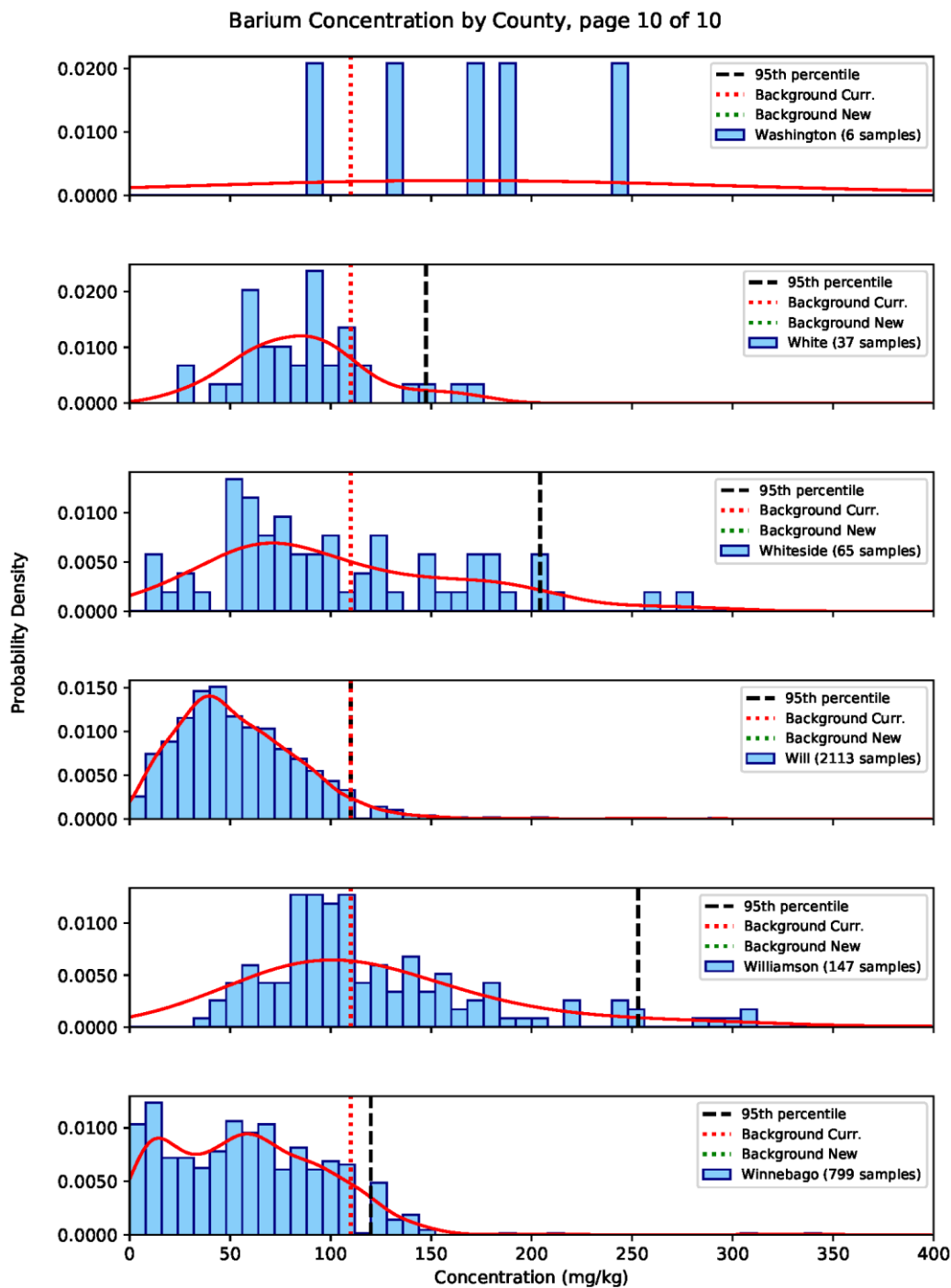


Figure 125. Histogram of RSL barium concentrations by Illinois county, REC (mg/kg), part 10

Barium Concentration for 95th Percentile by County: REC Sites

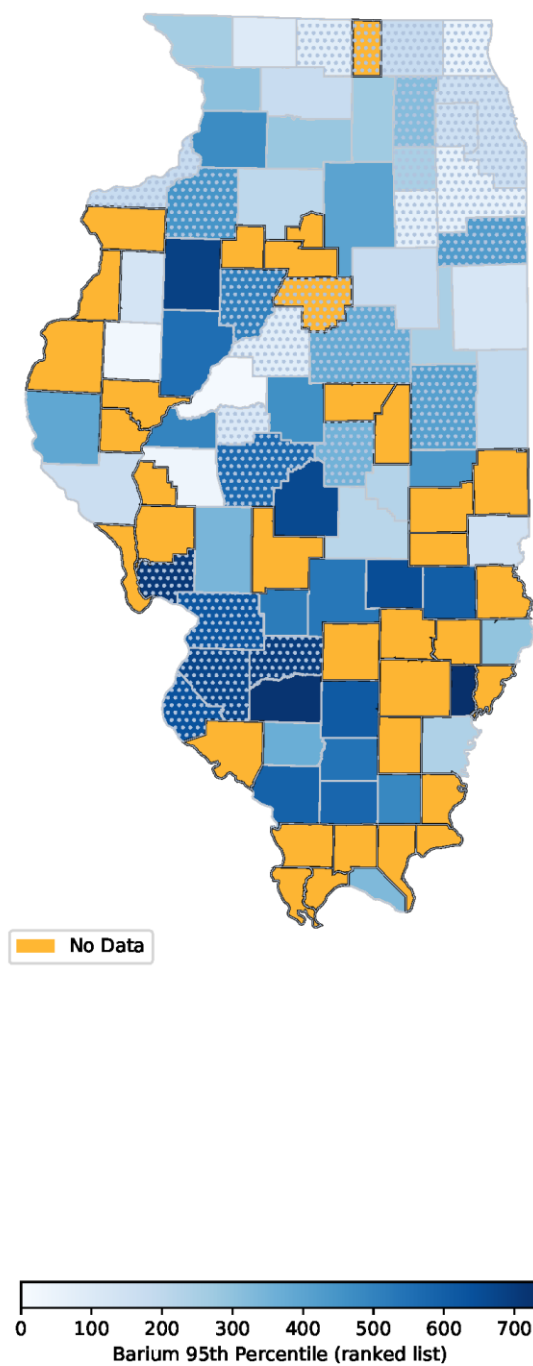


Figure 126. Map of RSL barium 95th percentile concentration by Illinois county, REC (mg/kg)

Number of Barium Samples by County: REC Sites

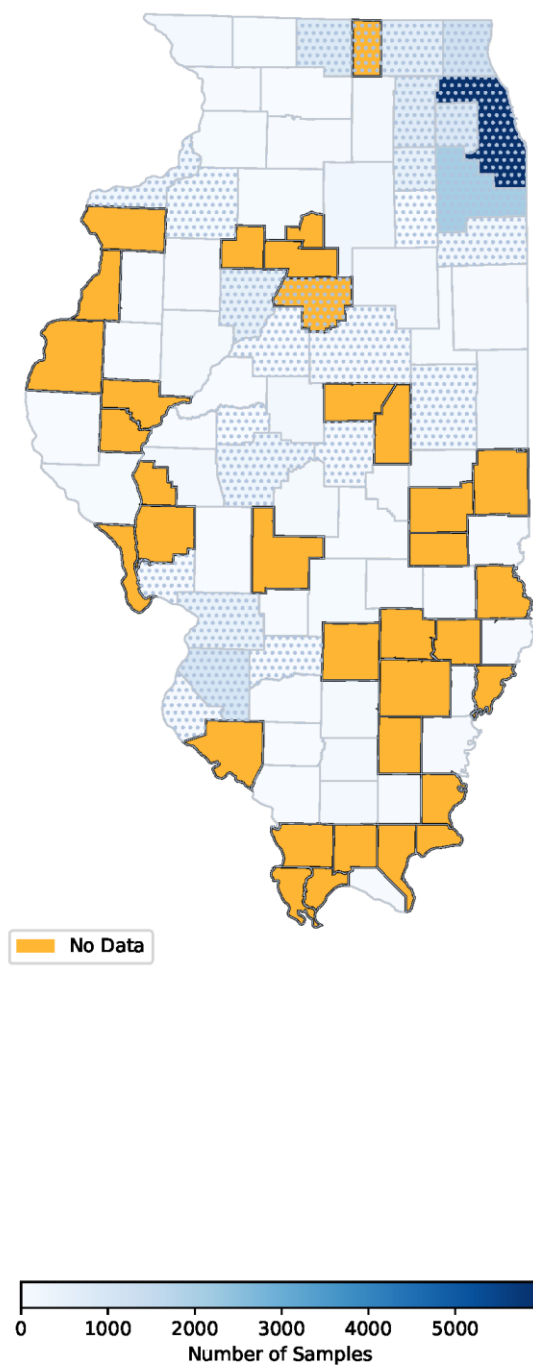
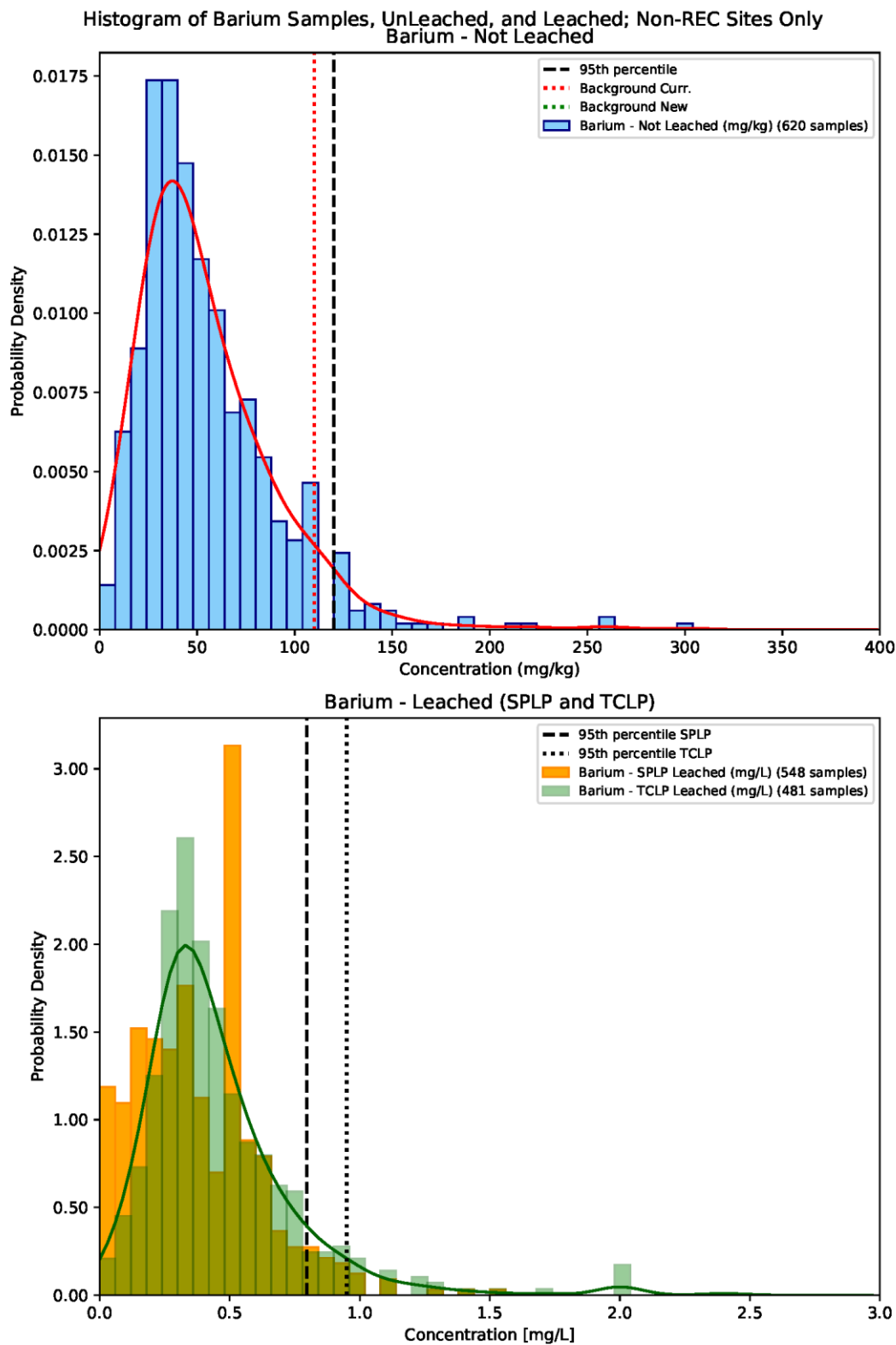


Figure 127. Map of RSL barium sample quantity by Illinois county, REC (mg/kg)



## D.2 BARIUM NON-REC



**Figure 128. Histogram of RSL barium concentrations, Non-REC (mg/kg)**

Barium Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

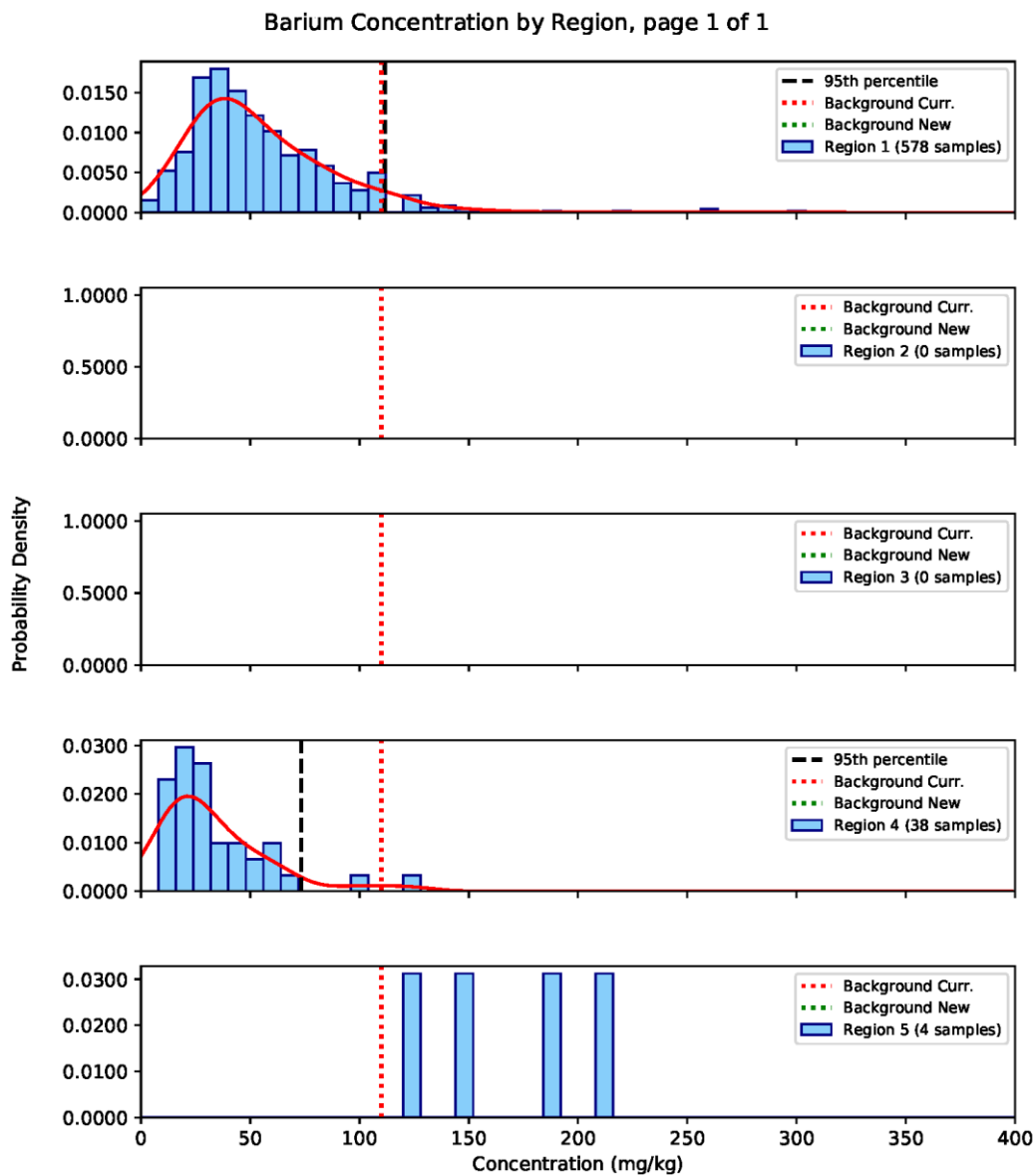
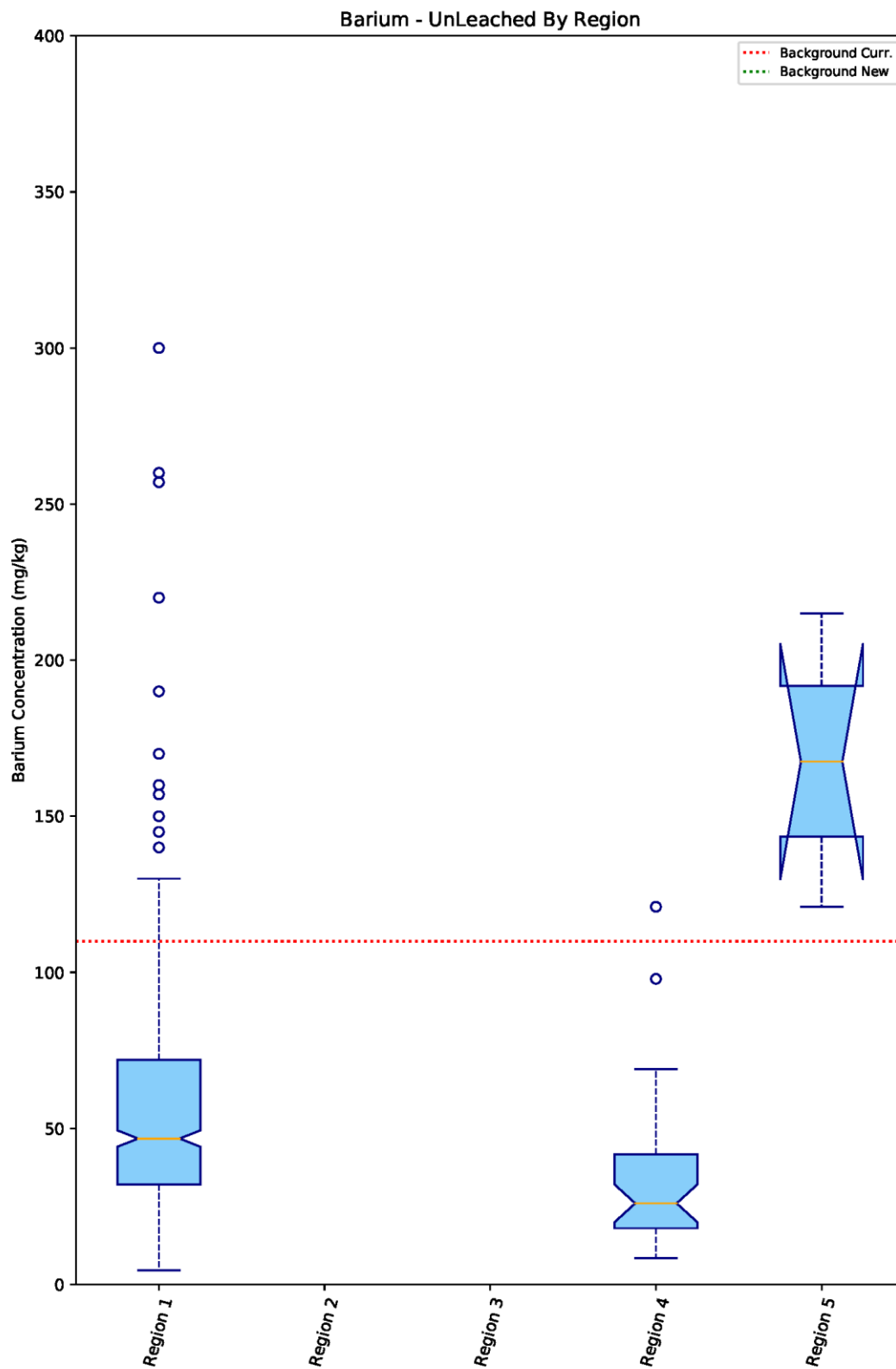


Figure 129. Histogram of RSL barium concentrations by IDOT Region, Non-REC (mg/kg)



**Figure 130. Boxplot of RSL barium concentrations by IDOT Region, Non-REC (mg/kg)**

Barium Concentration by District, page 1 of 2

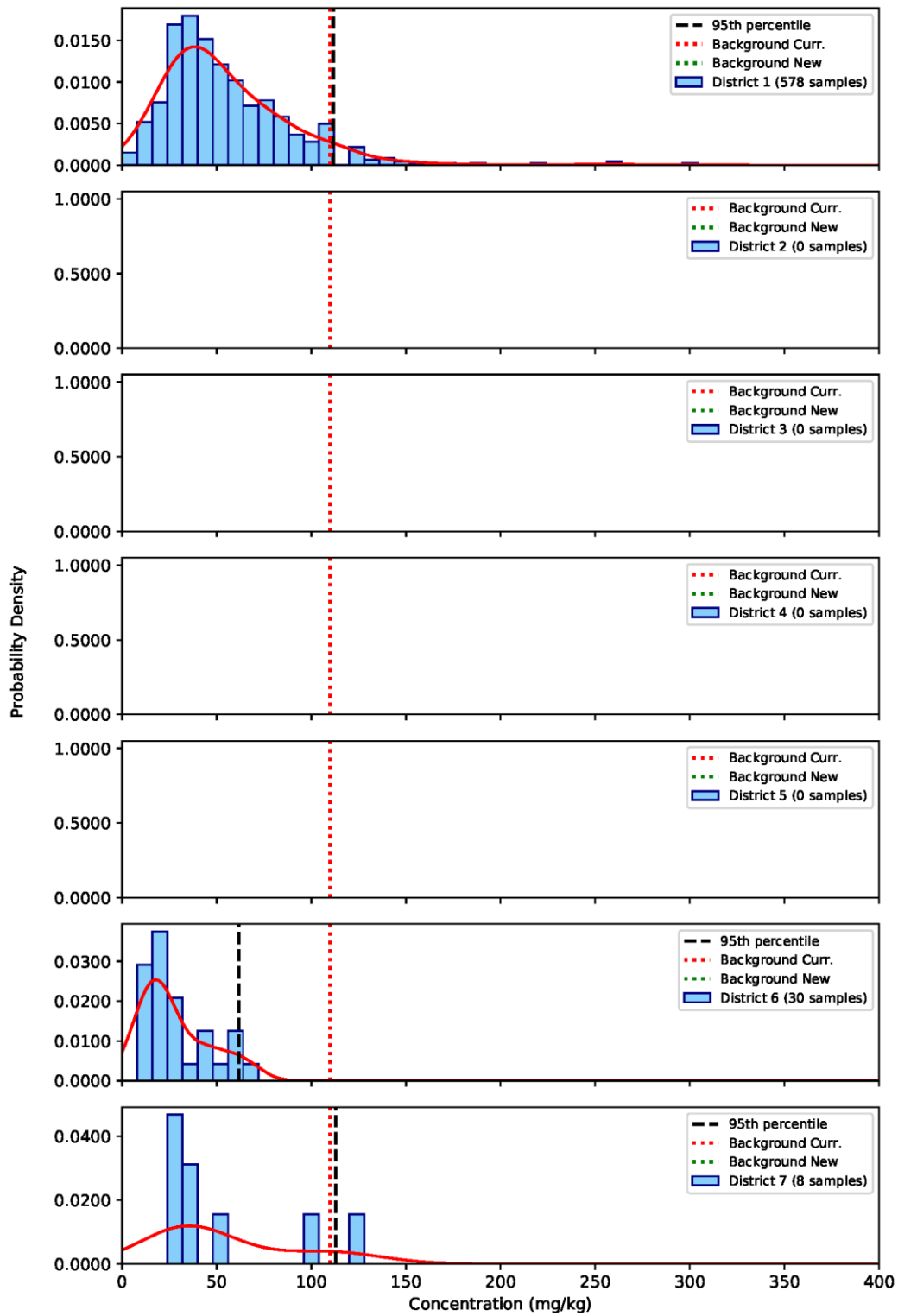


Figure 131. Histogram of RSL barium concentrations by IDOT District, Non-REC (mg/kg), part 1

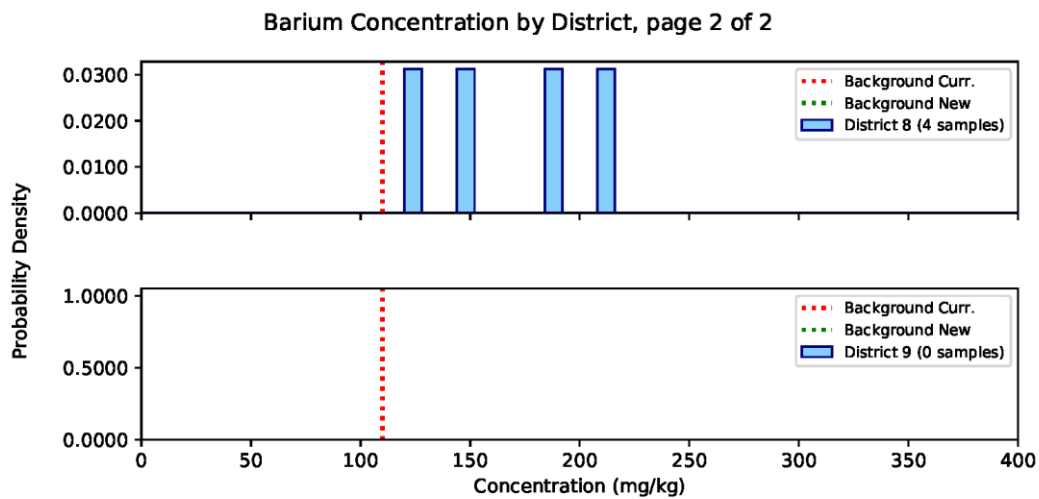
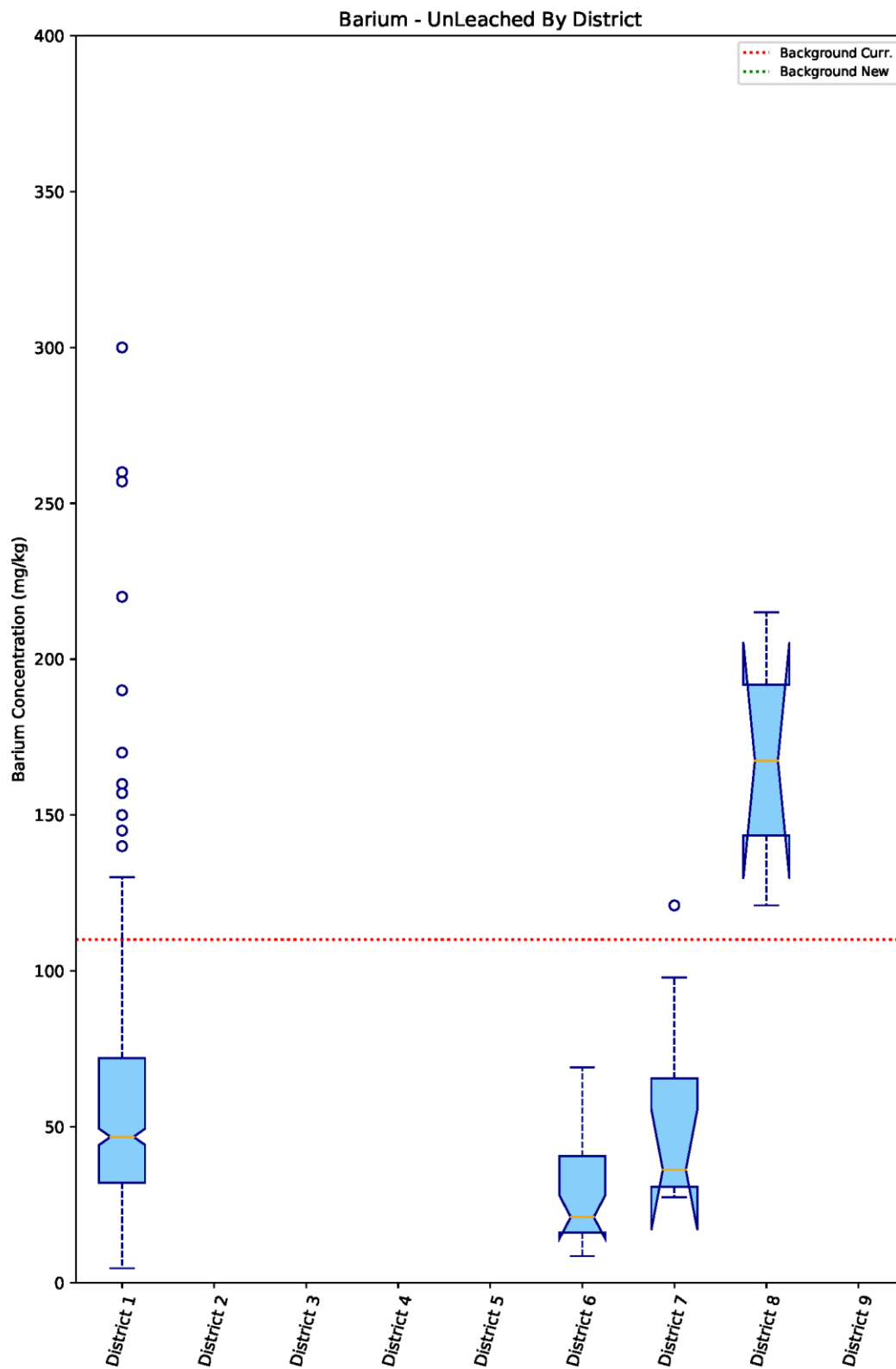


Figure 132. Histogram of RSL barium concentrations by IDOT District, Non-REC (mg/kg), part 2



**Figure 133. Boxplot of RSL barium concentrations by IDOT District, Non-REC (mg/kg)**



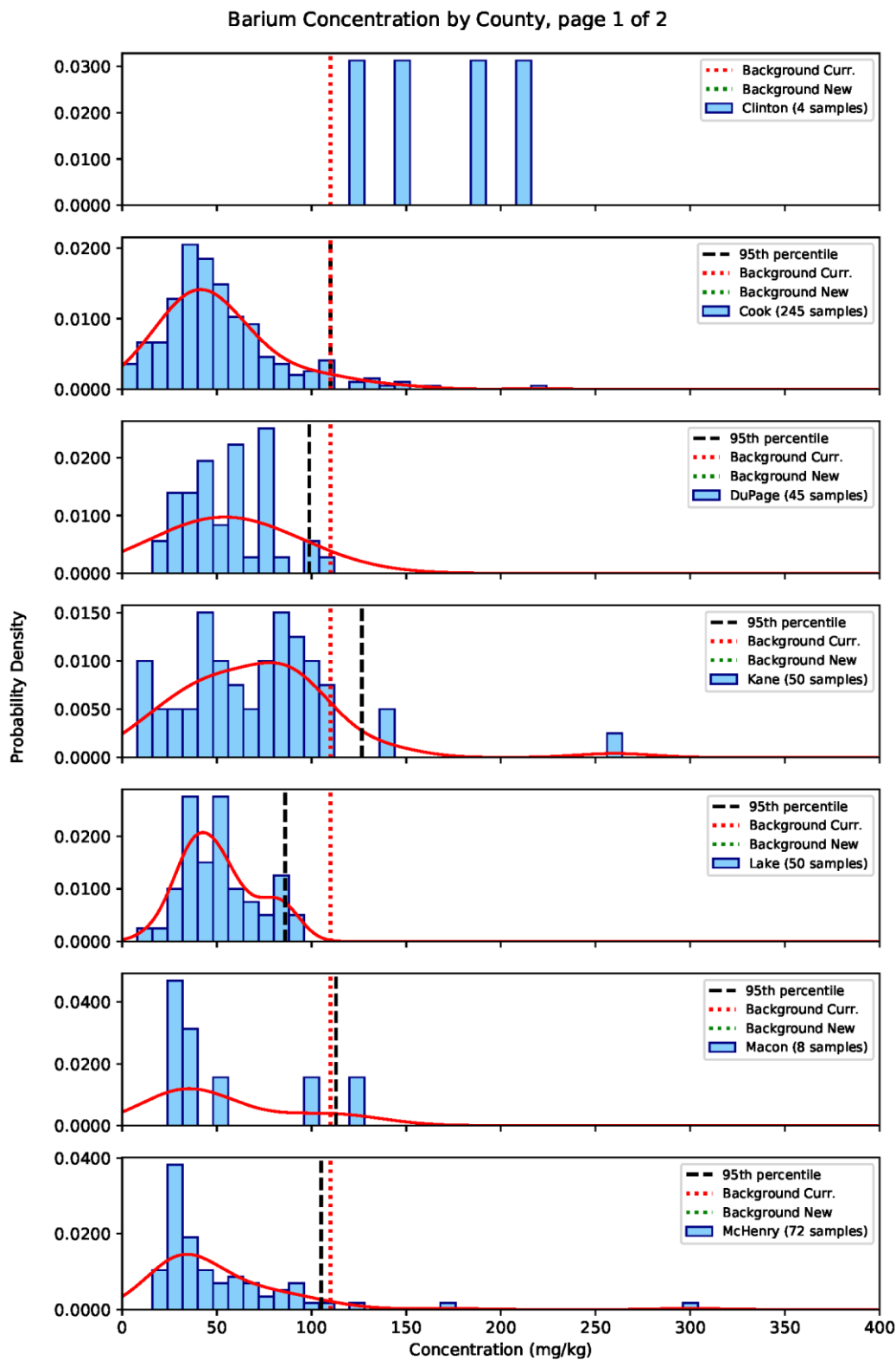


Figure 134. Histogram of RSL barium concentrations by Illinois county, Non-REC (mg/kg), part 1

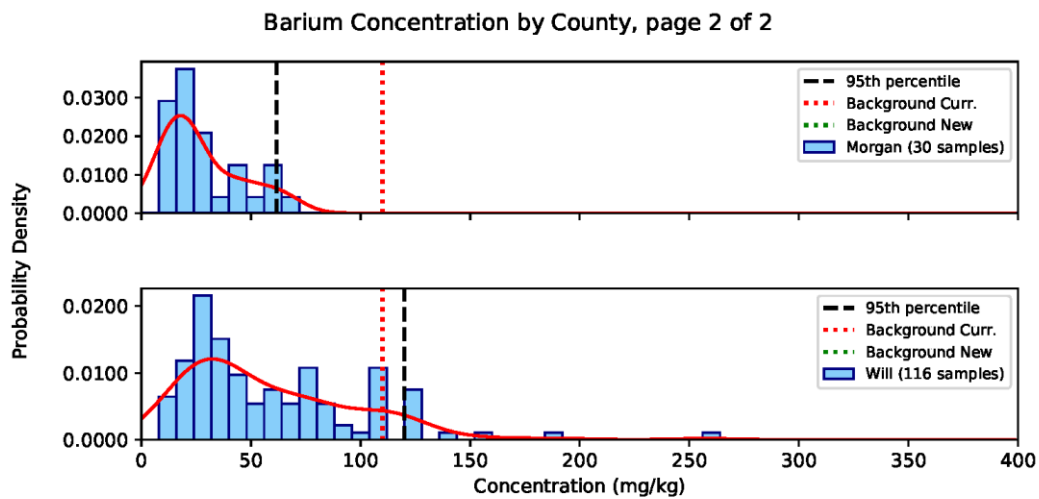


Figure 135. Histogram of RSL barium concentrations by Illinois county, Non-REC (mg/kg), part 2

Barium Concentration for 95th Percentile by County: Non-REC Sites

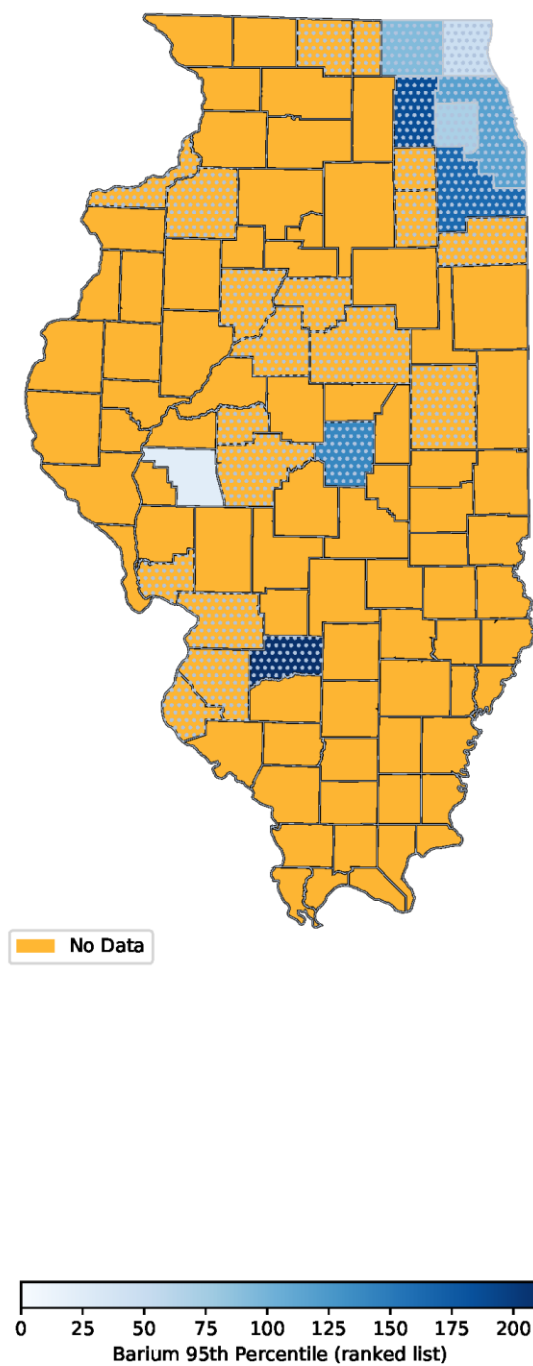


Figure 136. Map of RSL barium 95th percentile concentration by Illinois county, Non-REC (mg/kg)

Number of Barium Samples by County: Non-REC Sites

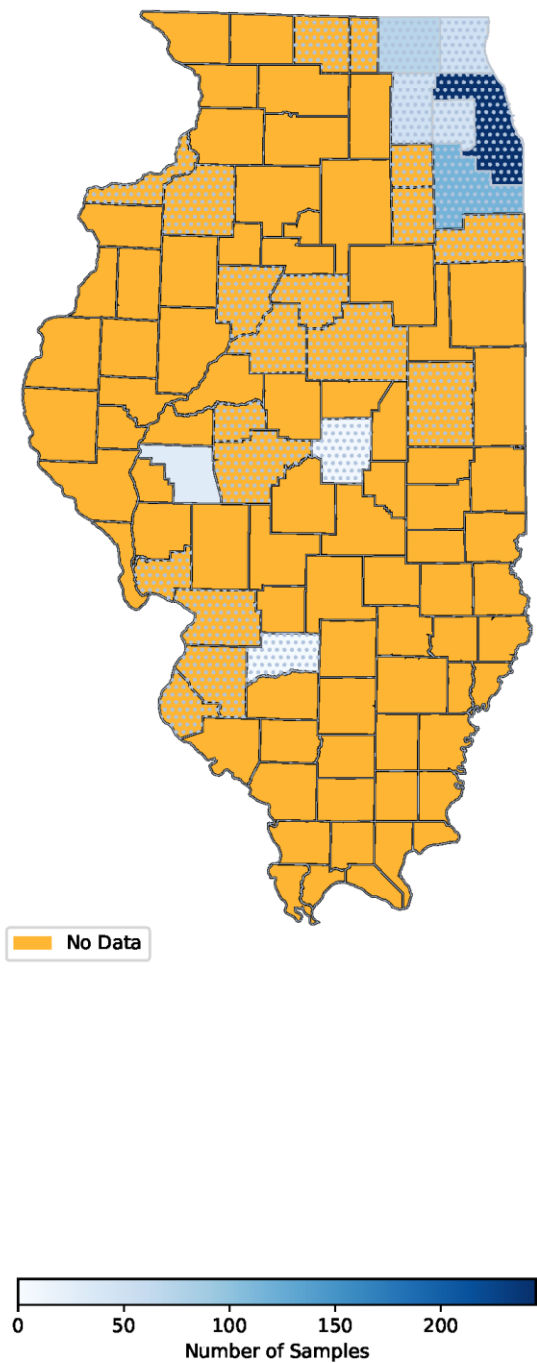
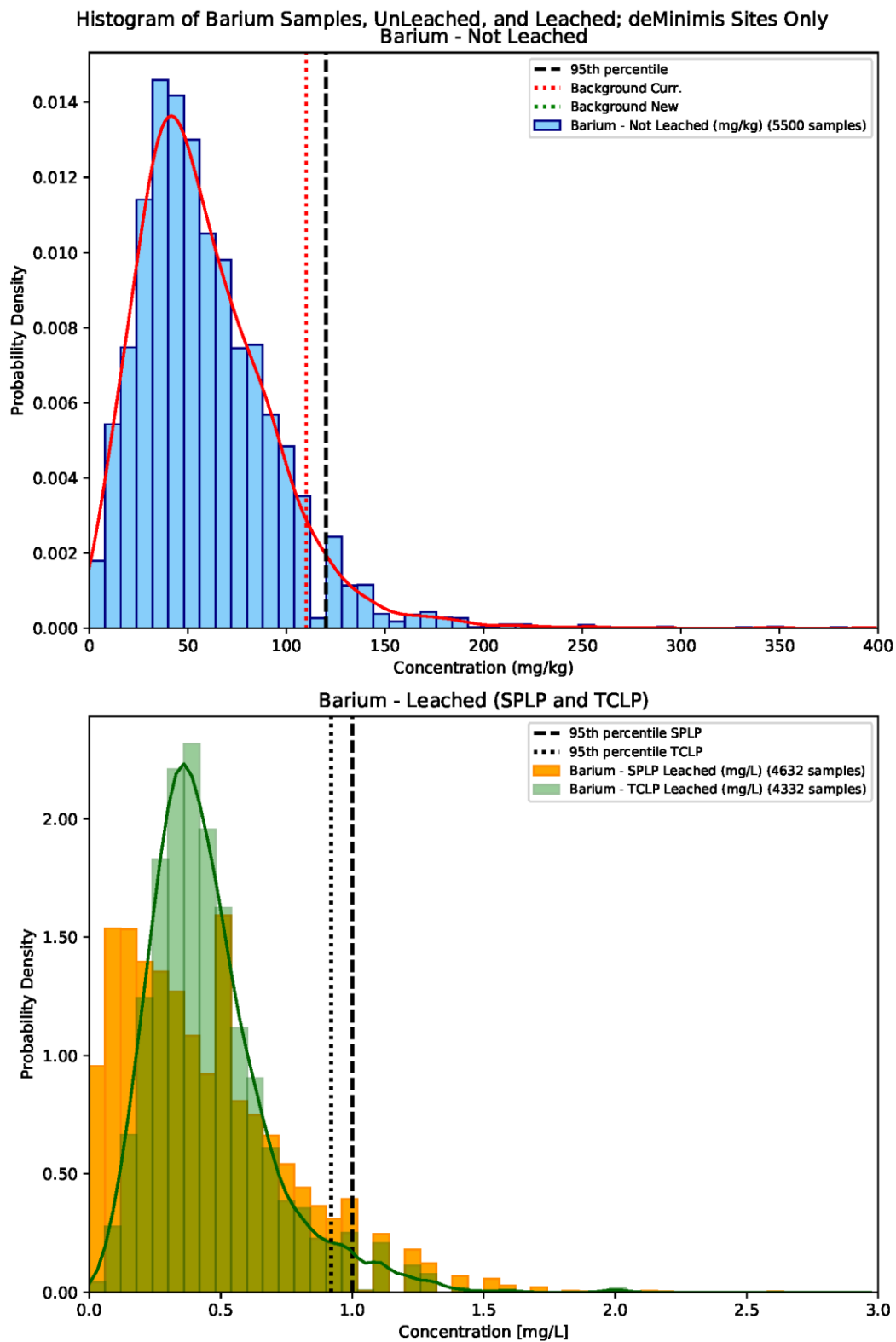


Figure 137. Map of RSL barium sample quantity by Illinois county, Non-REC (mg/kg)

### **D.3 BARIUM DE MINIMIS**



**Figure 138. Histogram of RSL barium concentrations, de minimis (mg/kg)**

Barium Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

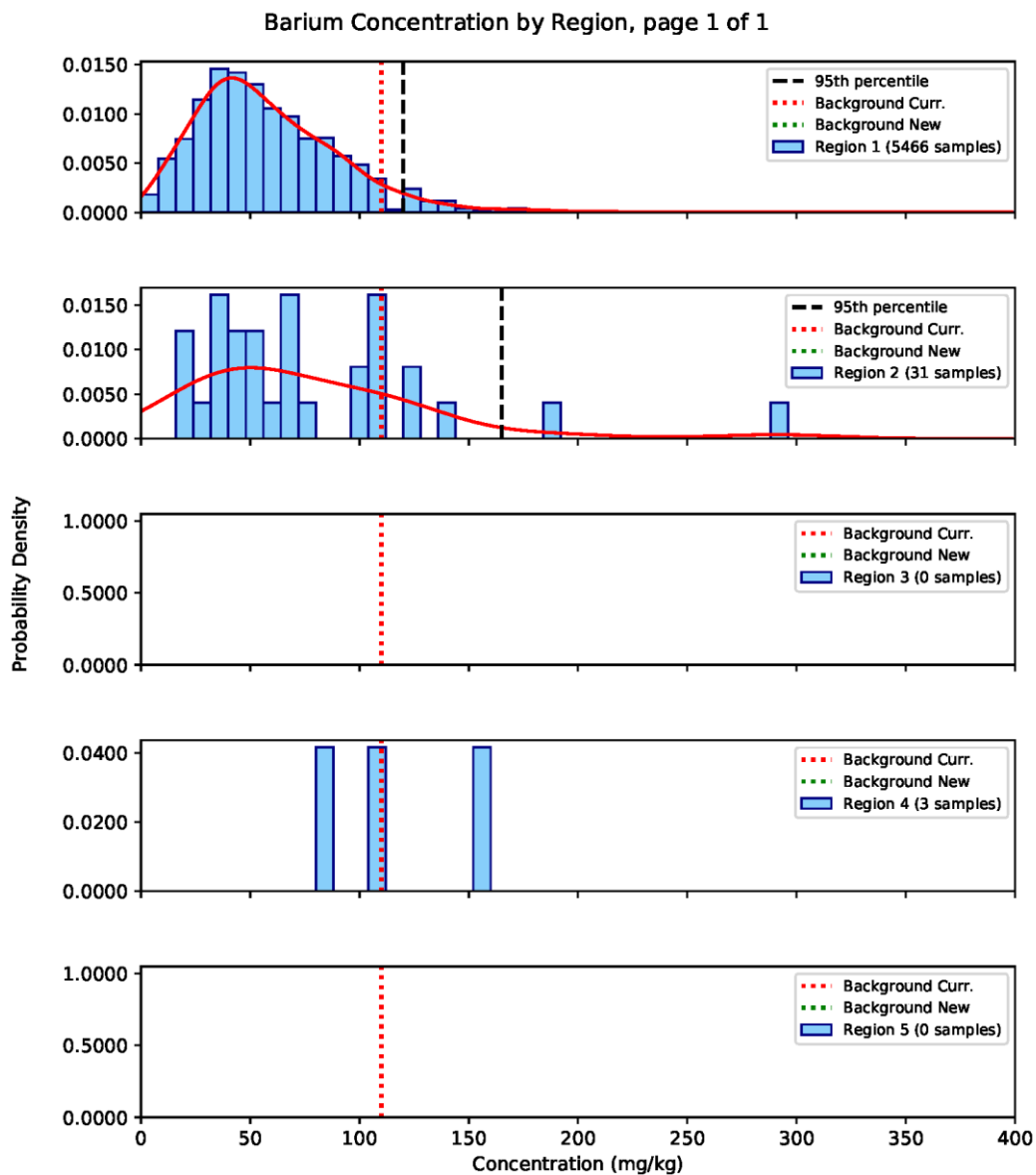


Figure 139. Histogram of RSL barium concentrations by IDOT Region, de minimis (mg/kg)



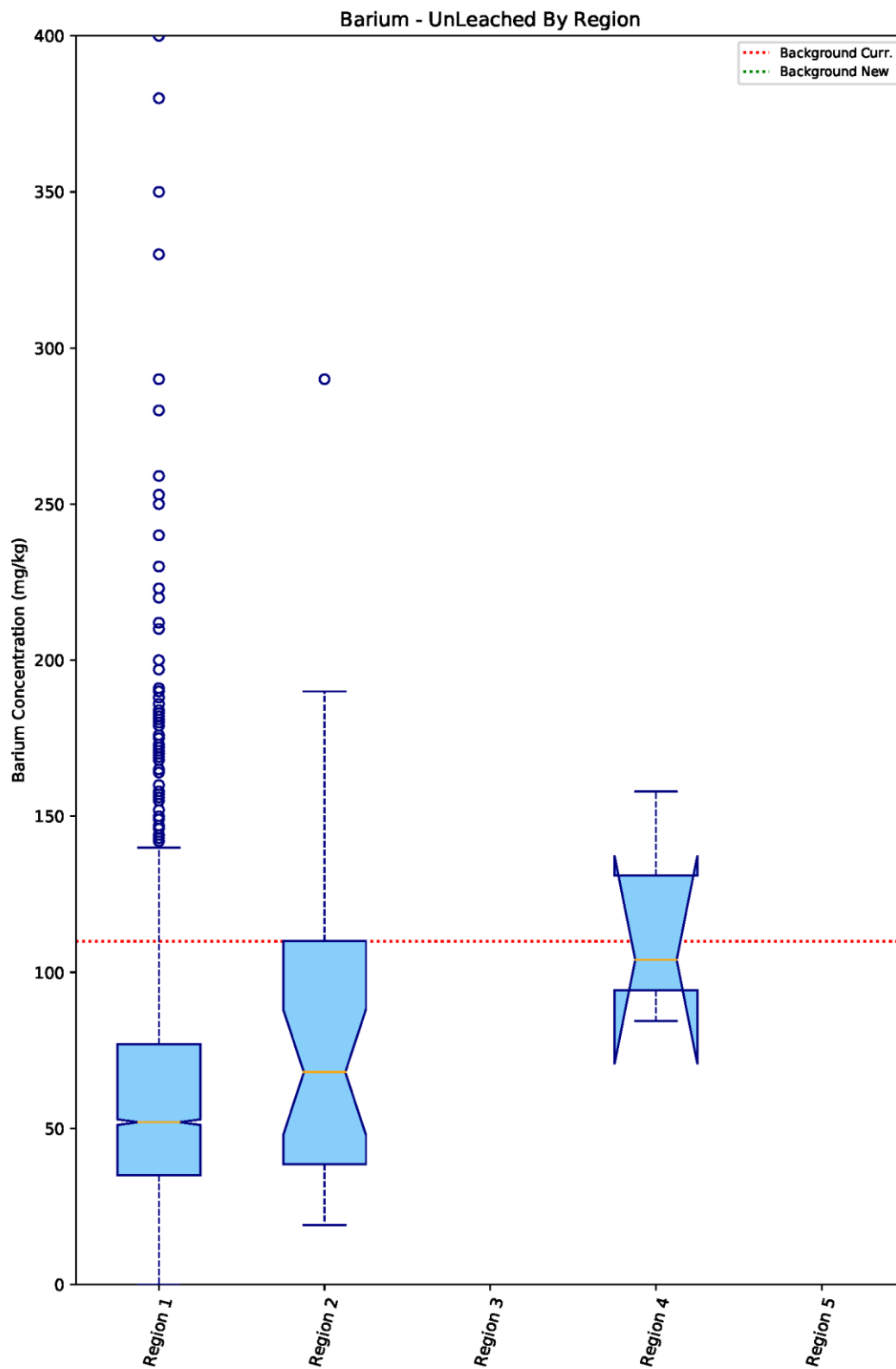


Figure 140. Boxplot of RSL barium concentrations by IDOT Region, de minimis (mg/kg)

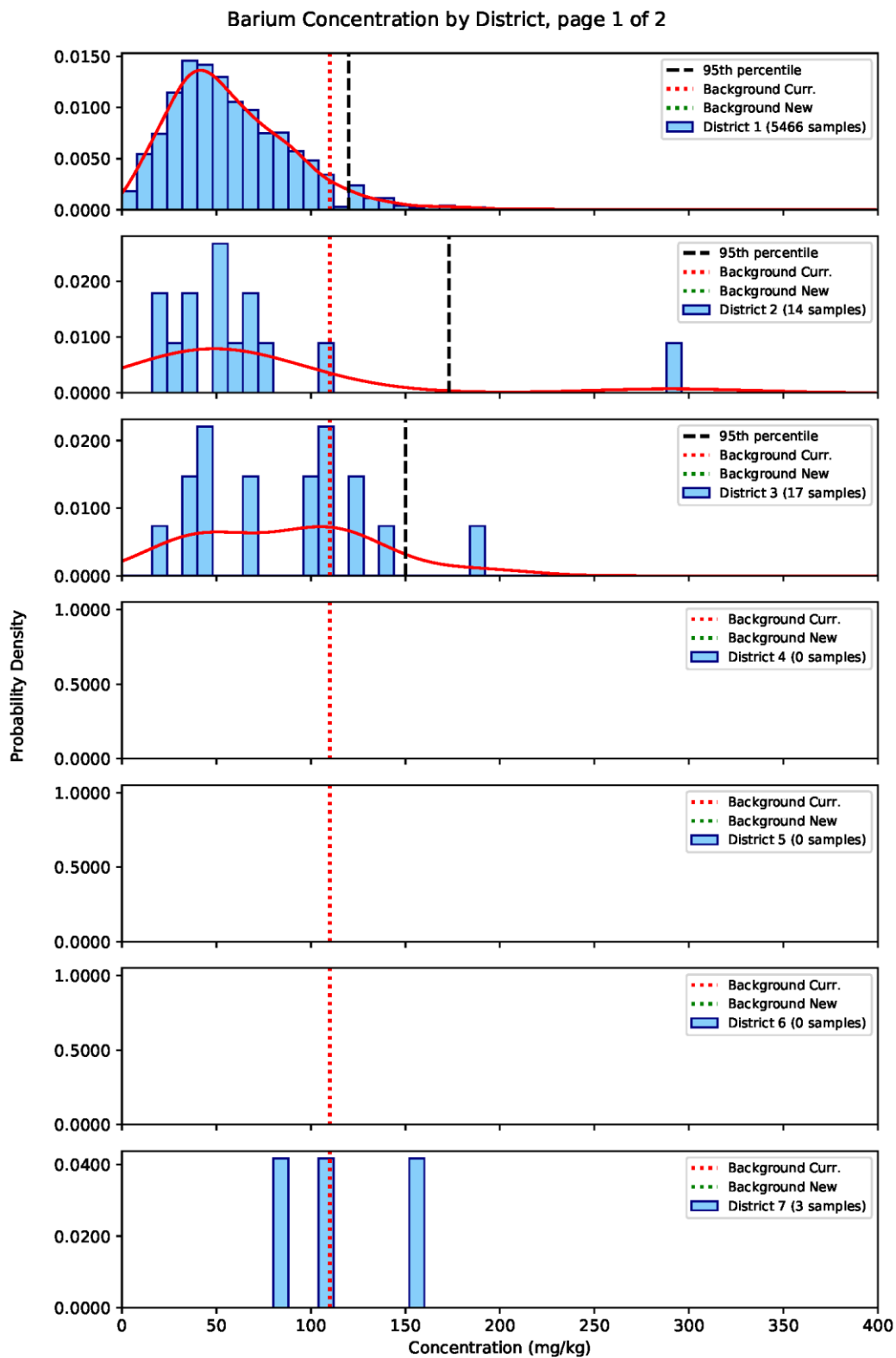


Figure 141. Histogram of RSL barium concentrations by IDOT District, de minimis (mg/kg), part 1

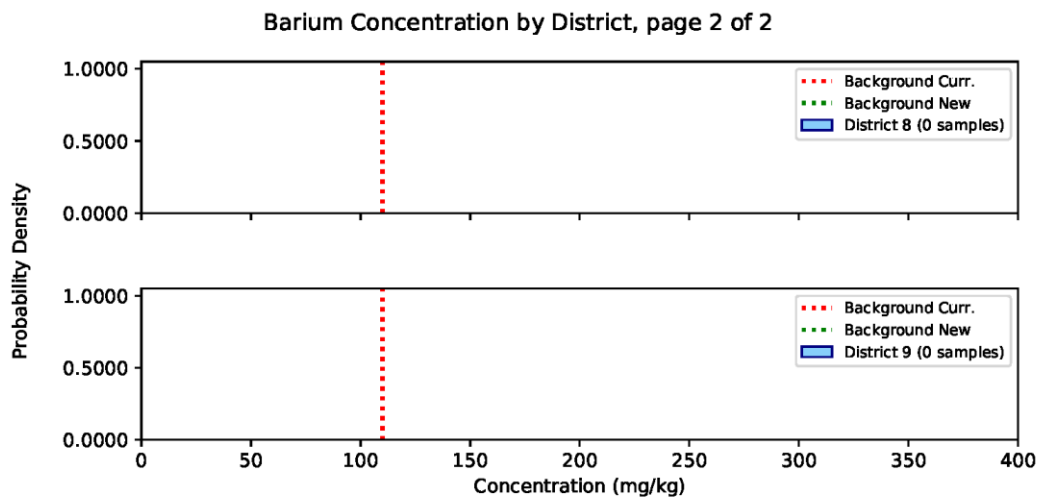


Figure 142. Histogram of RSL barium concentrations by IDOT District, de minimis (mg/kg), part 2

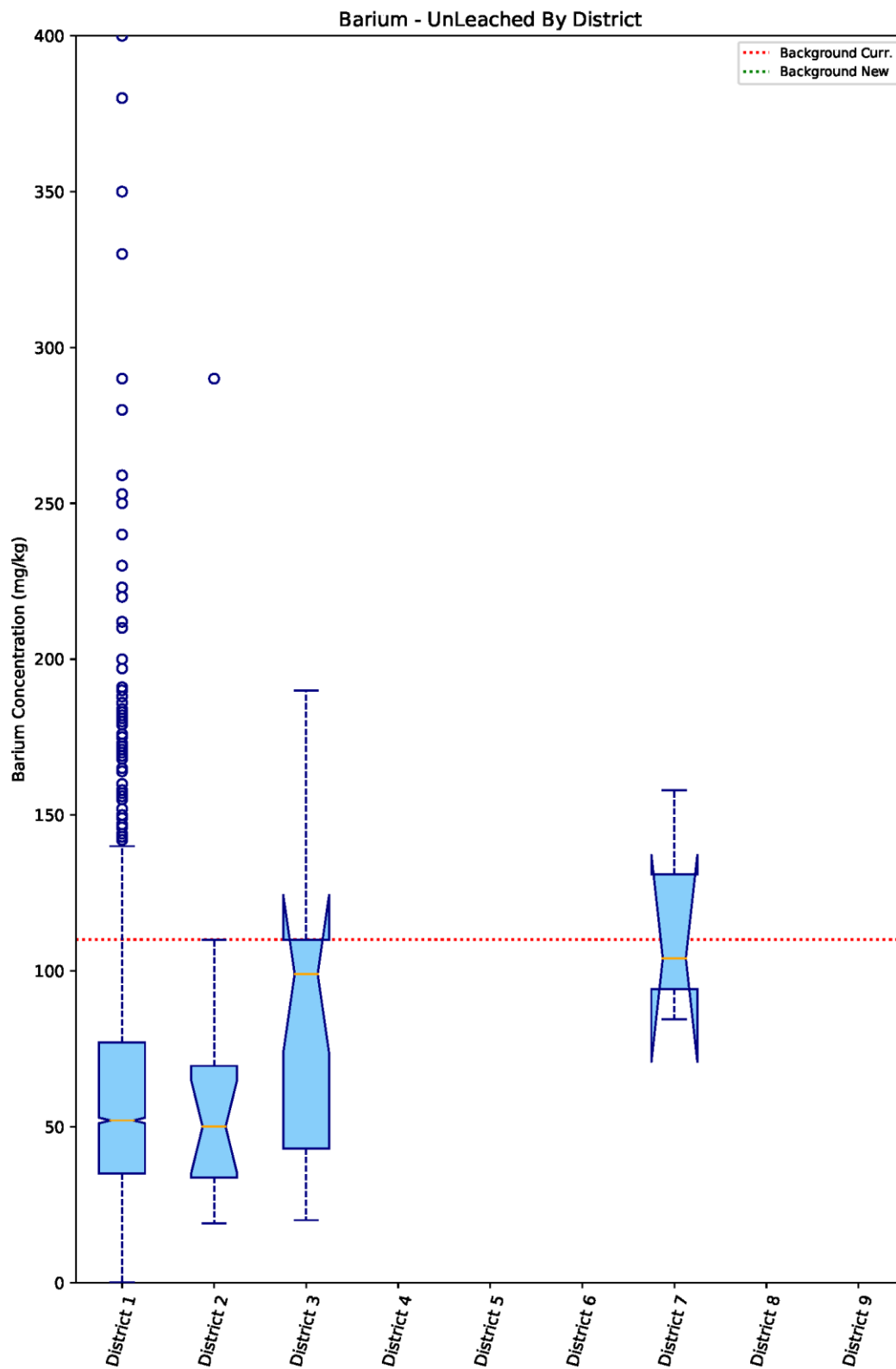


Figure 143. Boxplot of RSL barium concentrations by IDOT District, de minimis (mg/kg)

Barium Concentration by County, page 1 of 2

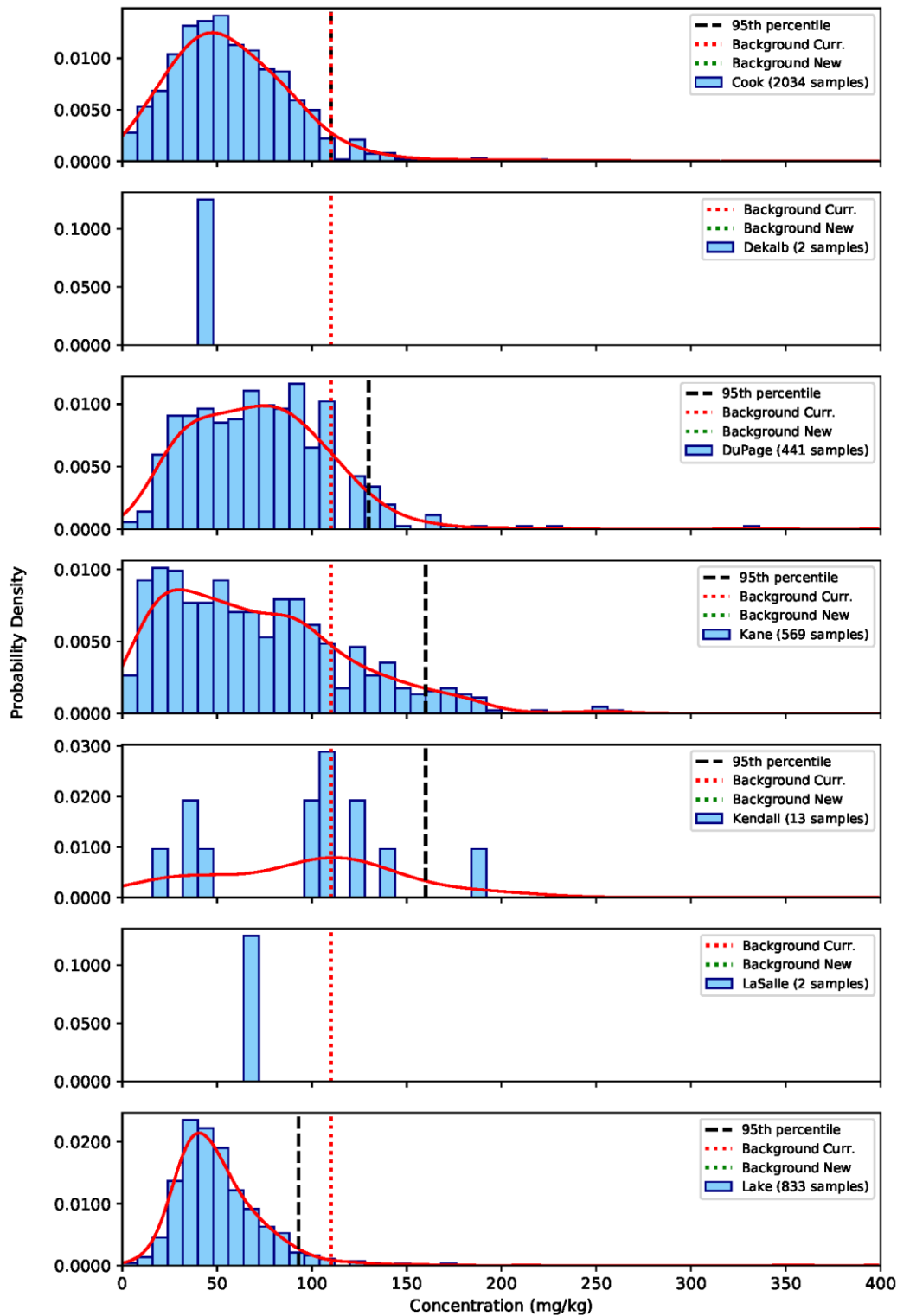


Figure 144. Histogram of RSL barium concentrations by Illinois county, de minimis (mg/kg), part 1

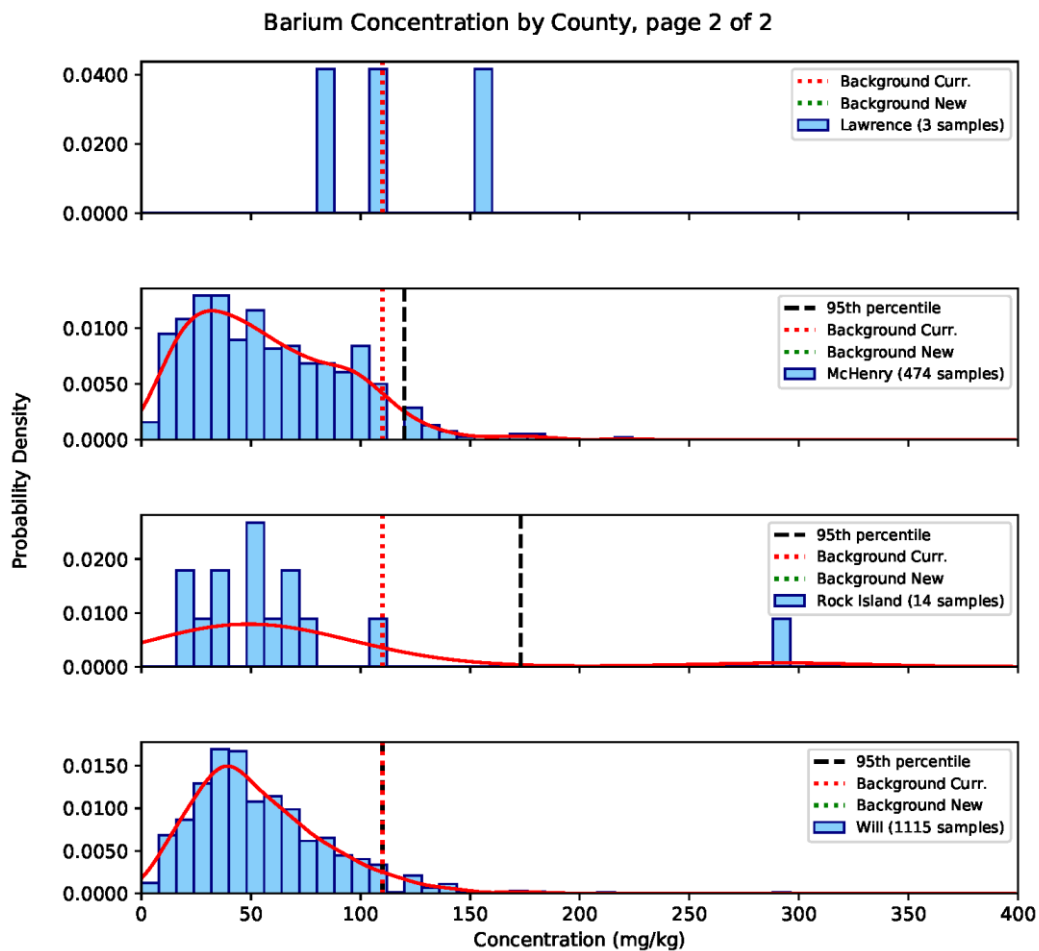


Figure 145. Histogram of RSL barium concentrations by Illinois county, de minimis (mg/kg), part 2

Barium Concentration for 95th Percentile by County: deMinimis Sites

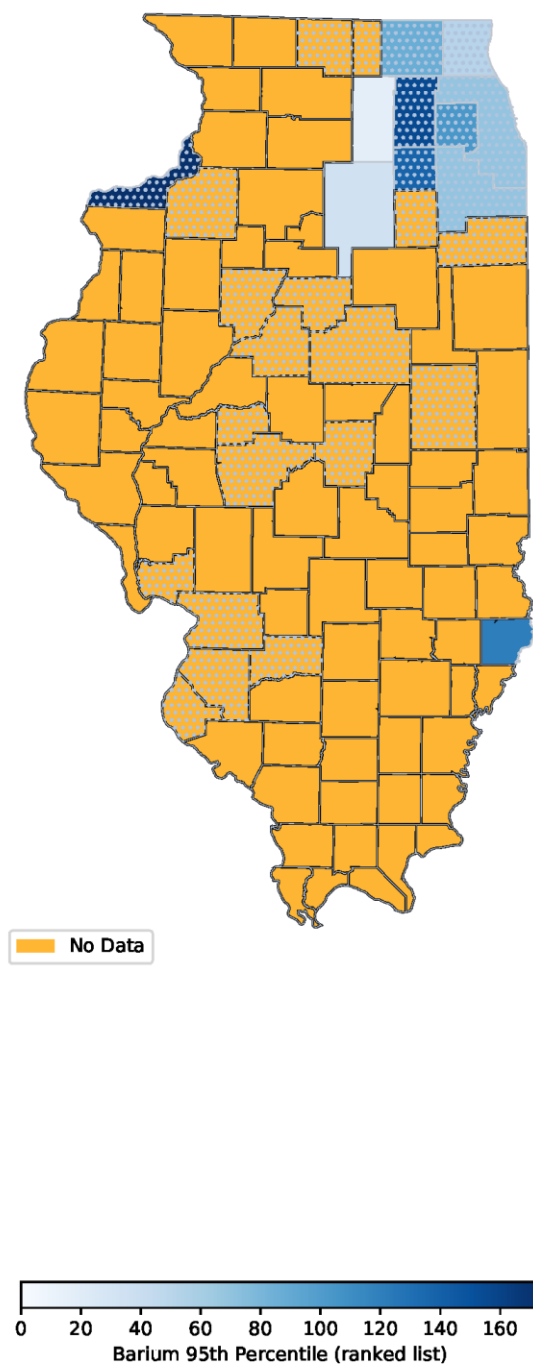


Figure 146. Map of RSL barium 95th percentile concentration by Illinois county, de minimis (mg/kg)

Number of Barium Samples by County: deMinimis Sites

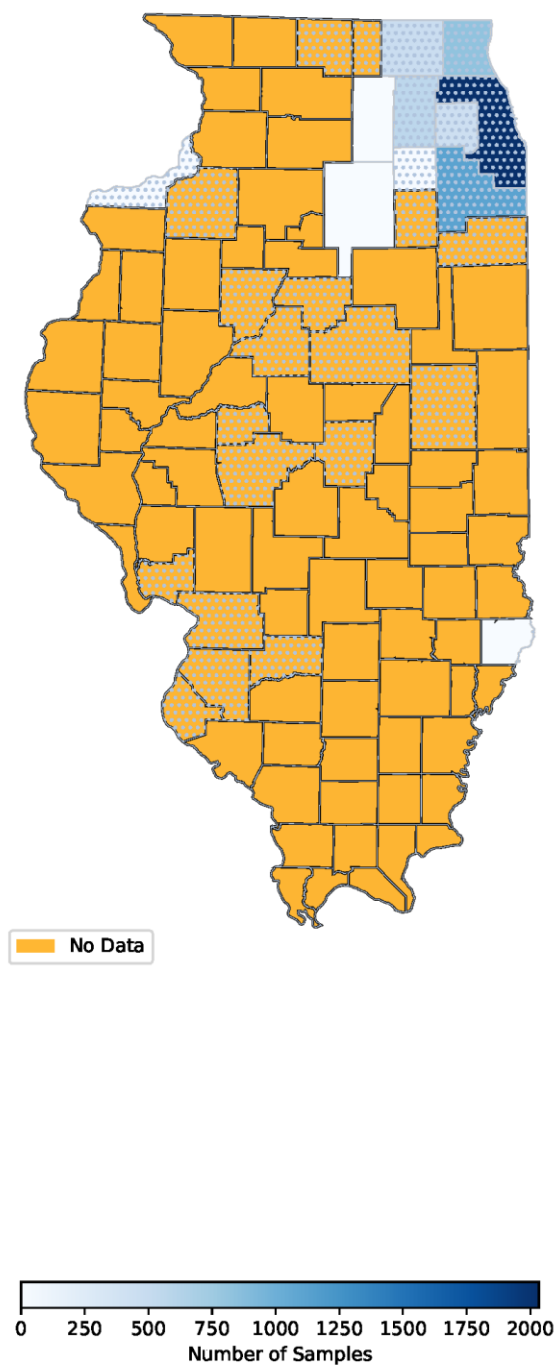


Figure 147. Map of RSL barium sample quantity by Illinois county, de minimis (mg/kg)



## **APPENDIX E. ANALYTE ANALYSIS: BERYLLIUM**

### **E.1 BERYLLIUM REC**

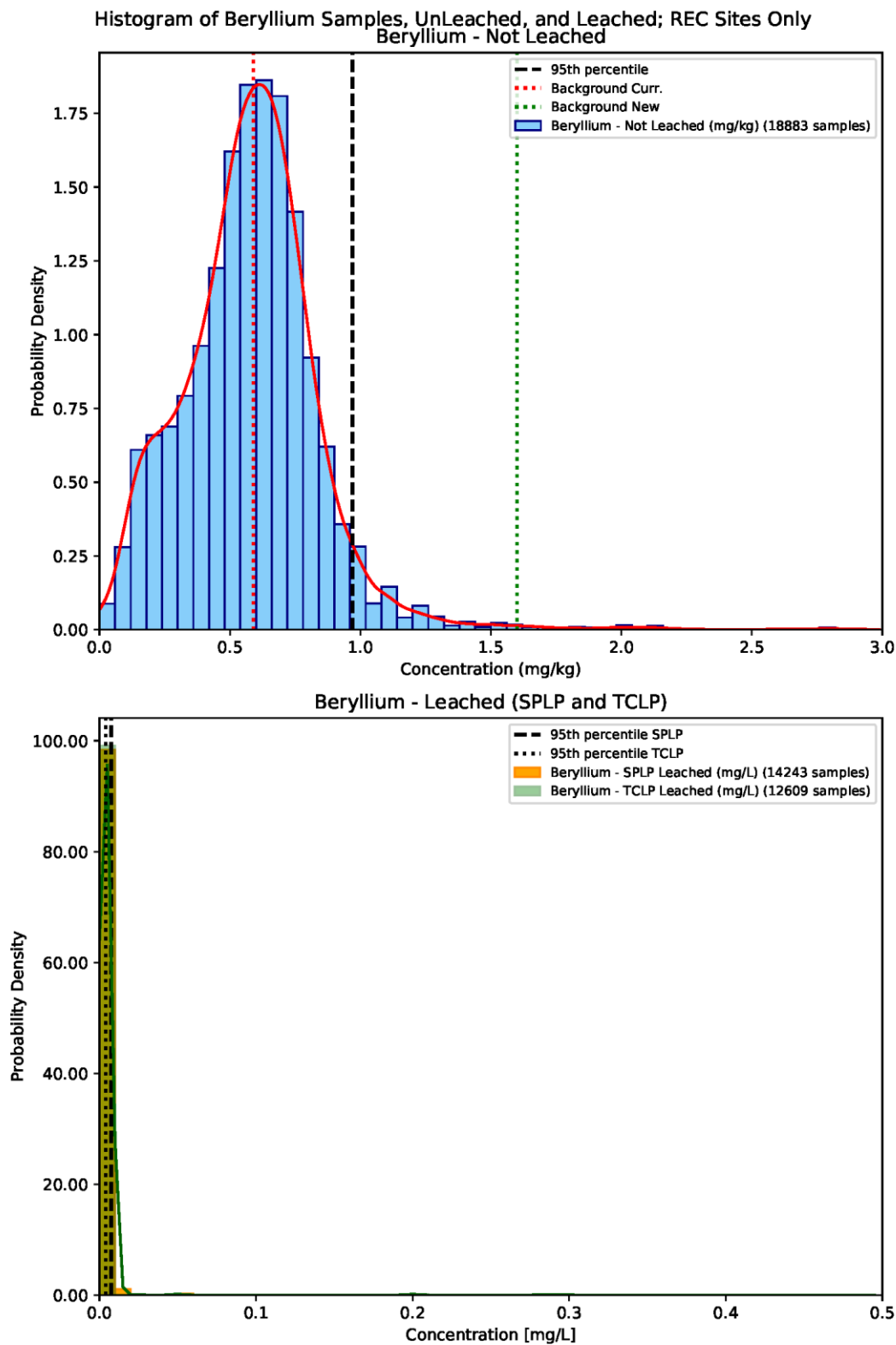


Figure 148. Histogram of RSL beryllium concentrations, REC (mg/kg)

**Beryllium Unleached Concentration (mg/kg)**

1) Region

2) District

3) County

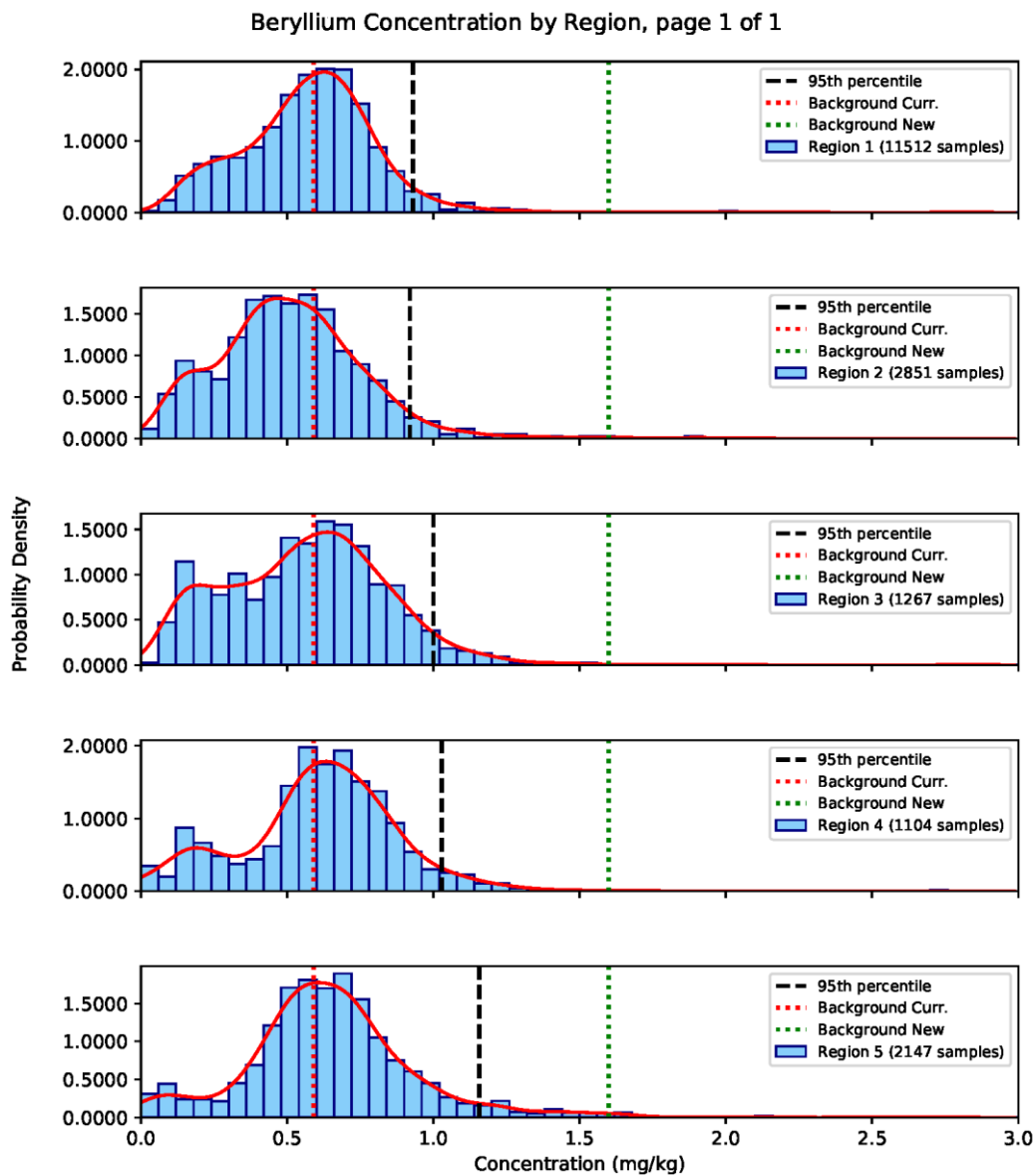


Figure 149. Histogram of RSL beryllium concentrations by IDOT Region, REC (mg/kg)

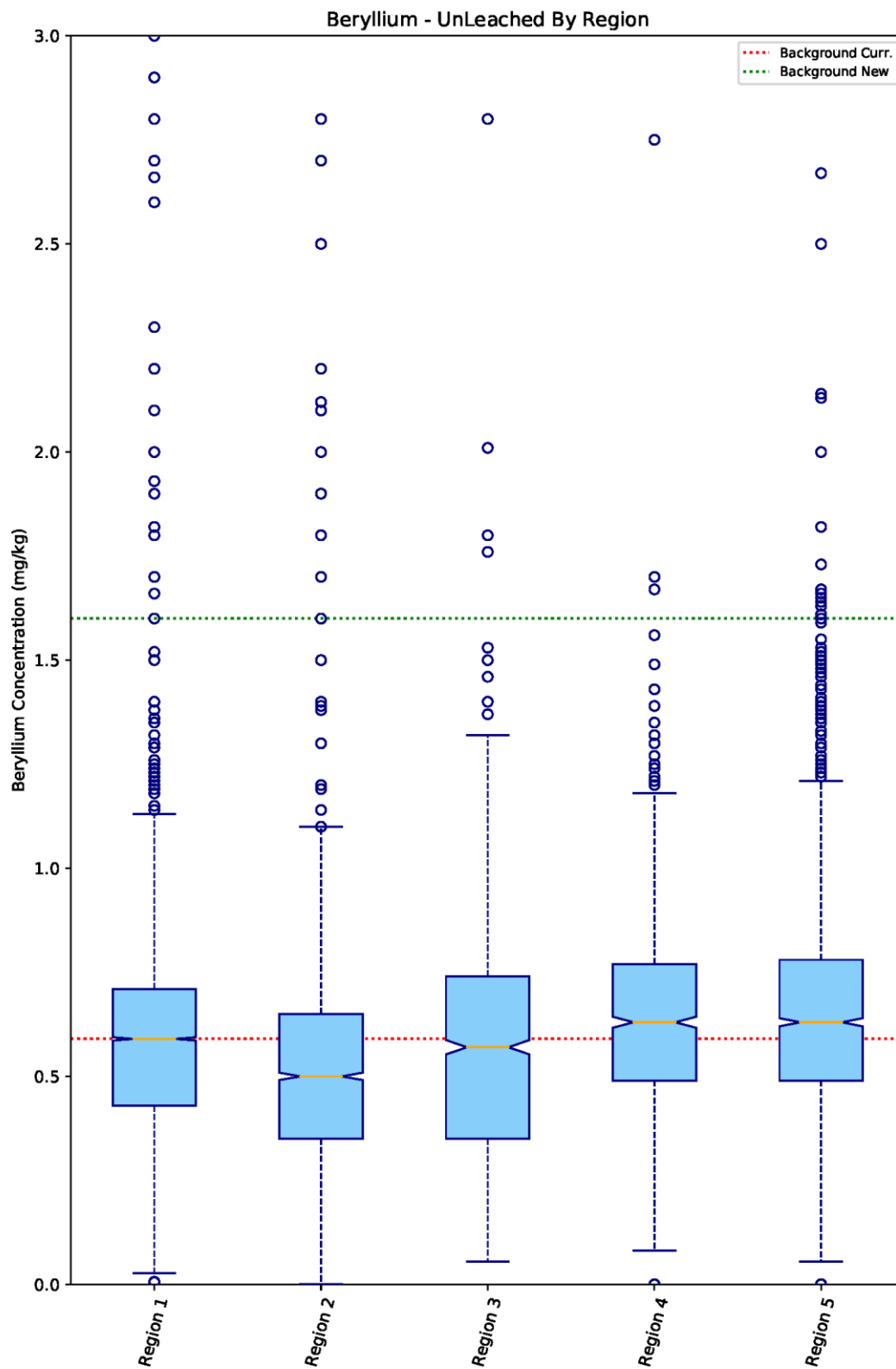


Figure 150. Boxplot of RSL beryllium concentrations by IDOT Region, REC (mg/kg)

# Beryllium Concentration by District, page 1 of 2

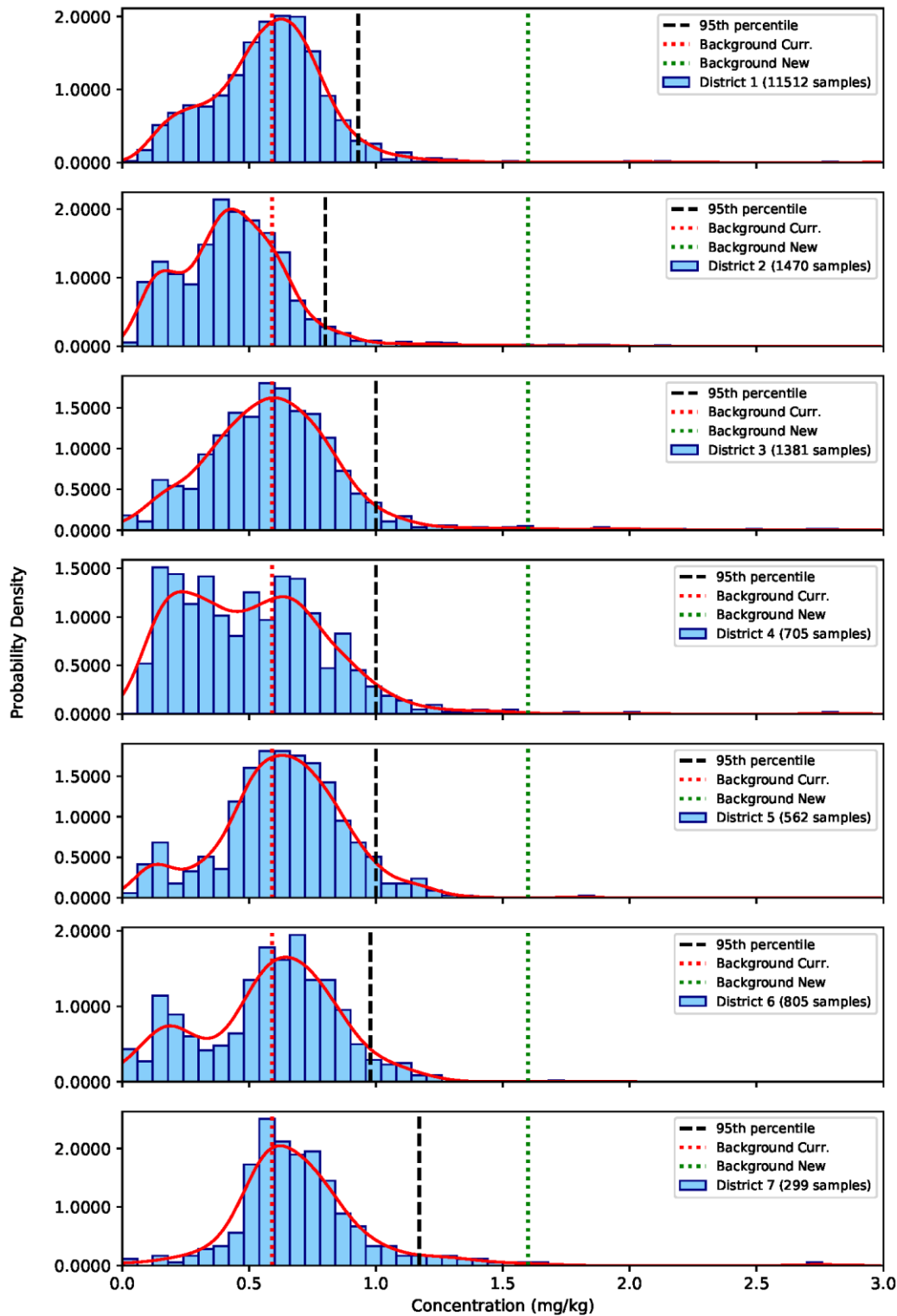


Figure 151. Histogram of RSL beryllium concentrations by IDOT District, REC (mg/kg), part 1

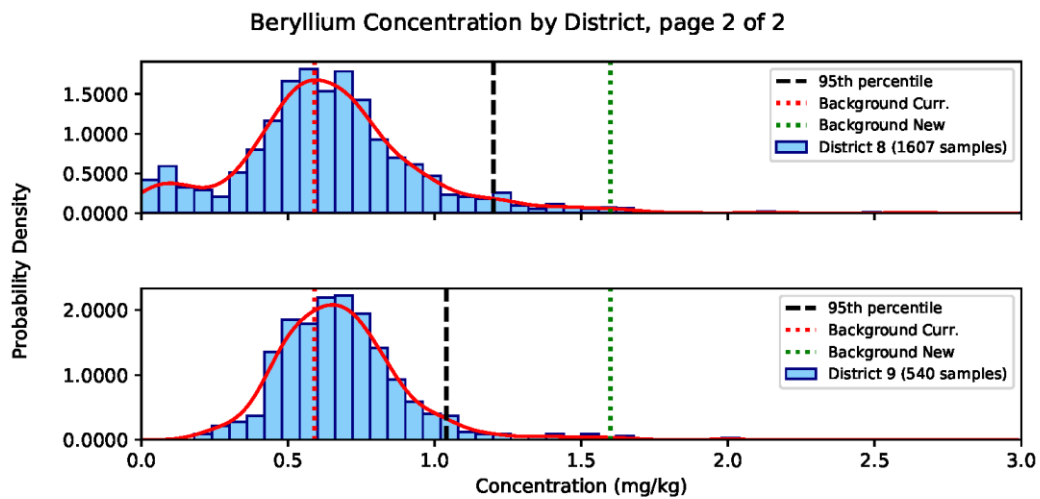


Figure 152. Histogram of RSL beryllium concentrations by IDOT District, REC (mg/kg), part 2

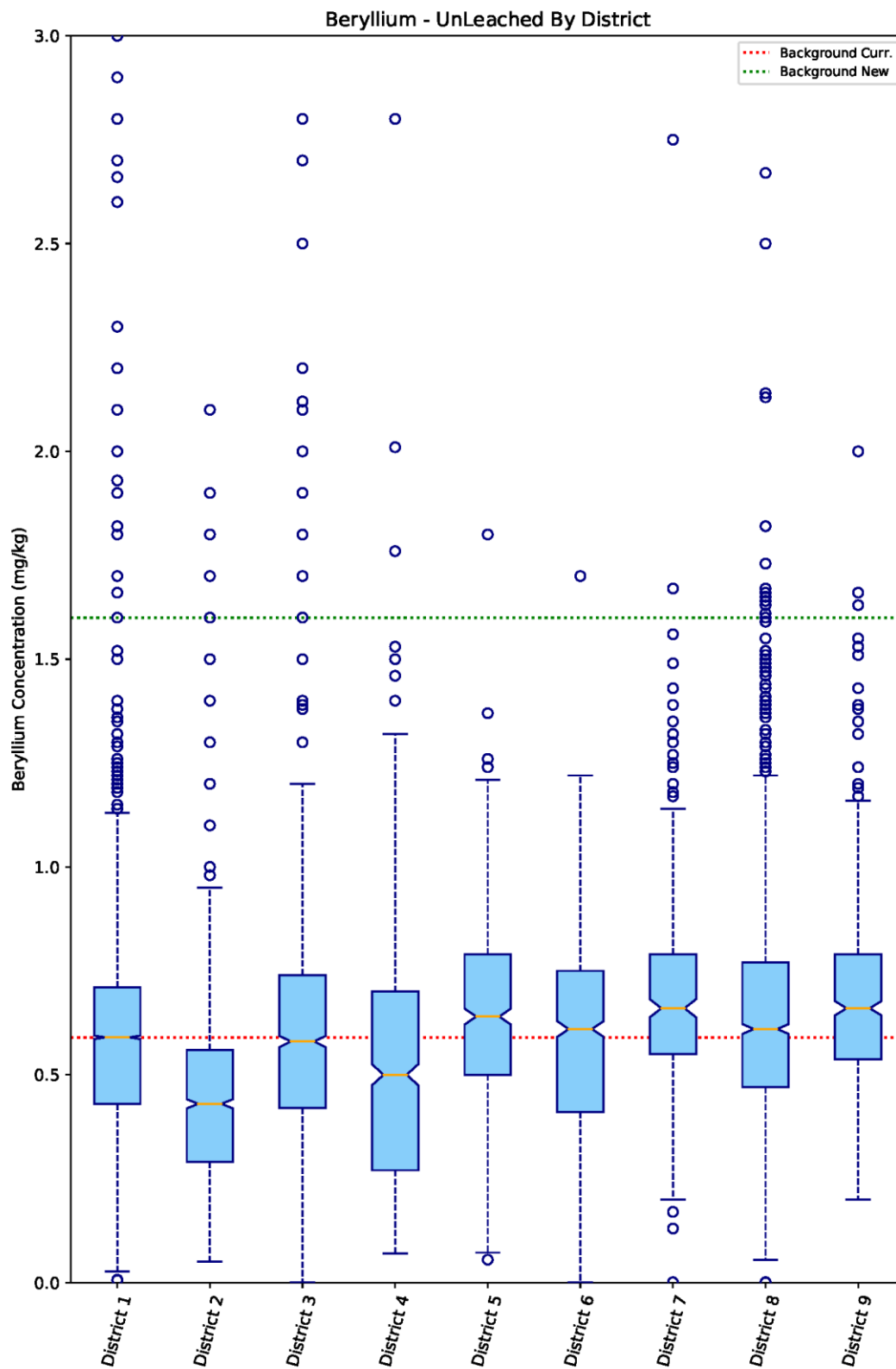


Figure 153. Boxplot of RSL beryllium concentrations by IDOT District, REC (mg/kg)



# Beryllium Concentration by County, page 1 of 10

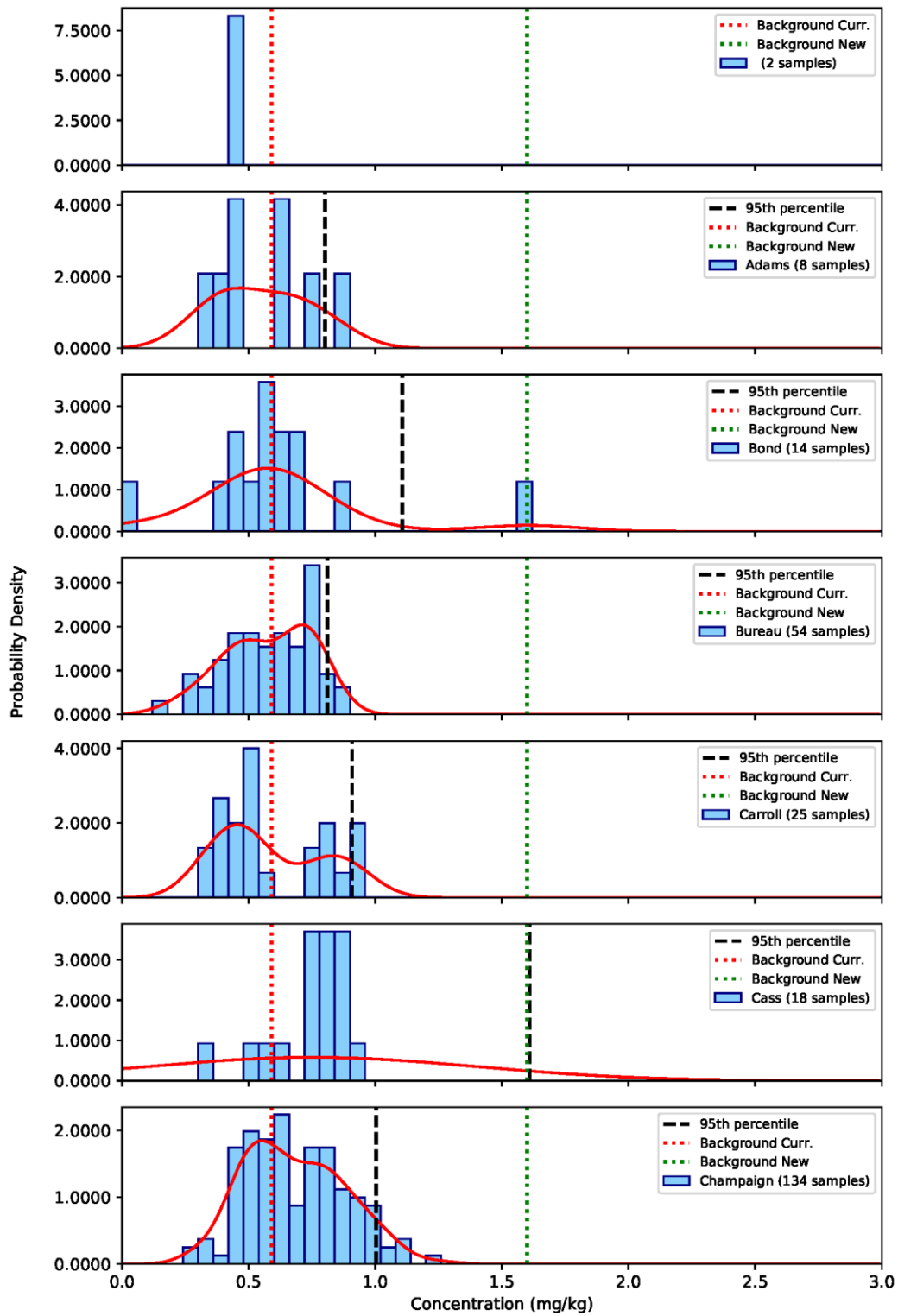


Figure 154. Histogram of RSL beryllium concentrations by Illinois county, REC (mg/kg), part 1

Beryllium Concentration by County, page 2 of 10

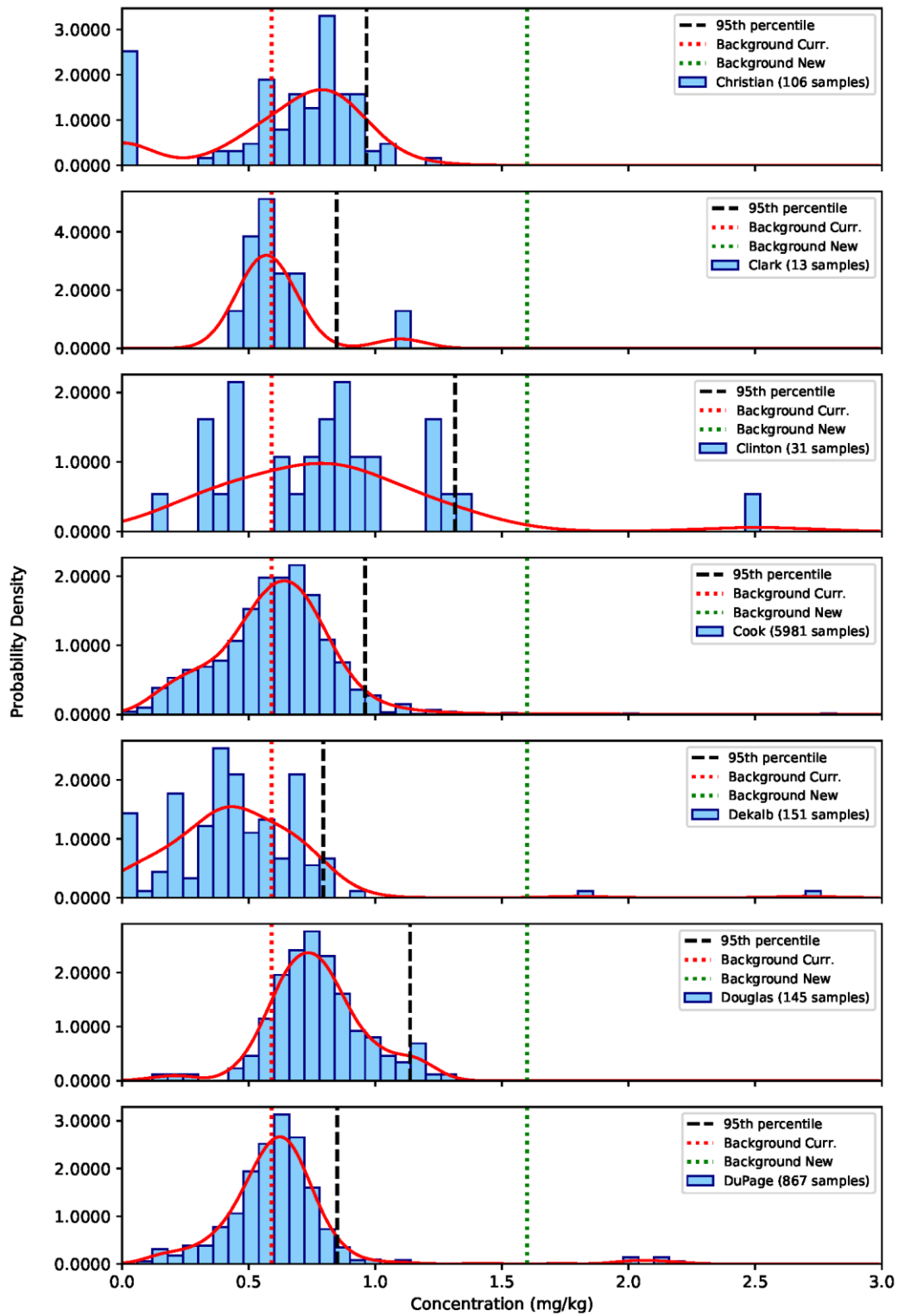


Figure 155. Histogram of RSL beryllium concentrations by Illinois county, REC (mg/kg), part 2

# Beryllium Concentration by County, page 3 of 10

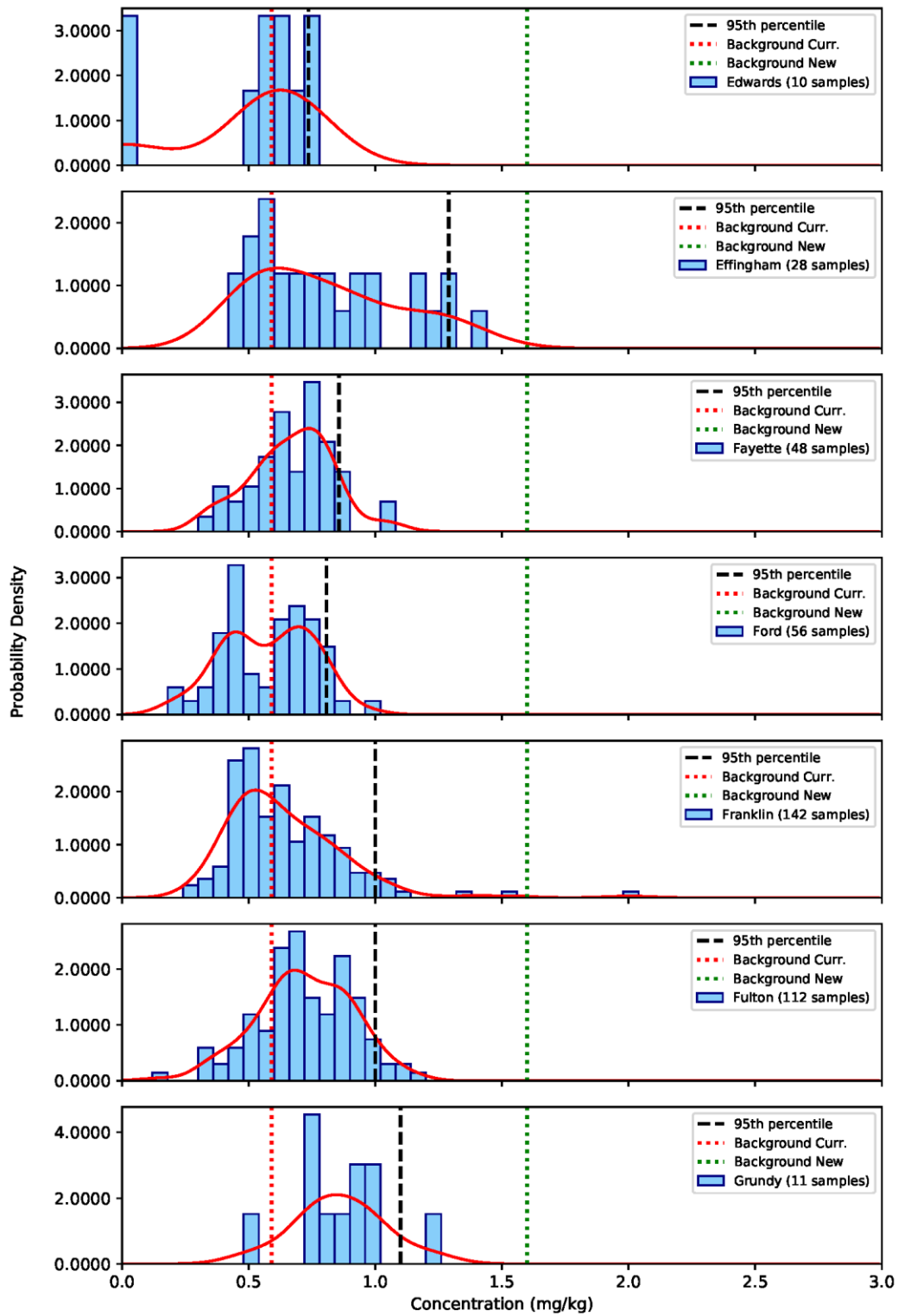


Figure 156. Histogram of RSL beryllium concentrations by Illinois county, REC (mg/kg), part 3

Beryllium Concentration by County, page 4 of 10

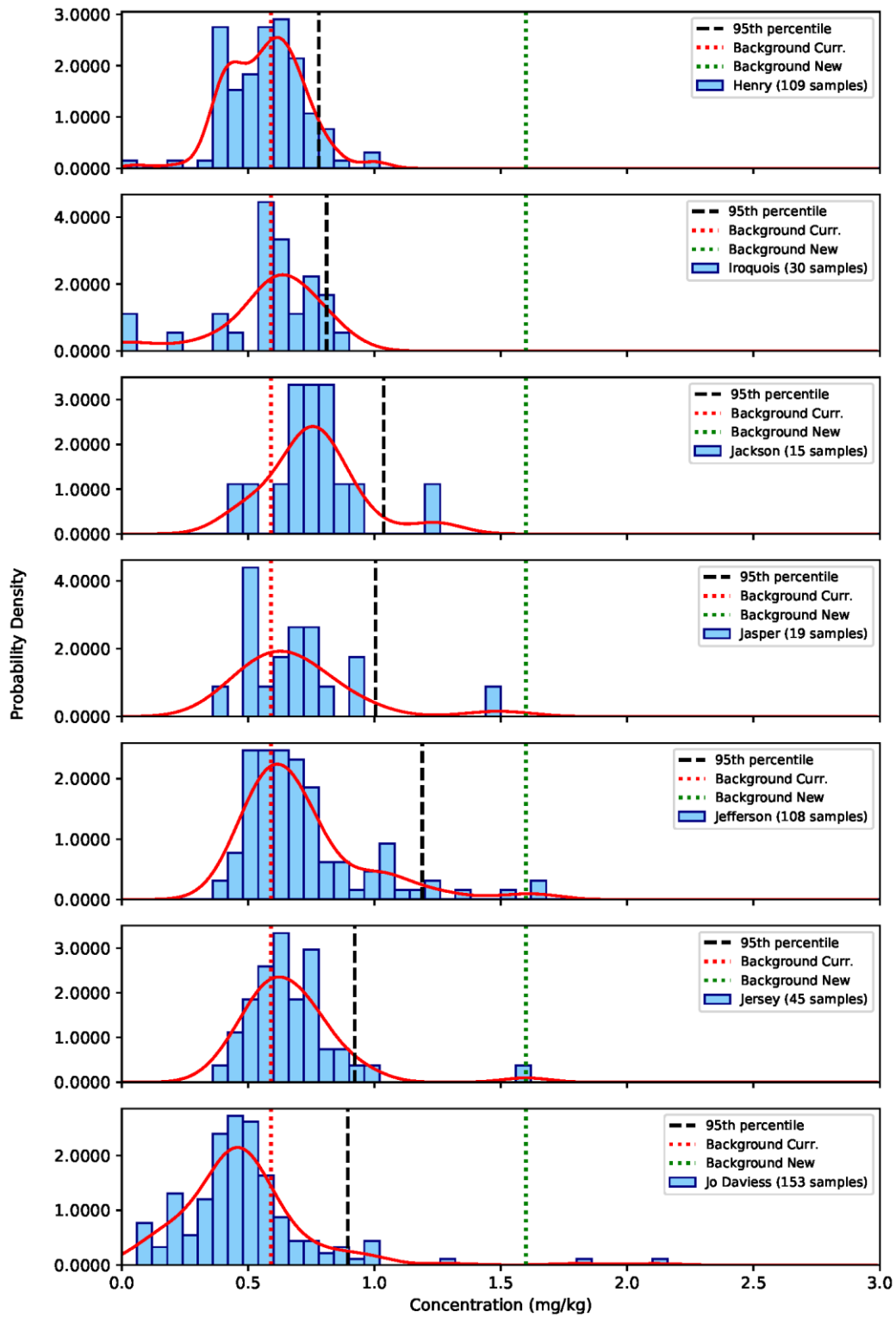


Figure 157. Histogram of RSL beryllium concentrations by Illinois county, REC (mg/kg), part 4

Beryllium Concentration by County, page 5 of 10

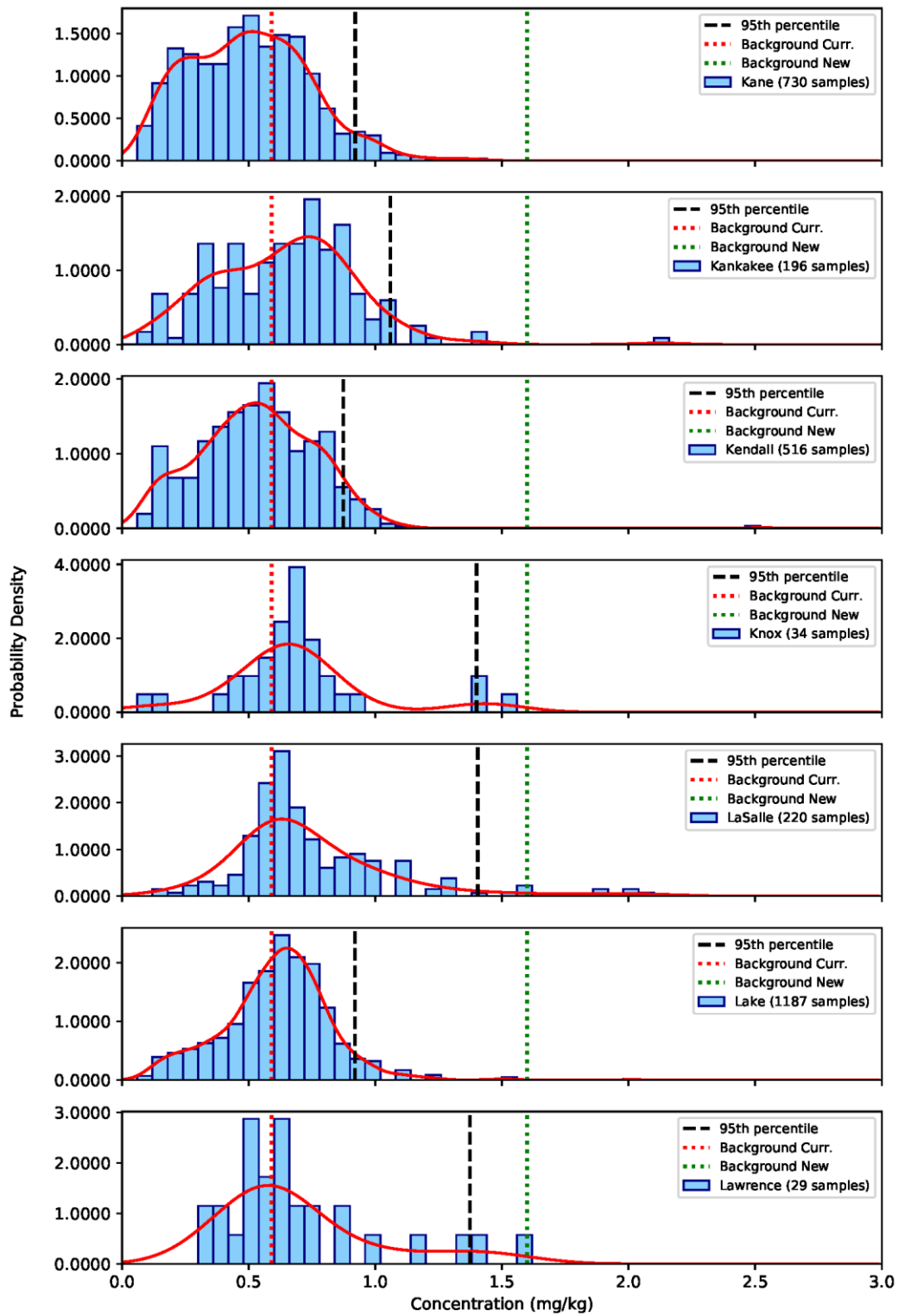


Figure 158. Histogram of RSL beryllium concentrations by Illinois county, REC (mg/kg), part 5

Beryllium Concentration by County, page 6 of 10

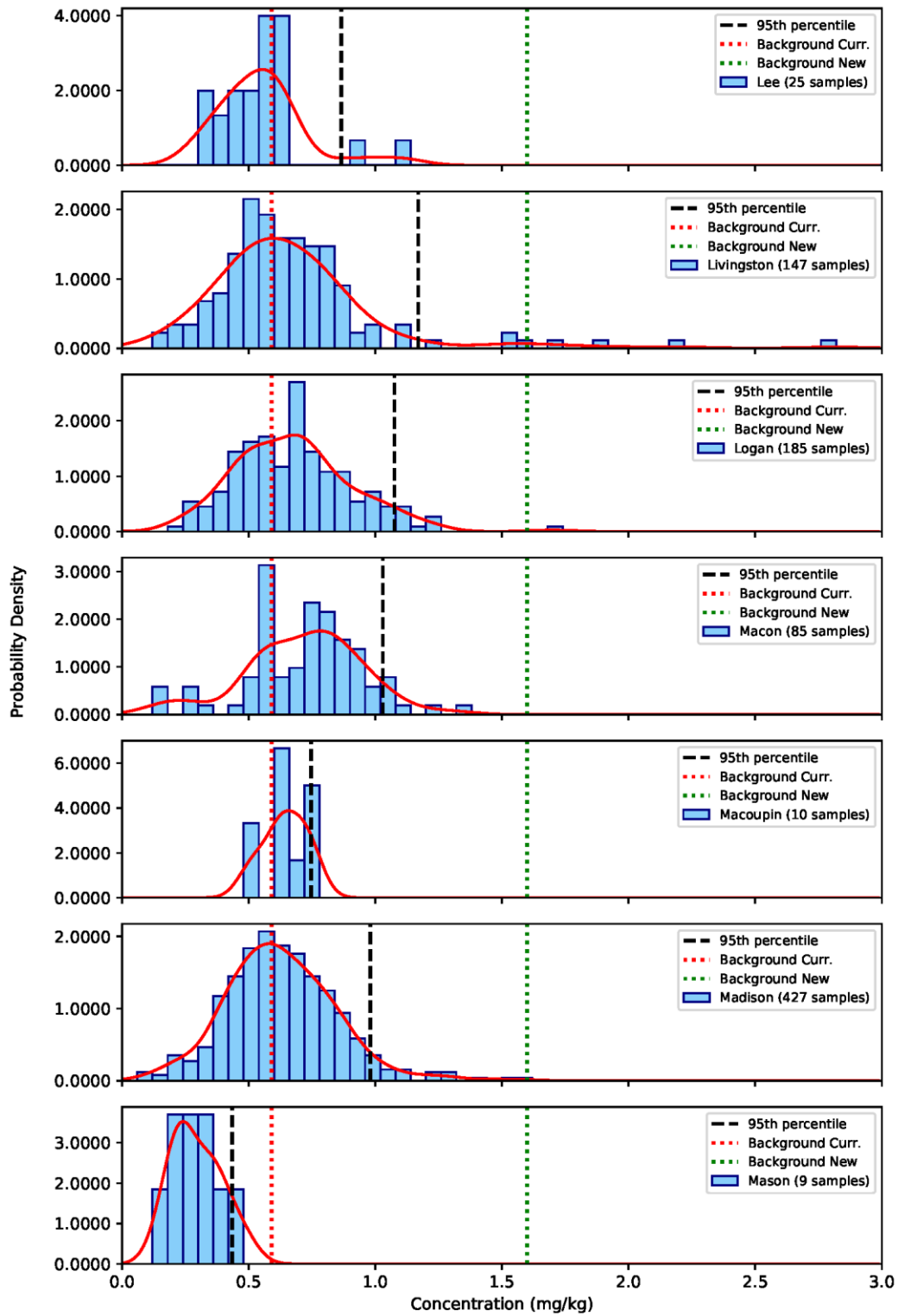


Figure 159. Histogram of RSL beryllium concentrations by Illinois county, REC (mg/kg), part 6

Beryllium Concentration by County, page 7 of 10

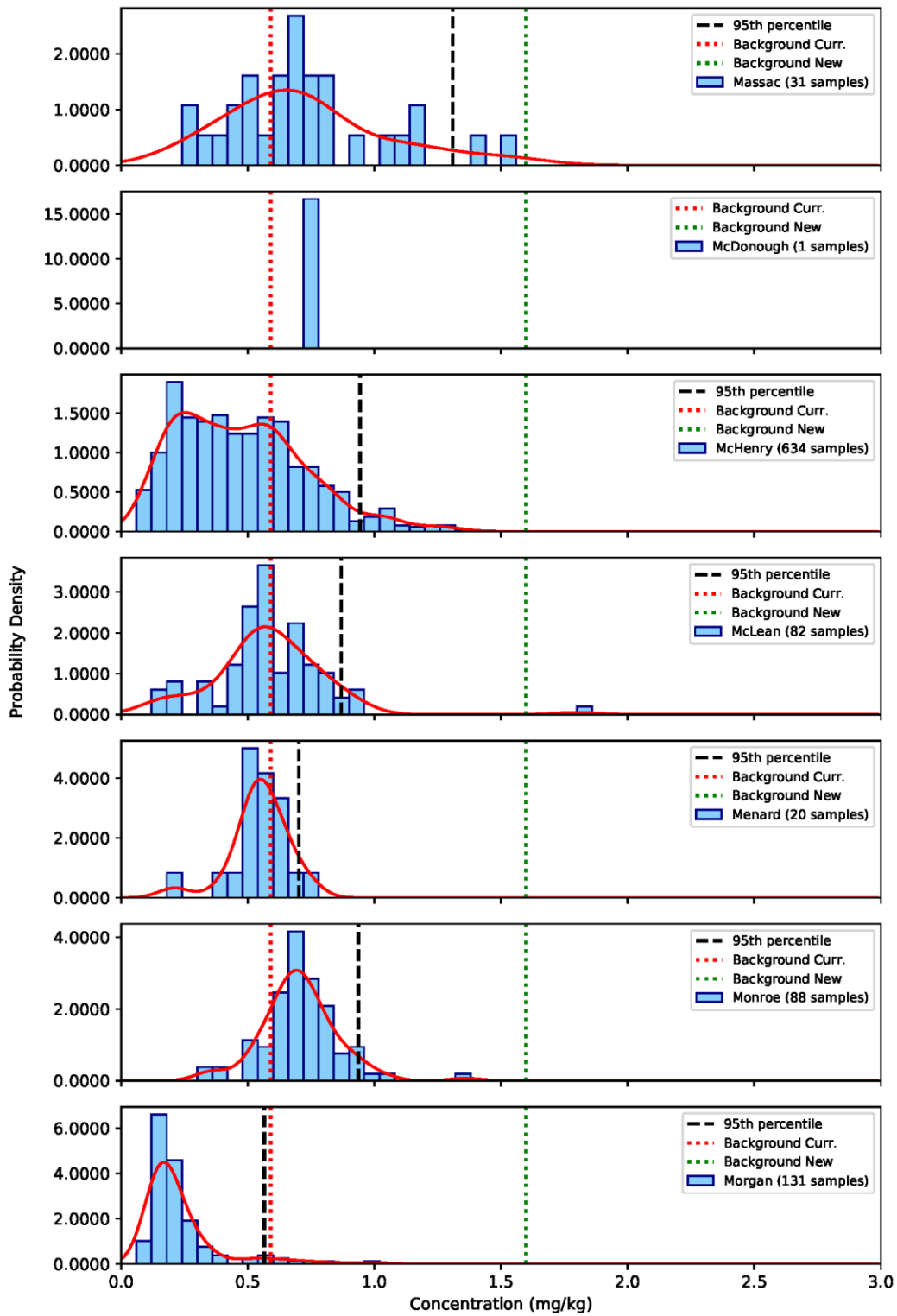


Figure 160. Histogram of RSL beryllium concentrations by Illinois county, REC (mg/kg), part 7

Beryllium Concentration by County, page 8 of 10

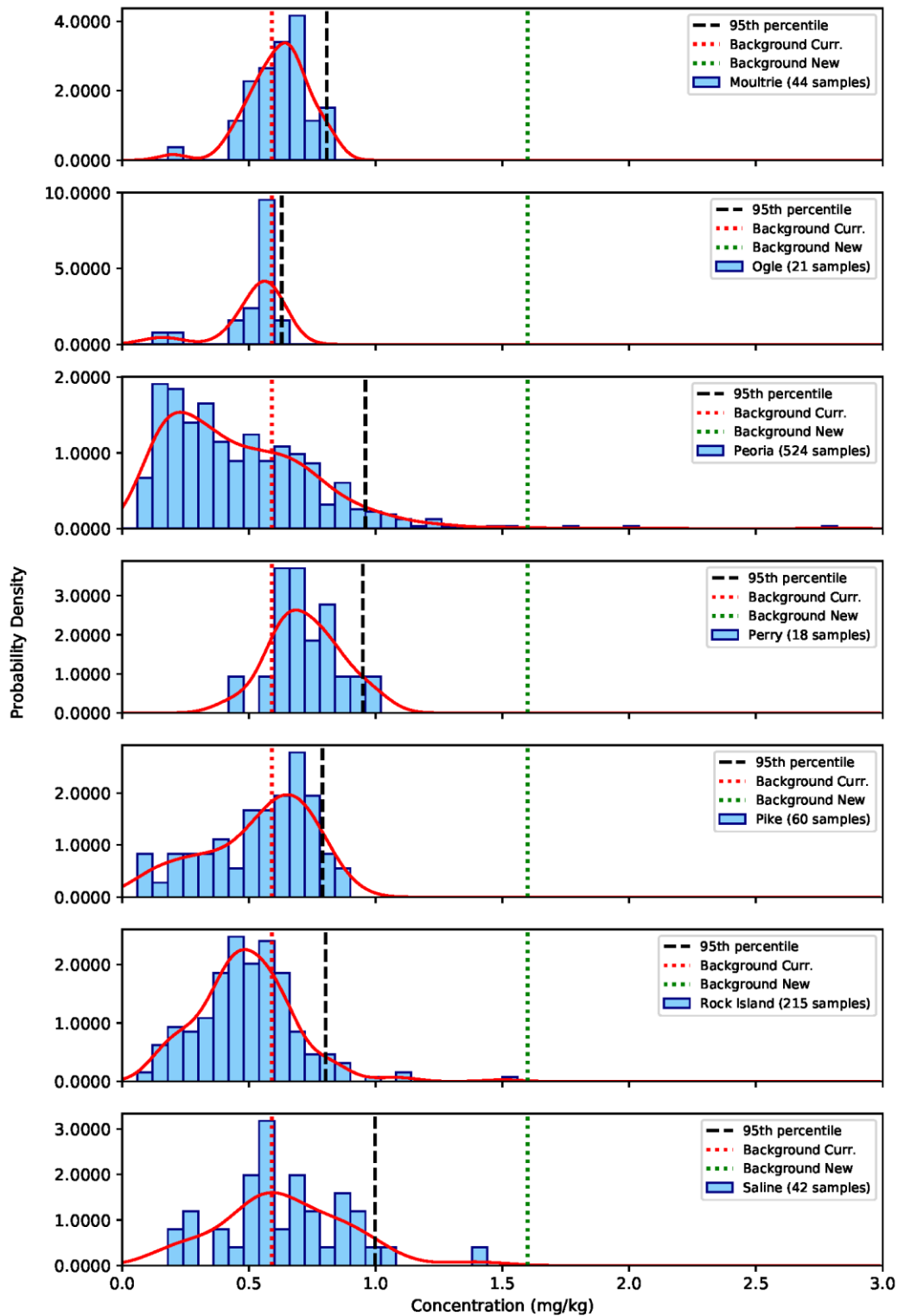


Figure 161. Histogram of RSL beryllium concentrations by Illinois county, REC (mg/kg), part 8



Beryllium Concentration by County, page 9 of 10

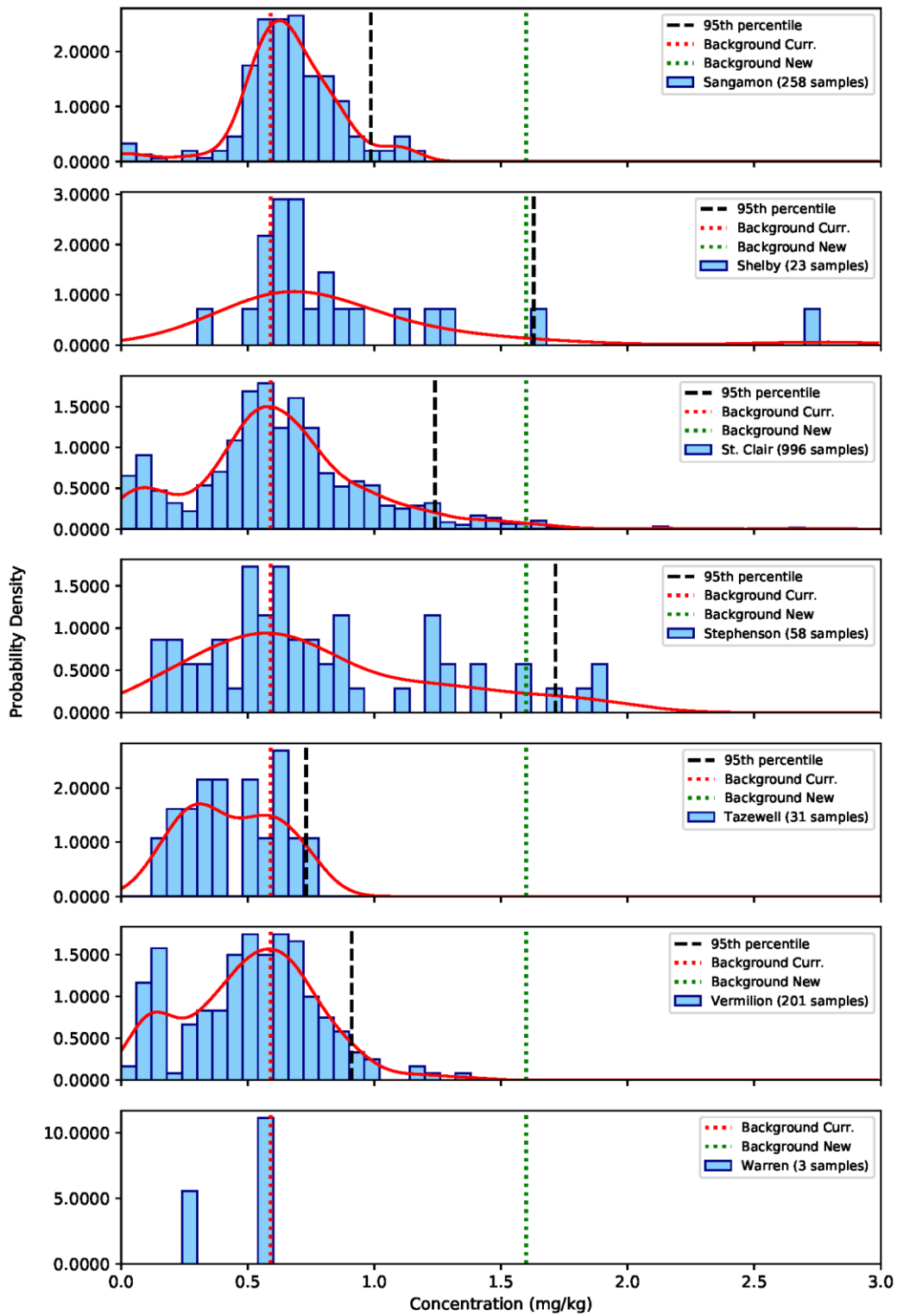


Figure 162. Histogram of RSL beryllium concentrations by Illinois county, REC (mg/kg), part 9

Beryllium Concentration by County, page 10 of 10

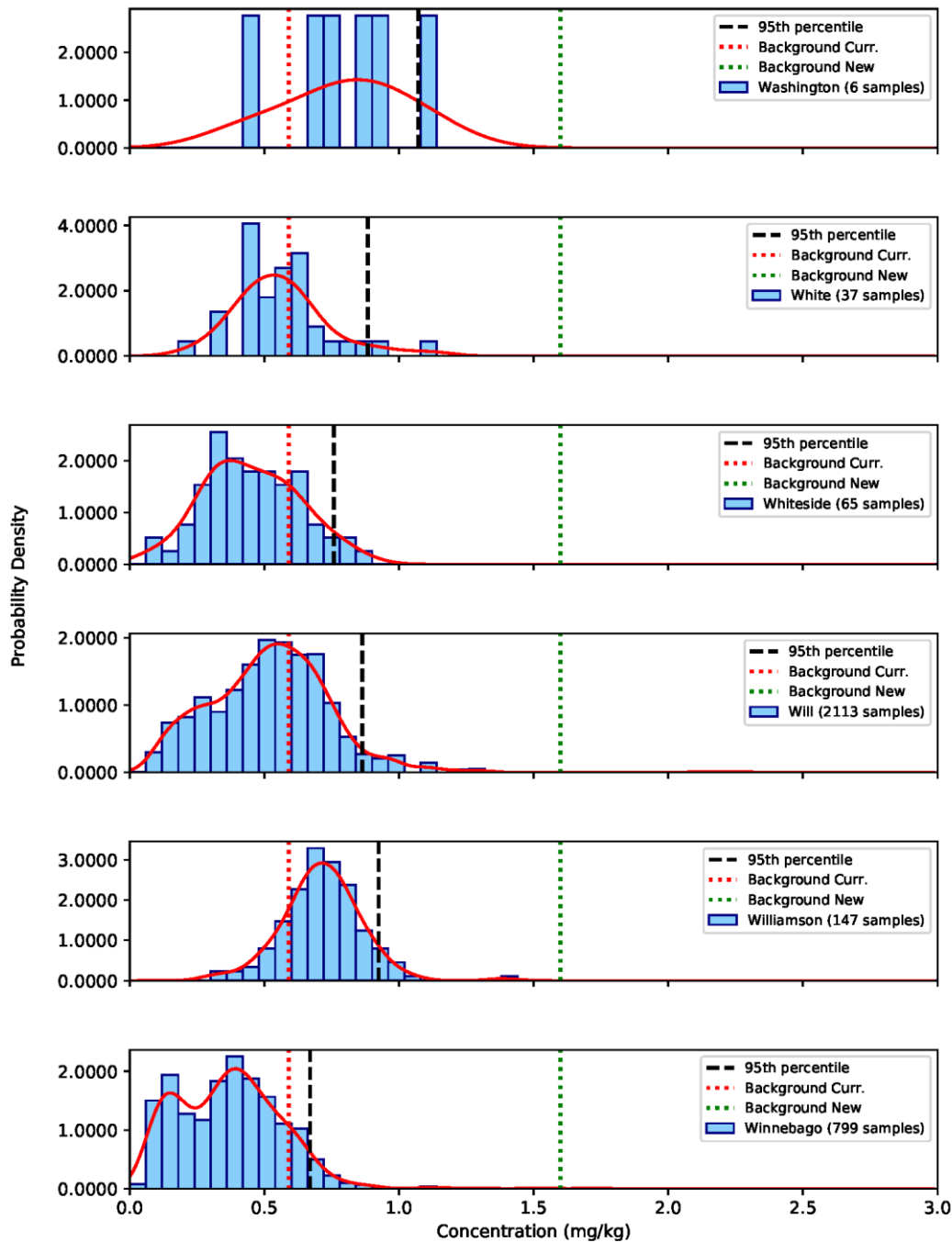


Figure 163. Histogram of RSL beryllium concentrations by Illinois county, REC (mg/kg), part 10

Beryllium Concentration for 95th Percentile by County: REC Sites

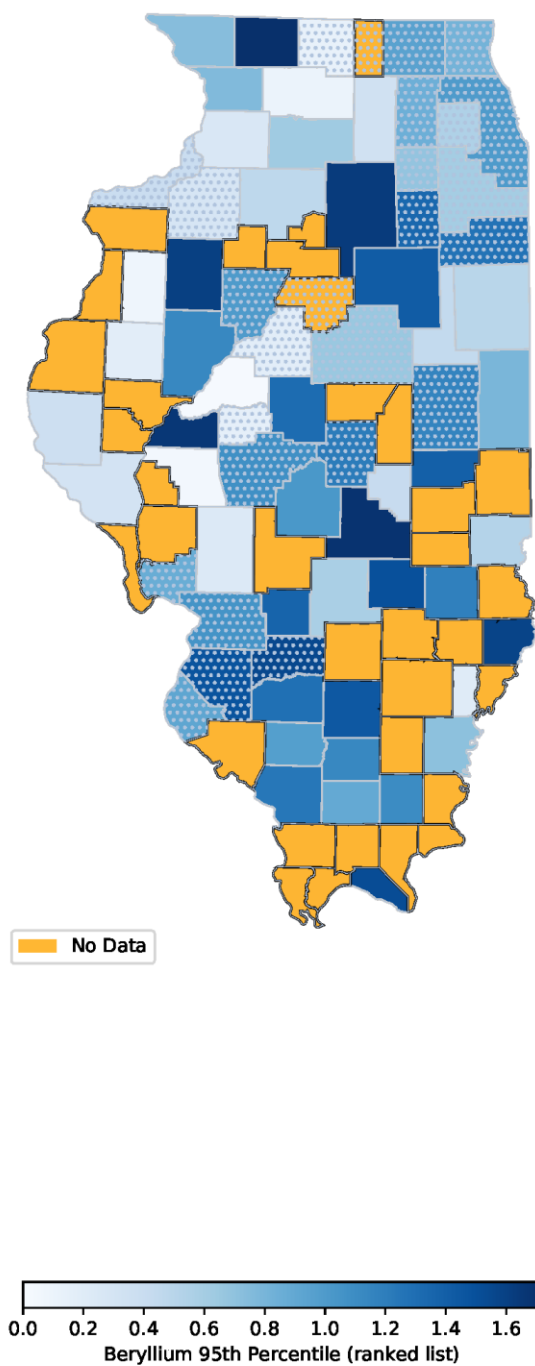


Figure 164. Map of RSL beryllium 95th percentile concentration by Illinois county, REC (mg/kg)

Number of Beryllium Samples by County: REC Sites

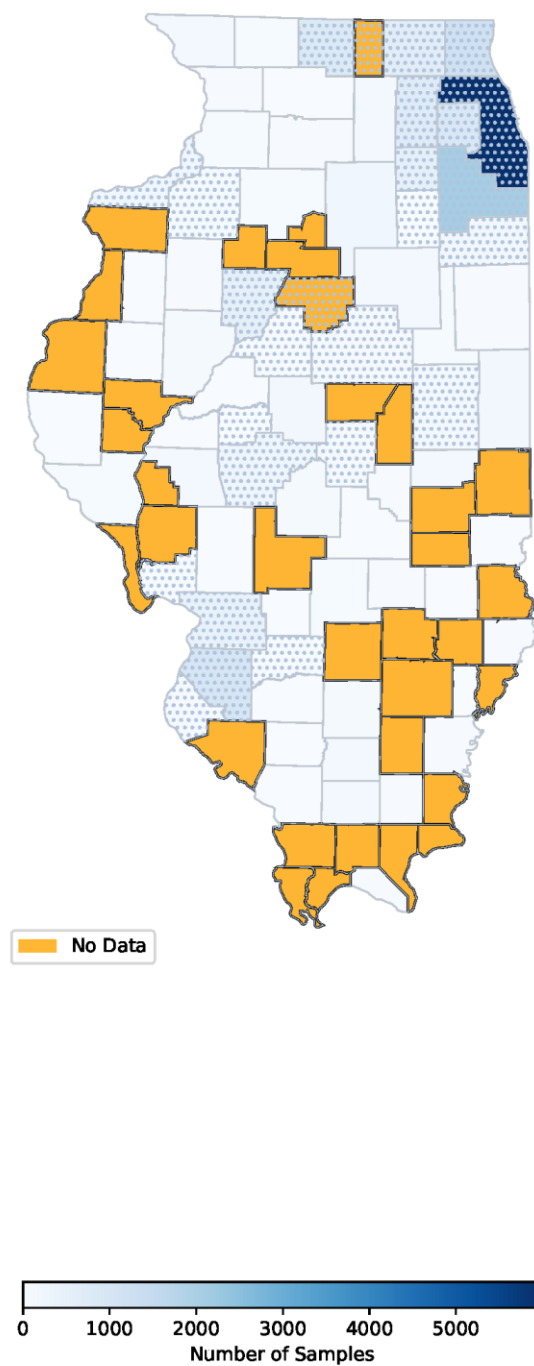


Figure 165. Map of RSL beryllium sample quantity by Illinois county, REC (mg/kg)

## E.2 BERYLLIUM NON-REC

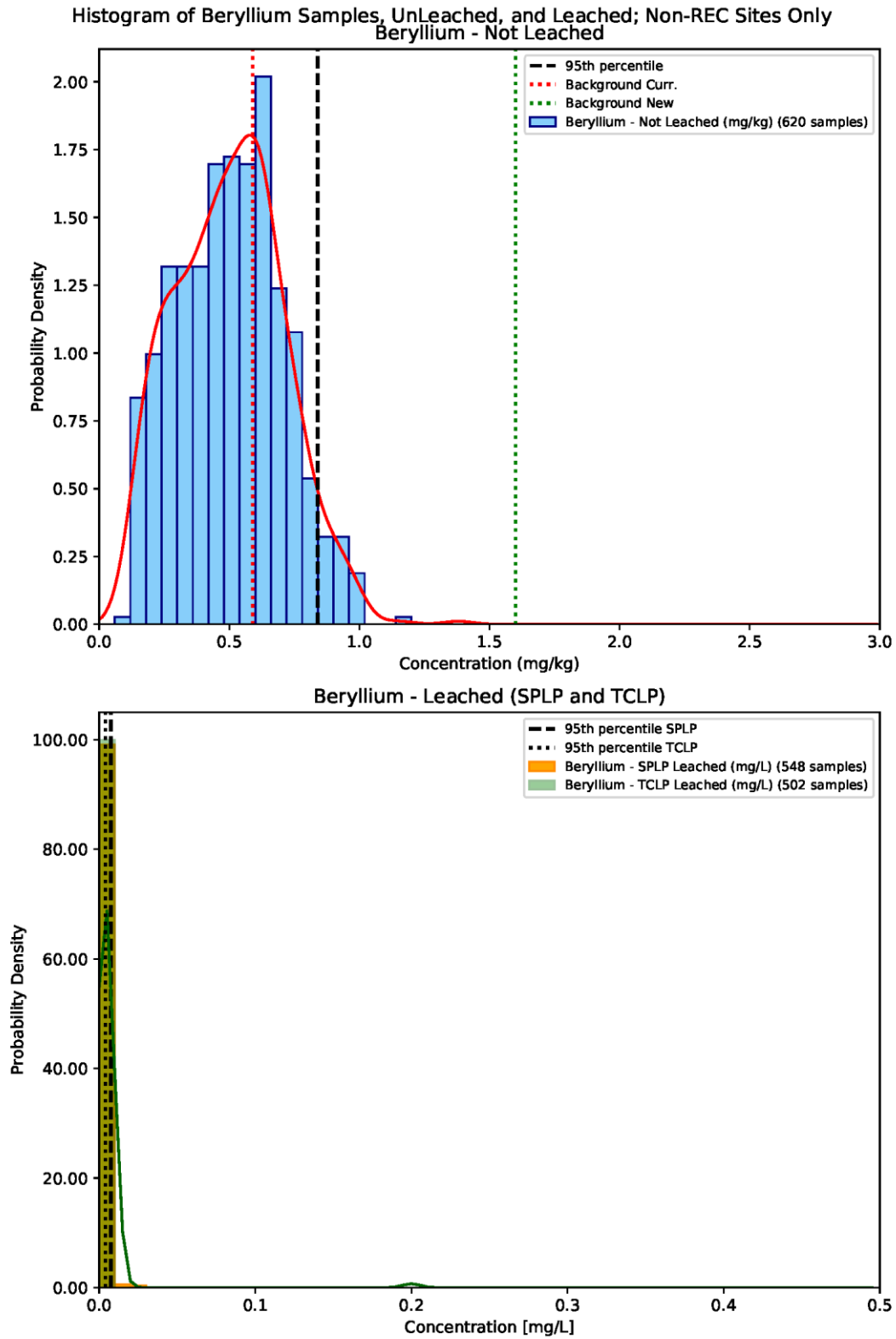


Figure 166. Histogram of RSL beryllium concentrations, Non-REC (mg/kg)

**Beryllium Unleached Concentration (mg/kg)**

1) Region

2) District

3) County

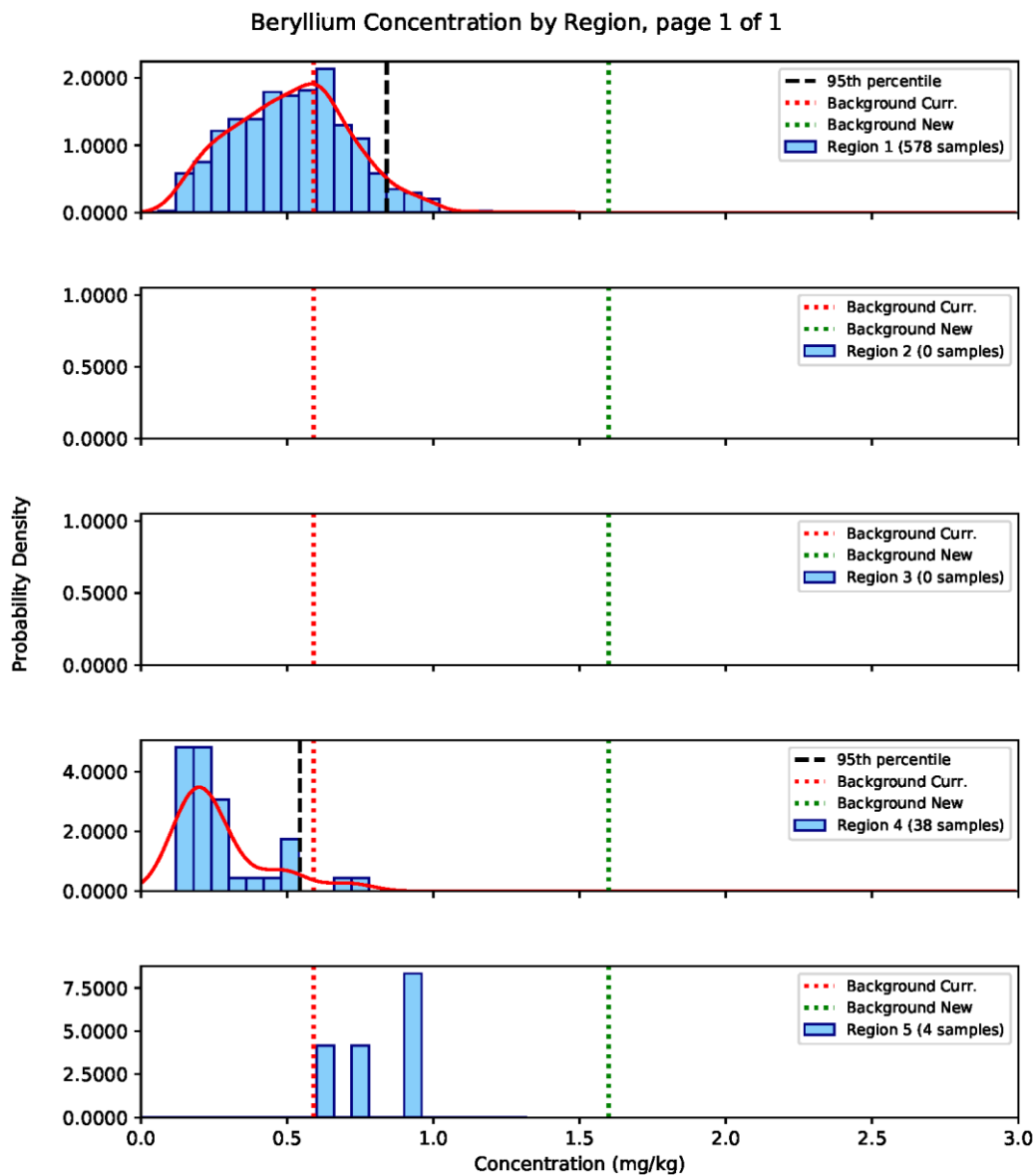


Figure 167. Histogram of RSL beryllium concentrations by IDOT Region, Non-REC (mg/kg)



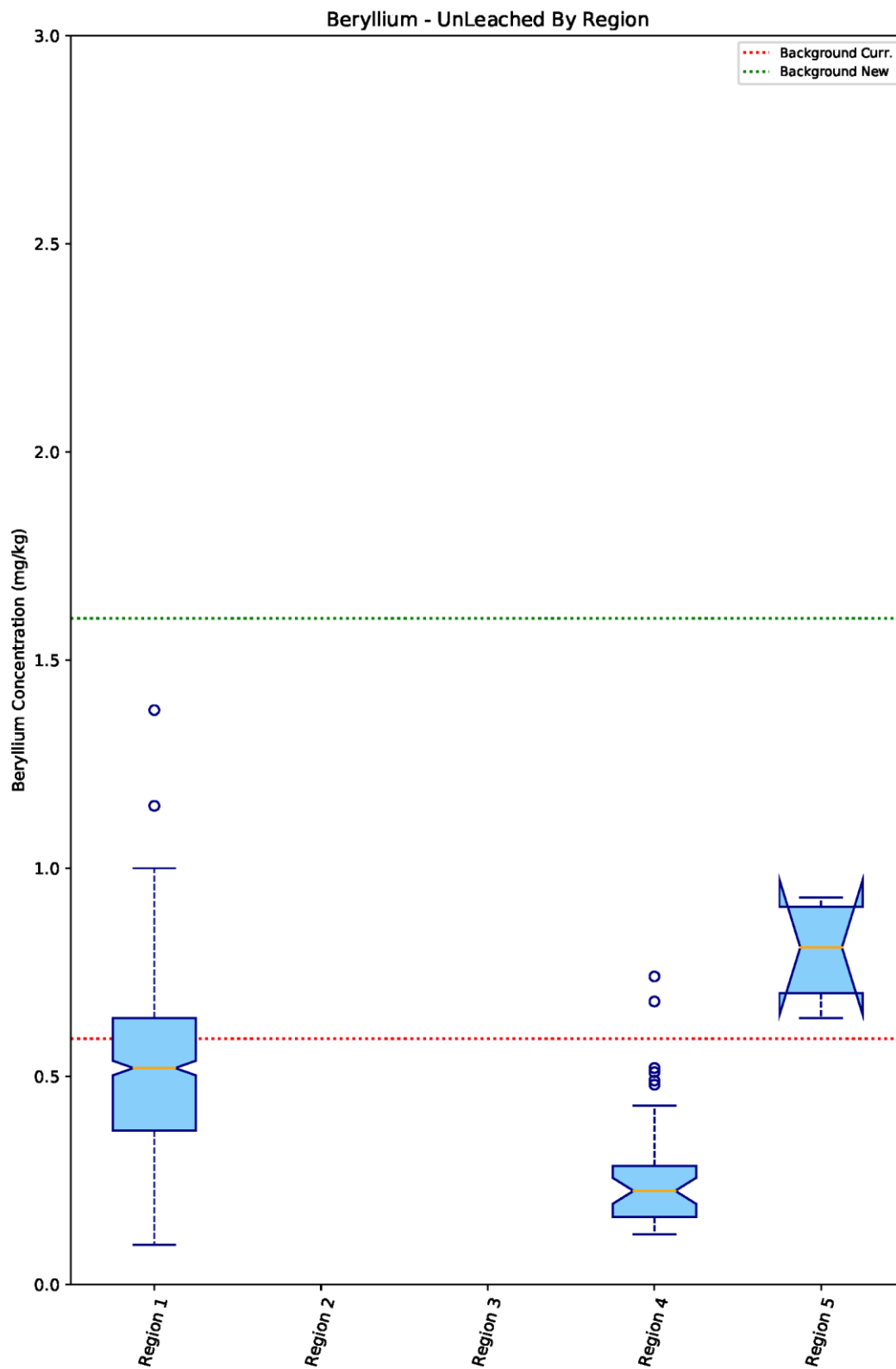


Figure 168. Boxplot of RSL beryllium concentrations by IDOT Region, Non-REC (mg/kg)

Beryllium Concentration by District, page 1 of 2

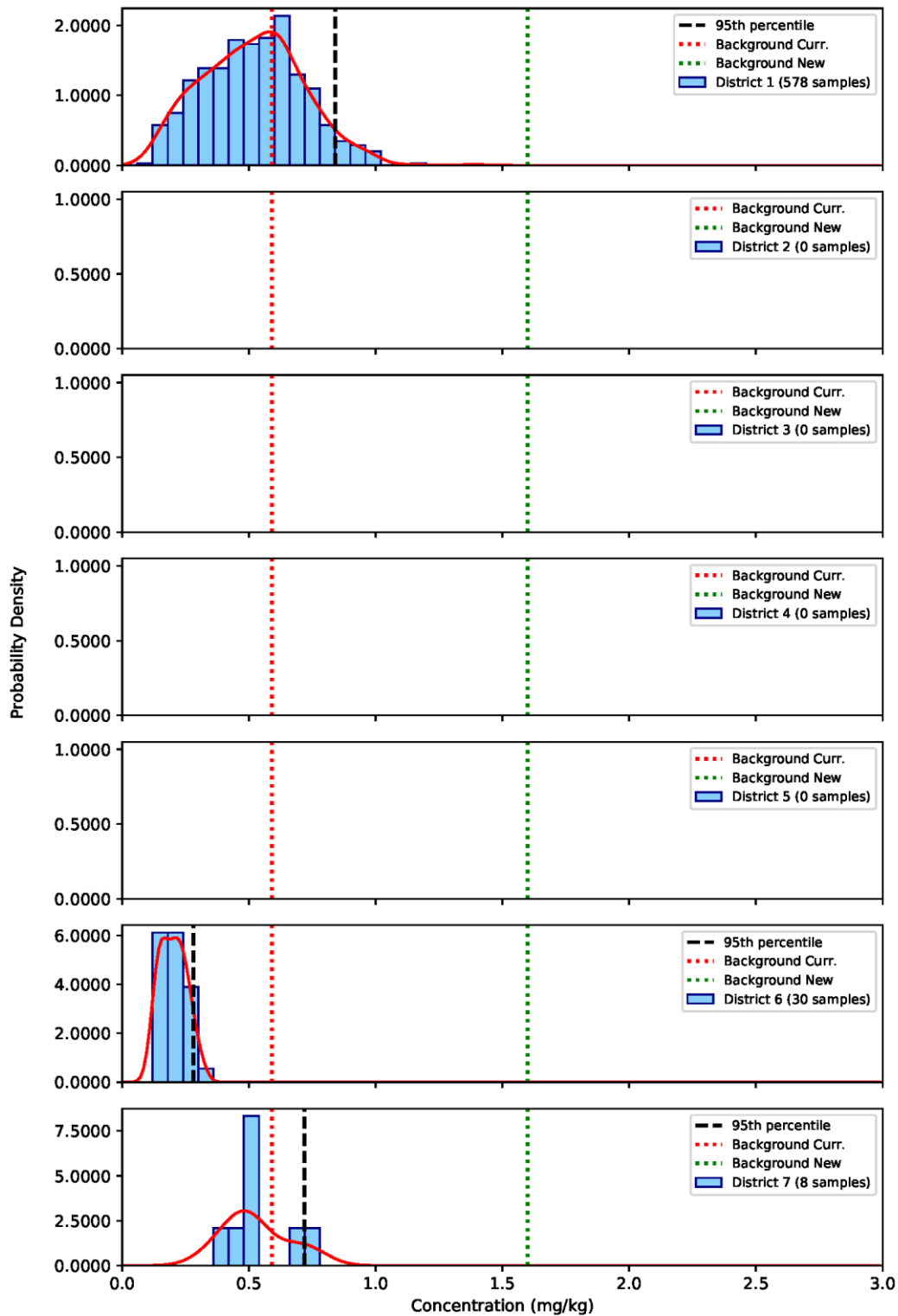


Figure 169. Histogram of RSL beryllium concentrations by IDOT District, Non-REC (mg/kg), part 1

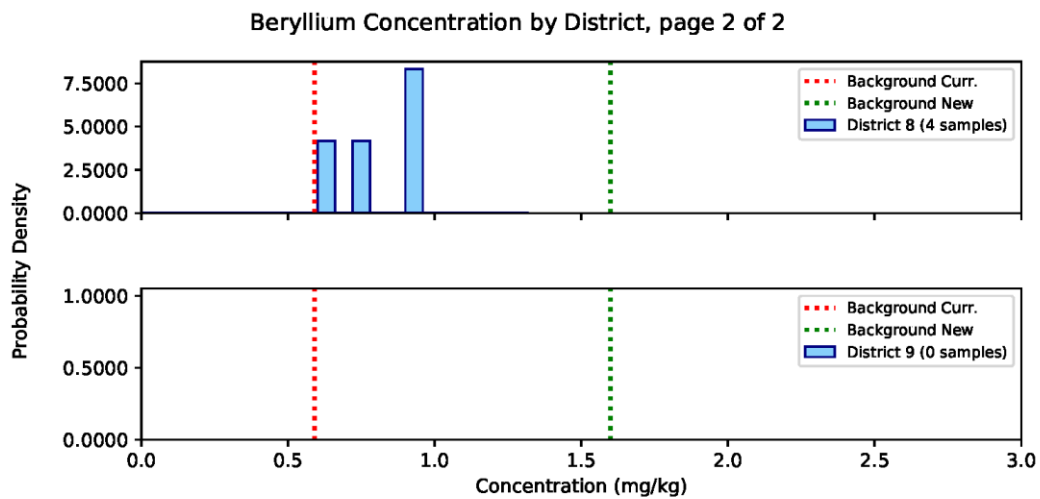
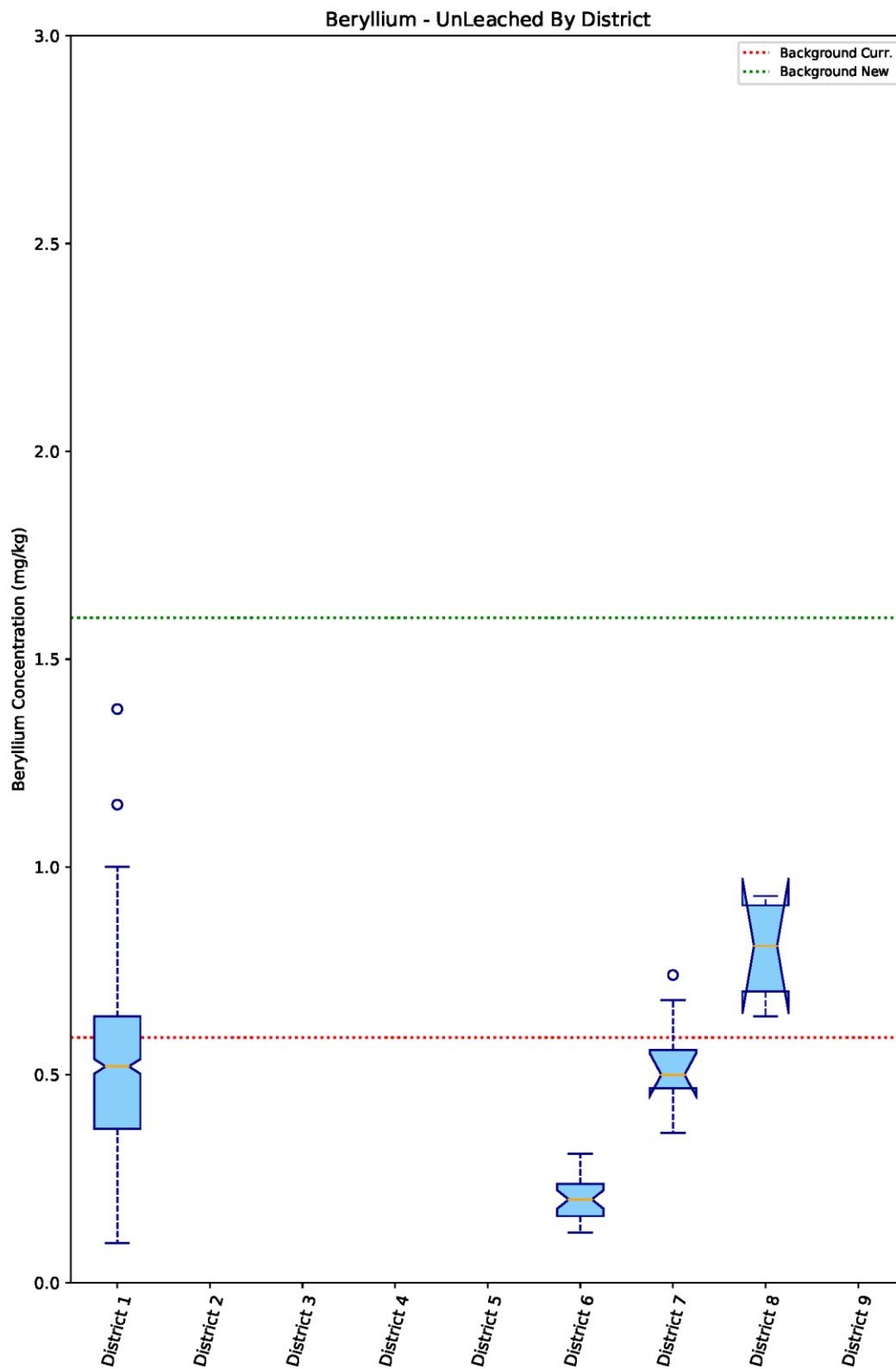


Figure 170. Histogram of RSL beryllium concentrations by IDOT District, Non-REC (mg/kg), part 2



**Figure 171. Boxplot of RSL beryllium concentrations by IDOT District, Non-REC (mg/kg)**

# Beryllium Concentration by County, page 1 of 2

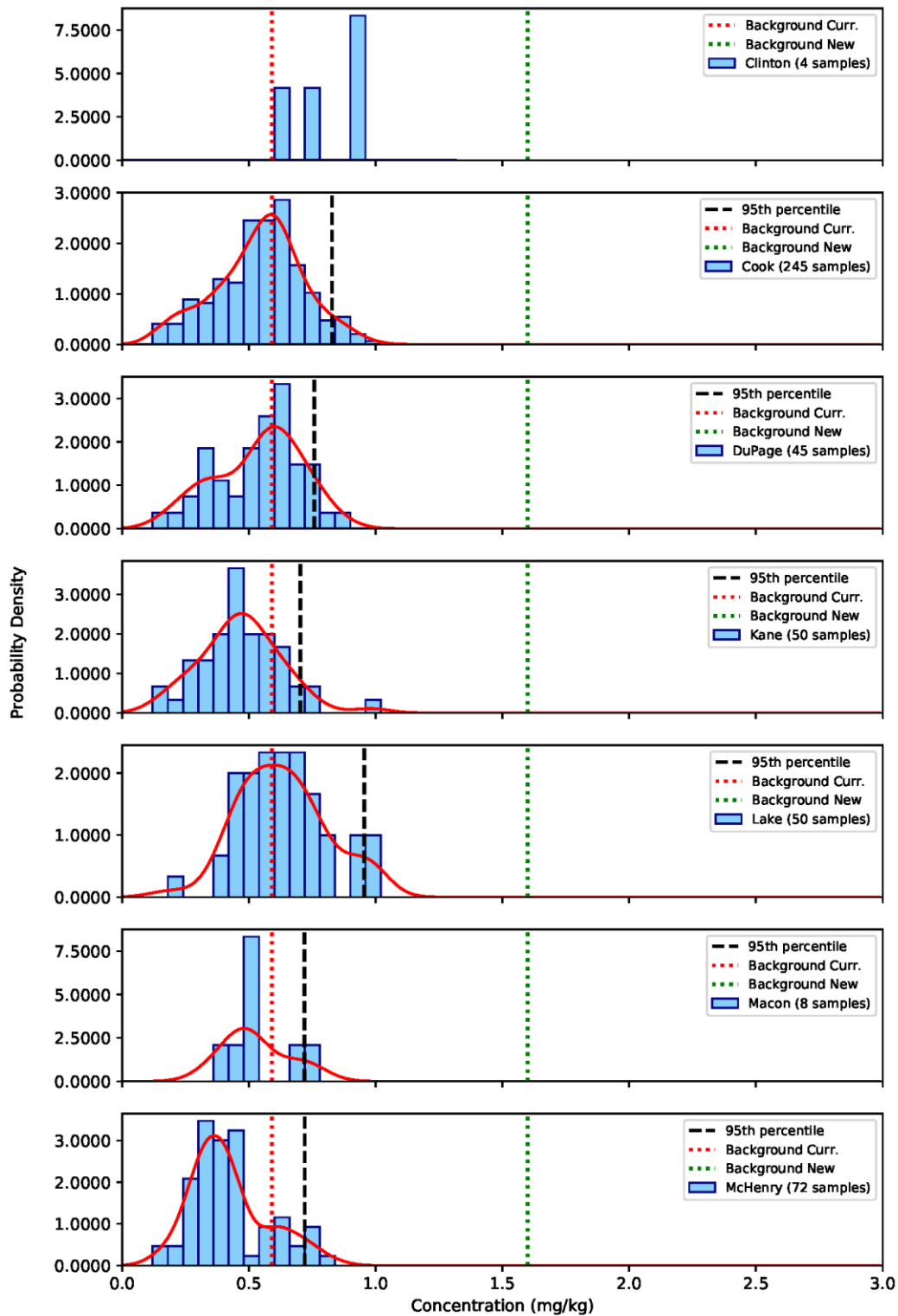


Figure 172. Histogram of RSL beryllium concentrations by Illinois county, Non-REC (mg/kg), part 1

Beryllium Concentration by County, page 2 of 2

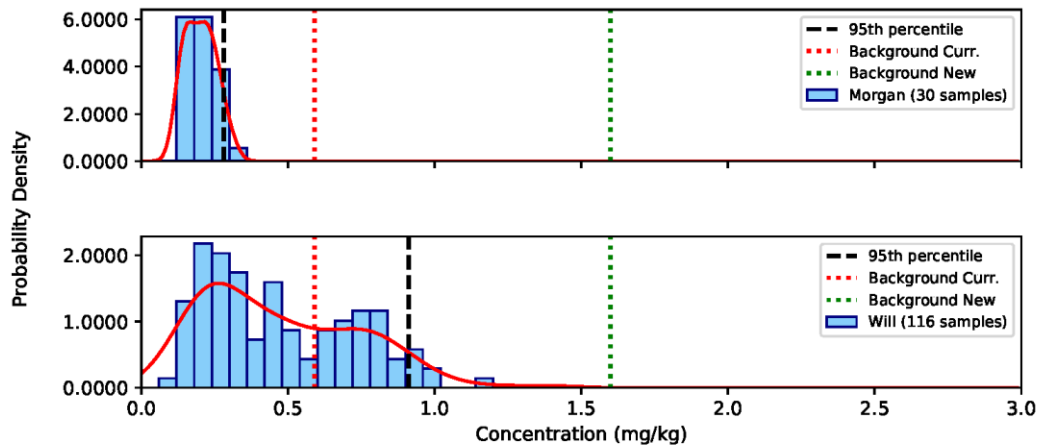


Figure 173. Histogram of RSL beryllium concentrations by Illinois county, Non-REC (mg/kg), part 2

Beryllium Concentration for 95th Percentile by County: Non-REC Sites

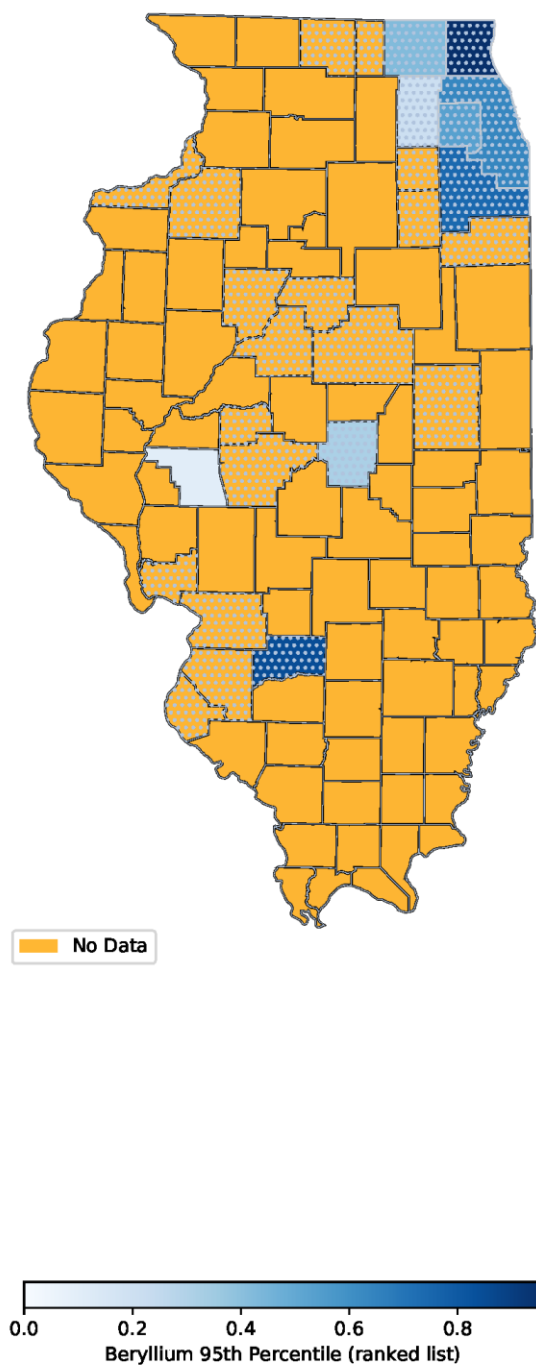


Figure 174. Map of RSL beryllium 95th percentile concentration by Illinois county, Non-REC (mg/kg)

Number of Beryllium Samples by County: Non-REC Sites

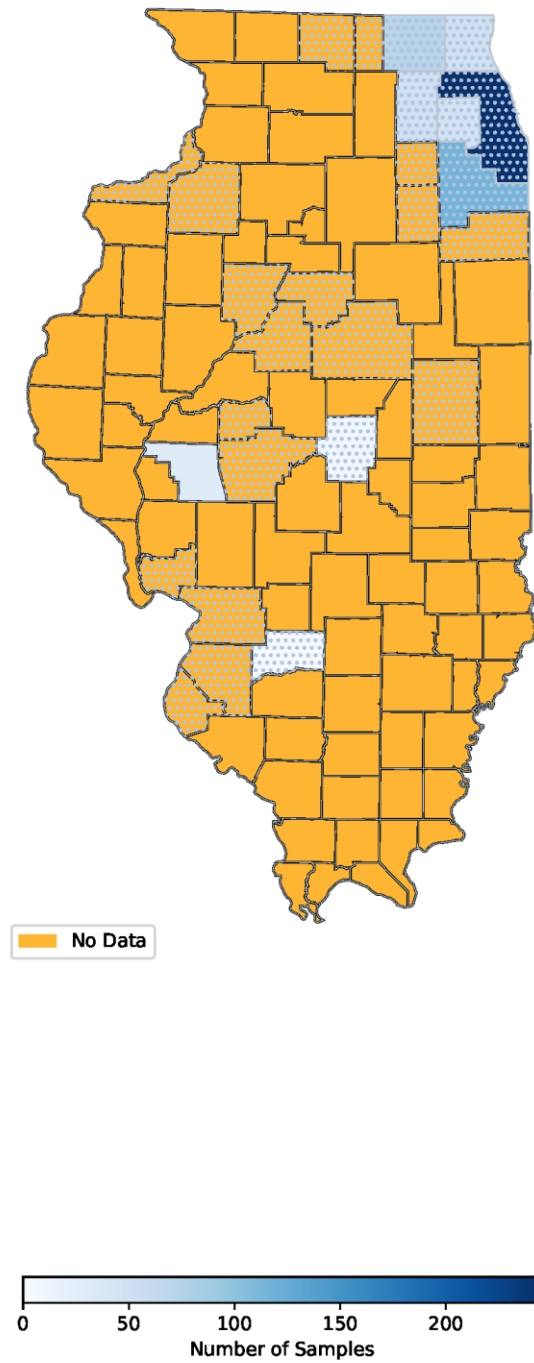


Figure 175. Map of RSL beryllium sample quantity by Illinois county, Non-REC (mg/kg)



### **E.3 BERYLLIUM DE MINIMIS**

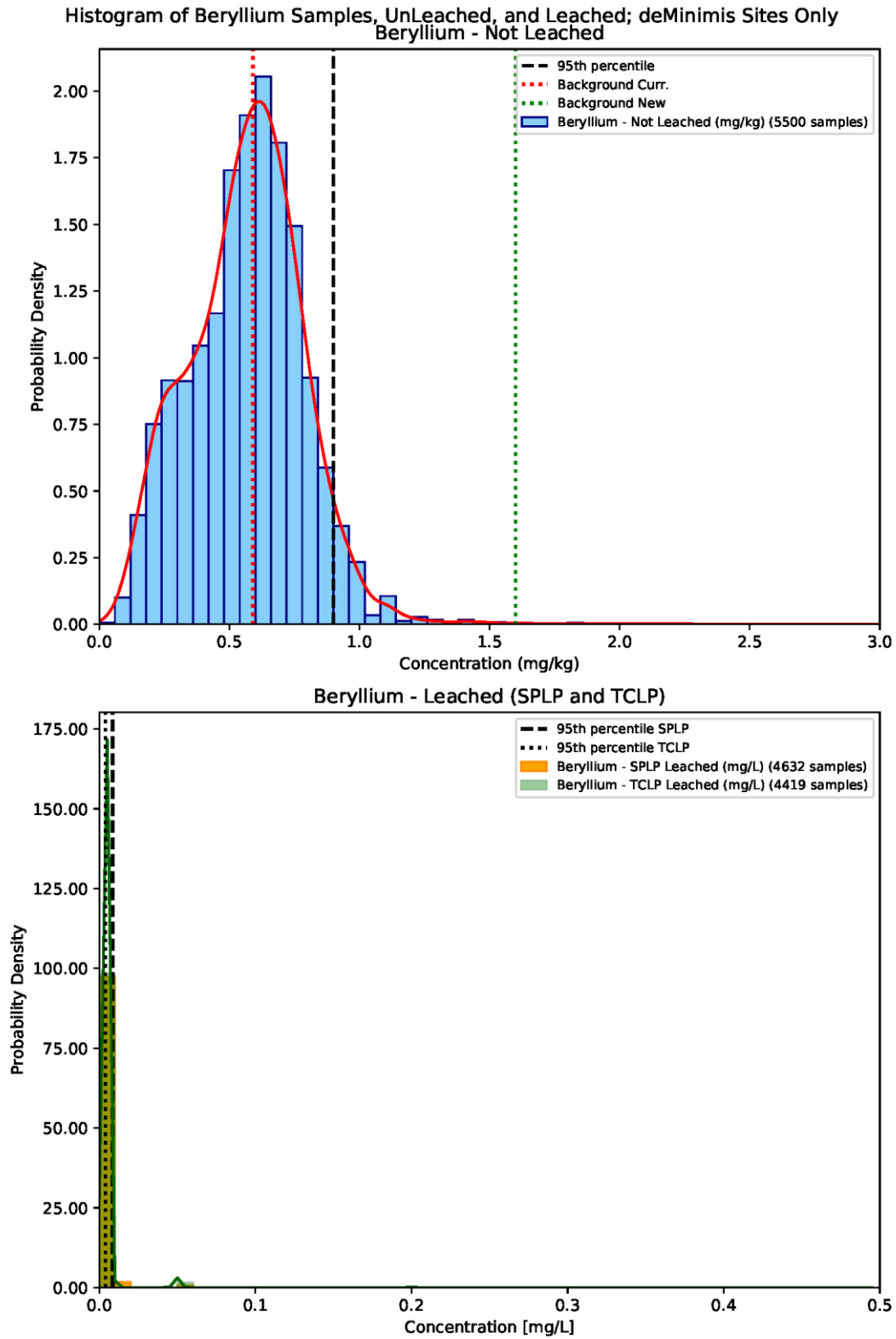


Figure 176. Histogram of RSL beryllium concentrations, de minimis (mg/kg)

**Beryllium Unleached Concentration (mg/kg)**

1) Region

2) District

3) County

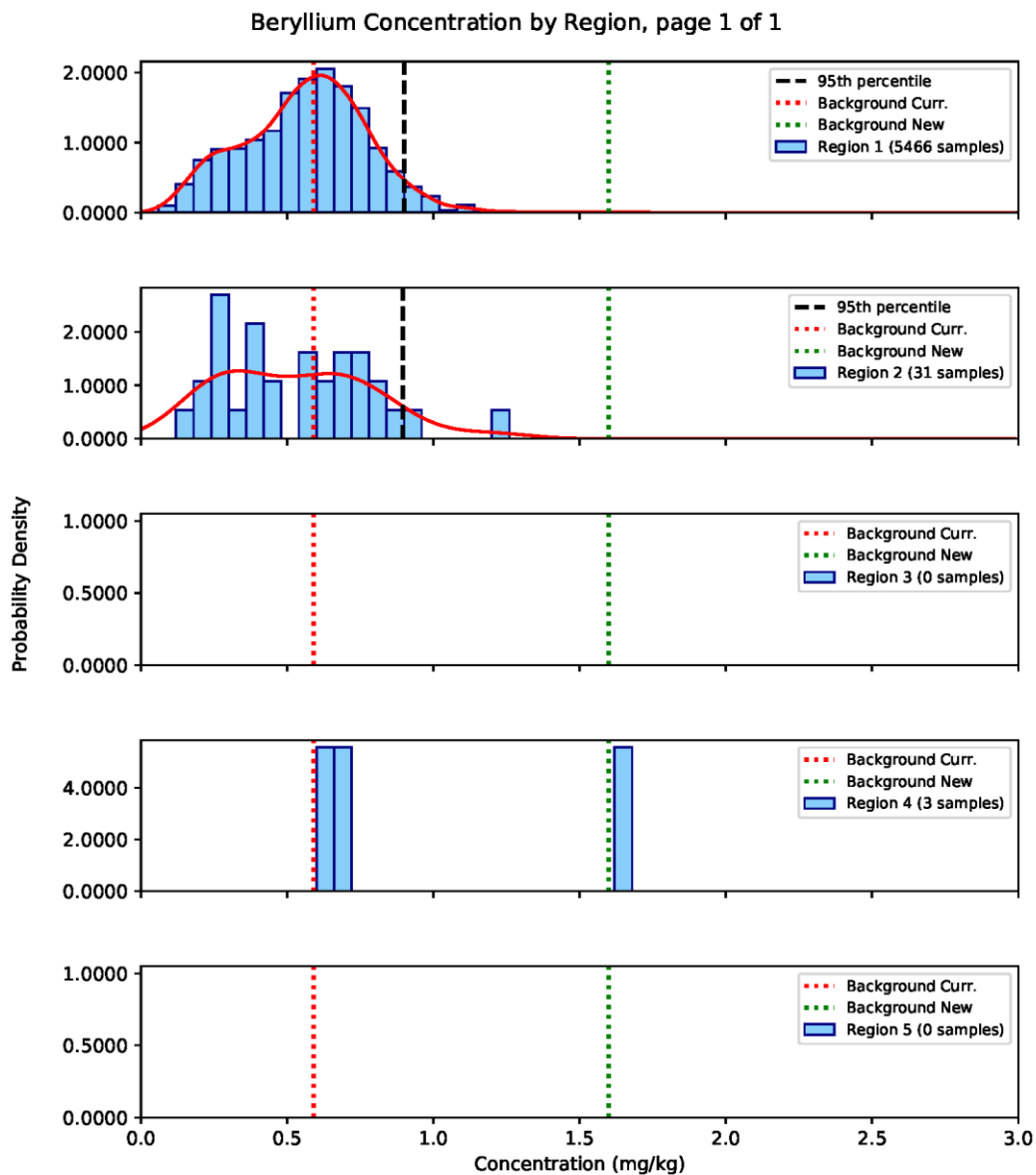


Figure 177. Histogram of RSL beryllium concentrations by IDOT Region, de minimis (mg/kg)

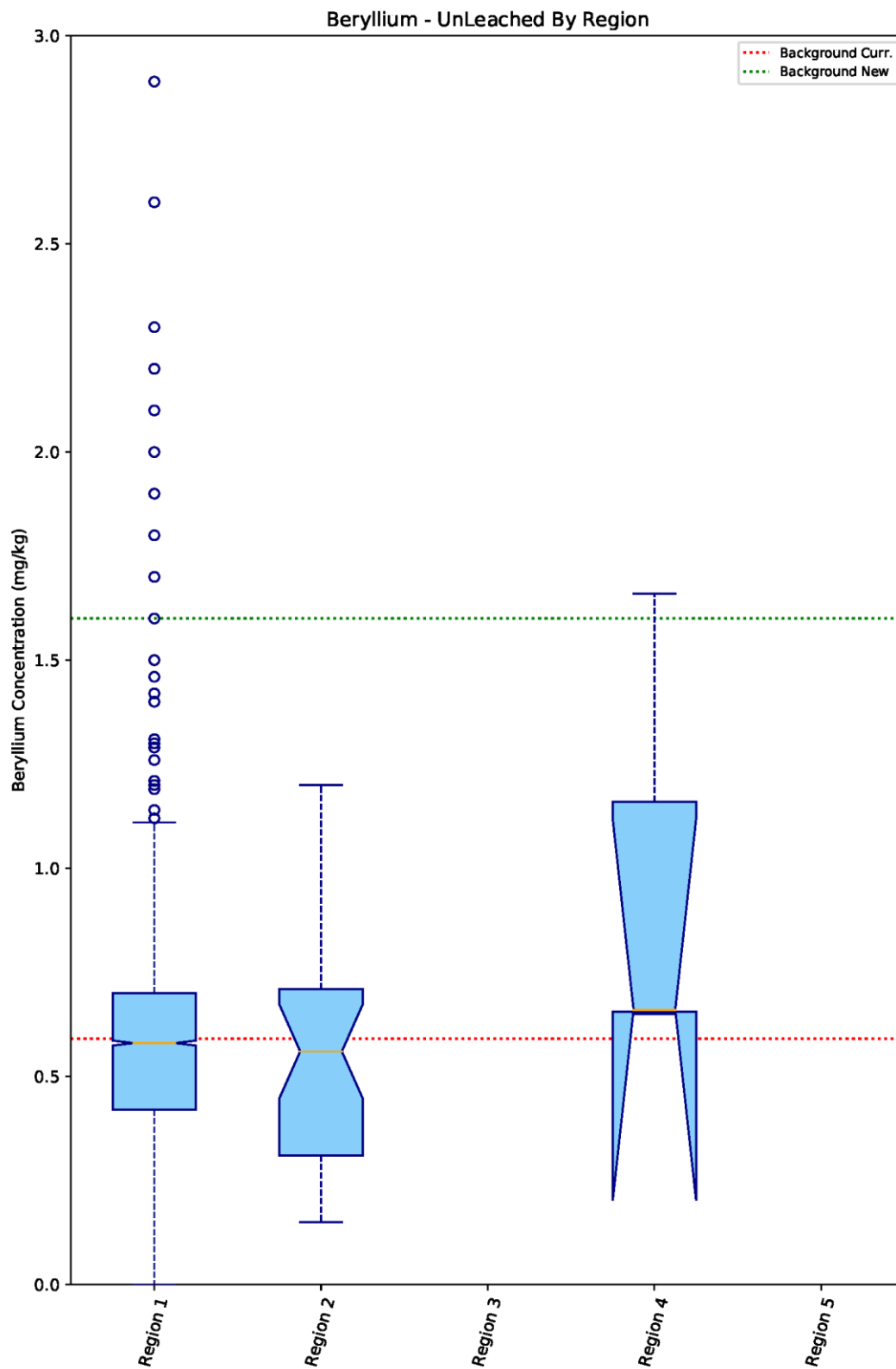


Figure 178. Boxplot of RSL beryllium concentrations by IDOT Region, de minimis (mg/kg)

Beryllium Concentration by District, page 1 of 2

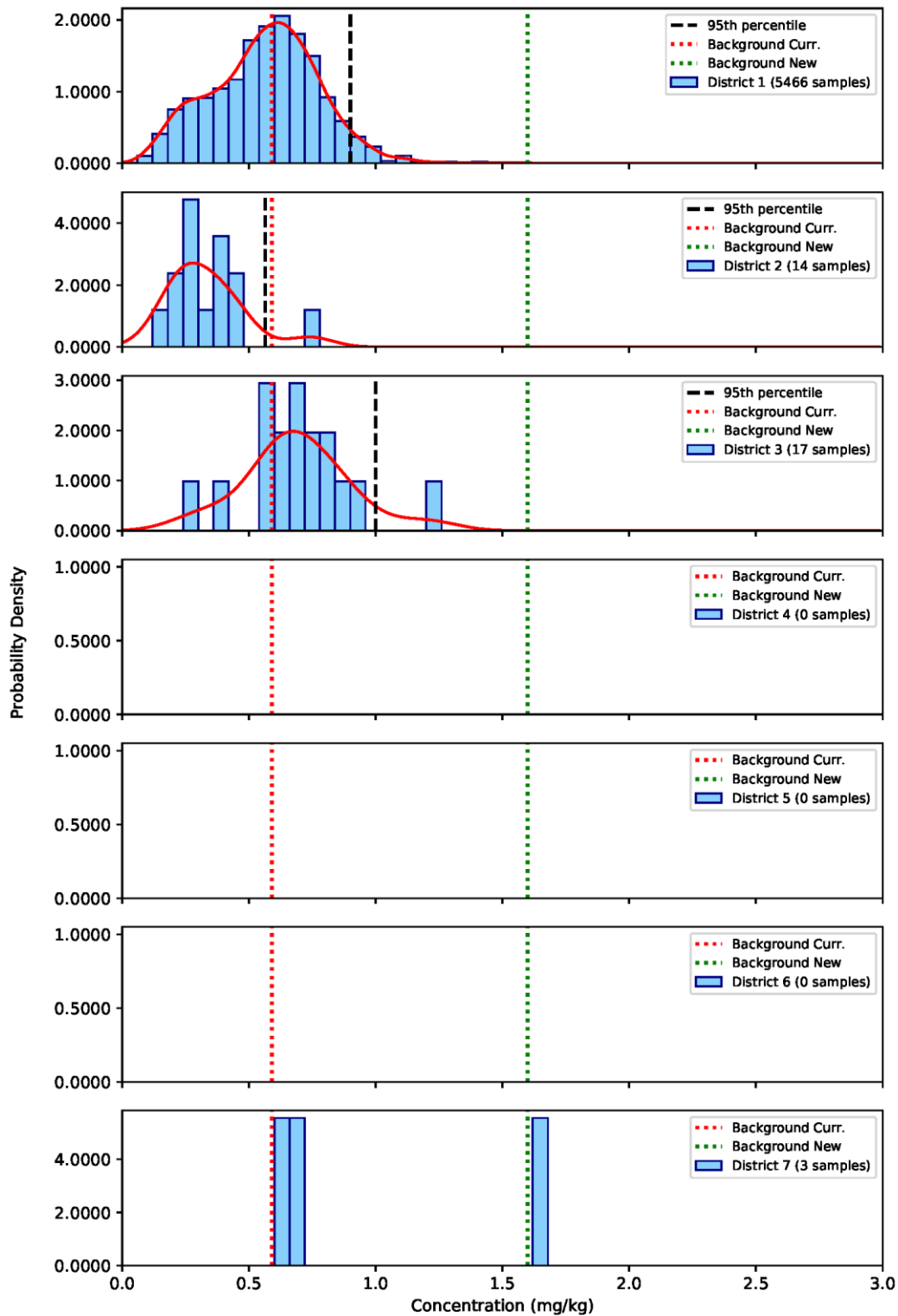


Figure 179. Histogram of RSL beryllium concentrations by IDOT District, de minimis (mg/kg), part 1

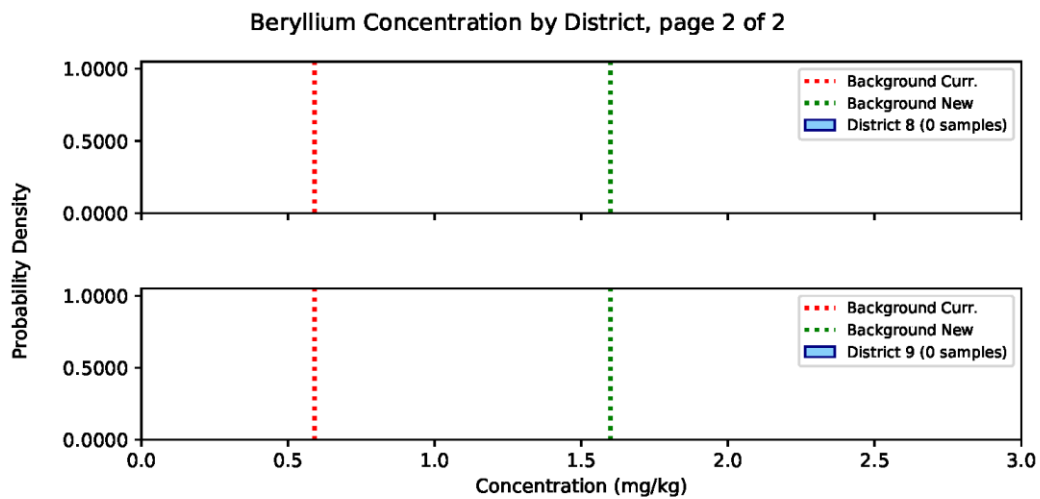


Figure 180. Histogram of RSL beryllium concentrations by IDOT District, de minimis (mg/kg), part 2

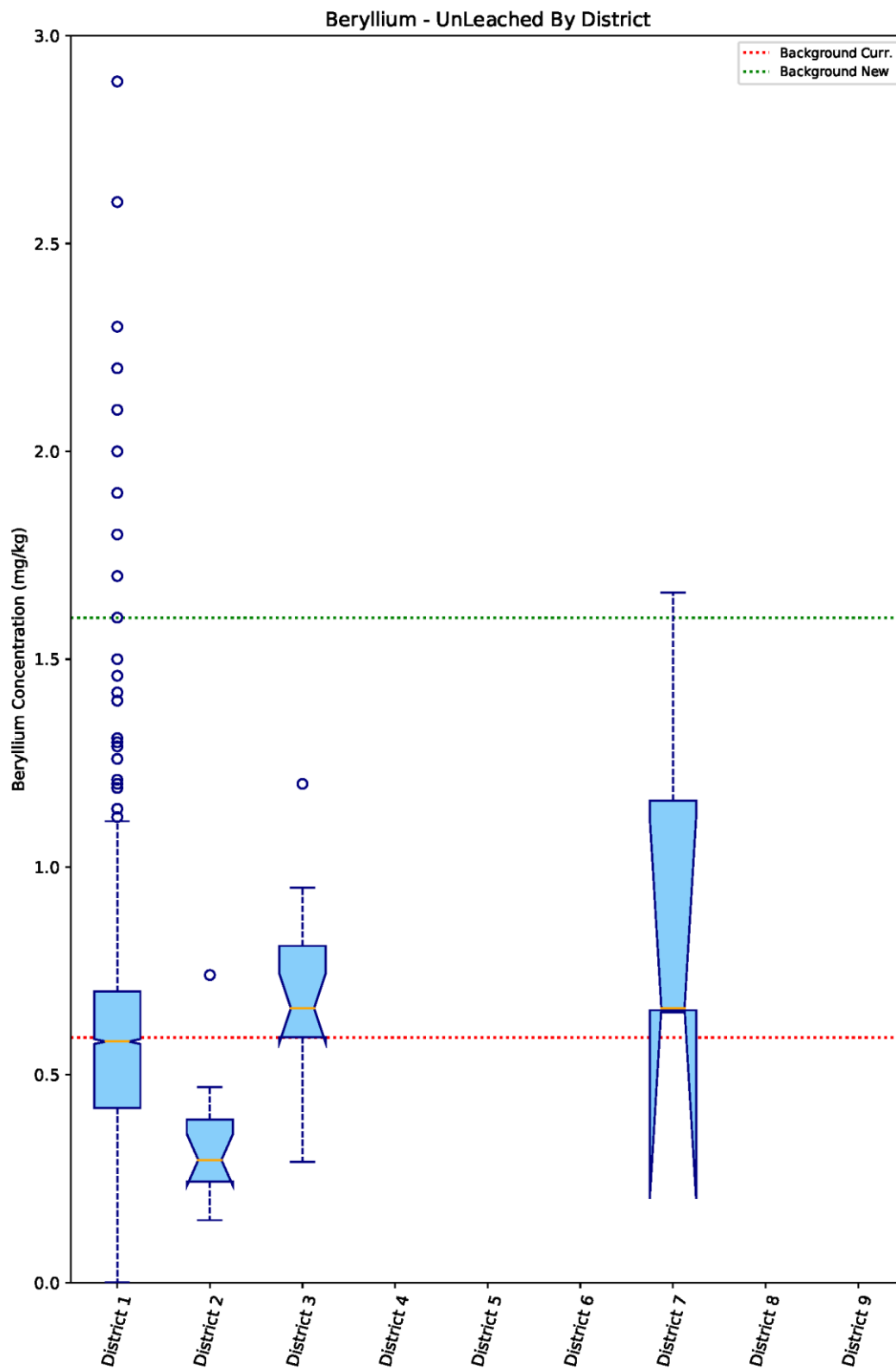


Figure 181. Boxplot of RSL beryllium concentrations by IDOT District, de minimis (mg/kg)



# Beryllium Concentration by County, page 1 of 2

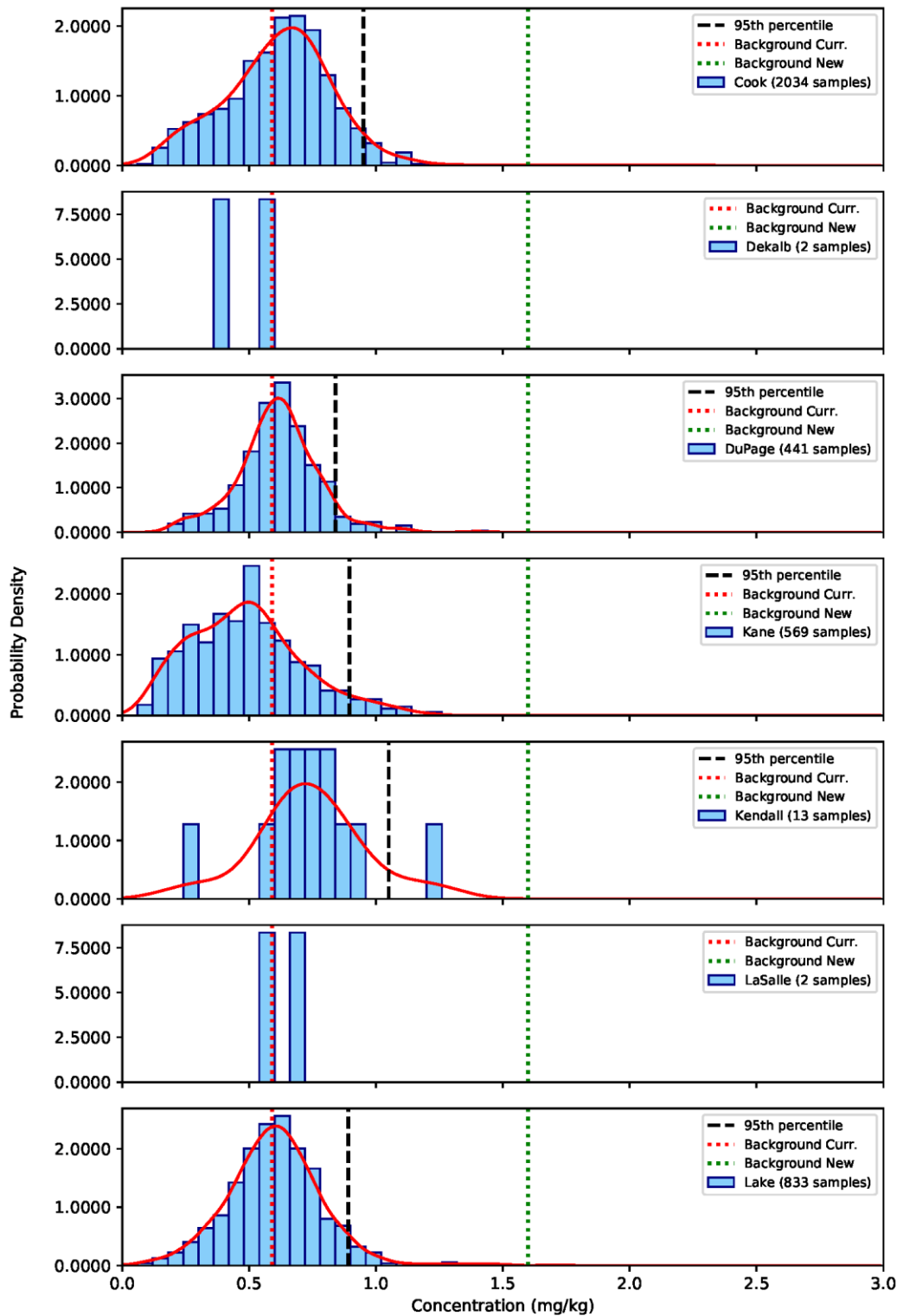


Figure 182. Histogram of RSL beryllium concentrations by Illinois county, de minimis (mg/kg), part 1

# Beryllium Concentration by County, page 2 of 2

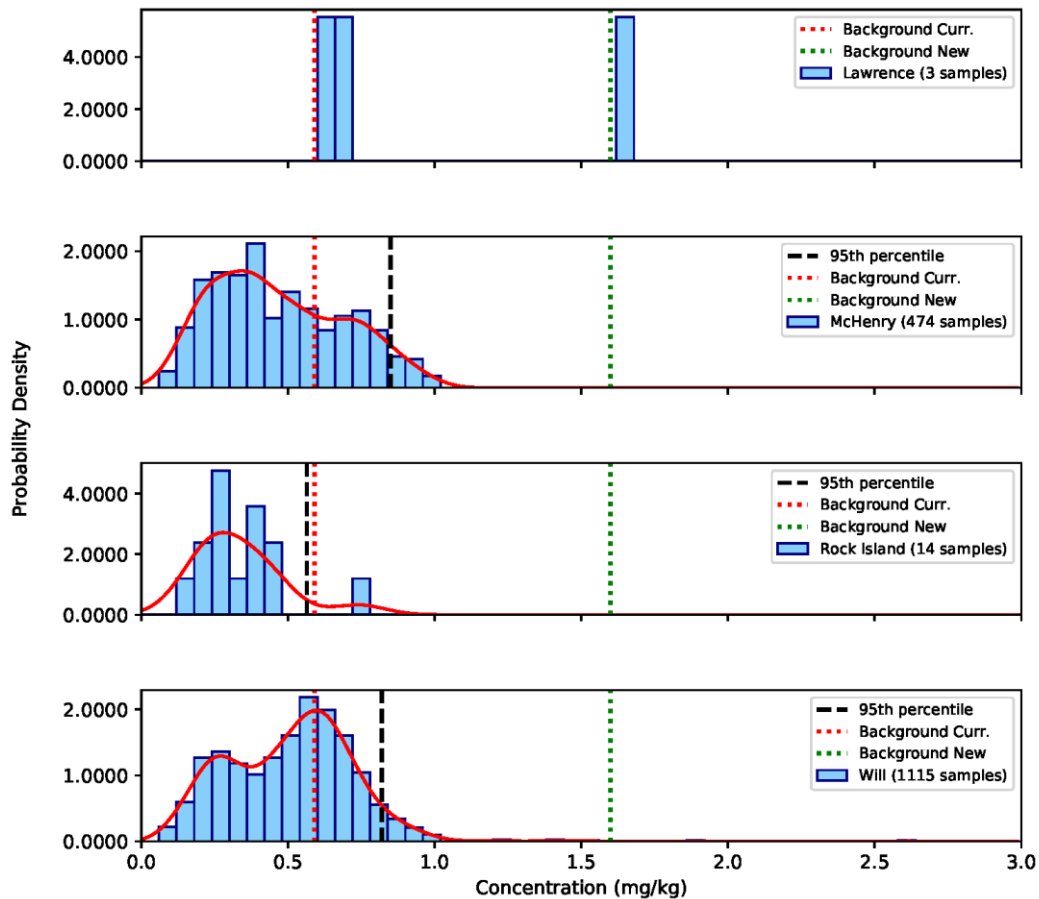


Figure 183. Histogram of RSL beryllium concentrations by Illinois county, de minimis (mg/kg), part 2

Beryllium Concentration for 95th Percentile by County: deMinimis Sites

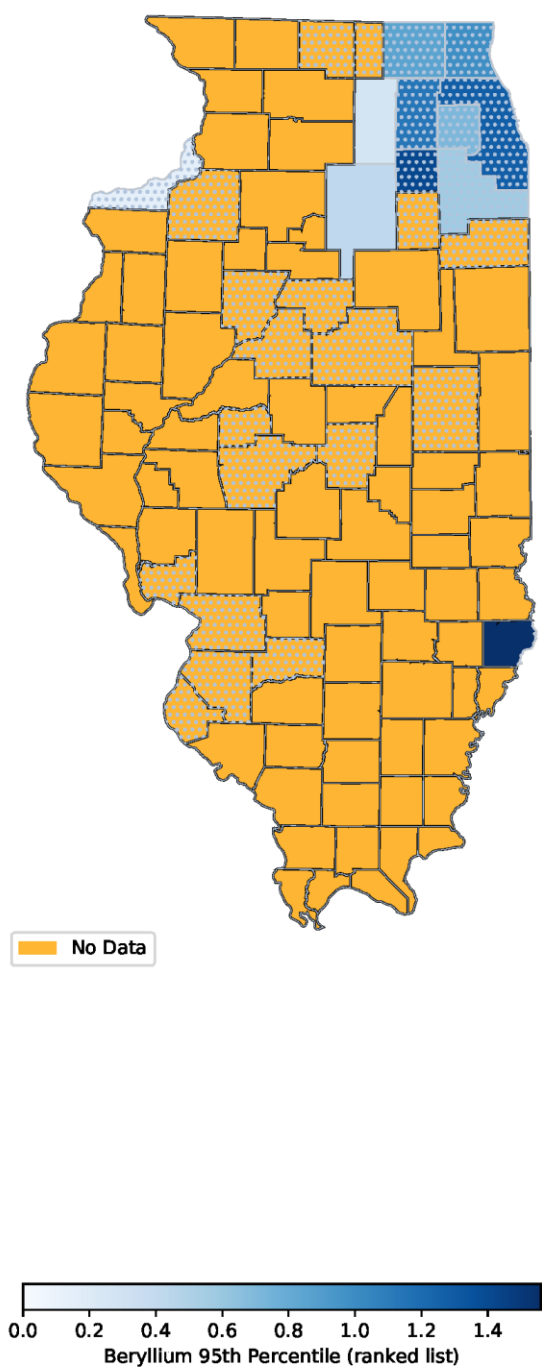


Figure 184. Map of RSL beryllium 95th percentile concentration by Illinois county, de minimis (mg/kg)

Number of Beryllium Samples by County: deMinimis Sites

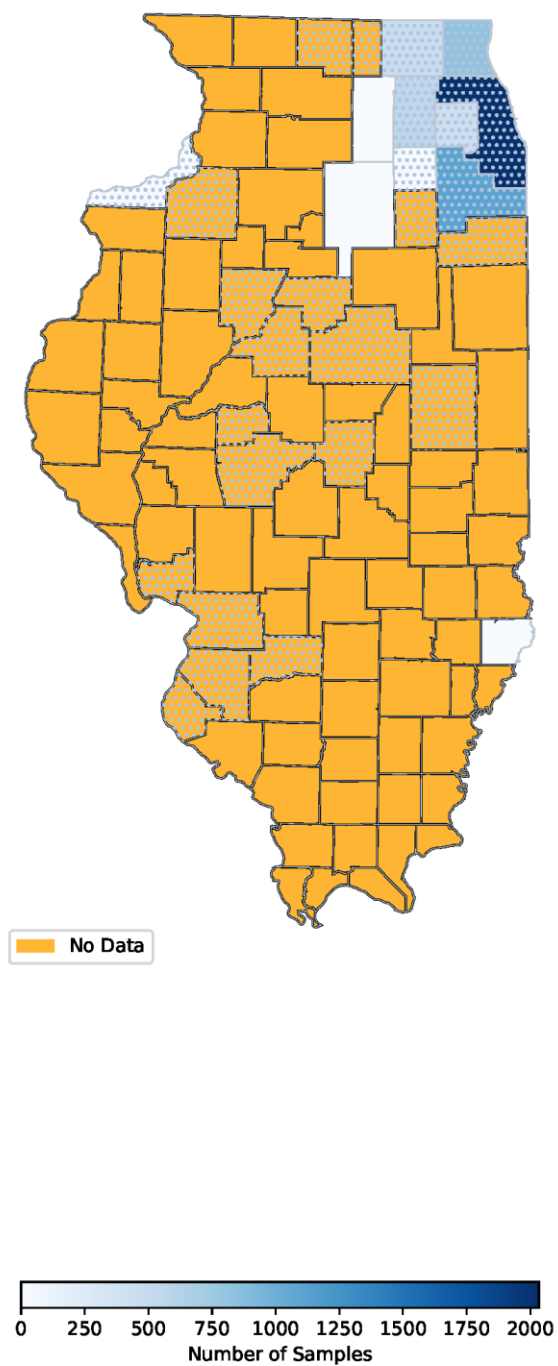
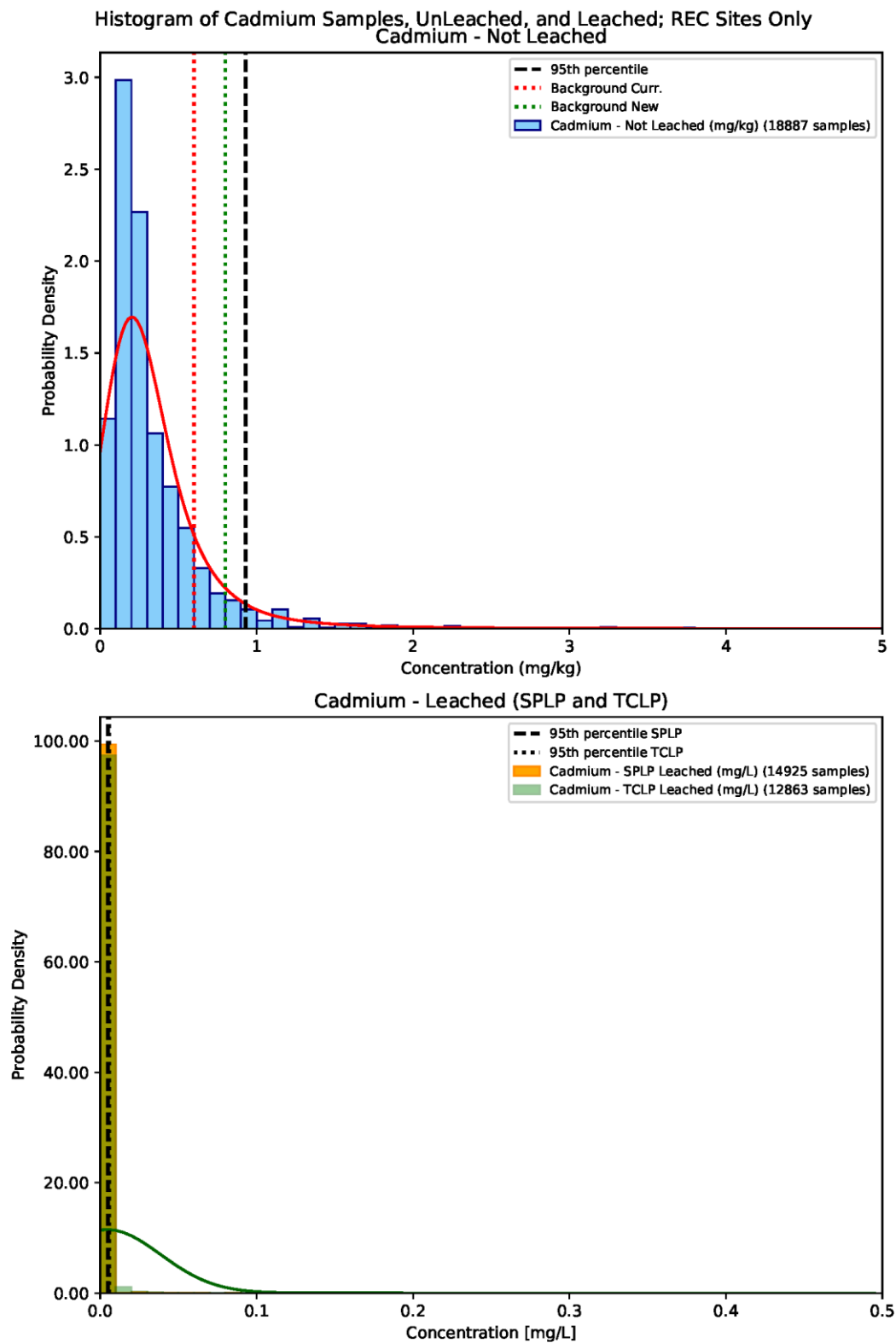


Figure 185. Map of RSL beryllium sample quantity by Illinois county, de minimis (mg/kg)

## **APPENDIX F. ANALYTE ANALYSIS: CADMIUM**

### **F.1 CADMIUM REC**



**Figure 186. Histogram of RSL cadmium concentrations, REC (mg/kg)**

Cadmium Unleached Concentration (mg/kg)

1) Region

2) District

3) County

Cadmium Concentration by Region, page 1 of 1

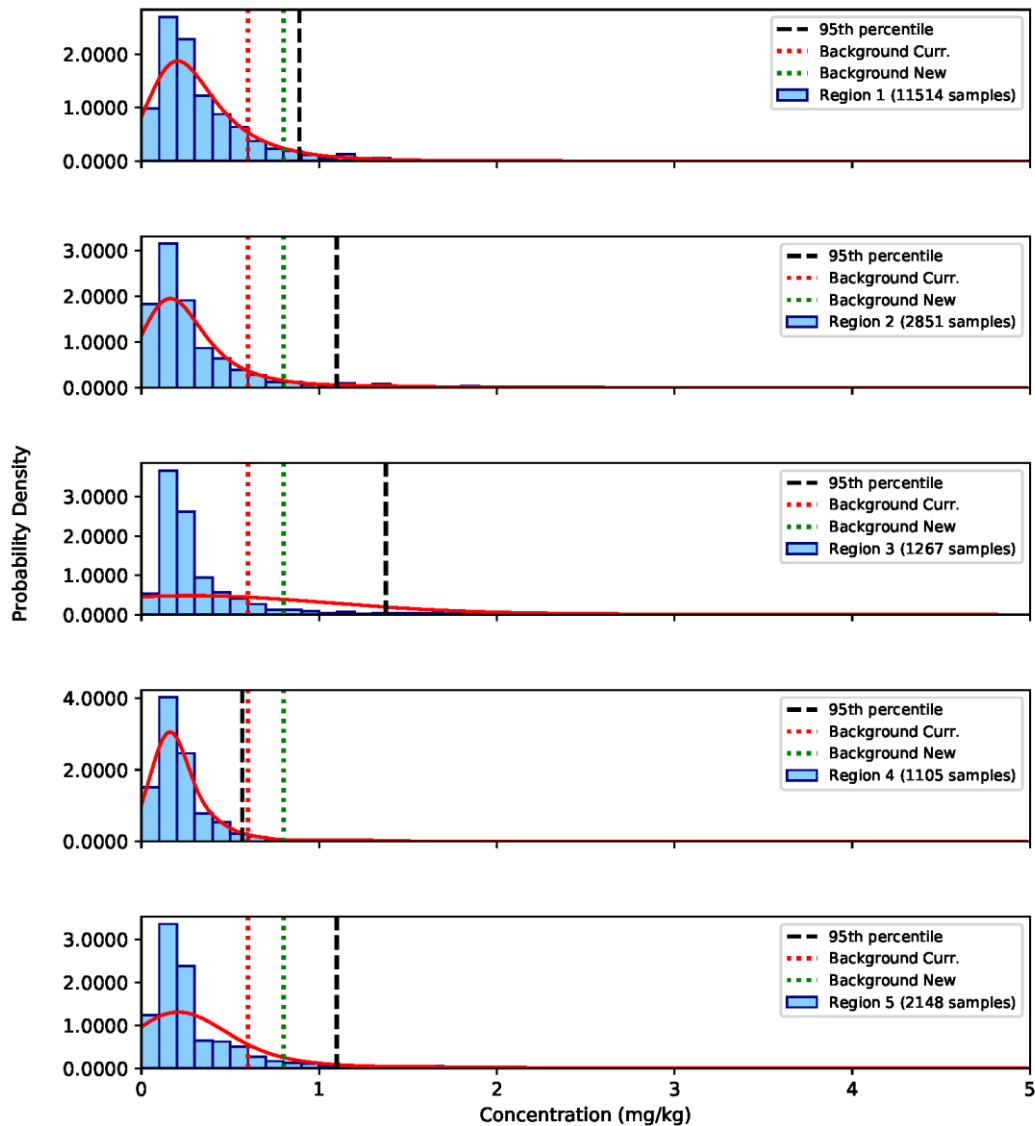


Figure 187. Histogram of RSL cadmium concentrations by IDOT Region, REC (mg/kg)



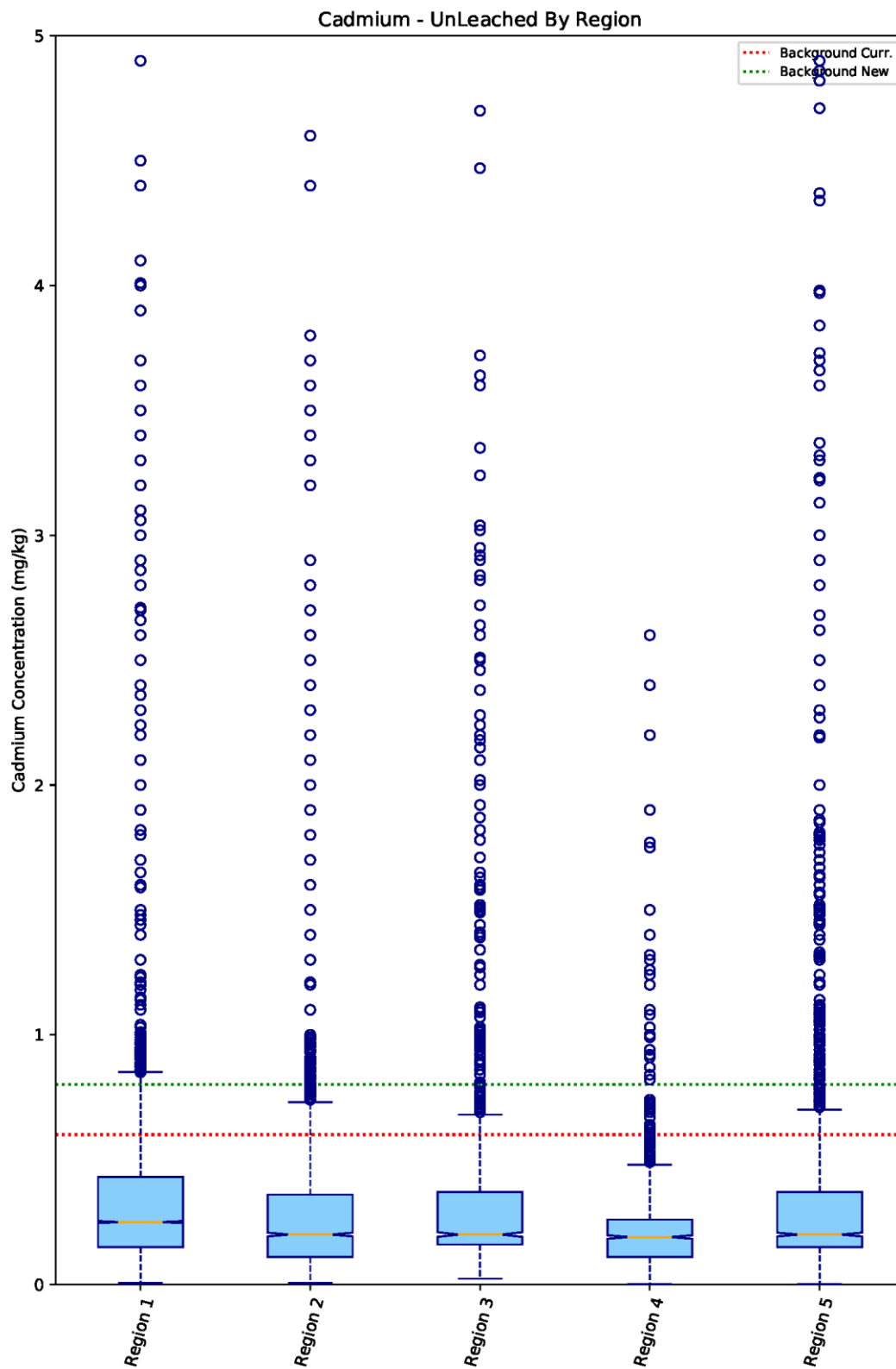


Figure 188. Boxplot of RSL cadmium concentrations by IDOT Region, REC (mg/kg)

# Cadmium Concentration by District, page 1 of 2

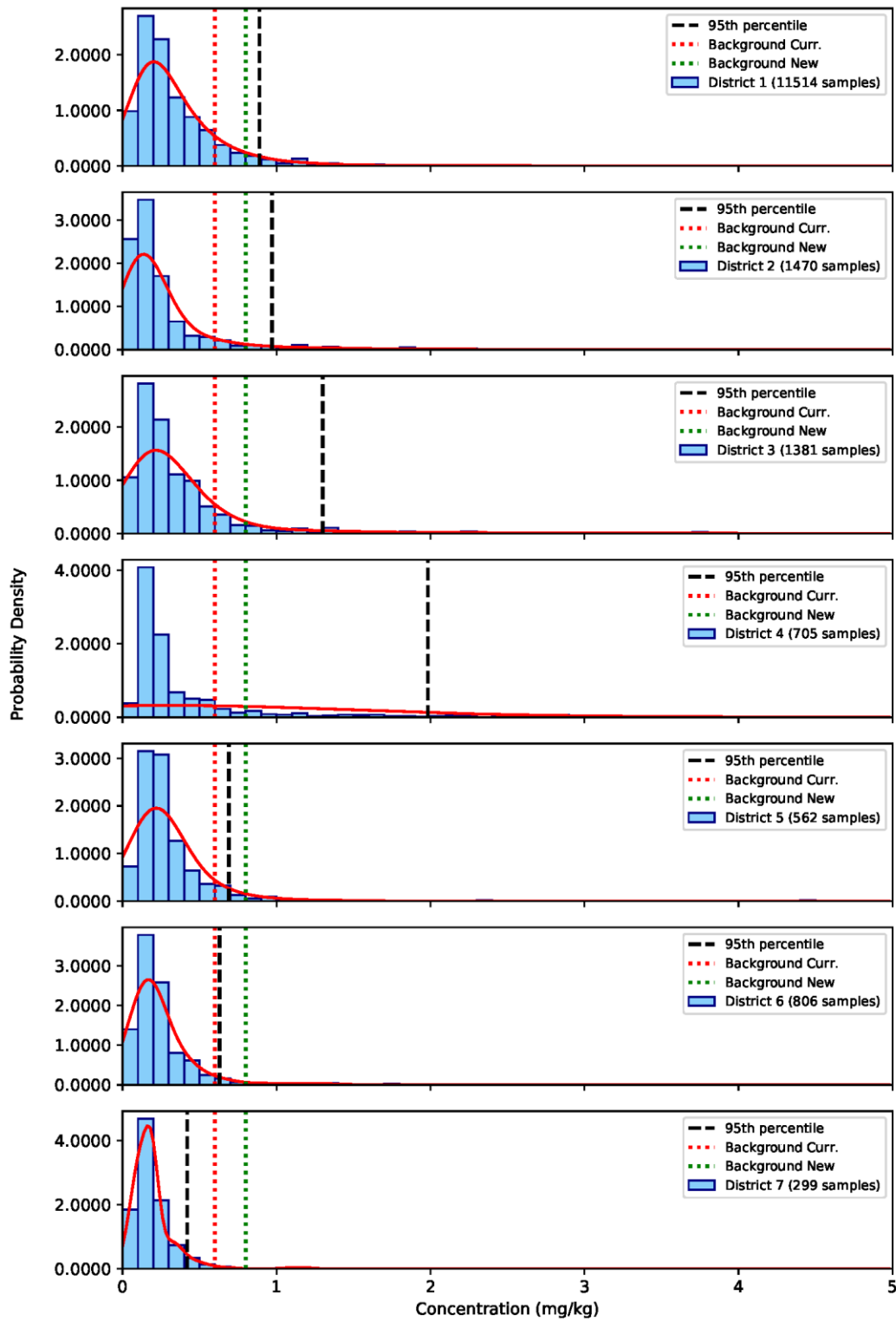


Figure 189. Histogram of RSL cadmium concentrations by IDOT District, REC (mg/kg), part 1

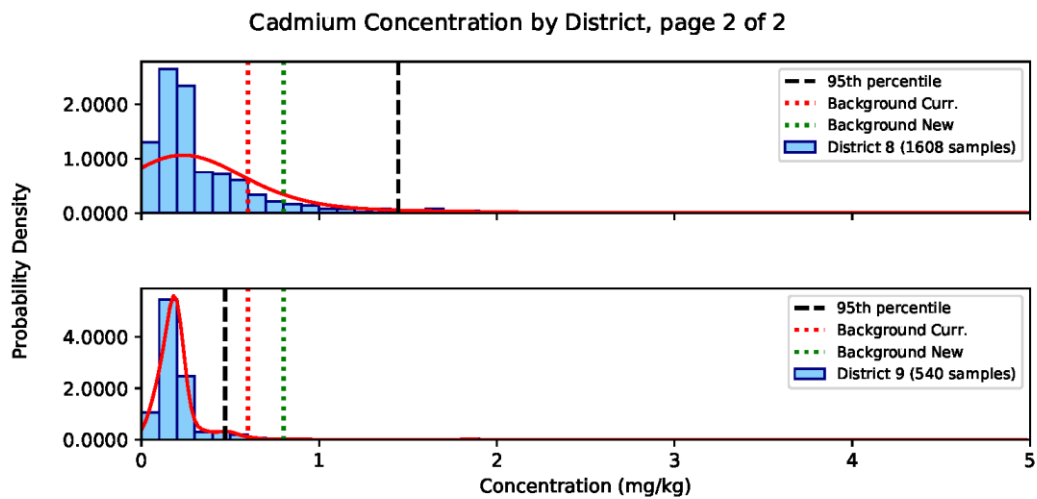


Figure 190. Histogram of RSL cadmium concentrations by IDOT District, REC (mg/kg), part 2

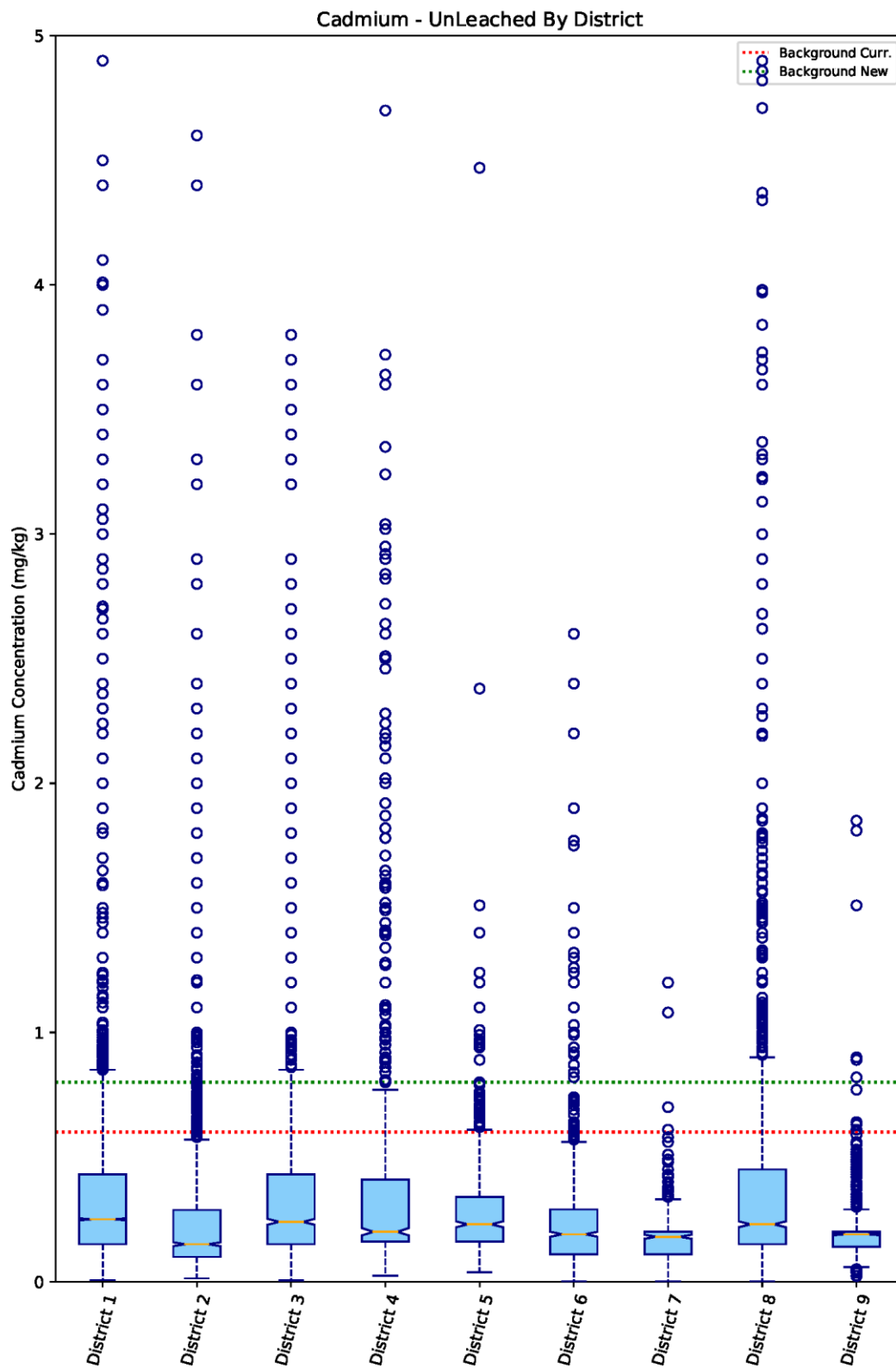


Figure 191. Boxplot of RSL cadmium concentrations by IDOT District, REC (mg/kg)

Cadmium Concentration by County, page 1 of 10

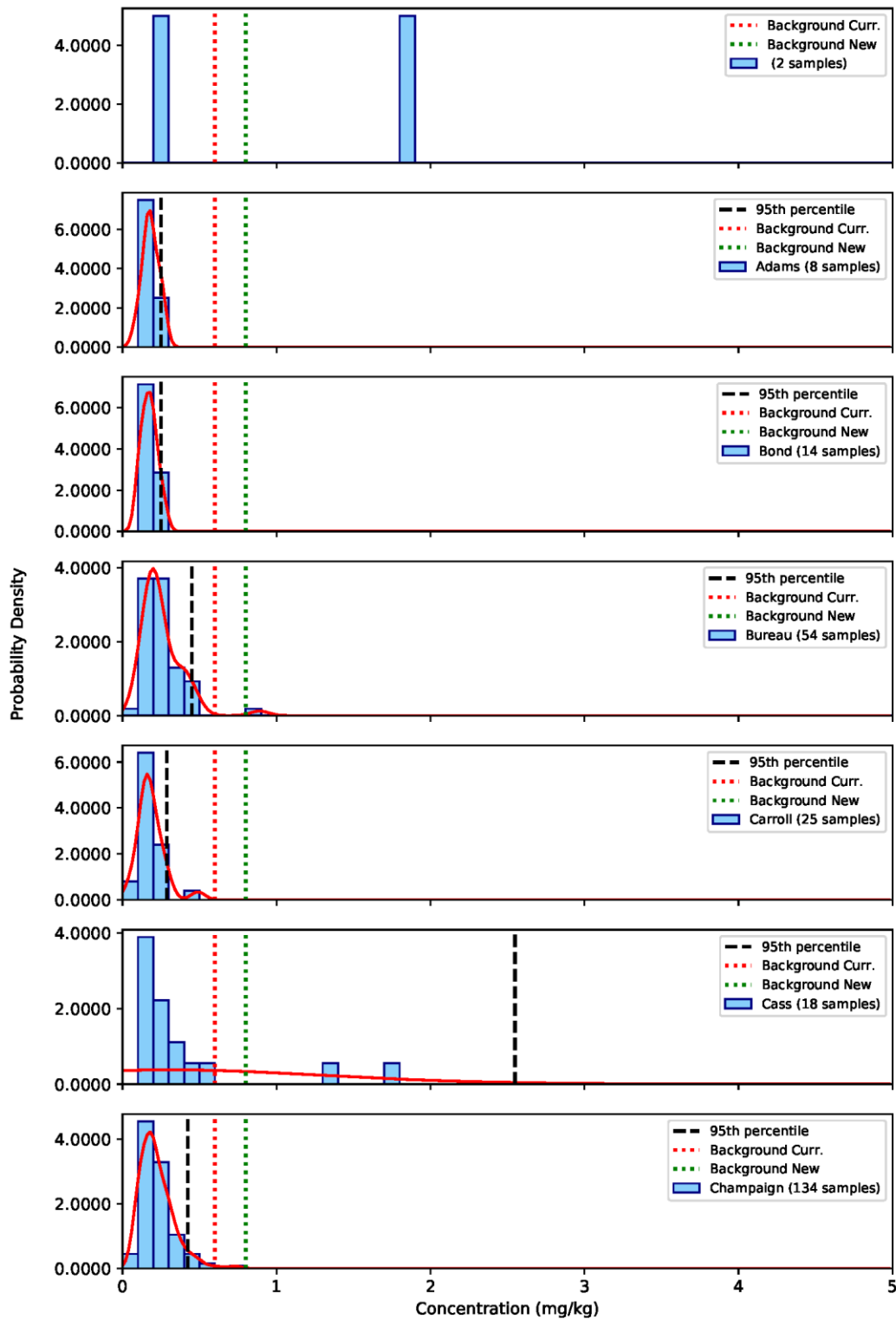


Figure 192. Histogram of RSL cadmium concentrations by Illinois county, REC (mg/kg), part 1

Cadmium Concentration by County, page 2 of 10

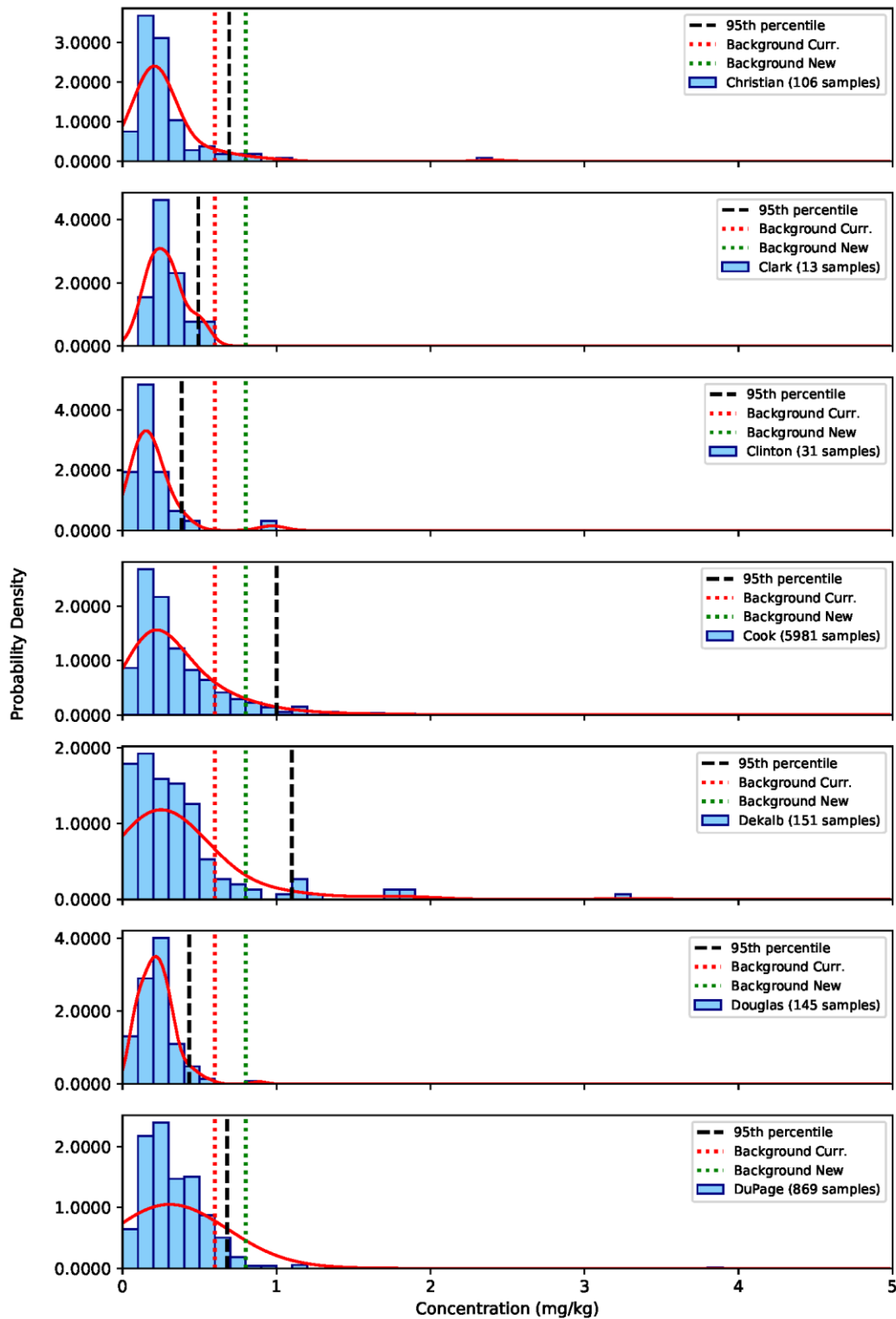


Figure 193. Histogram of RSL cadmium concentrations by Illinois county, REC (mg/kg), part 2

Cadmium Concentration by County, page 3 of 10

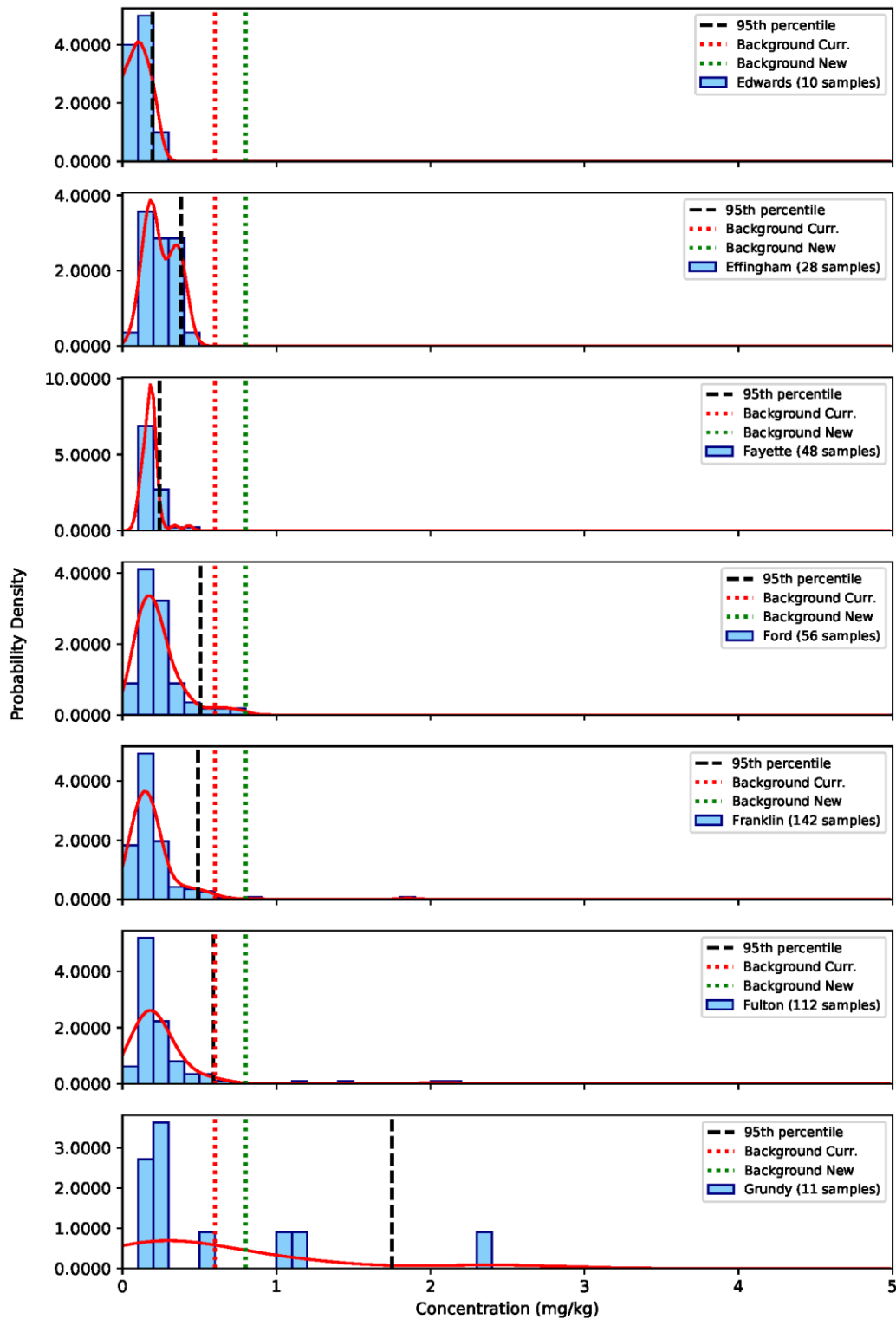


Figure 194. Histogram of RSL cadmium concentrations by Illinois county, REC (mg/kg), part 3

Cadmium Concentration by County, page 4 of 10

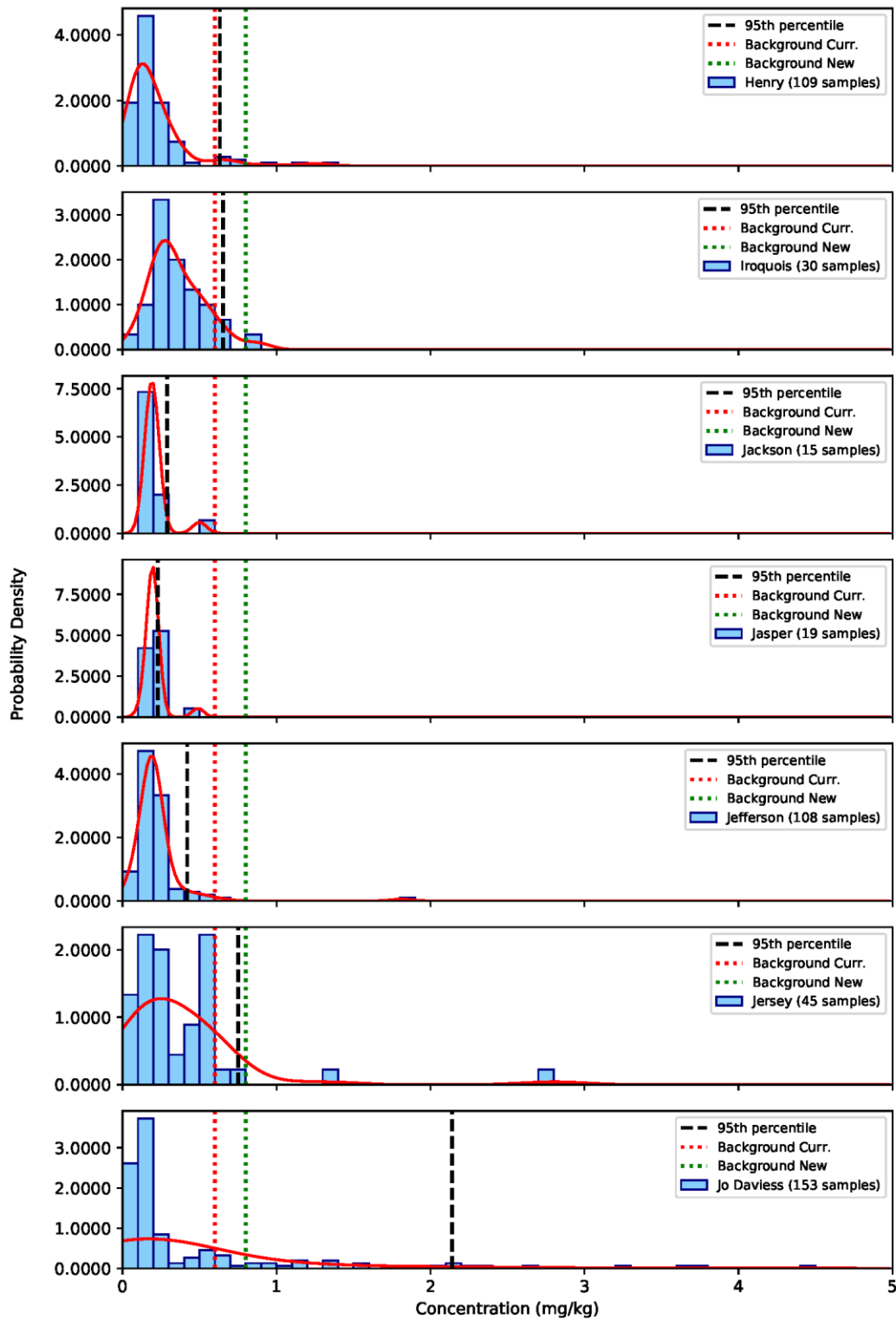


Figure 195. Histogram of RSL cadmium concentrations by Illinois county, REC (mg/kg), part 4



# Cadmium Concentration by County, page 5 of 10

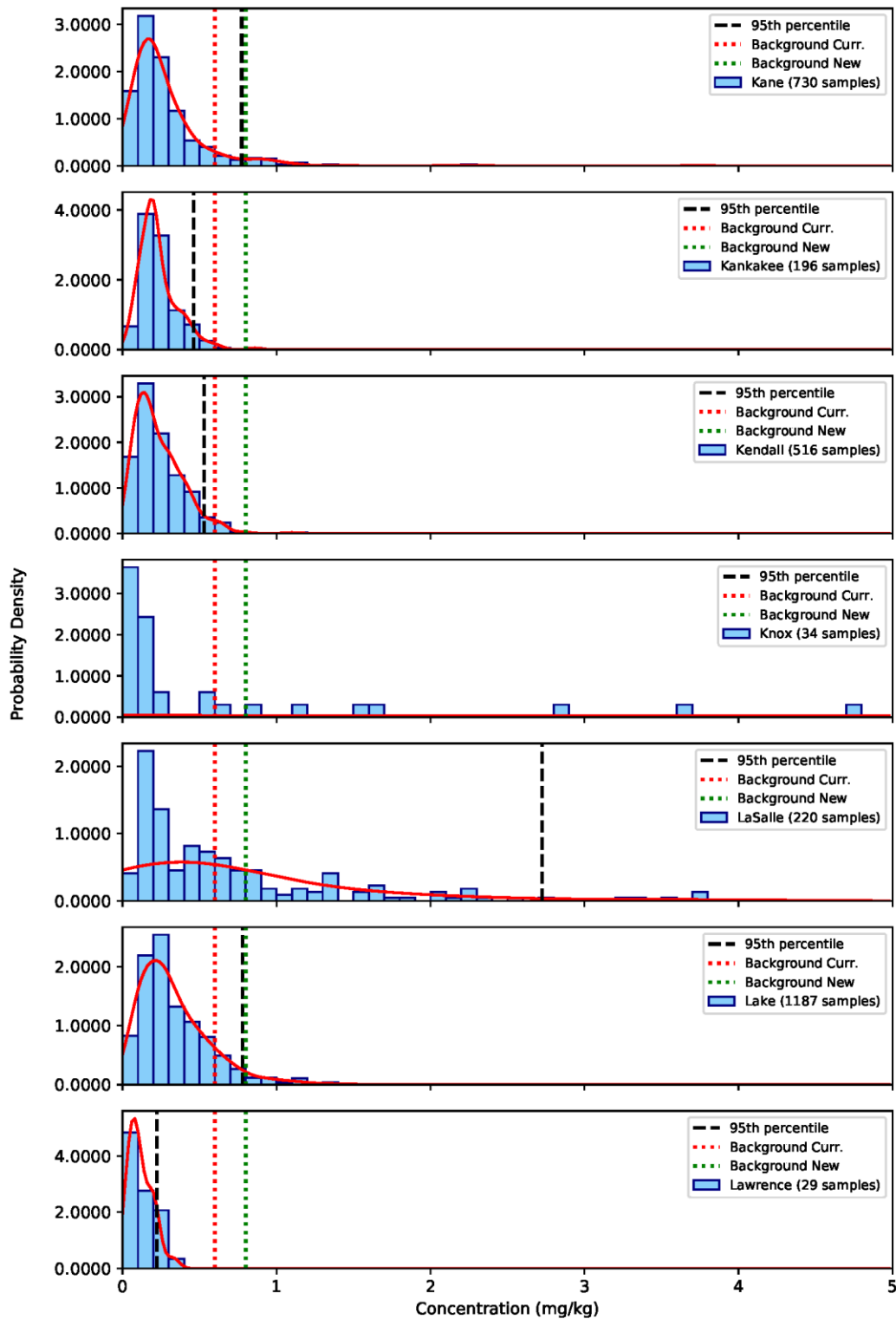


Figure 196. Histogram of RSL cadmium concentrations by Illinois county, REC (mg/kg), part 5

Cadmium Concentration by County, page 6 of 10

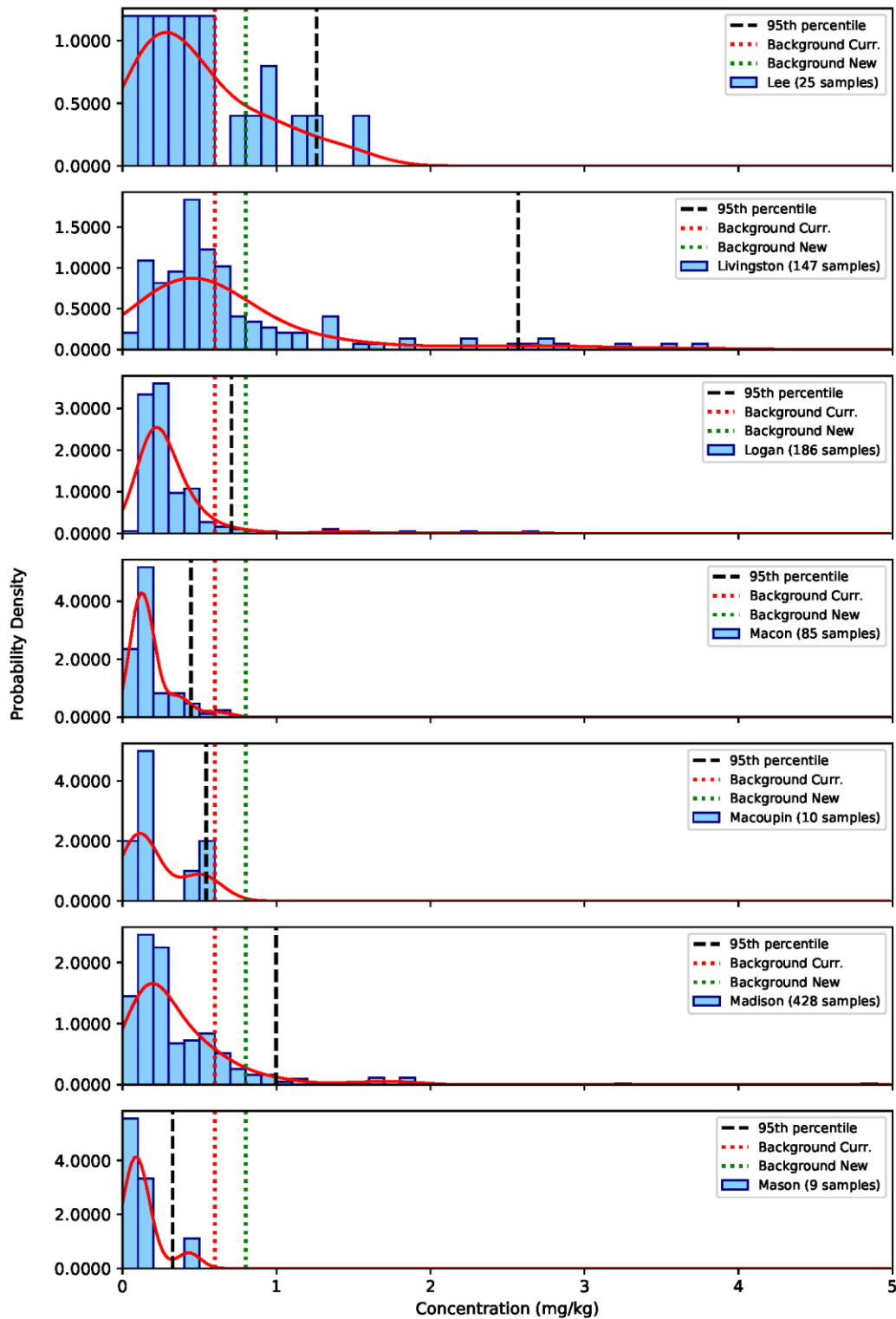


Figure 197. Histogram of RSL cadmium concentrations by Illinois county, REC (mg/kg), part 6

Cadmium Concentration by County, page 7 of 10

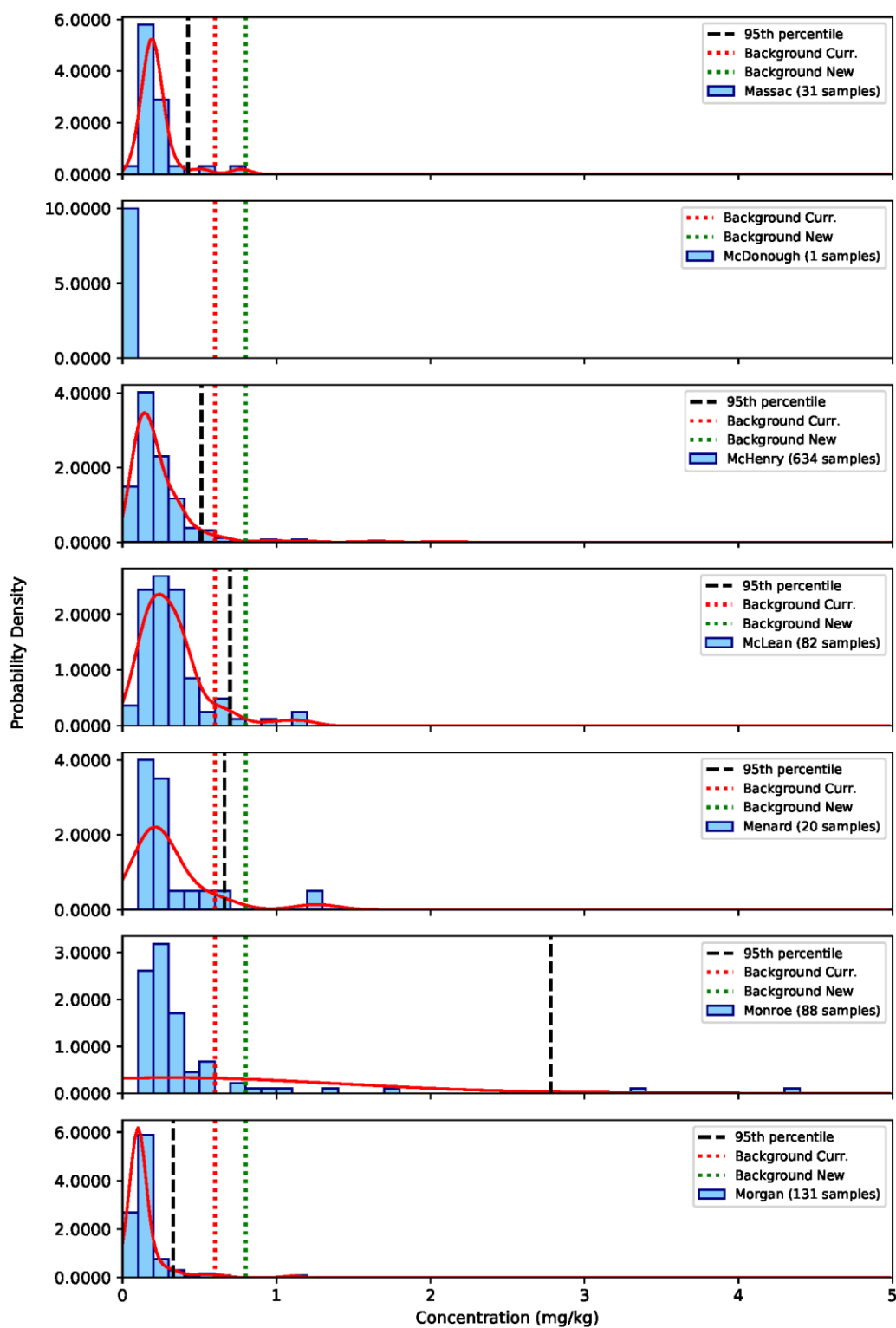


Figure 198. Histogram of RSL cadmium concentrations by Illinois county, REC (mg/kg), part 7

Cadmium Concentration by County, page 8 of 10

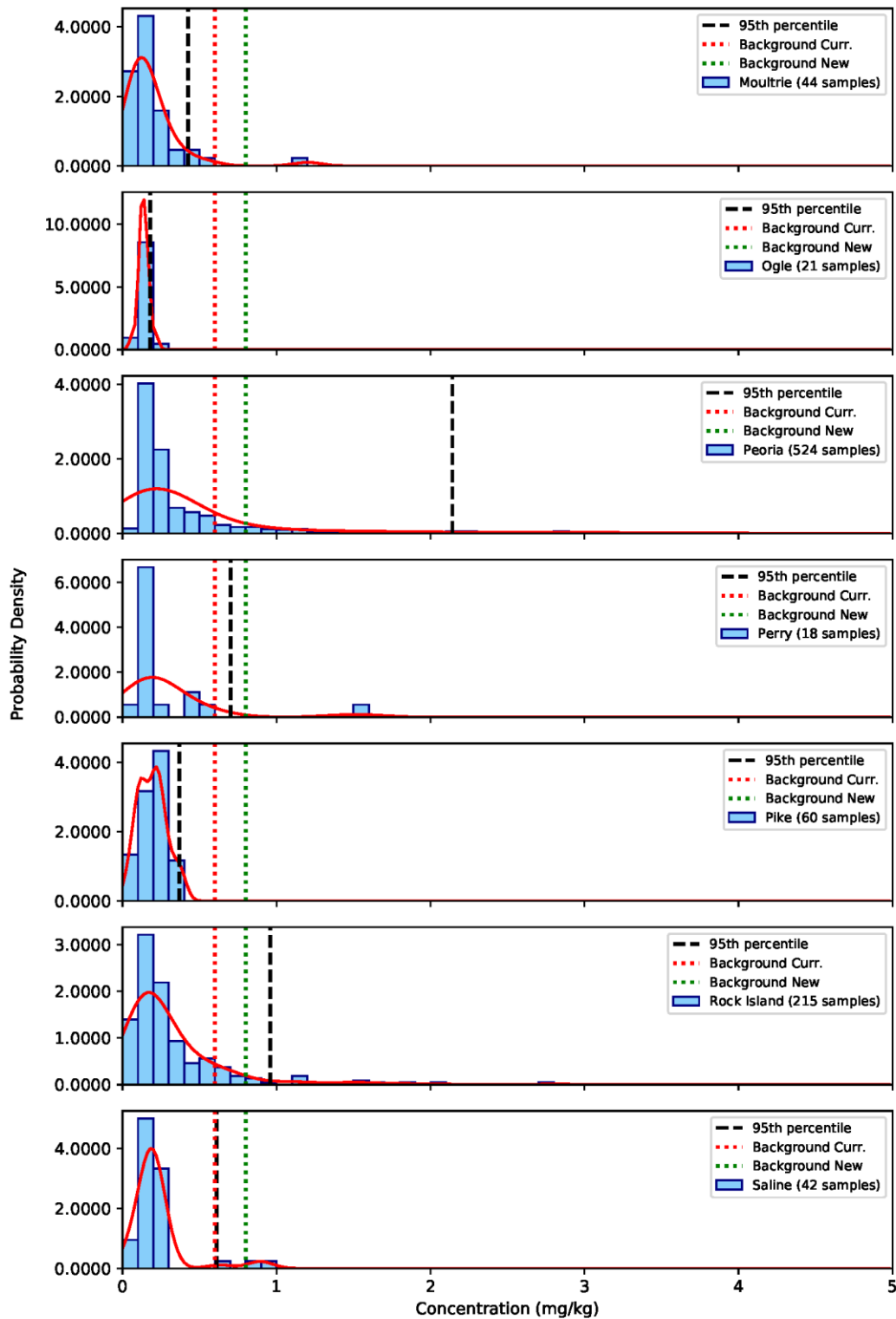


Figure 199. Histogram of RSL cadmium concentrations by Illinois county, REC (mg/kg), part 8

Cadmium Concentration by County, page 9 of 10

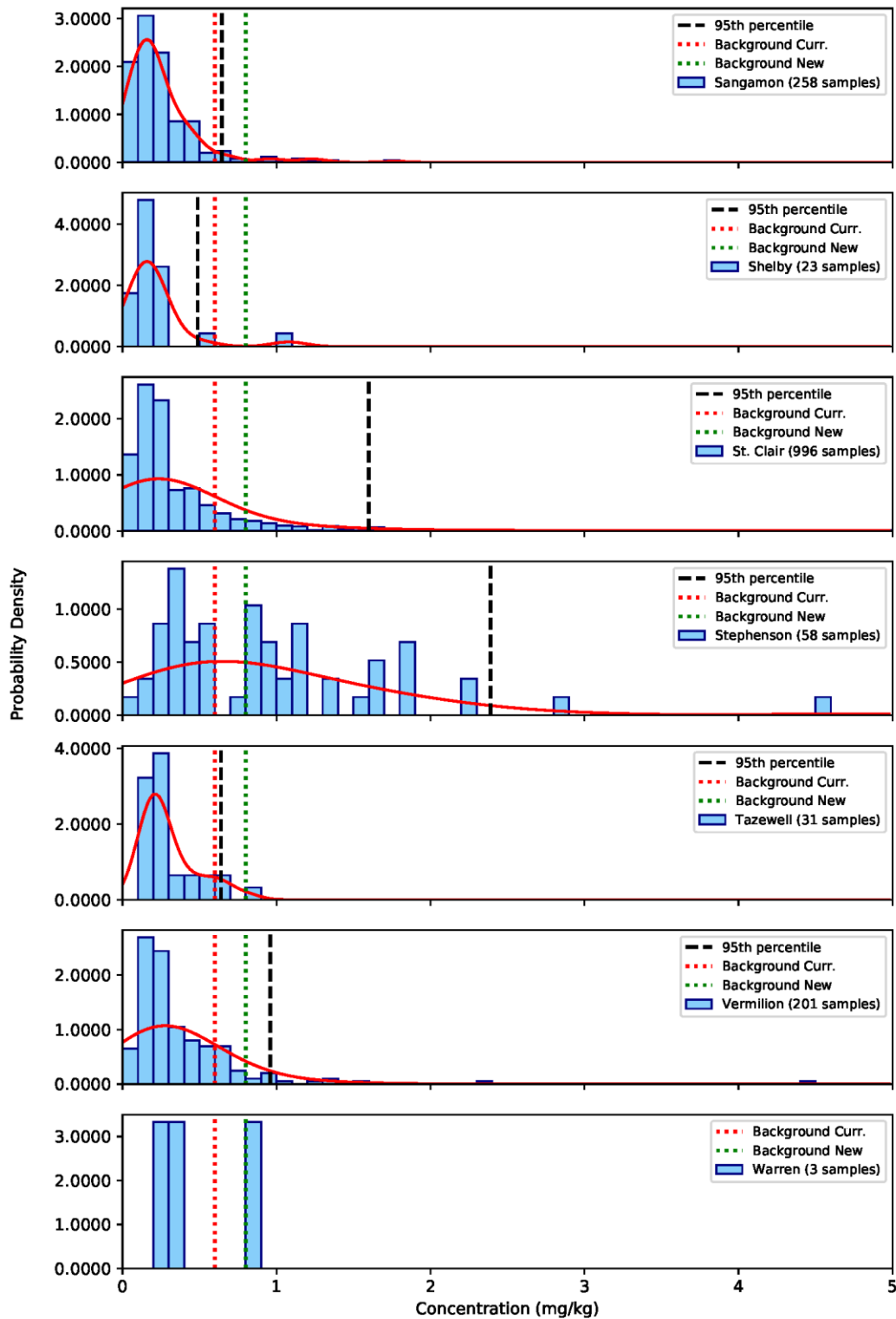


Figure 200. Histogram of RSL cadmium concentrations by Illinois county, REC (mg/kg), part 9

# Cadmium Concentration by County, page 10 of 10

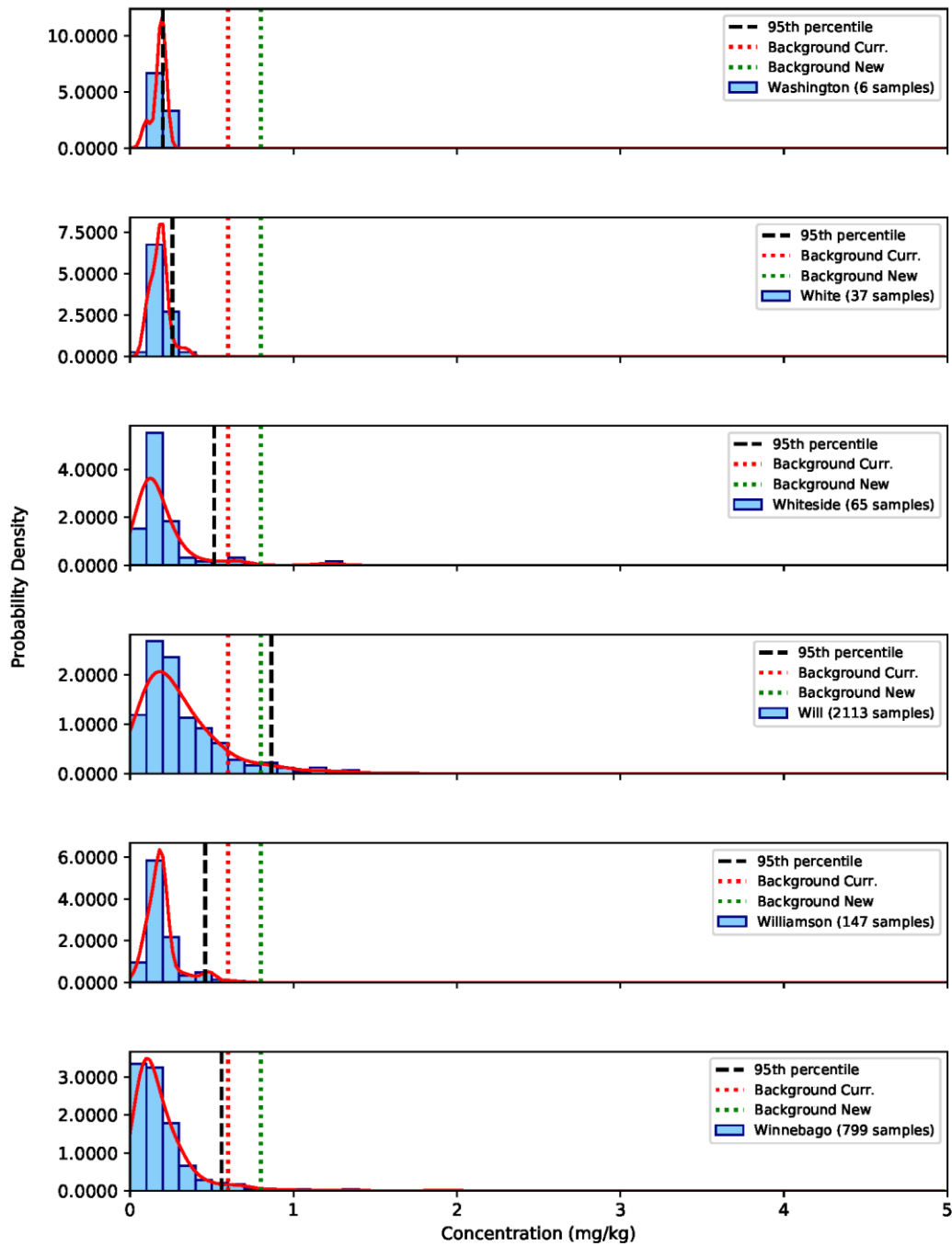


Figure 201. Histogram of RSL cadmium concentrations by Illinois county, REC (mg/kg), part 10

Cadmium Concentration for 95th Percentile by County: REC Sites

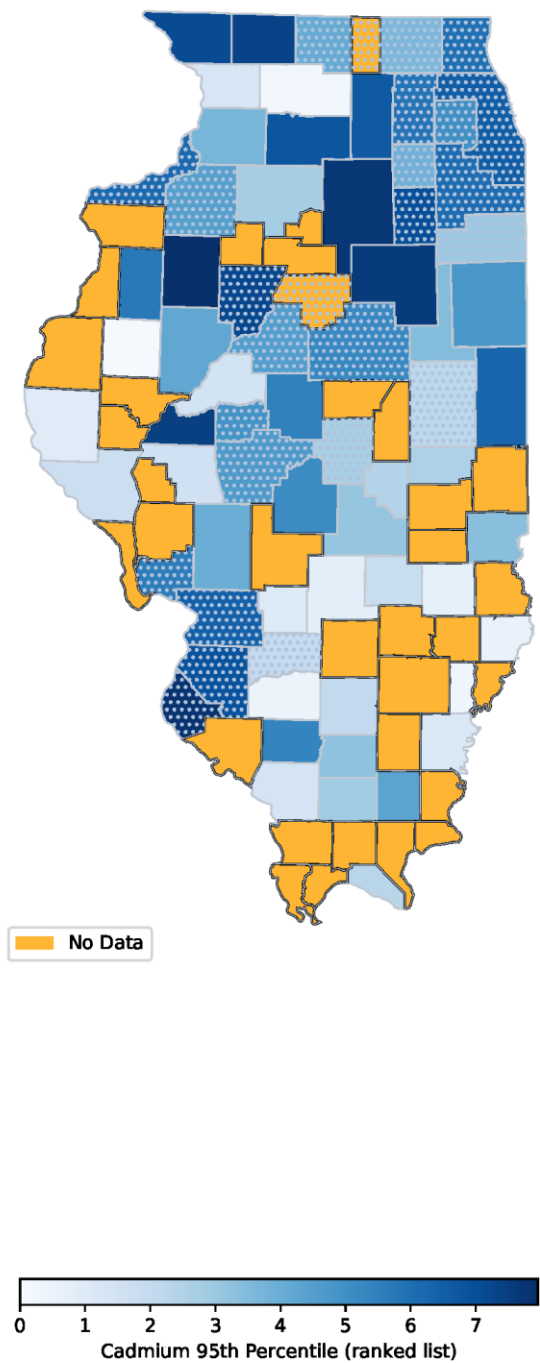


Figure 202. Map of RSL cadmium 95th percentile concentration by Illinois county, REC (mg/kg)

Number of Cadmium Samples by County: REC Sites

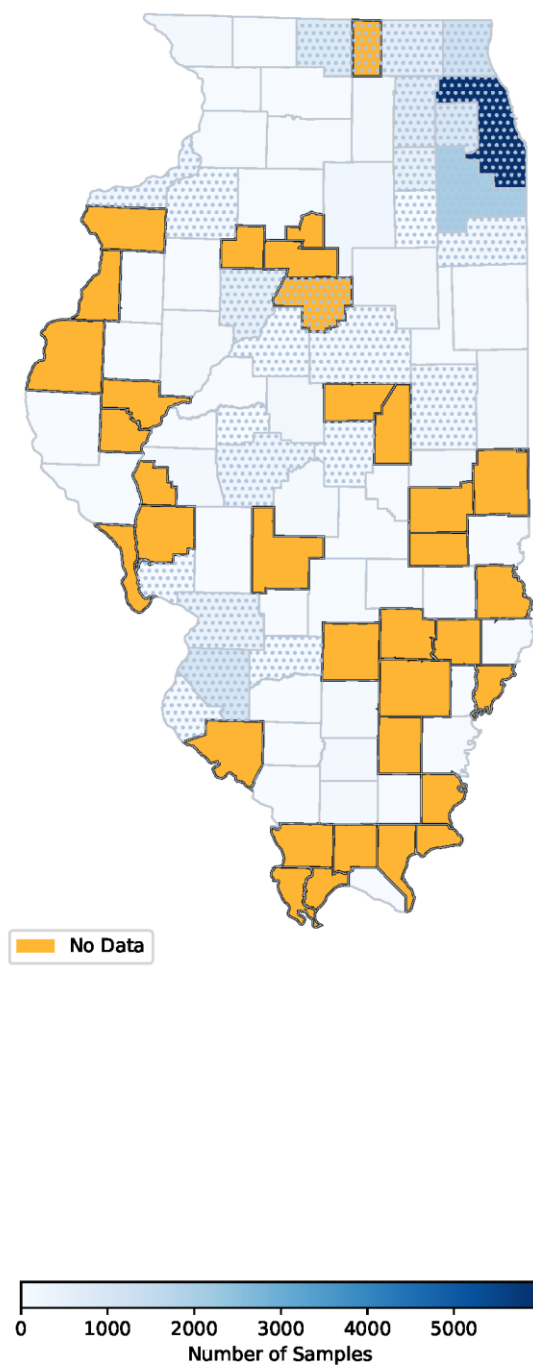


Figure 203. Map of RSL cadmium sample quantity by Illinois county, REC (mg/kg)



## **F.2 CADMIUM NON-REC**

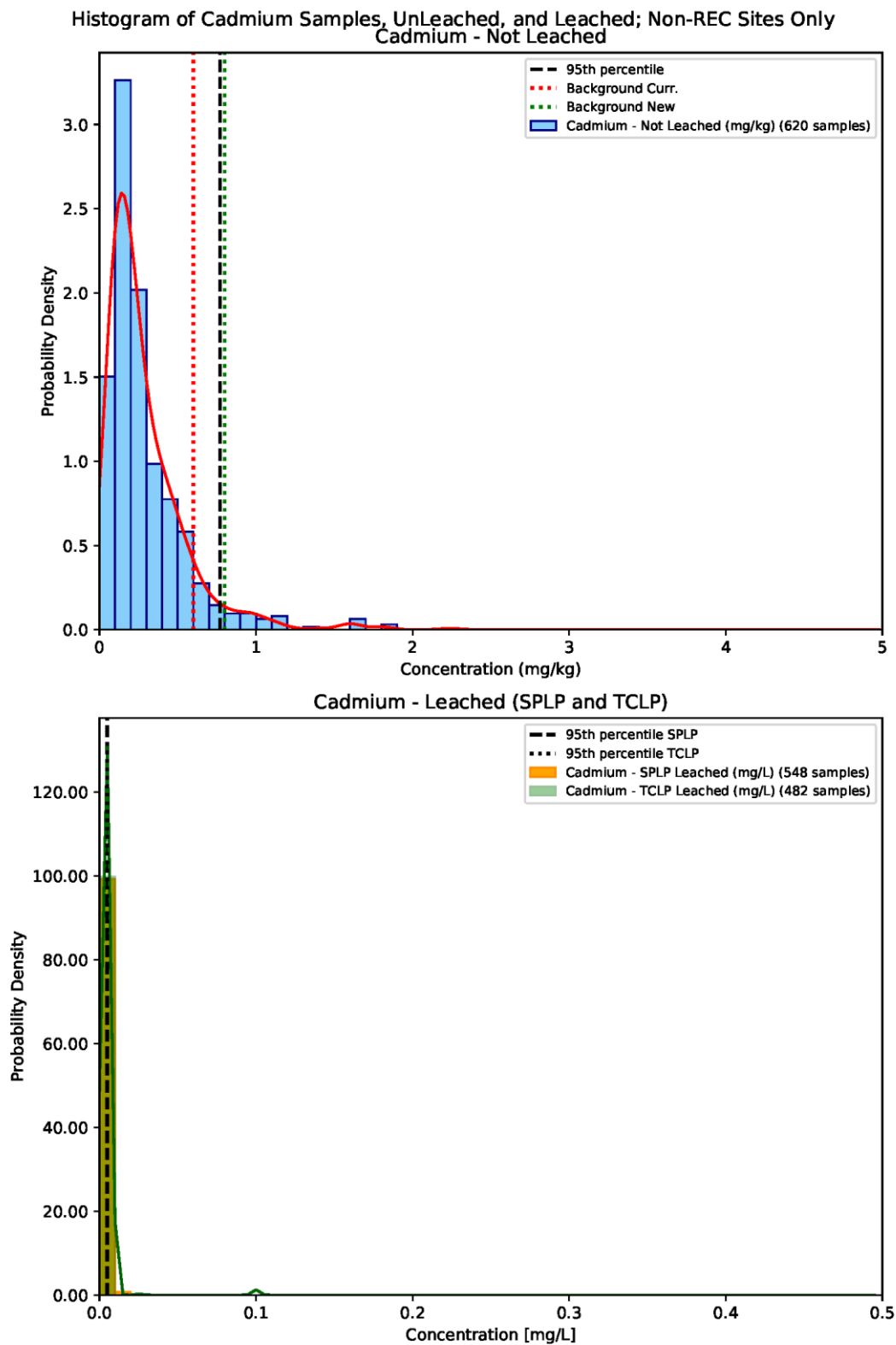


Figure 204. Histogram of RSL cadmium concentrations, Non-REC (mg/kg)

Cadmium Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

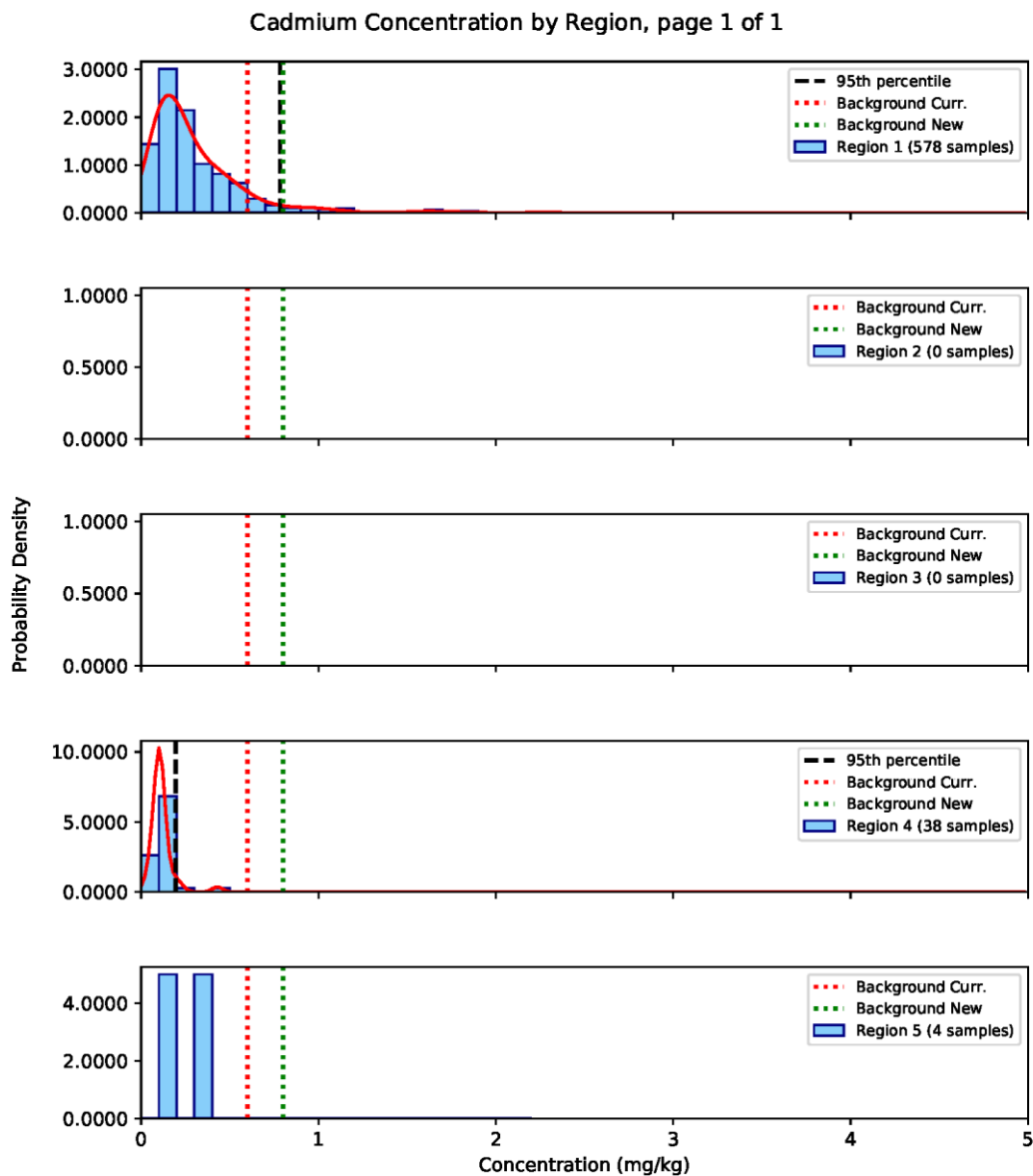


Figure 205. Histogram of RSL cadmium concentrations by IDOT Region, Non-REC (mg/kg)

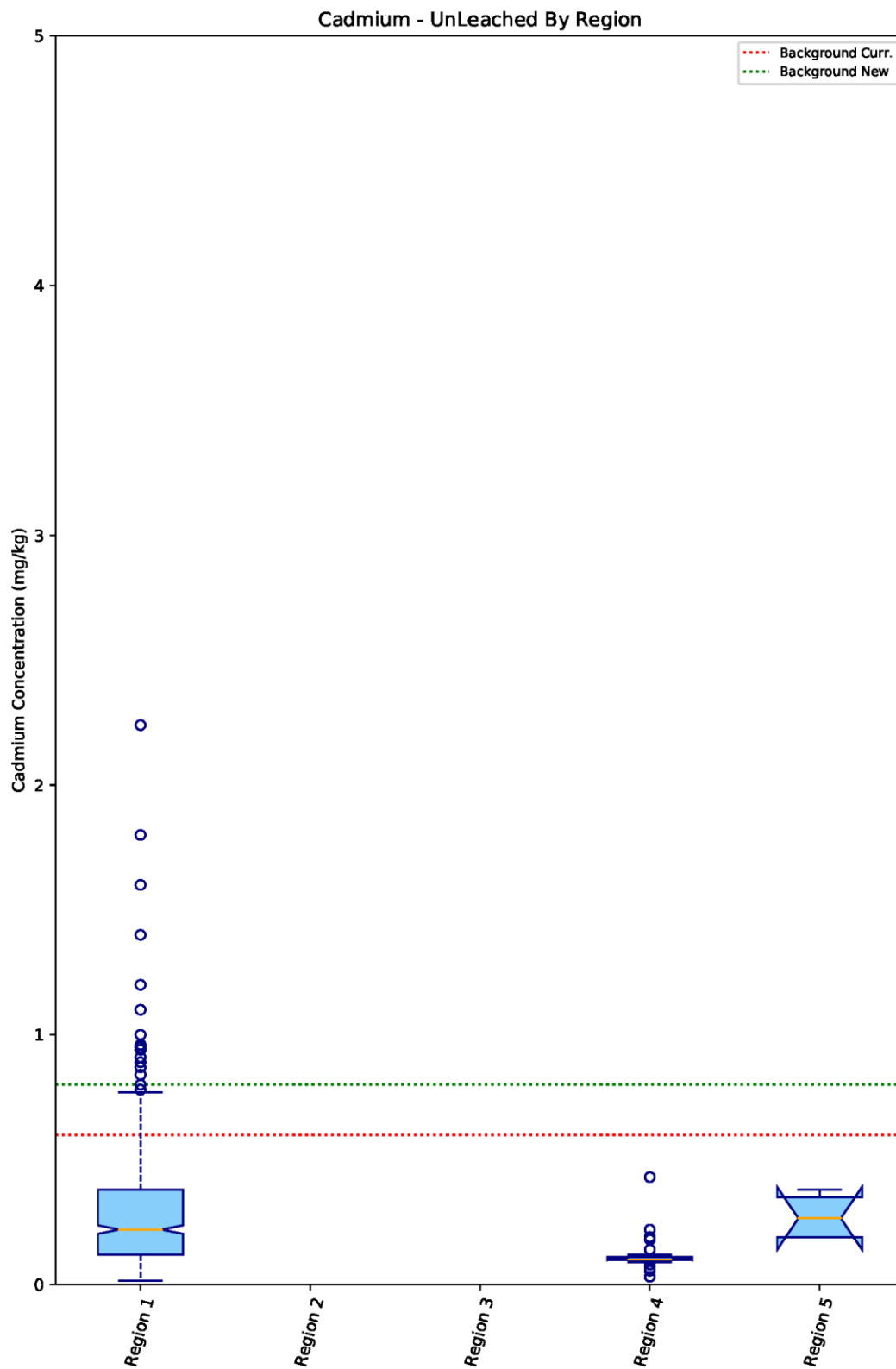


Figure 206. Boxplot of RSL cadmium concentrations by IDOT Region, Non-REC (mg/kg)

Cadmium Concentration by District, page 1 of 2

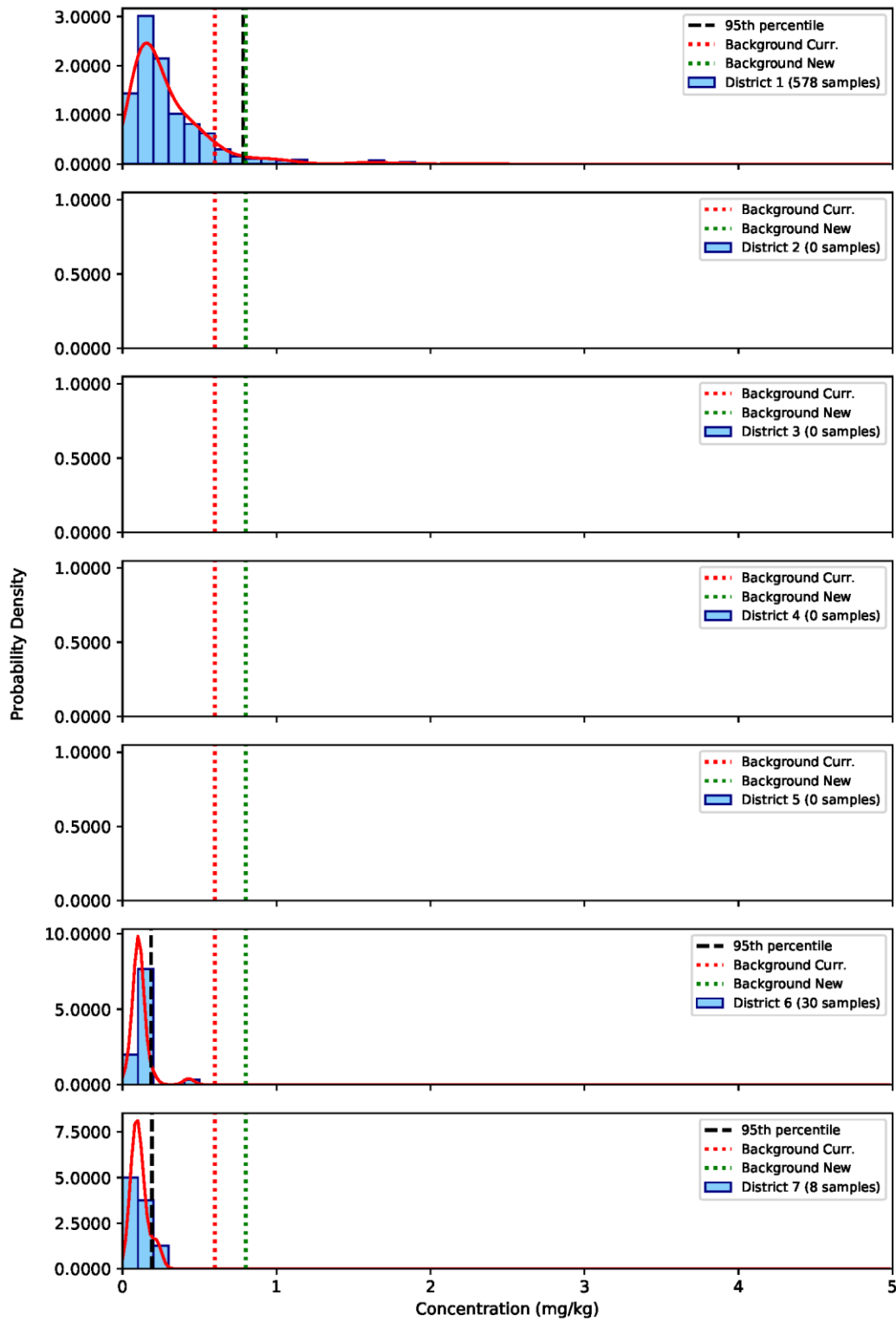


Figure 207. Histogram of RSL cadmium concentrations by IDOT District, Non-REC (mg/kg), part 1

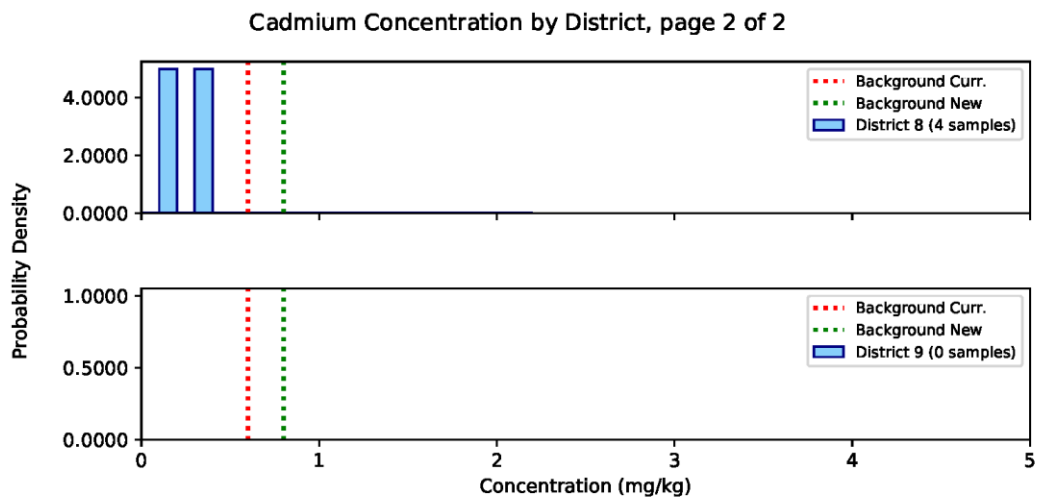
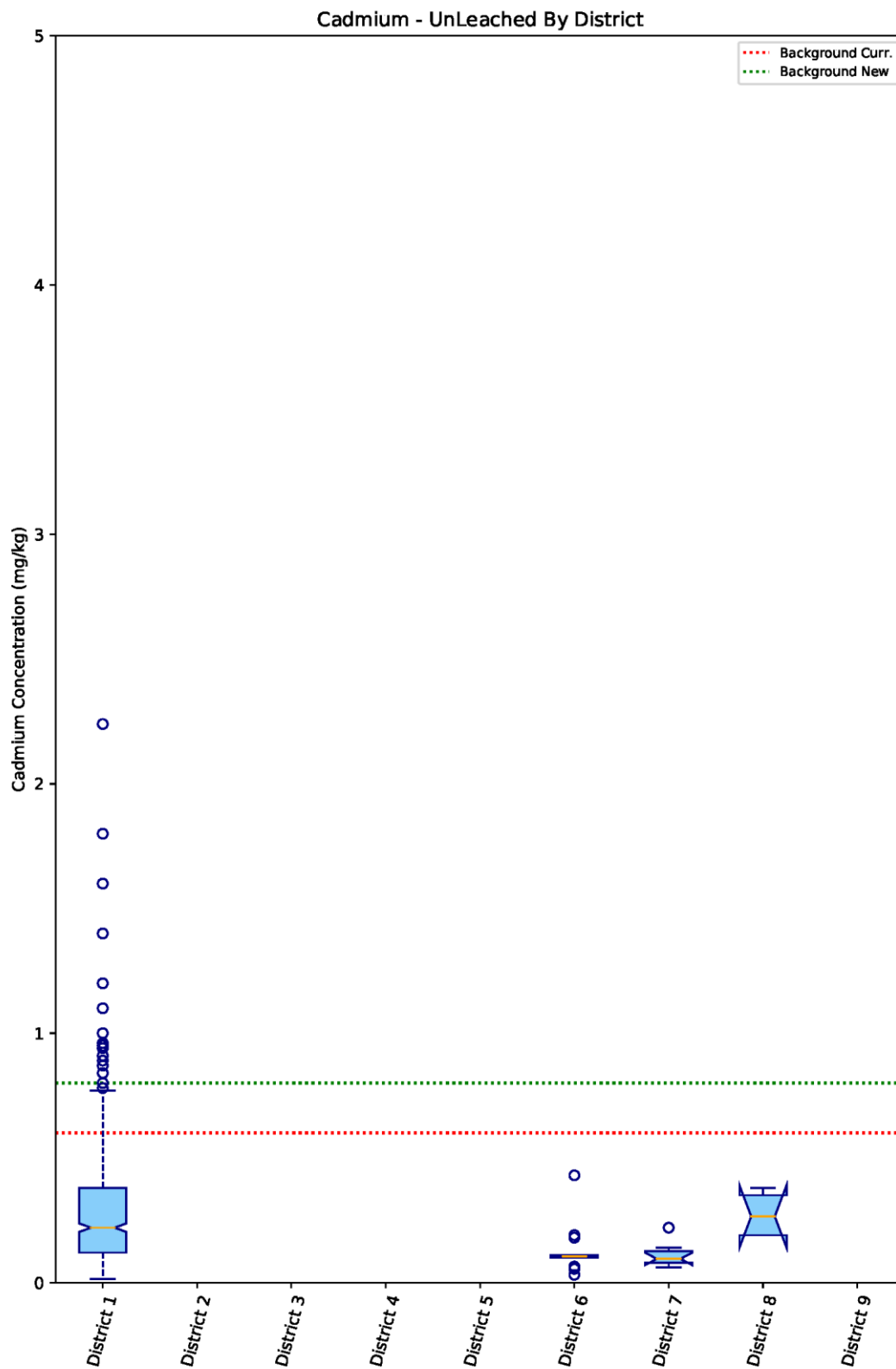


Figure 208. Histogram of RSL cadmium concentrations by IDOT District, Non-REC (mg/kg), part 2



**Figure 209. Boxplot of RSL cadmium concentrations by IDOT District, Non-REC (mg/kg)**



# Cadmium Concentration by County, page 1 of 2

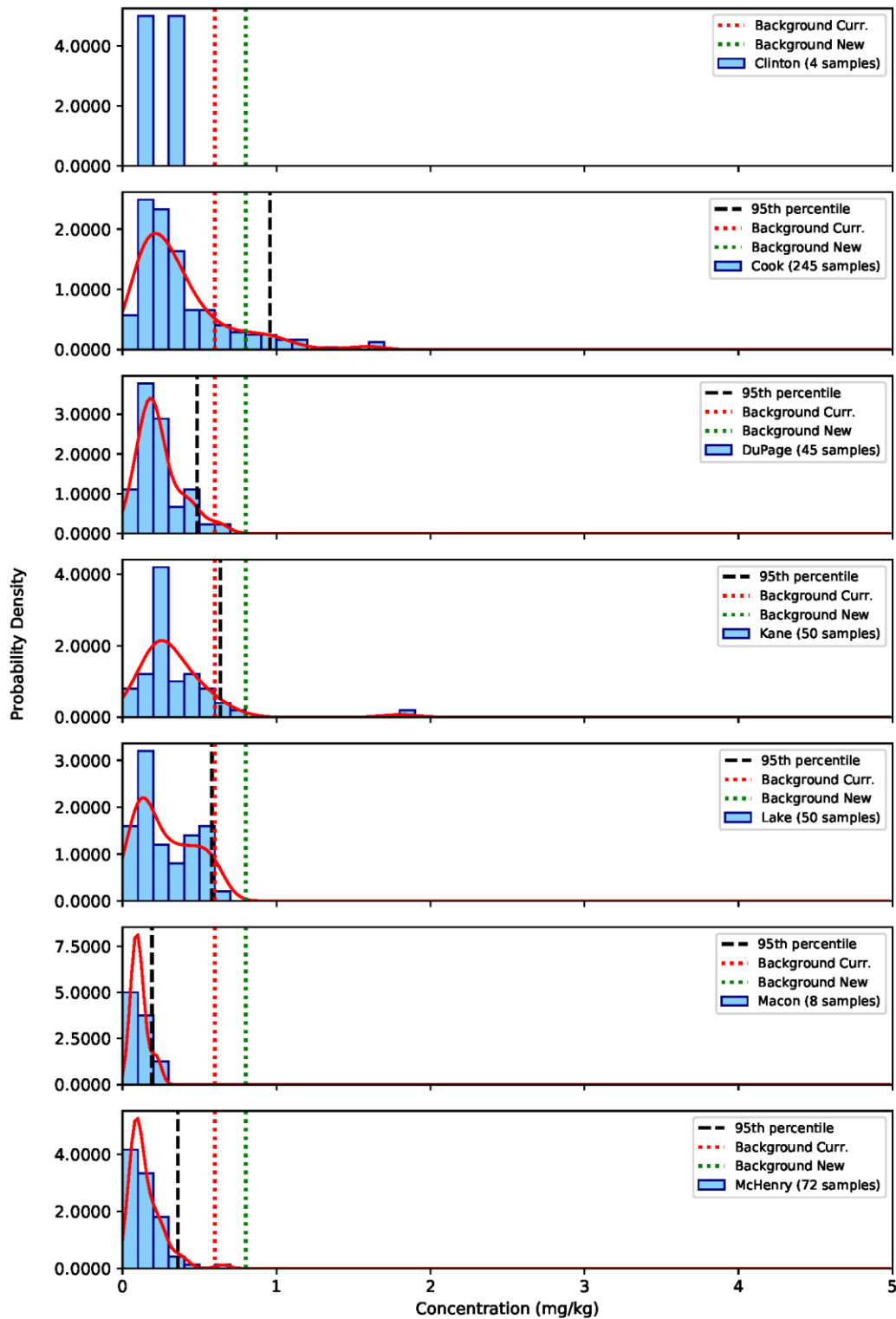


Figure 210. Histogram of RSL cadmium concentrations by Illinois county, Non-REC (mg/kg), part 1

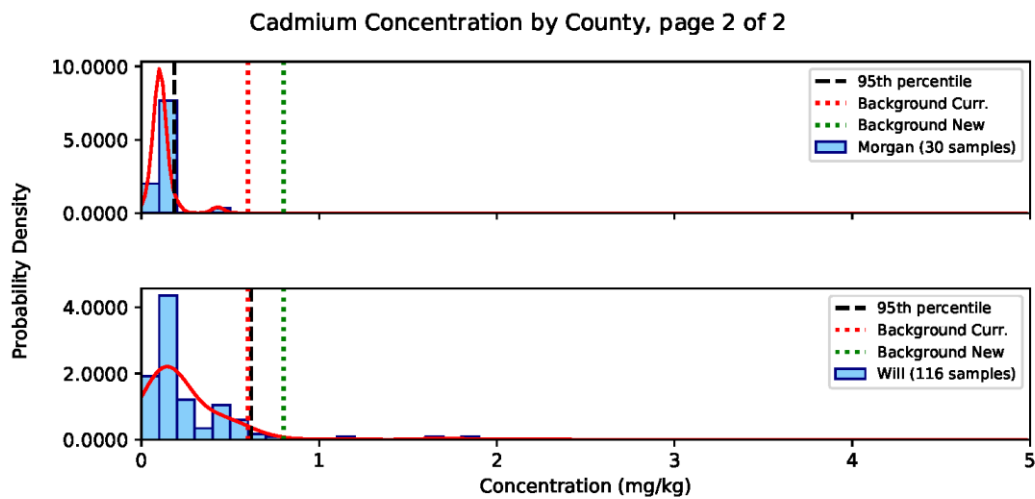


Figure 211. Histogram of RSL cadmium concentrations by Illinois county, Non-REC (mg/kg), part 2

253

Model	Number of Samples
Model 1	~220

254

### F.3 CADMIUM DE MINIMIS

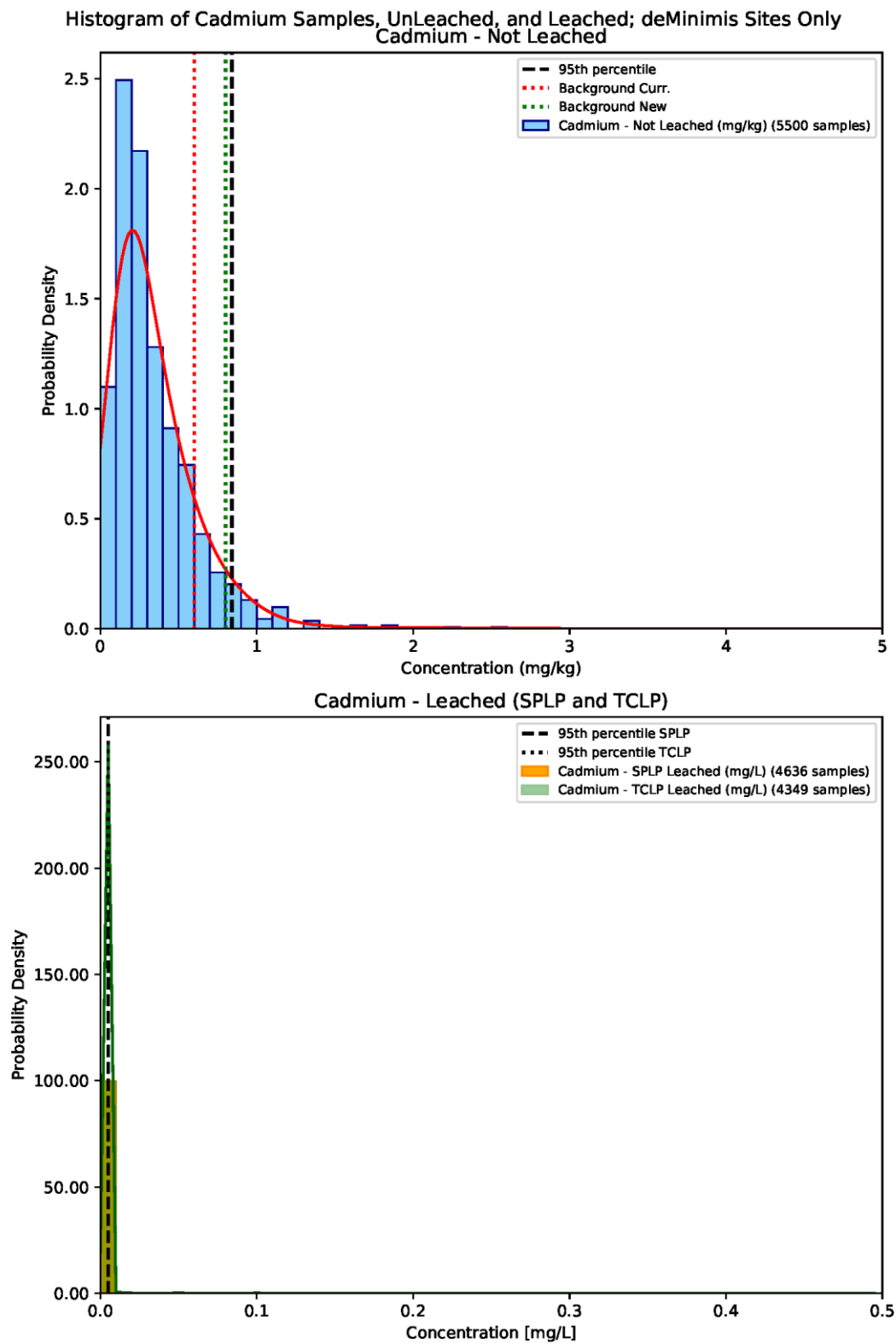


Figure 214. Histogram of RSL cadmium concentrations, de minimis (mg/kg)

Cadmium Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

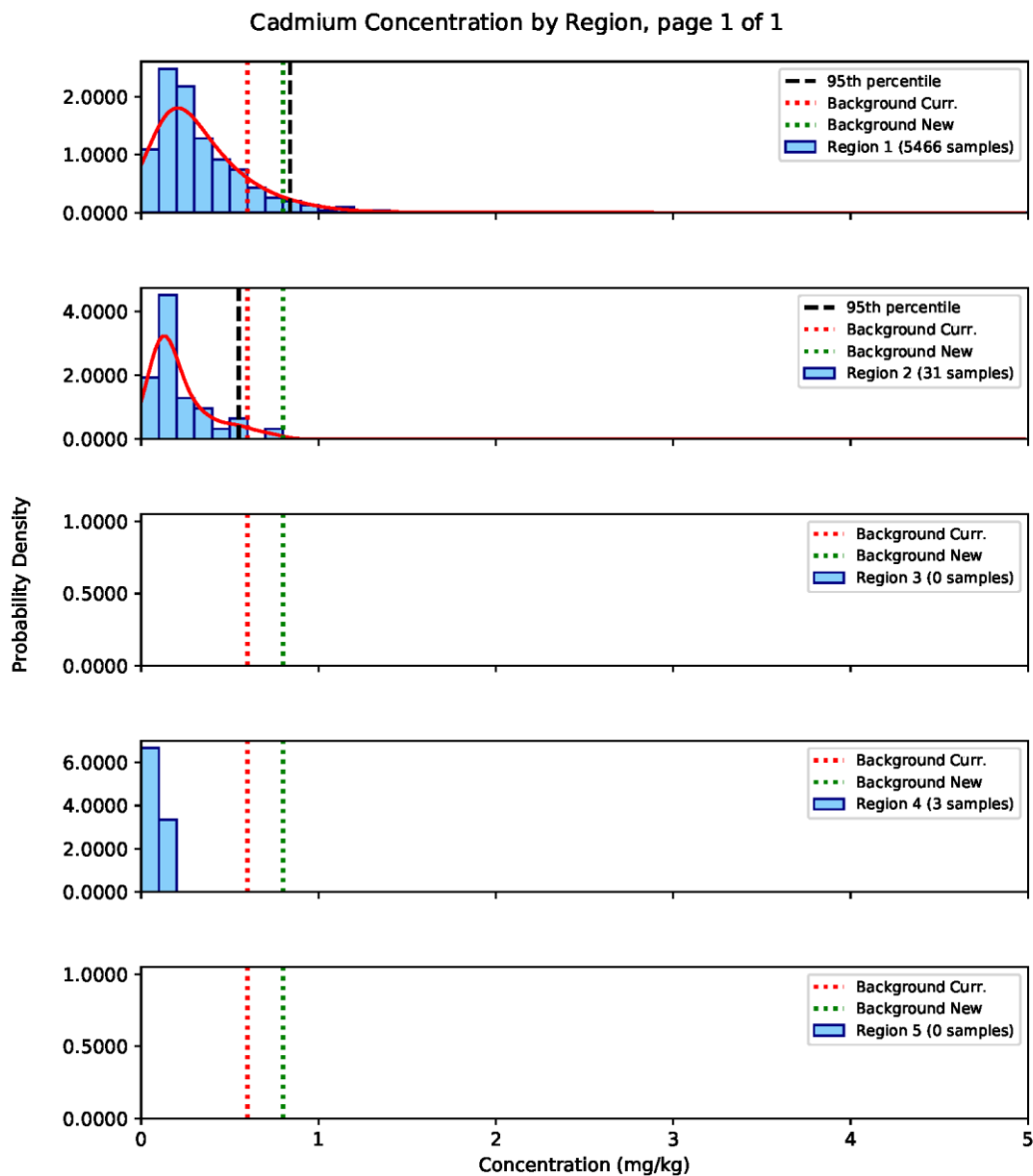


Figure 215. Histogram of RSL cadmium concentrations by IDOT Region, de minimis (mg/kg)



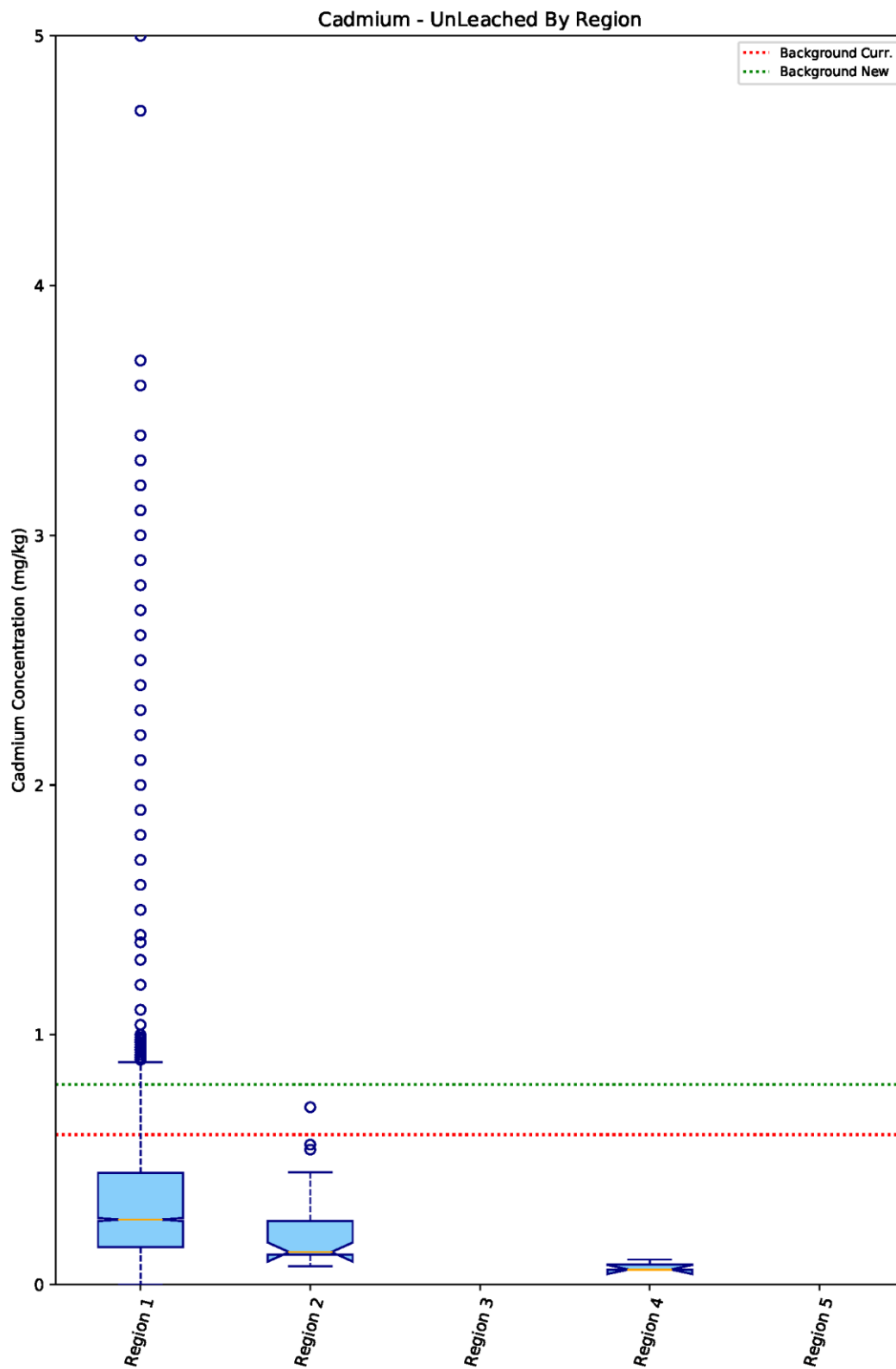


Figure 216. Boxplot of RSL cadmium concentrations by IDOT Region, de minimis (mg/kg)

Cadmium Concentration by District, page 1 of 2

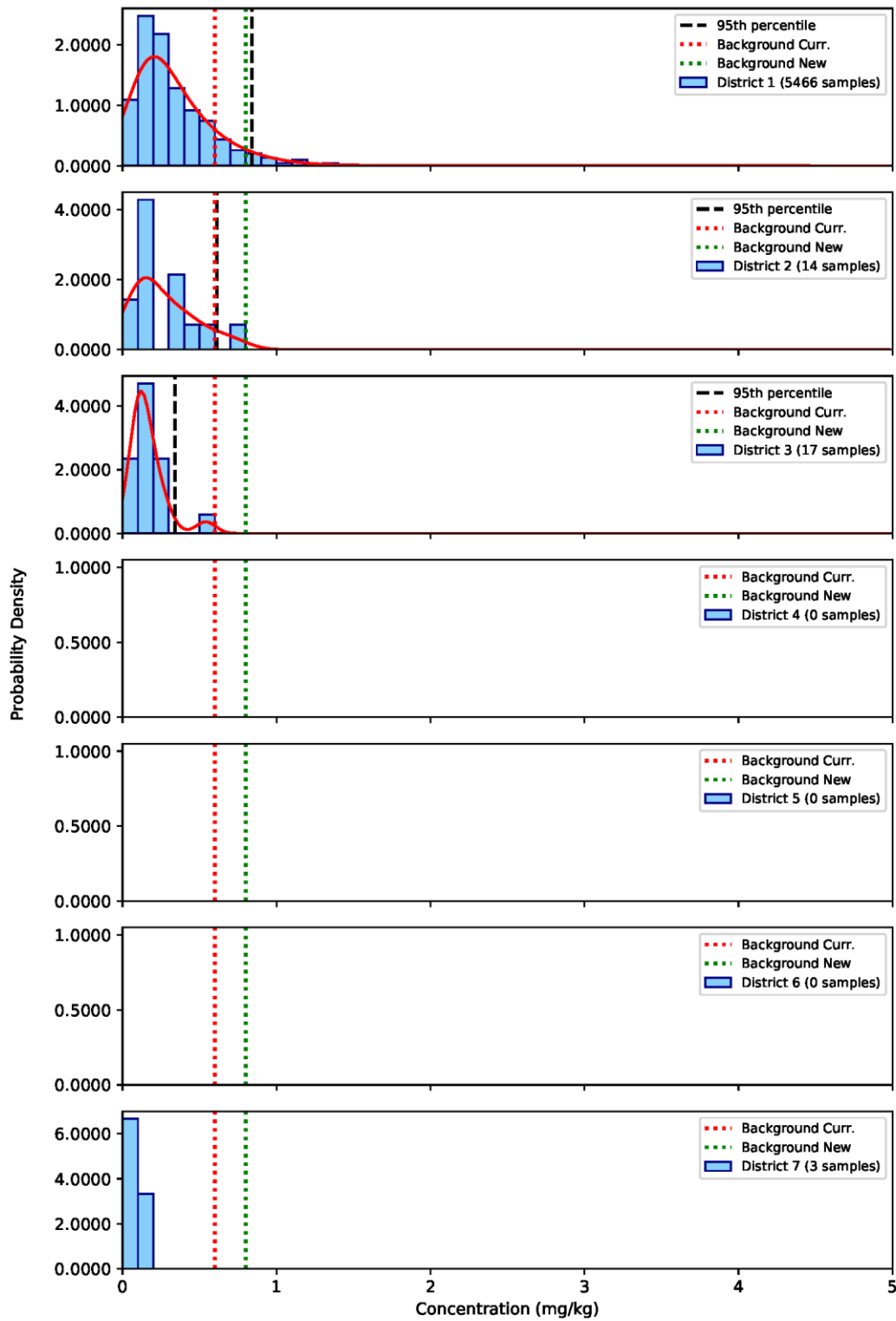


Figure 217. Histogram of RSL cadmium concentrations by IDOT District, de minimis (mg/kg), part 1

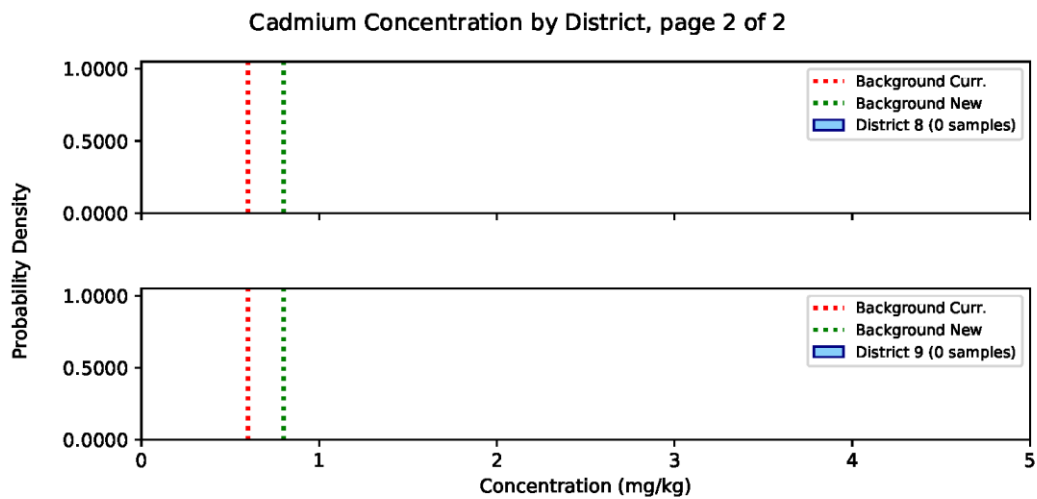


Figure 218. Histogram of RSL cadmium concentrations by IDOT District, de minimis (mg/kg), part 2

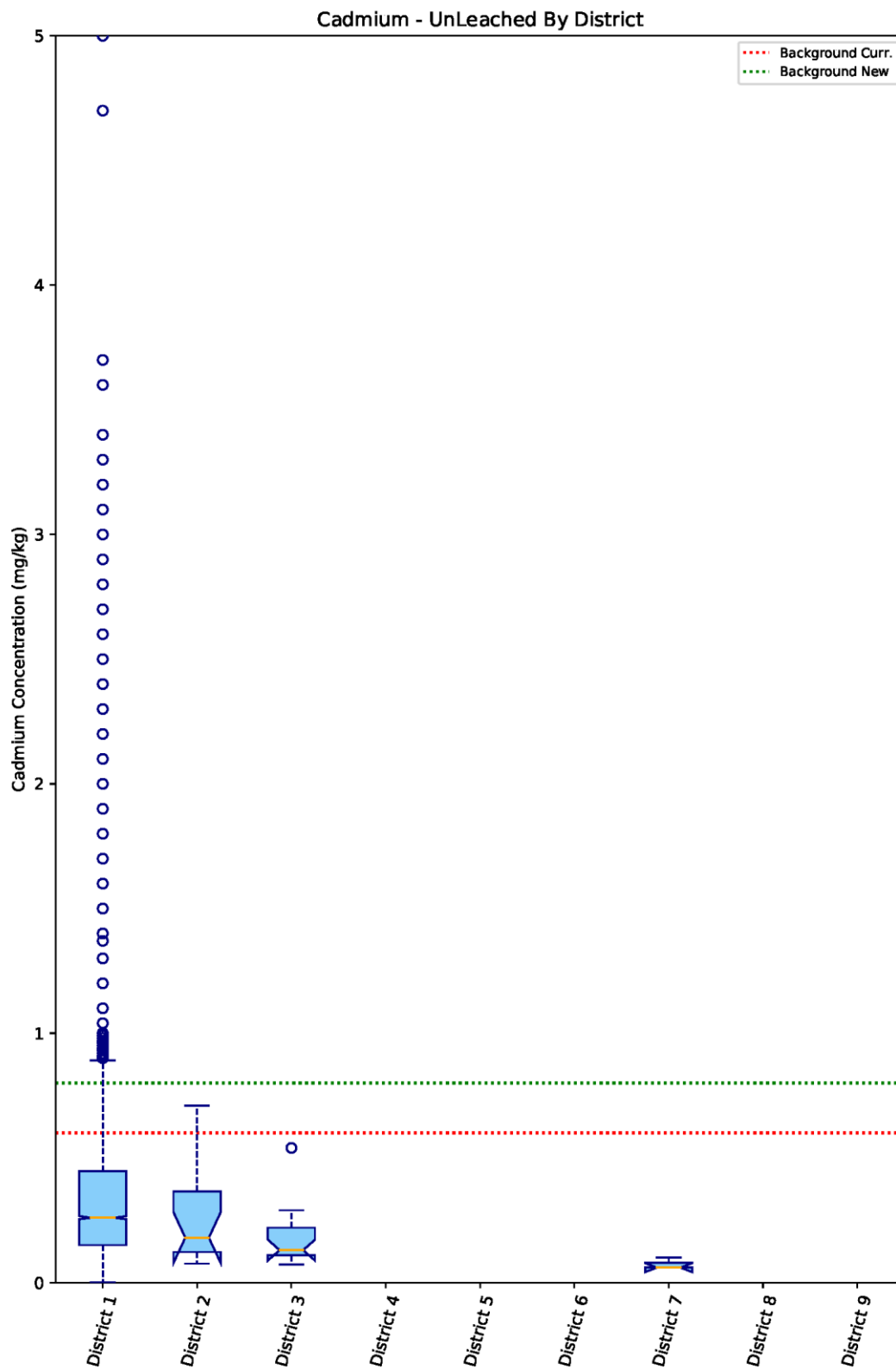


Figure 219. Boxplot of RSL cadmium concentrations by IDOT District, de minimis (mg/kg)

Cadmium Concentration by County, page 1 of 2

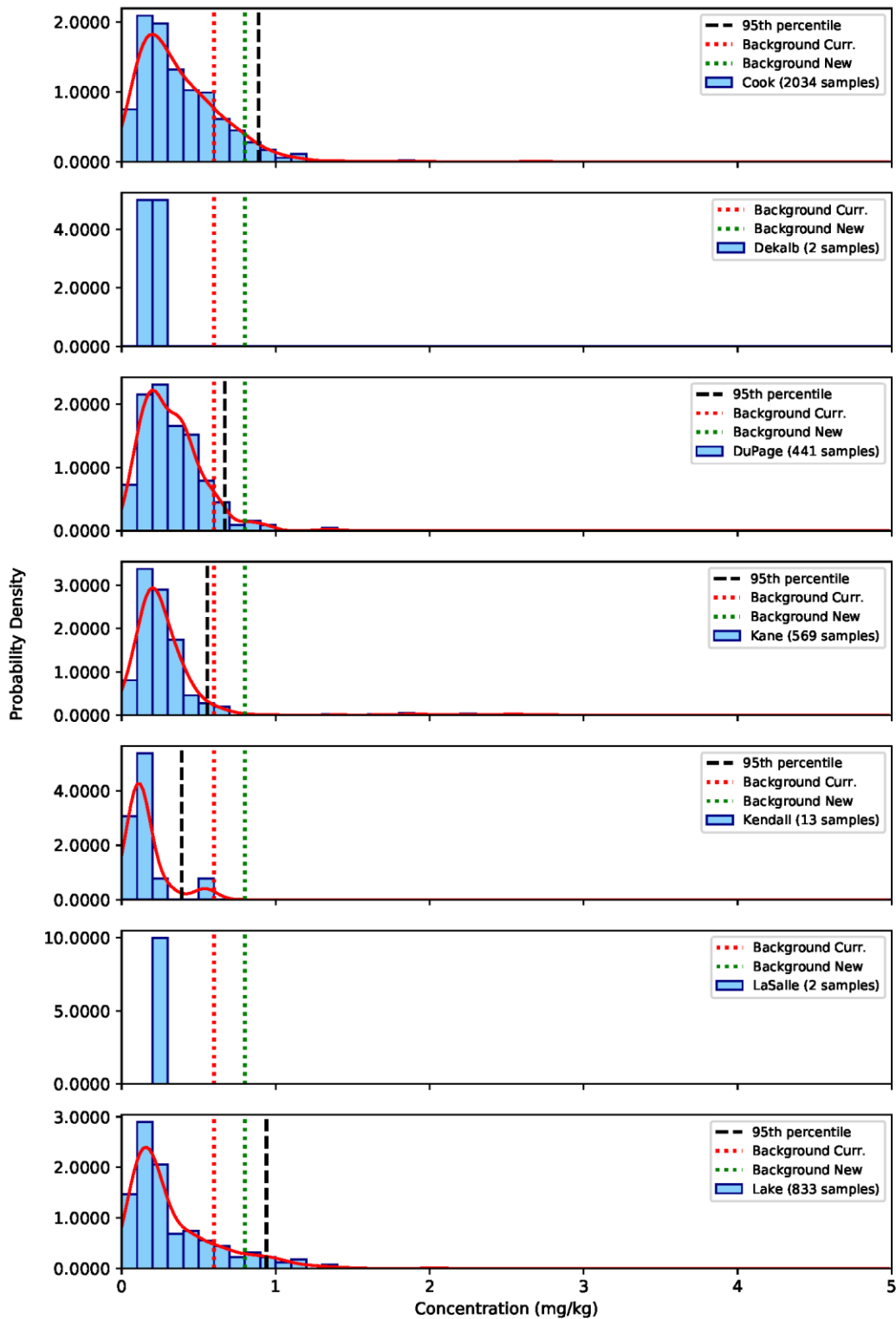


Figure 220. Histogram of RSL cadmium concentrations by Illinois county, de minimis (mg/kg), part 1

# Cadmium Concentration by County, page 2 of 2

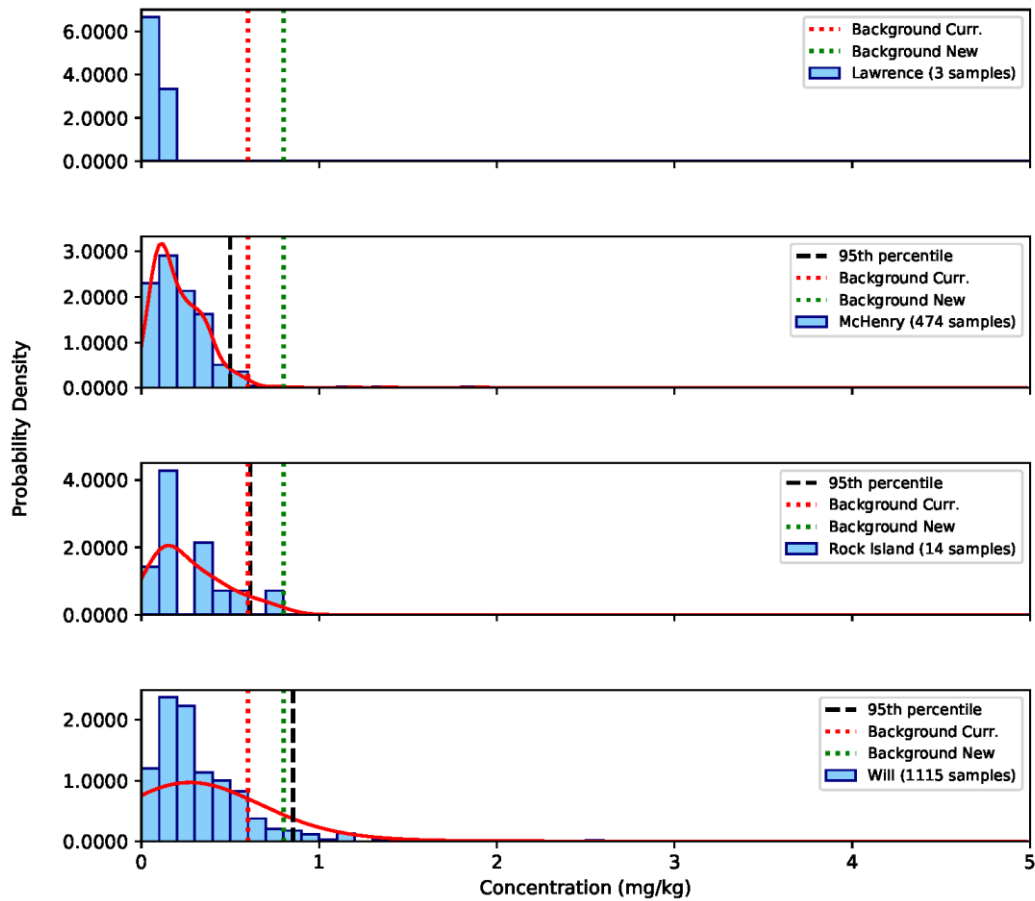


Figure 221. Histogram of RSL cadmium concentrations by Illinois county, de minimis (mg/kg), part 1

Cadmium Concentration for 95th Percentile by County: deMinimis Sites

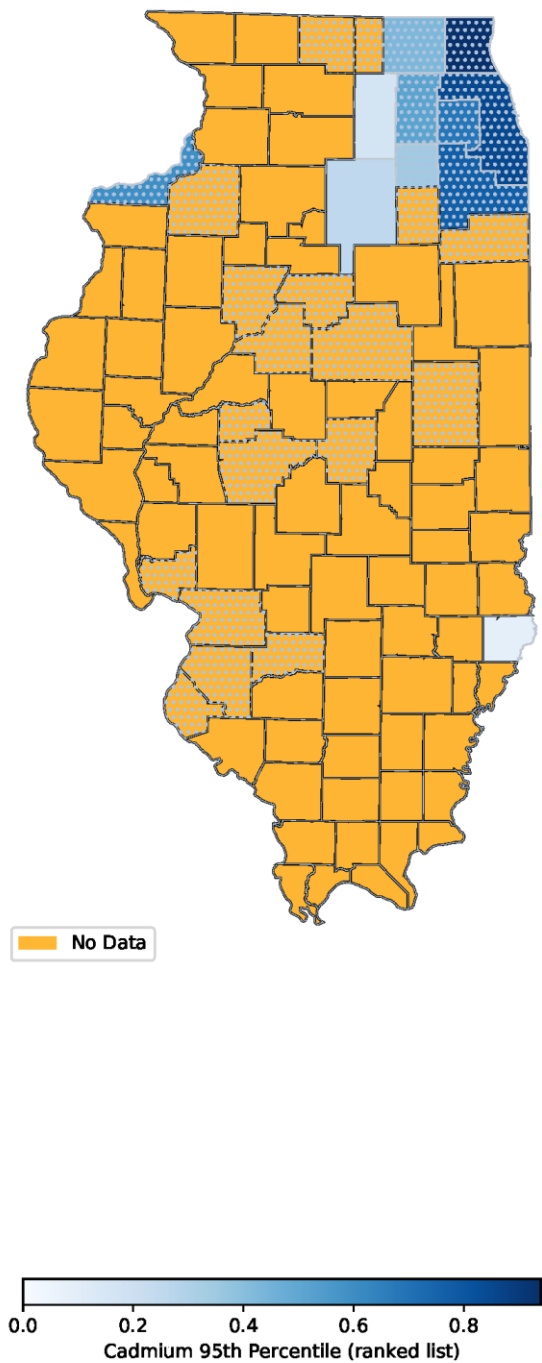


Figure 222. Map of RSL cadmium 95th percentile concentration by Illinois county, de minimis (mg/kg)

Number of Cadmium Samples by County: deMinimis Sites

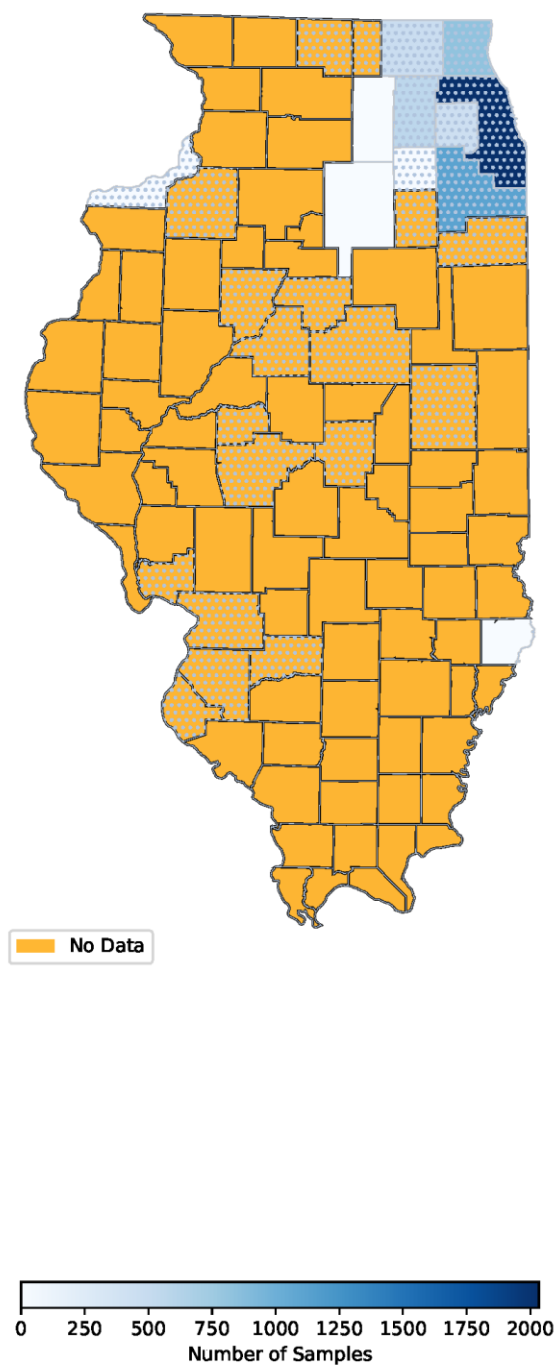
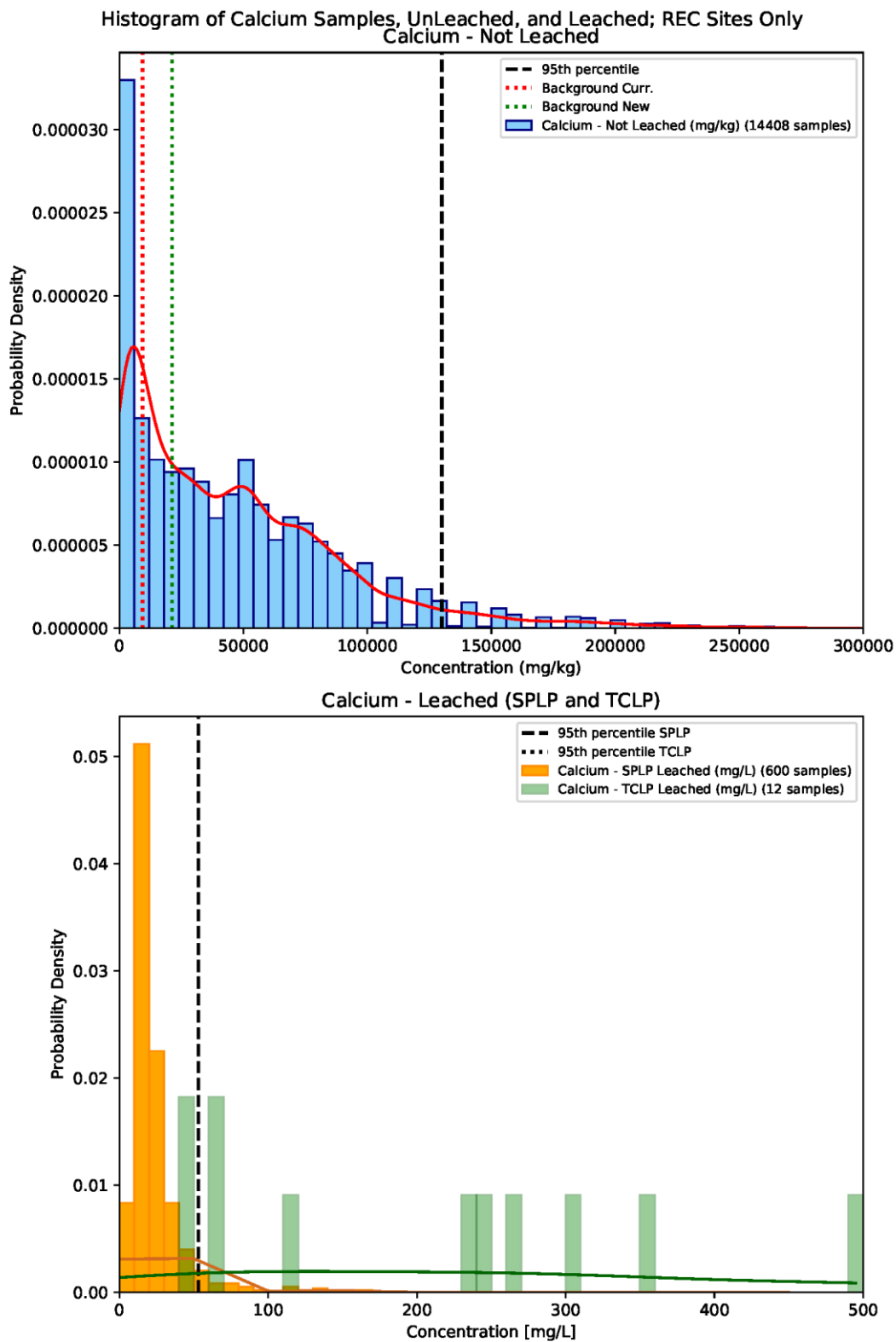


Figure 223. Map of RSL cadmium sample quantity by Illinois county, de minimis (mg/kg)



## **APPENDIX G. ANALYTE ANALYSIS: CALCIUM**

### **G.1 CALCIUM REC**



**Figure 224. Histogram of RSL calcium concentrations, REC (mg/kg)**

Calcium Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

Calcium Concentration by Region, page 1 of 1

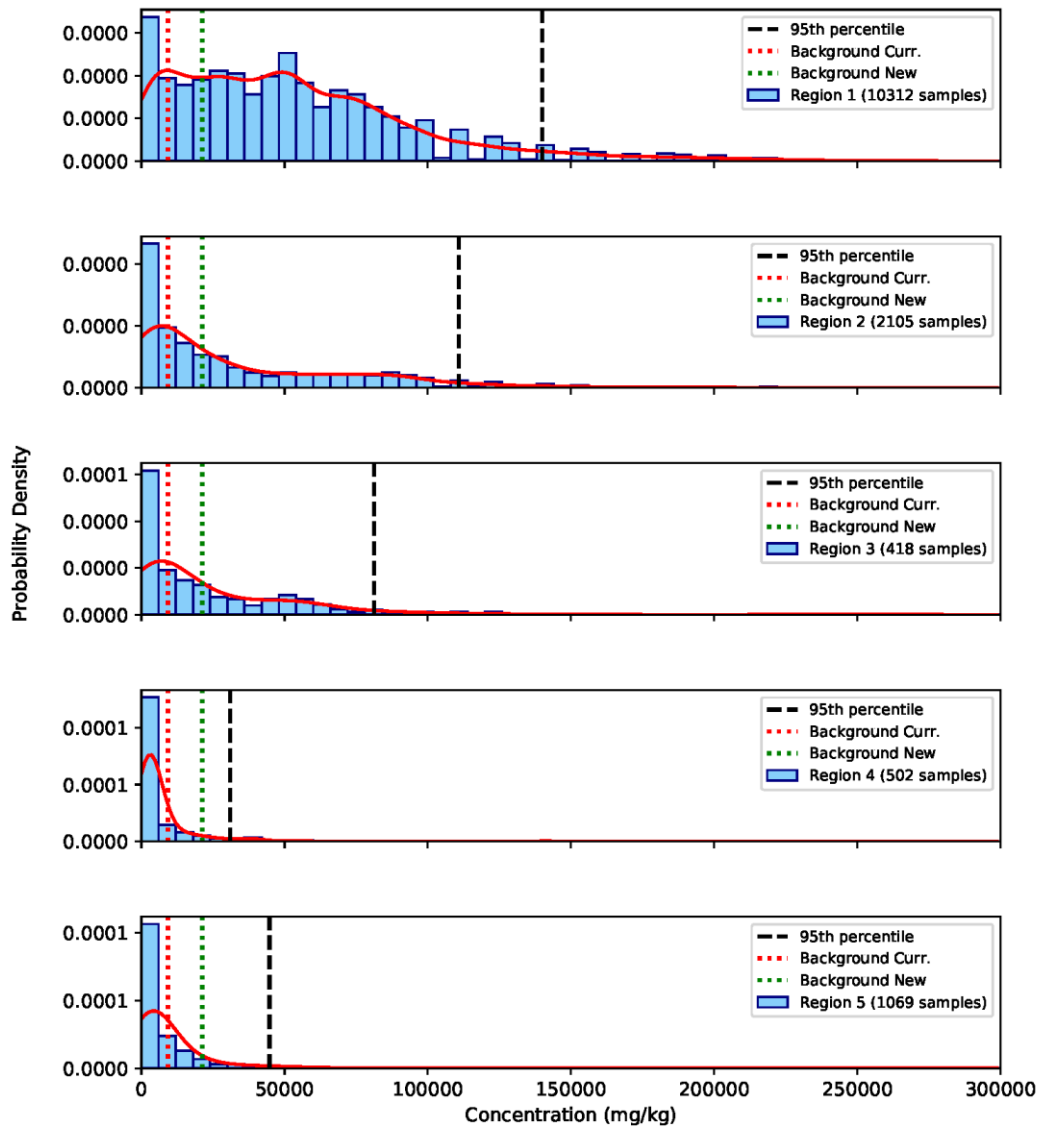


Figure 225. Histogram of RSL calcium concentrations by IDOT Region, REC (mg/kg)

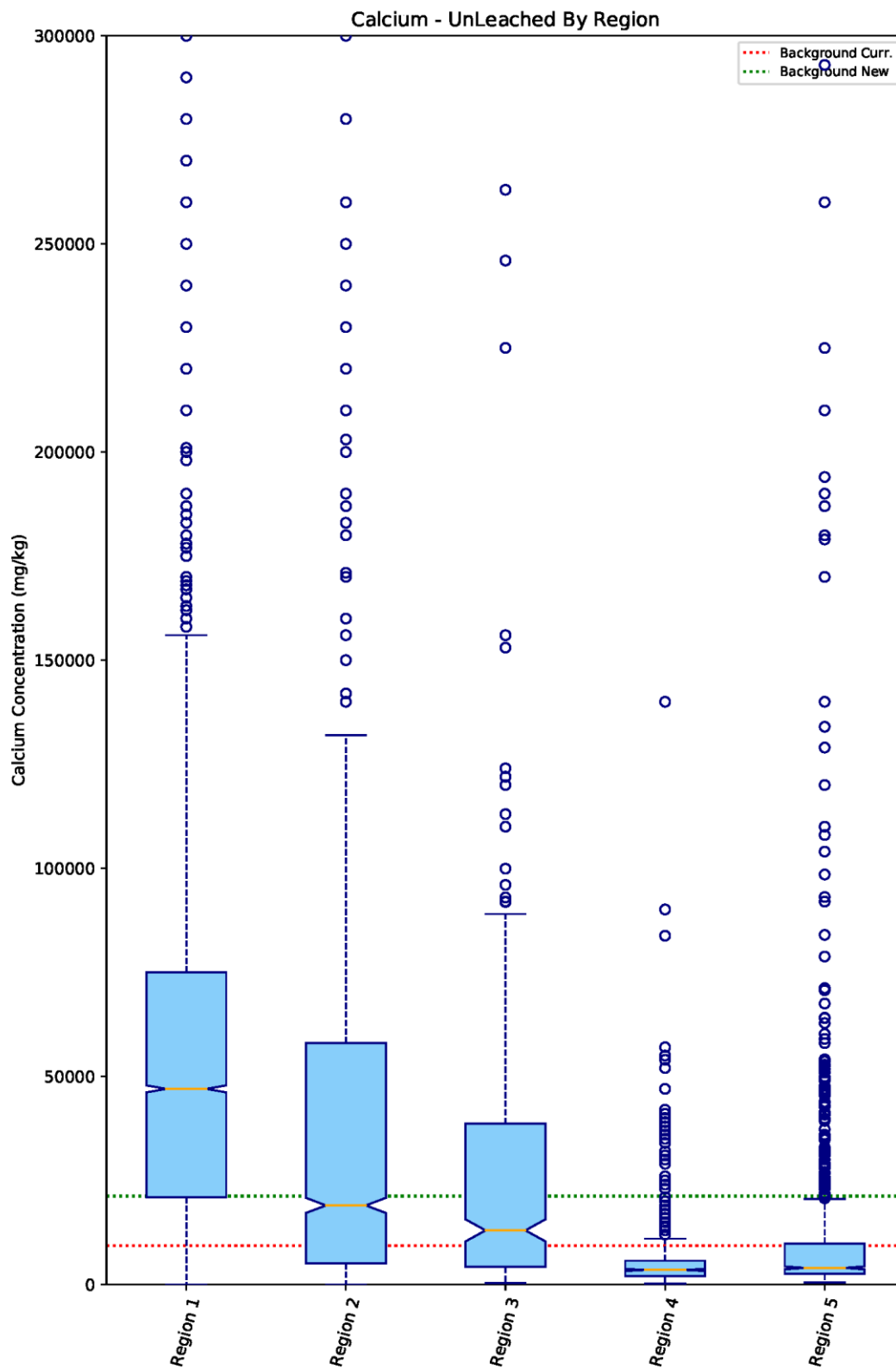


Figure 226. Boxplot of RSL calcium concentrations by IDOT Region, REC (mg/kg)

Calcium Concentration by District, page 1 of 2

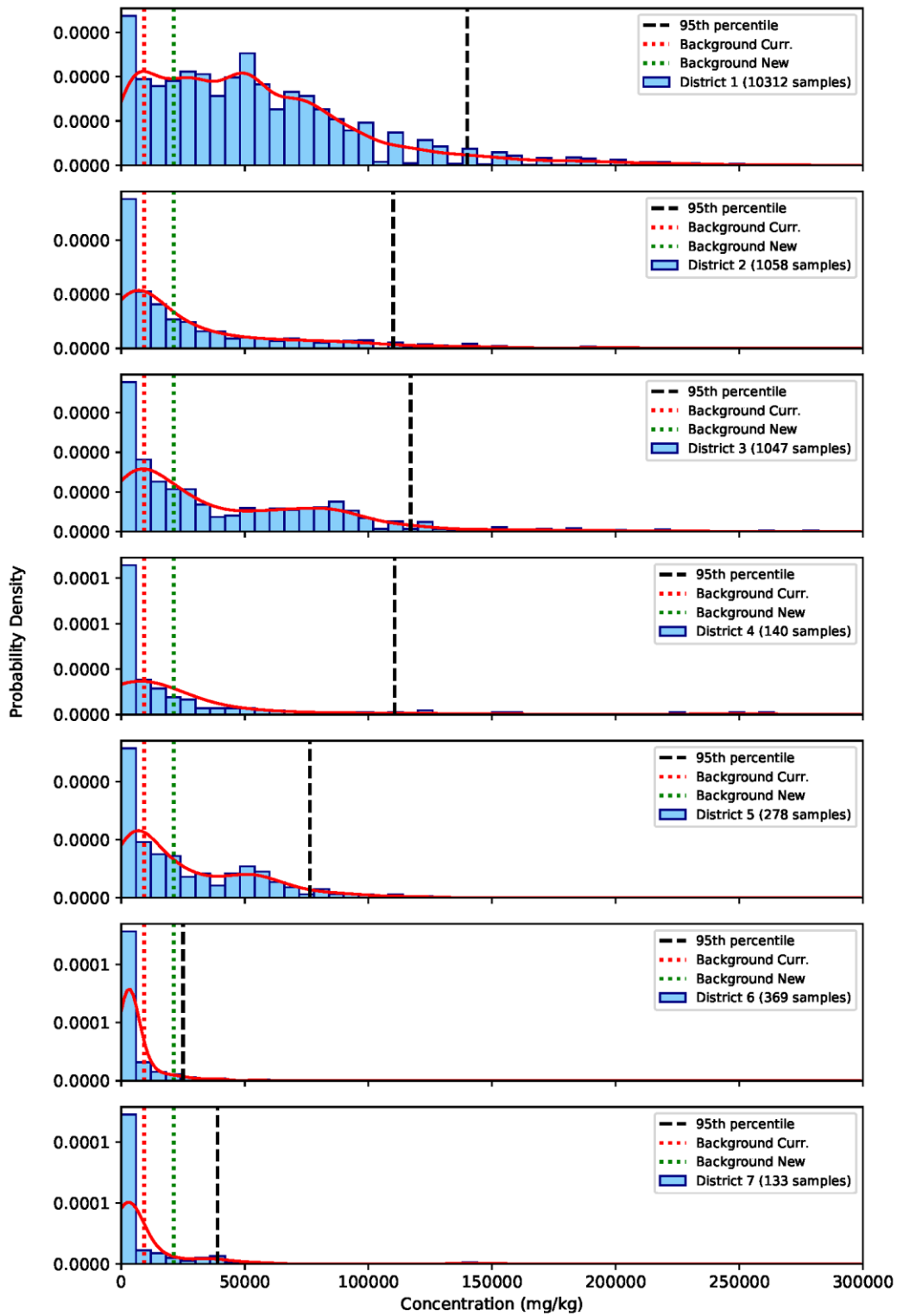


Figure 227. Histogram of RSL calcium concentrations by IDOT District, REC (mg/kg), part 1

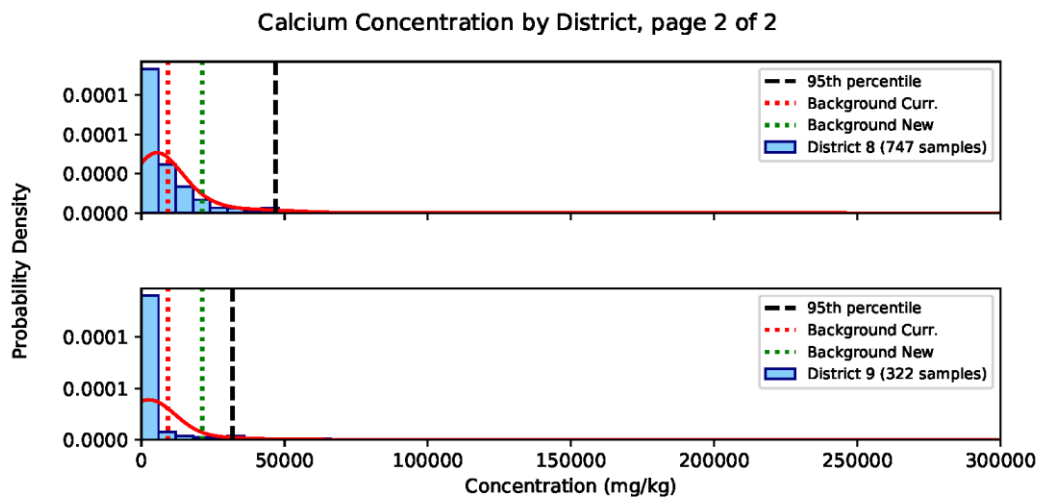


Figure 228. Histogram of RSL calcium concentrations by IDOT District, REC (mg/kg), part 2

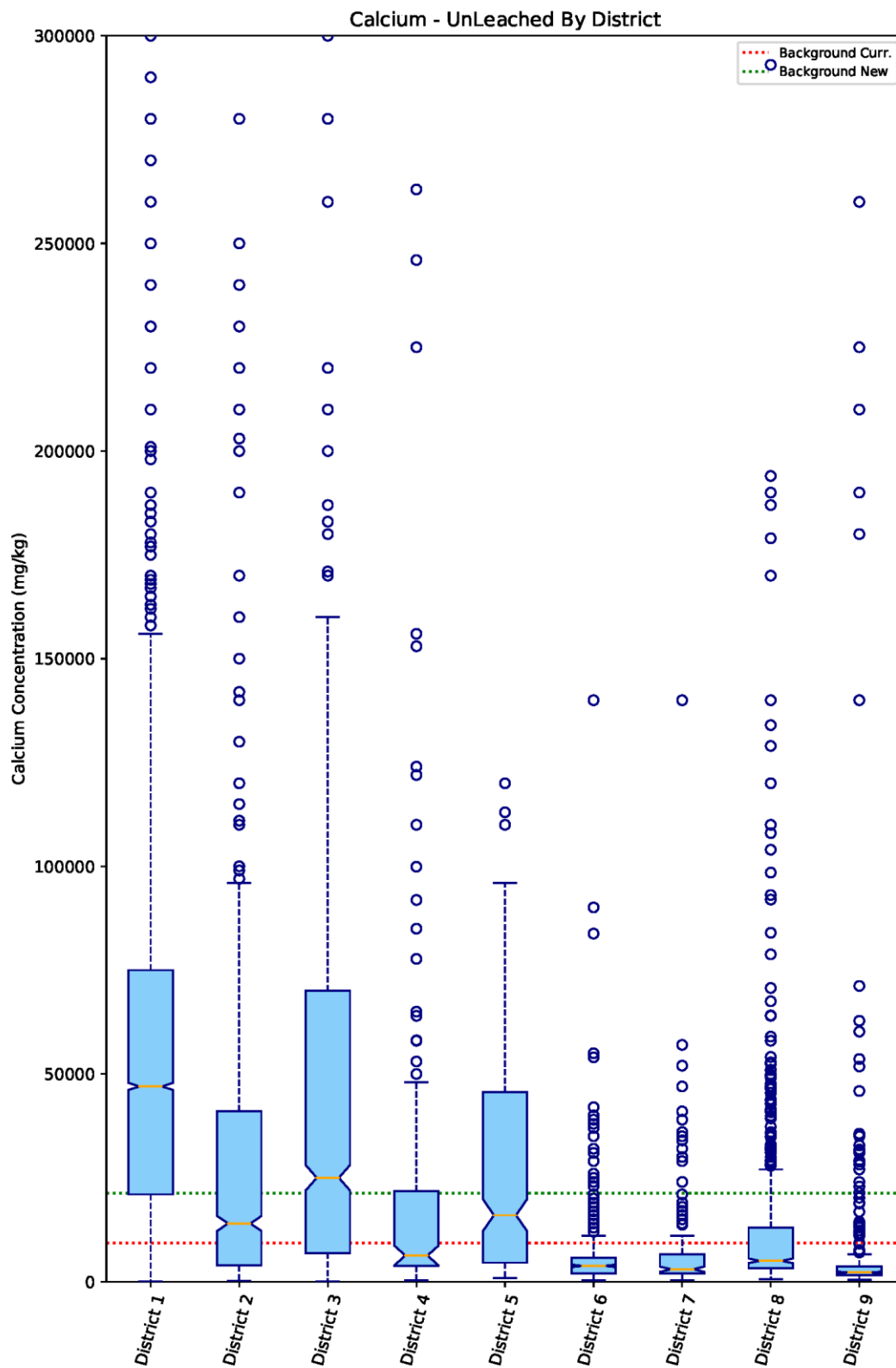


Figure 229. Boxplot of RSL calcium concentrations by IDOT District, REC (mg/kg)



Calcium Concentration by County, page 1 of 9

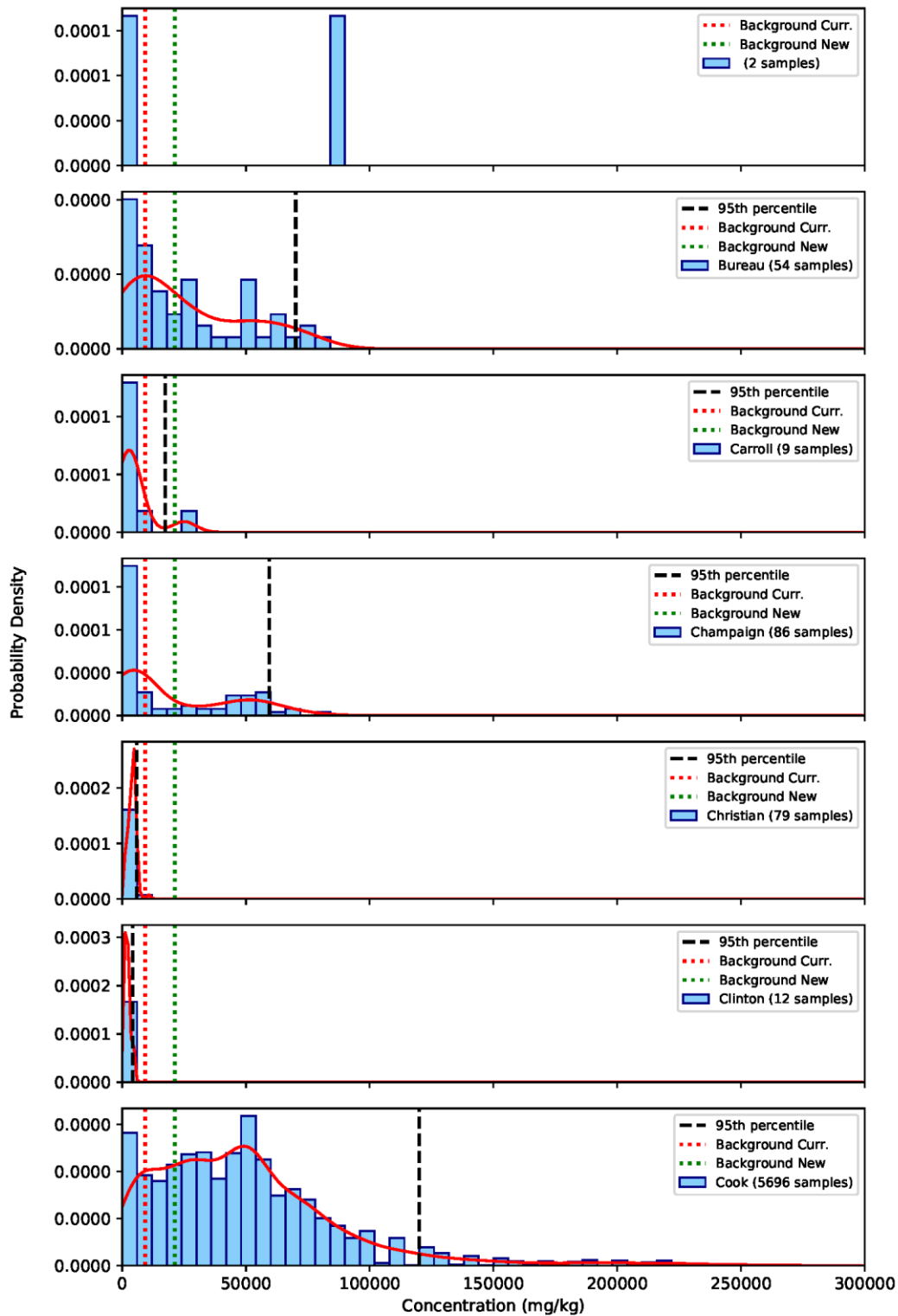


Figure 230. Histogram of RSL calcium concentrations by Illinois county, REC (mg/kg), part 1

# Calcium Concentration by County, page 2 of 9

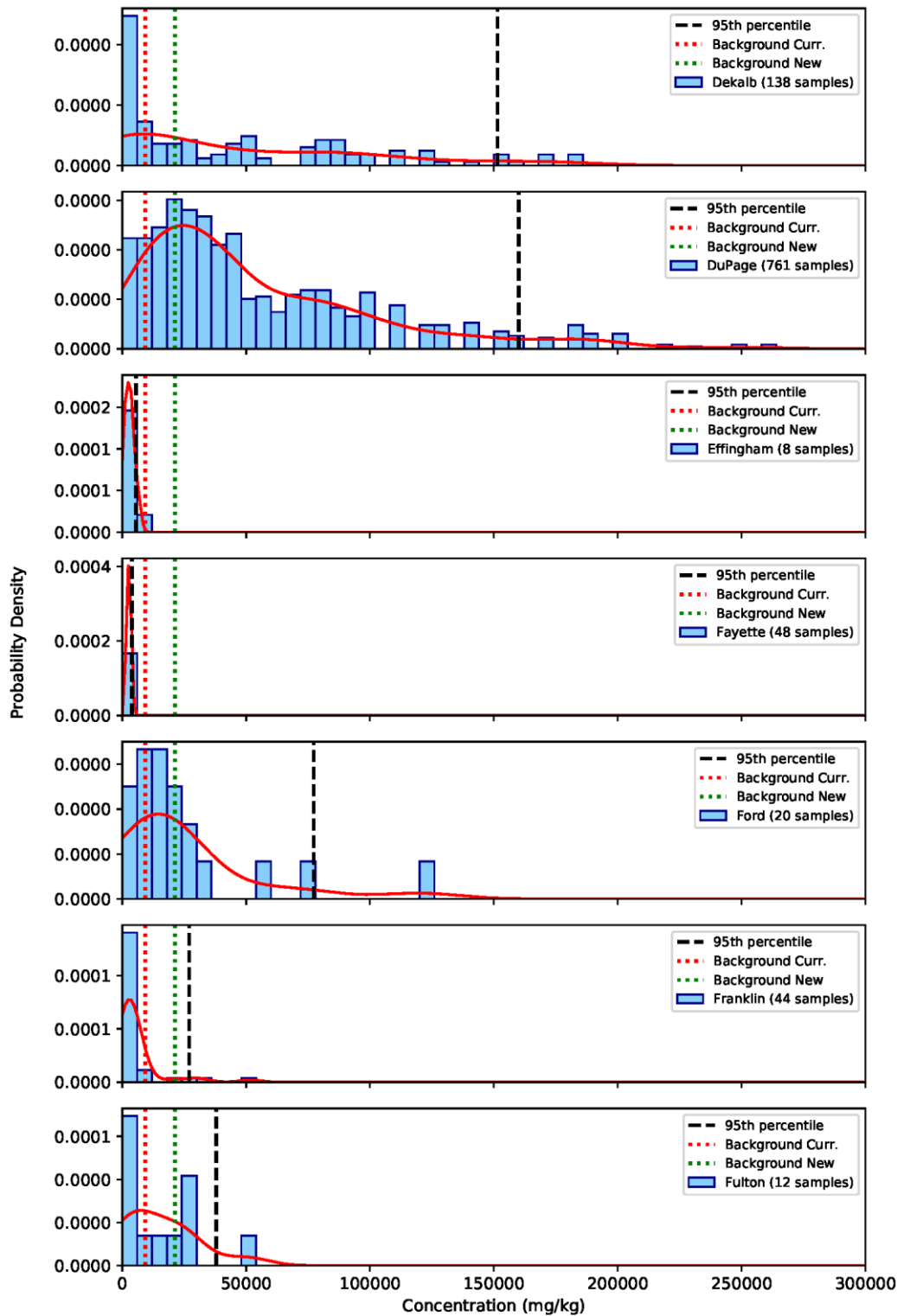


Figure 231. Histogram of RSL calcium concentrations by Illinois county, REC (mg/kg), part 2

# Calcium Concentration by County, page 3 of 9

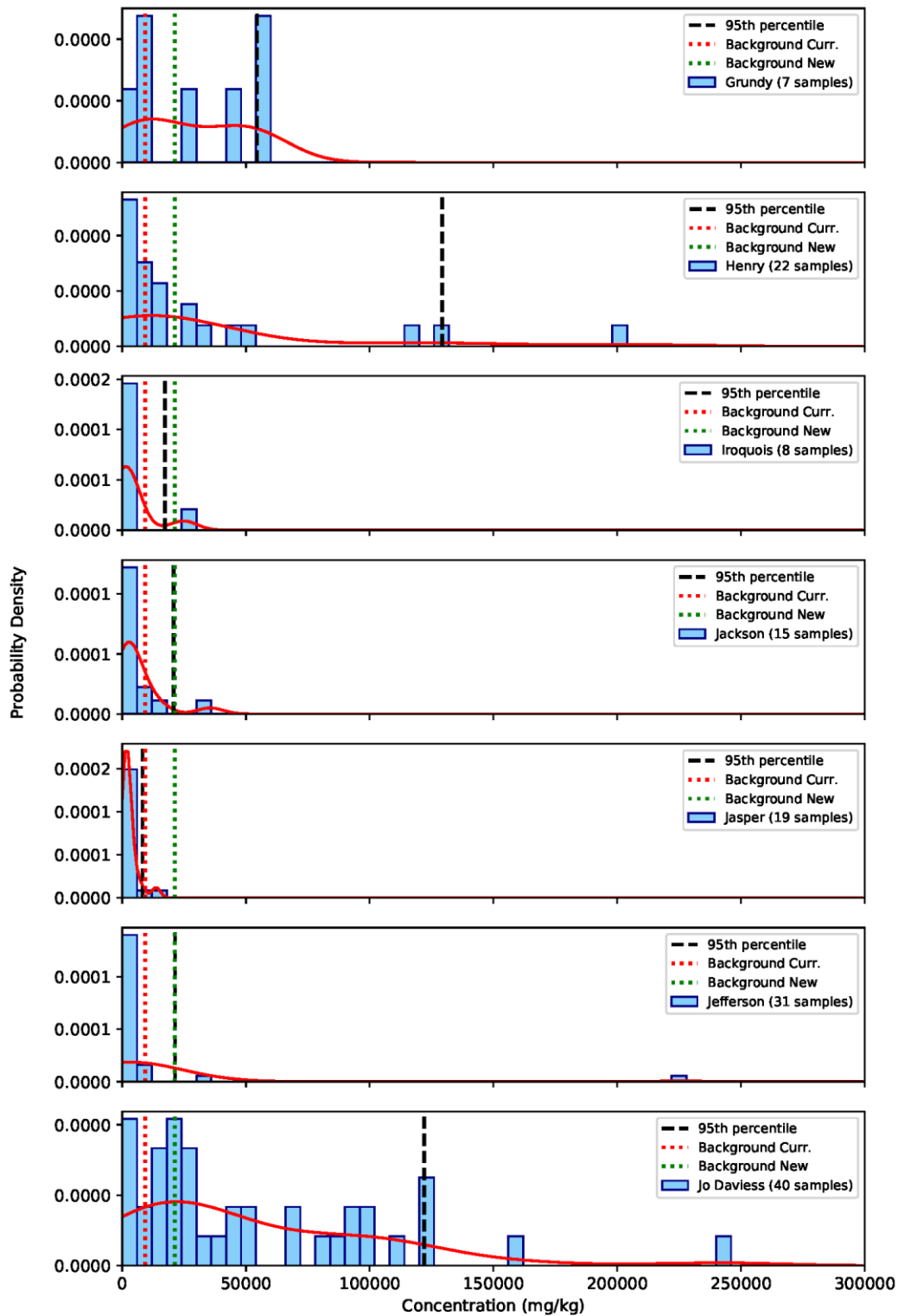


Figure 232. Histogram of RSL calcium concentrations by Illinois county, REC (mg/kg), part 3

Calcium Concentration by County, page 4 of 9

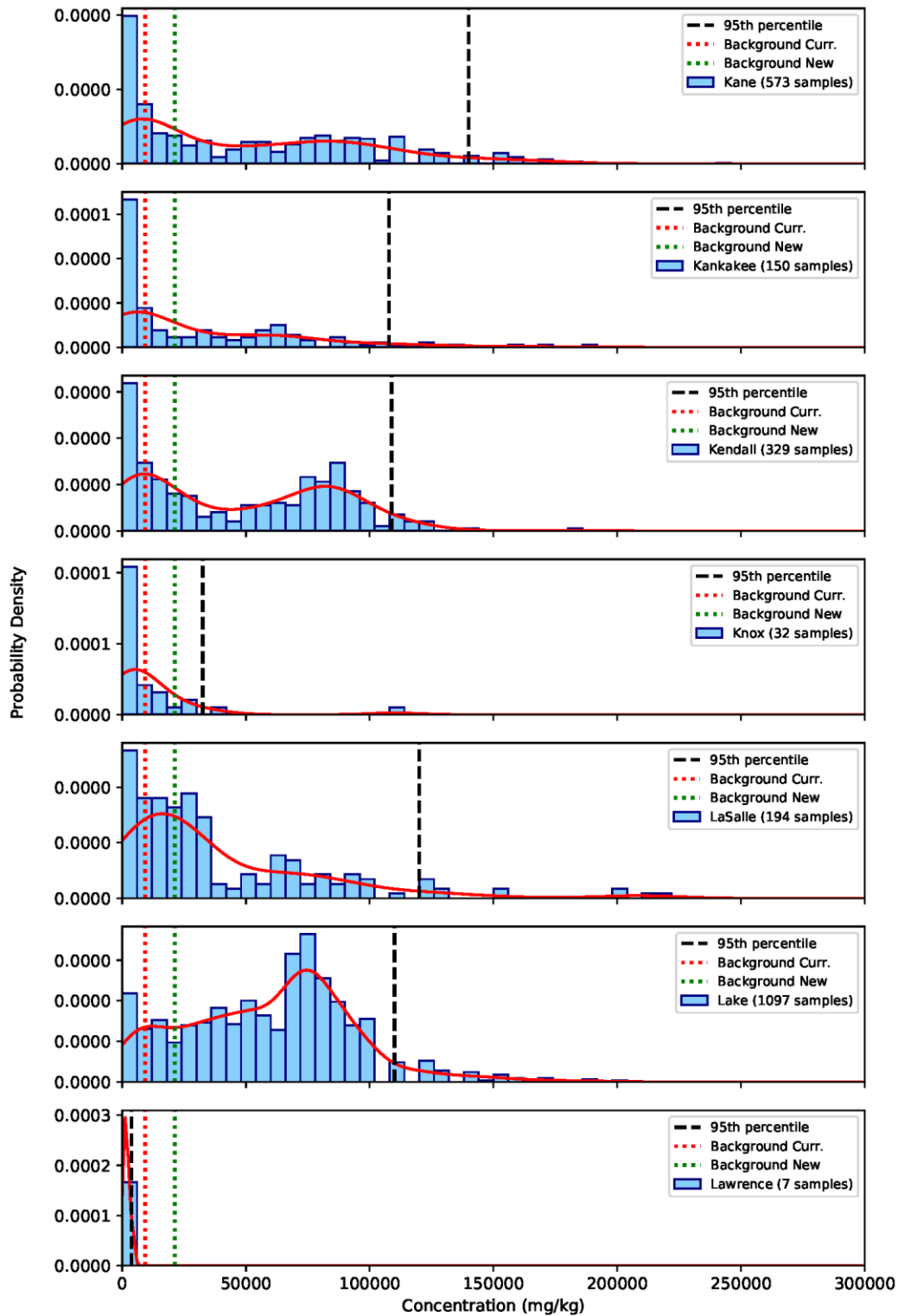


Figure 233. Histogram of RSL calcium concentrations by Illinois county, REC (mg/kg), part 4

Calcium Concentration by County, page 5 of 9

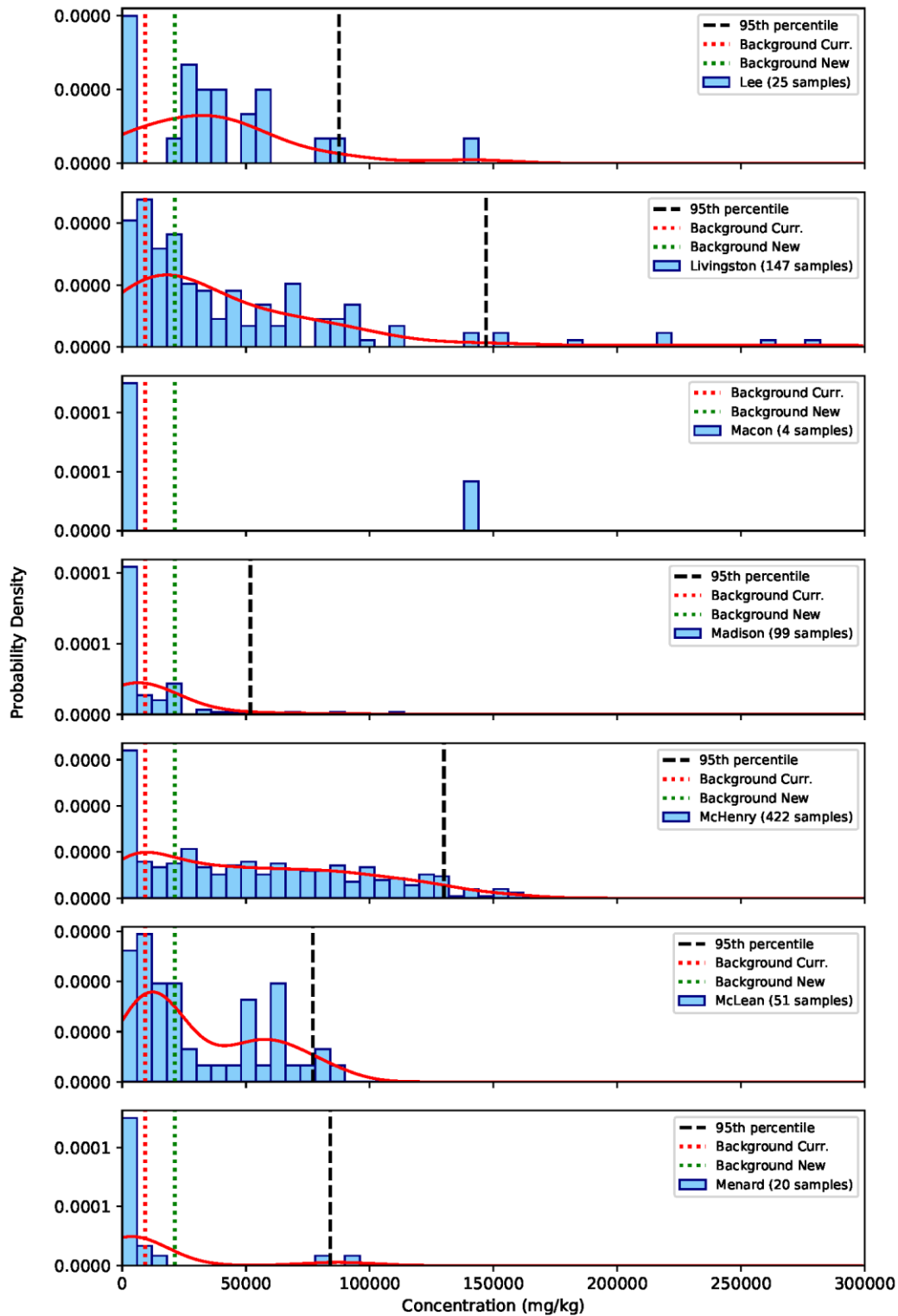


Figure 234. Histogram of RSL calcium concentrations by Illinois county, REC (mg/kg), part 5

Calcium Concentration by County, page 6 of 9

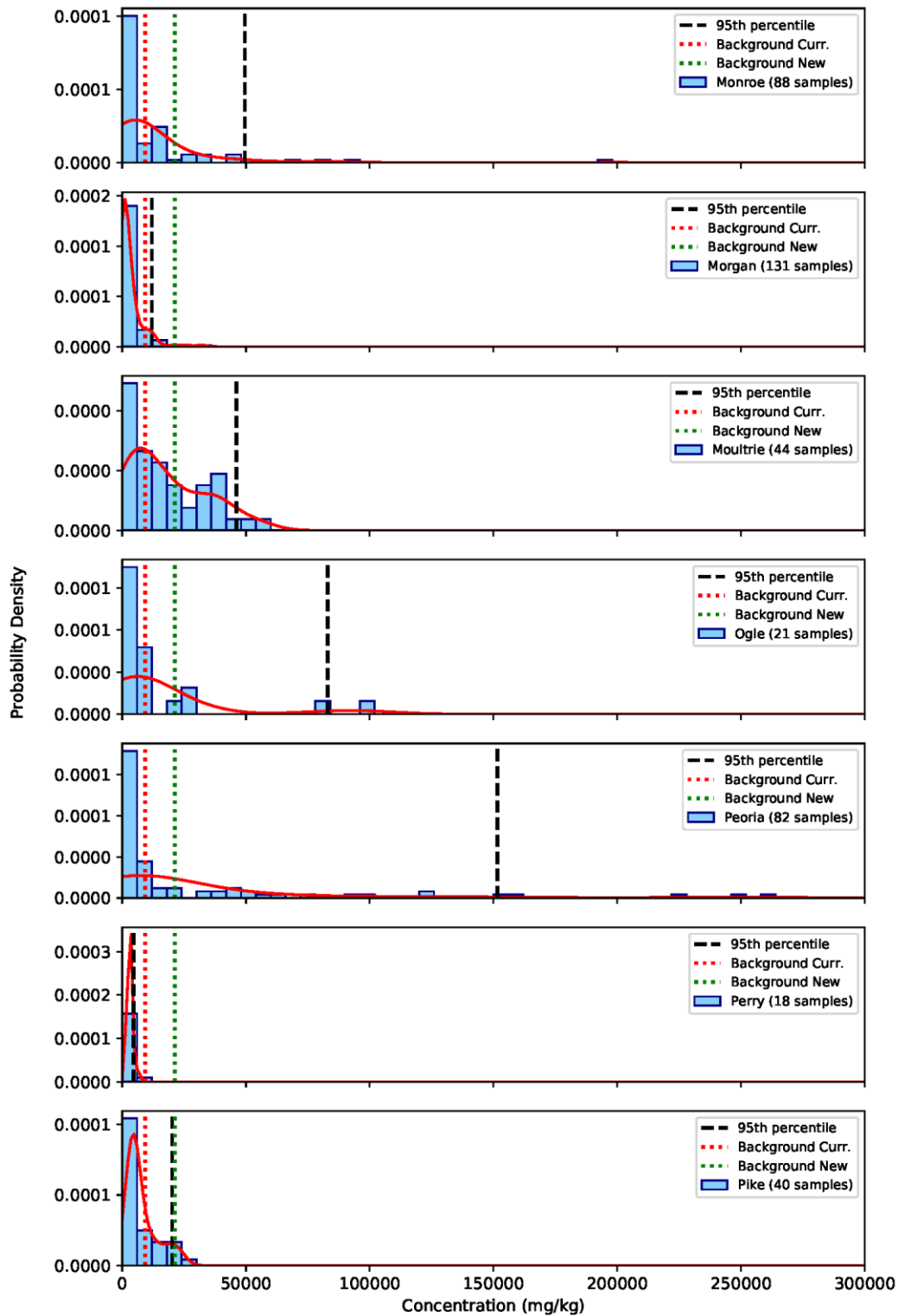


Figure 235. Histogram of RSL calcium concentrations by Illinois county, REC (mg/kg), part 6

# Calcium Concentration by County, page 7 of 9

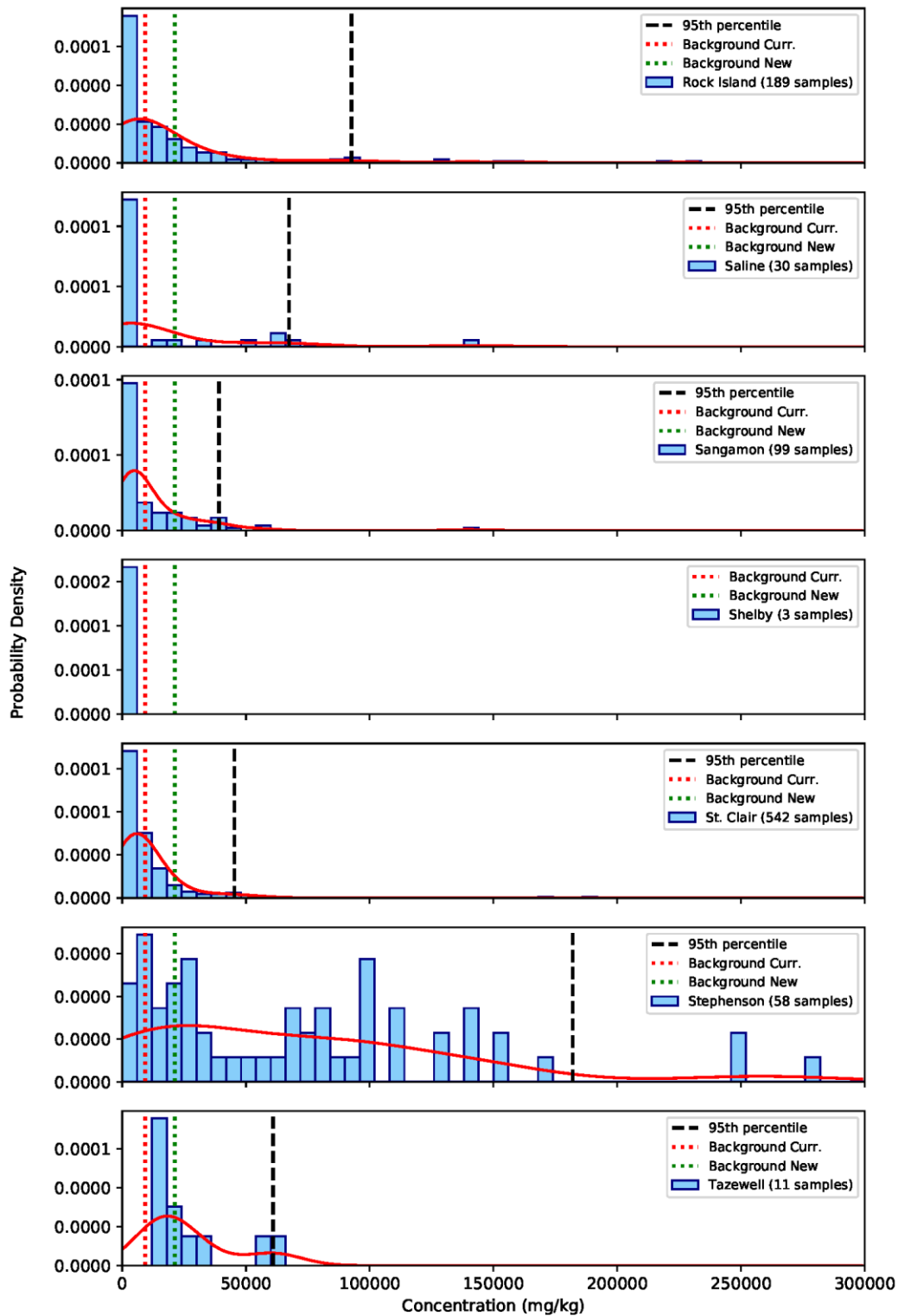


Figure 236. Histogram of RSL calcium concentrations by Illinois county, REC (mg/kg), part 7

Calcium Concentration by County, page 8 of 9

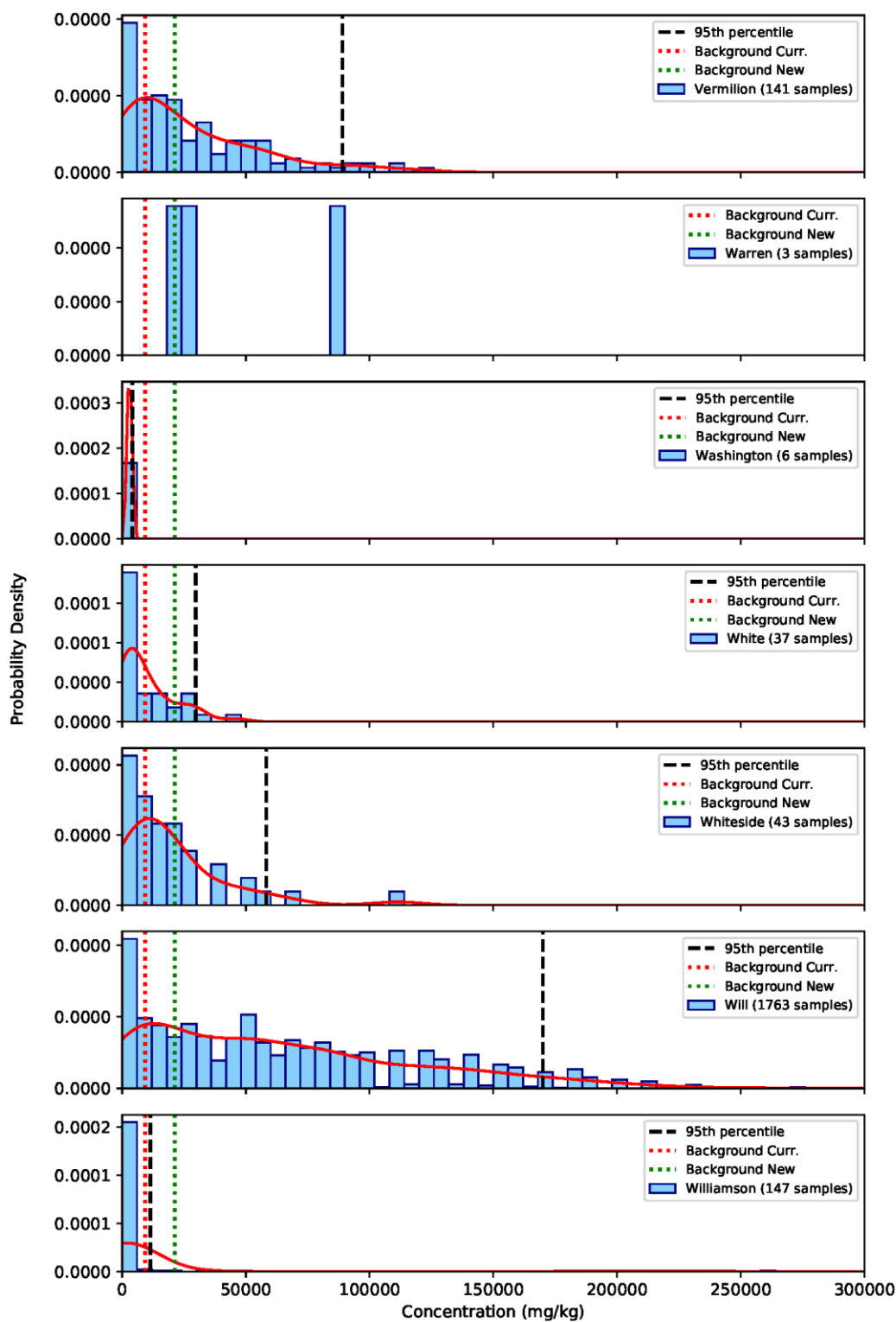


Figure 237. Histogram of RSL calcium concentrations by Illinois county, REC (mg/kg), part 8



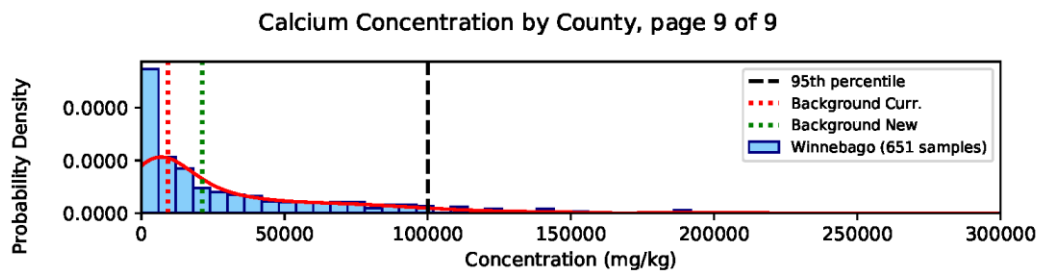


Figure 238. Histogram of RSL calcium concentrations by Illinois county, REC (mg/kg), part 9

Calcium Concentration for 95th Percentile by County: REC Sites

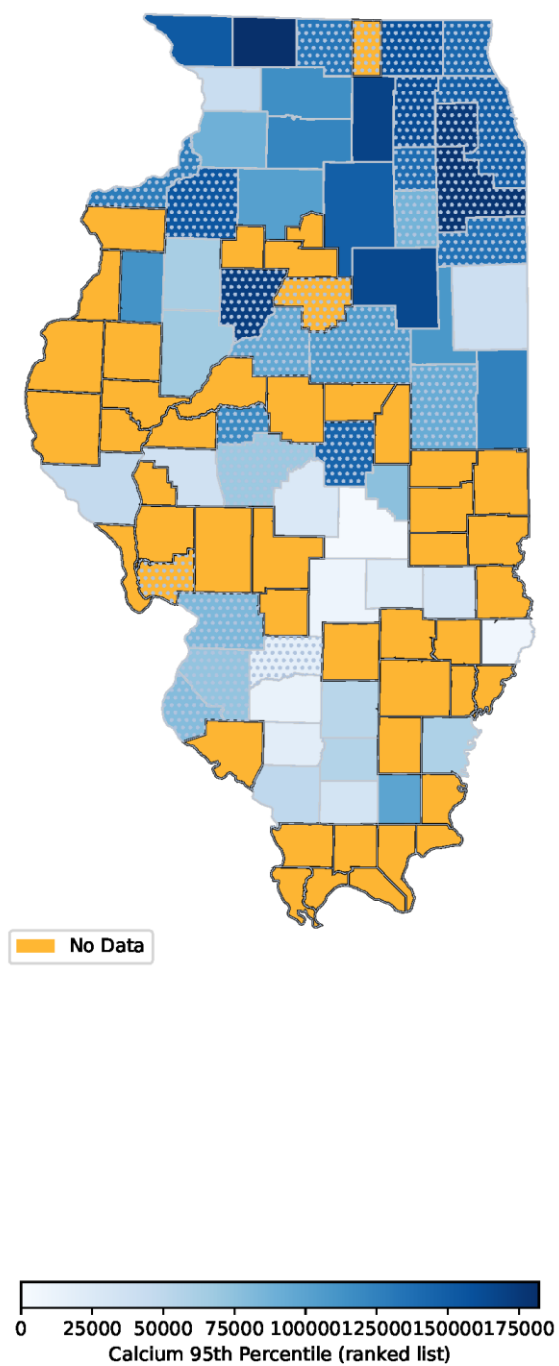


Figure 239. Map of RSL calcium 95th percentile concentration by Illinois county, REC (mg/kg)

Number of Calcium Samples by County: REC Sites

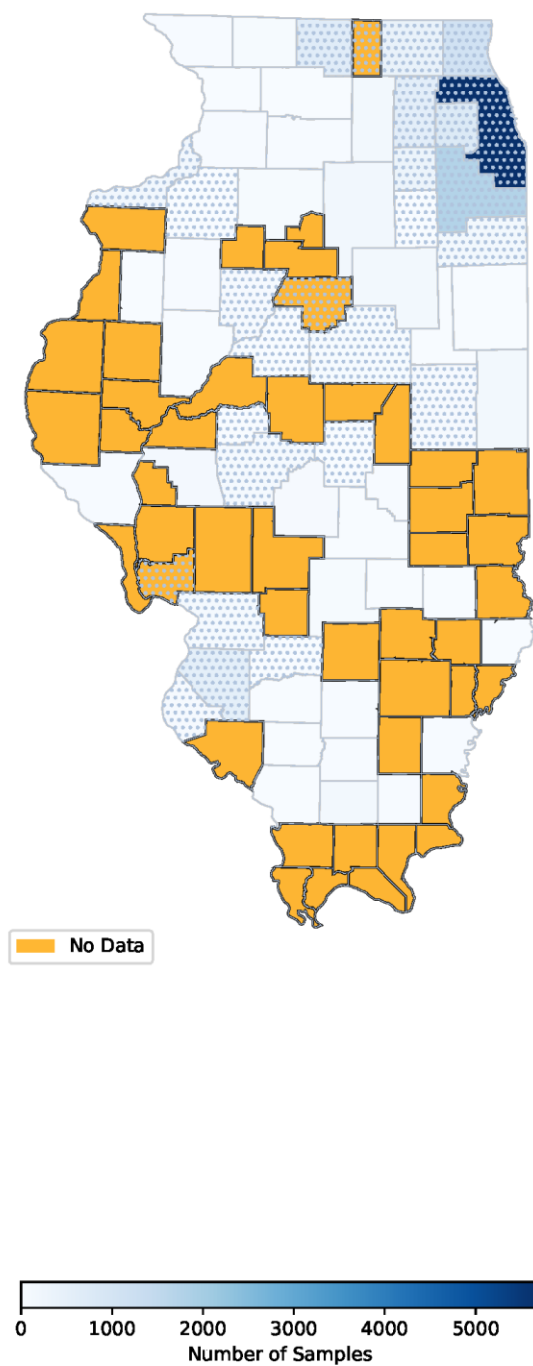
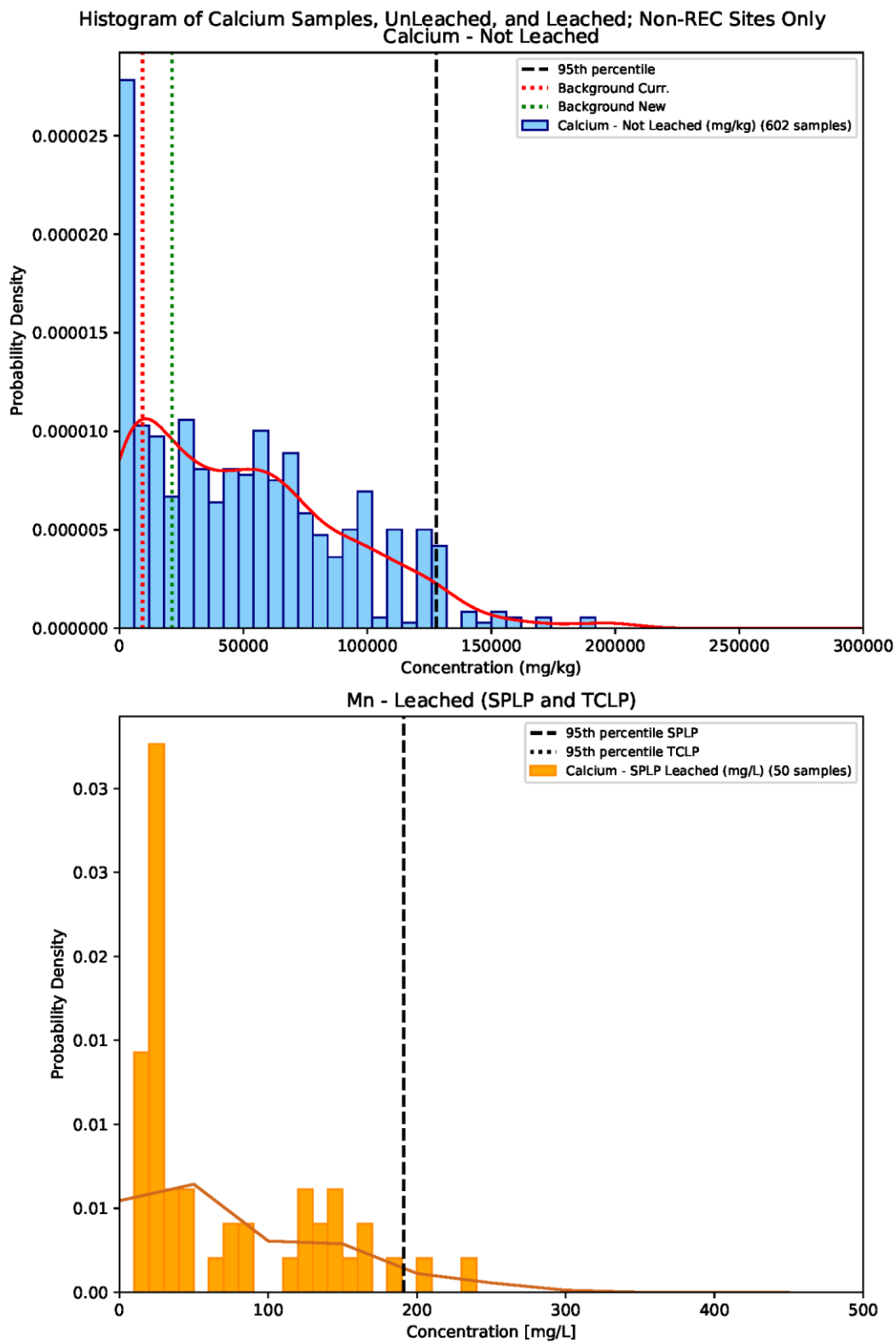


Figure 240. Map of RSL calcium sample quantity by Illinois county, REC (mg/kg)

## G.2 CALCIUM NON-REC



**Figure 241. Histogram of RSL calcium concentrations, Non-REC (mg/kg)**

Calcium Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

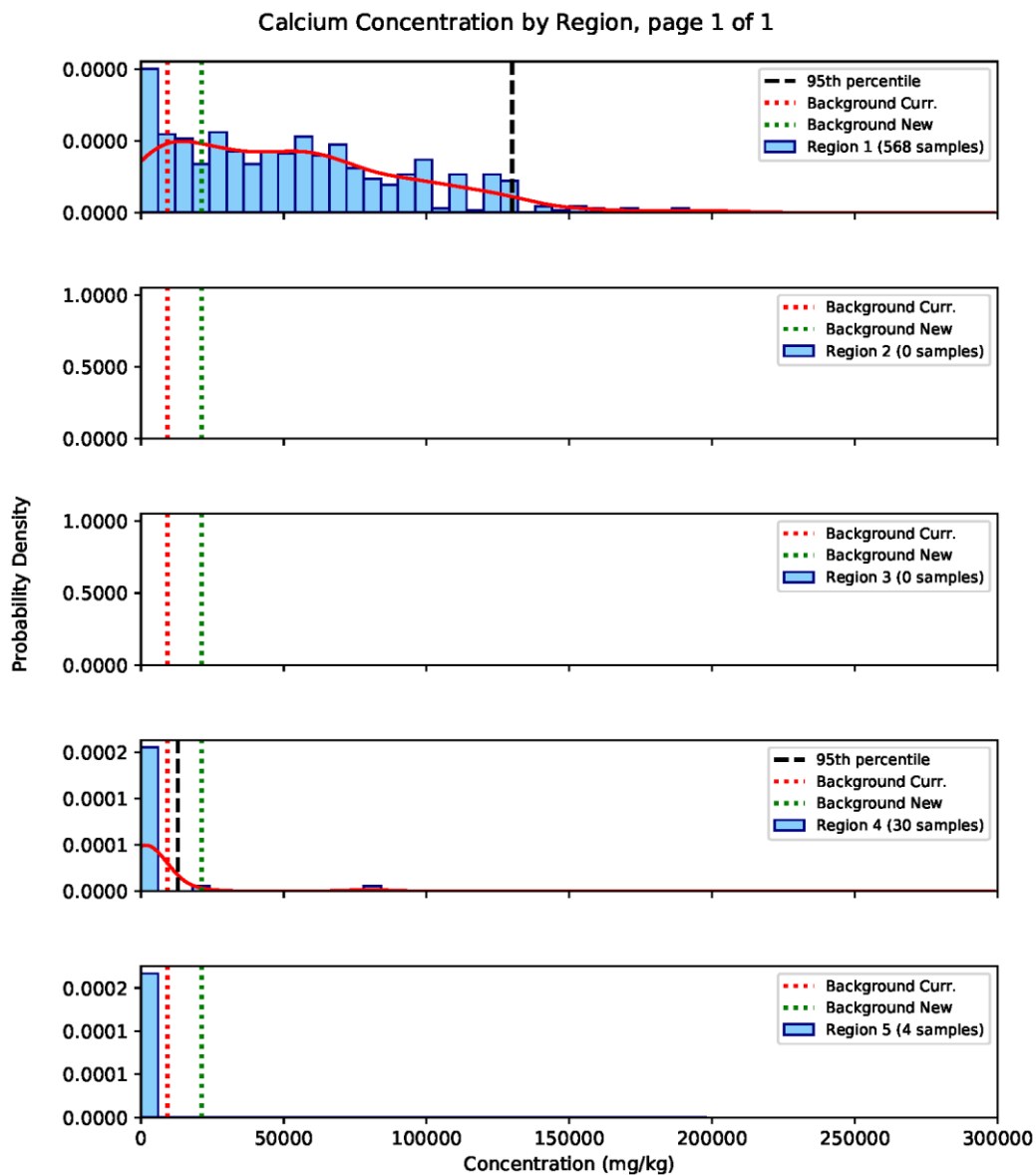


Figure 242. Histogram of RSL calcium concentrations by IDOT Region, Non-REC (mg/kg)

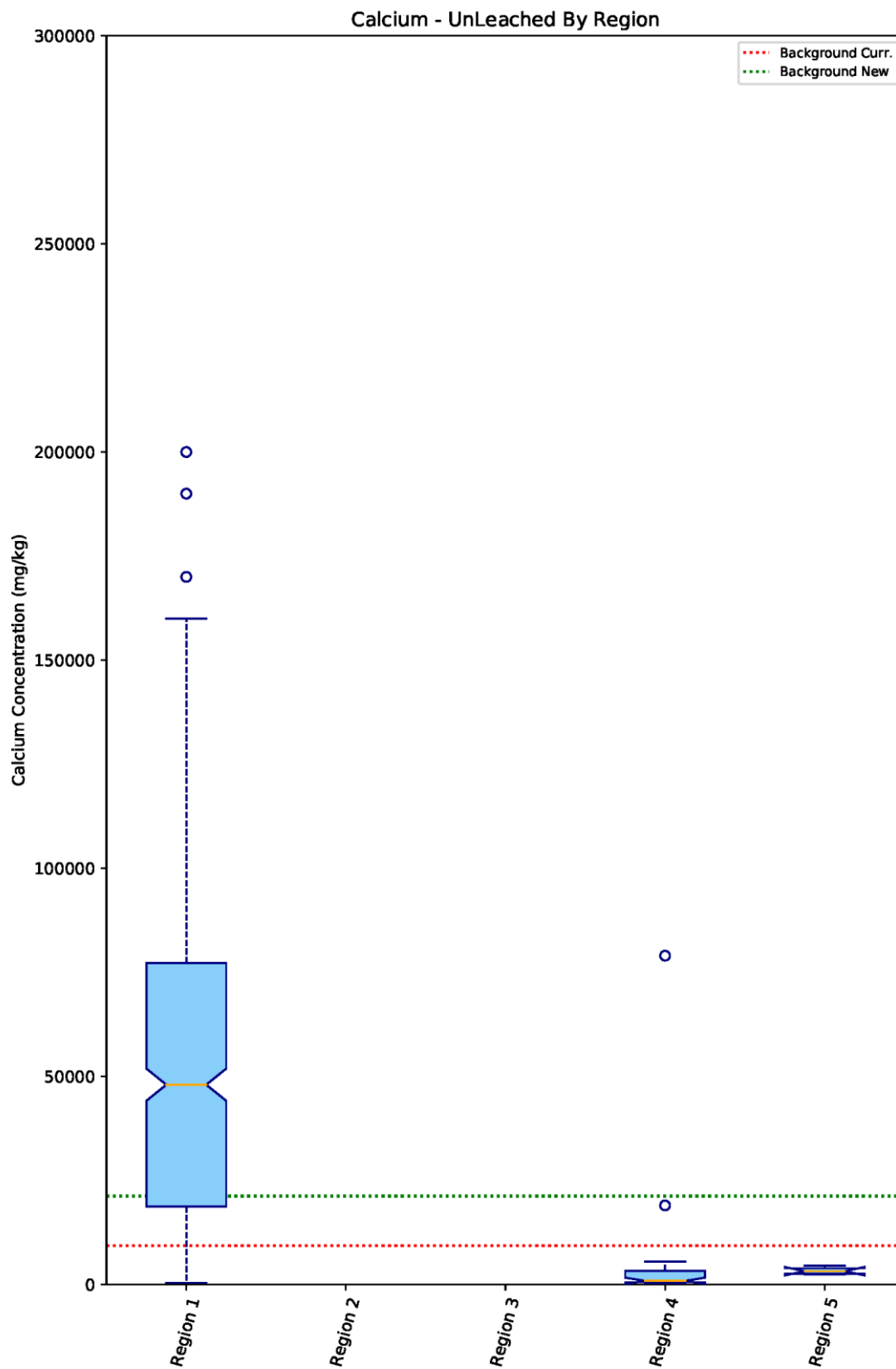


Figure 243. Boxplot of RSL calcium concentrations by IDOT Region, Non-REC (mg/kg)



Calcium Concentration by District, page 1 of 2

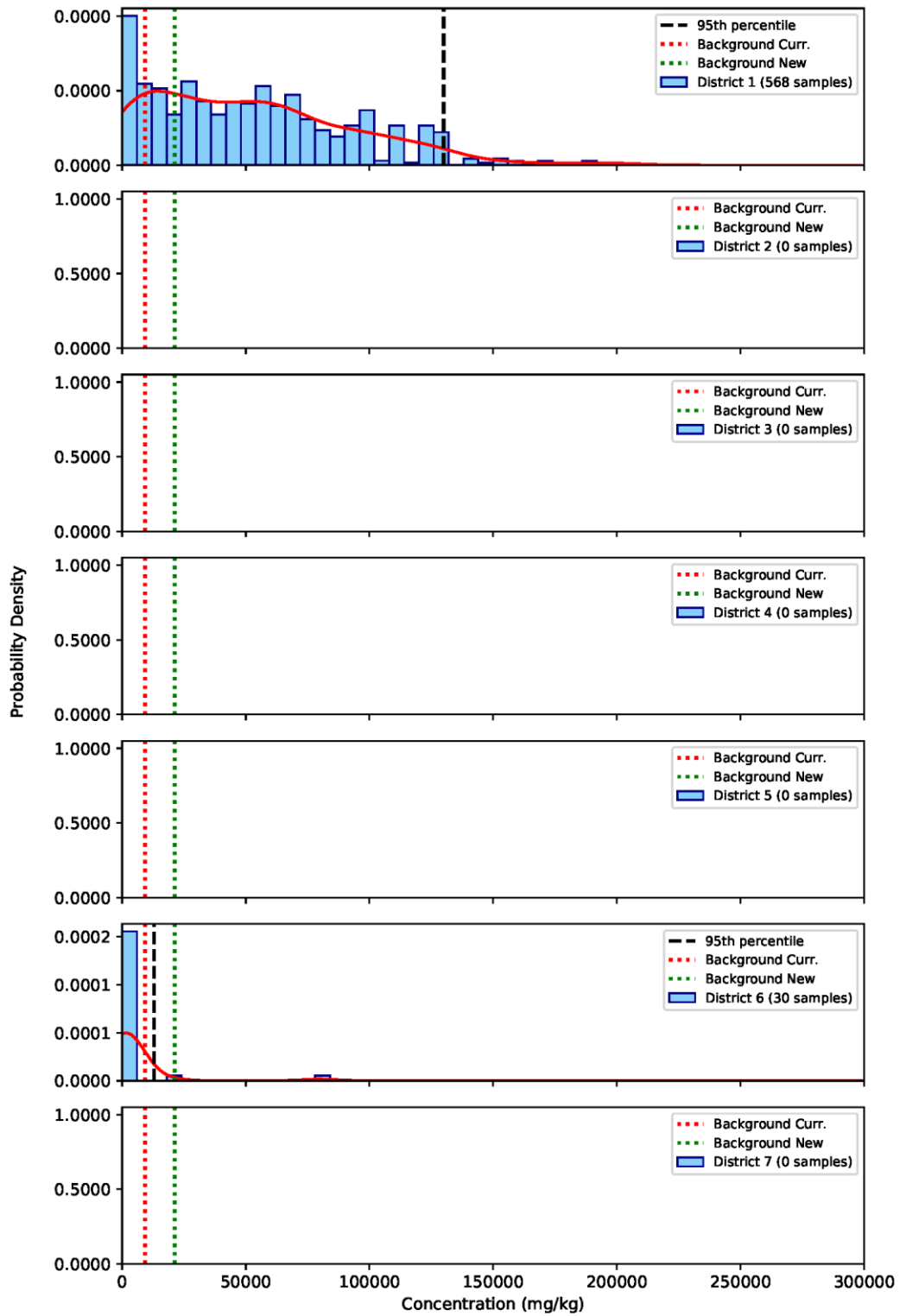


Figure 244. Histogram of RSL calcium concentrations by IDOT District, Non-REC (mg/kg), part 1

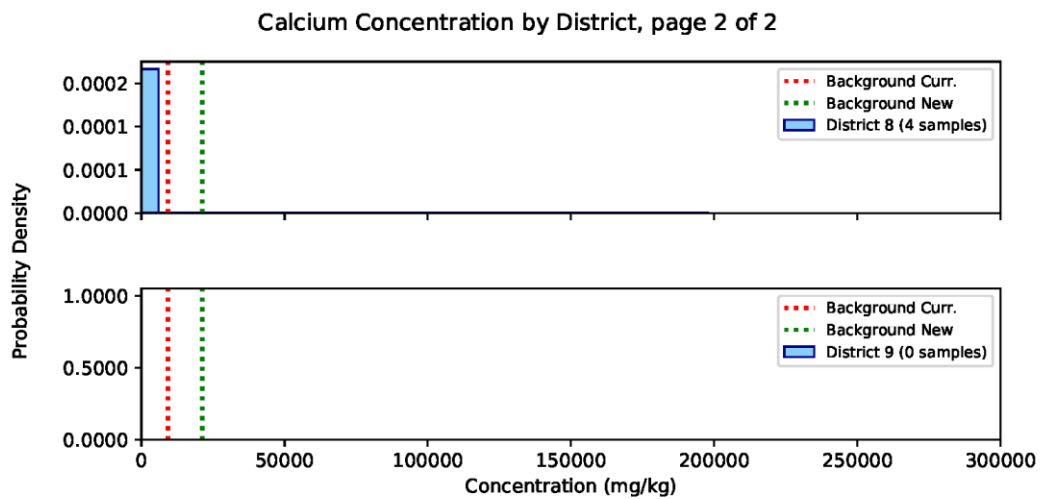


Figure 245. Histogram of RSL calcium concentrations by IDOT District, Non-REC (mg/kg), part 2

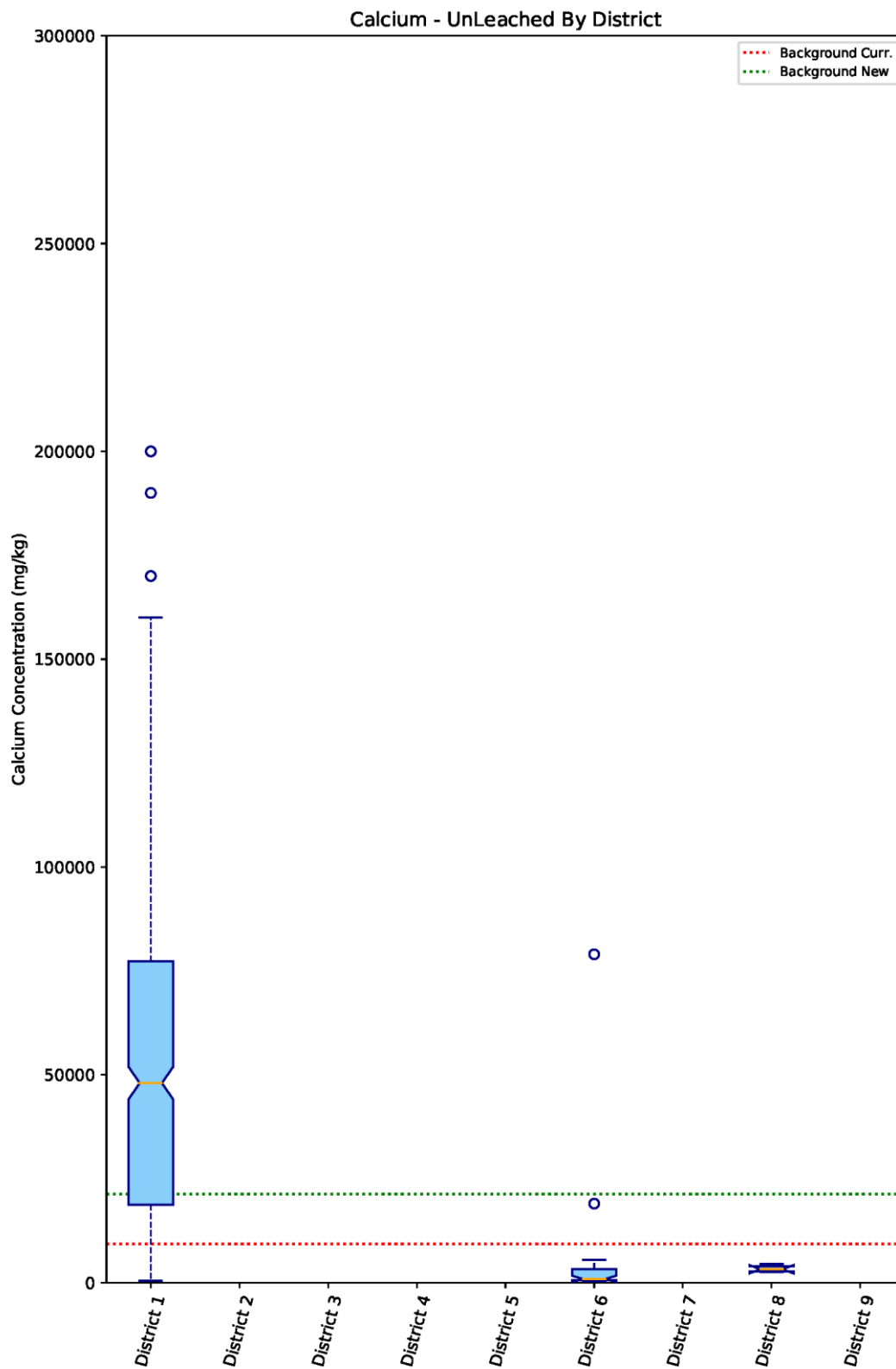


Figure 246. Boxplot of RSL calcium concentrations by IDOT District, Non-REC (mg/kg)

# Calcium Concentration by County, page 1 of 2

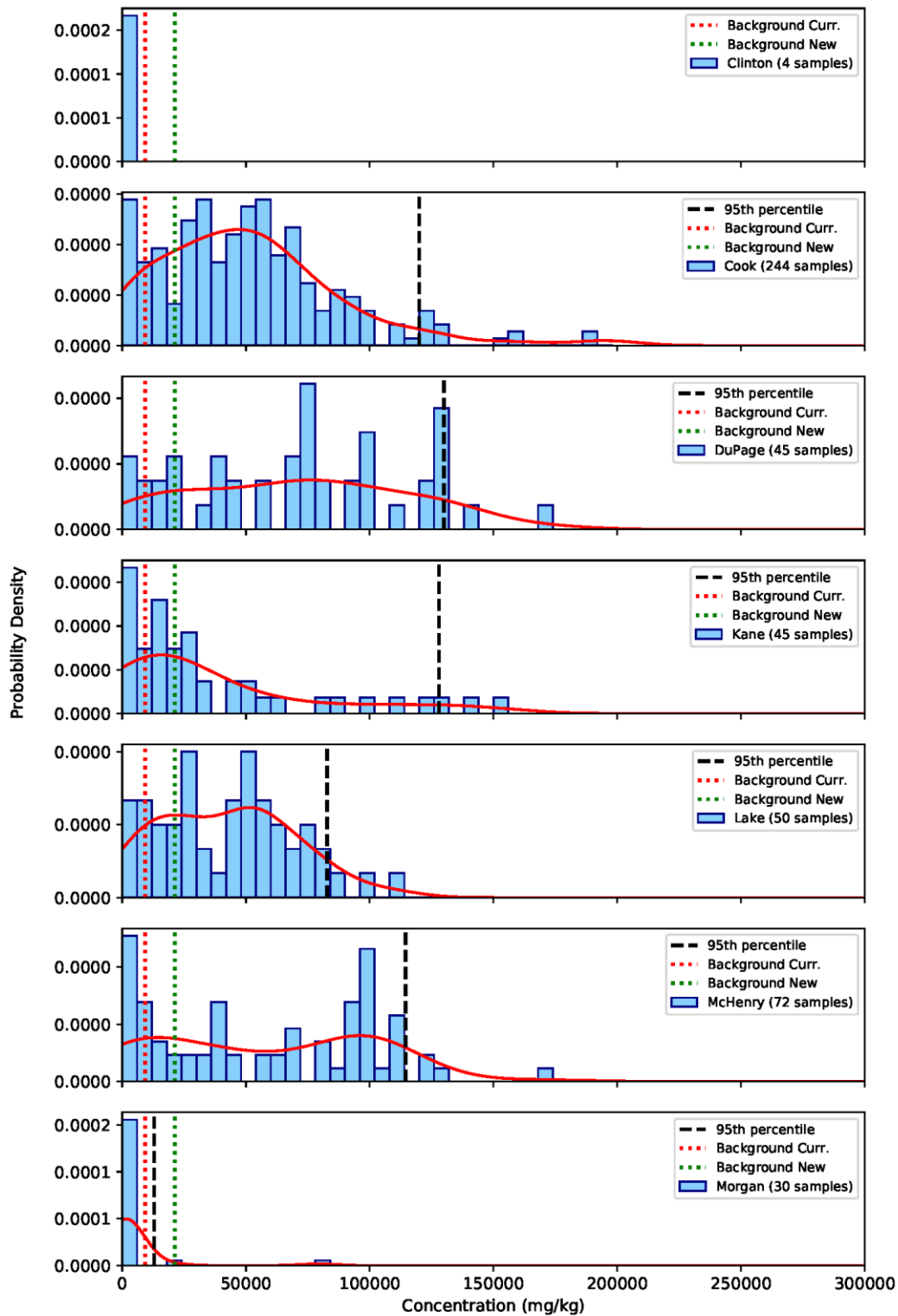


Figure 247. Histogram of RSL calcium concentrations by Illinois county, Non-REC (mg/kg), part 1

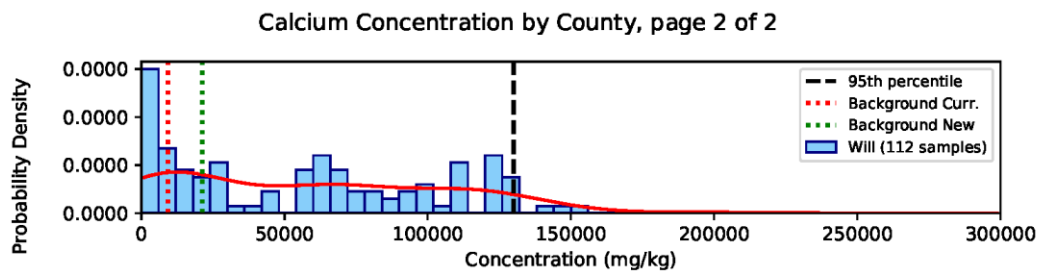


Figure 248. Histogram of RSL calcium concentrations by Illinois county, Non-REC (mg/kg), part 2

Calcium Concentration for 95th Percentile by County: Non-REC Sites

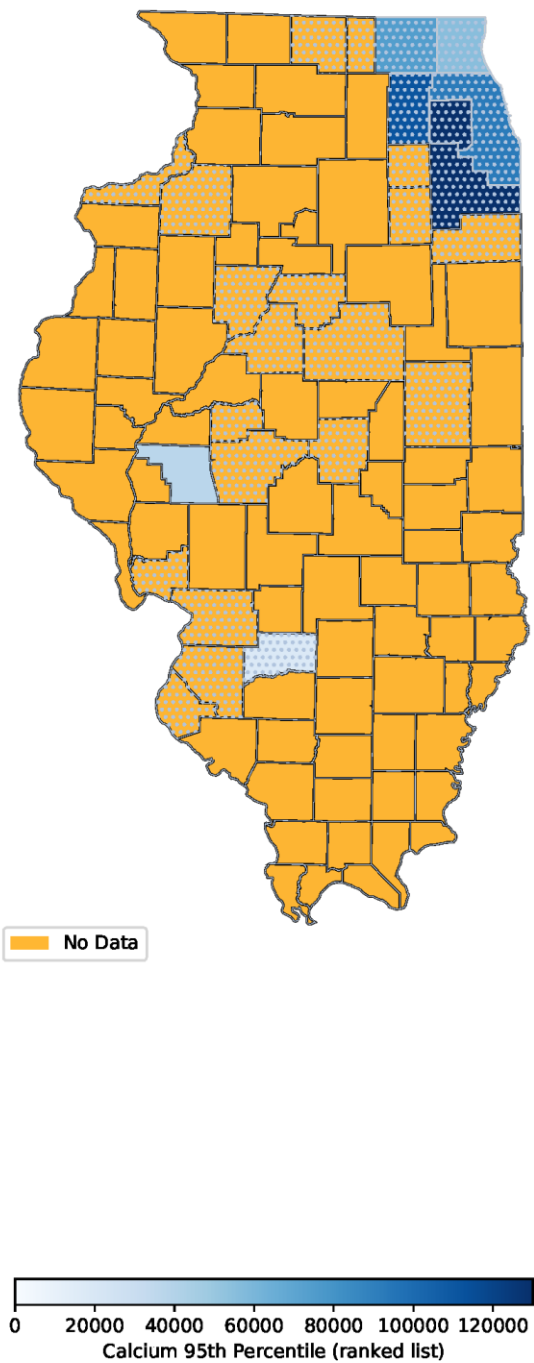


Figure 249. Map of RSL calcium 95th percentile concentration by Illinois county, Non-REC (mg/kg)

Number of Calcium Samples by County: Non-REC Sites

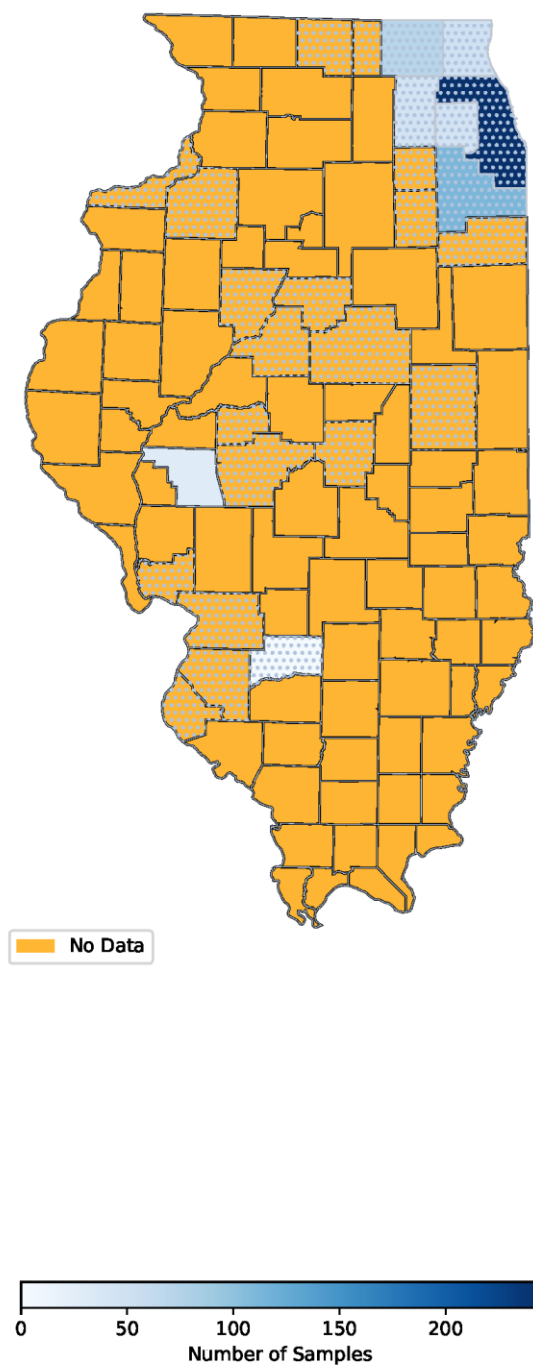


Figure 250. Map of RSL calcium sample quantity by Illinois county, Non-REC (mg/kg)

### **G.3 CALCIUM DE MINIMIS**



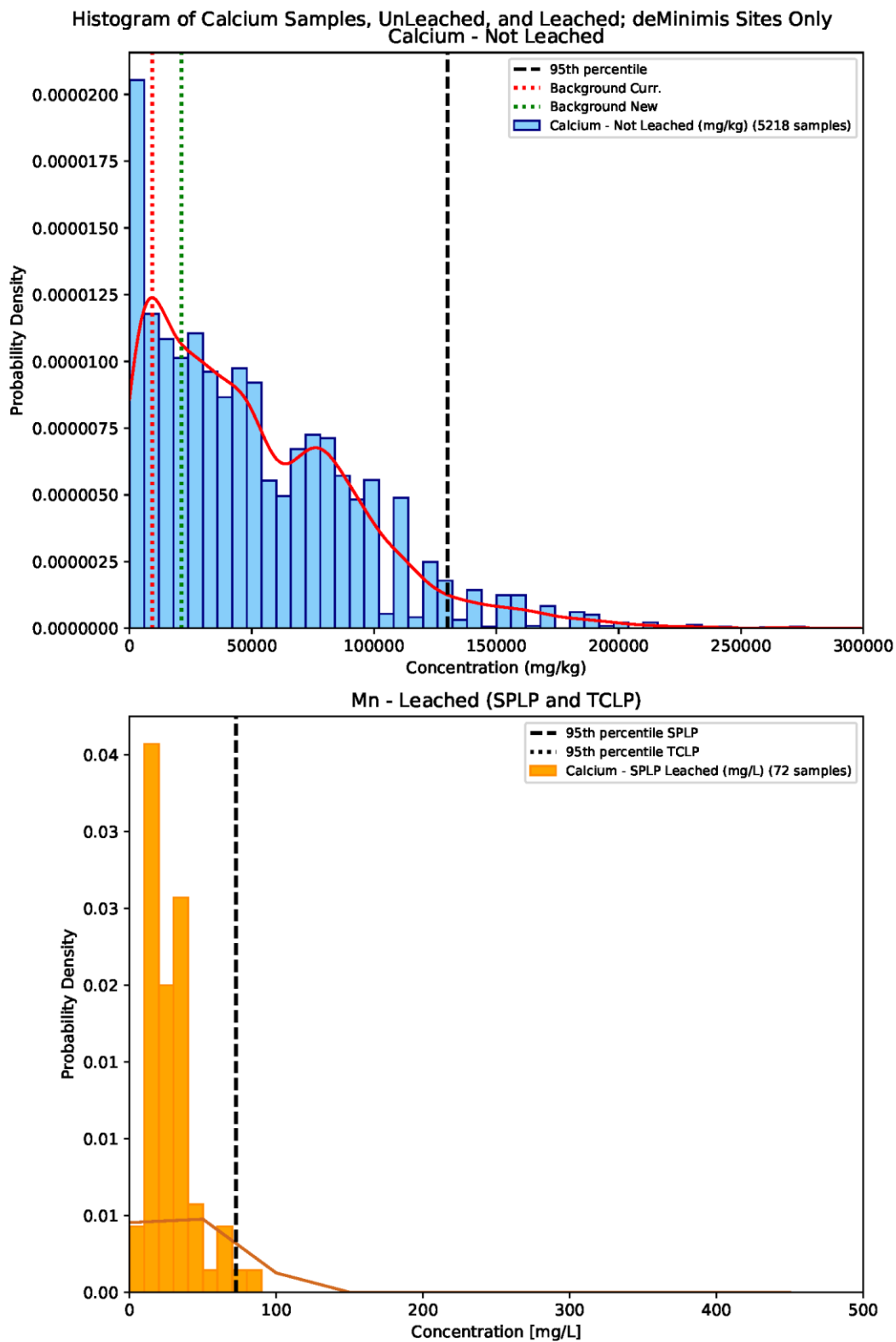


Figure 251. Histogram of RSL calcium concentrations, de minimis (mg/kg)

Calcium Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

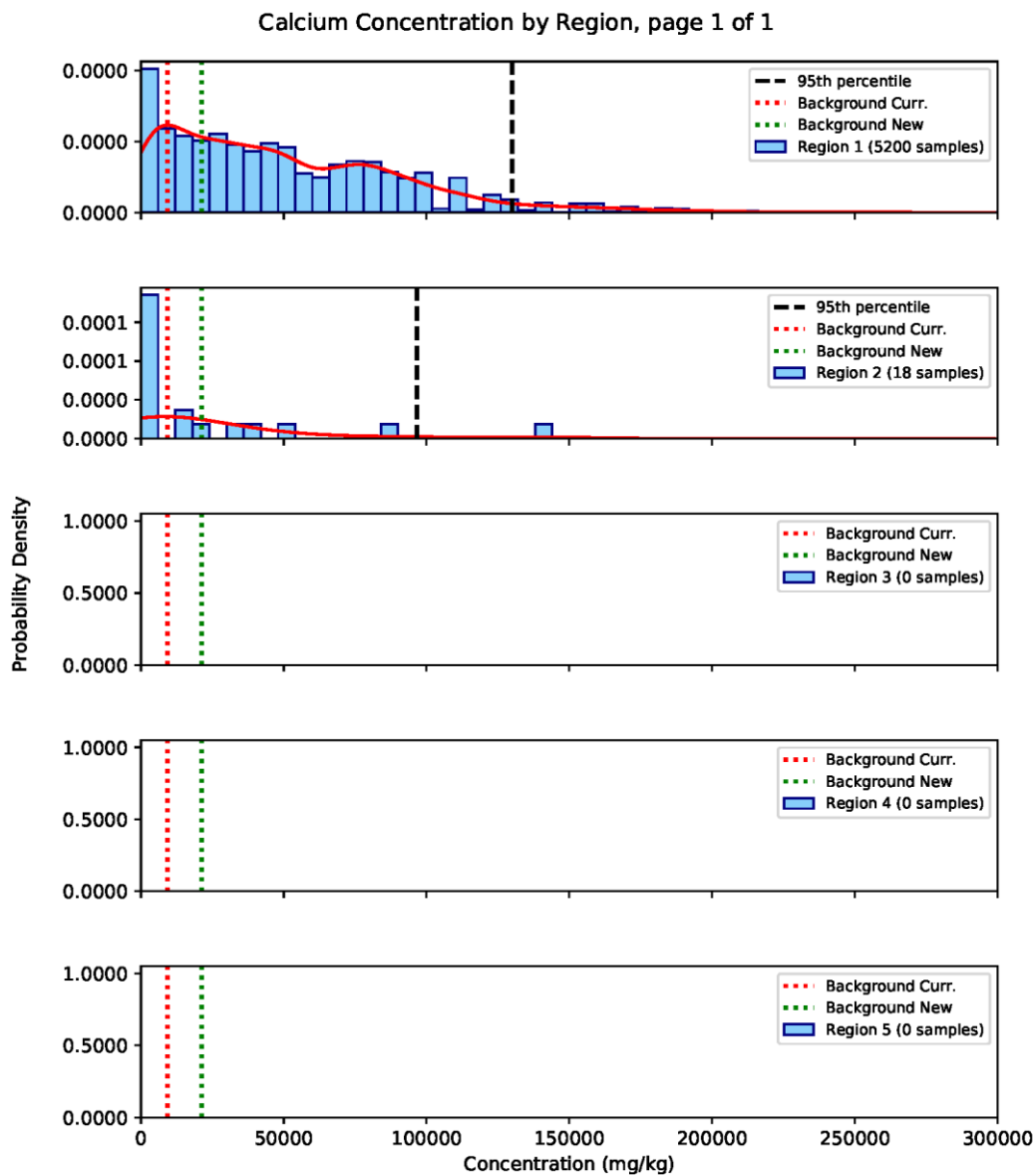


Figure 252. Histogram of RSL calcium concentrations by IDOT Region, de minimis (mg/kg)

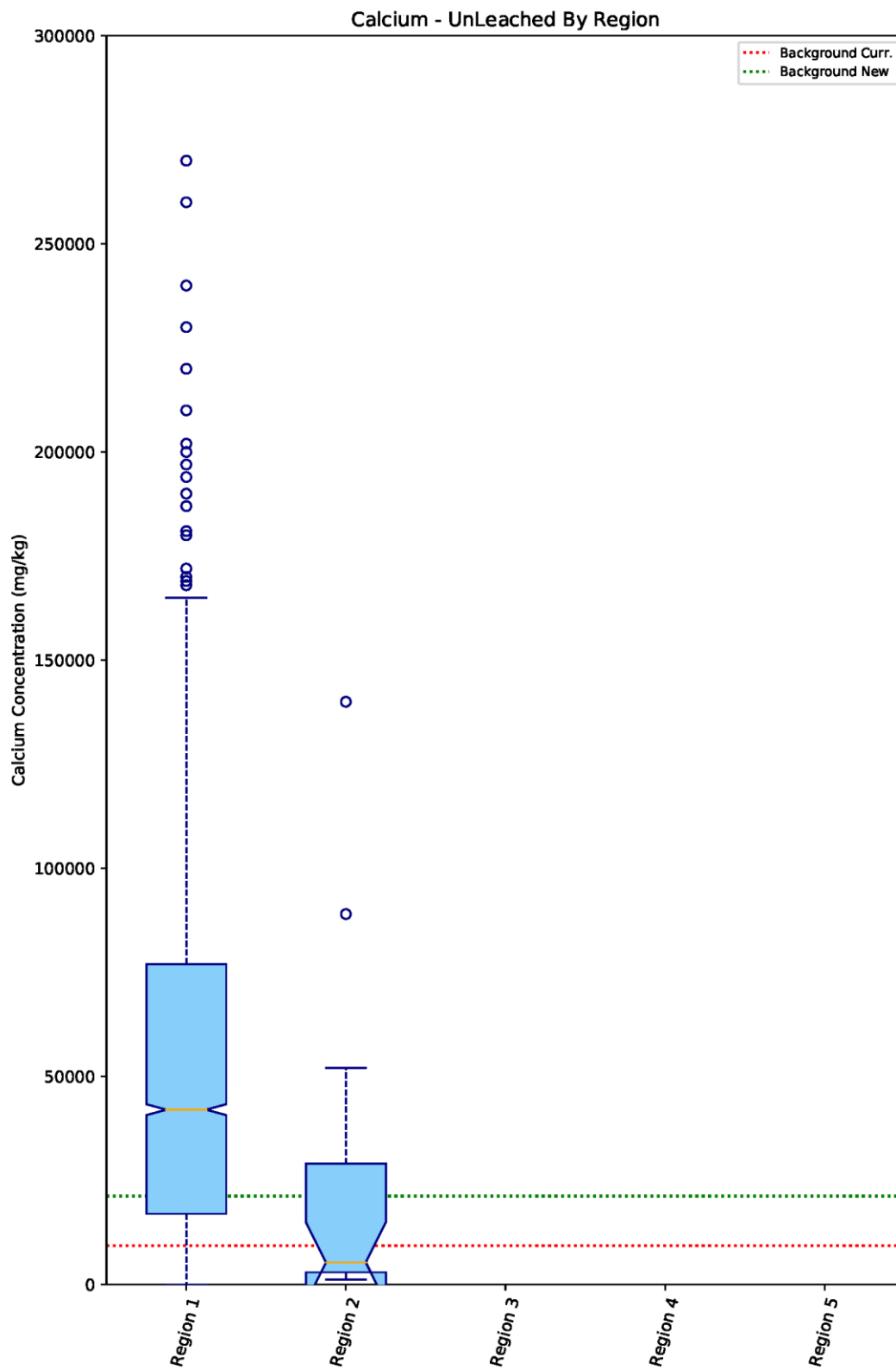


Figure 253. Boxplot of RSL calcium concentrations by IDOT Region, de minimis (mg/kg)

Calcium Concentration by District, page 1 of 2

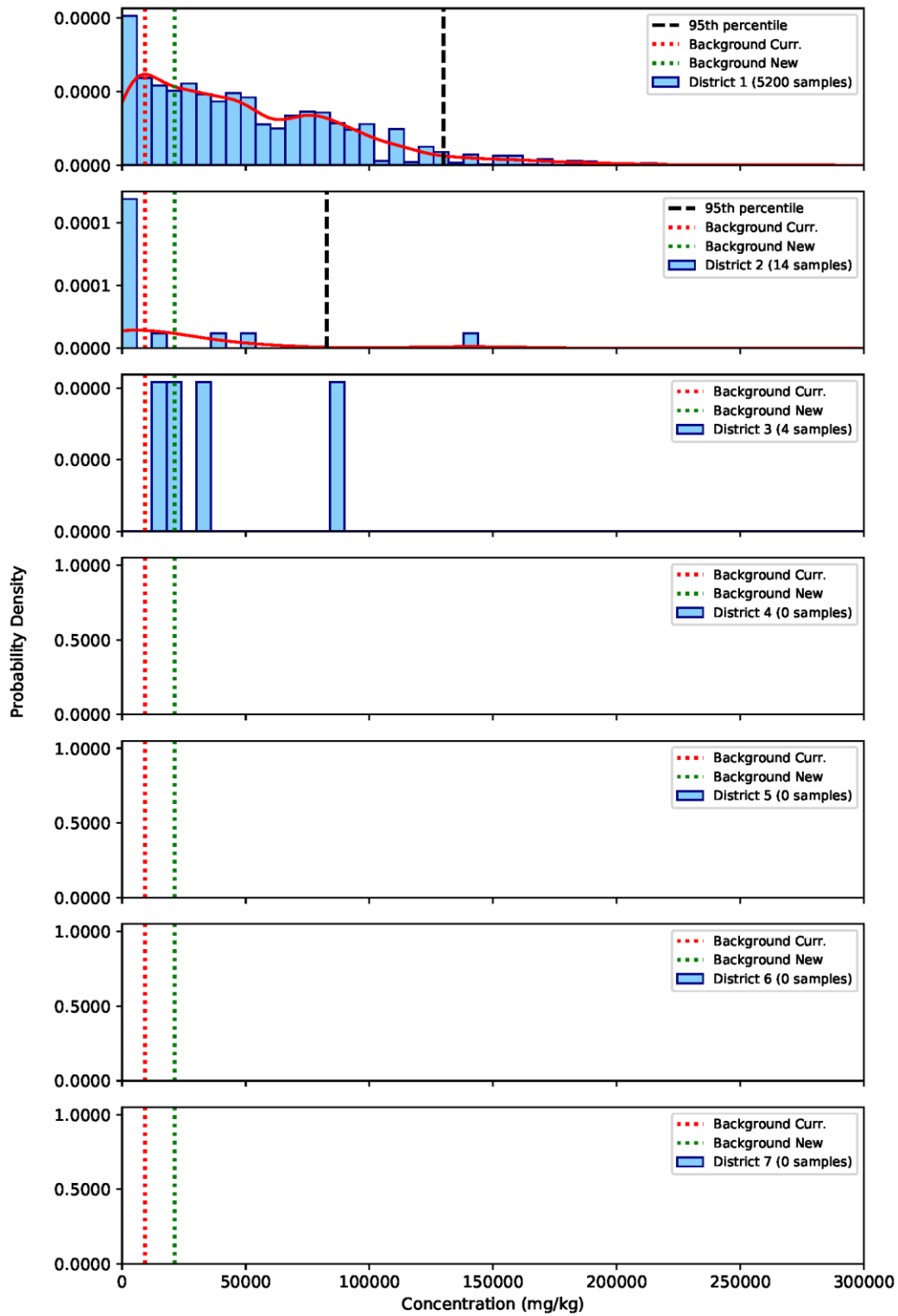


Figure 254. Histogram of RSL calcium concentrations by IDOT District, de minimis (mg/kg), part 1

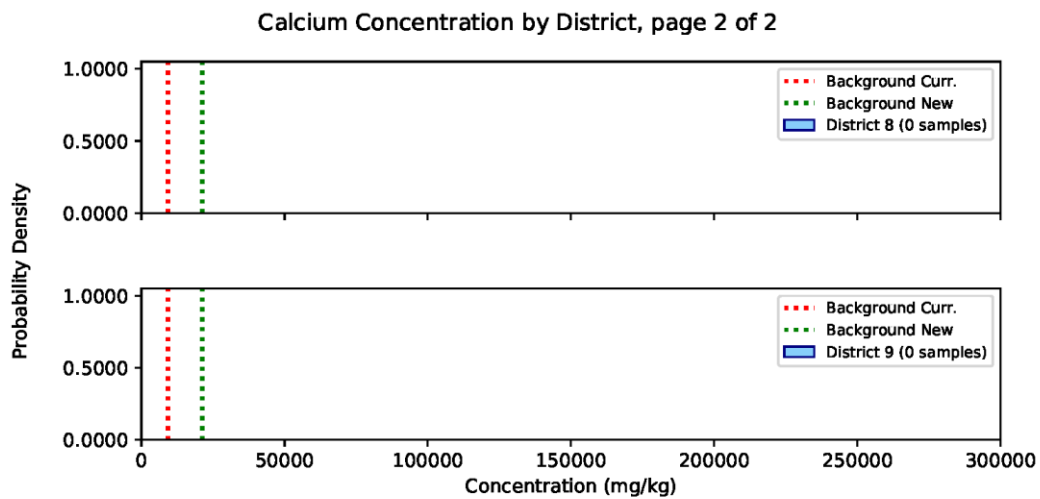


Figure 255. Histogram of RSL calcium concentrations by IDOT District, de minimis (mg/kg), part 2

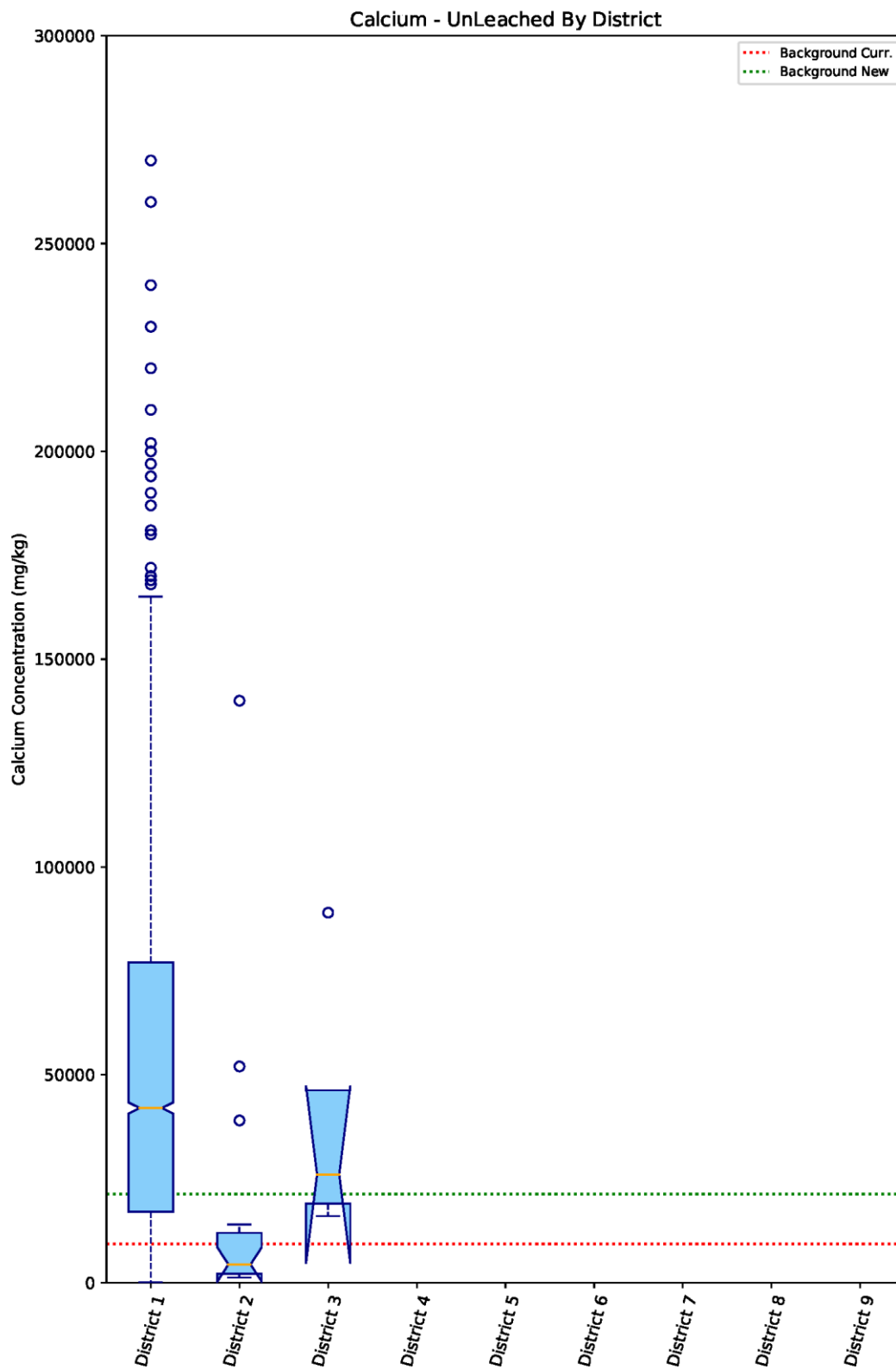


Figure 256. Boxplot of RSL calcium concentrations by IDOT District, de minimis (mg/kg)

Calcium Concentration by County, page 1 of 2

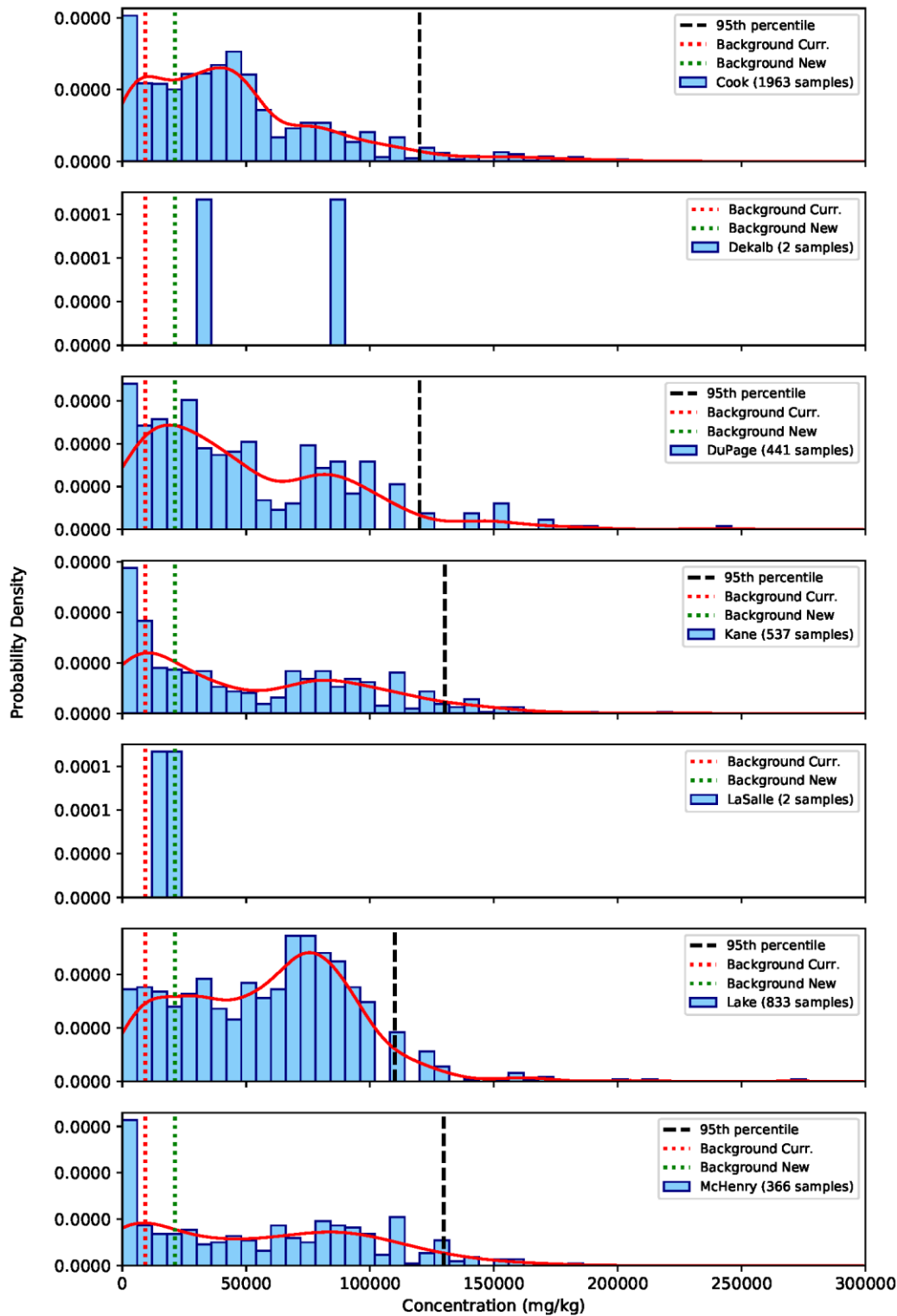


Figure 257. Histogram of RSL calcium concentrations by Illinois county, de minimis (mg/kg), part 1



Calcium Concentration by County, page 2 of 2

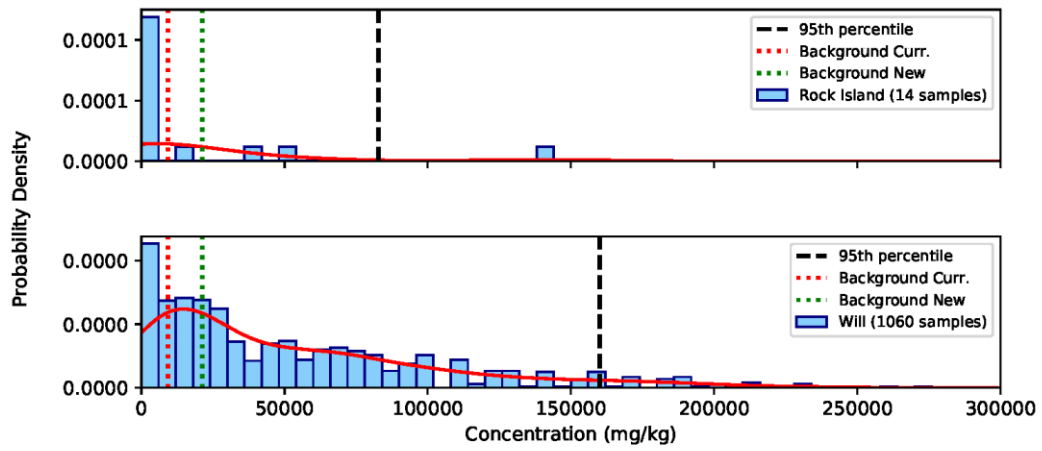


Figure 258. Histogram of RSL calcium concentrations by Illinois county, de minimis (mg/kg), part 2

Calcium Concentration for 95th Percentile by County: deMinimis Sites

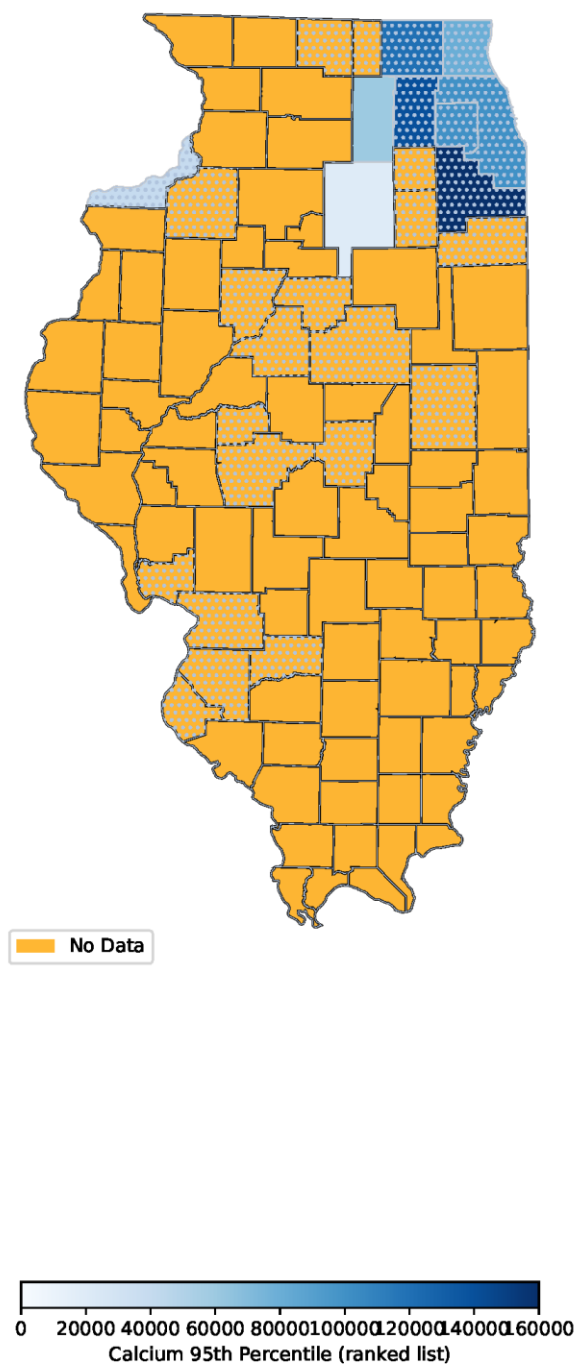


Figure 259. Map of RSL calcium 95th percentile concentration by Illinois county, de minimis (mg/kg)

Number of Calcium Samples by County: deMinimis Sites

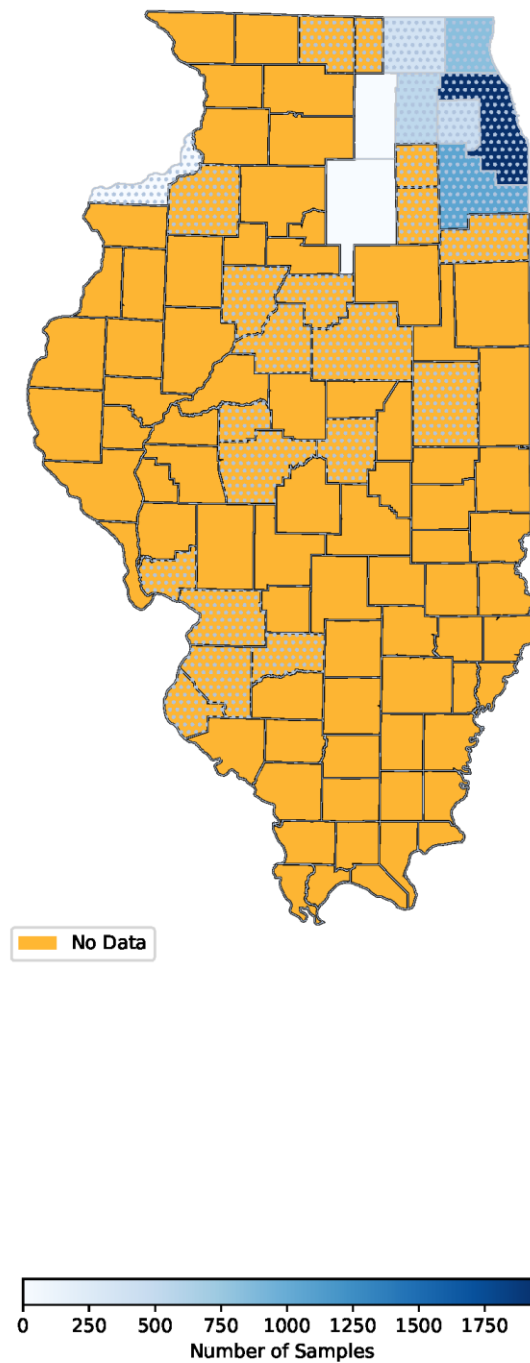


Figure 260. Map of RSL calcium sample quantity by Illinois county, de minimis (mg/kg)

## **APPENDIX H. ANALYTE ANALYSIS: CHROMIUM**

### **H.1 CHROMIUM REC**

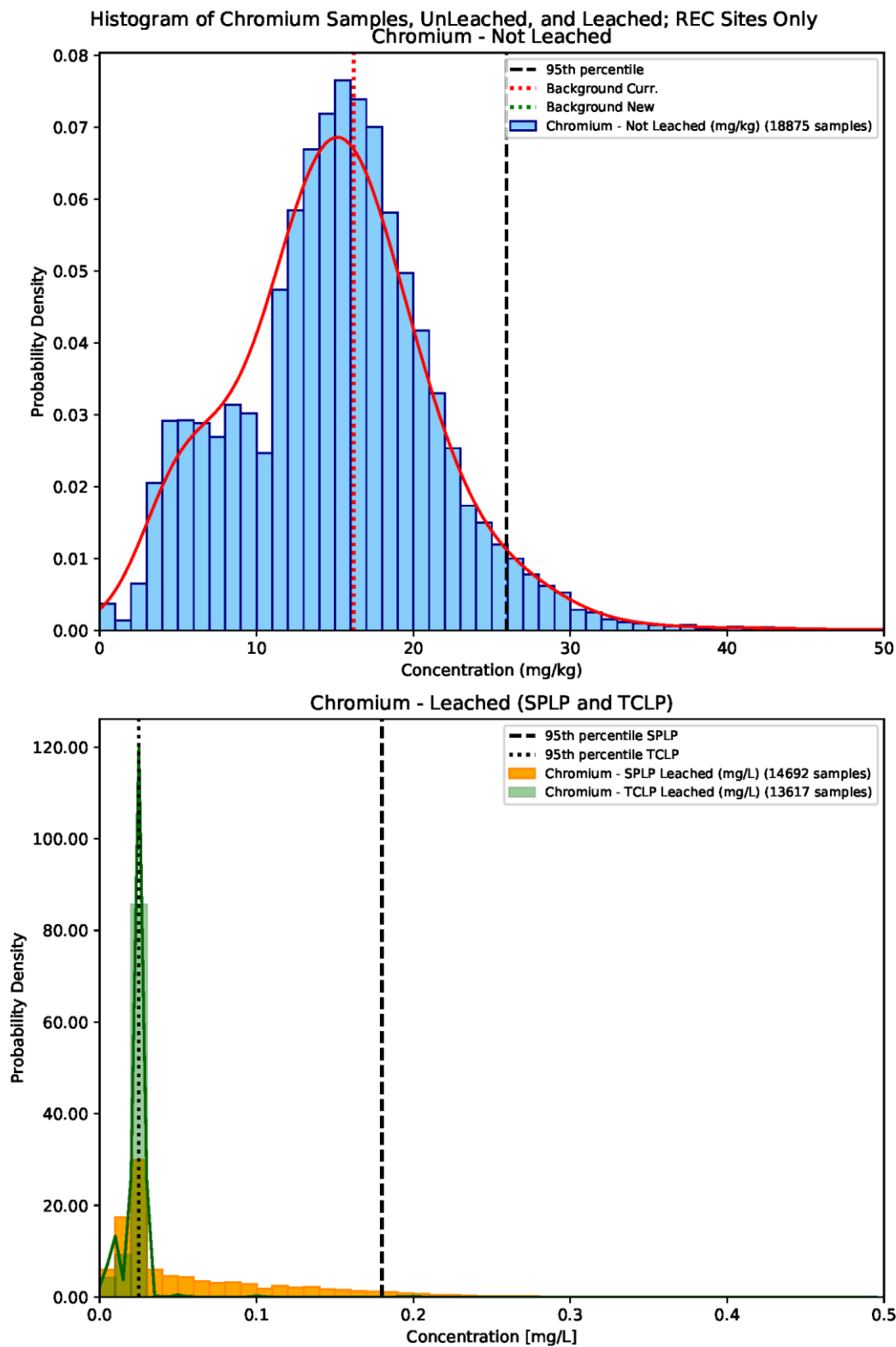


Figure 261. Histogram of RSL chromium concentrations, REC (mg/kg)

Chromium Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

### Chromium Concentration by Region, page 1 of 1

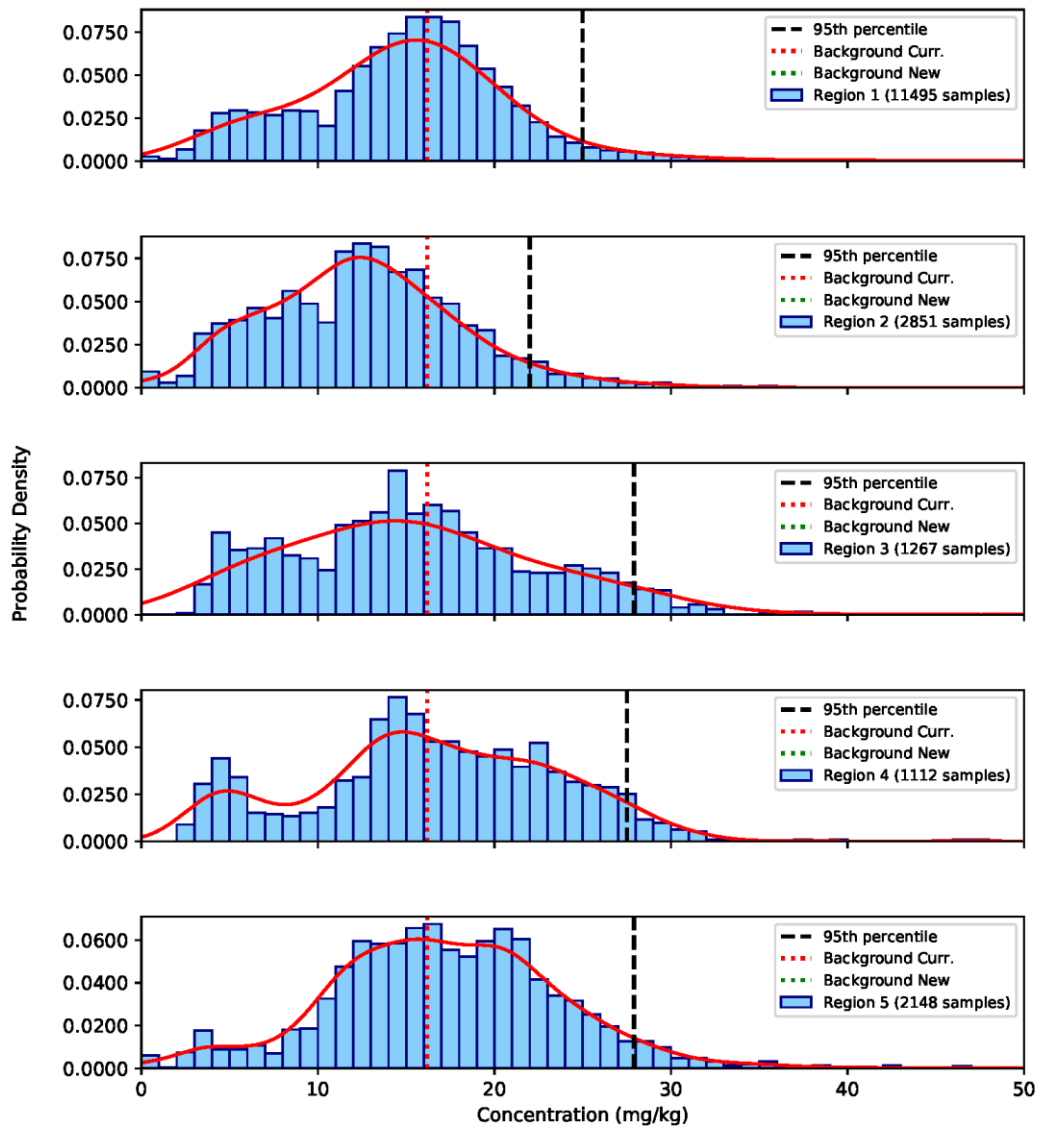


Figure 262. Histogram of RSL chromium concentrations by IDOT Region, REC (mg/kg)

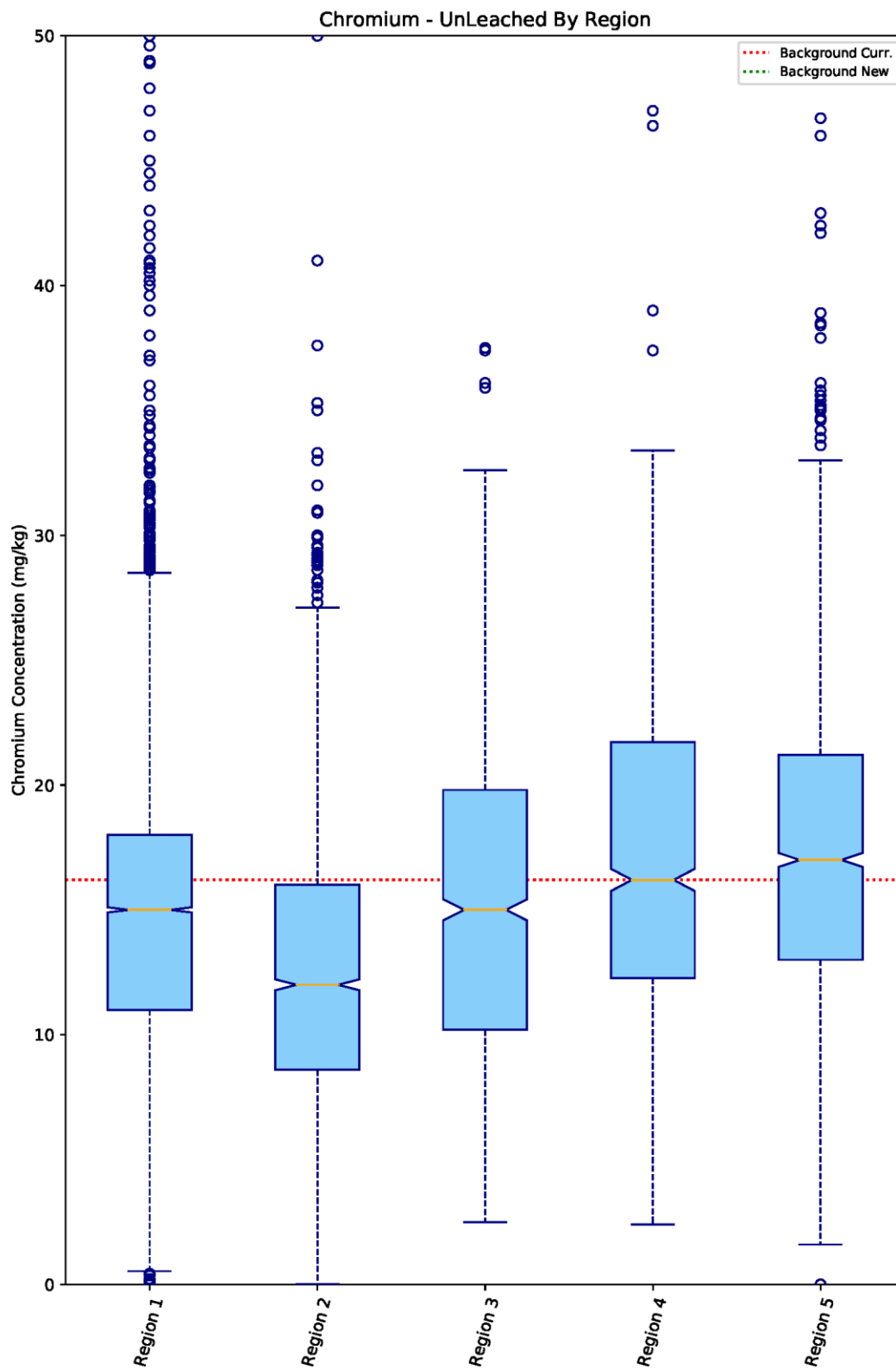


Figure 263. Boxplot of RSL chromium concentrations by IDOT Region, REC (mg/kg)



# Chromium Concentration by District, page 1 of 2

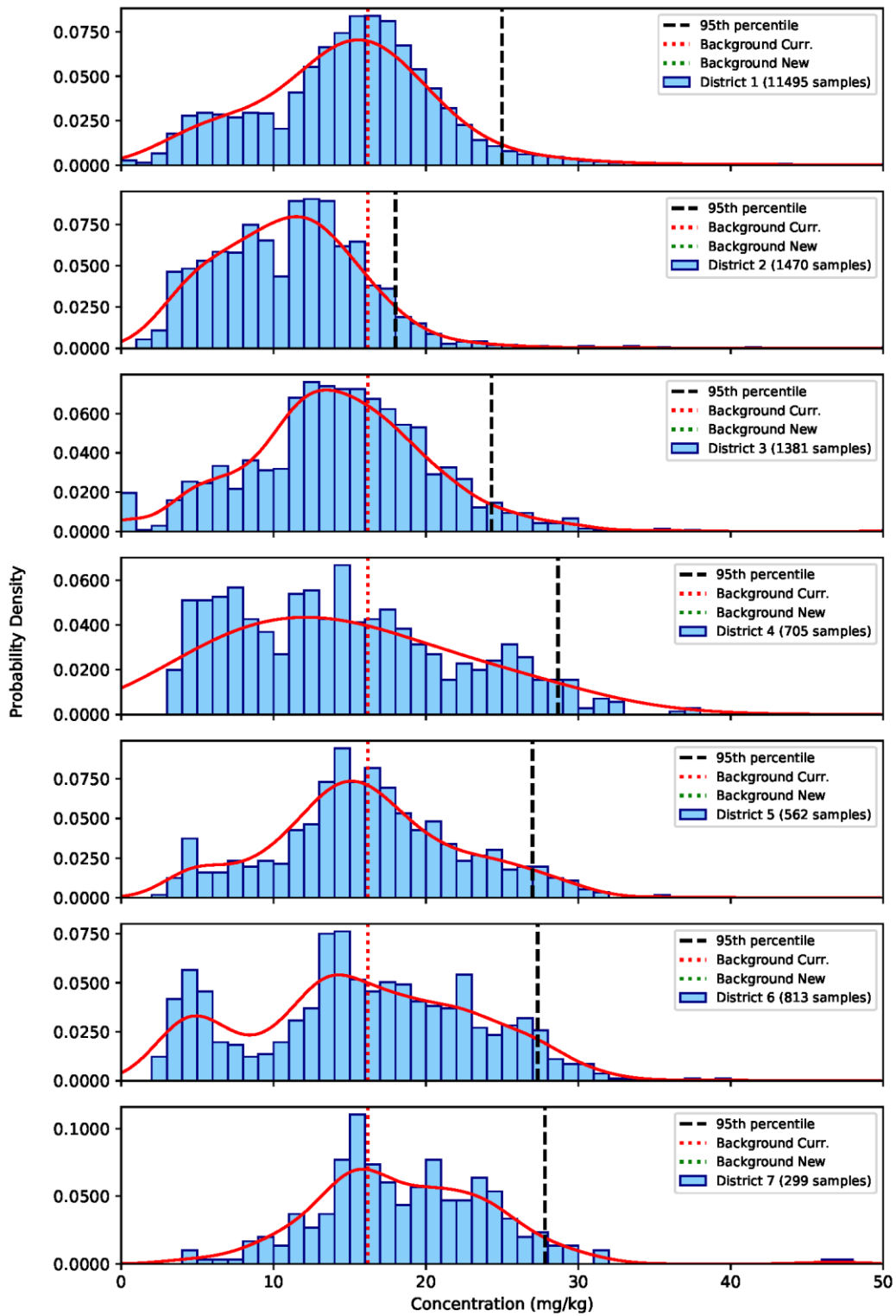


Figure 264. Histogram of RSL chromium concentrations by IDOT District, REC (mg/kg), part 1

Chromium Concentration by District, page 2 of 2

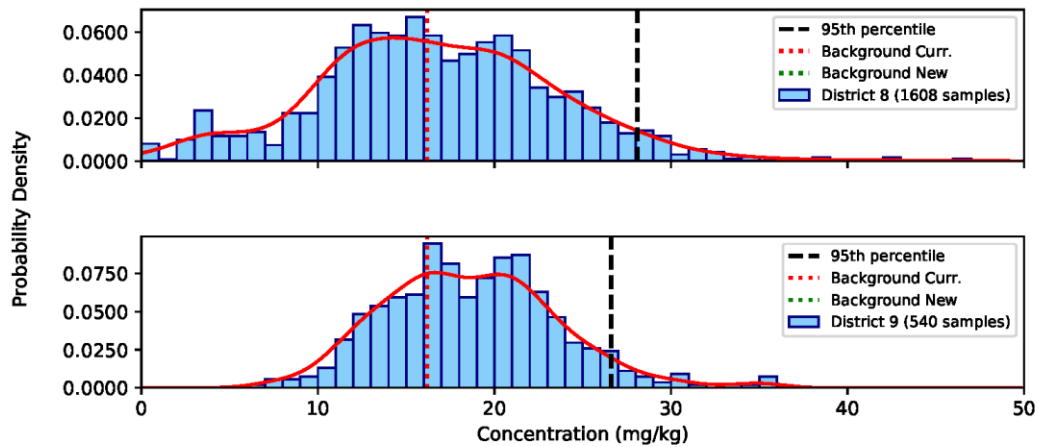


Figure 265. Histogram of RSL chromium concentrations by IDOT District, REC (mg/kg), part 2

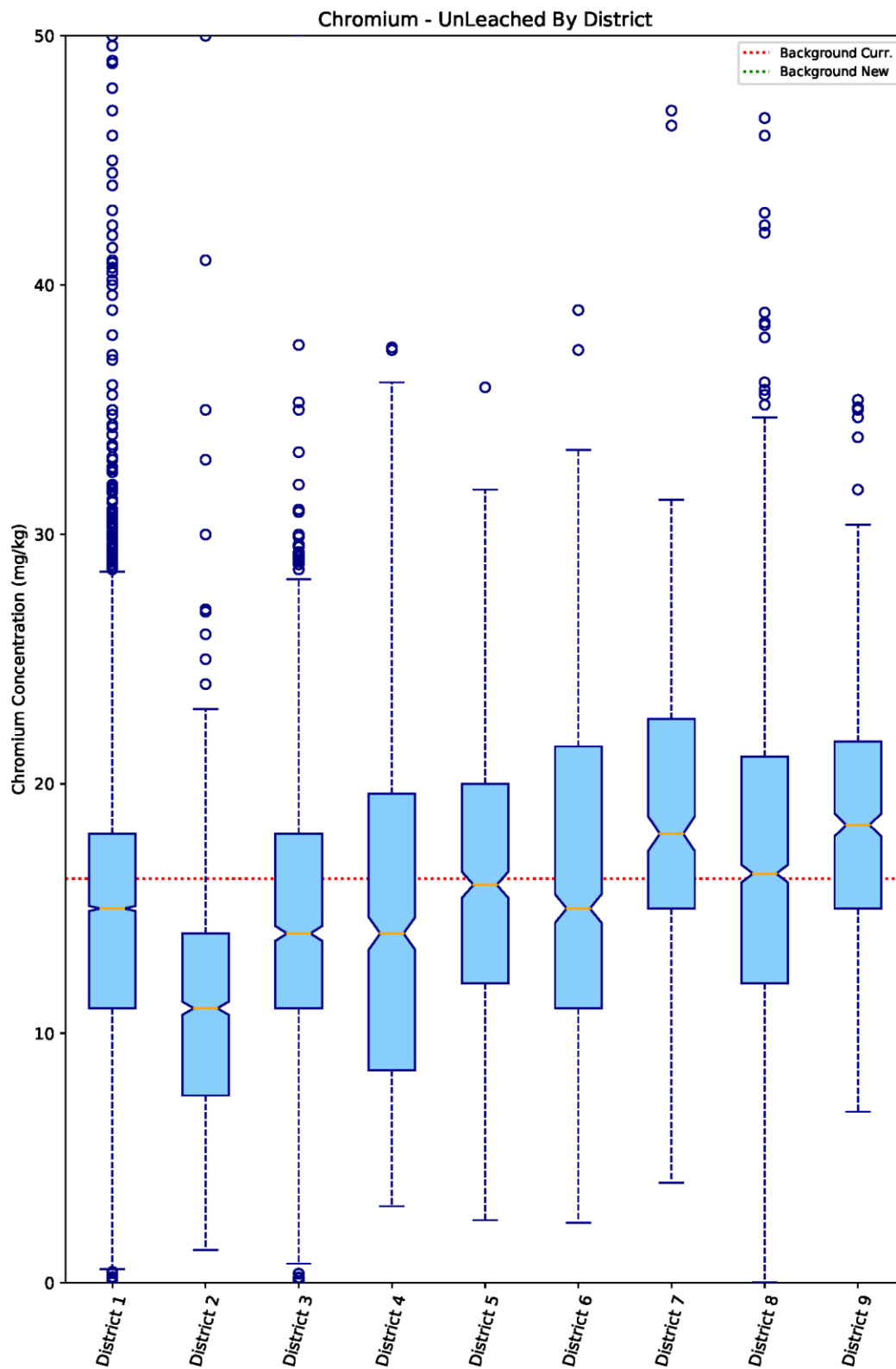


Figure 266. Boxplot of RSL chromium concentrations by IDOT District, REC (mg/kg)

Chromium Concentration by County, page 1 of 10

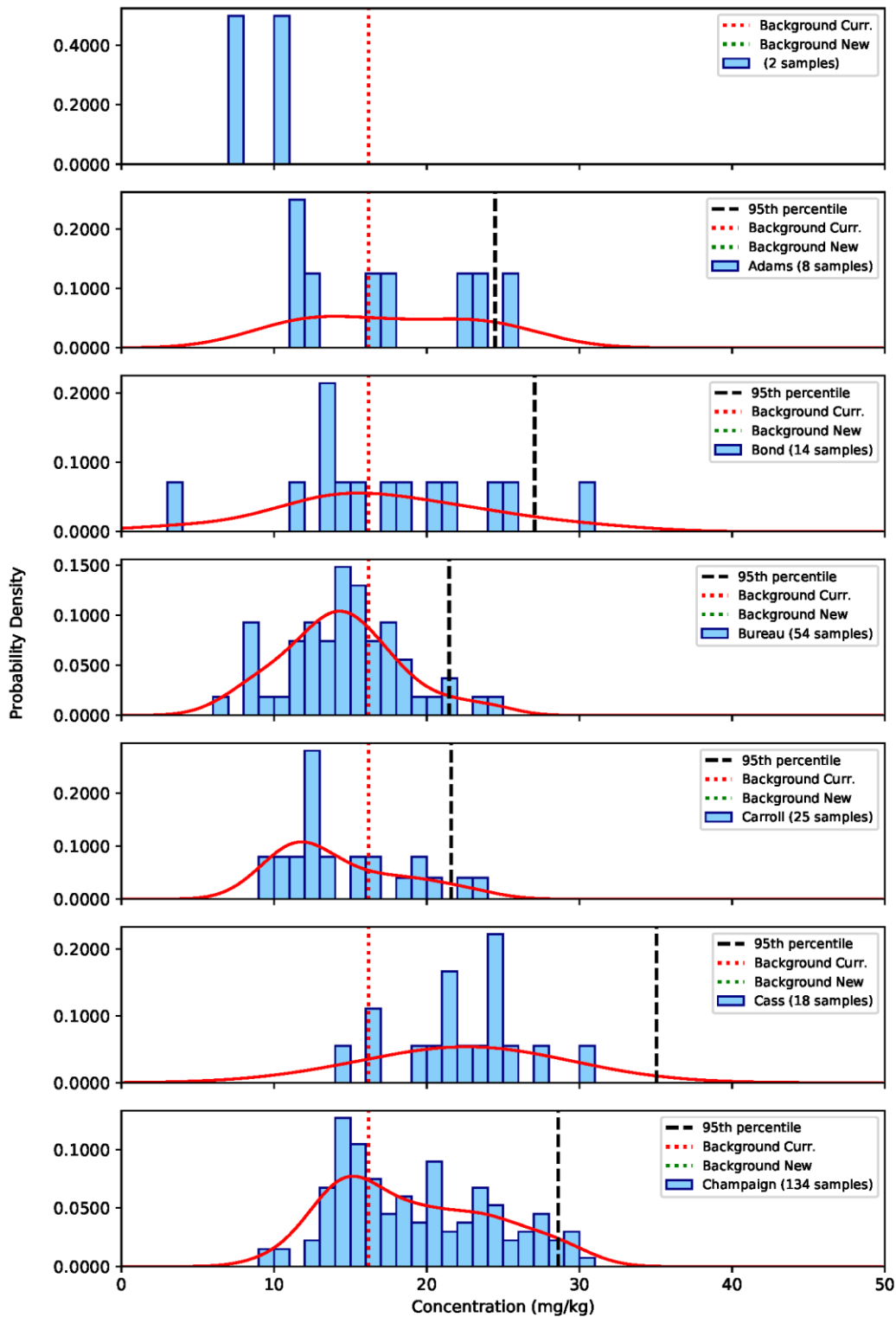


Figure 267. Histogram of RSL chromium concentrations by Illinois county, REC (mg/kg), part 1

Chromium Concentration by County, page 2 of 10

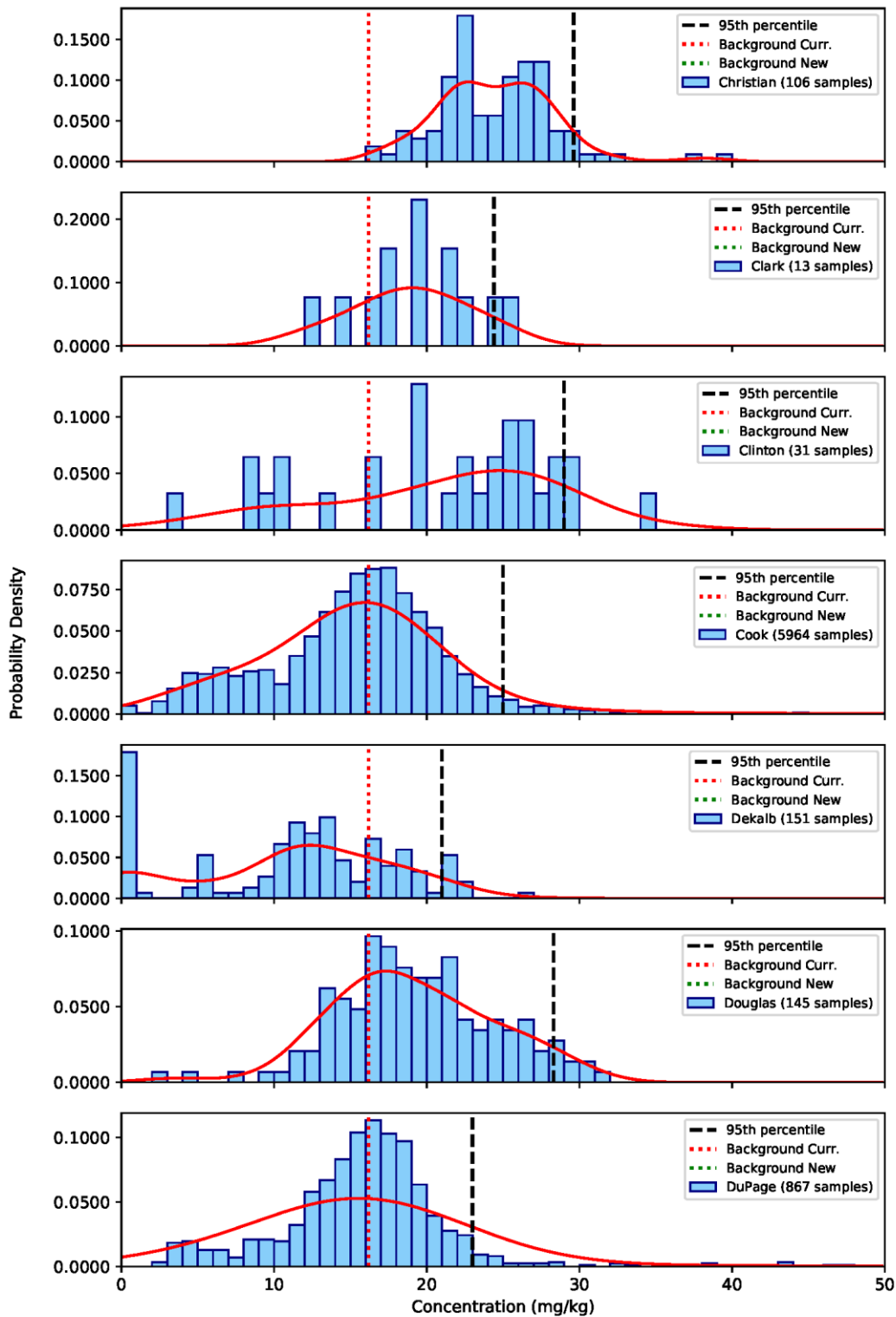


Figure 268. Histogram of RSL chromium concentrations by Illinois county, REC (mg/kg), part 2

Chromium Concentration by County, page 3 of 10

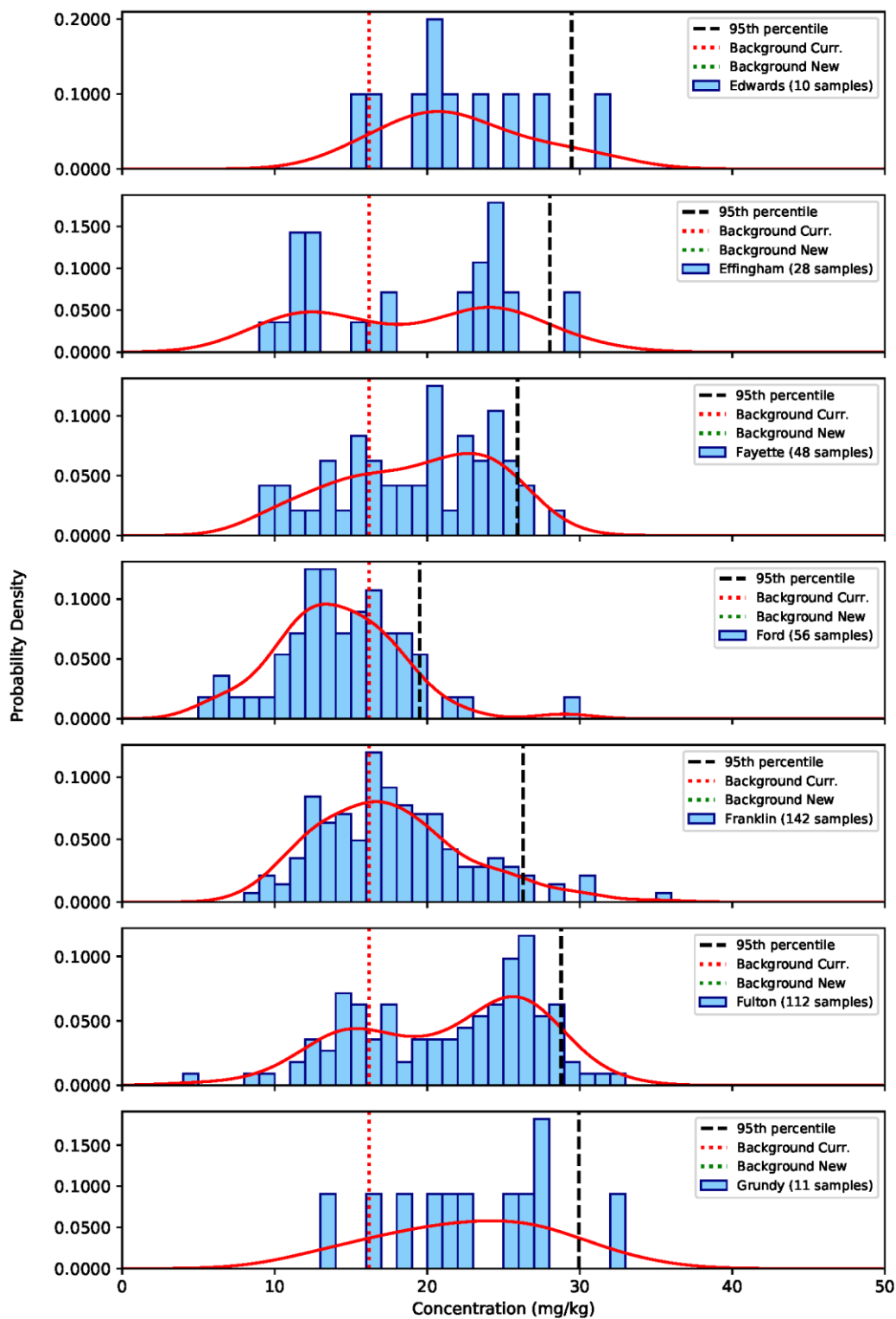


Figure 269. Histogram of RSL chromium concentrations by Illinois county, REC (mg/kg), part 3

Chromium Concentration by County, page 4 of 10

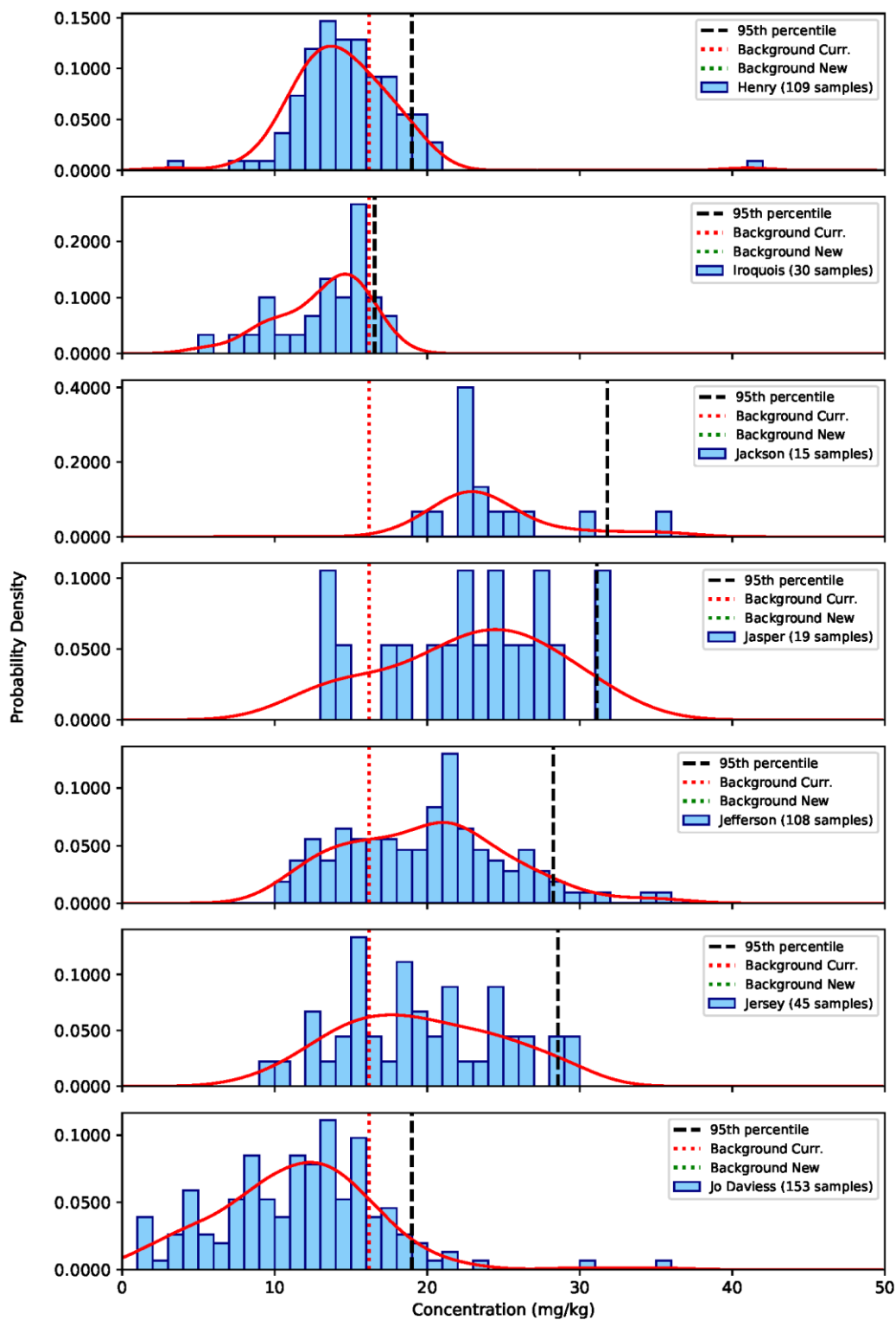


Figure 270. Histogram of RSL chromium concentrations by Illinois county, REC (mg/kg), part 4

Chromium Concentration by County, page 5 of 10

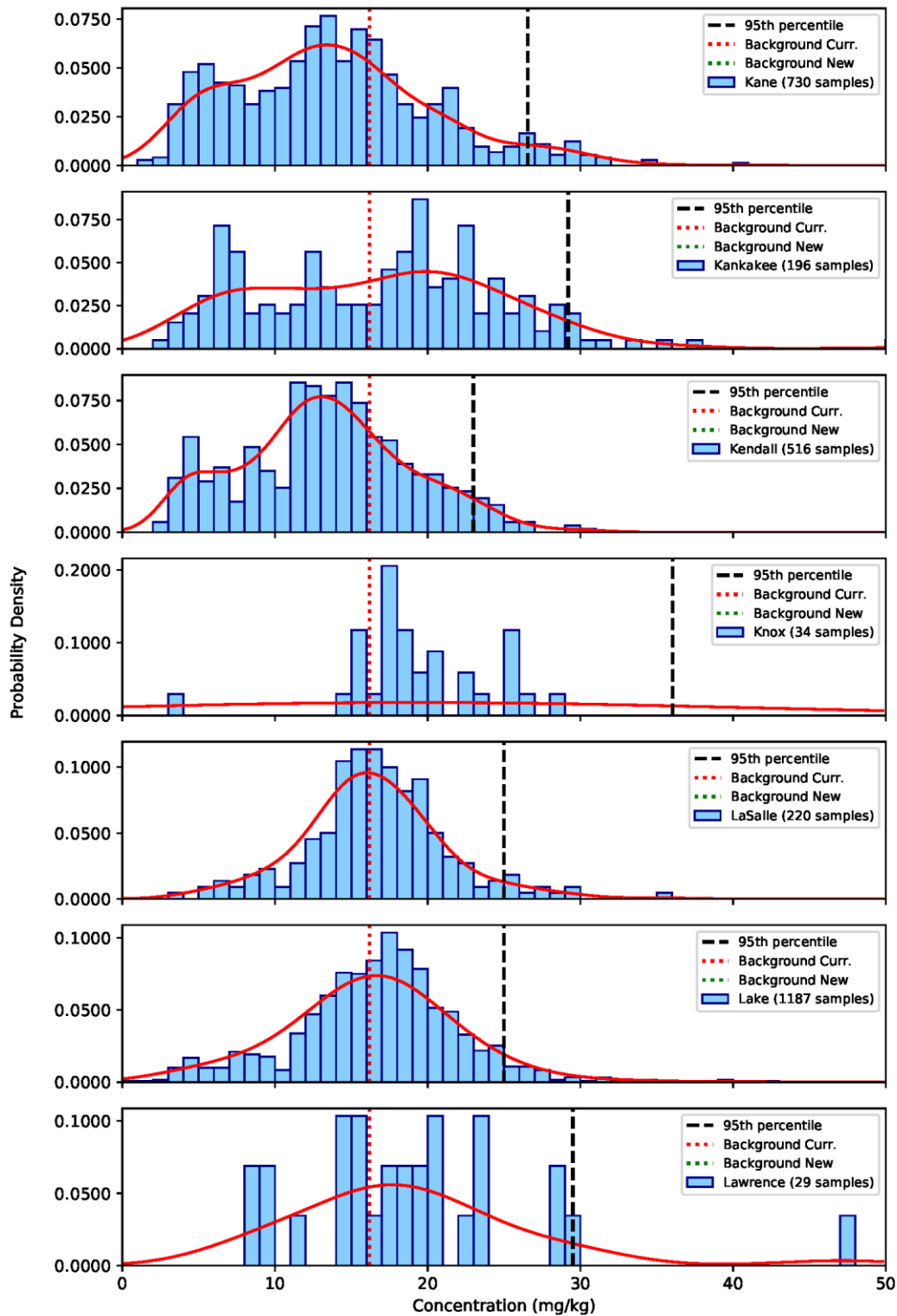


Figure 271. Histogram of RSL chromium concentrations by Illinois county, REC (mg/kg), part 5



Chromium Concentration by County, page 6 of 10

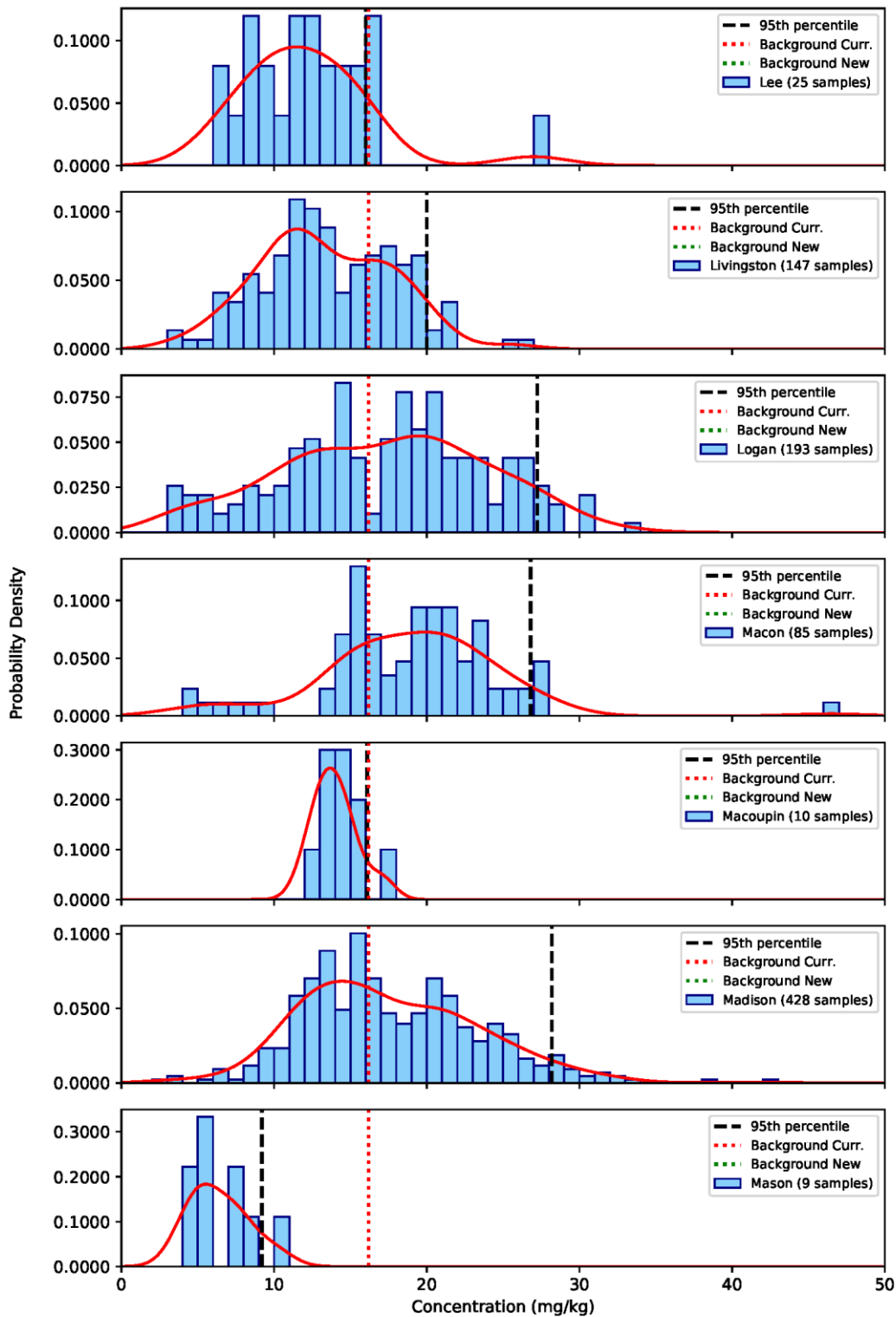


Figure 272. Histogram of RSL chromium concentrations by Illinois county, REC (mg/kg), part 6

Chromium Concentration by County, page 7 of 10

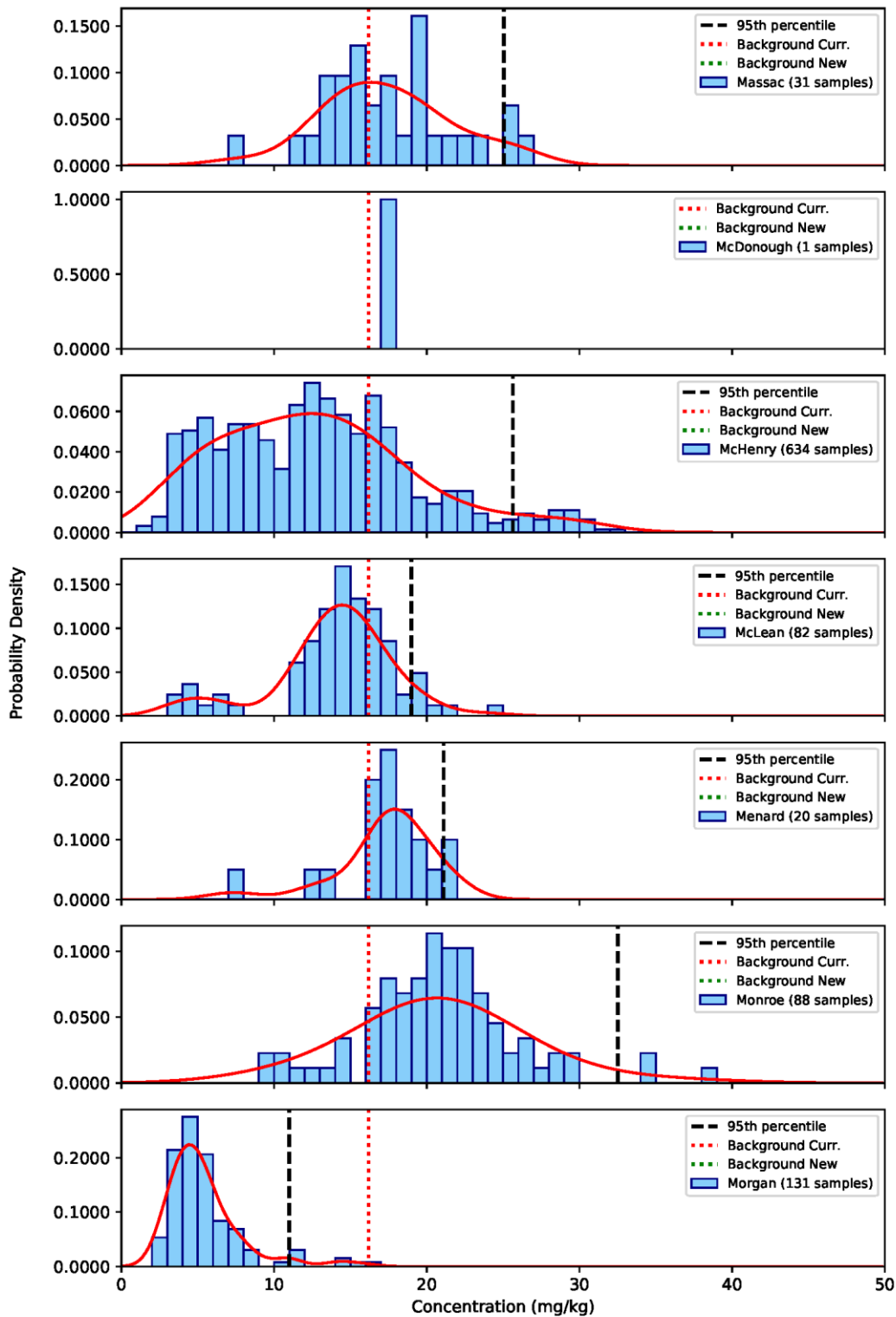


Figure 273. Histogram of RSL chromium concentrations by Illinois county, REC (mg/kg), part 7

Chromium Concentration by County, page 8 of 10

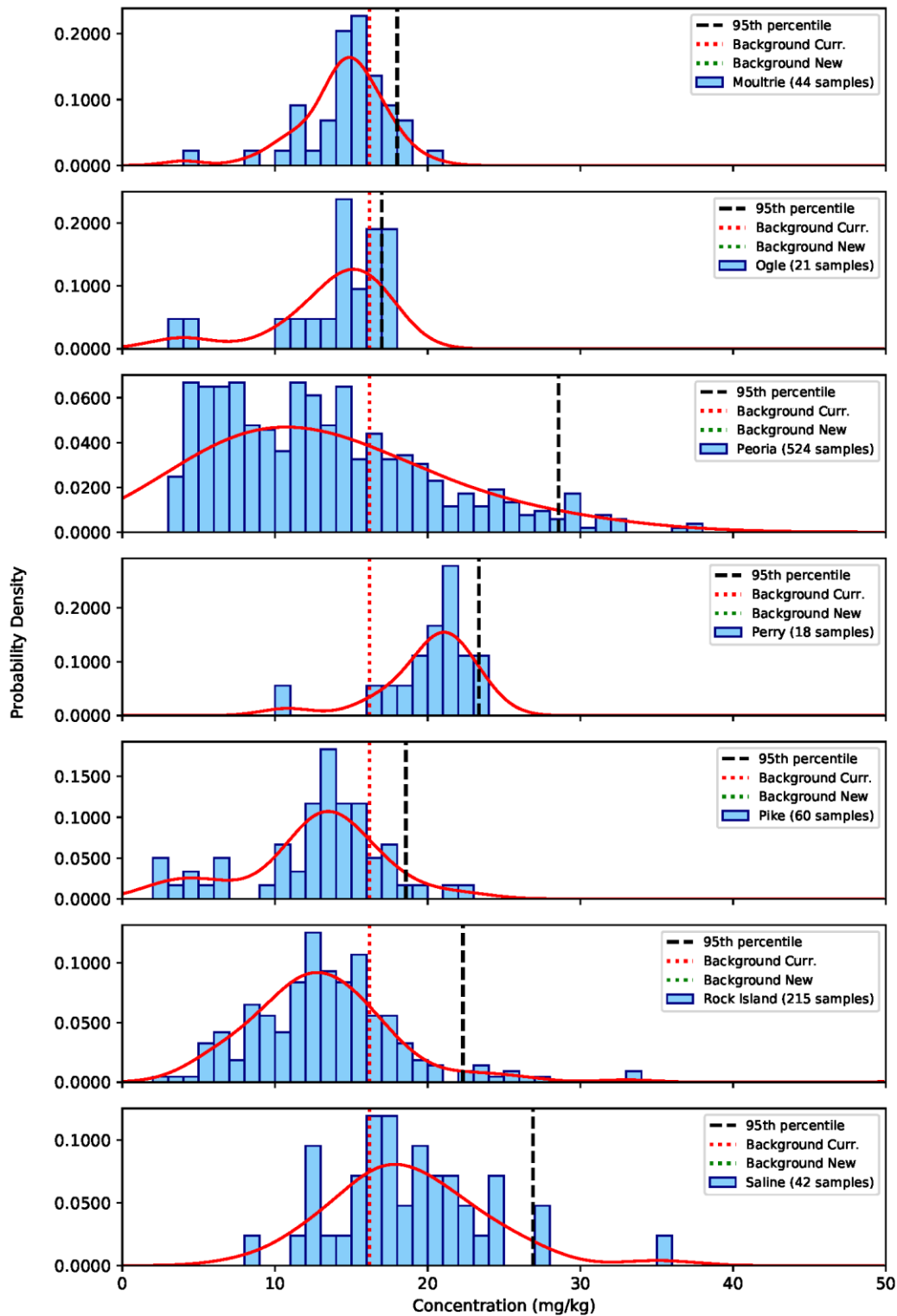


Figure 274. Histogram of RSL chromium concentrations by Illinois county, REC (mg/kg), part 8

Chromium Concentration by County, page 9 of 10

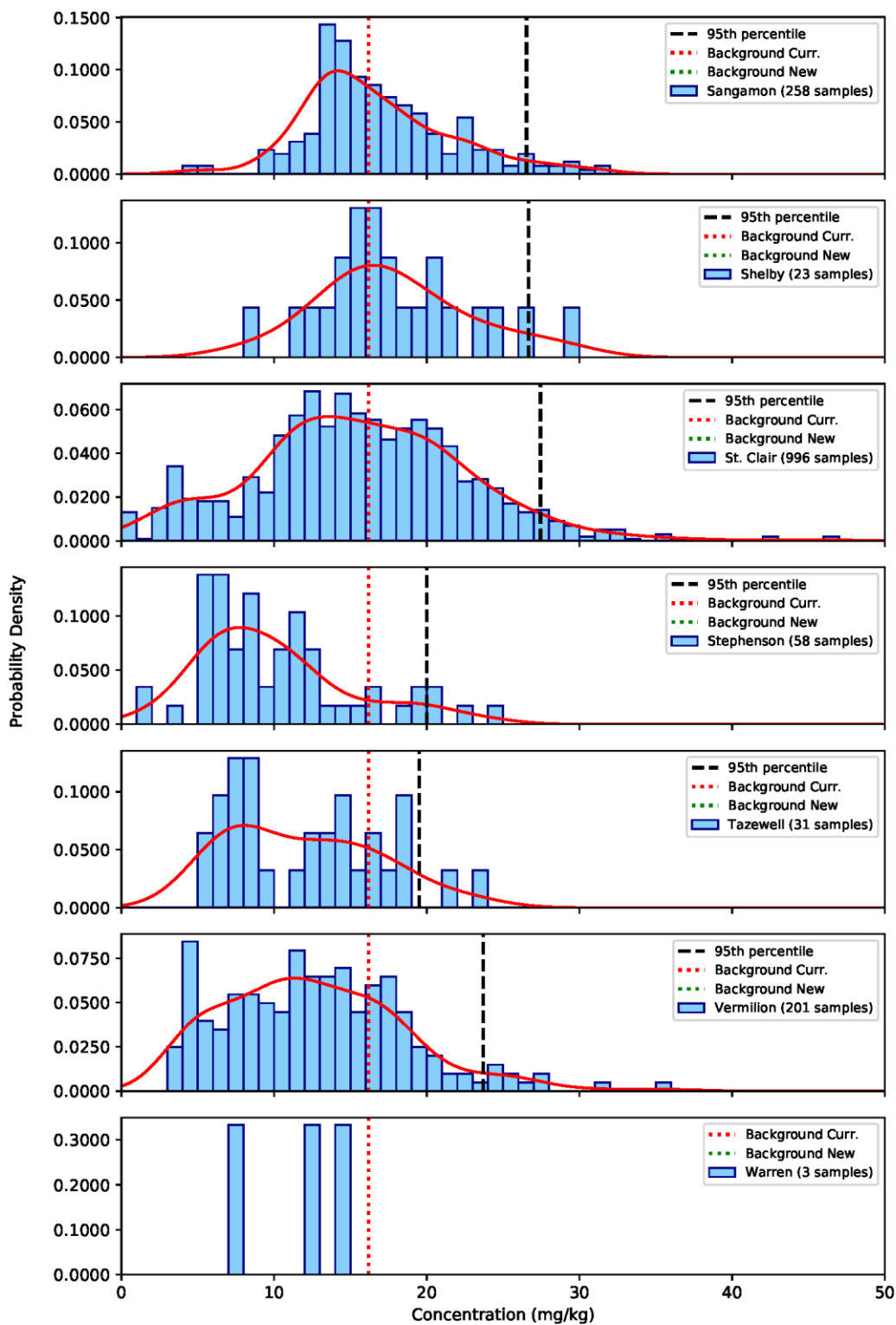


Figure 275. Histogram of RSL chromium concentrations by Illinois county, REC (mg/kg), part 9

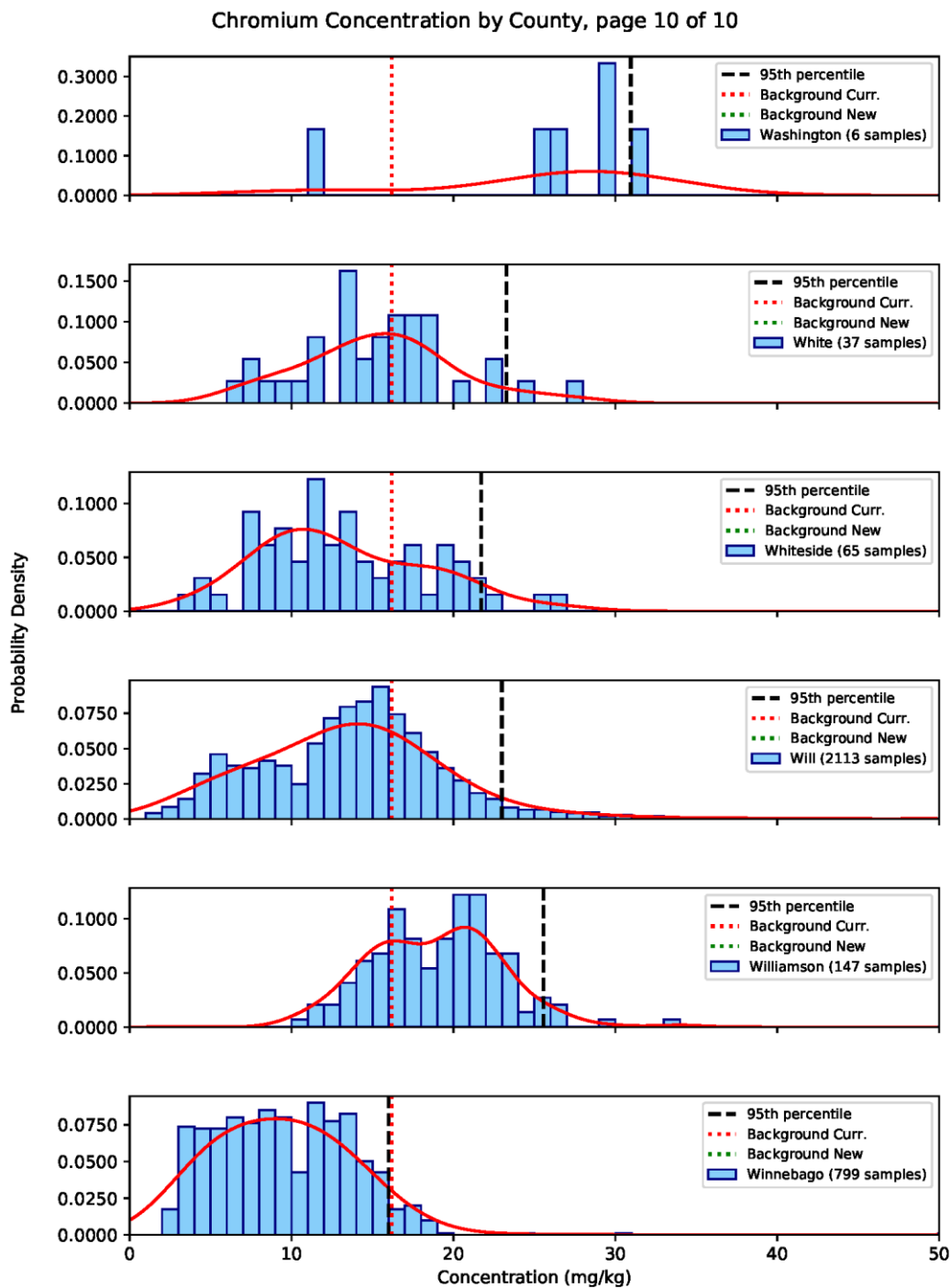


Figure 276. Histogram of RSL chromium concentrations by Illinois county, REC (mg/kg), part 10

Chromium Concentration for 95th Percentile by County: REC Sites

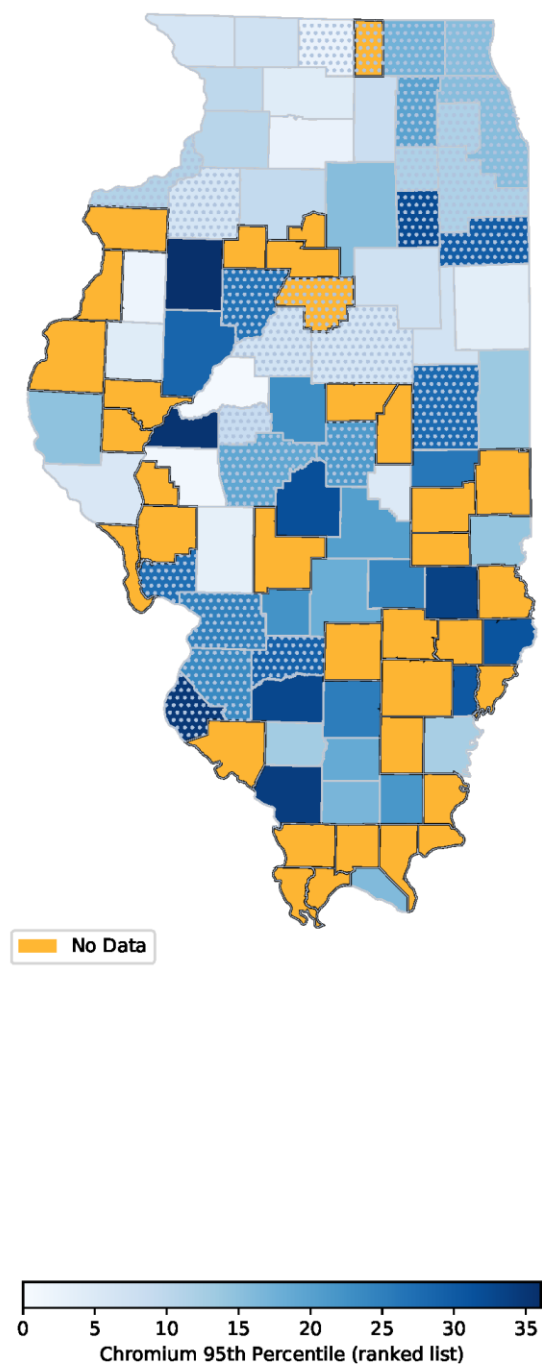


Figure 277. Map of RSL chromium 95th percentile concentration by Illinois county, REC (mg/kg)

329

## H.2 CHROMIUM NON-REC



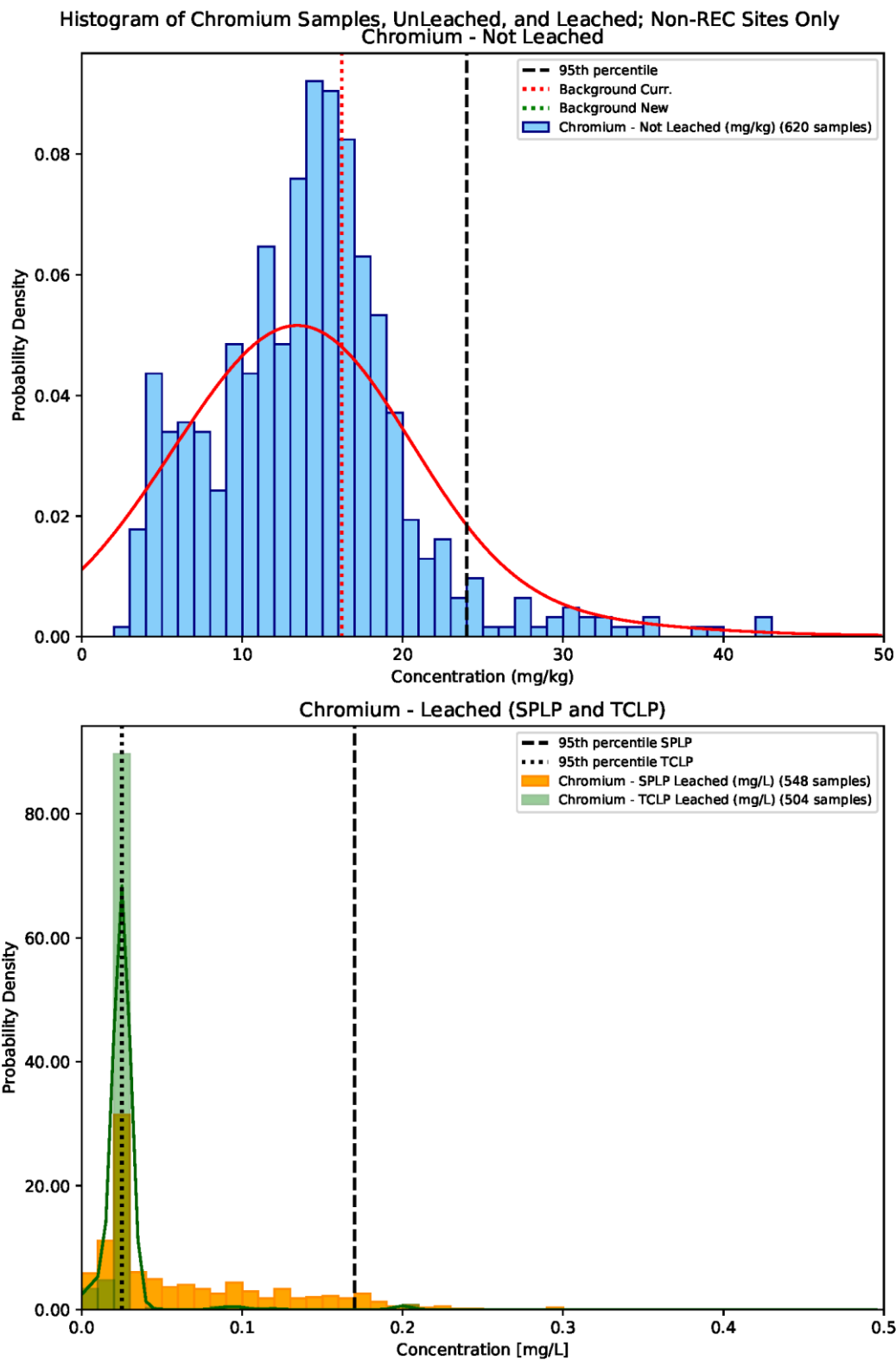


Figure 279. Histogram of RSL chromium concentrations, Non-REC (mg/kg)

Chromium Unleached Concentration (mg/kg)

1) Region

2) District

3) County

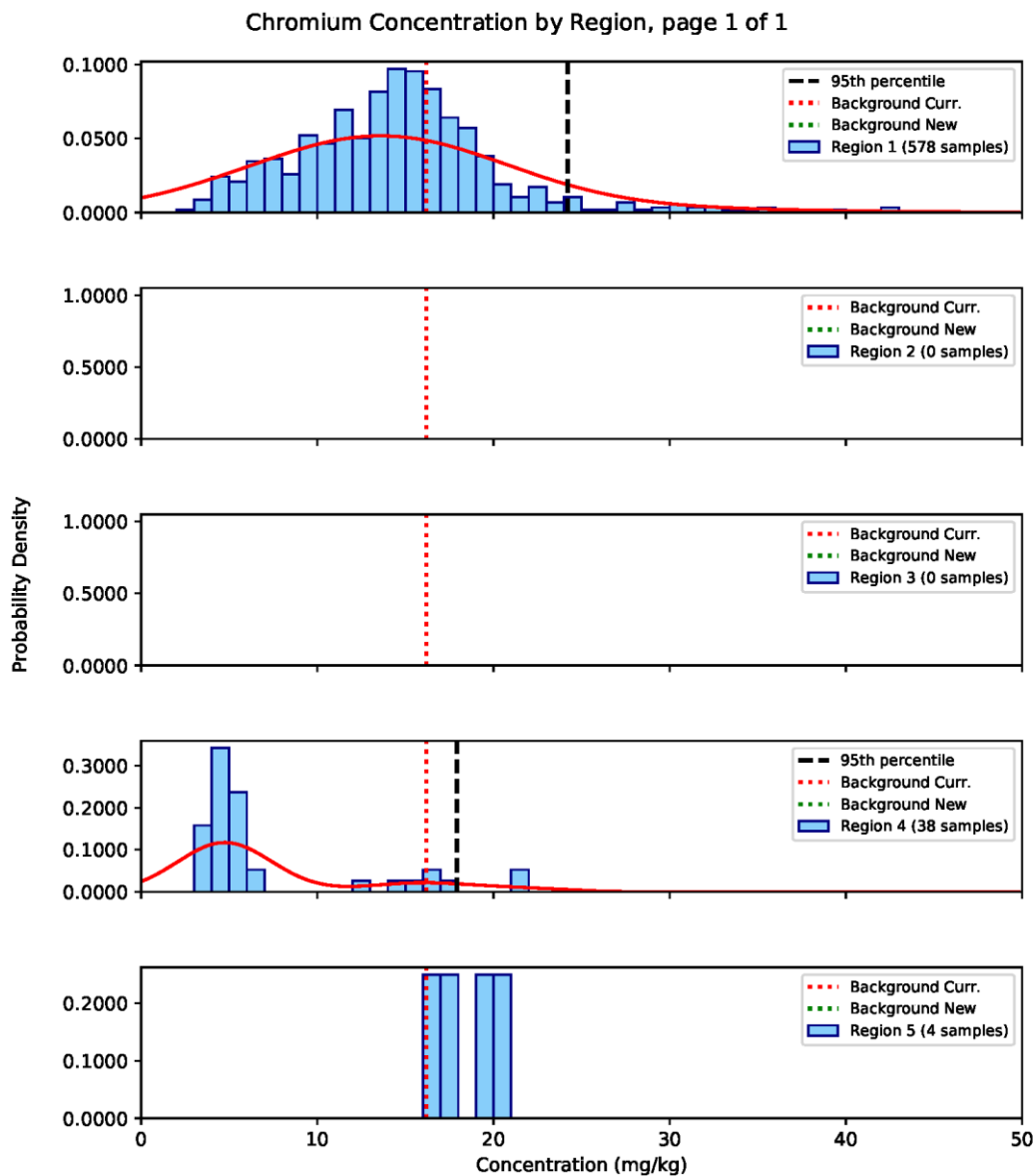


Figure 280. Histogram of RSL chromium concentrations by IDOT Region, Non-REC (mg/kg)

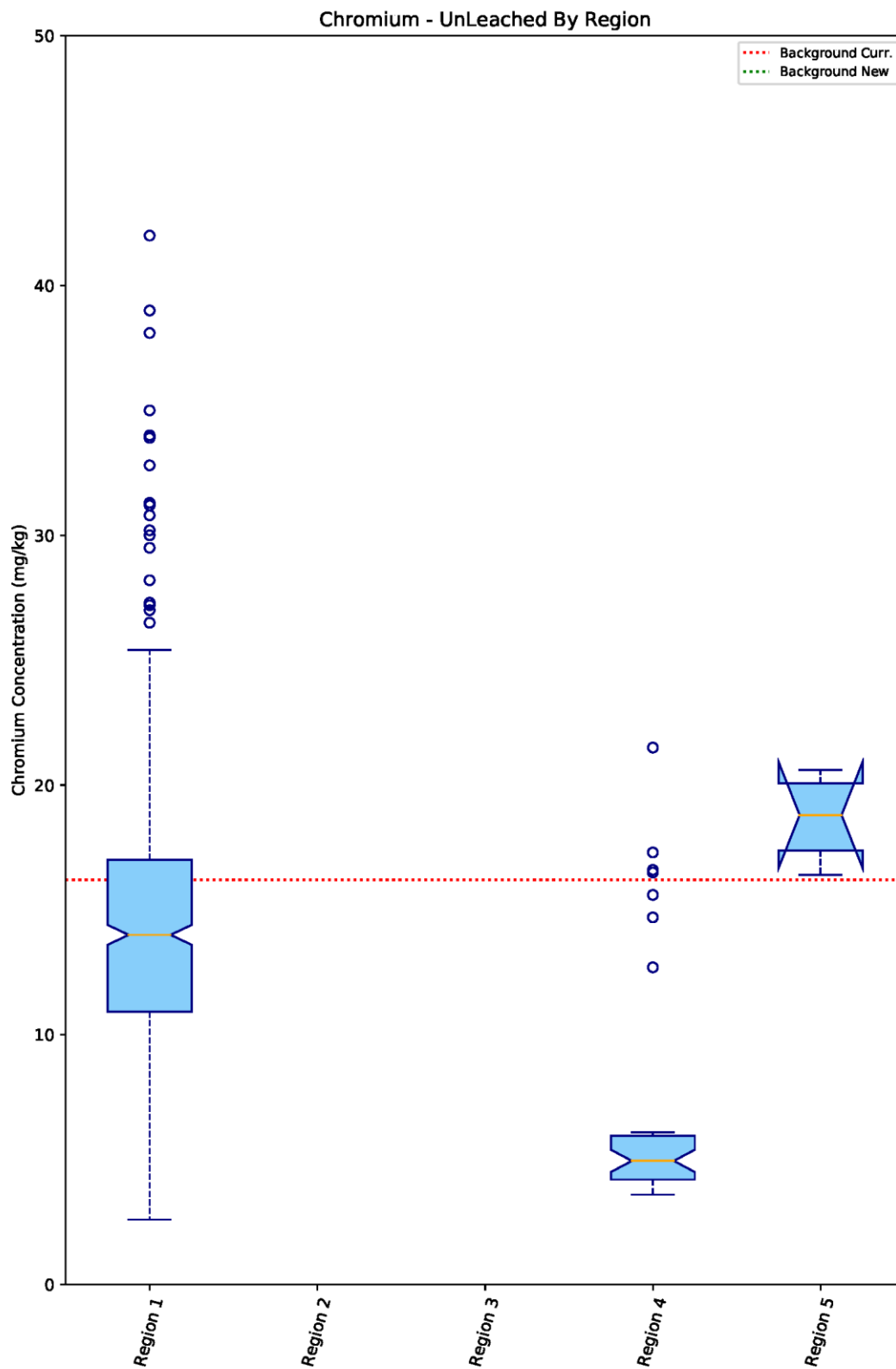


Figure 281. Boxplot of RSL chromium concentrations by IDOT Region, Non-REC (mg/kg)

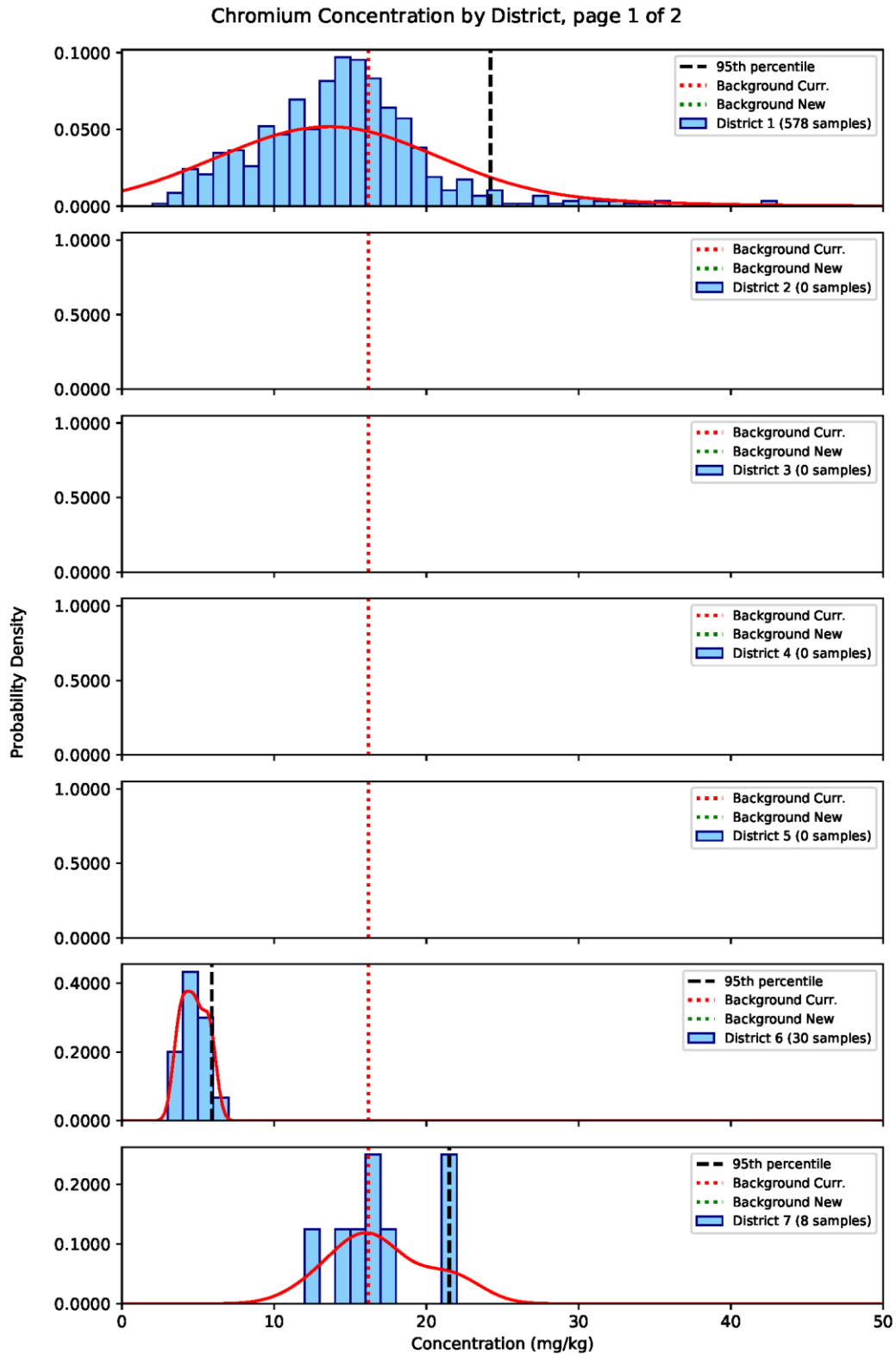


Figure 282. Histogram of RSL chromium concentrations by IDOT District, Non-REC (mg/kg), part 1

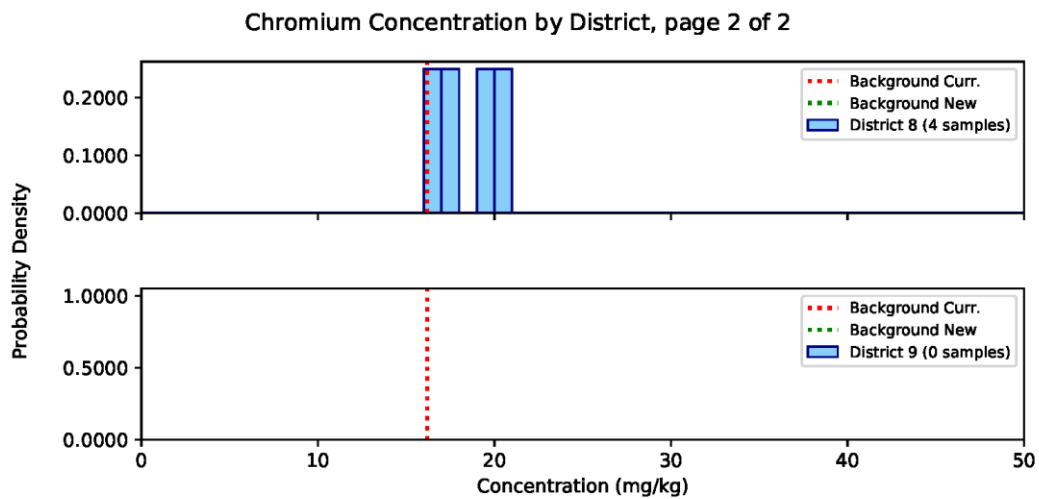


Figure 283. Histogram of RSL chromium concentrations by IDOT District, Non-REC (mg/kg), part 2

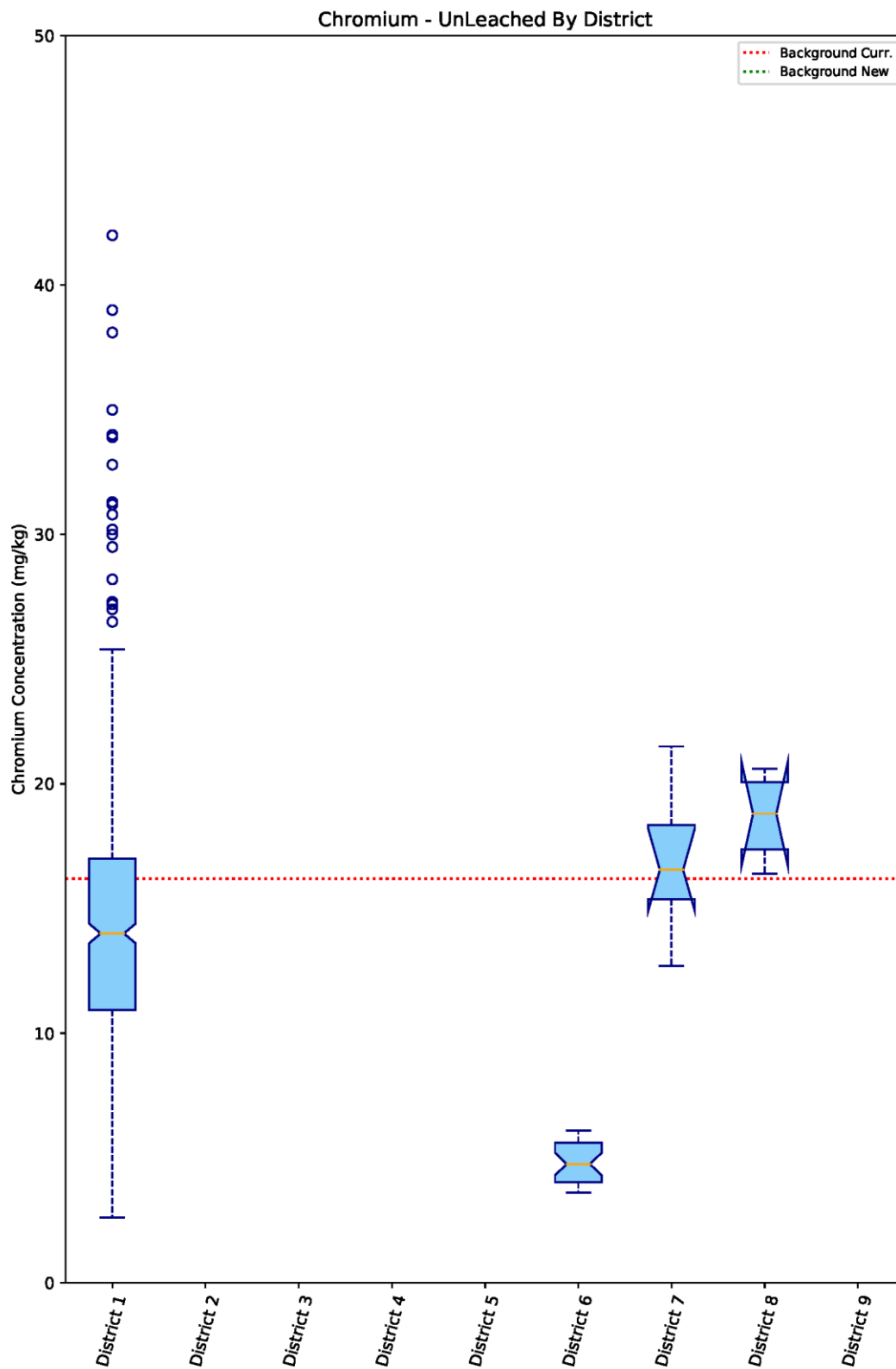


Figure 284. Boxplot of RSL chromium concentrations by IDOT District, Non-REC (mg/kg)

# Chromium Concentration by County, page 1 of 2

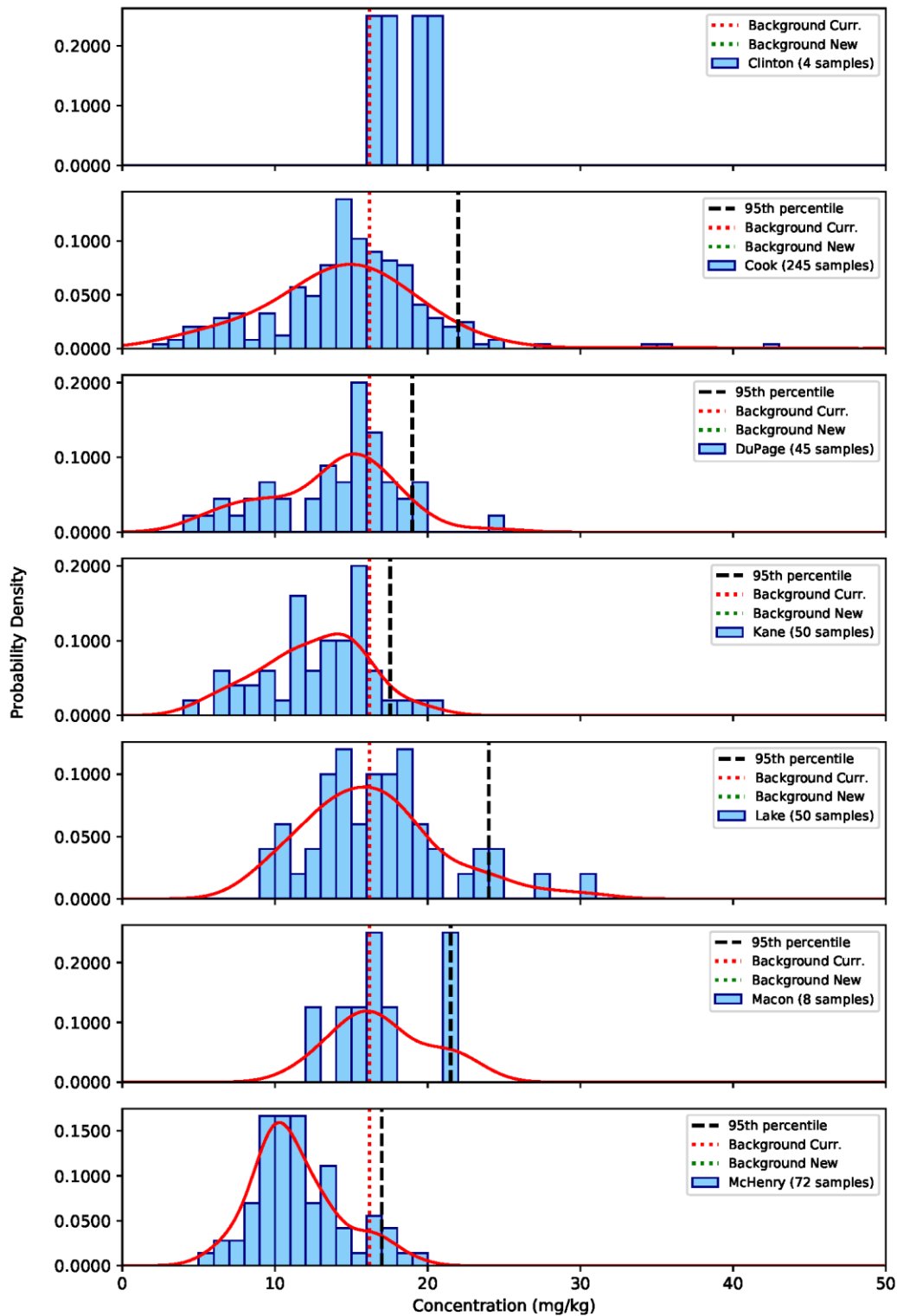


Figure 285. Histogram of RSL chromium concentrations by Illinois county, Non-REC (mg/kg), part 1



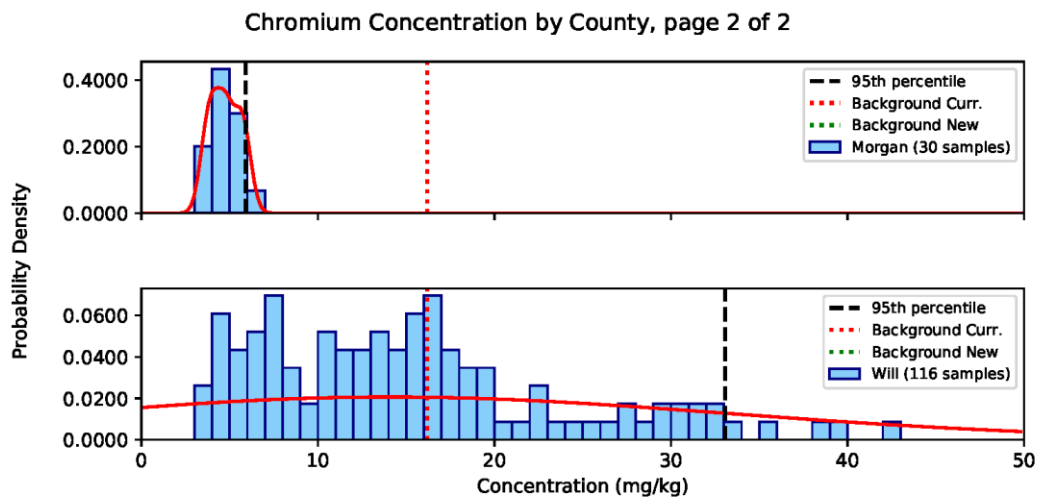


Figure 286. Histogram of RSL chromium concentrations by Illinois county, Non-REC (mg/kg), part 2

Chromium Concentration for 95th Percentile by County: Non-REC Sites

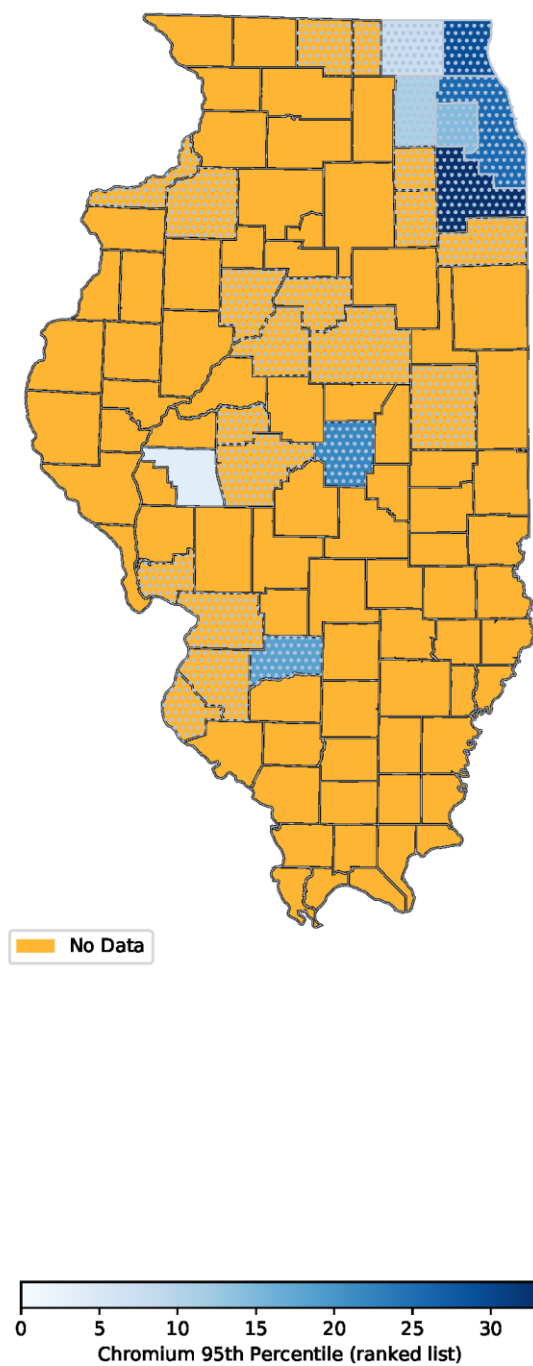


Figure 287. Map of RSL chromium 95th percentile concentration by Illinois county, Non-REC (mg/kg)

341

### **H.3 CHROMIUM DE MINIMIS**

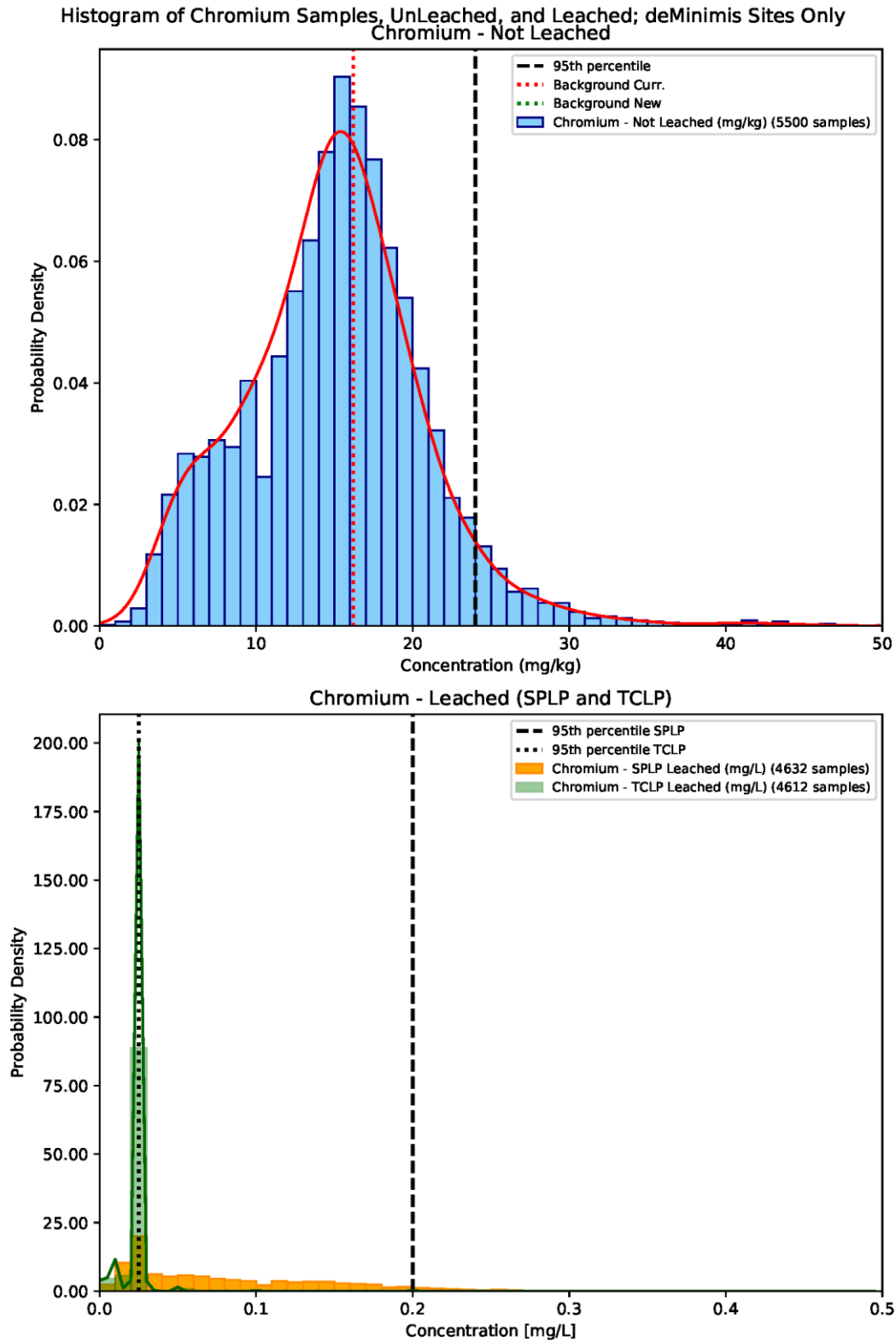


Figure 289. Histogram of RSL chromium concentrations, de minimis (mg/kg)

Chromium Unleached Concentration (mg/kg)

1) Region

2) District

3) County

Chromium Concentration by Region, page 1 of 1

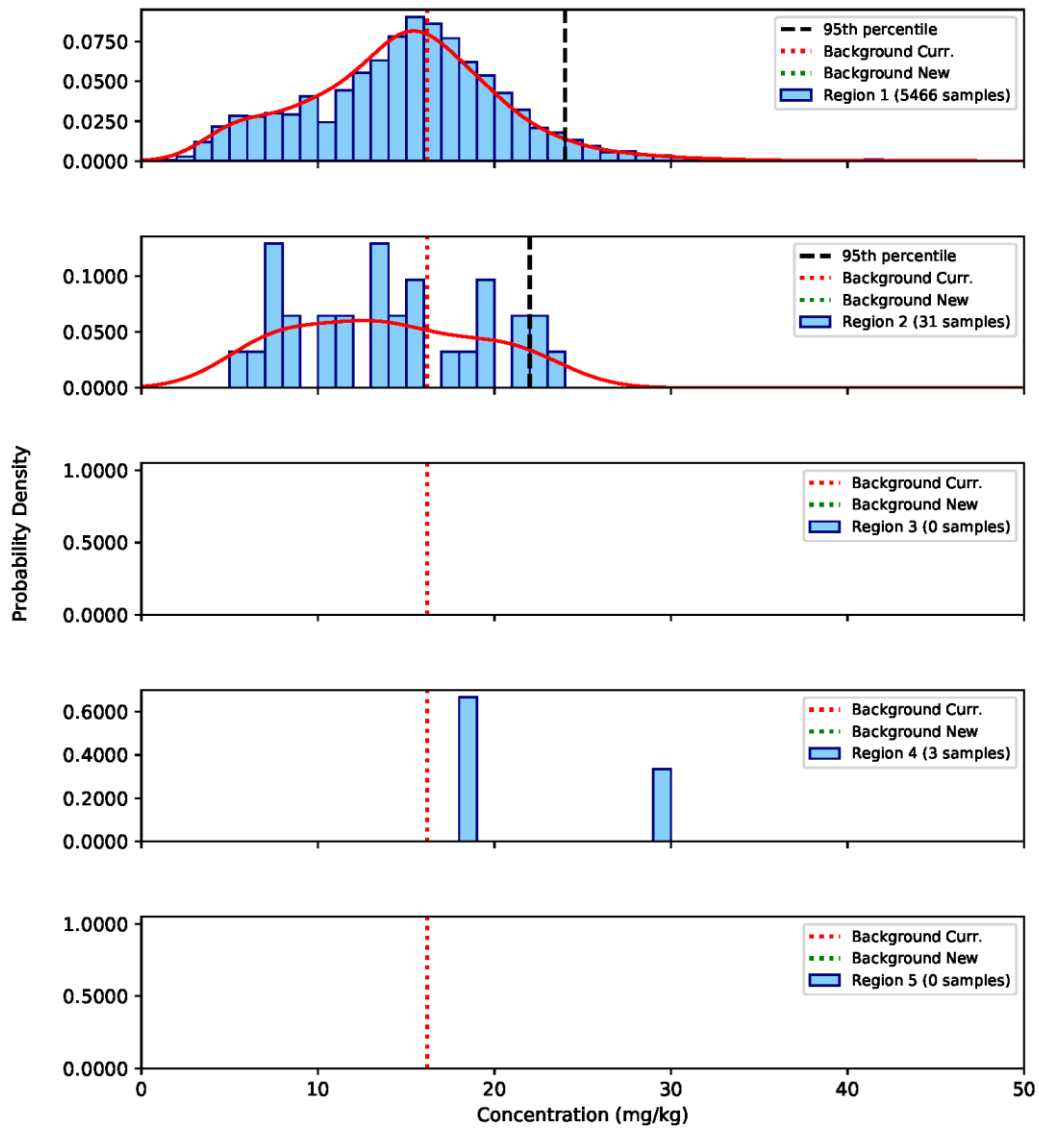


Figure 290. Histogram of RSL chromium concentrations by IDOT Region, de minimis (mg/kg)

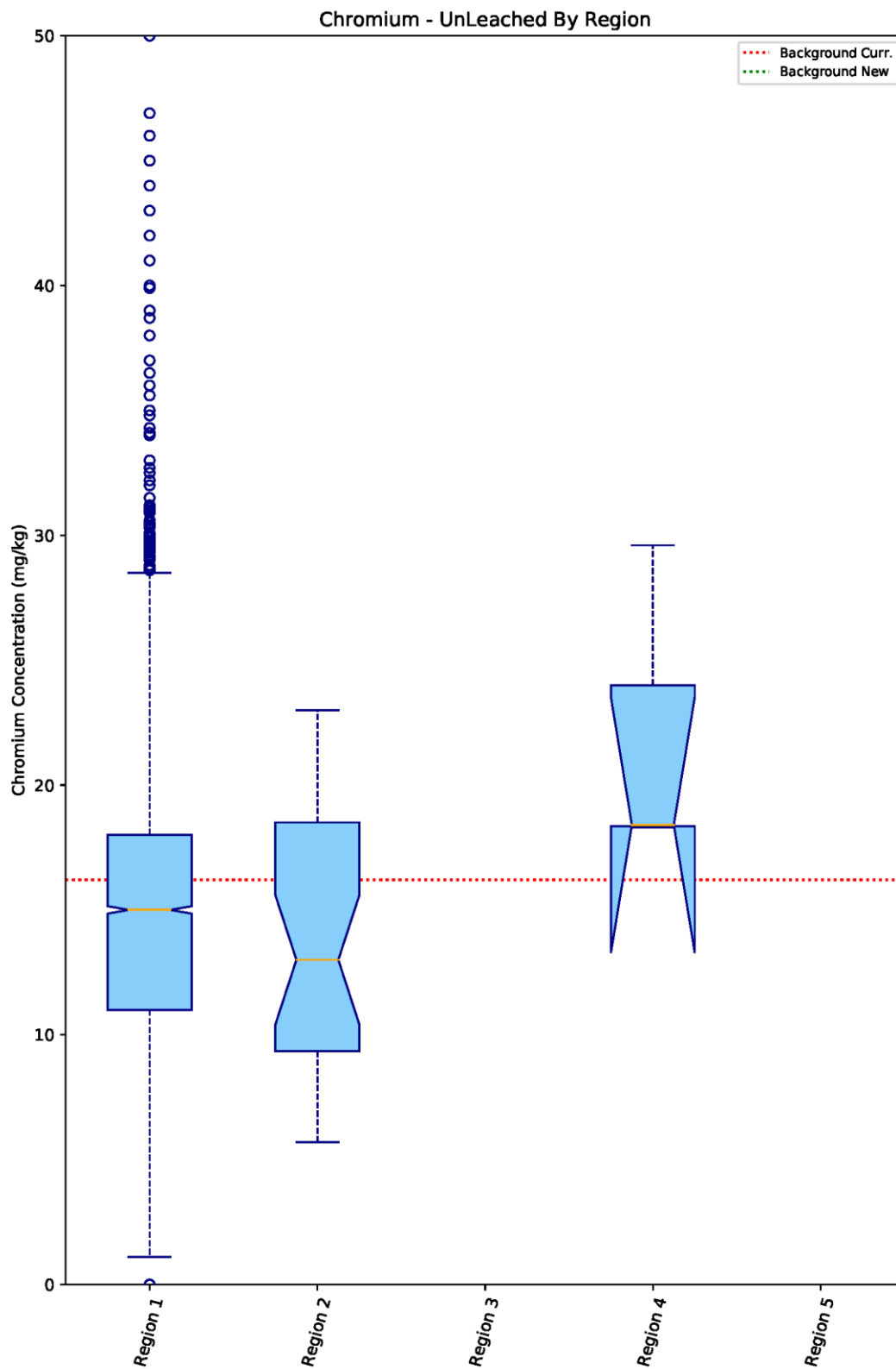


Figure 291. Boxplot of RSL chromium concentrations by IDOT Region, de minimis (mg/kg)



Chromium Concentration by District, page 1 of 2

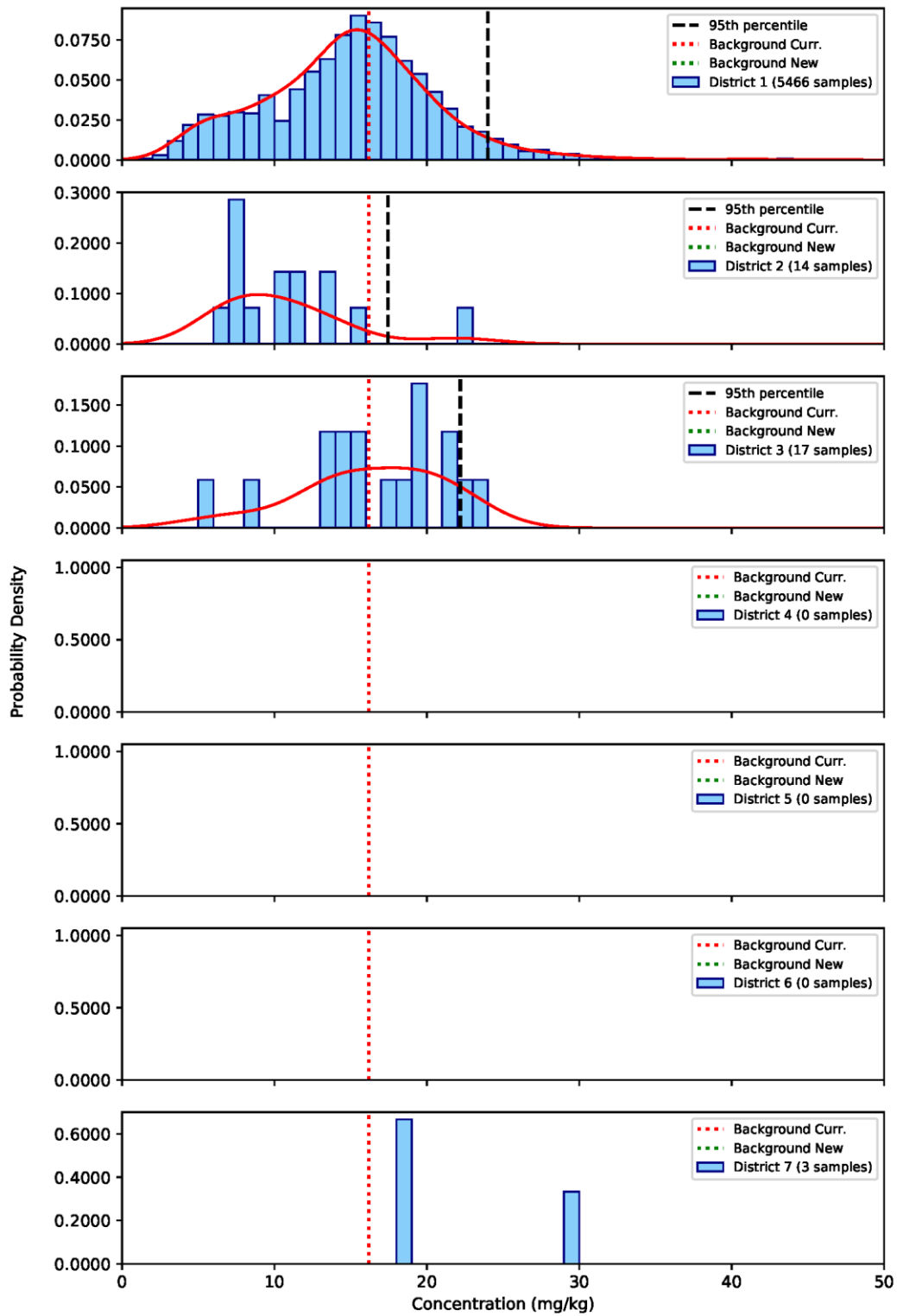


Figure 292. Histogram of RSL chromium concentrations by IDOT District, de minimis (mg/kg), part 1

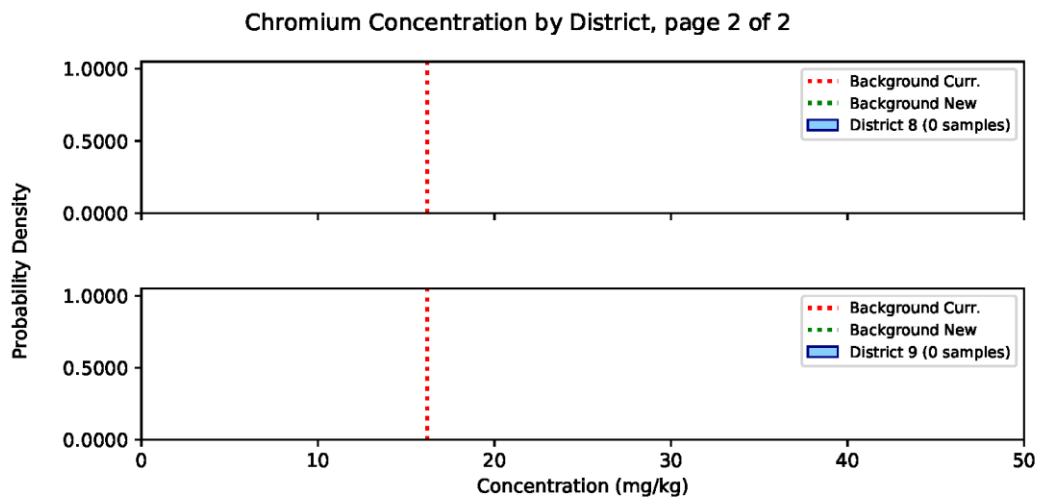


Figure 293. Histogram of RSL chromium concentrations by IDOT District, de minimis (mg/kg), part 2

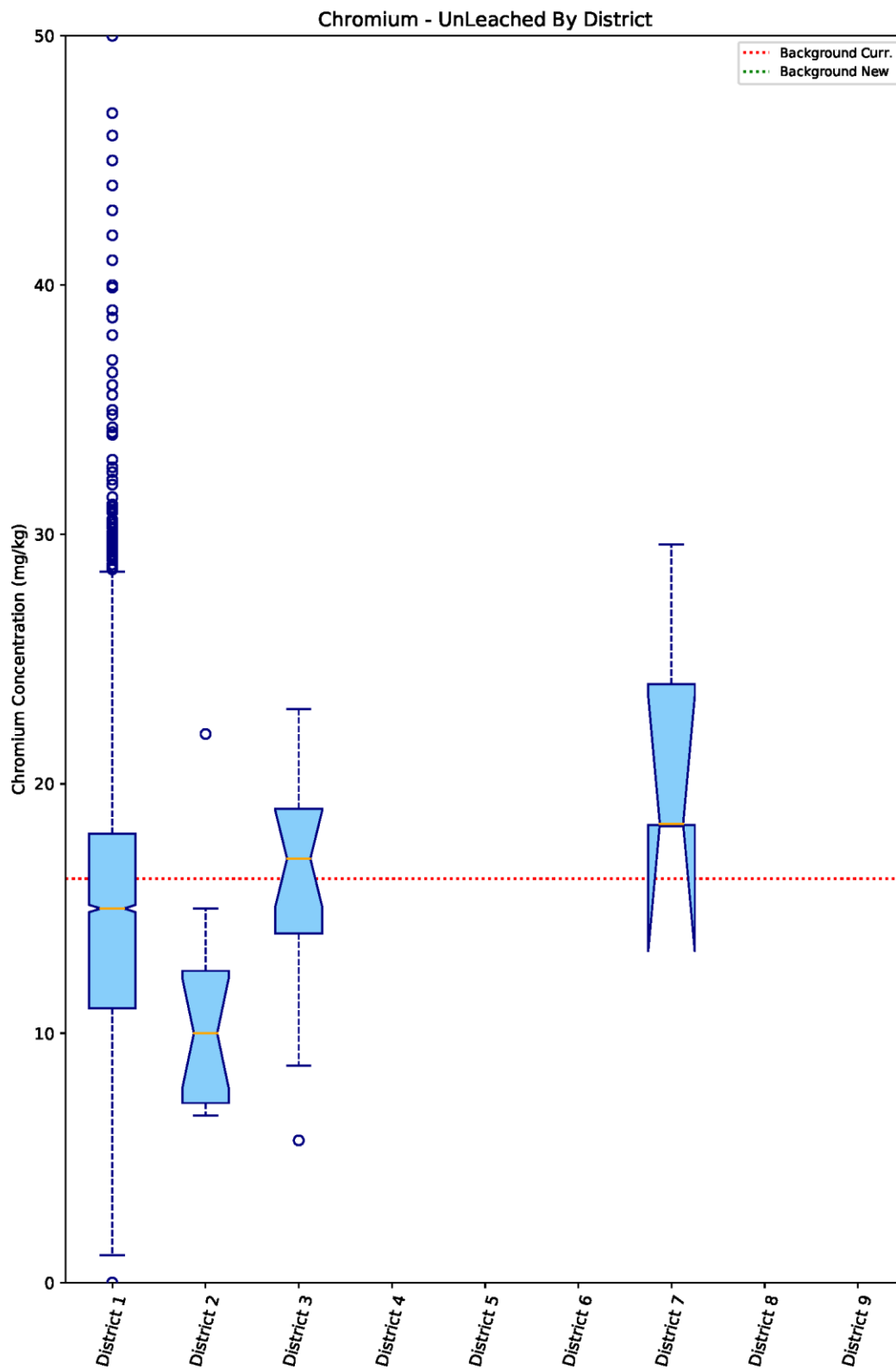


Figure 294. Boxplot of RSL chromium concentrations by IDOT District, de minimis (mg/kg)

Chromium Concentration by County, page 1 of 2

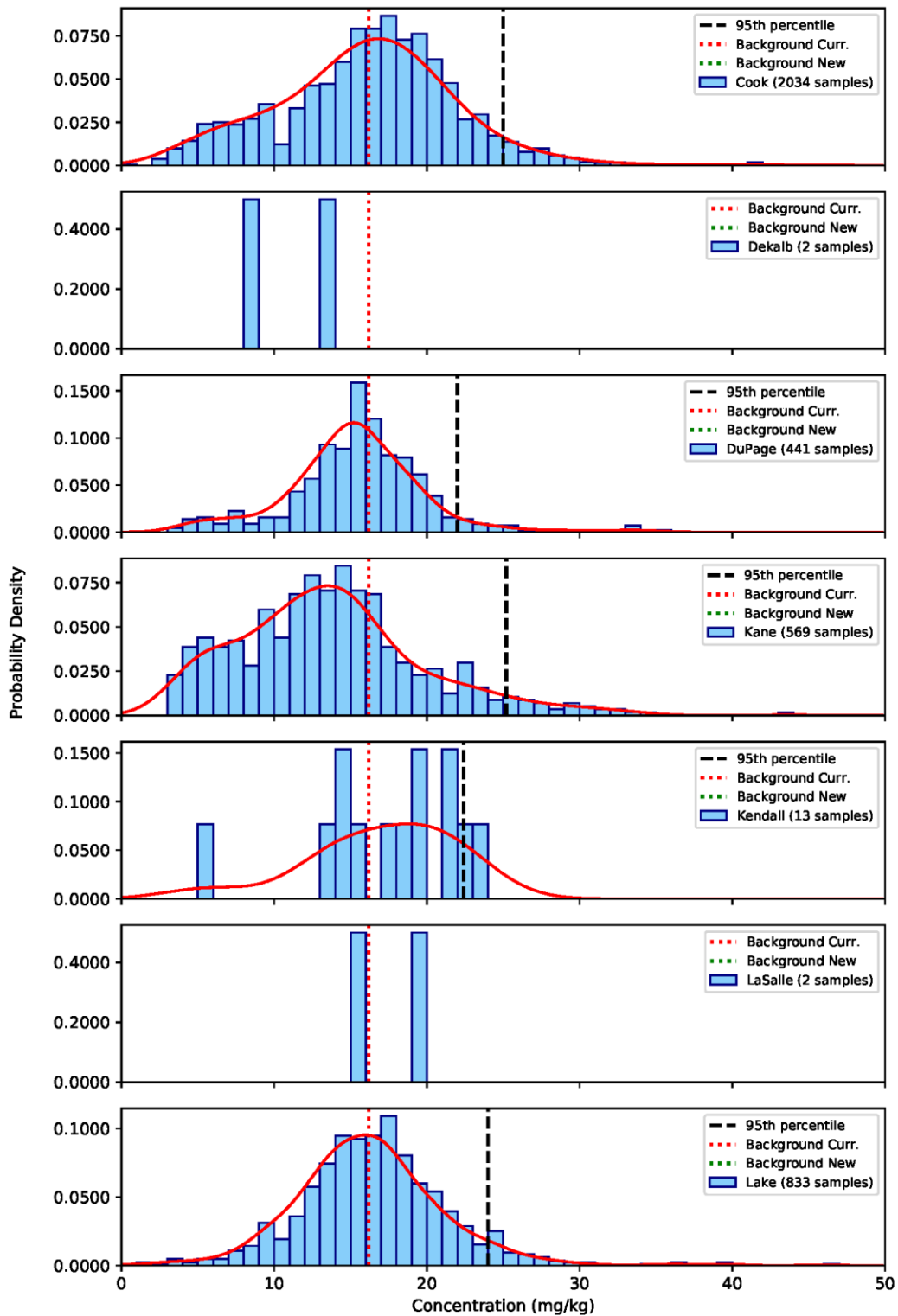


Figure 295. Histogram of RSL chromium concentrations by Illinois county, de minimis (mg/kg), part

Chromium Concentration by County, page 2 of 2

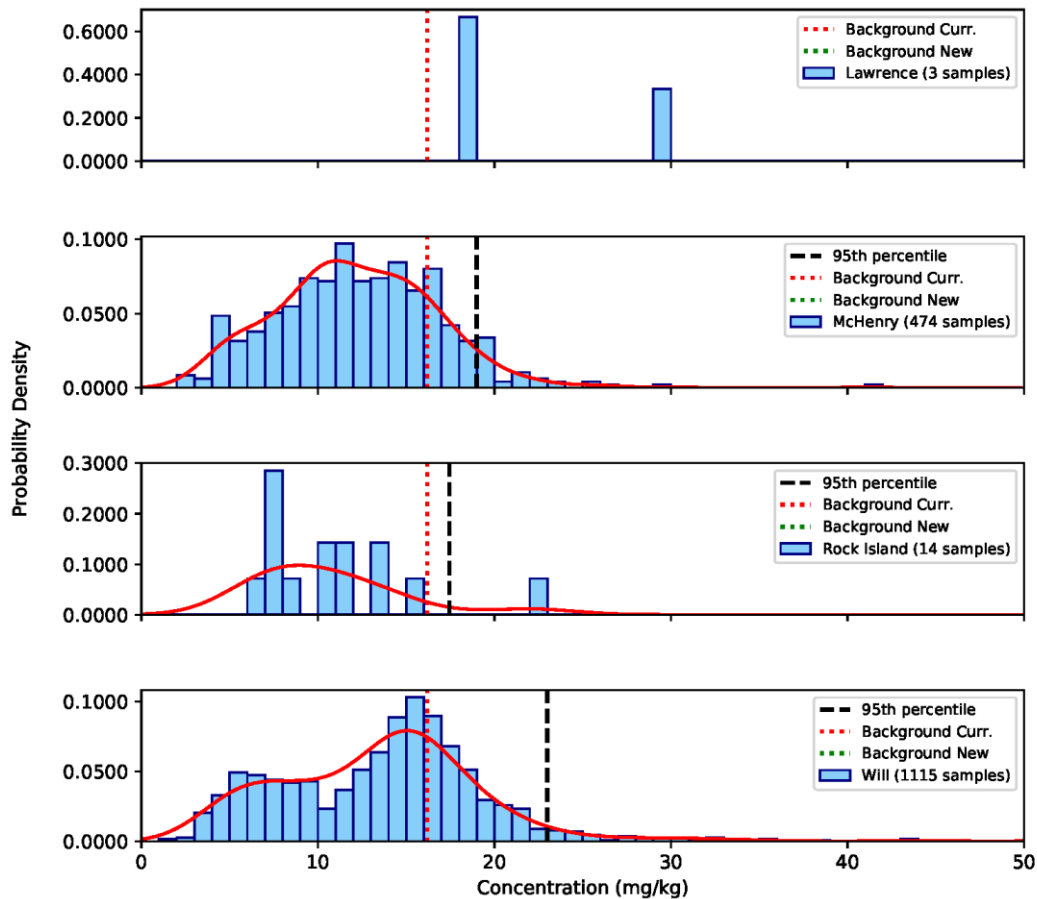


Figure 296. Histogram of RSL chromium concentrations by Illinois county, de minimis (mg/kg), part 2

Chromium Concentration for 95th Percentile by County: deMinimis Sites

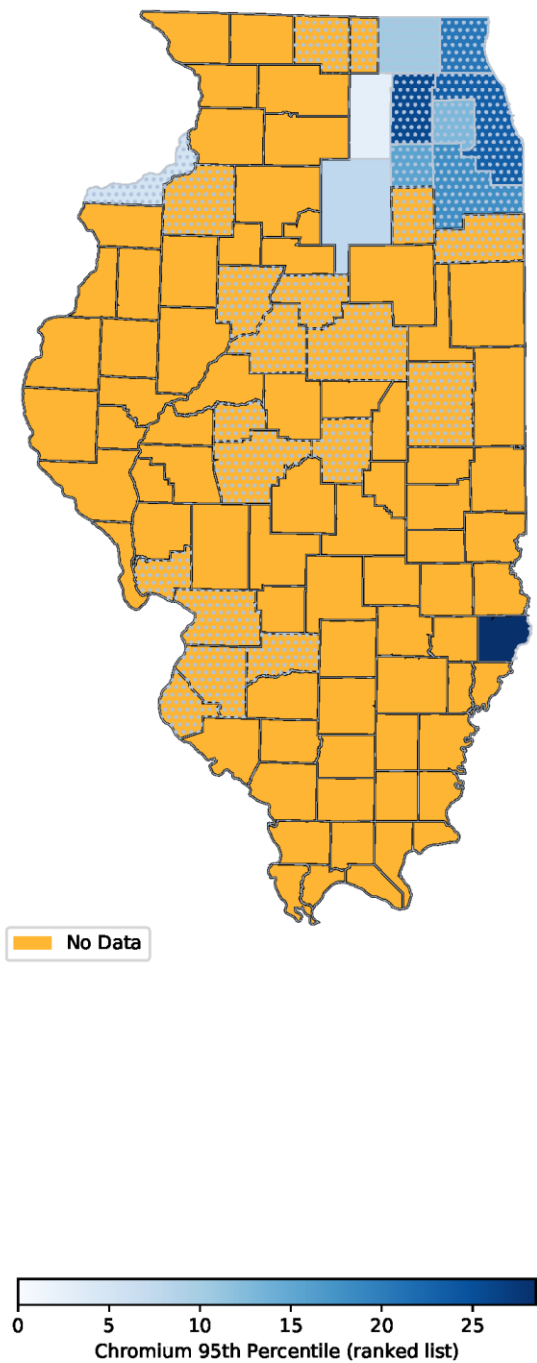


Figure 297. Map of RSL chromium 95th percentile concentration by Illinois county, de minimis (mg/kg)

Number of Chromium Samples by County: deMinimis Sites

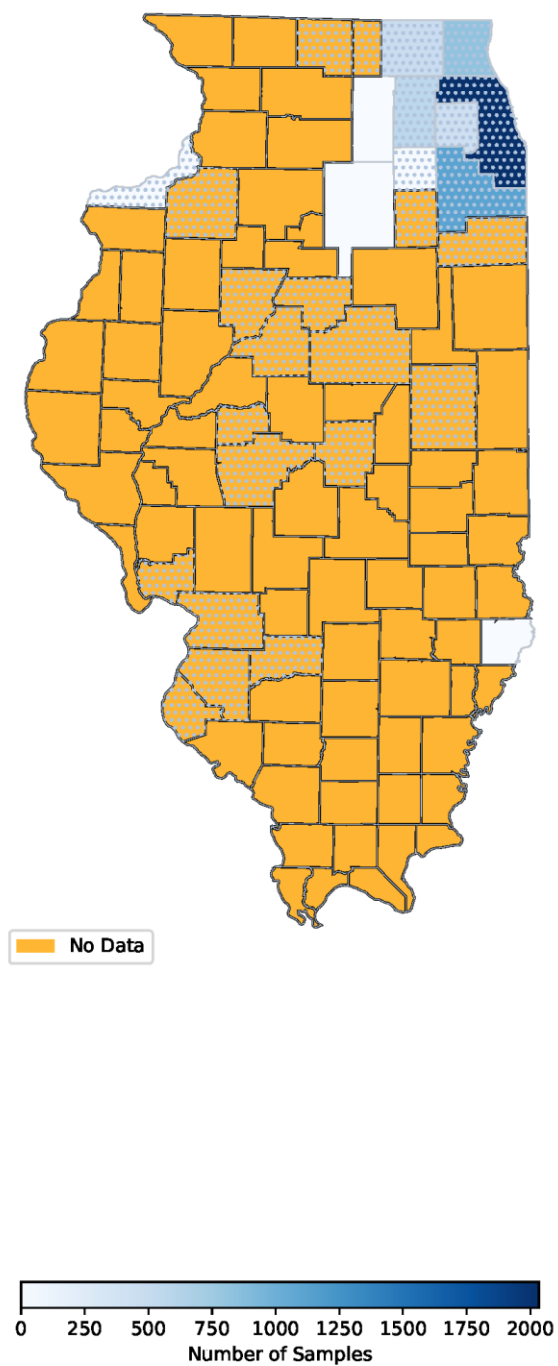
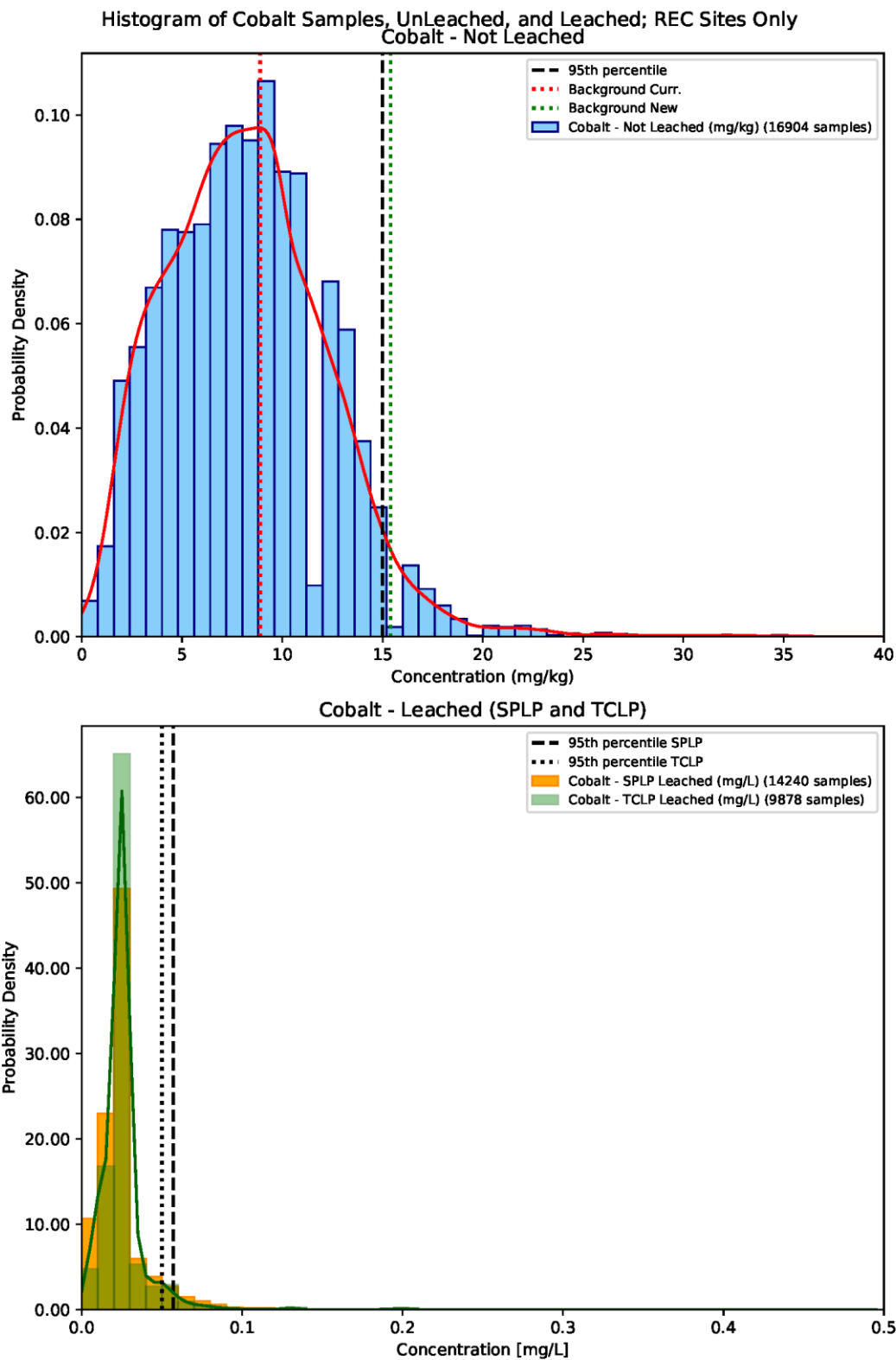


Figure 298. Map of RSL chromium sample quantity by Illinois county, de minimis (mg/kg)

## **APPENDIX I. ANALYTE ANALYSIS: COBALT**

### **I.1 COBALT REC**





**Figure 299. Histogram of RSL cobalt concentrations, REC (mg/kg)**

**Cobalt Unleached Concentration (mg/kg)**

1) Region

2) District

3) County

Cobalt Concentration by Region, page 1 of 1

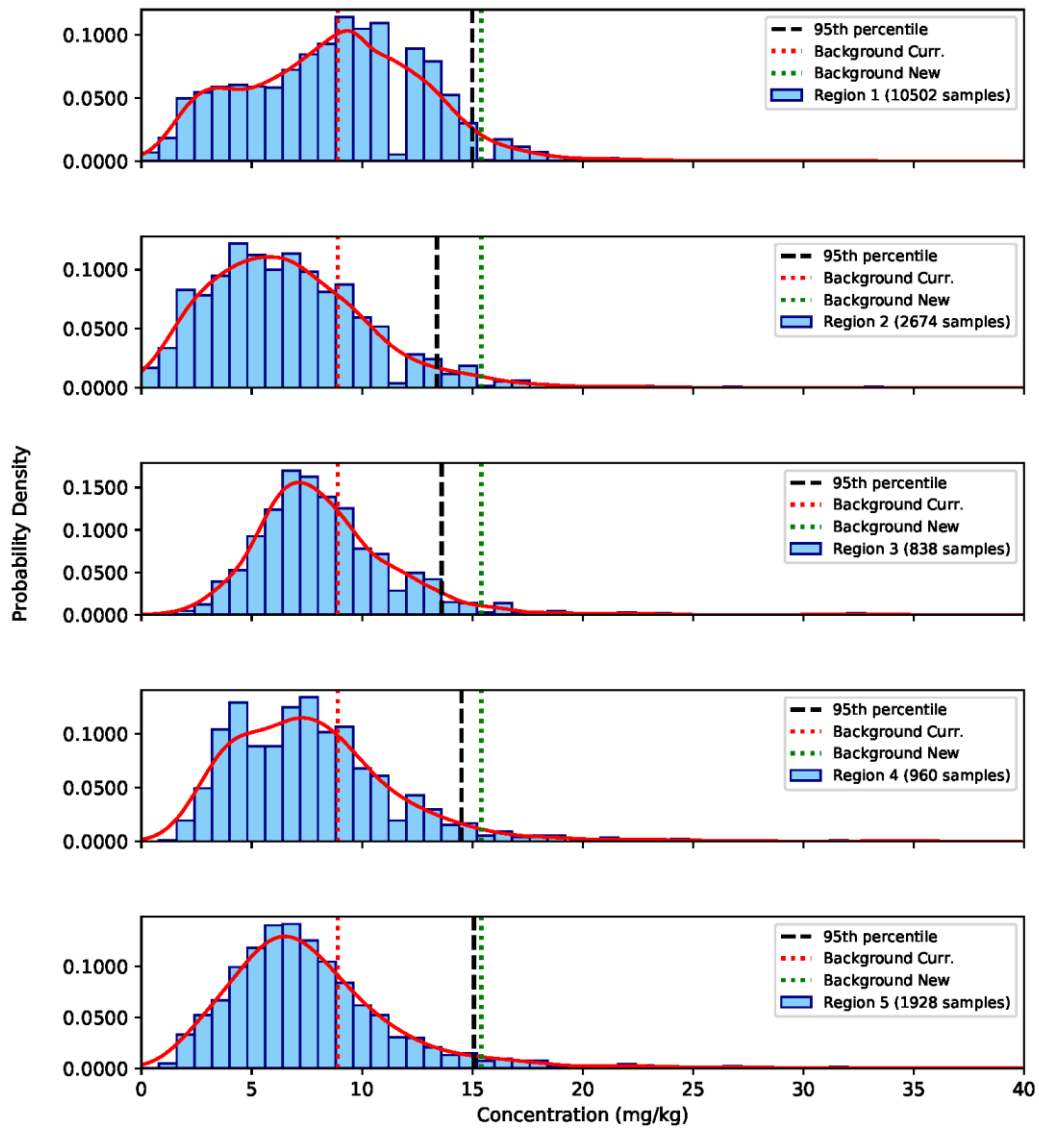
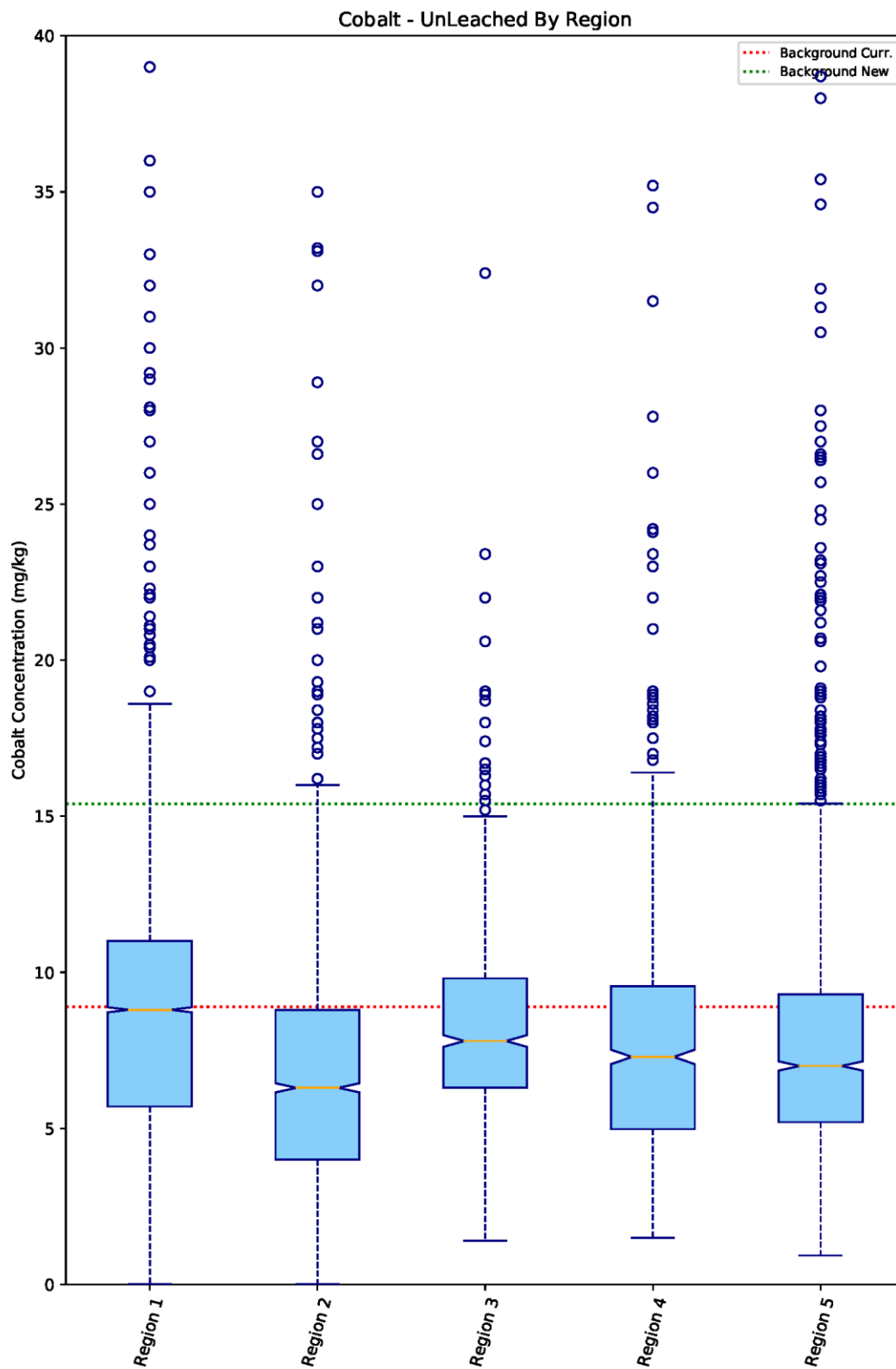


Figure 300. Histogram of RSL cobalt concentrations by IDOT Region, REC (mg/kg)



**Figure 301. Boxplot of RSL cobalt concentrations by IDOT Region, REC (mg/kg)**

Cobalt Concentration by District, page 1 of 2

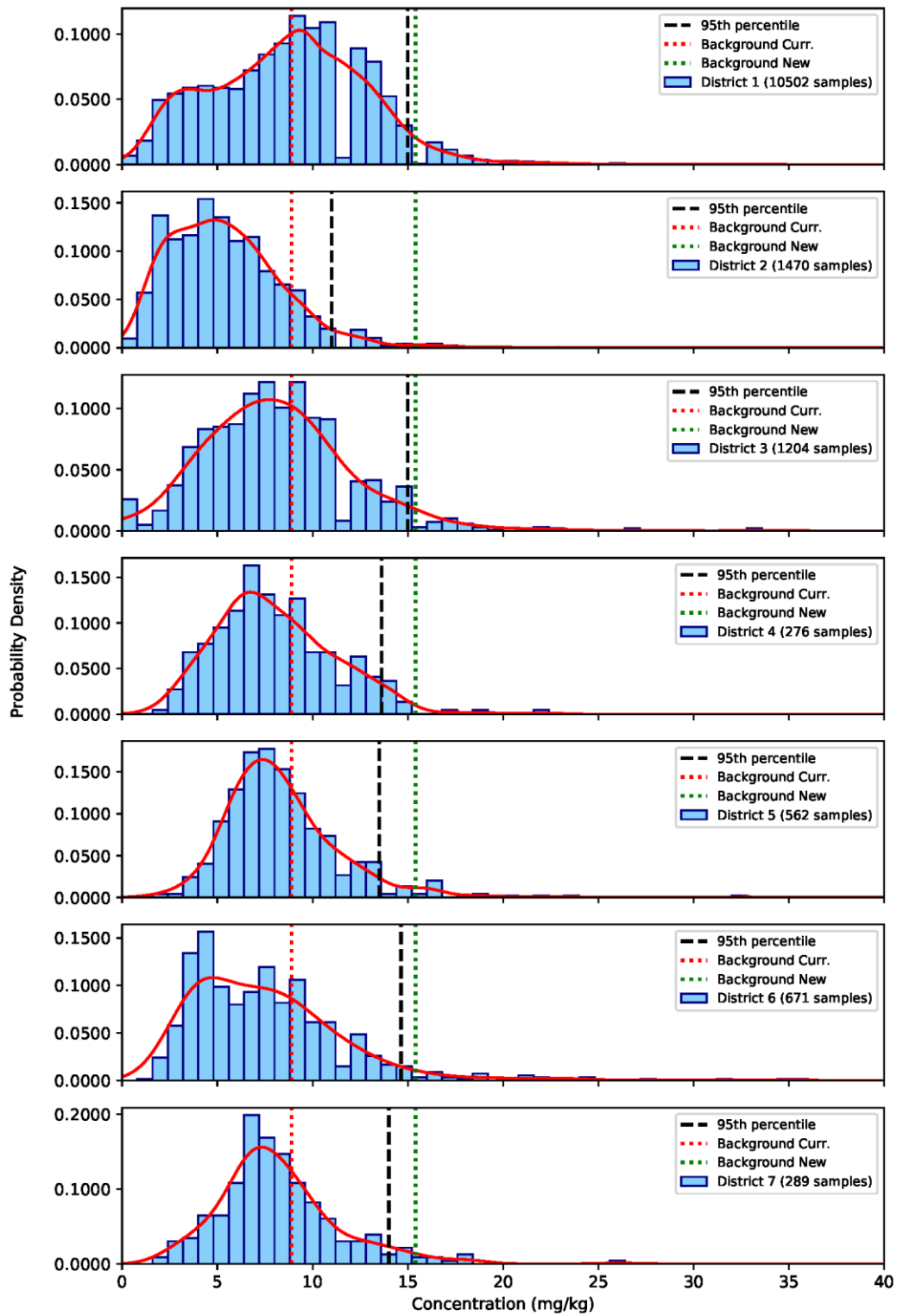


Figure 302. Histogram of RSL cobalt concentrations by IDOT District, REC (mg/kg), part 1

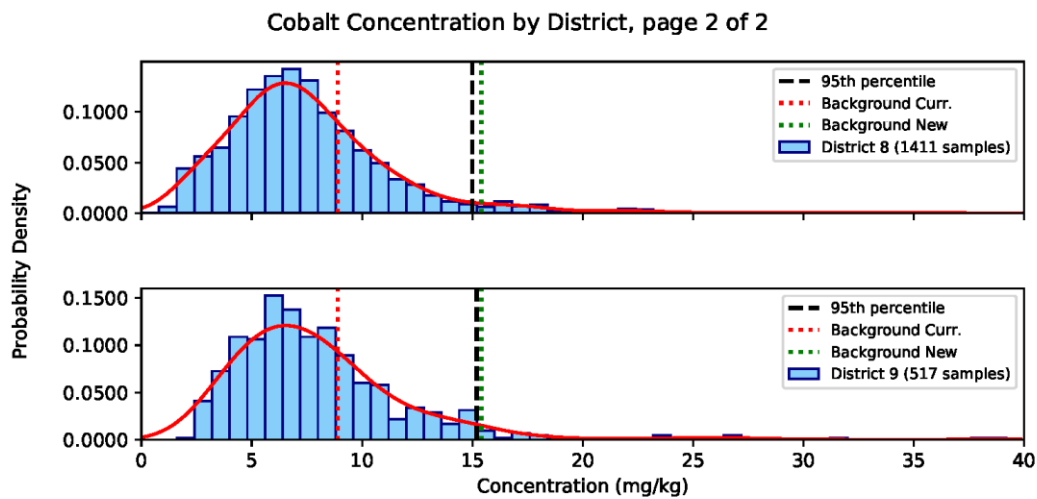
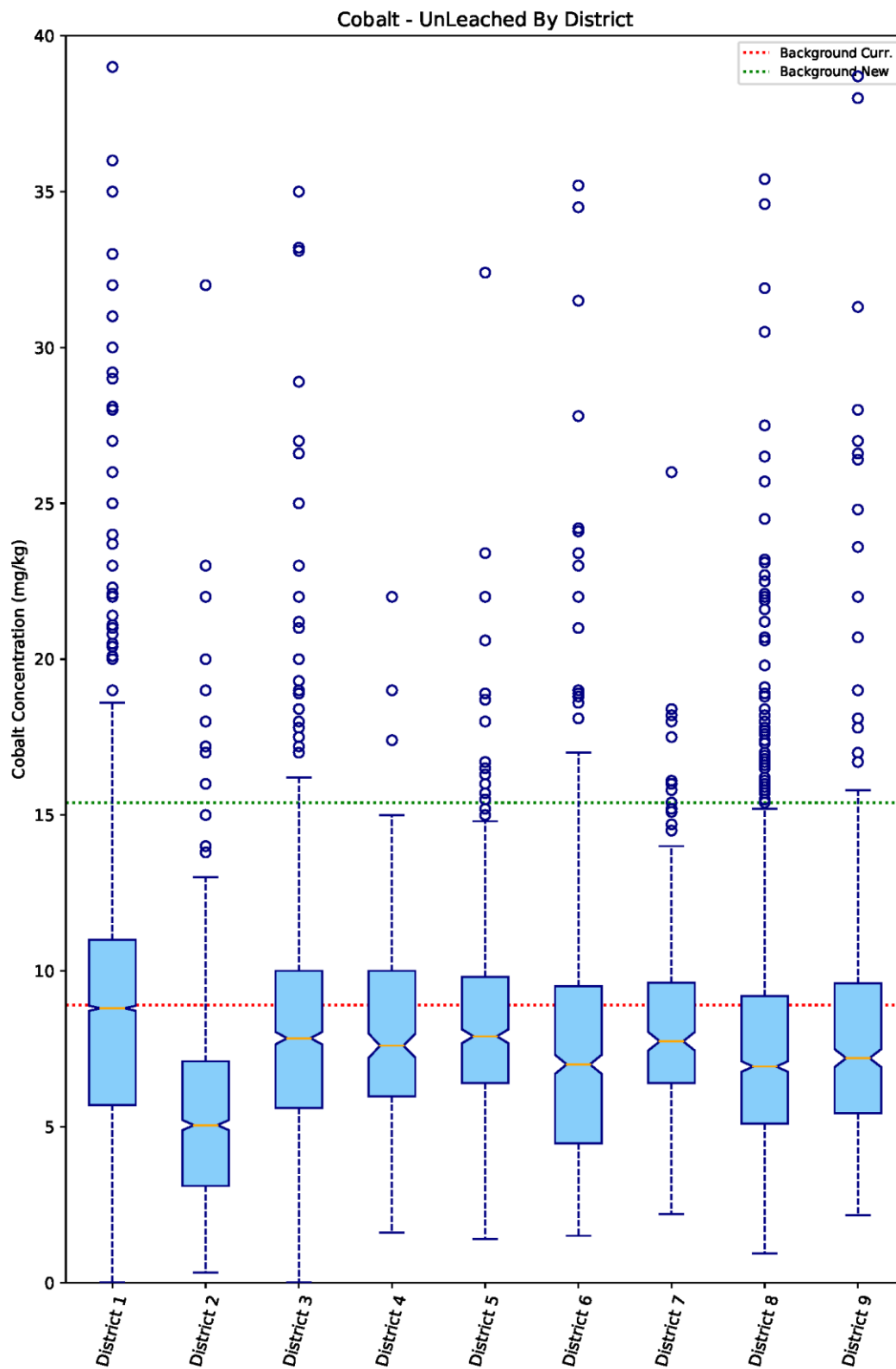


Figure 303. Histogram of RSL cobalt concentrations by IDOT District, REC (mg/kg), part 2



**Figure 304. Boxplot of RSL cobalt concentrations by IDOT District, REC (mg/kg)**

Cobalt Concentration by County, page 1 of 10

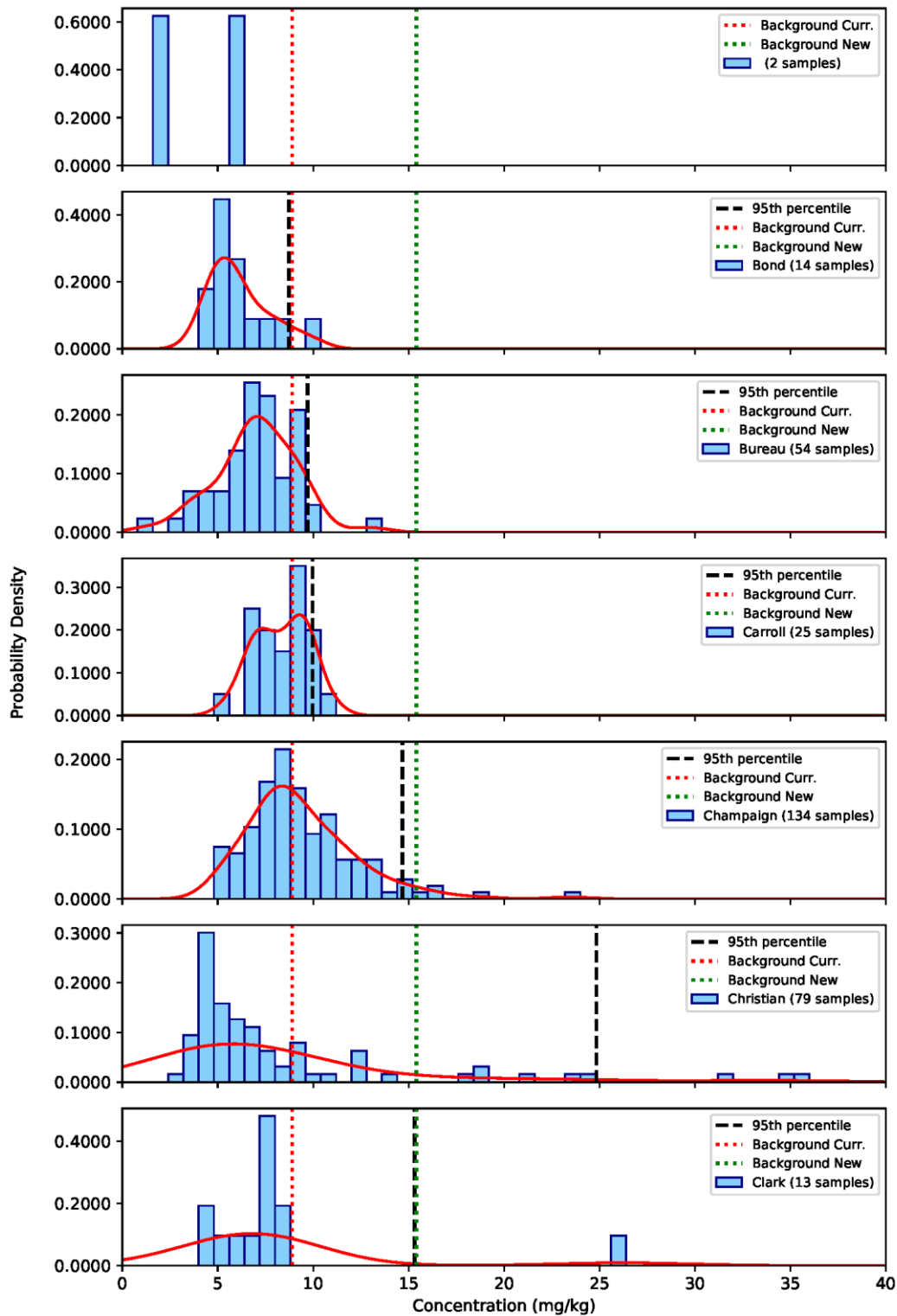


Figure 305. Histogram of RSL cobalt concentrations by Illinois county, REC (mg/kg), part 1



Cobalt Concentration by County, page 2 of 10

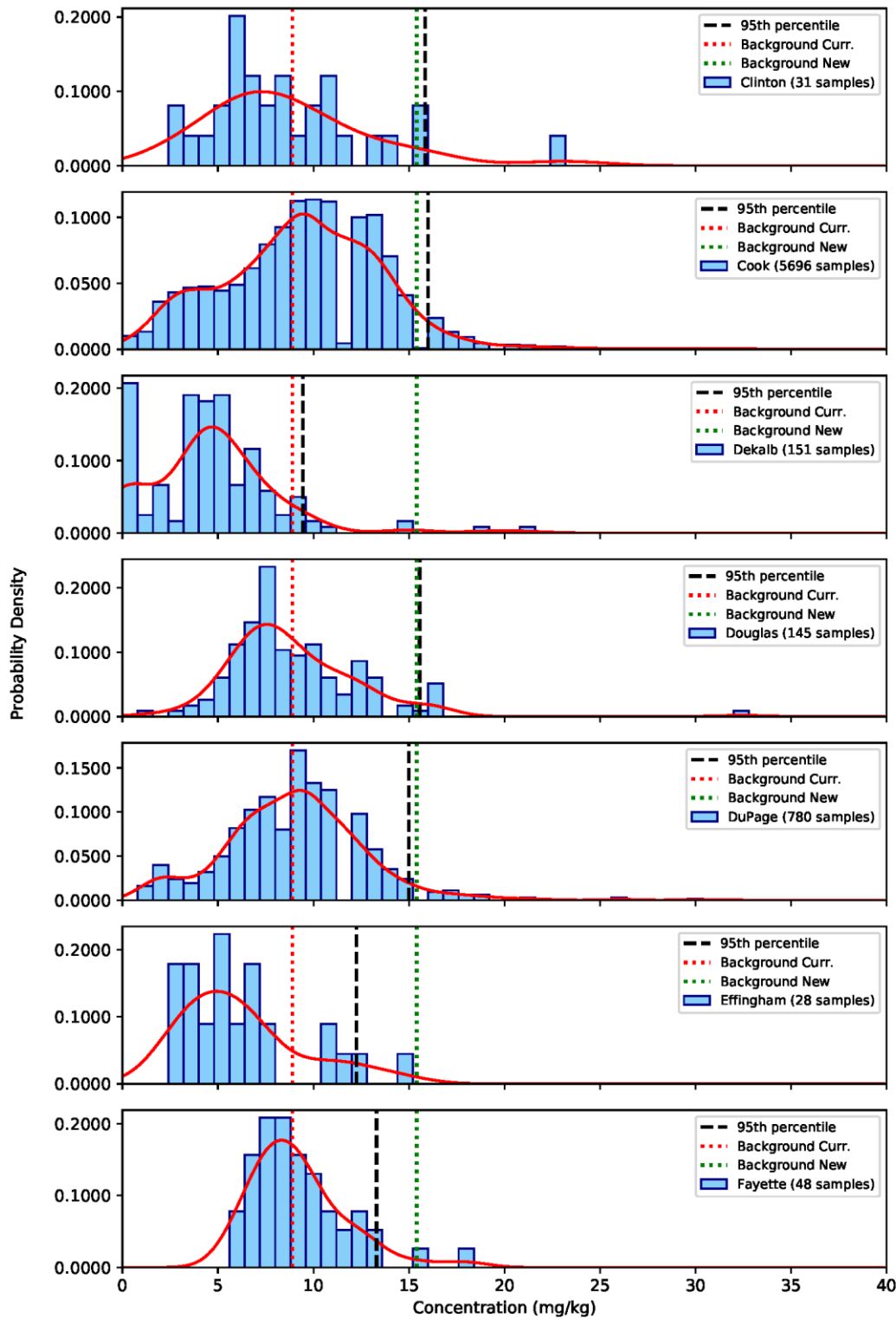


Figure 306. Histogram of RSL cobalt concentrations by Illinois county, REC (mg/kg), part 2

Cobalt Concentration by County, page 3 of 10

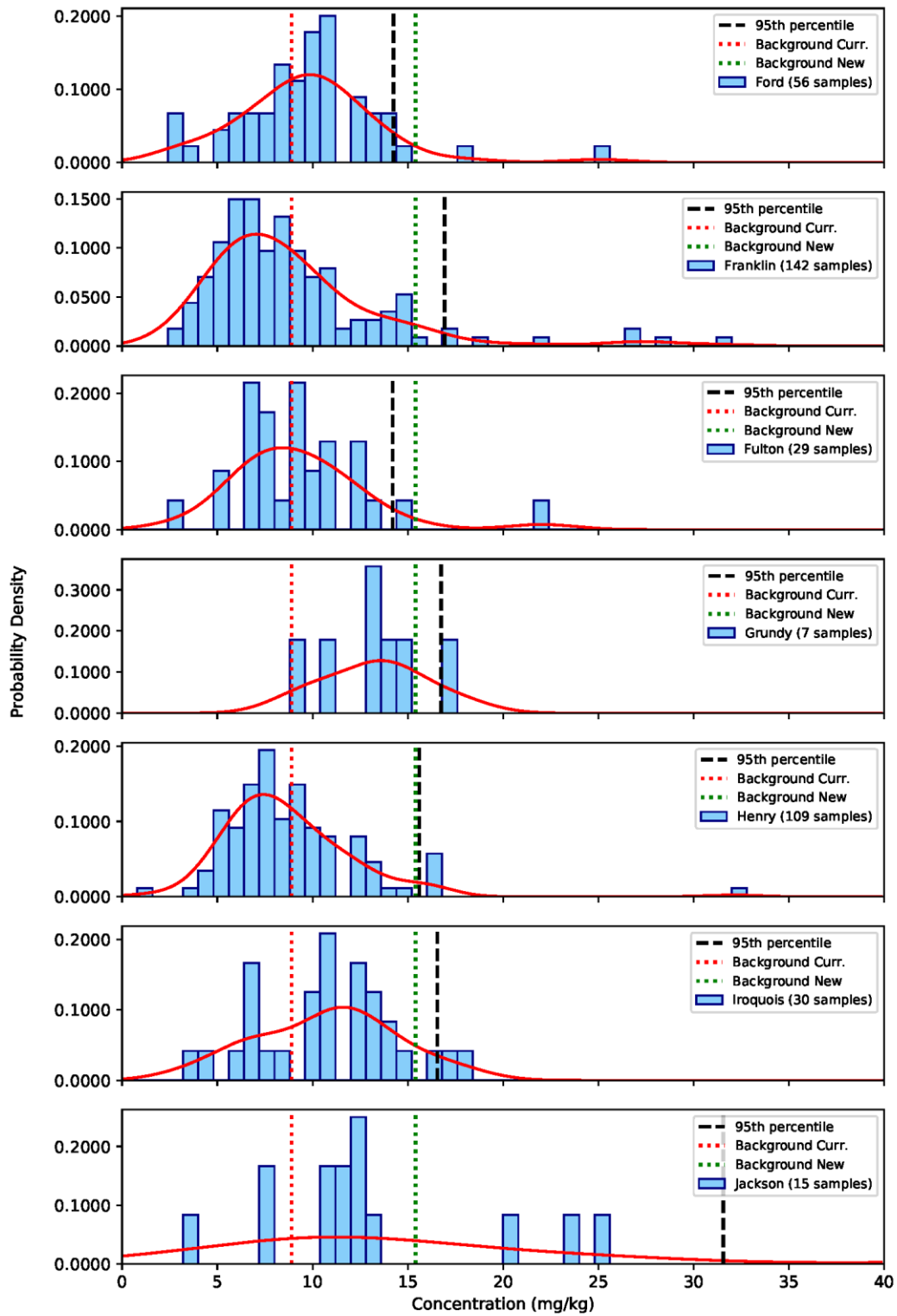


Figure 307. Histogram of RSL cobalt concentrations by Illinois county, REC (mg/kg), part 3

Cobalt Concentration by County, page 4 of 10

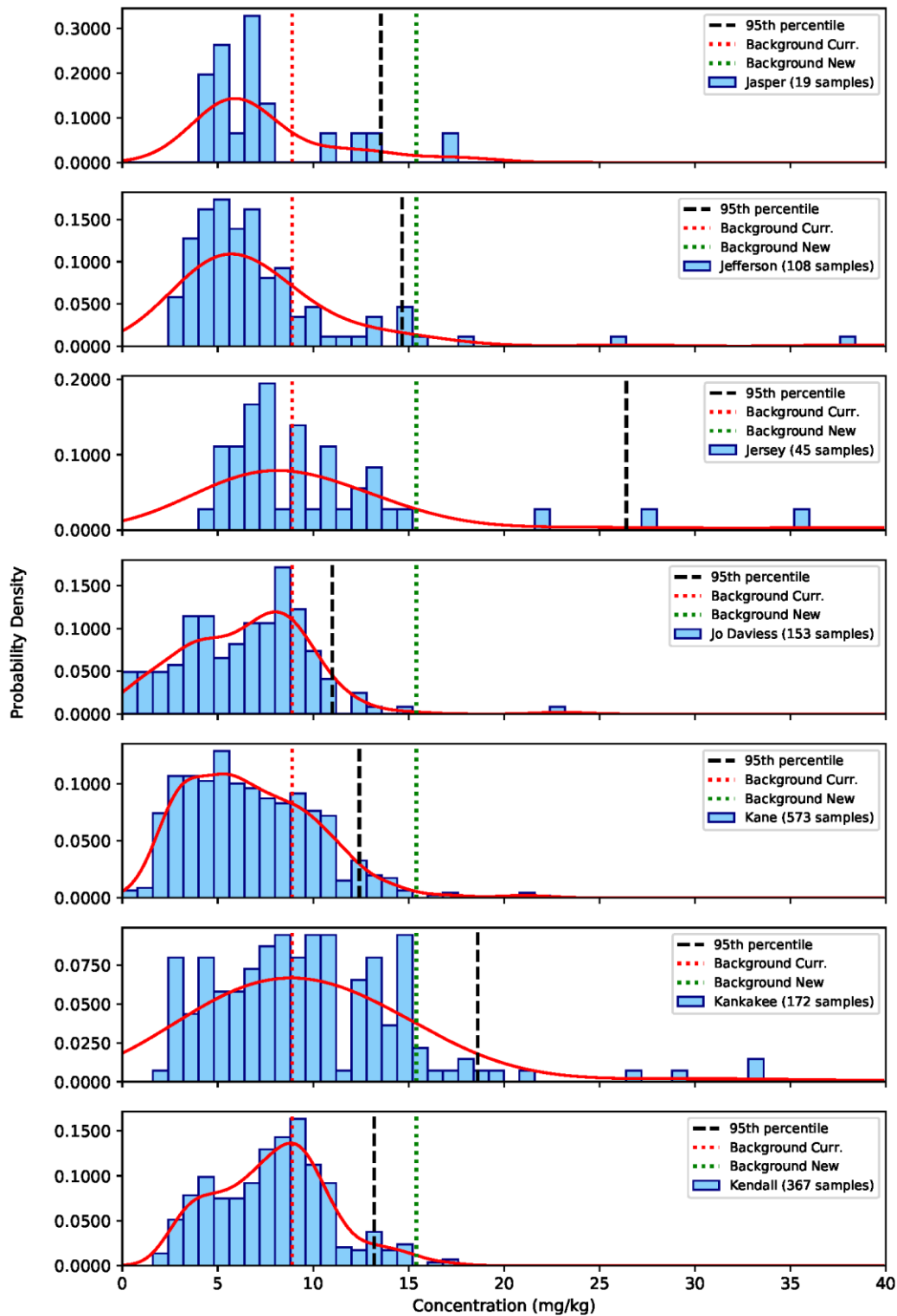


Figure 308. Histogram of RSL cobalt concentrations by Illinois county, REC (mg/kg), part 4

Cobalt Concentration by County, page 5 of 10

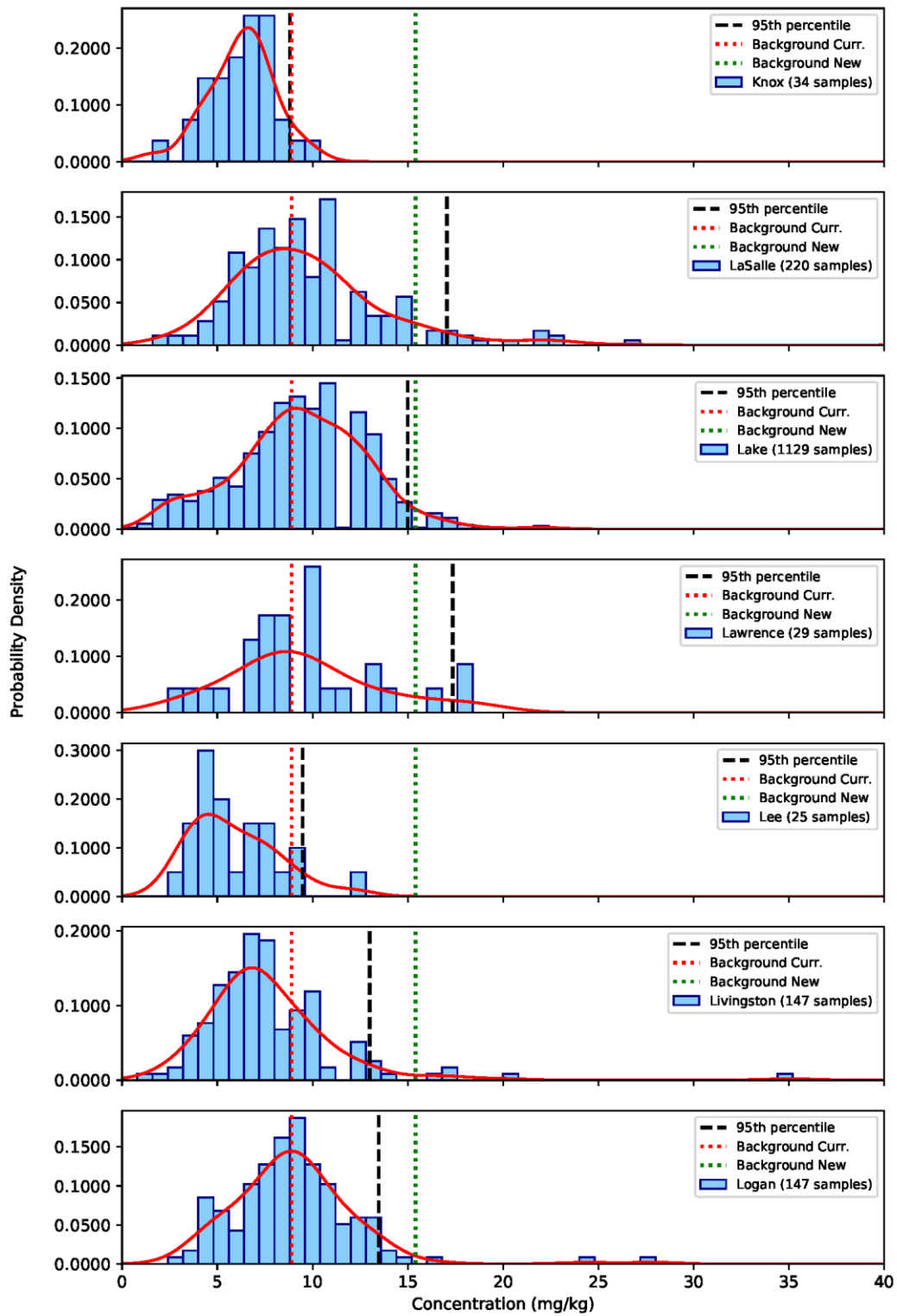


Figure 309. Histogram of RSL cobalt concentrations by Illinois county, REC (mg/kg), part 5

Cobalt Concentration by County, page 6 of 10

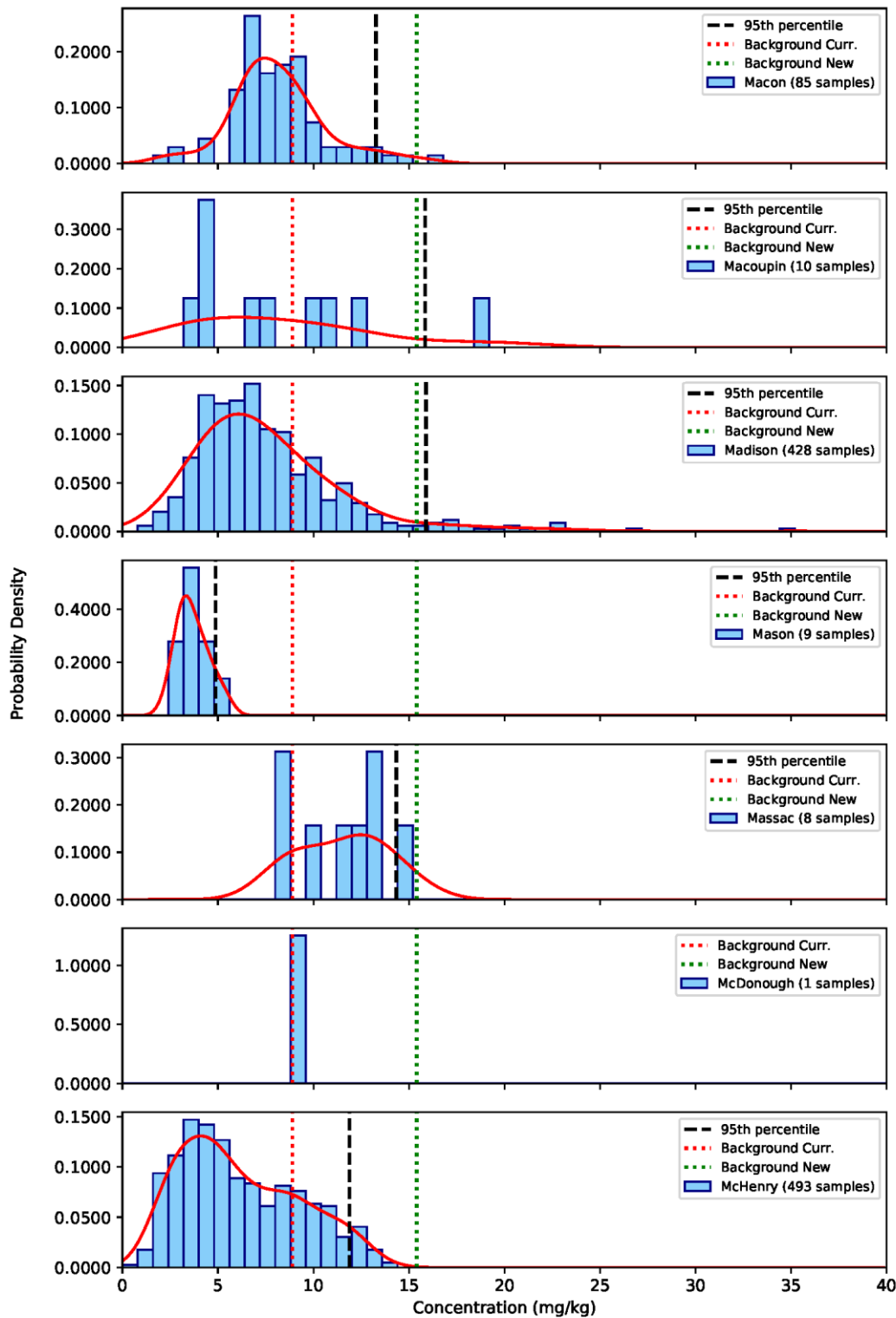


Figure 310. Histogram of RSL cobalt concentrations by Illinois county, REC (mg/kg), part 6

Cobalt Concentration by County, page 7 of 10

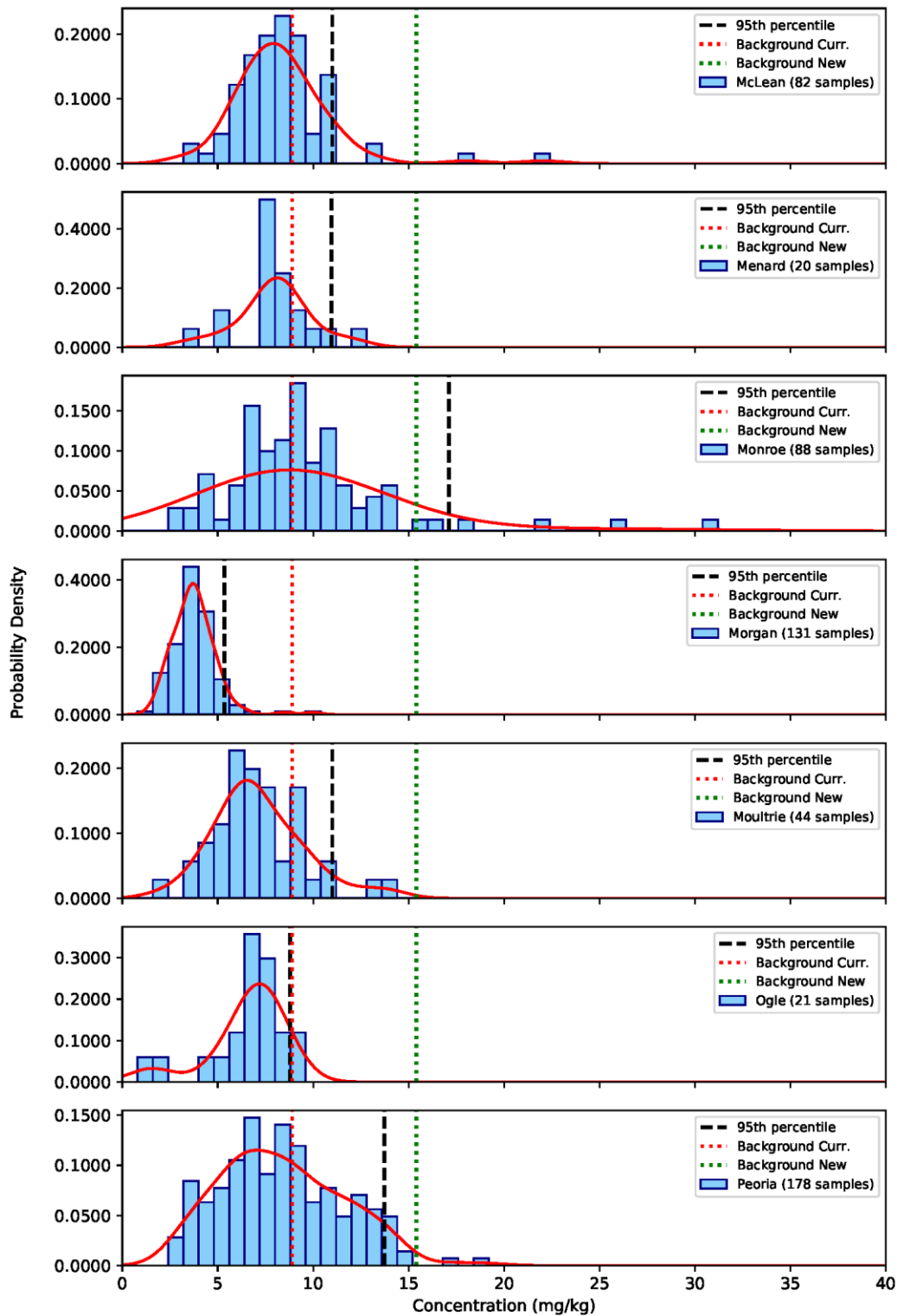


Figure 311. Histogram of RSL cobalt concentrations by Illinois county, REC (mg/kg), part 7

Cobalt Concentration by County, page 8 of 10

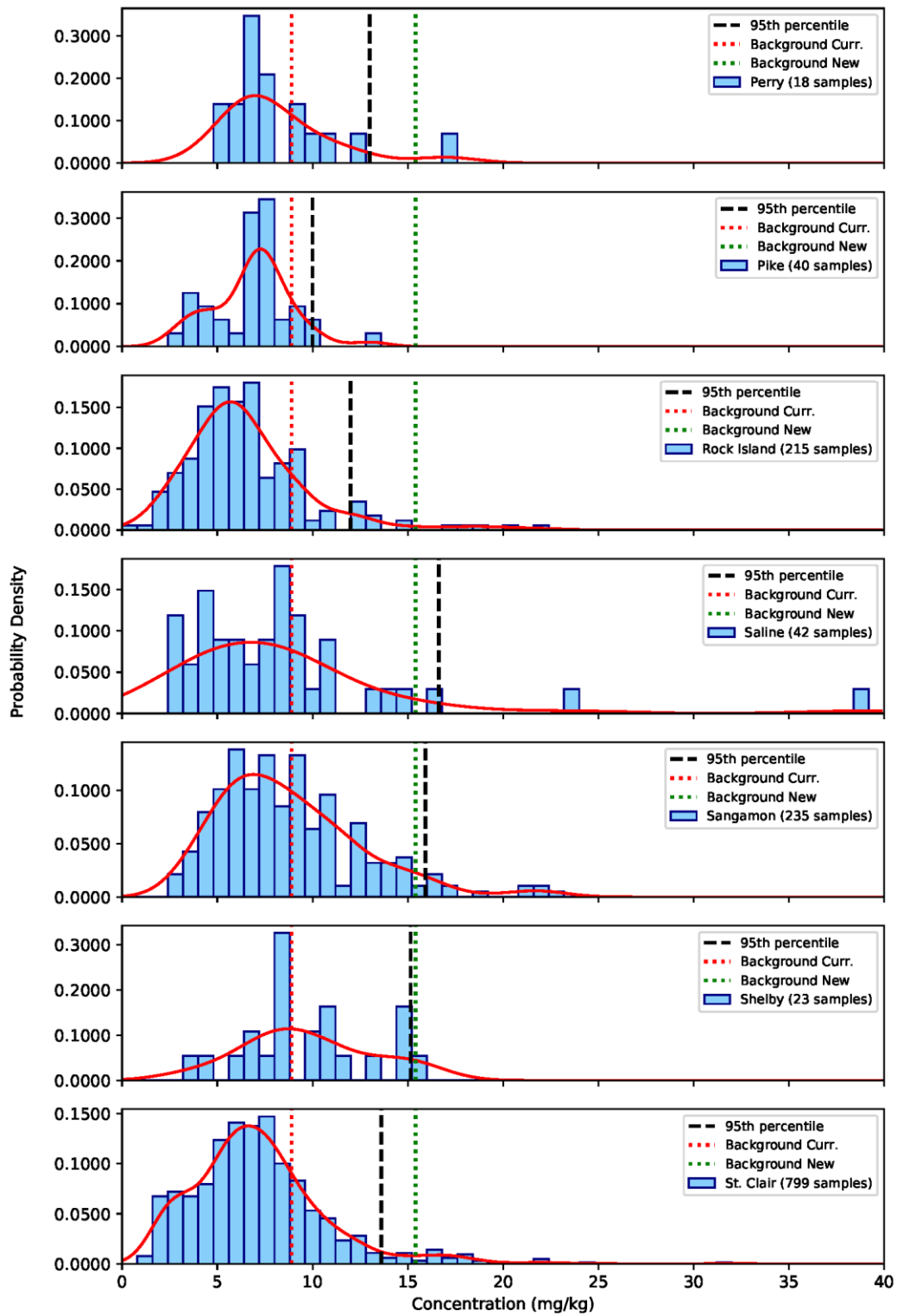


Figure 312. Histogram of RSL cobalt concentrations by Illinois county, REC (mg/kg), part 8

Cobalt Concentration by County, page 9 of 10

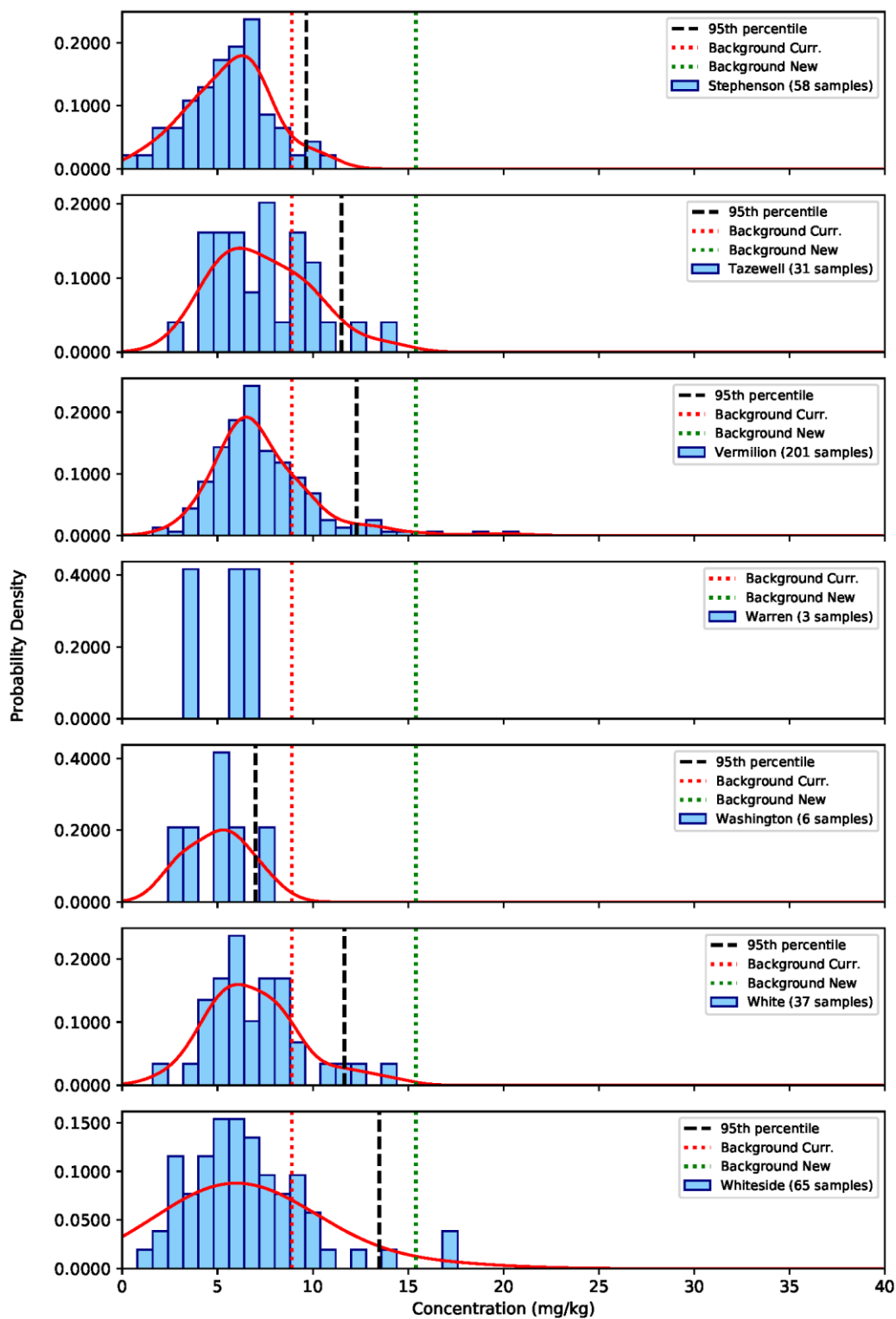


Figure 313. Histogram of RSL cobalt concentrations by Illinois county, REC (mg/kg), part 9



Cobalt Concentration by County, page 10 of 10

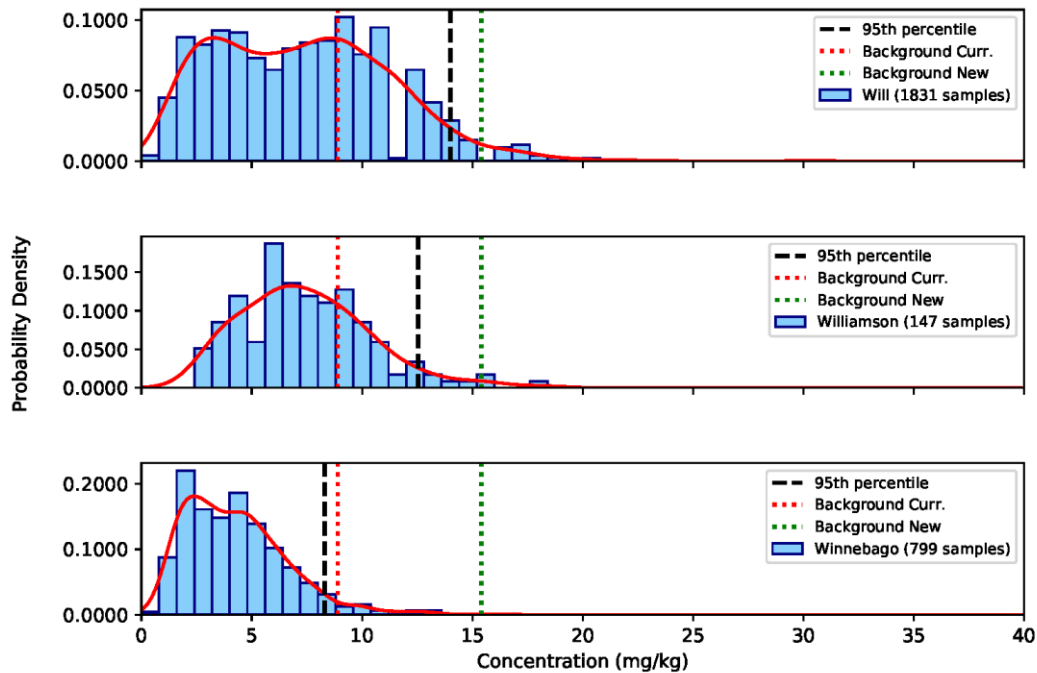


Figure 314. Histogram of RSL cobalt concentrations by Illinois county, REC (mg/kg), part 10

Cobalt Concentration for 95th Percentile by County: REC Sites

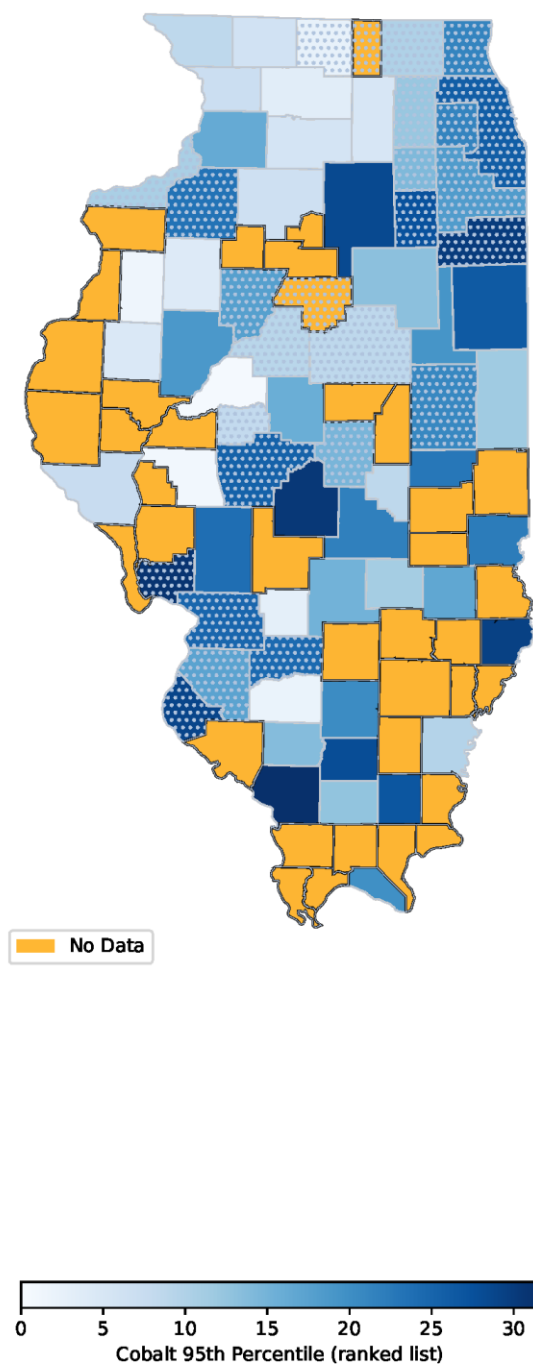


Figure 315. Map of RSL cobalt 95th percentile concentration by Illinois county, REC (mg/kg)

Number of Cobalt Samples by County: REC Sites

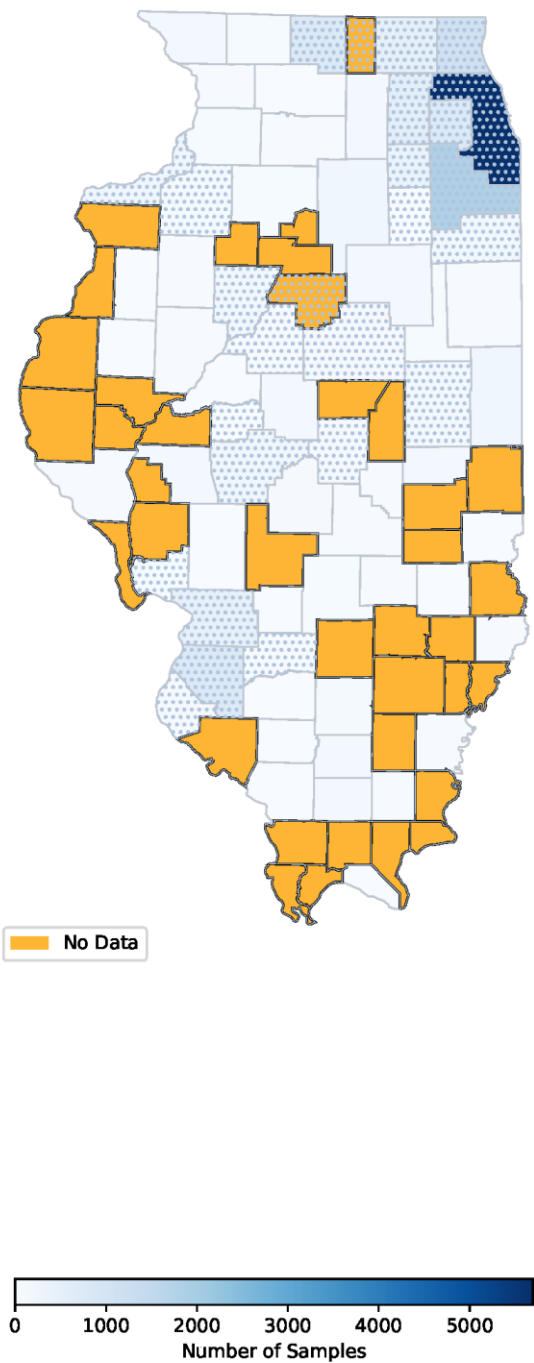


Figure 316. Map of RSL cobalt sample quantity by Illinois county, REC (mg/kg)

## I.2 COBALT NON-REC

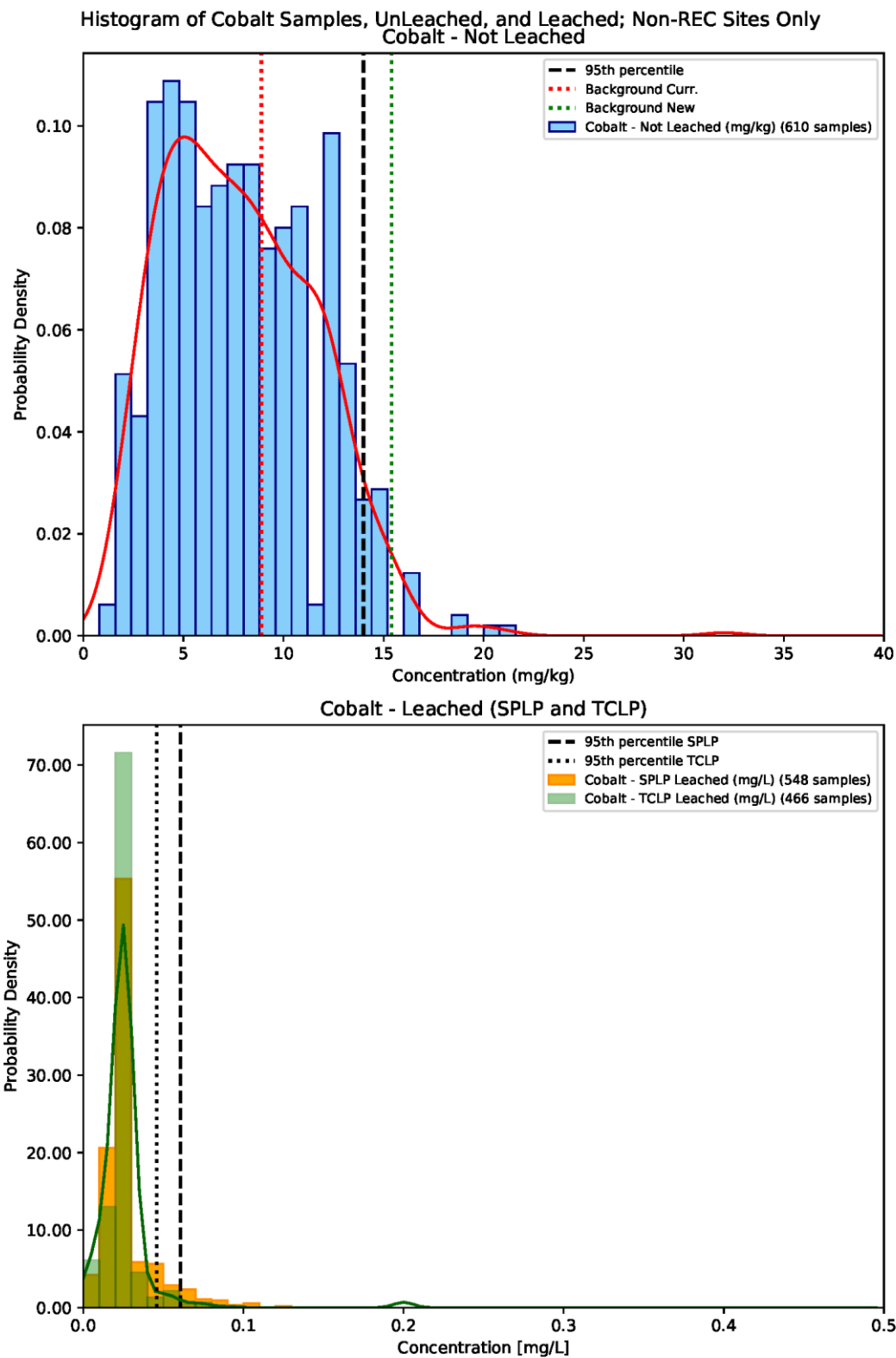


Figure 317. Histogram of RSL cobalt concentrations, Non-REC (mg/kg)

**Cobalt Unleached Concentration (mg/kg)**

1) Region

2) District

3) County

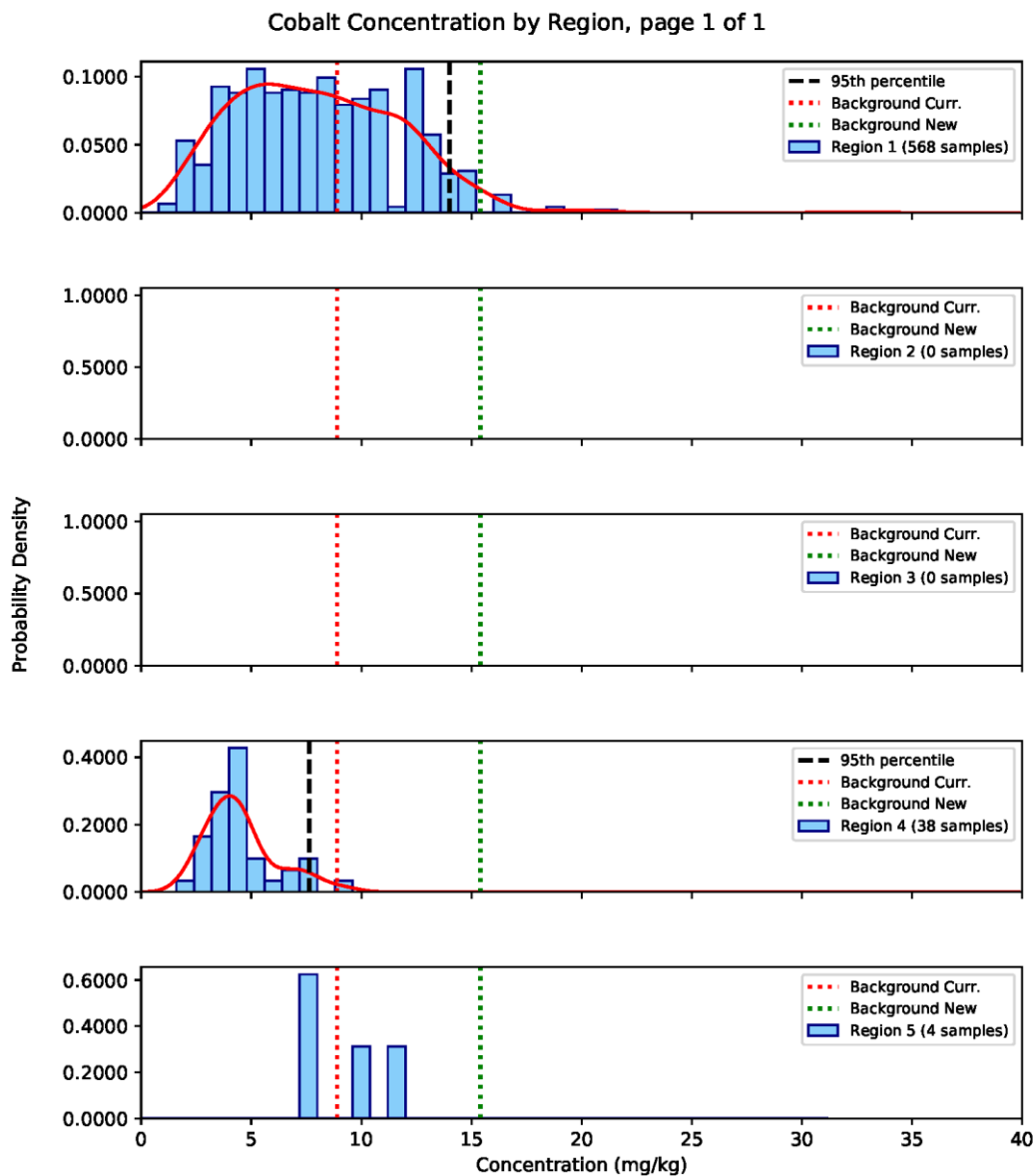
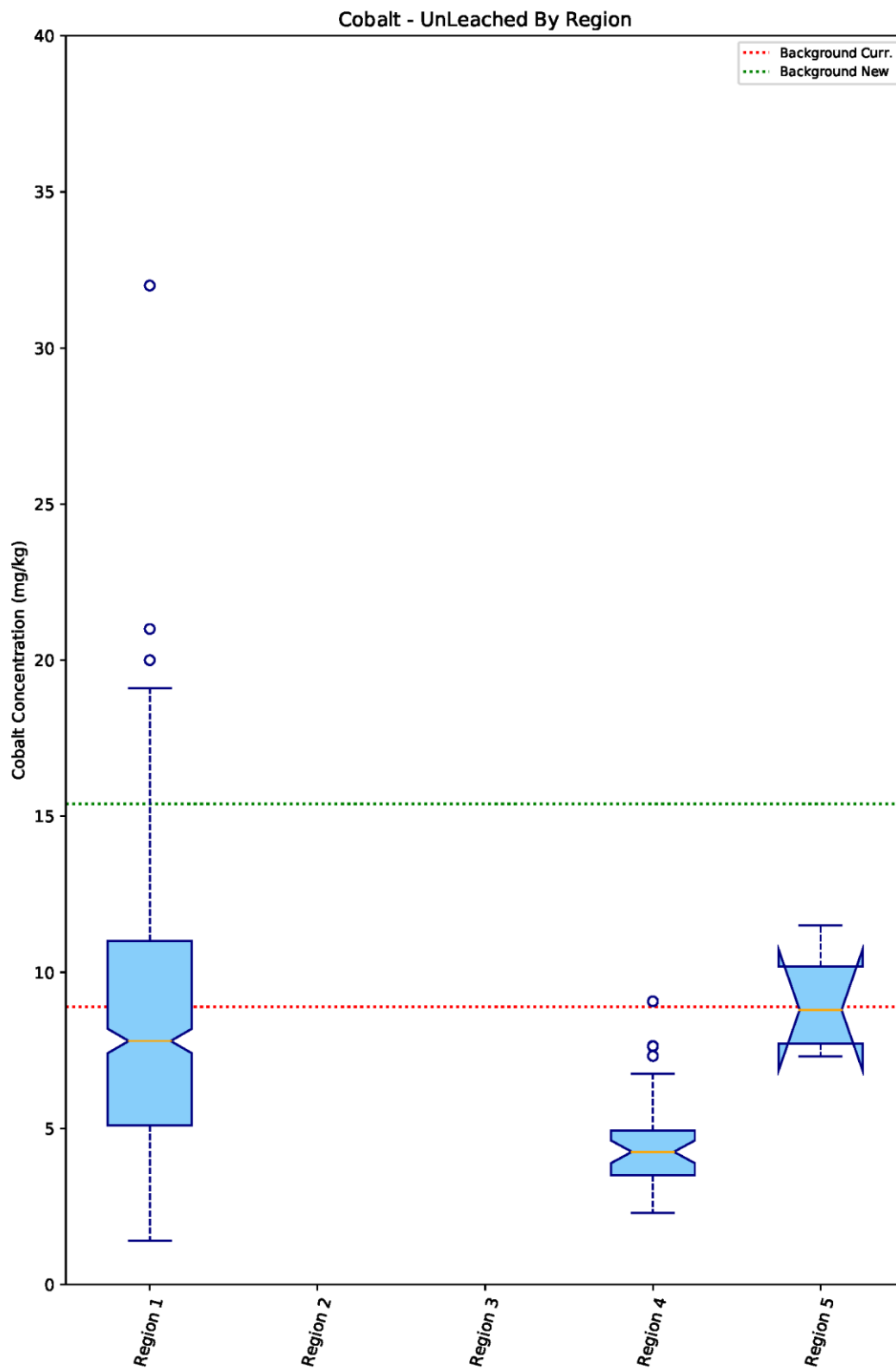


Figure 318. Histogram of RSL cobalt concentrations by IDOT Region, Non-REC (mg/kg)



**Figure 319. Boxplot of RSL cobalt concentrations by IDOT Region, Non-REC (mg/kg)**



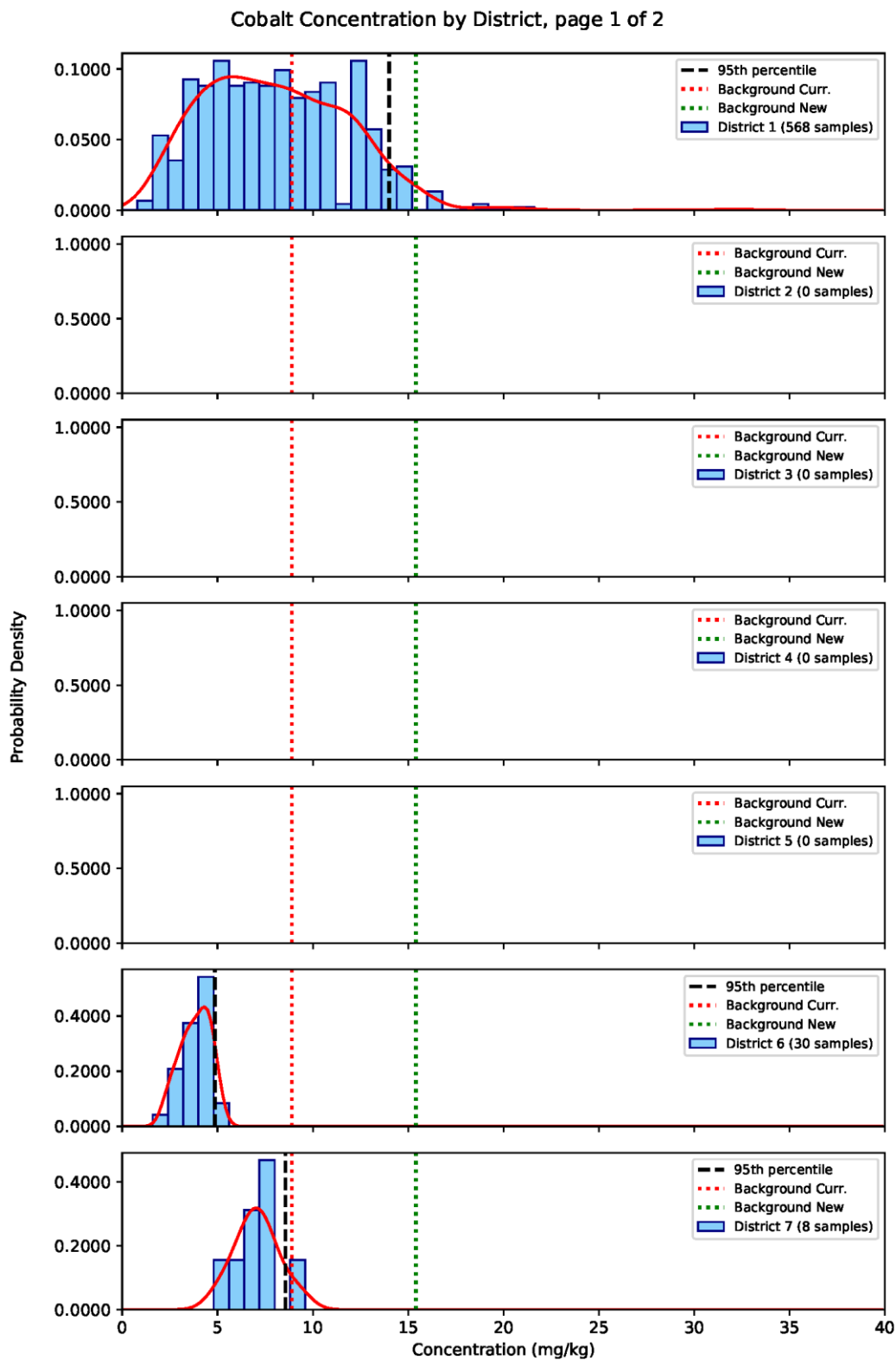


Figure 320. Histogram of RSL cobalt concentrations by IDOT District, Non-REC (mg/kg), part 1

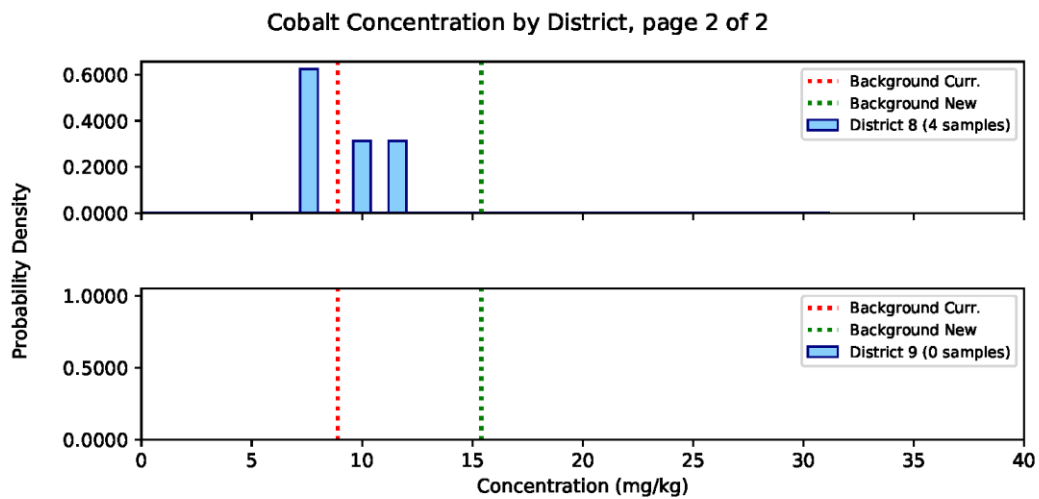


Figure 321. Histogram of RSL cobalt concentrations by IDOT District, Non-REC (mg/kg), part 2

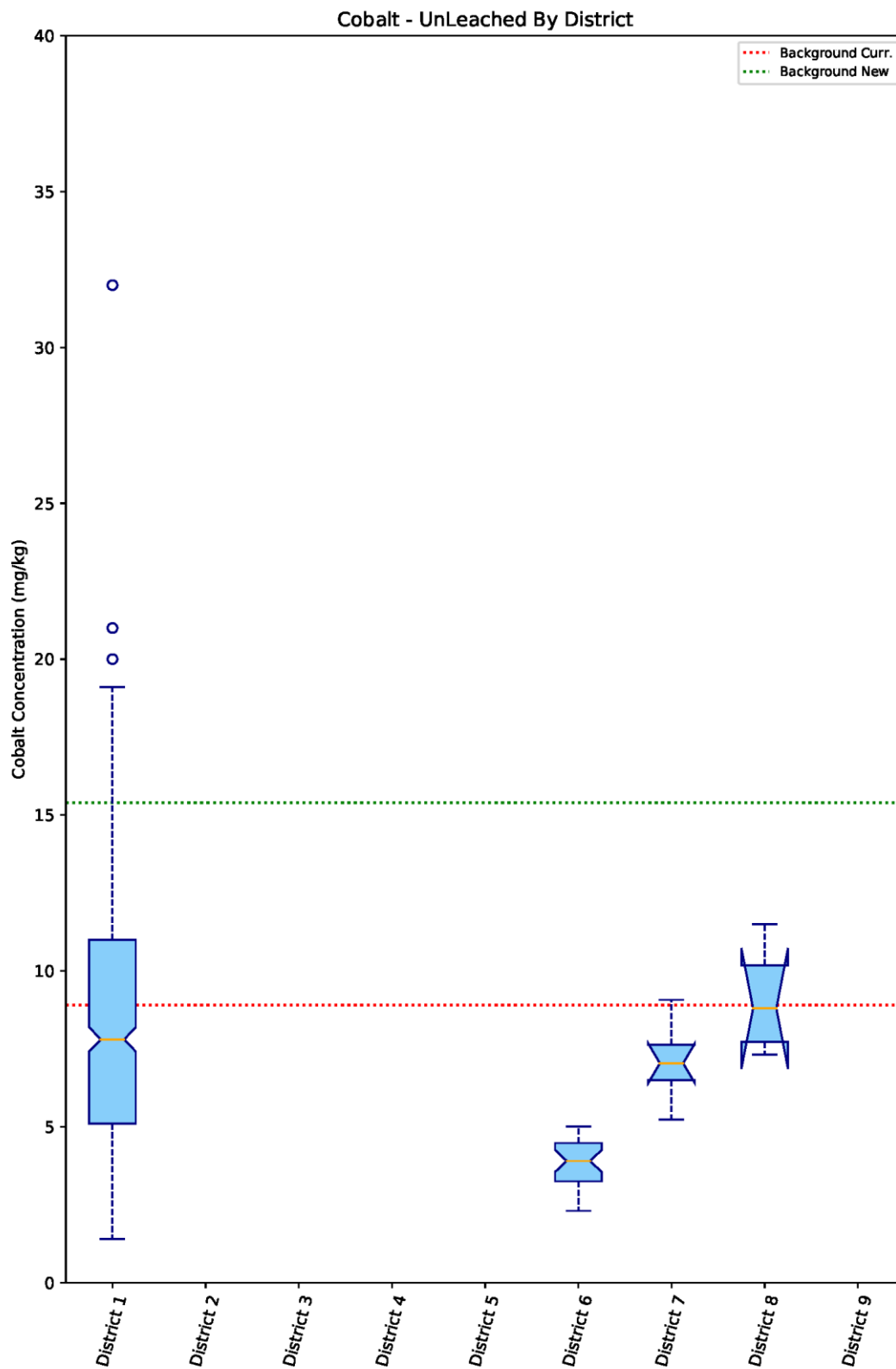


Figure 322. Boxplot of RSL cobalt concentrations by IDOT District, Non-REC (mg/kg)

Cobalt Concentration by County, page 1 of 2

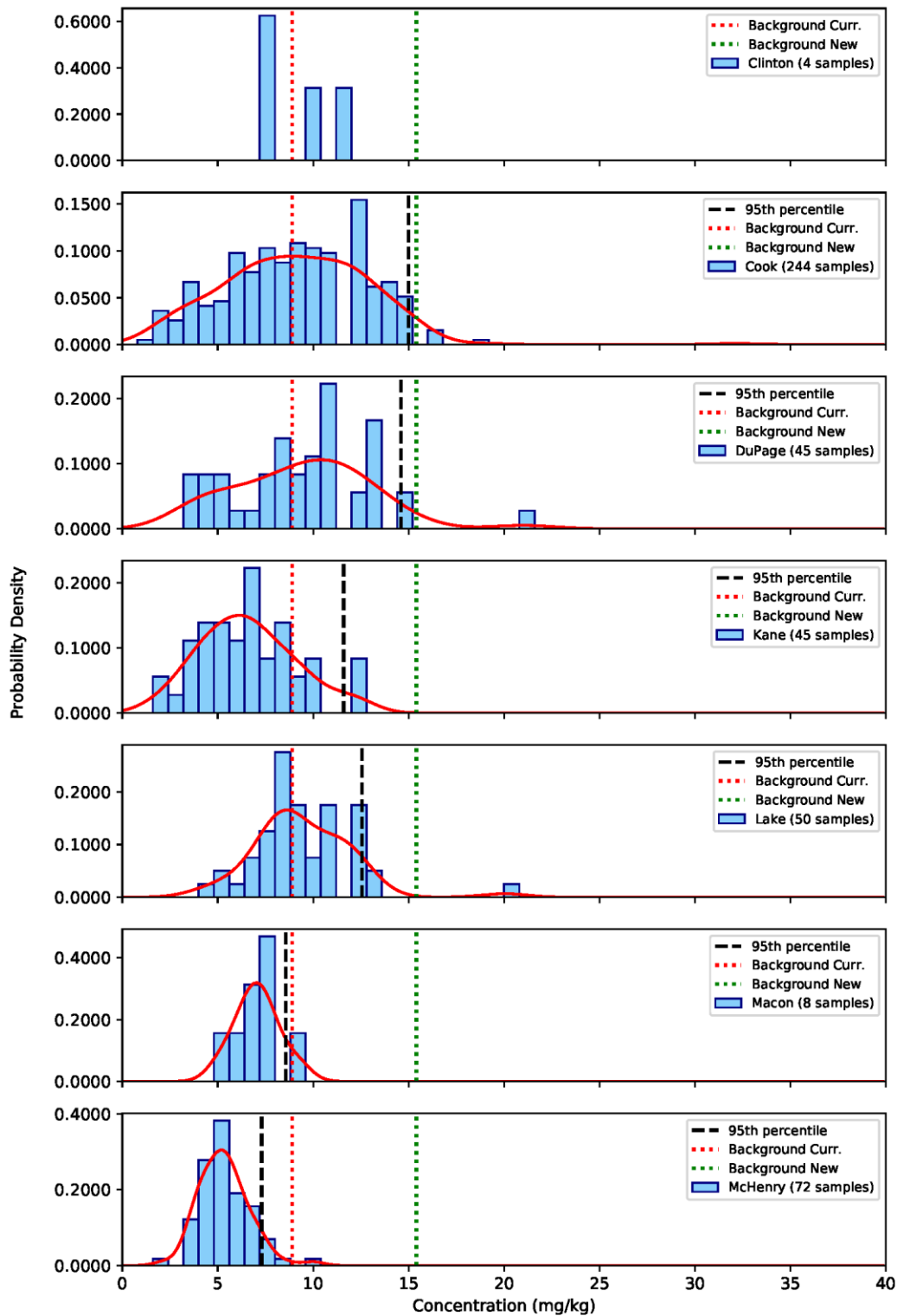


Figure 323. Histogram of RSL cobalt concentrations by Illinois county, Non-REC (mg/kg), part 1

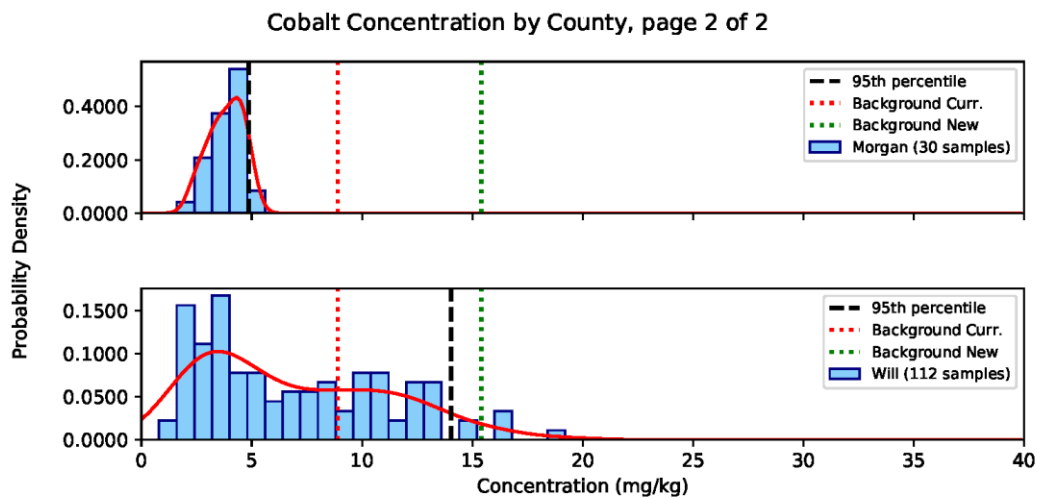


Figure 324. Histogram of RSL cobalt concentrations by Illinois county, Non-REC (mg/kg), part 2

Cobalt Concentration for 95th Percentile by County: Non-REC Sites

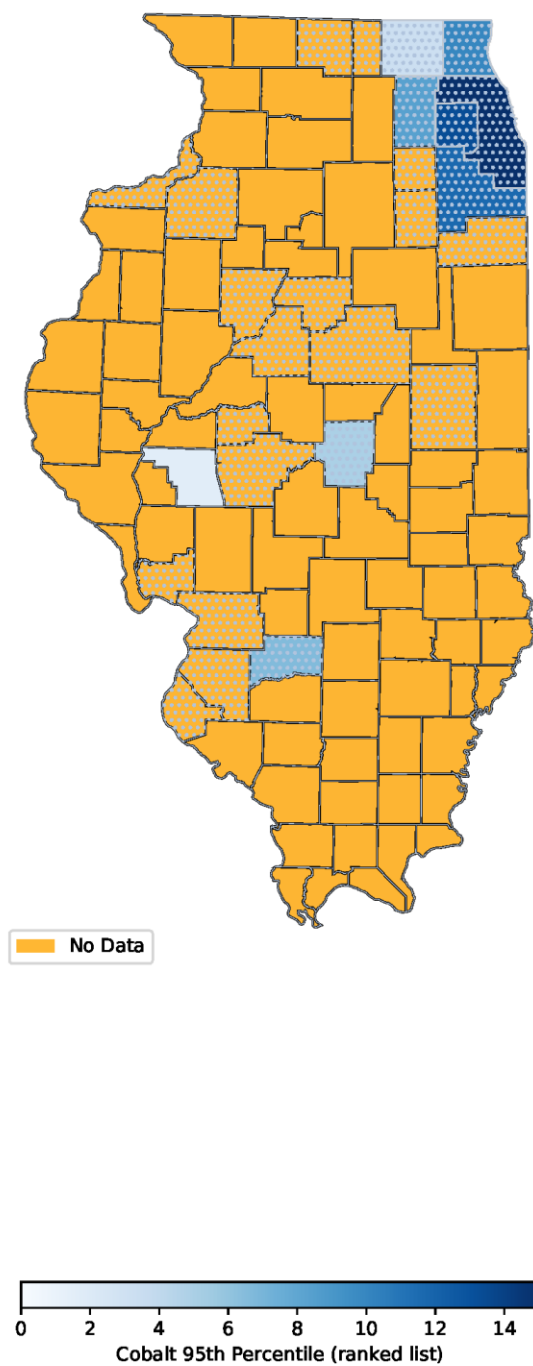


Figure 325. Map of RSL cobalt 95th percentile concentration by Illinois county, Non-REC (mg/kg)

Model	Number of Samples
Model 1	~210

385

### **I.3 COBALT DE MINIMIS**



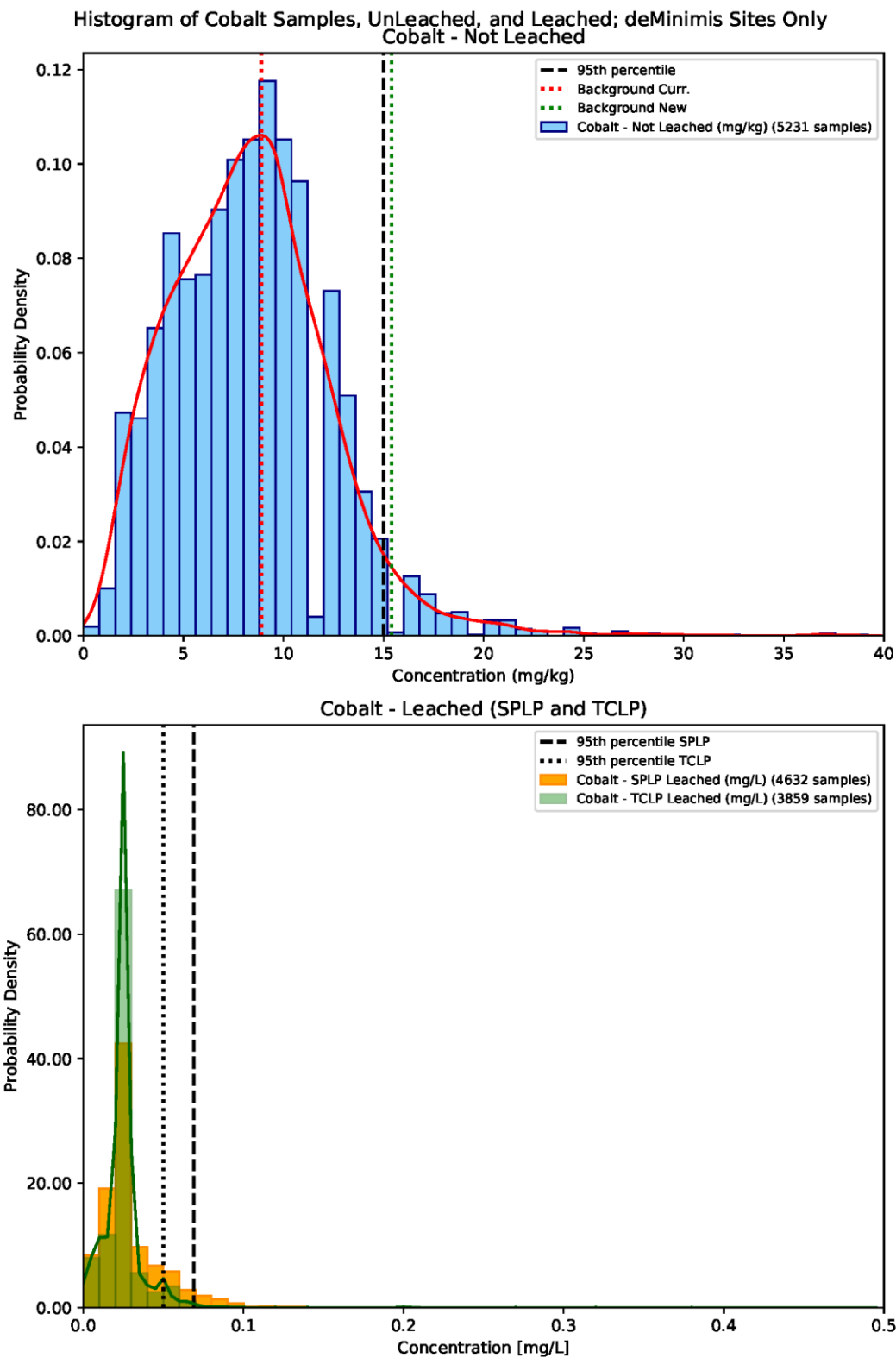


Figure 327. Histogram of RSL cobalt concentrations, de minimis (mg/kg)

**Cobalt Unleached Concentration (mg/kg)**

1) Region

2) District

3) County

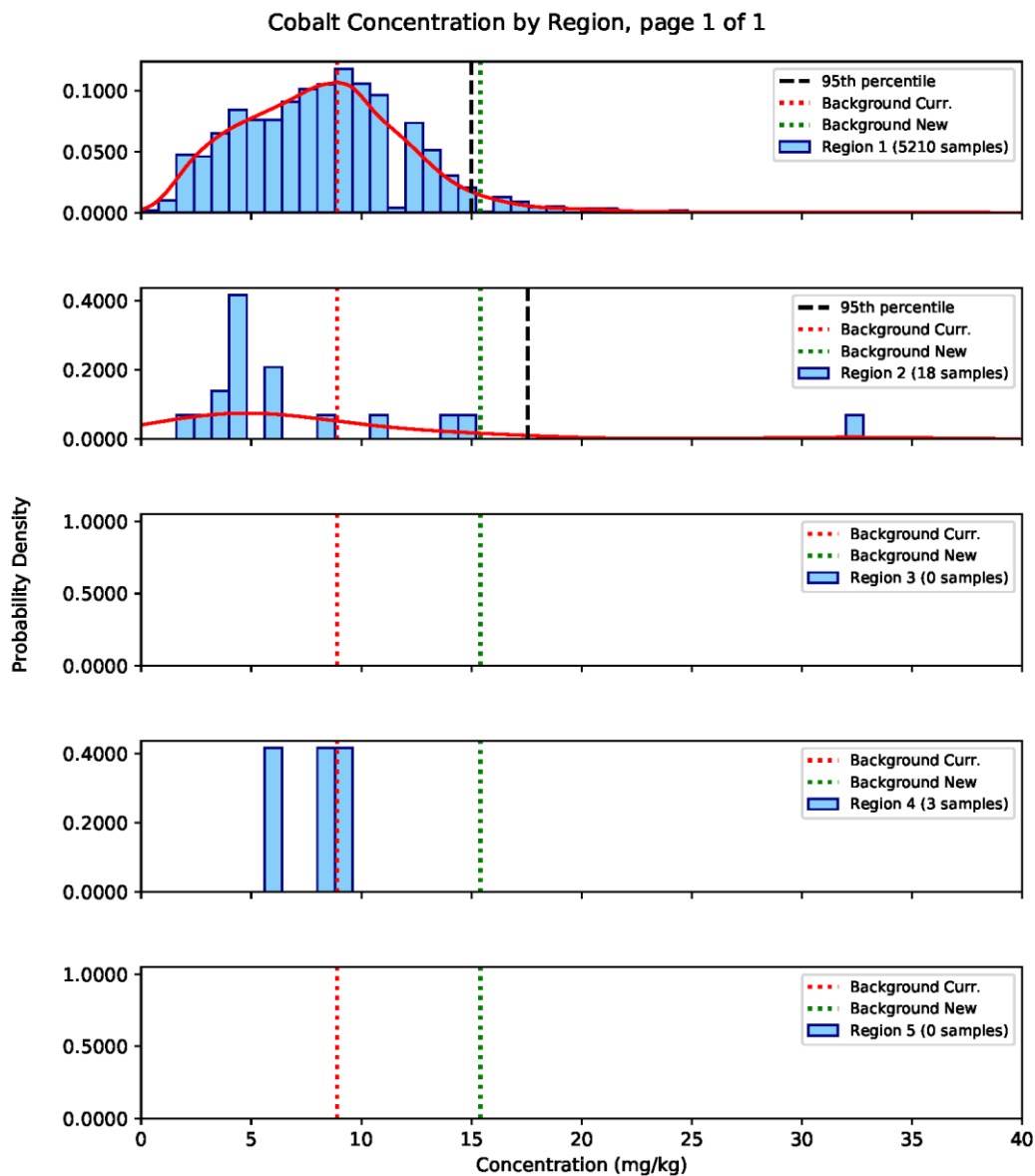
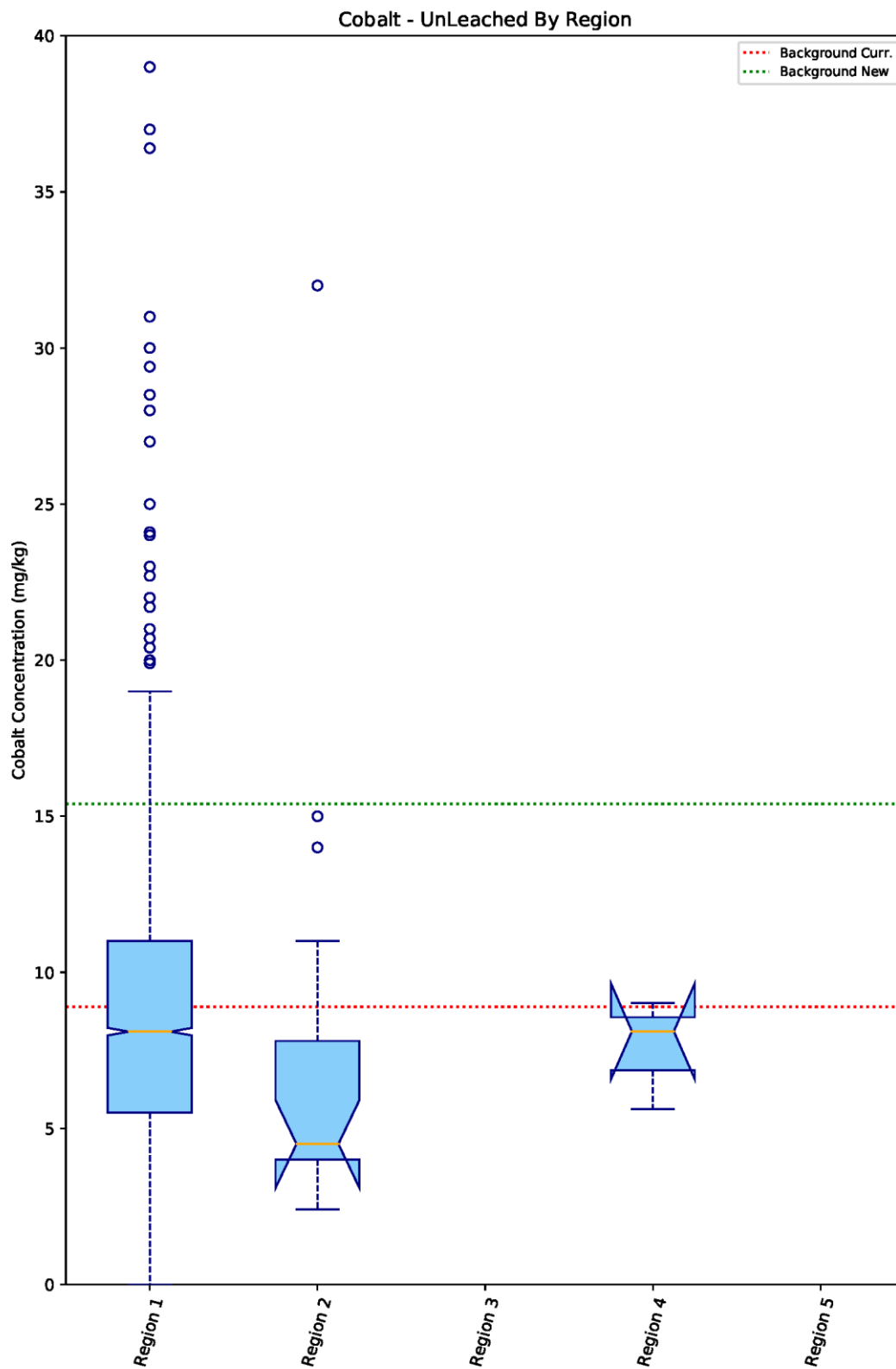


Figure 328. Histogram of RSL cobalt concentrations by IDOT Region, de minimis (mg/kg)



**Figure 329. Boxplot of RSL cobalt concentrations by IDOT Region, de minimis (mg/kg)**

Cobalt Concentration by District, page 1 of 2

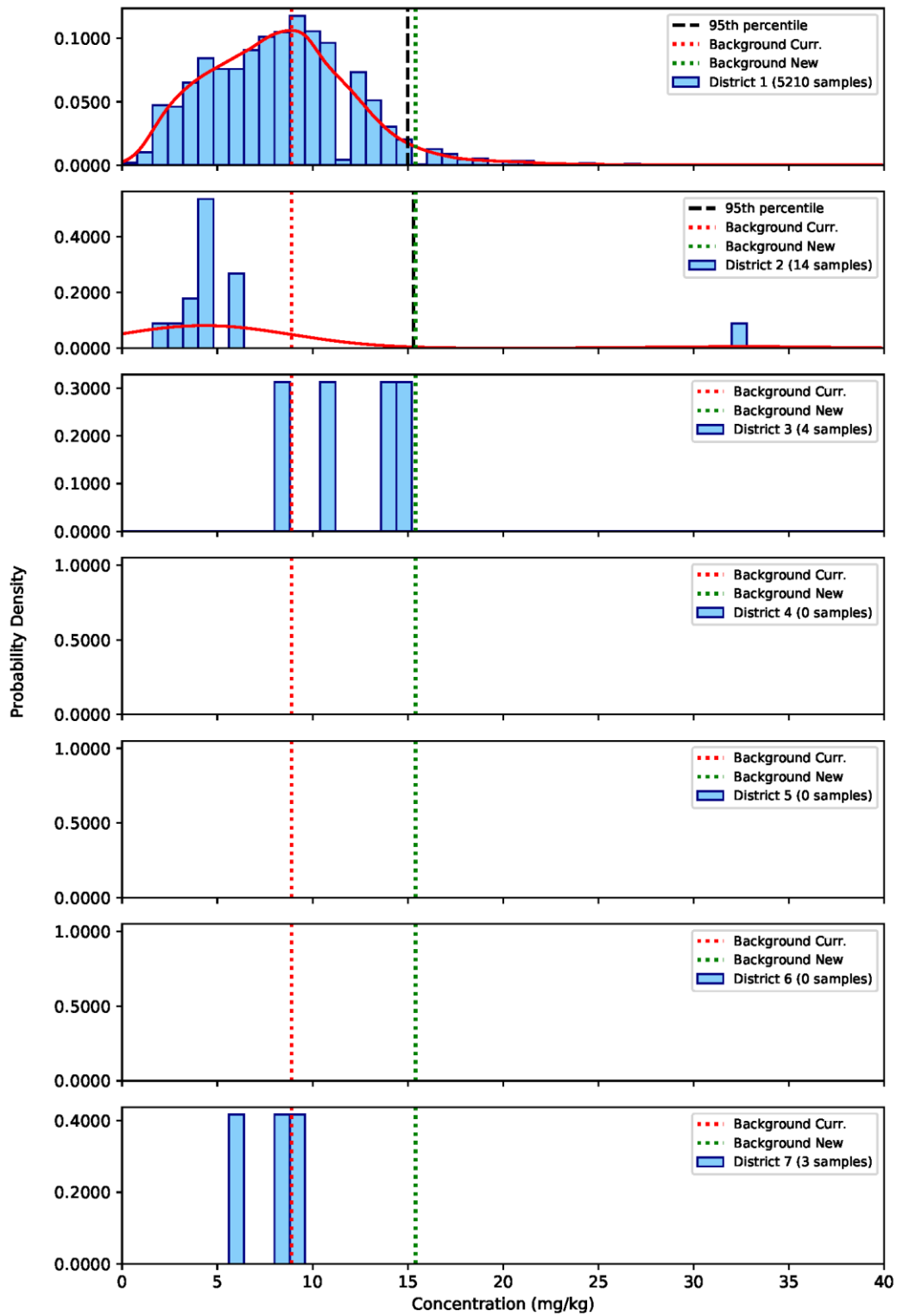


Figure 330. Histogram of RSL cobalt concentrations by IDOT District, de minimis (mg/kg), part 1

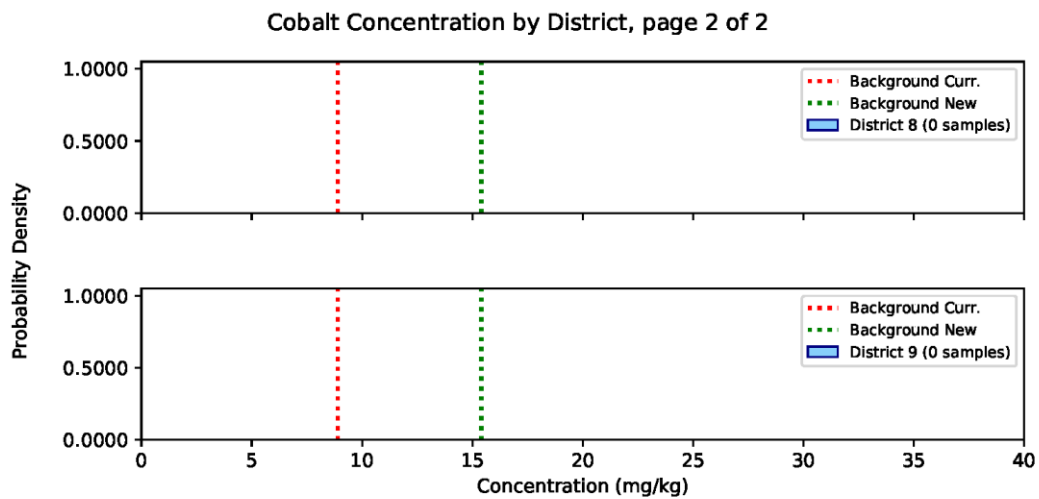


Figure 331. Histogram of RSL cobalt concentrations by IDOT District, de minimis (mg/kg), part 2

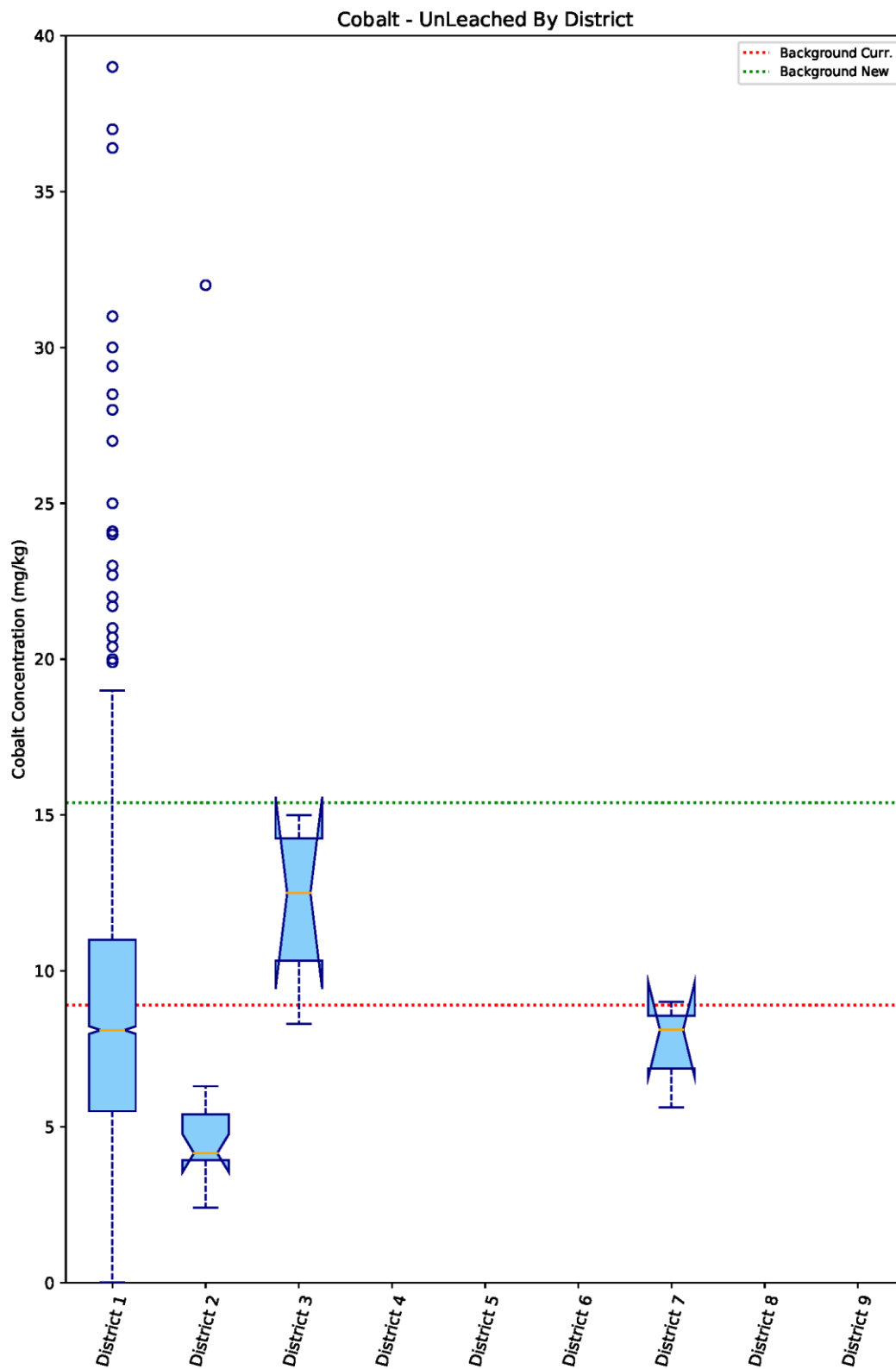


Figure 332. Boxplot of RSL cobalt concentrations by IDOT District, de minimis (mg/kg)

Cobalt Concentration by County, page 1 of 2

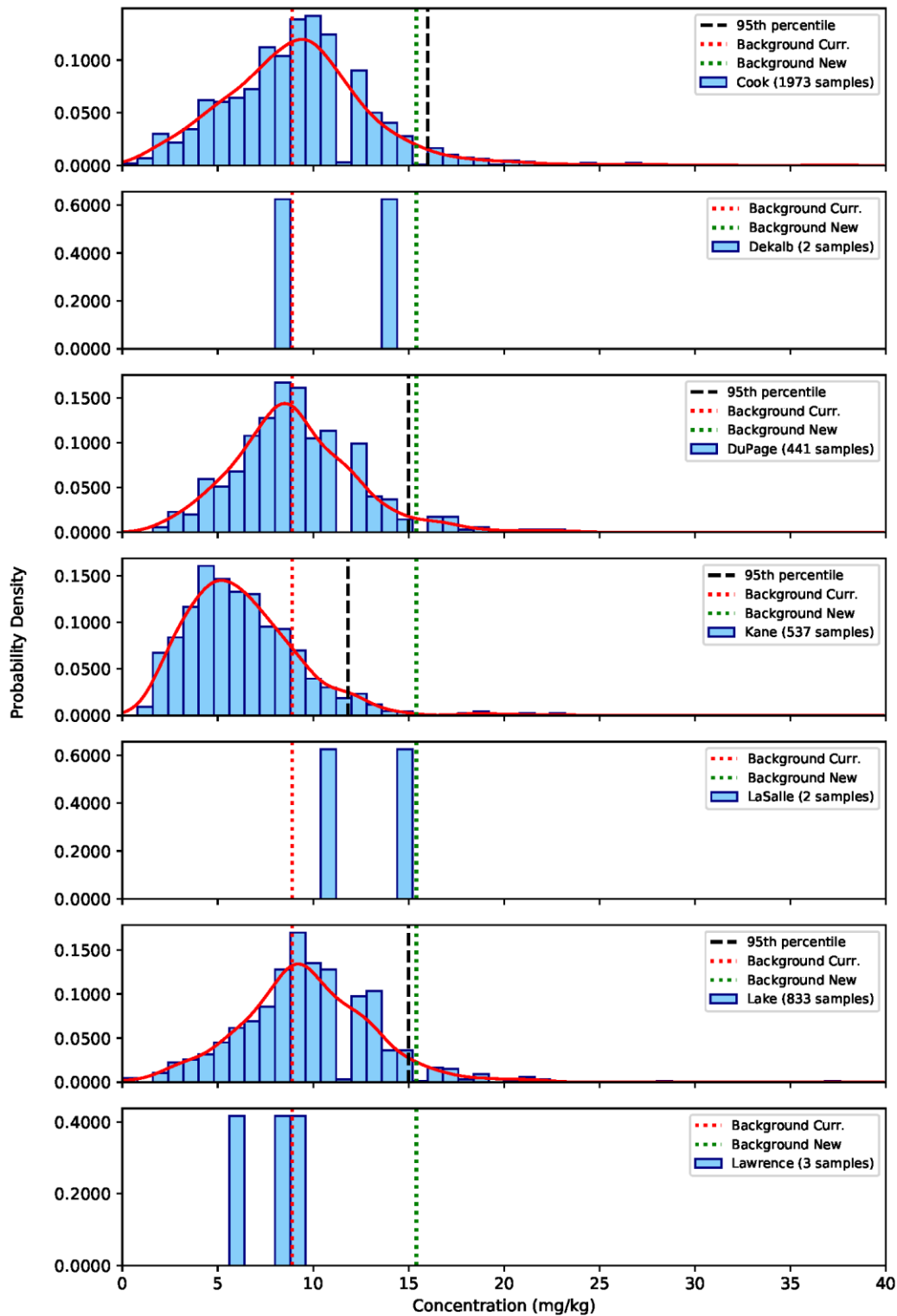


Figure 333. Histogram of RSL cobalt concentrations by Illinois county, de minimis (mg/kg), part 1



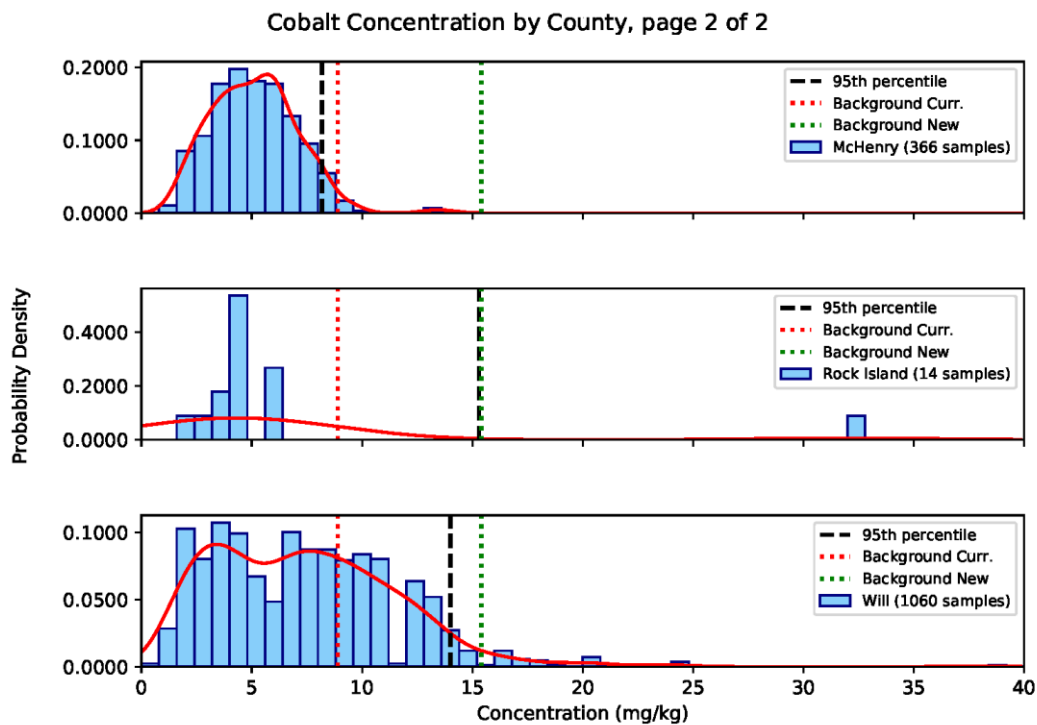


Figure 334. Histogram of RSL cobalt concentrations by Illinois county, de minimis (mg/kg), part 2

Cobalt Concentration for 95th Percentile by County: deMinimis Sites

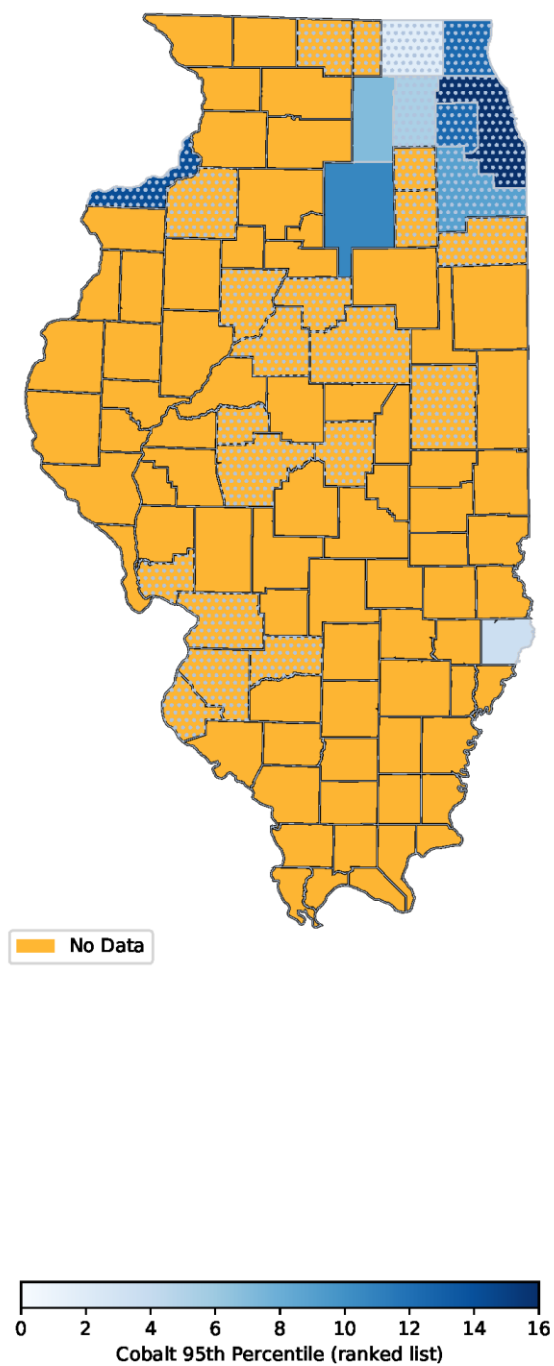


Figure 335. Map of RSL cobalt 95th percentile concentration by Illinois county, de minimis (mg/kg)

Number of Cobalt Samples by County: deMinimis Sites

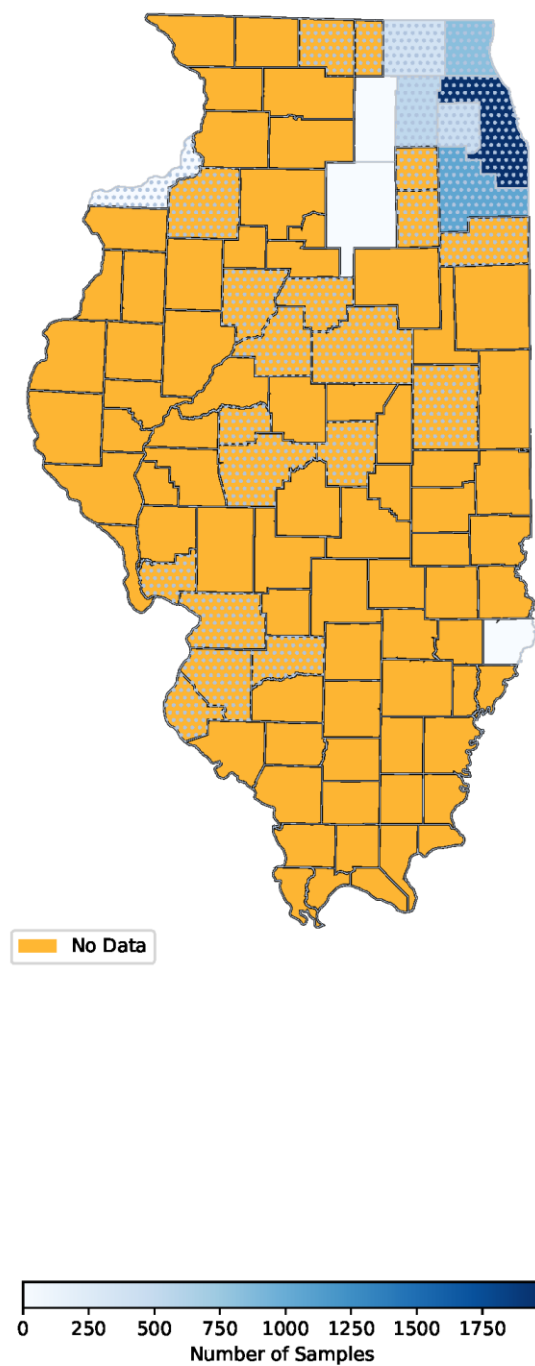


Figure 336. Map of RSL cobalt sample quantity by Illinois county, de minimis (mg/kg)

## **APPENDIX J. ANALYTE ANALYSIS: COPPER**

### **J.1 COPPER REC**

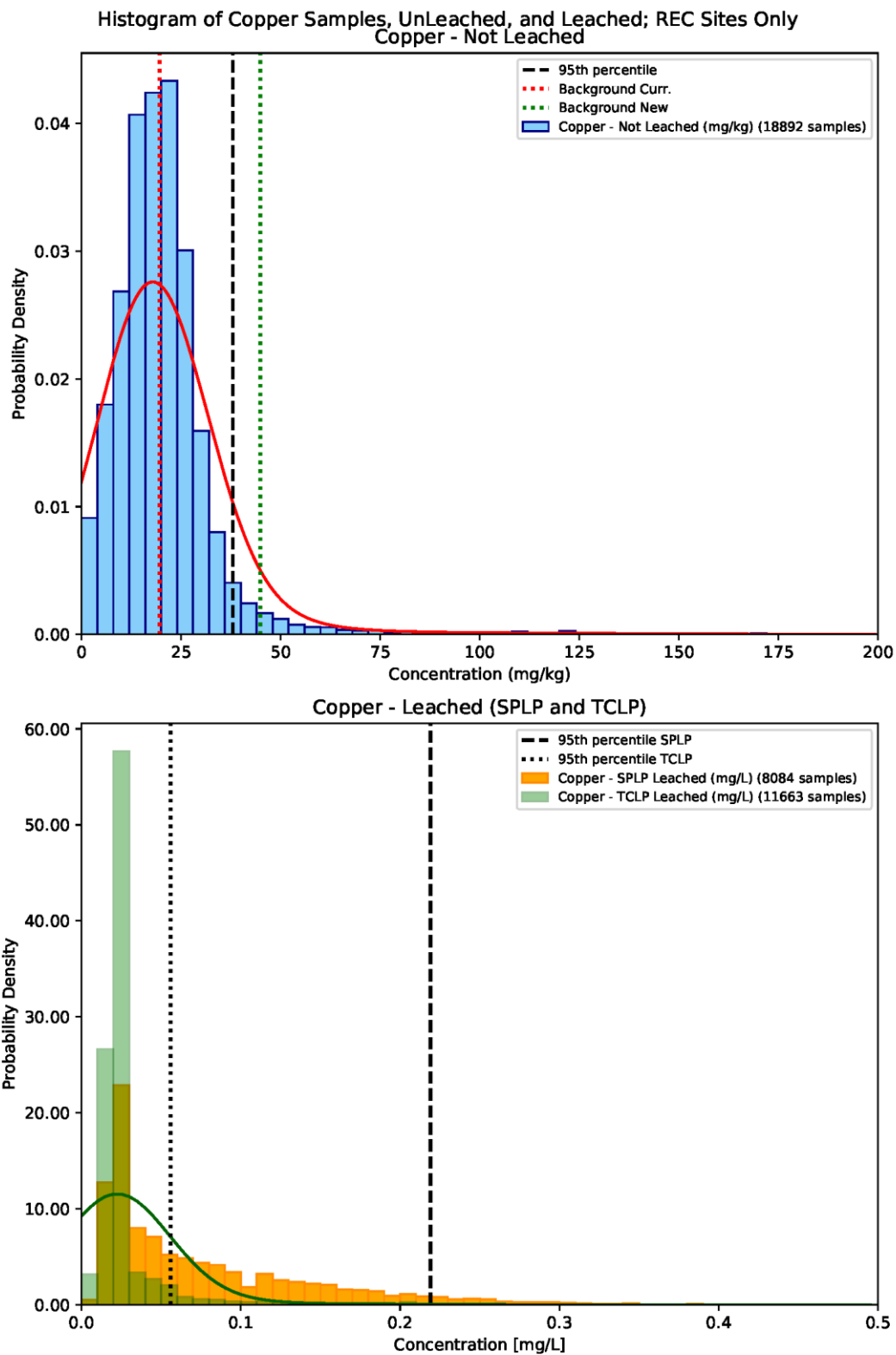


Figure 337. Histogram of RSL copper concentrations, REC (mg/kg)

Copper Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

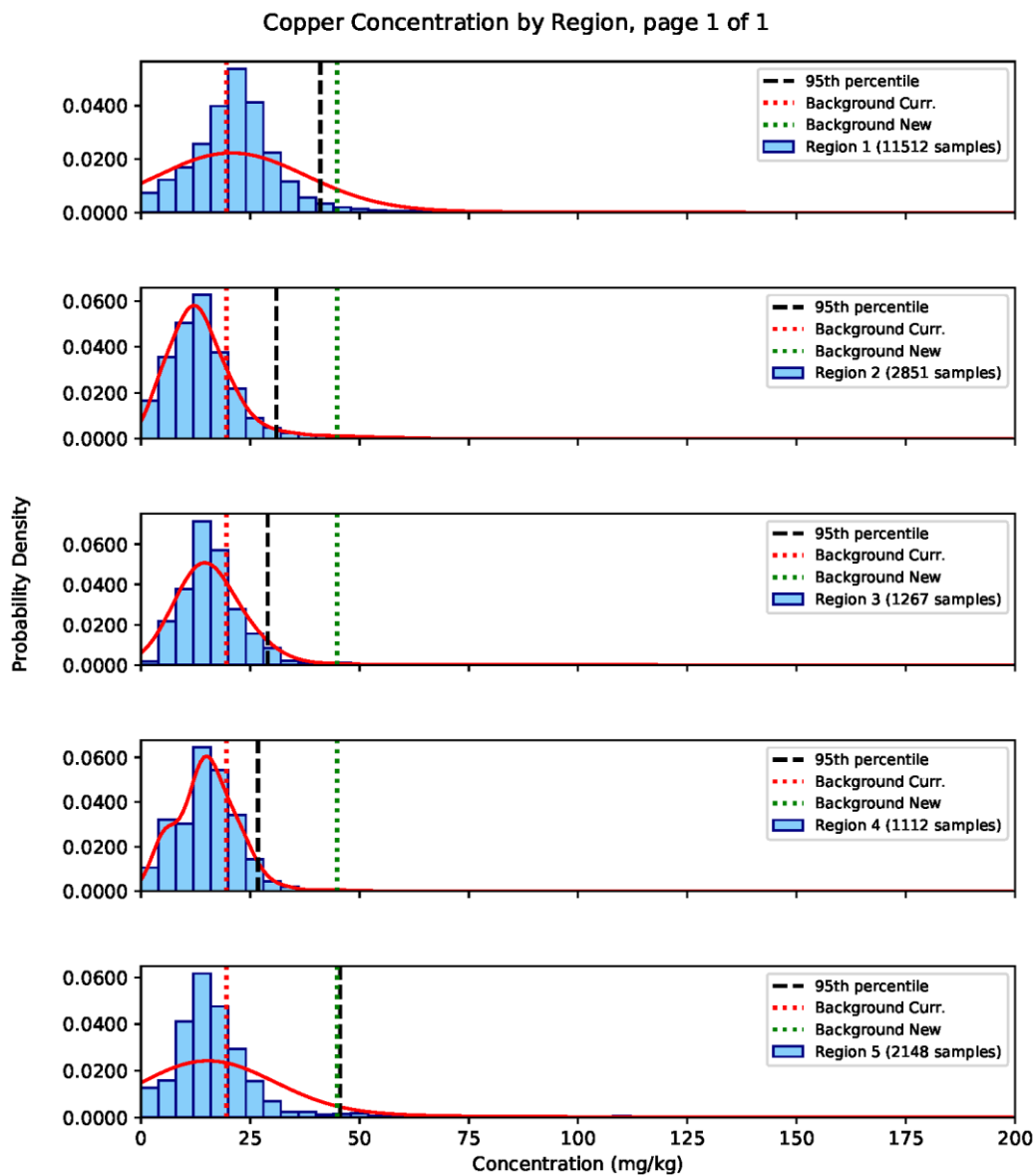


Figure 338. Histogram of RSL copper concentrations by IDOT Region, REC (mg/kg)

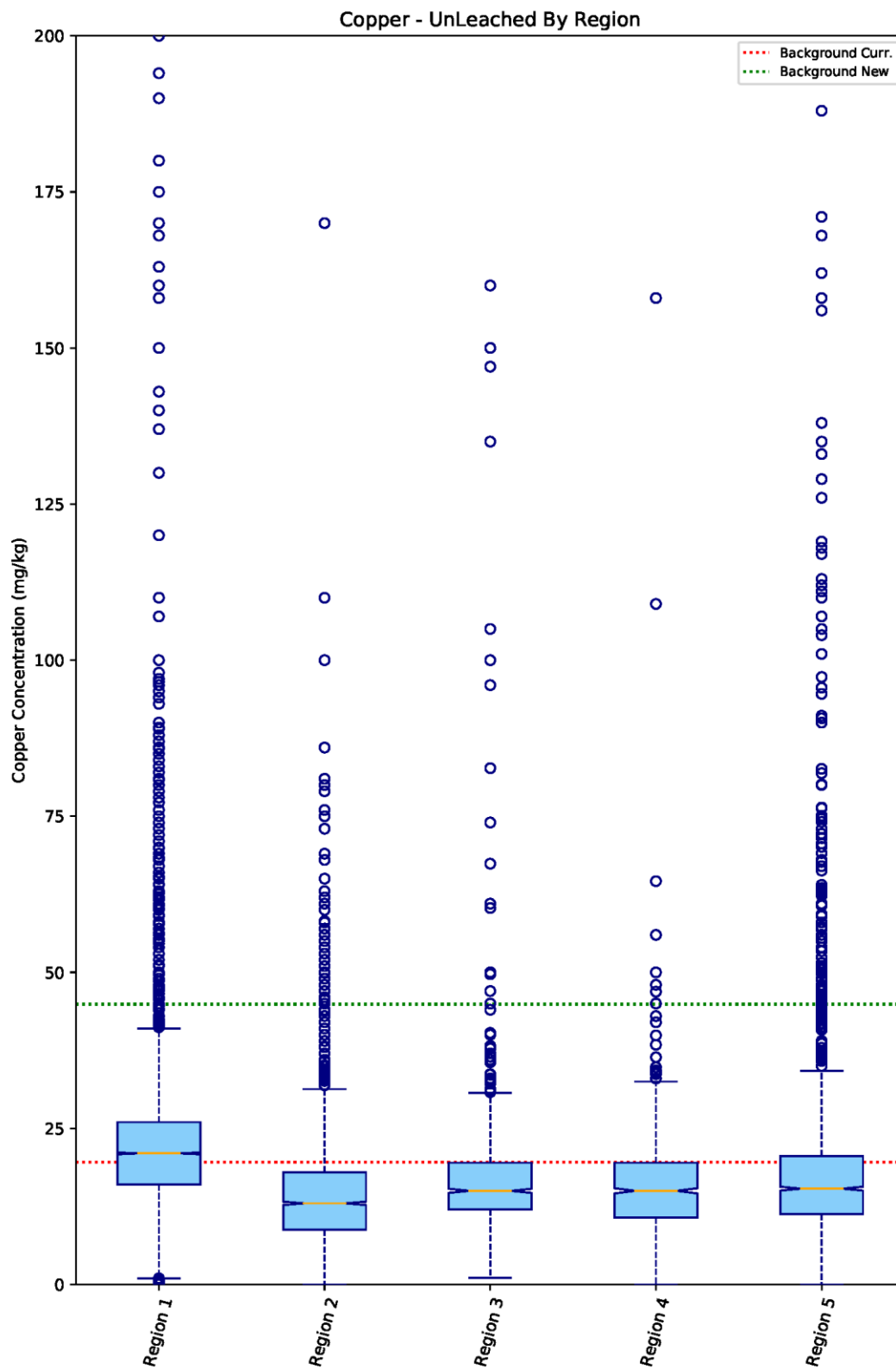


Figure 339. Boxplot of RSL copper concentrations by IDOT Region, REC (mg/kg)



Copper Concentration by District, page 1 of 2

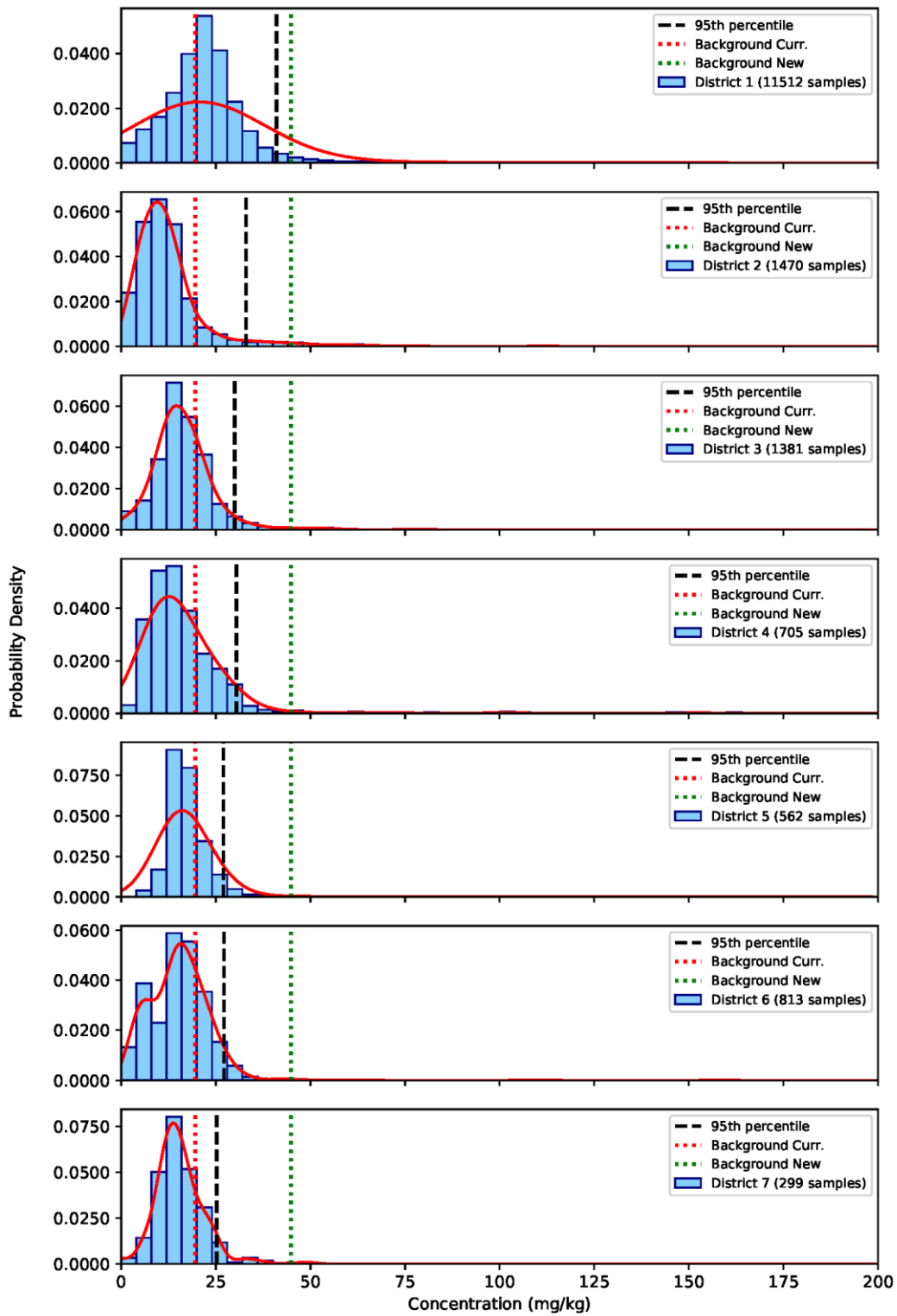


Figure 340. Histogram of RSL copper concentrations by IDOT District, REC (mg/kg), part 1

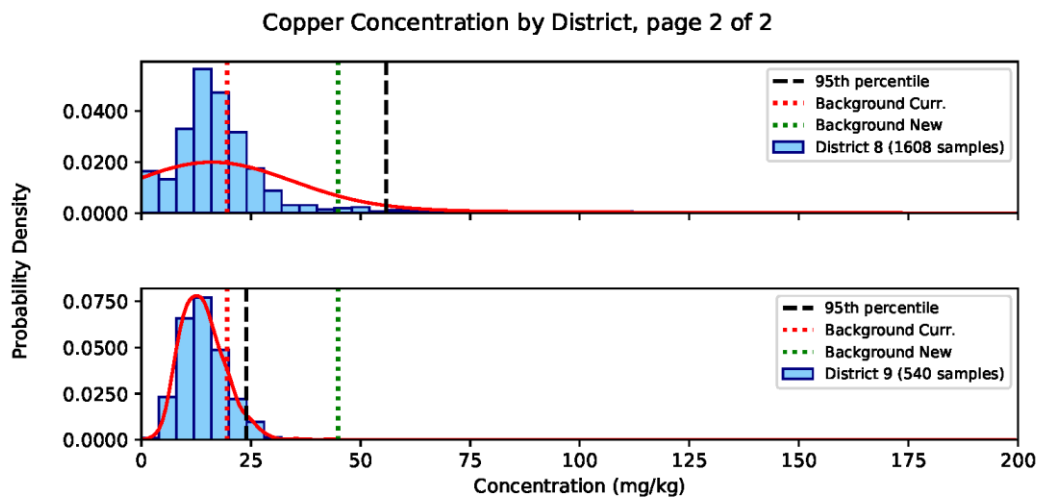


Figure 341. Histogram of RSL copper concentrations by IDOT District, REC (mg/kg), part 2

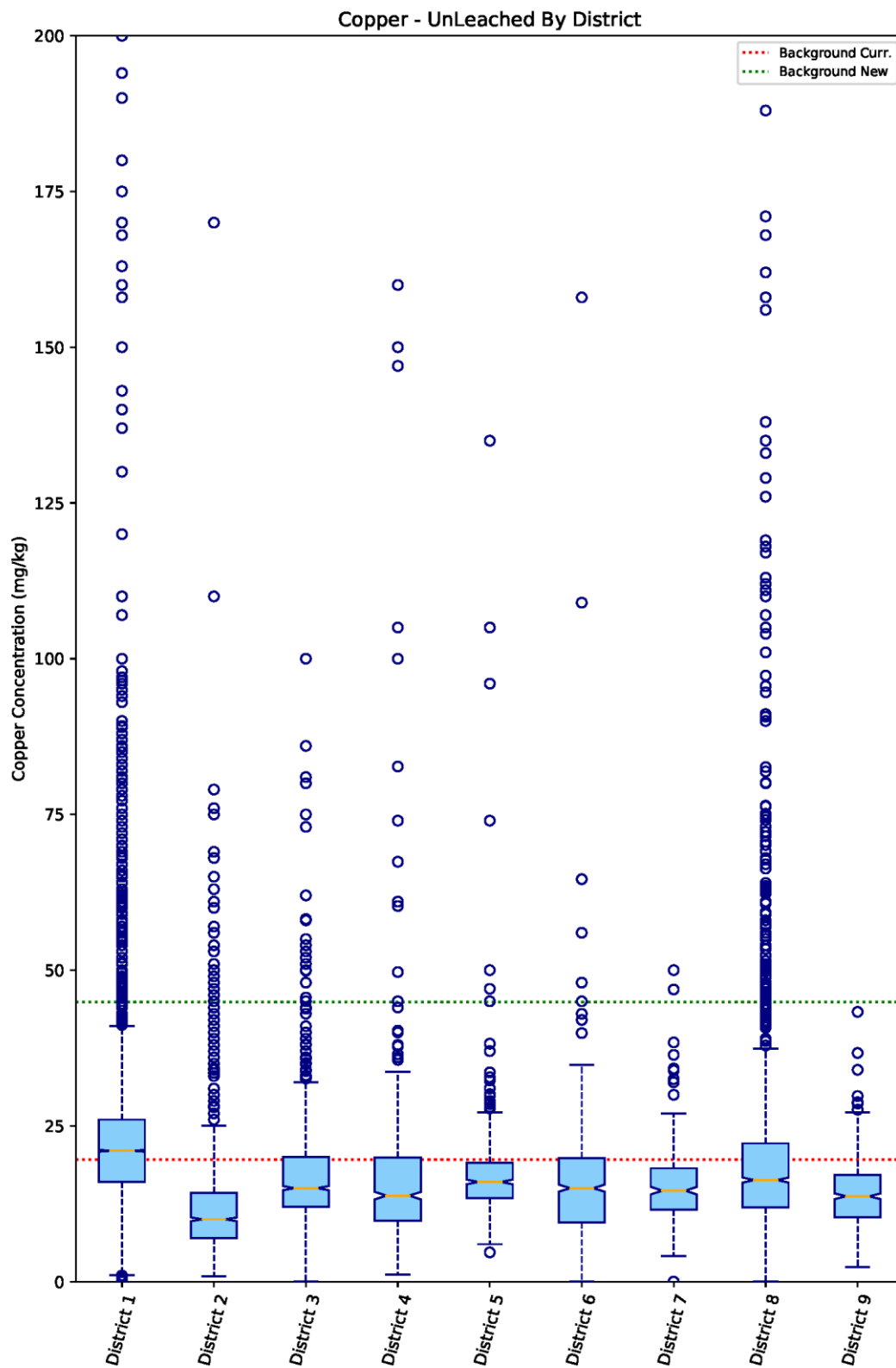


Figure 342. Boxplot of RSL copper concentrations by IDOT District, REC (mg/kg)

# Copper Concentration by County, page 1 of 10

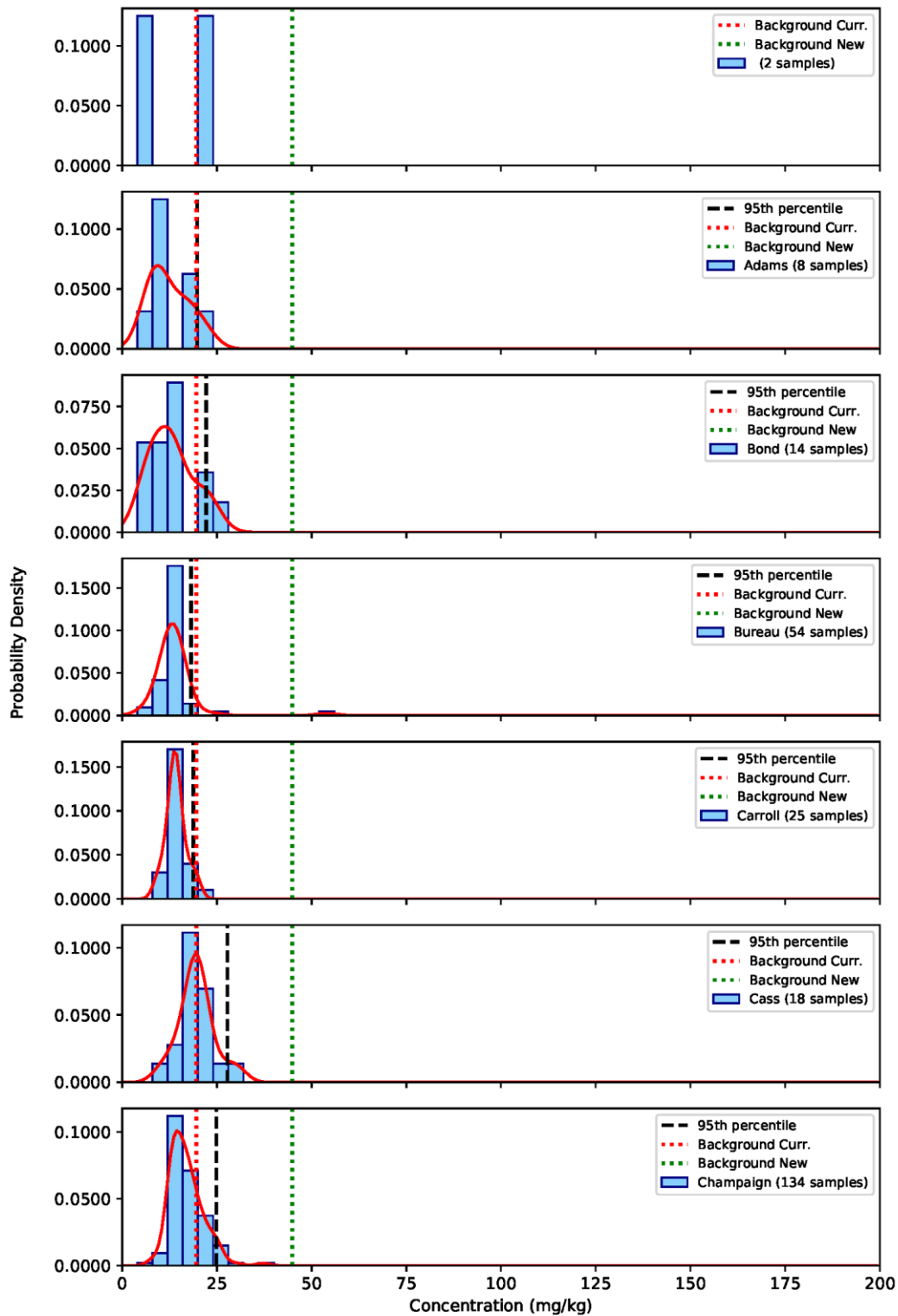


Figure 343. Histogram of RSL copper concentrations by Illinois county, REC (mg/kg), part 1

Copper Concentration by County, page 2 of 10

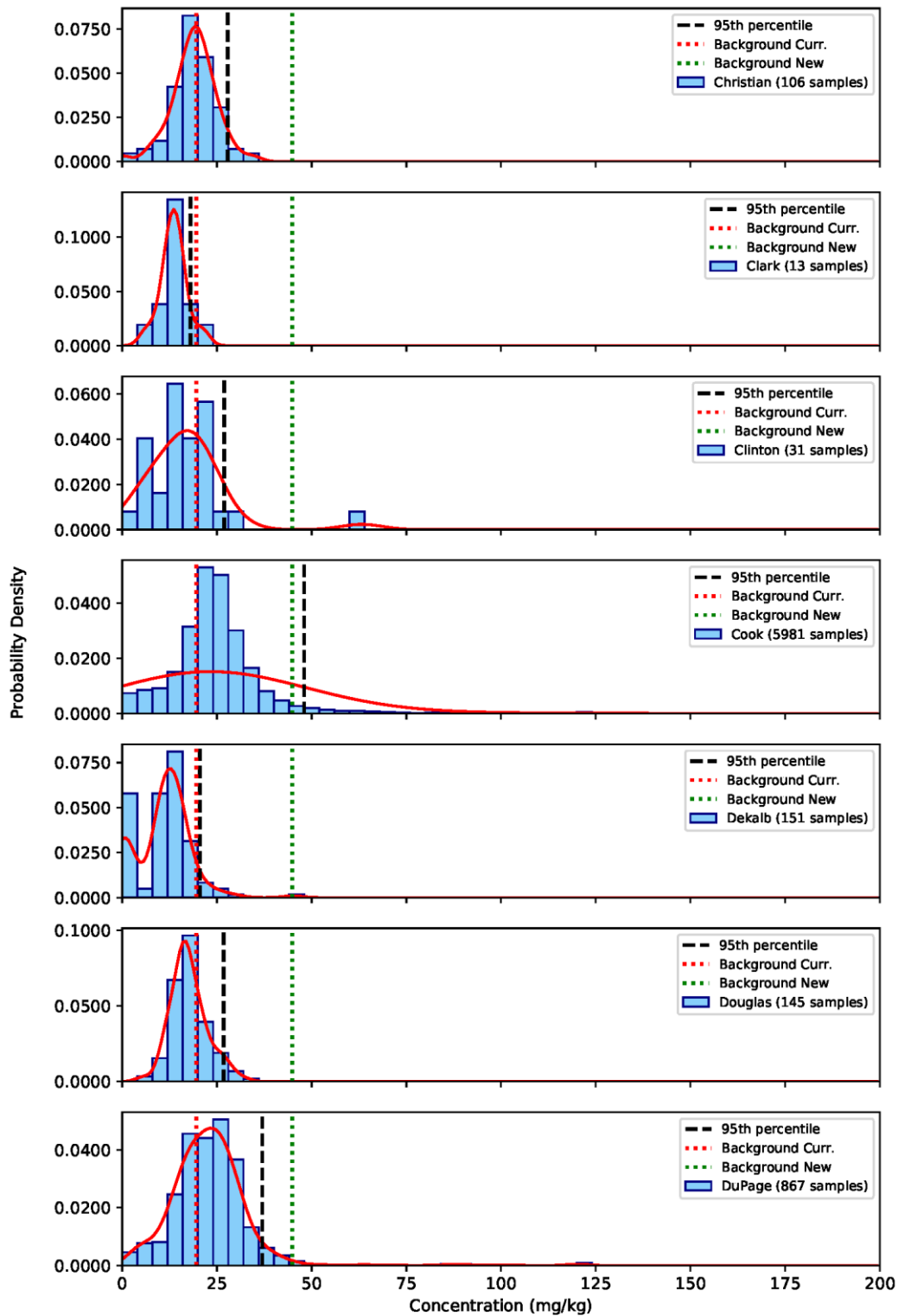


Figure 344. Histogram of RSL copper concentrations by Illinois county, REC (mg/kg), part 2

Copper Concentration by County, page 3 of 10

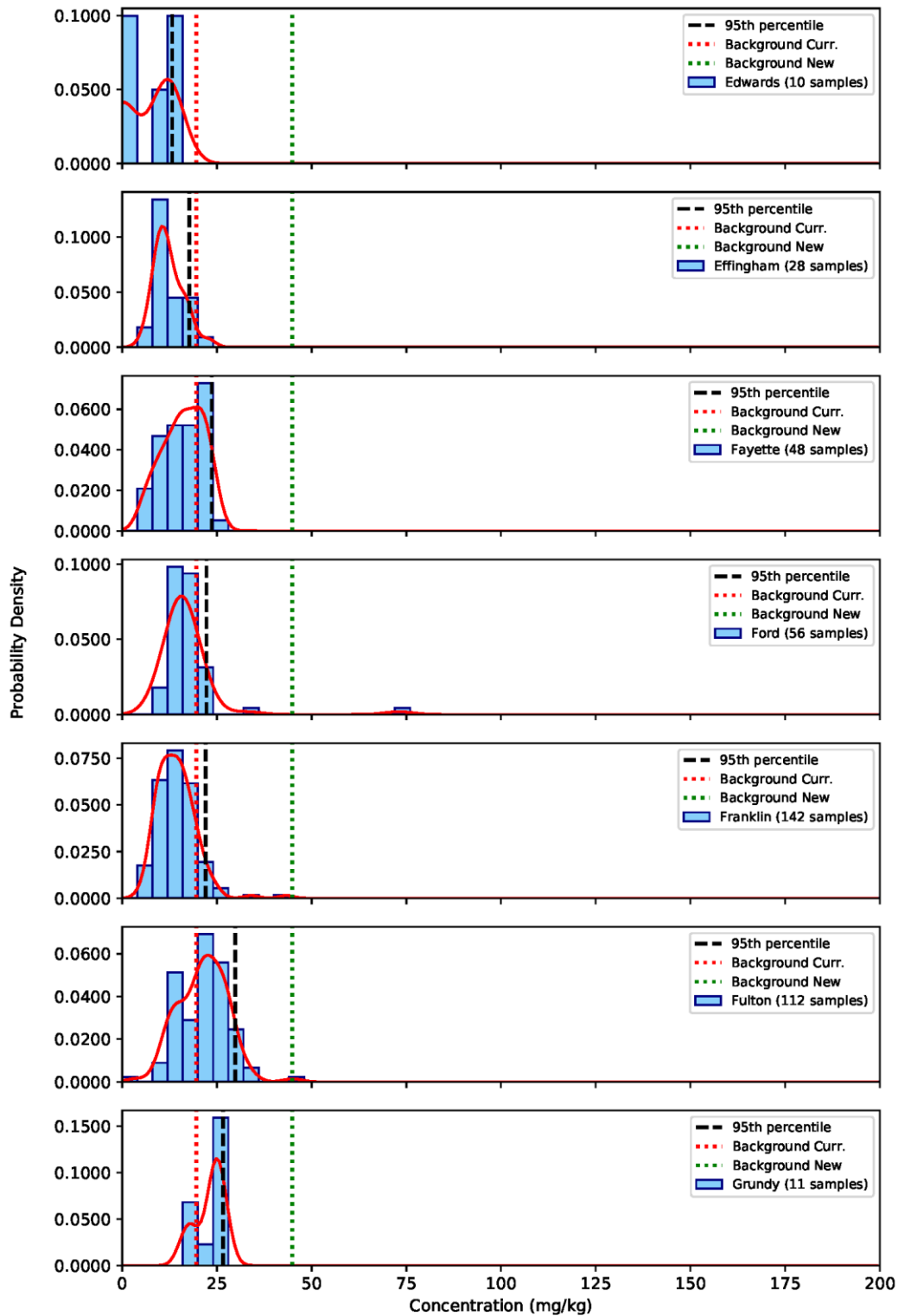


Figure 345. Histogram of RSL copper concentrations by Illinois county, REC (mg/kg), part 3

Copper Concentration by County, page 4 of 10

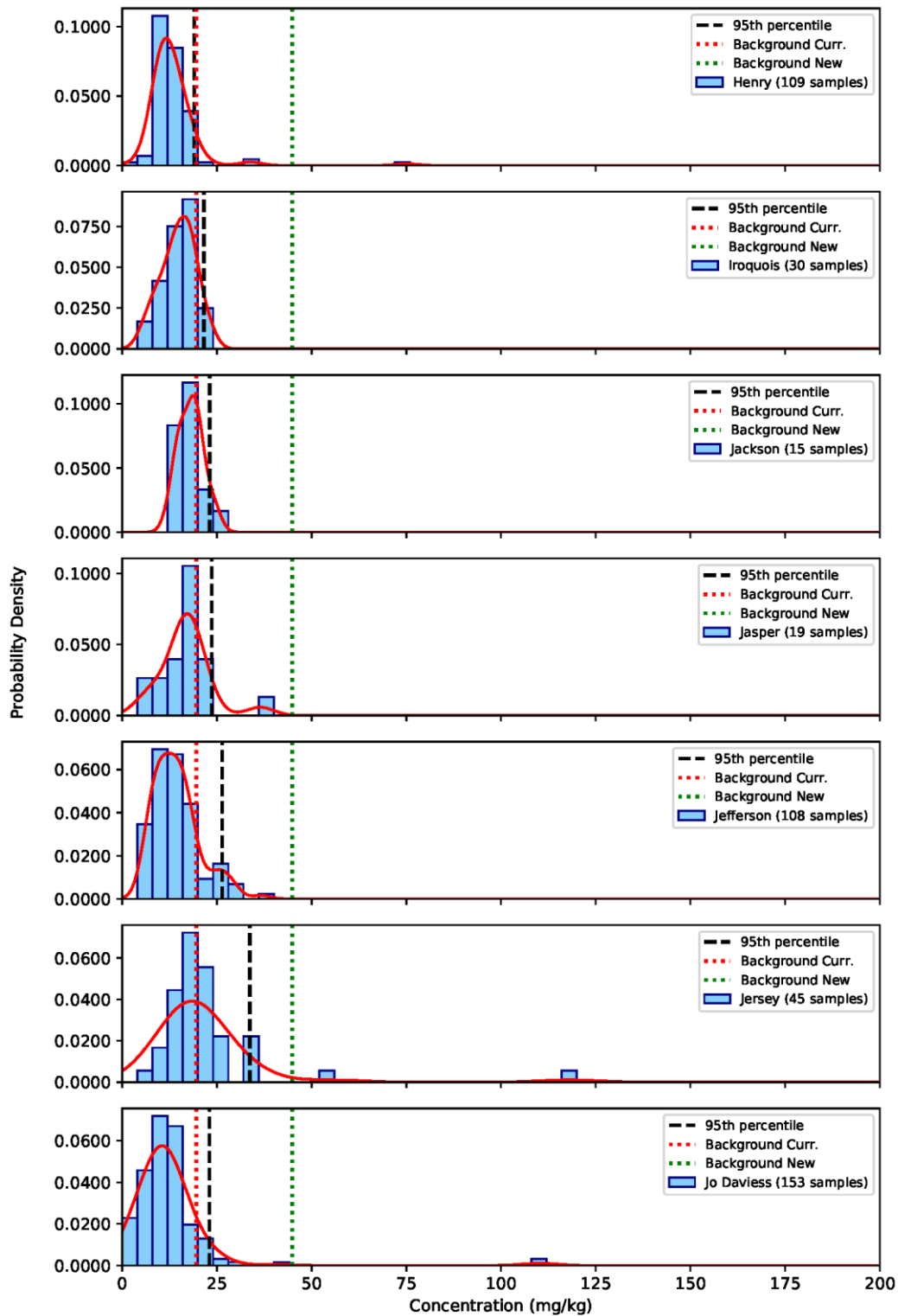


Figure 346. Histogram of RSL copper concentrations by Illinois county, REC (mg/kg), part 4

Copper Concentration by County, page 5 of 10

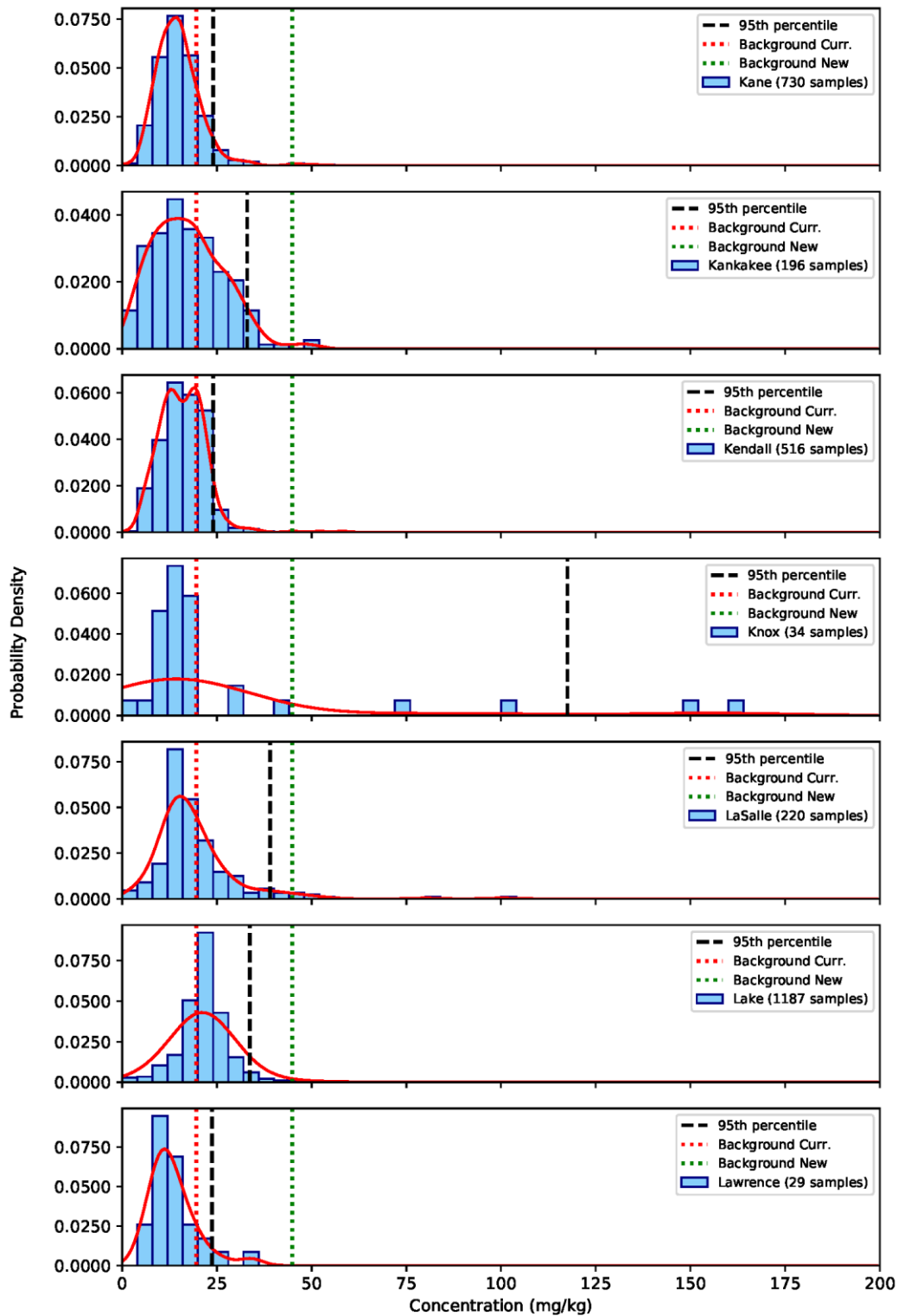


Figure 347. Histogram of RSL copper concentrations by Illinois county, REC (mg/kg), part 5



Copper Concentration by County, page 6 of 10

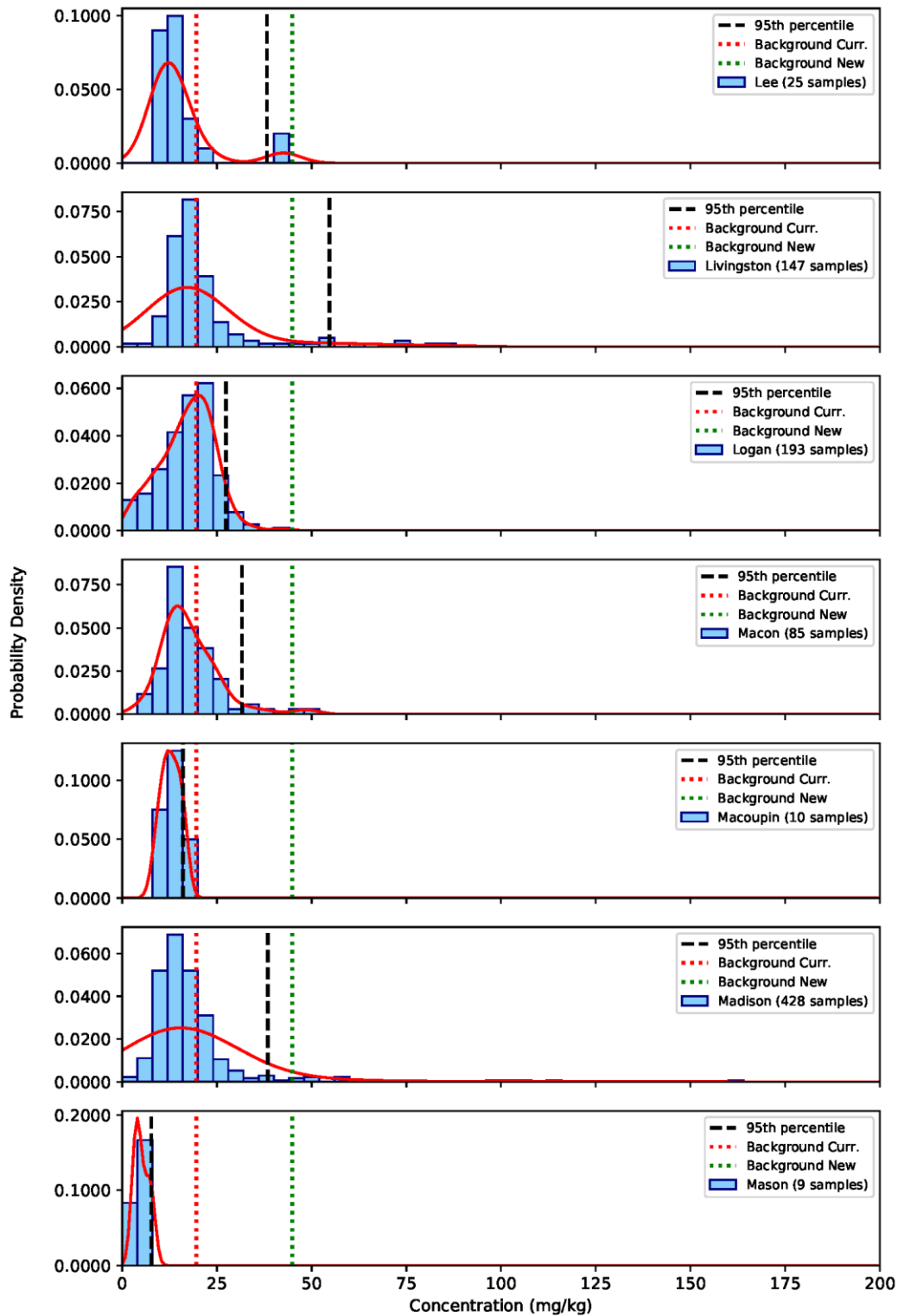


Figure 348. Histogram of RSL copper concentrations by Illinois county, REC (mg/kg), part 6

Copper Concentration by County, page 7 of 10

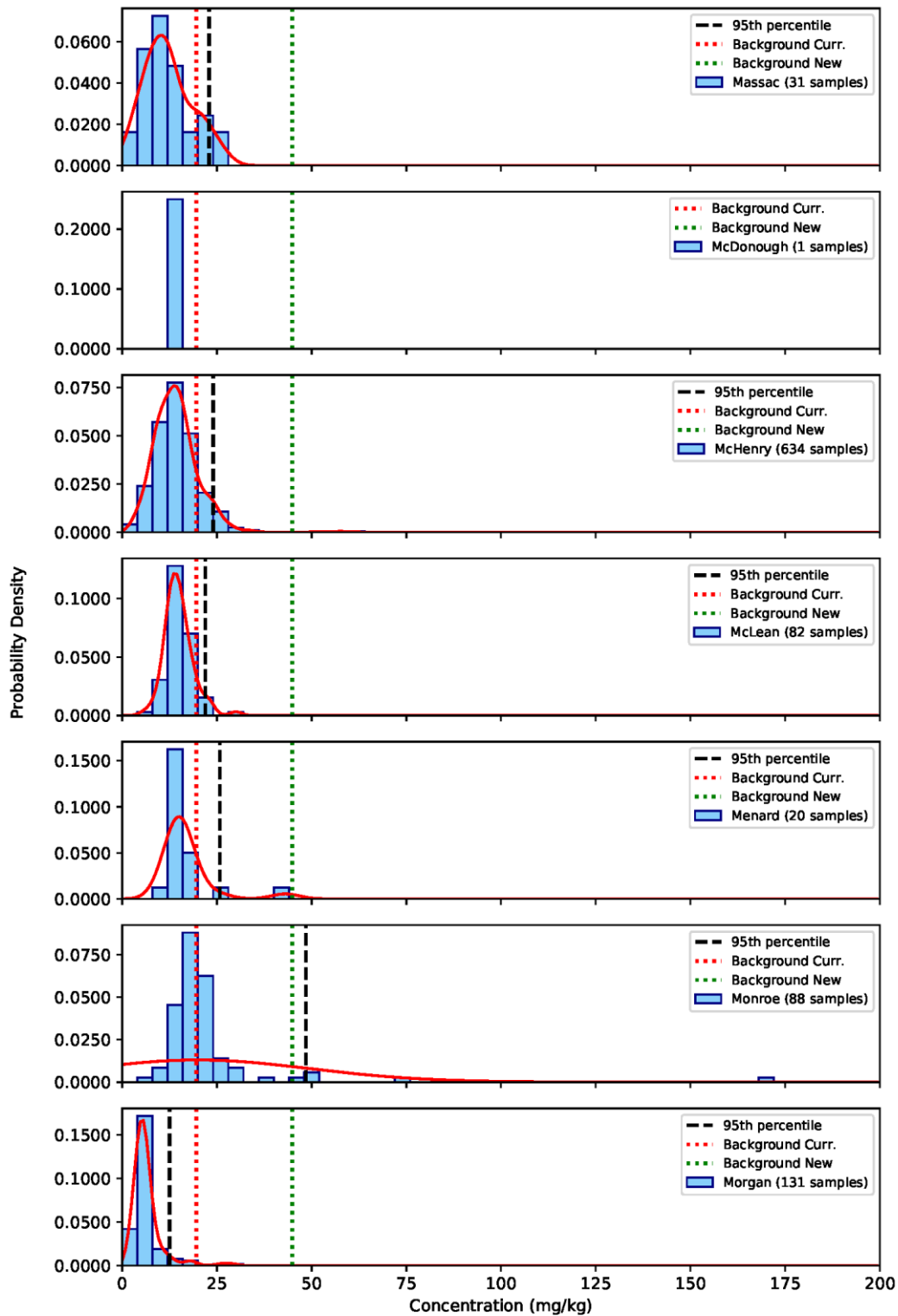


Figure 349. Histogram of RSL copper concentrations by Illinois county, REC (mg/kg), part 7

Copper Concentration by County, page 8 of 10

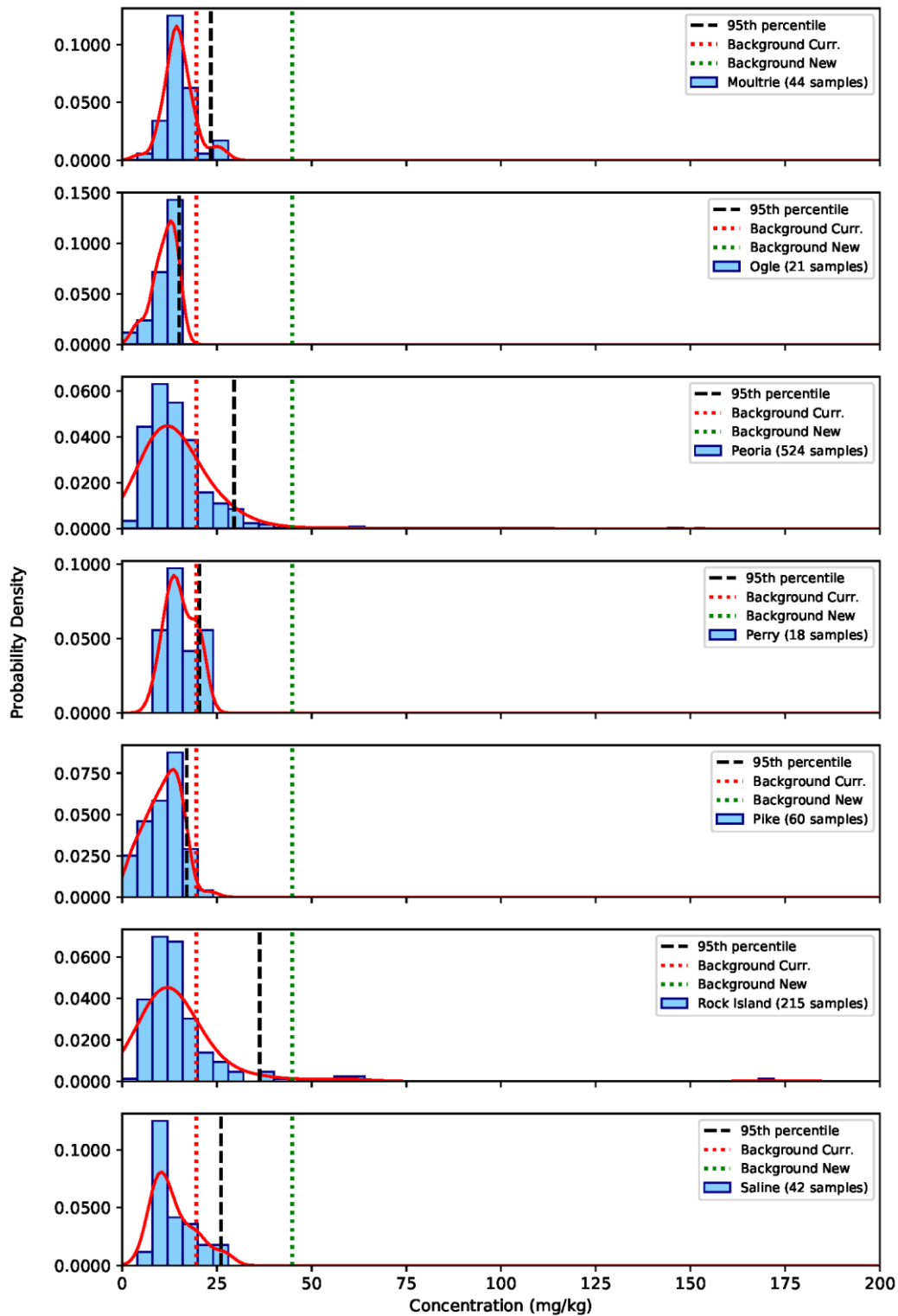


Figure 350. Histogram of RSL copper concentrations by Illinois county, REC (mg/kg), part 8

Copper Concentration by County, page 9 of 10

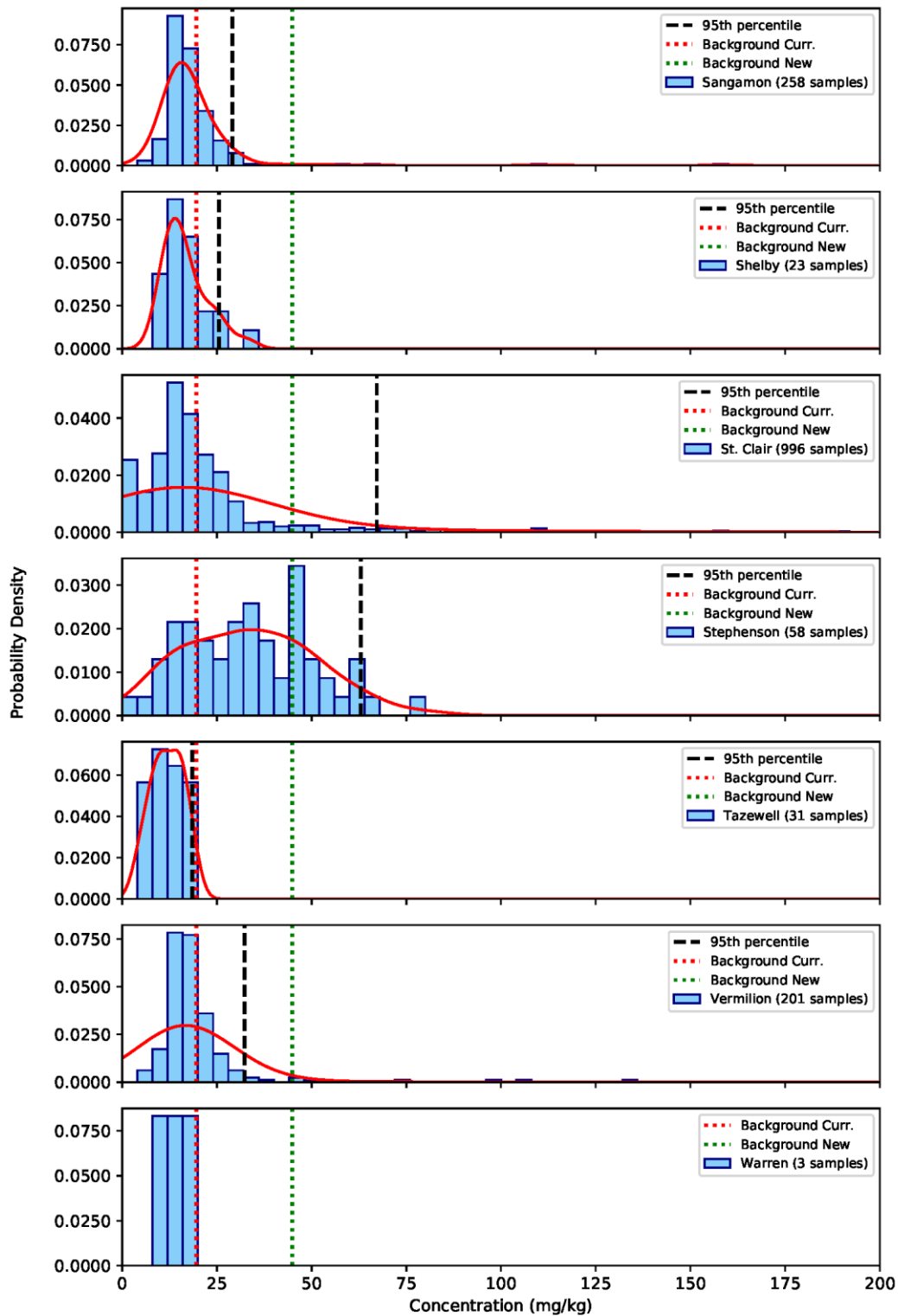


Figure 351. Histogram of RSL copper concentrations by Illinois county, REC (mg/kg), part 9

Copper Concentration by County, page 10 of 10

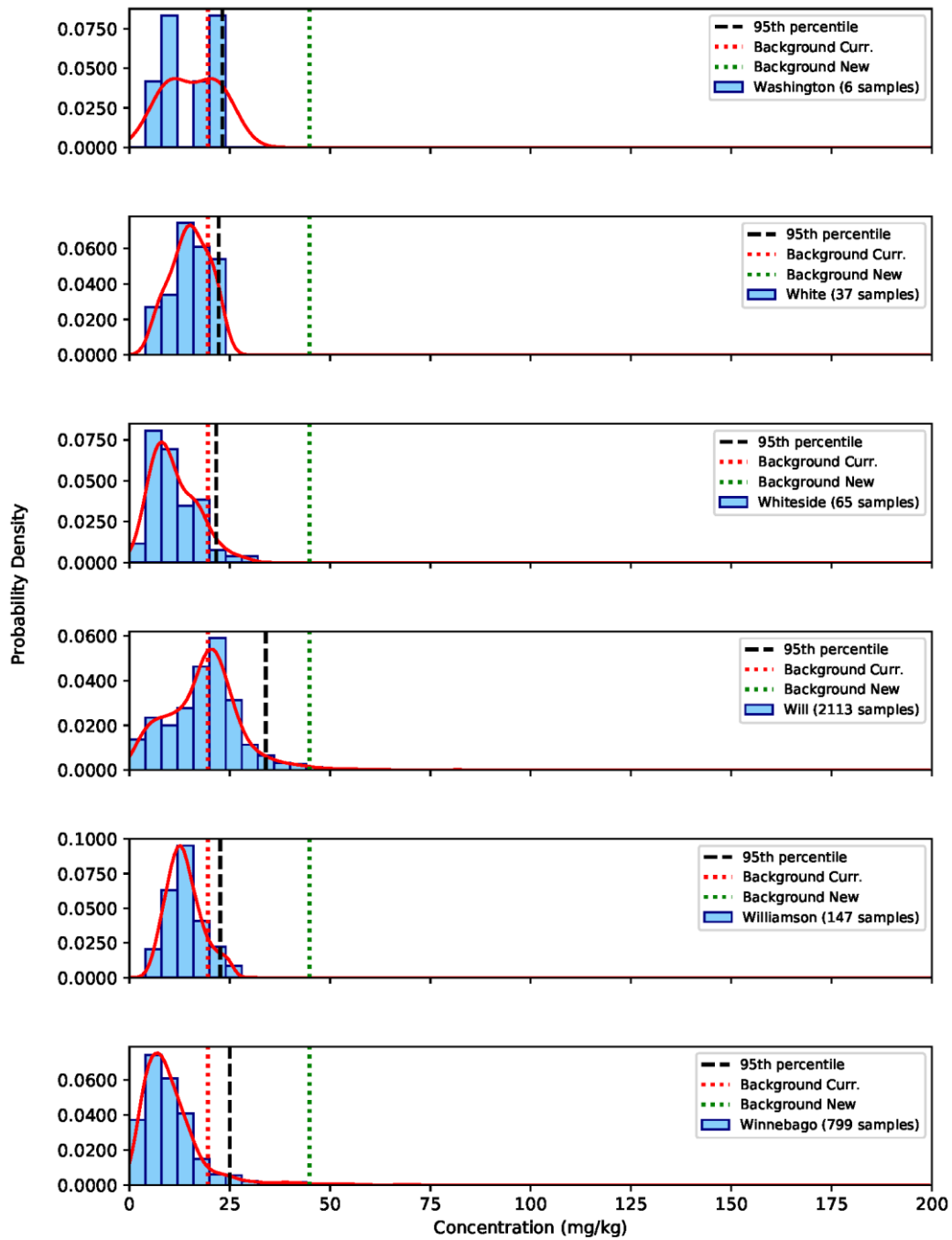


Figure 352. Histogram of RSL copper concentrations by Illinois county, REC (mg/kg), part 10

Copper Concentration for 95th Percentile by County: REC Sites

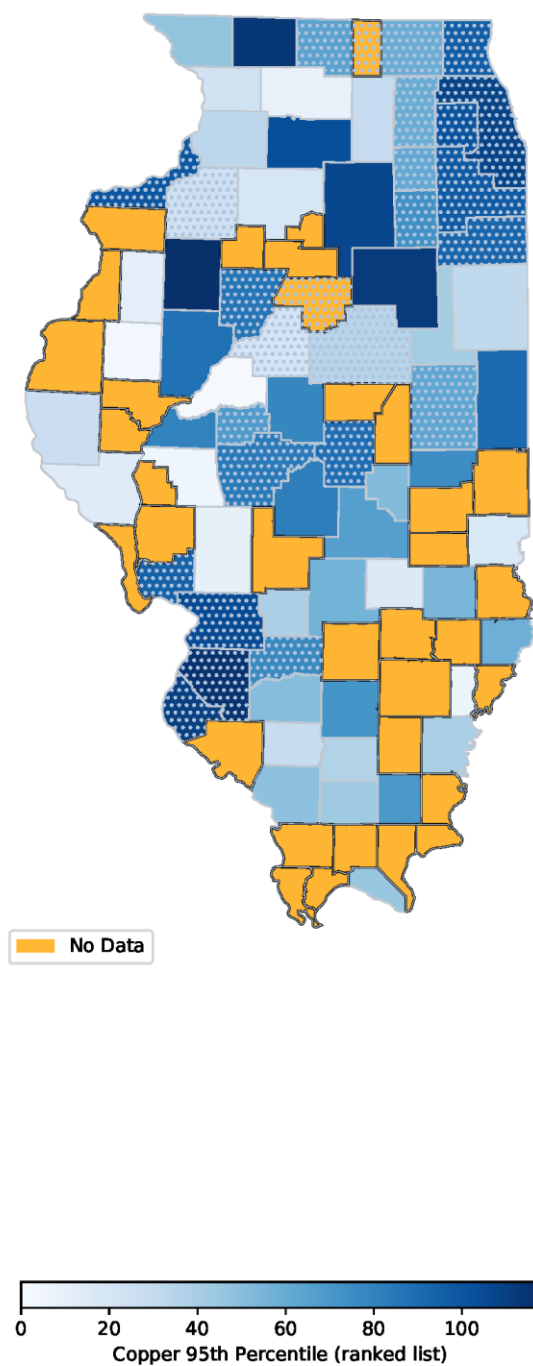


Figure 353. Map of RSL copper 95th percentile concentration by Illinois county, REC (mg/kg)

417

## J.2 COPPER NON-REC



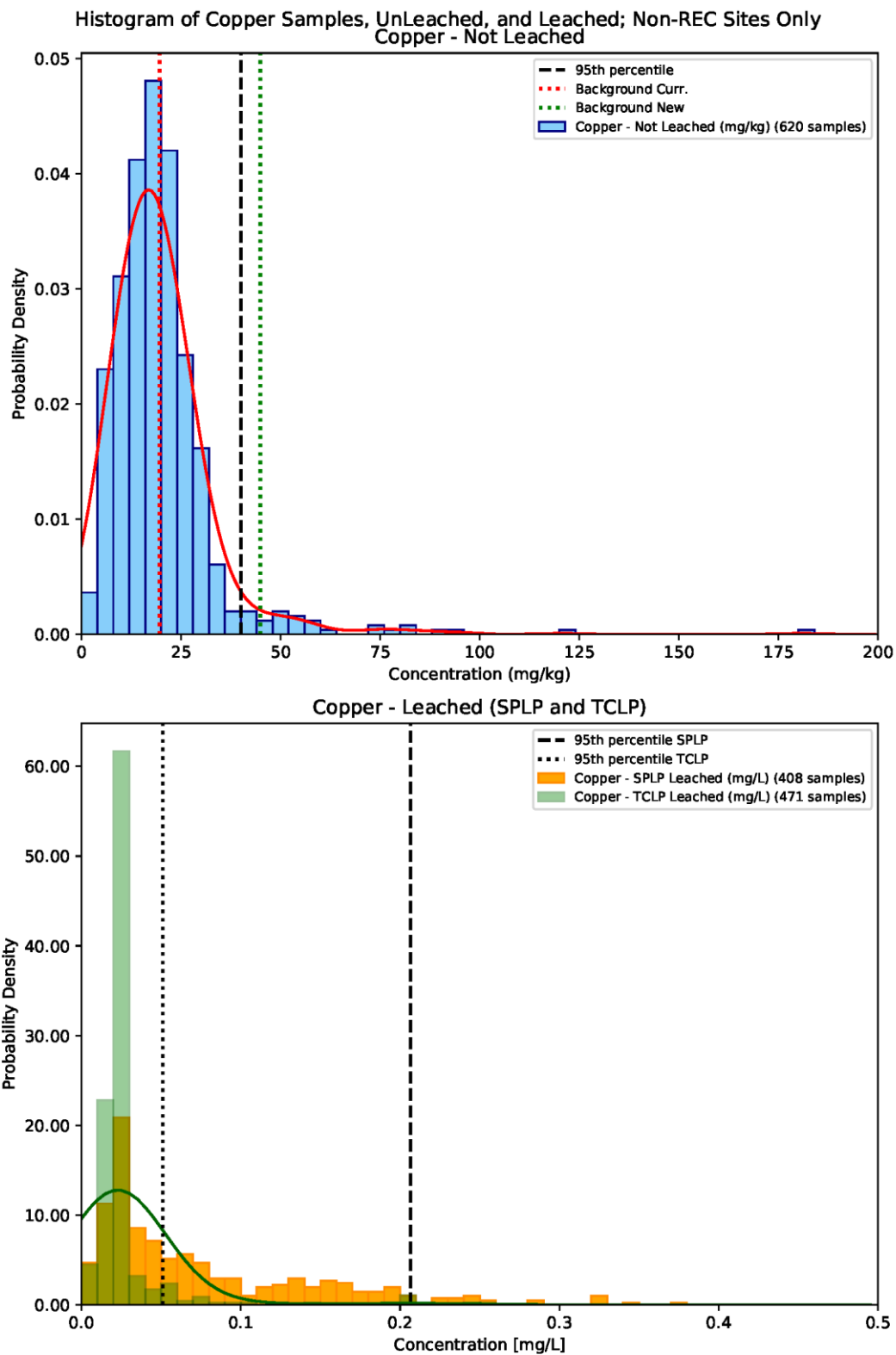


Figure 355. Histogram of RSL copper concentrations, Non-REC (mg/kg)

Copper Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

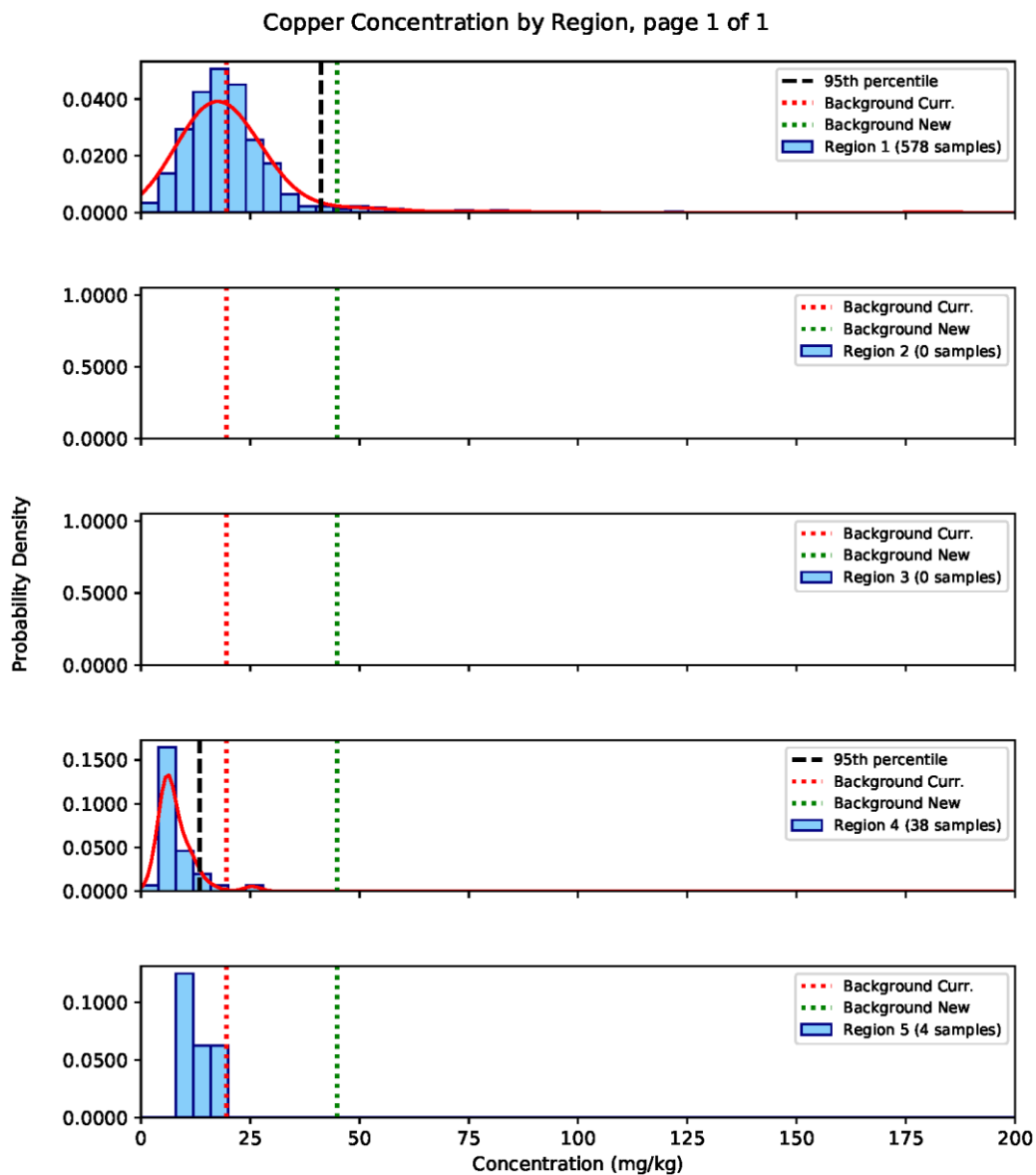


Figure 356. Histogram of RSL copper concentrations by IDOT Region, Non-REC (mg/kg)

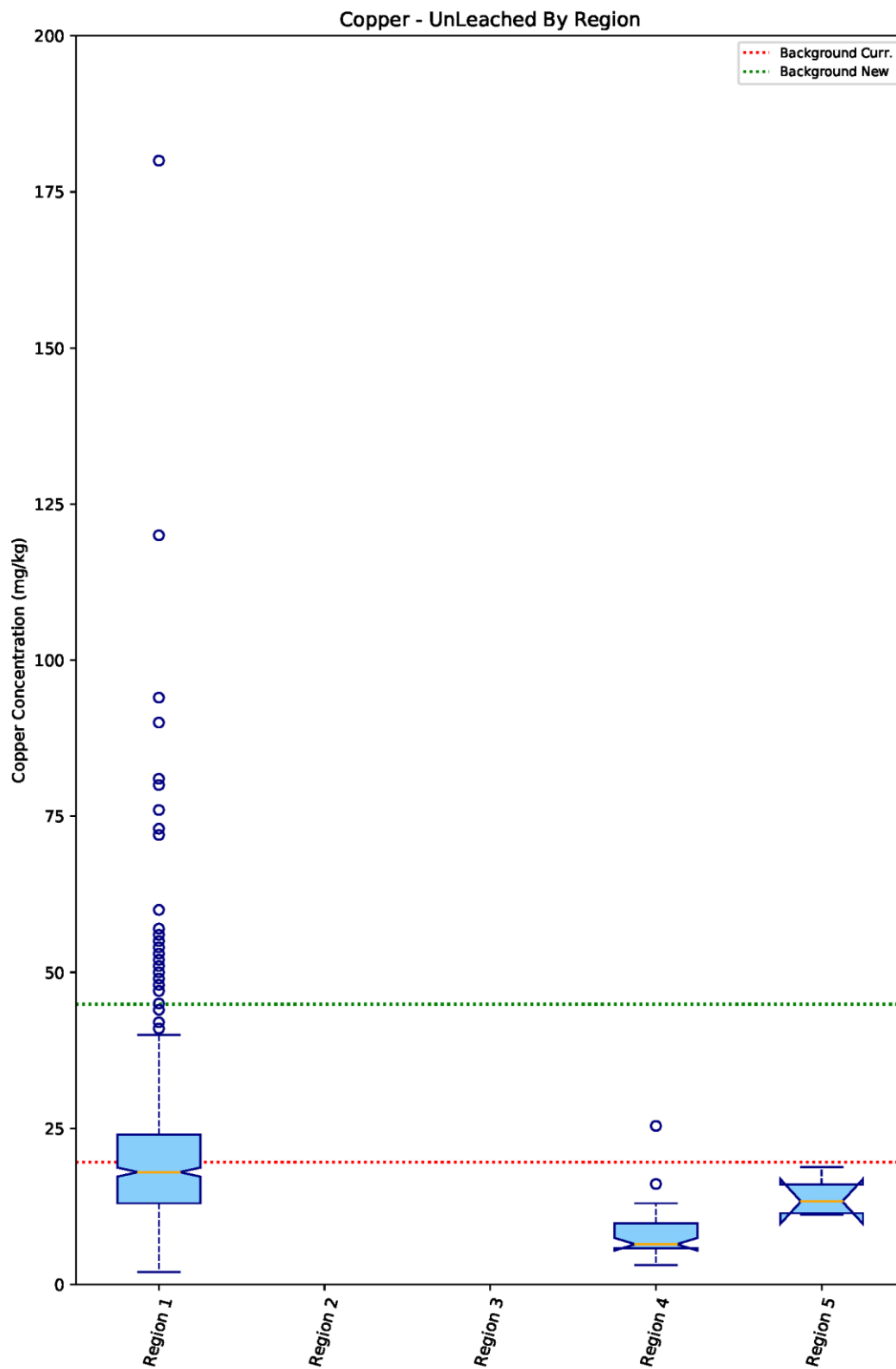


Figure 357. Boxplot of RSL copper concentrations by IDOT Region, Non-REC (mg/kg)

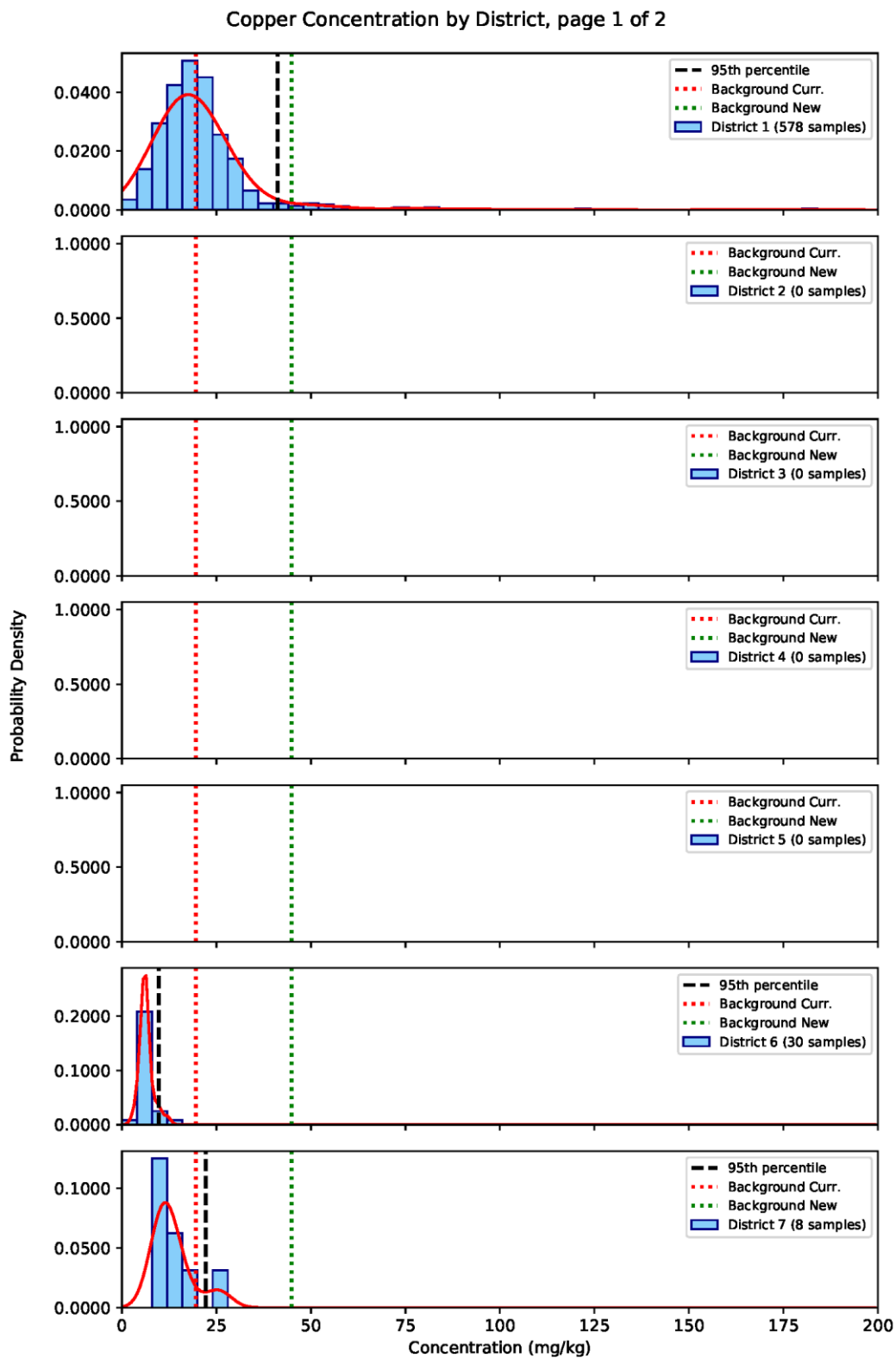


Figure 358. Histogram of RSL copper concentrations by IDOT District, Non-REC (mg/kg), part 1

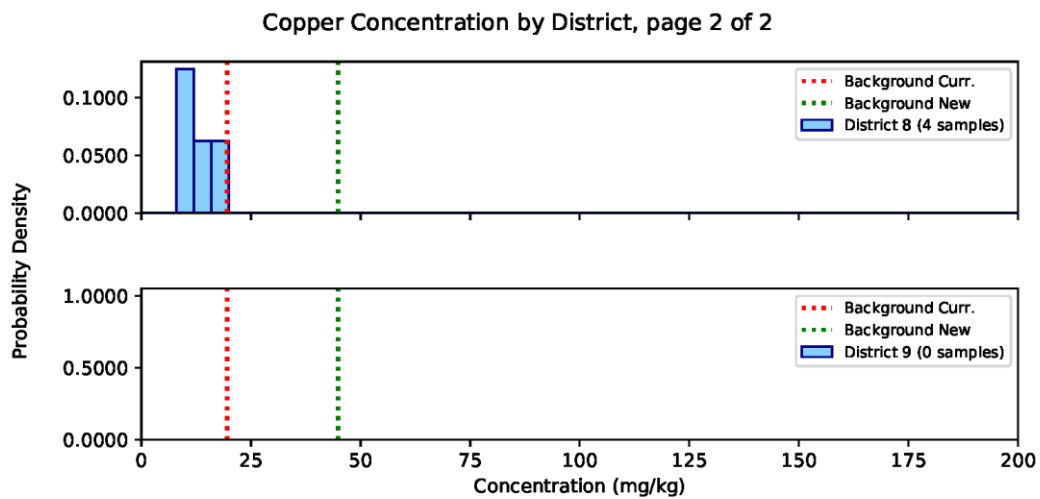


Figure 359. Histogram of RSL copper concentrations by IDOT District, Non-REC (mg/kg), part 2

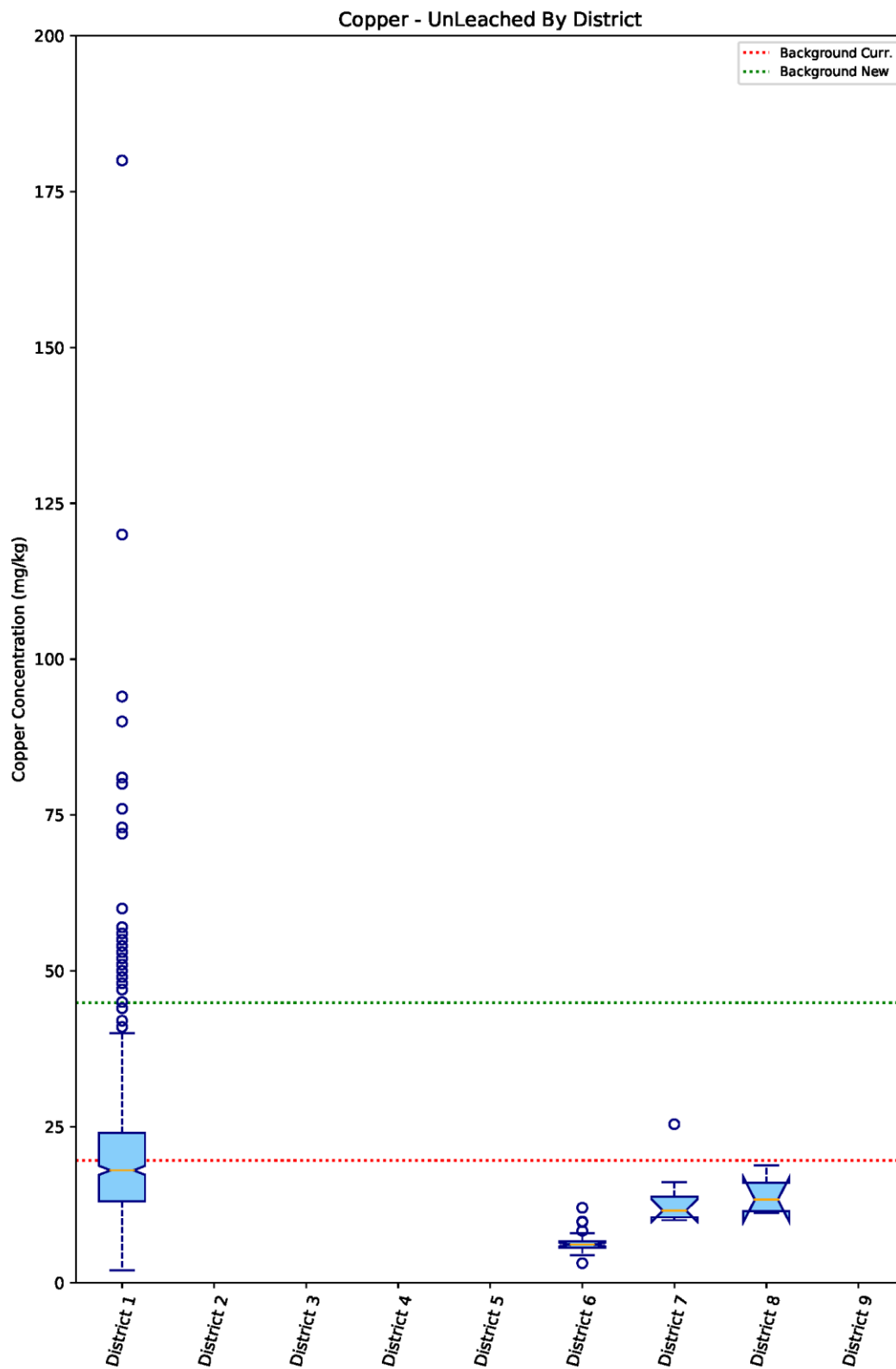


Figure 360. Boxplot of RSL copper concentrations by IDOT District, Non-REC (mg/kg)

# Copper Concentration by County, page 1 of 2

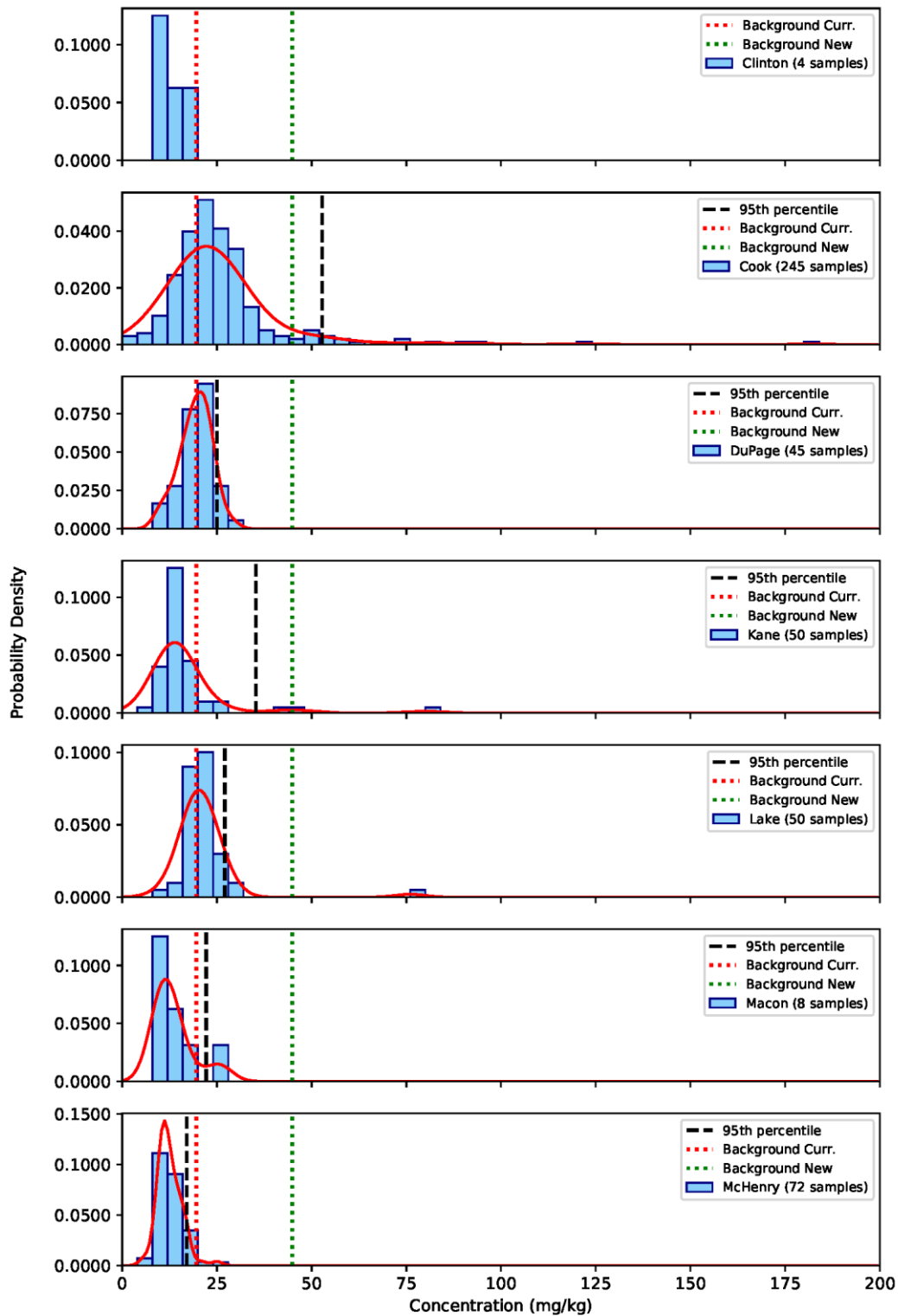


Figure 361. Histogram of RSL copper concentrations by Illinois county, Non-REC (mg/kg), part 1



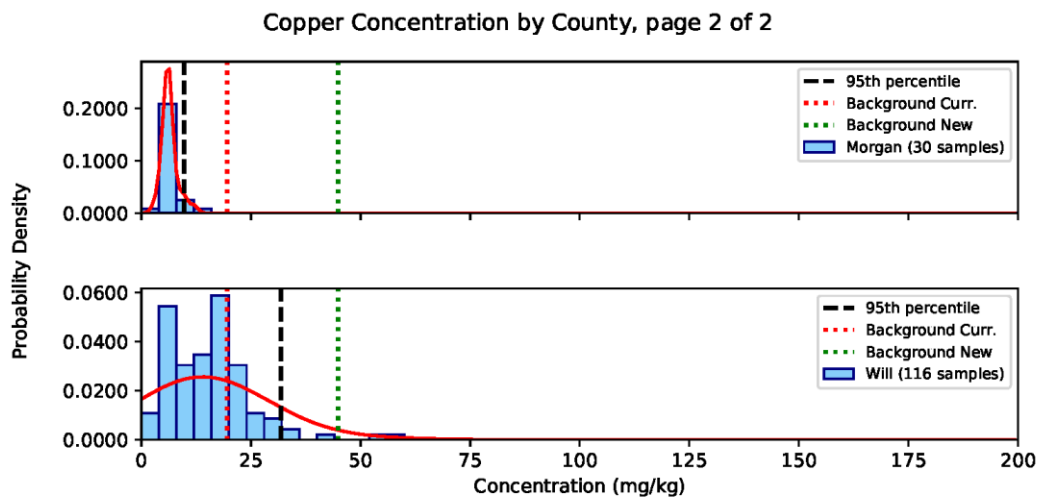


Figure 362. Histogram of RSL copper concentrations by Illinois county, Non-REC (mg/kg), part 2

Copper Concentration for 95th Percentile by County: Non-REC Sites

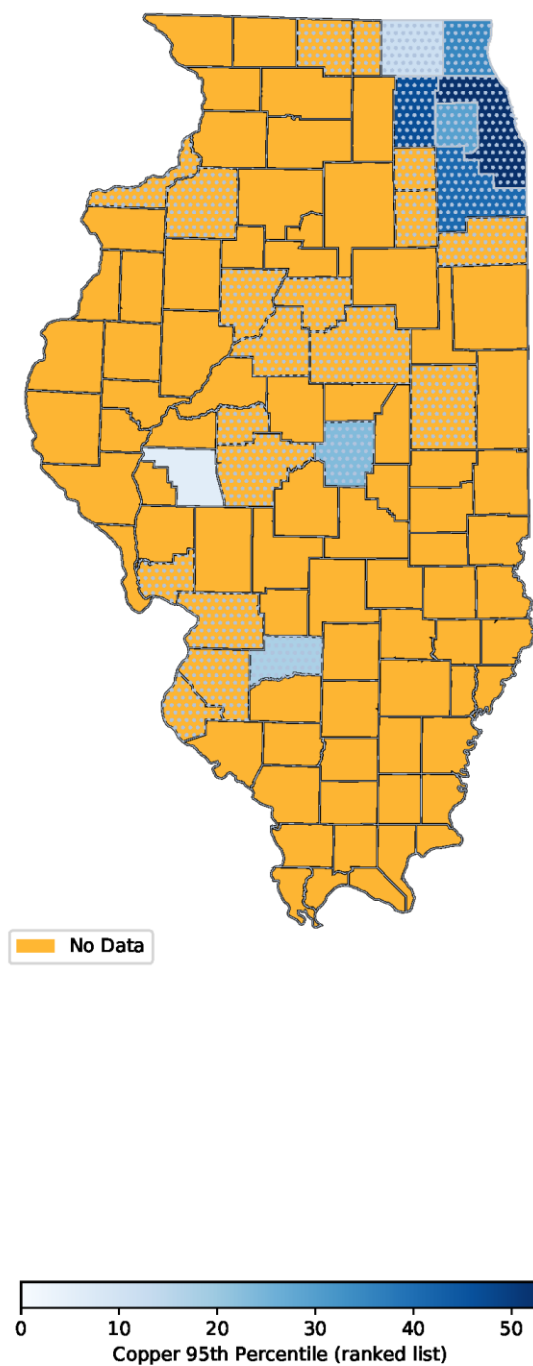


Figure 363. Map of RSL copper 95th percentile concentration by Illinois county, Non-REC (mg/kg)

Model	Number of Samples
Model 1	~210

429

### J.3 COPPER DE MINIMIS

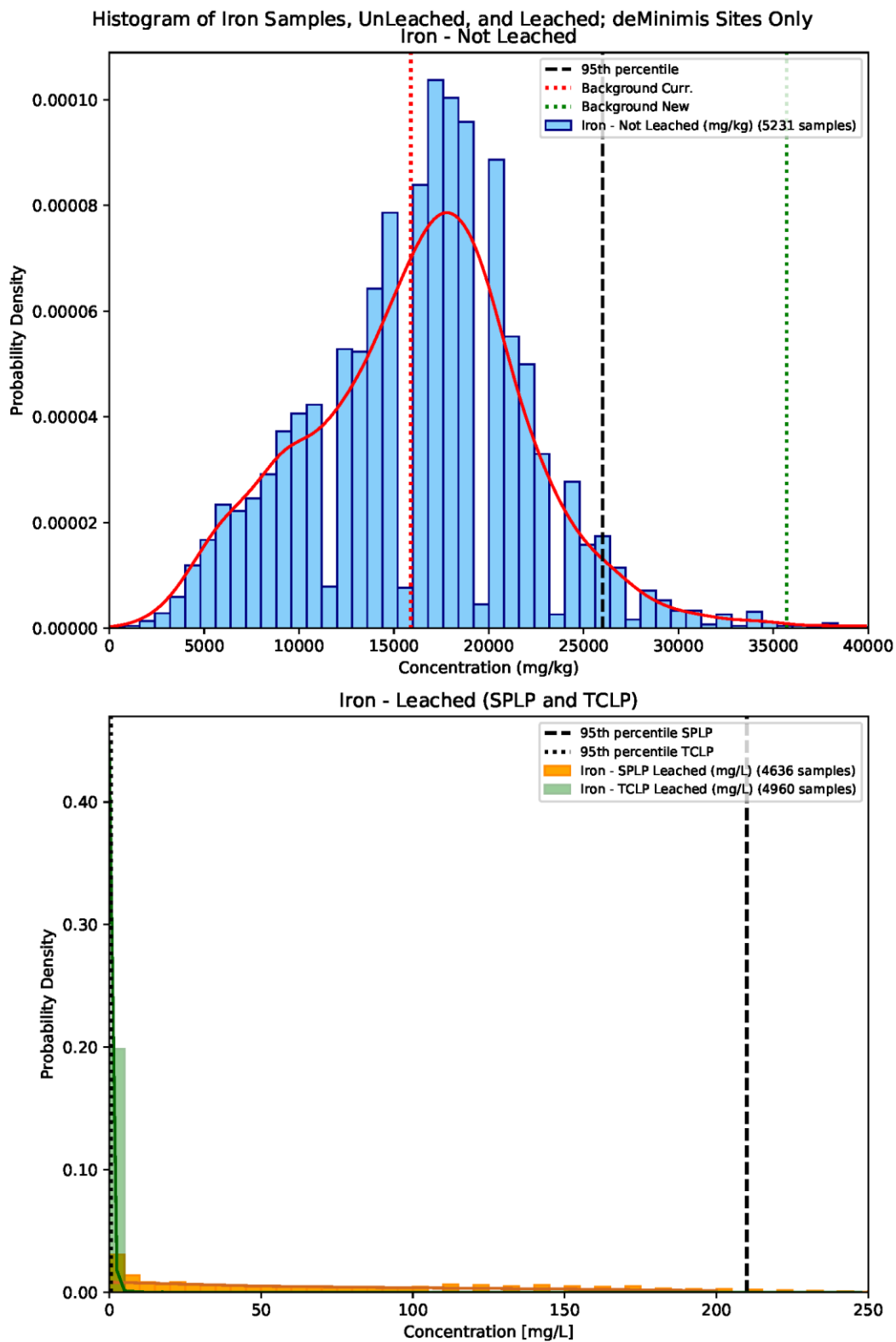


Figure 365. Histogram of RSL copper concentrations, de minimis (mg/kg)

Iron Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

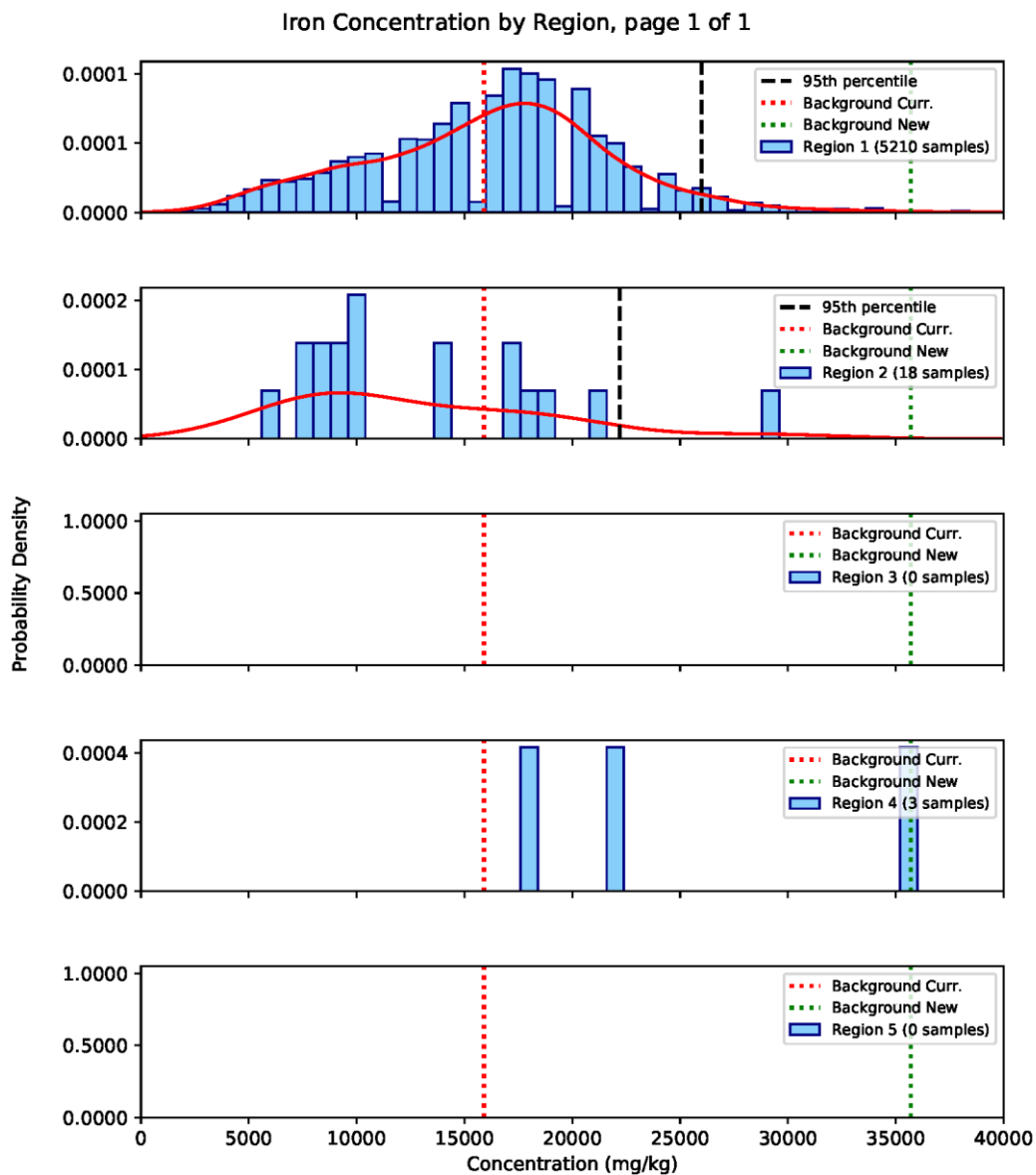


Figure 366. Histogram of RSL copper concentrations by IDOT Region, de minimis (mg/kg)

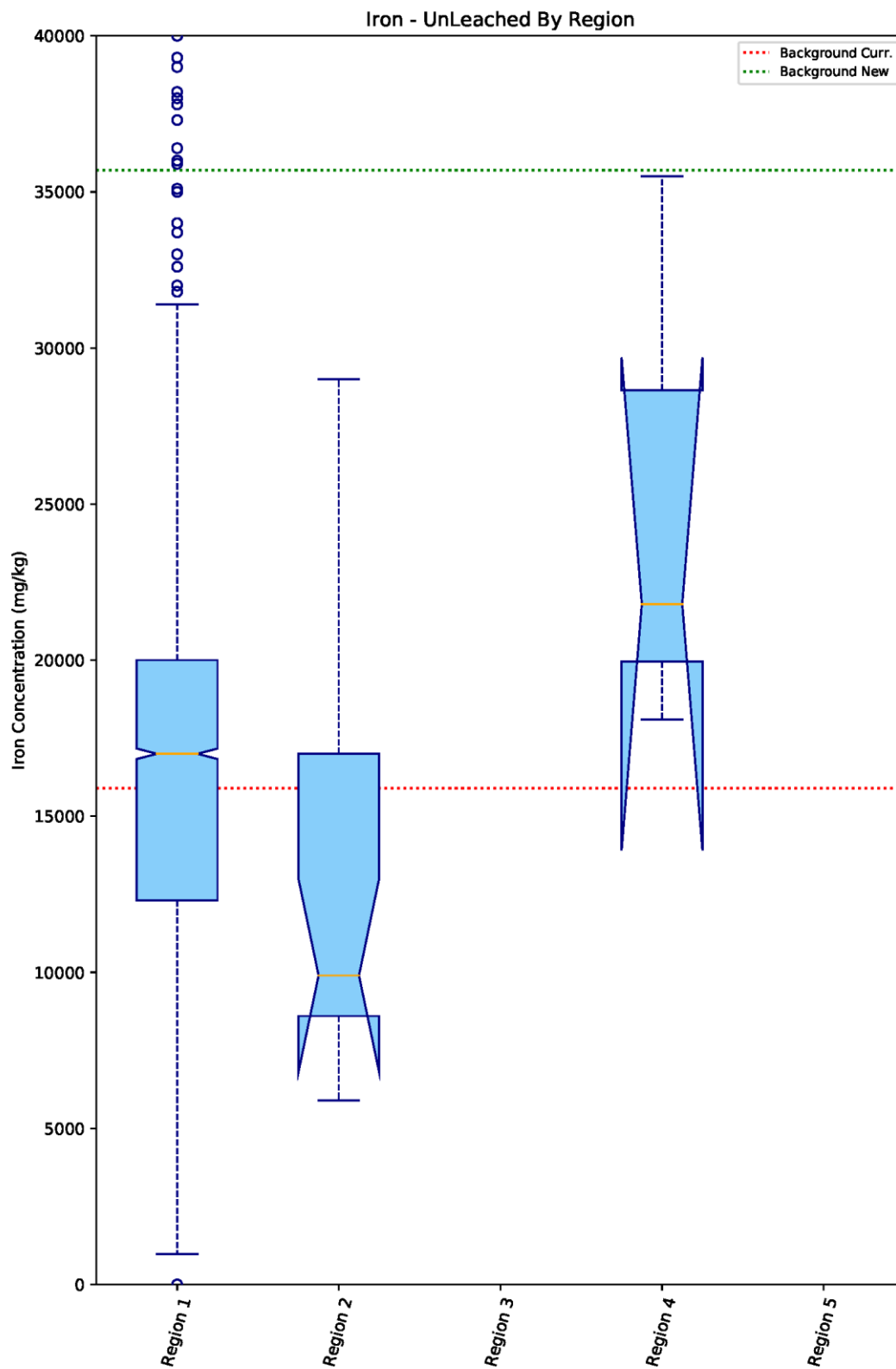


Figure 367. Boxplot of RSL copper concentrations by IDOT Region, de minimis (mg/kg)



Iron Concentration by District, page 1 of 2

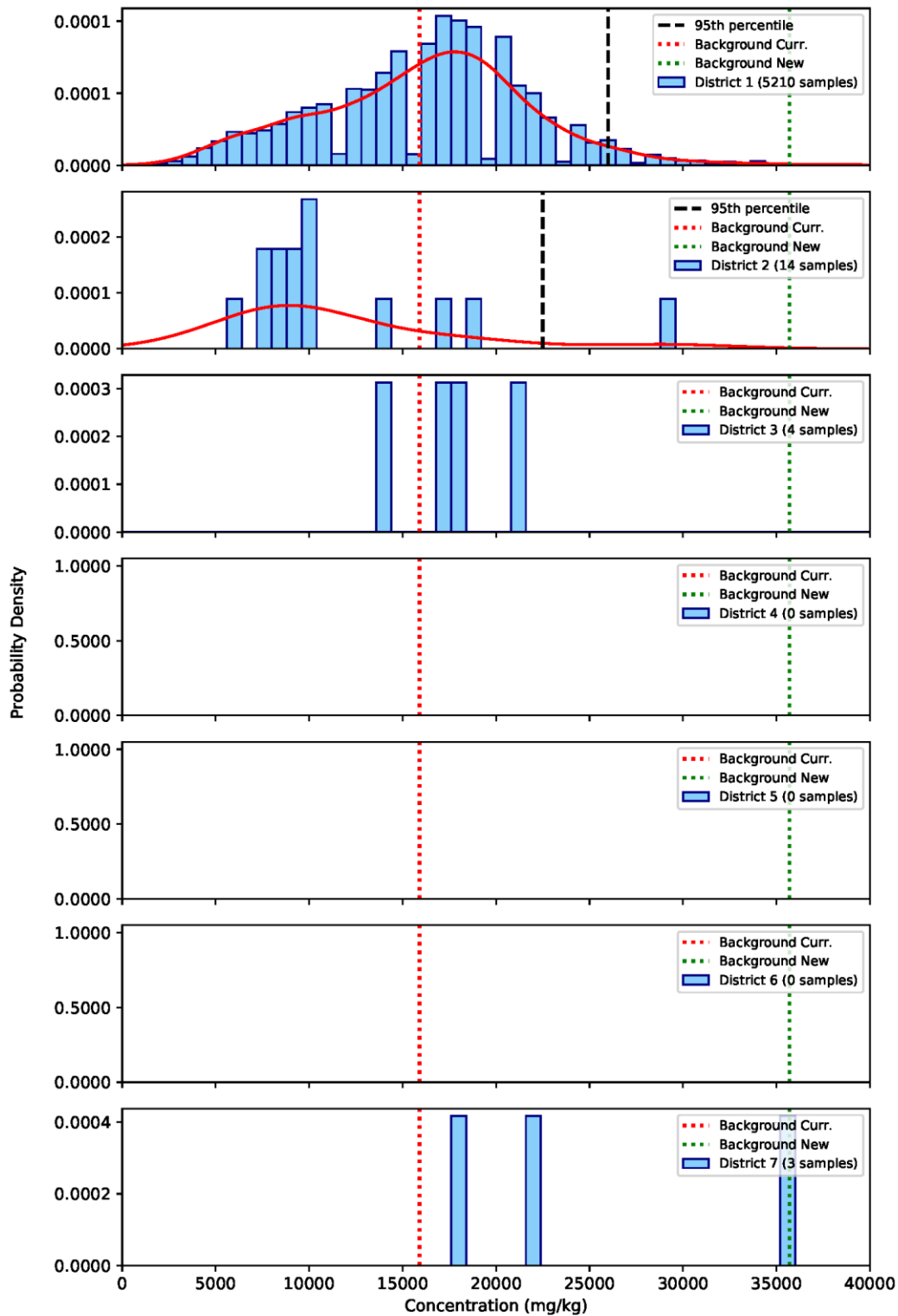


Figure 368. Histogram of RSL copper concentrations by IDOT District, de minimis (mg/kg), part 1

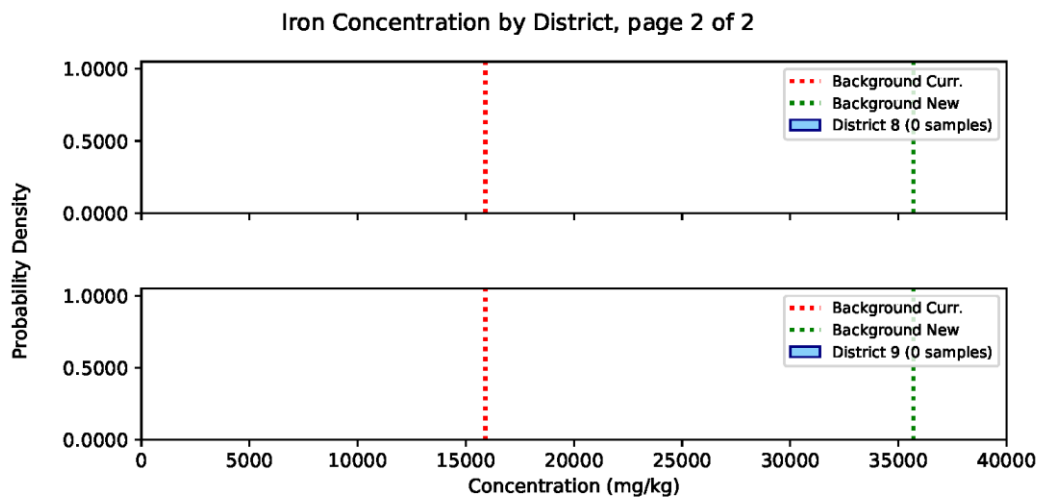


Figure 369. Histogram of RSL copper concentrations by IDOT District, de minimis (mg/kg), part 2

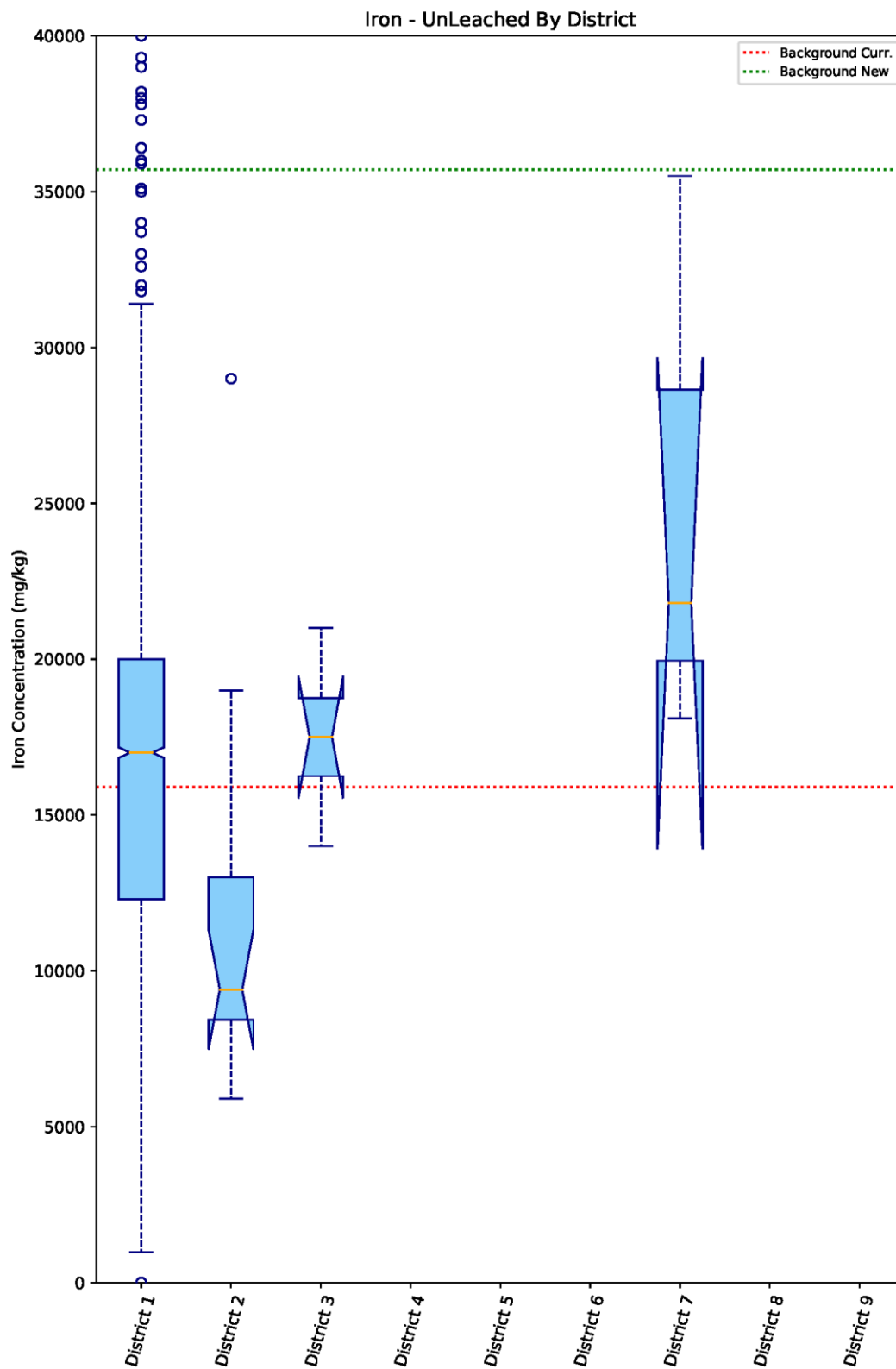


Figure 370. Boxplot of RSL copper concentrations by IDOT District, de minimis (mg/kg)

# Iron Concentration by County, page 1 of 2

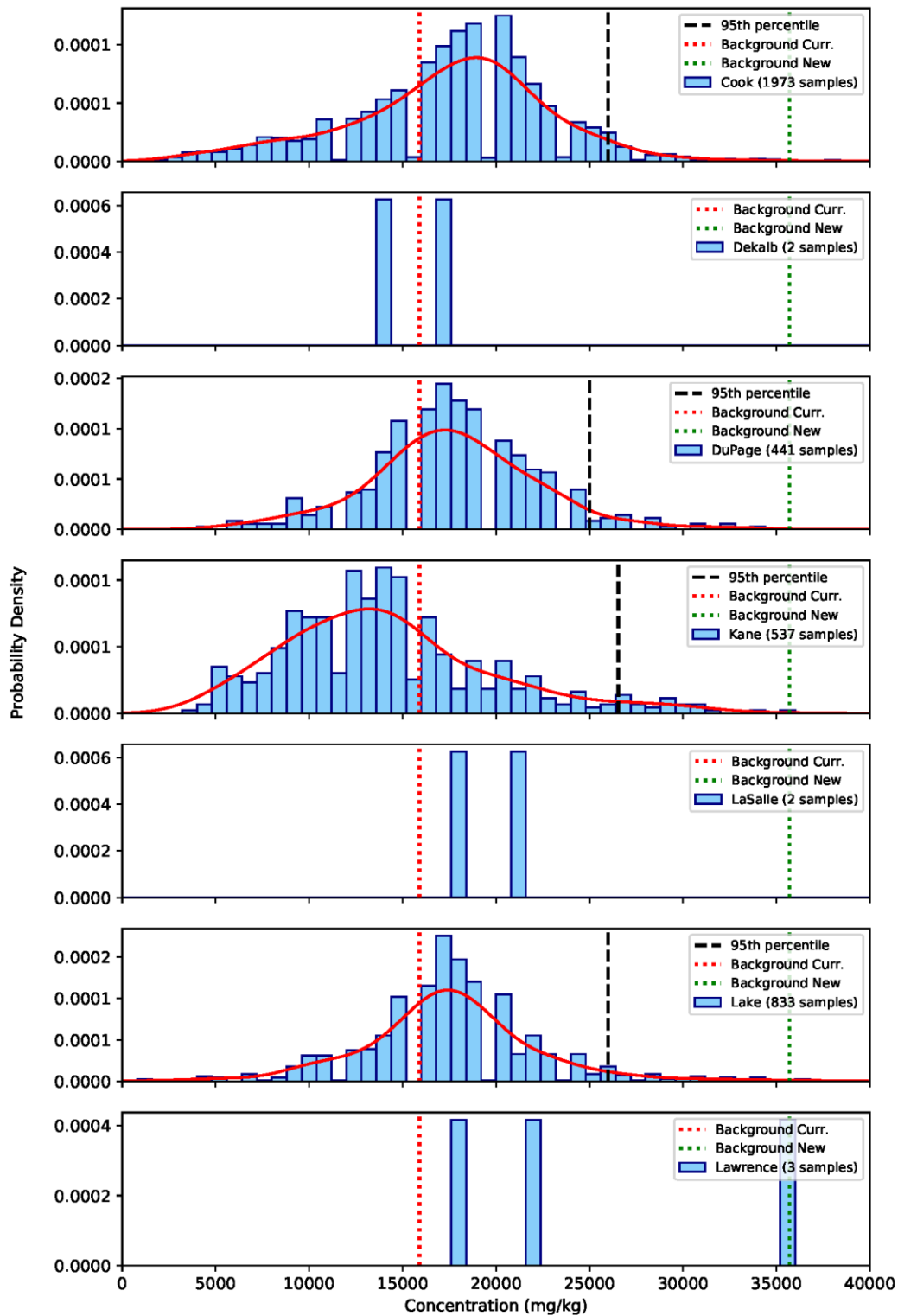


Figure 371. Histogram of RSL copper concentrations by Illinois county, de minimis (mg/kg), part 1

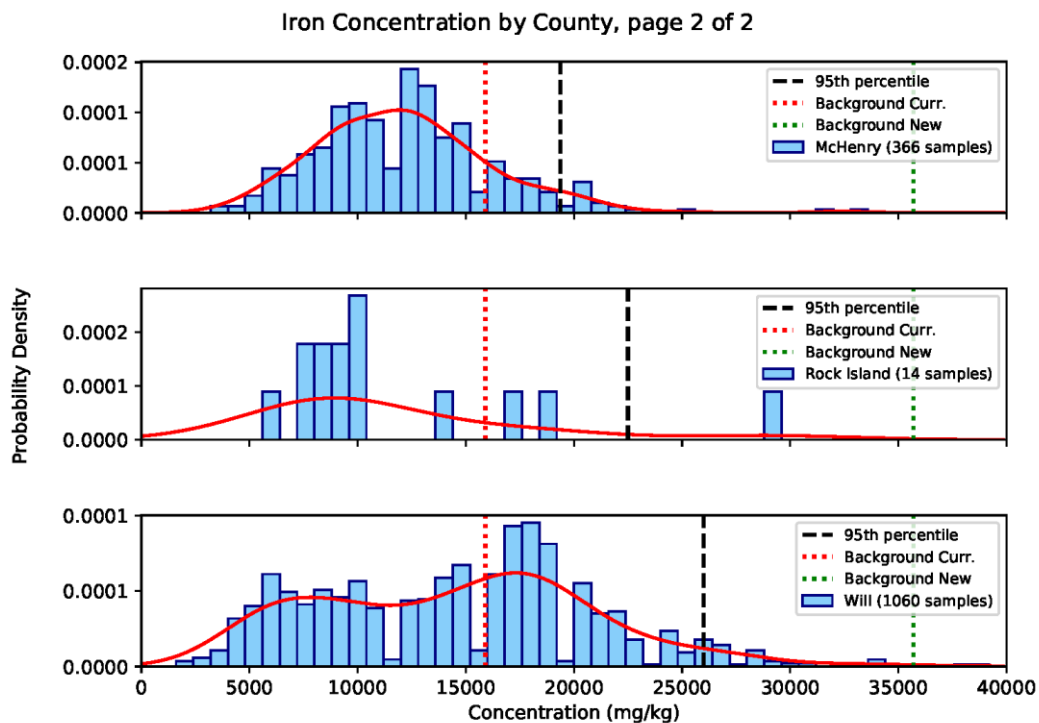


Figure 372. Histogram of RSL copper concentrations by Illinois county, de minimis (mg/kg), part 2

Iron Concentration for 95th Percentile by County: deMinimis Sites

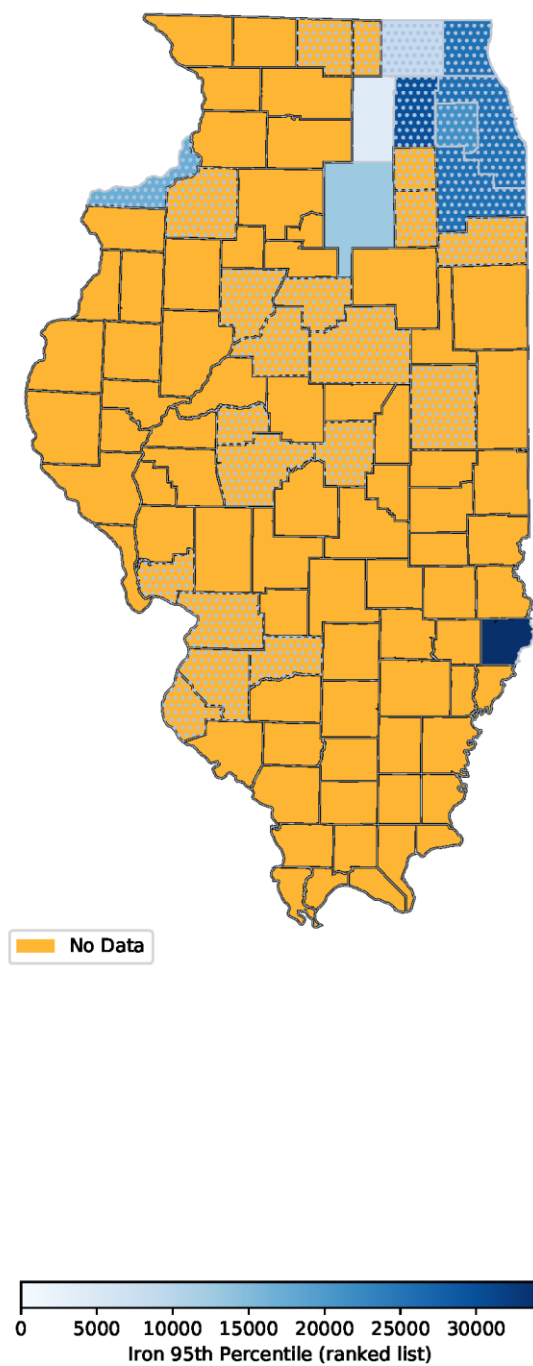


Figure 373. Map of RSL copper 95th percentile concentration by Illinois county, de minimis (mg/kg)

Number of Iron Samples by County: deMinimis Sites

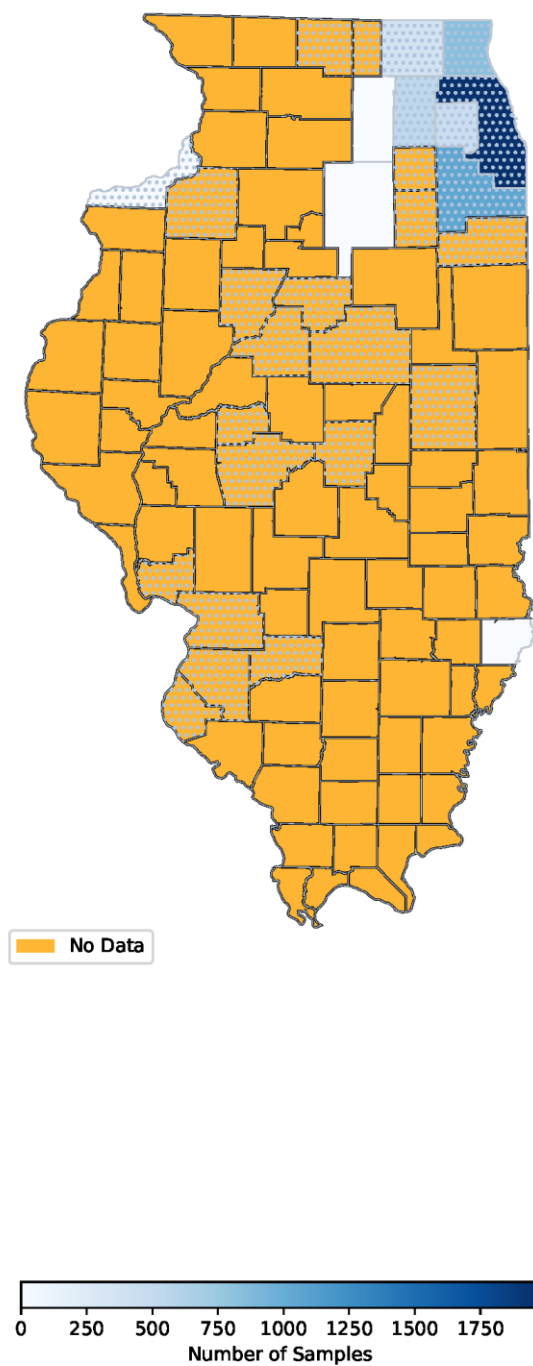
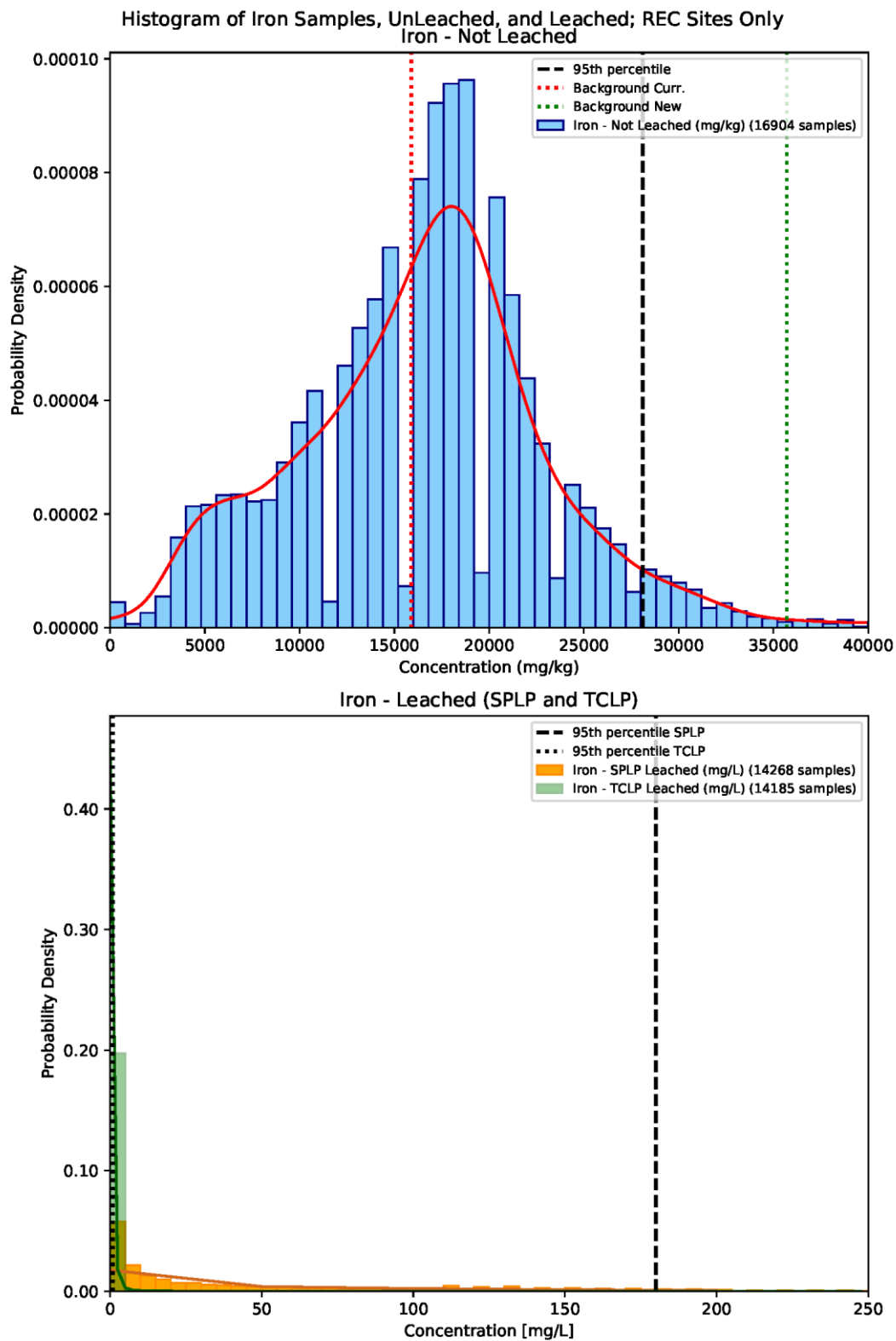


Figure 374. Map of RSL copper sample quantity by Illinois county, de minimis (mg/kg)

## **APPENDIX K. ANALYTE ANALYSIS: IRON**

### **K.1 IRON REC**





**Figure 375. Histogram of RSL iron concentrations, REC (mg/kg)**

Iron Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

Iron Concentration by Region, page 1 of 1

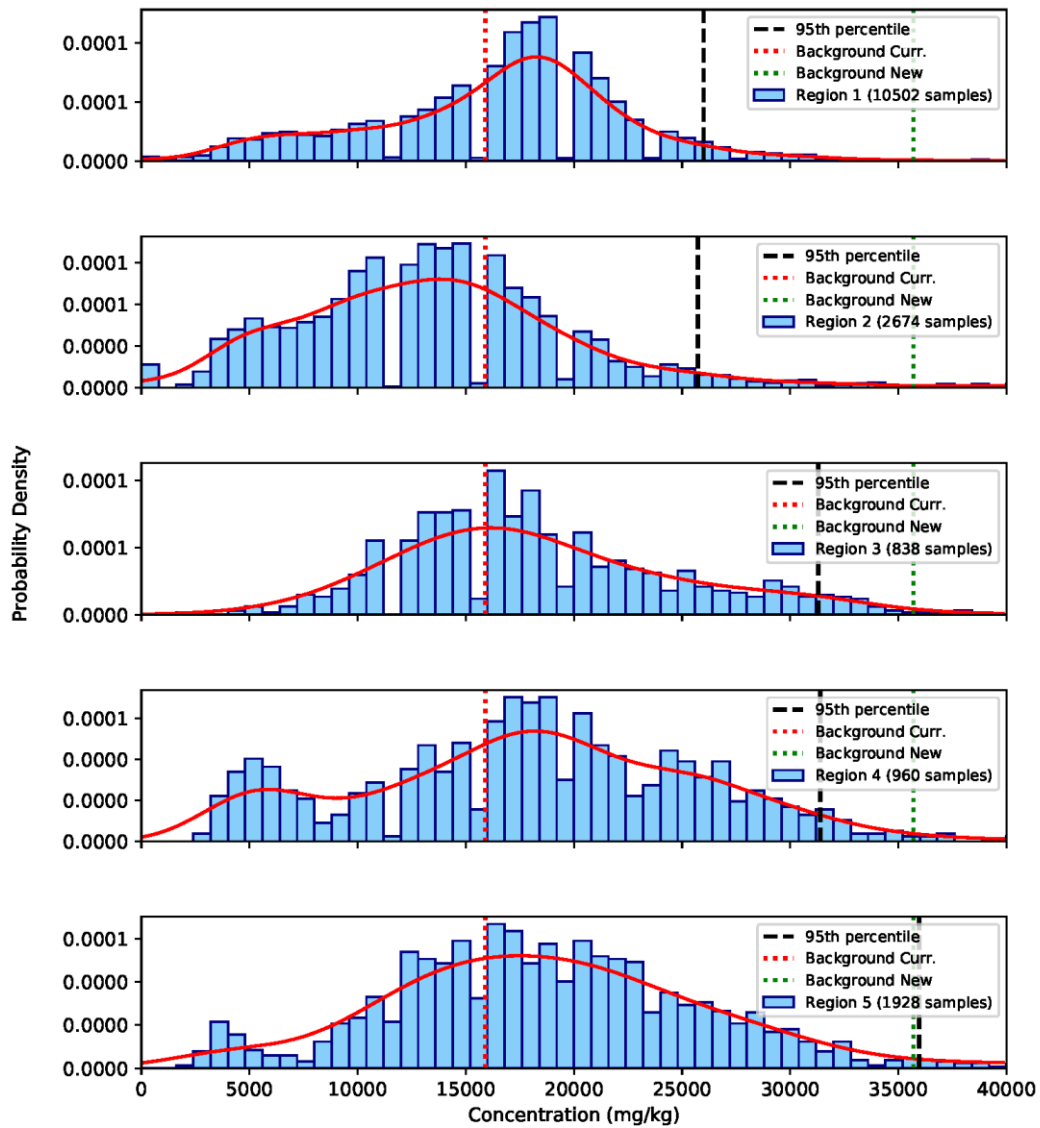


Figure 376. Histogram of RSL iron concentrations by IDOT Region, REC (mg/kg)

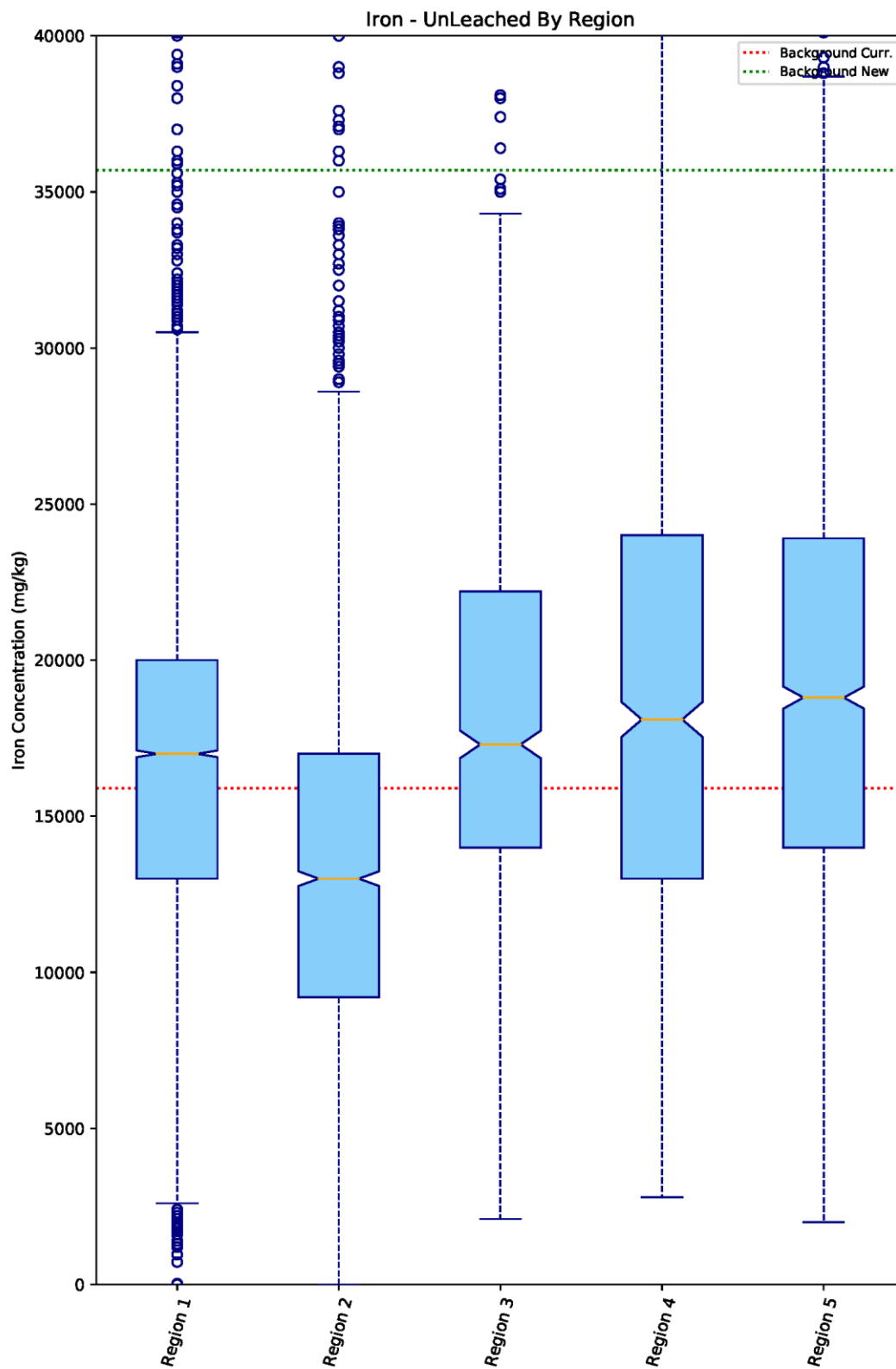


Figure 377. Boxplot of RSL iron concentrations by IDOT Region, REC (mg/kg)

# Iron Concentration by District, page 1 of 2

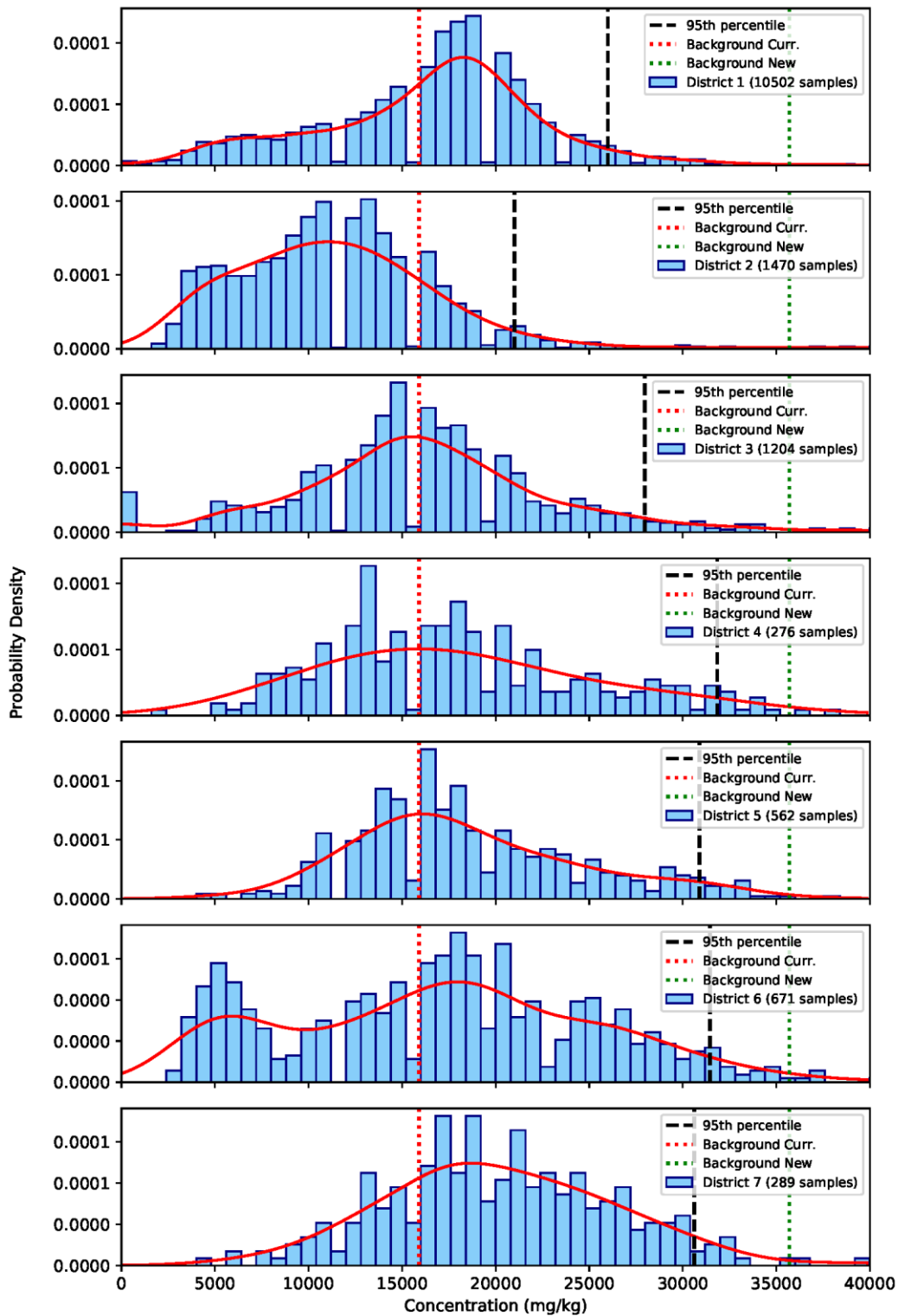


Figure 378. Histogram of RSL iron concentrations by IDOT District, REC (mg/kg), part 1

Iron Concentration by District, page 2 of 2

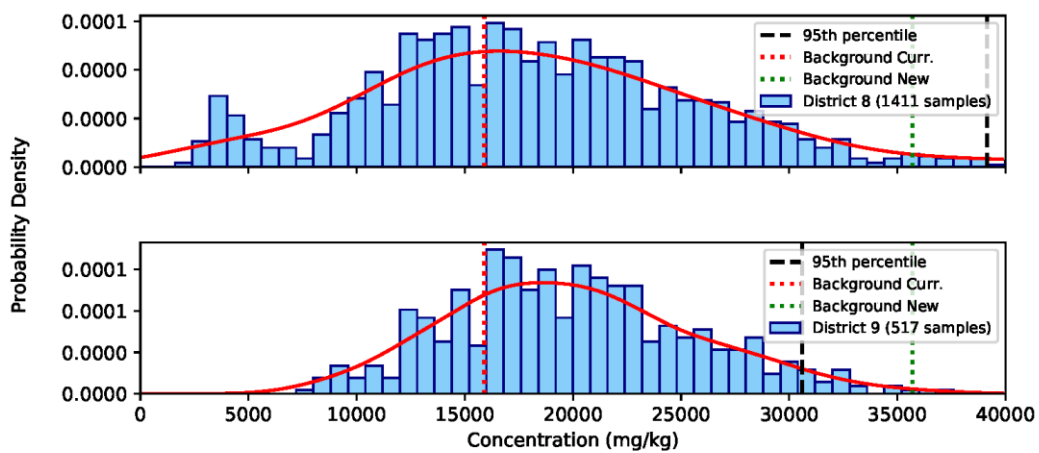


Figure 379. Histogram of RSL iron concentrations by IDOT District, REC (mg/kg), part 2

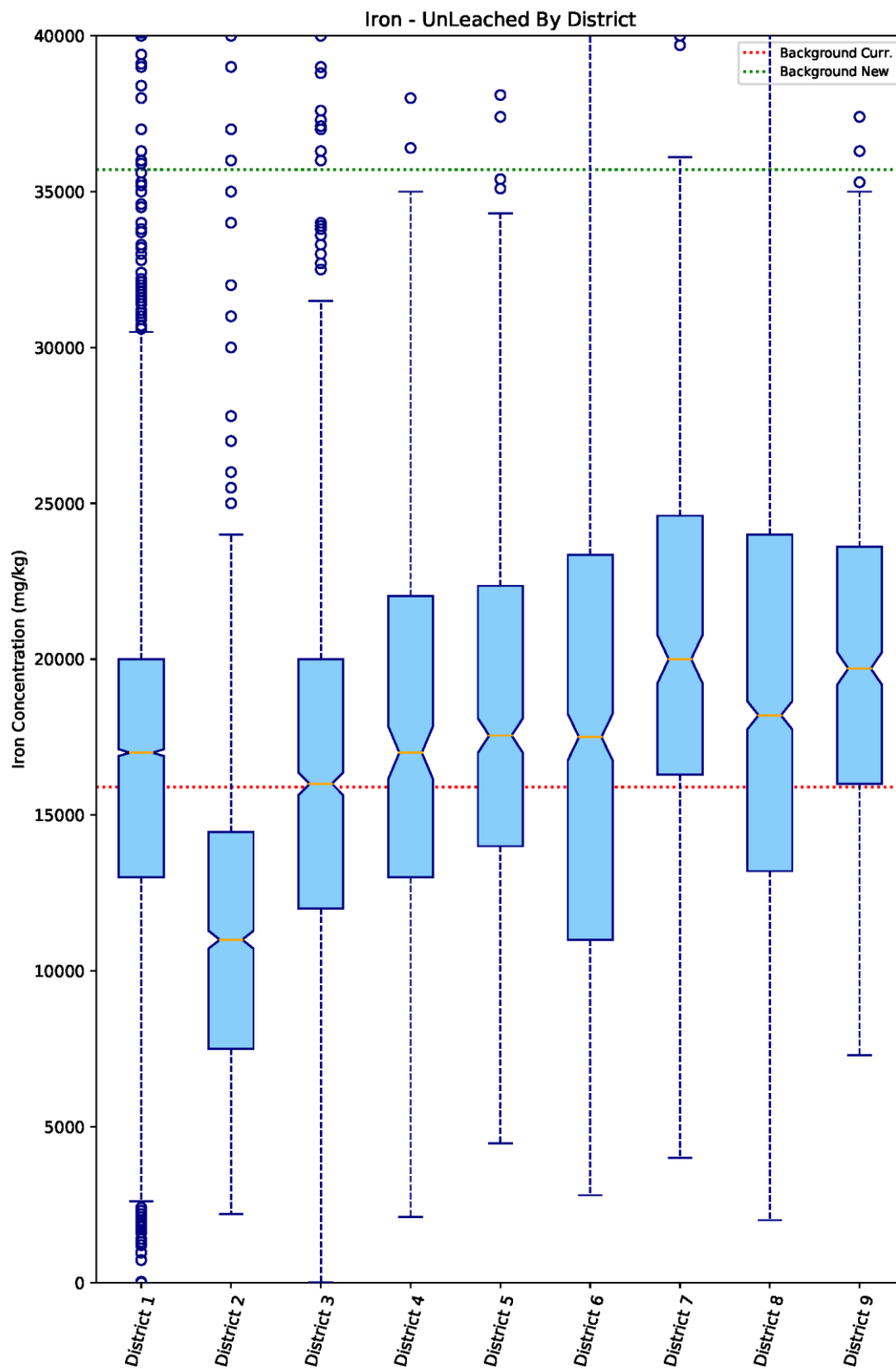


Figure 380. Boxplot of RSL iron concentrations by IDOT District, REC (mg/kg)

# Iron Concentration by County, page 1 of 10

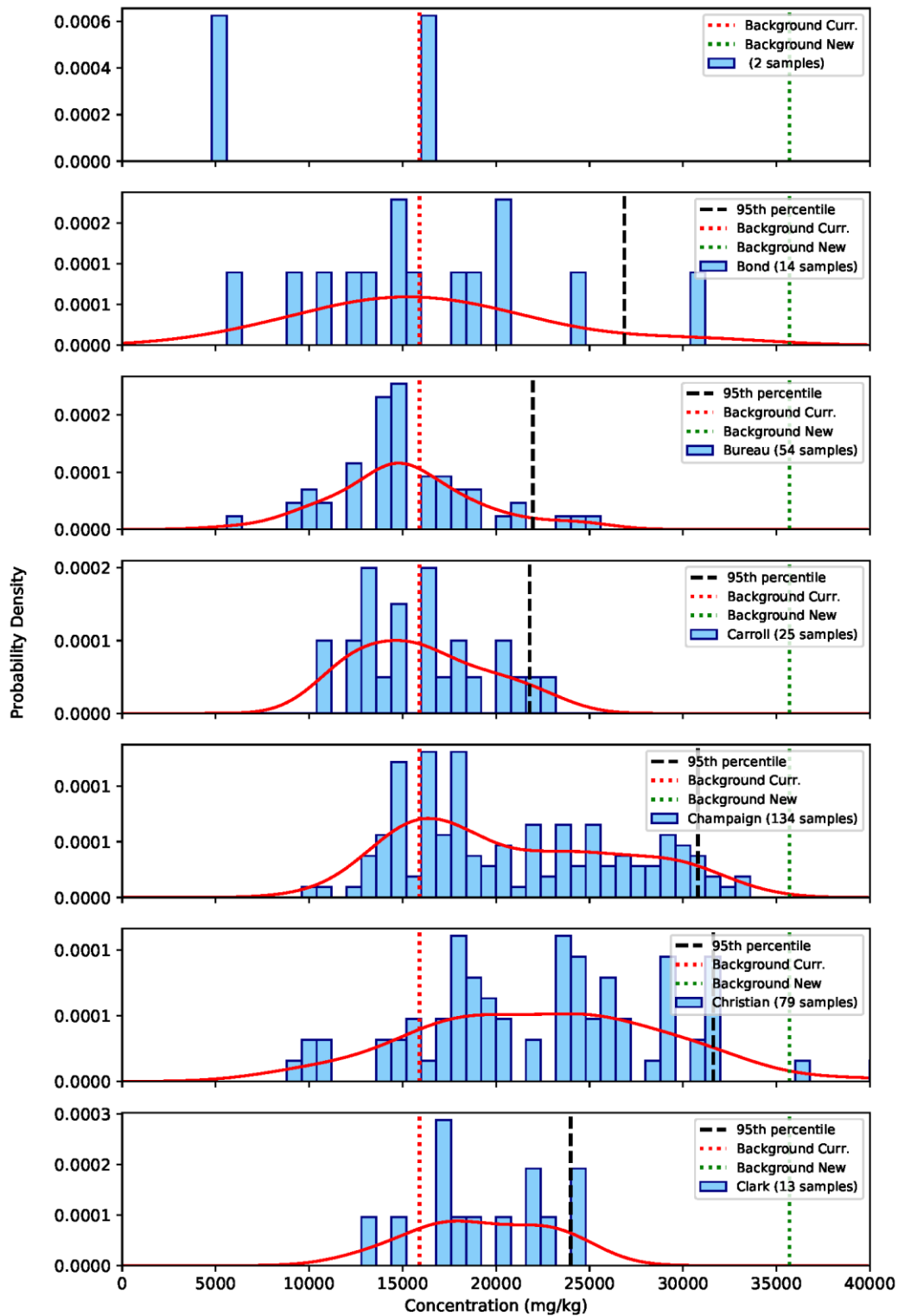


Figure 381. Histogram of RSL iron concentrations by Illinois county, REC (mg/kg), part 1



Iron Concentration by County, page 2 of 10

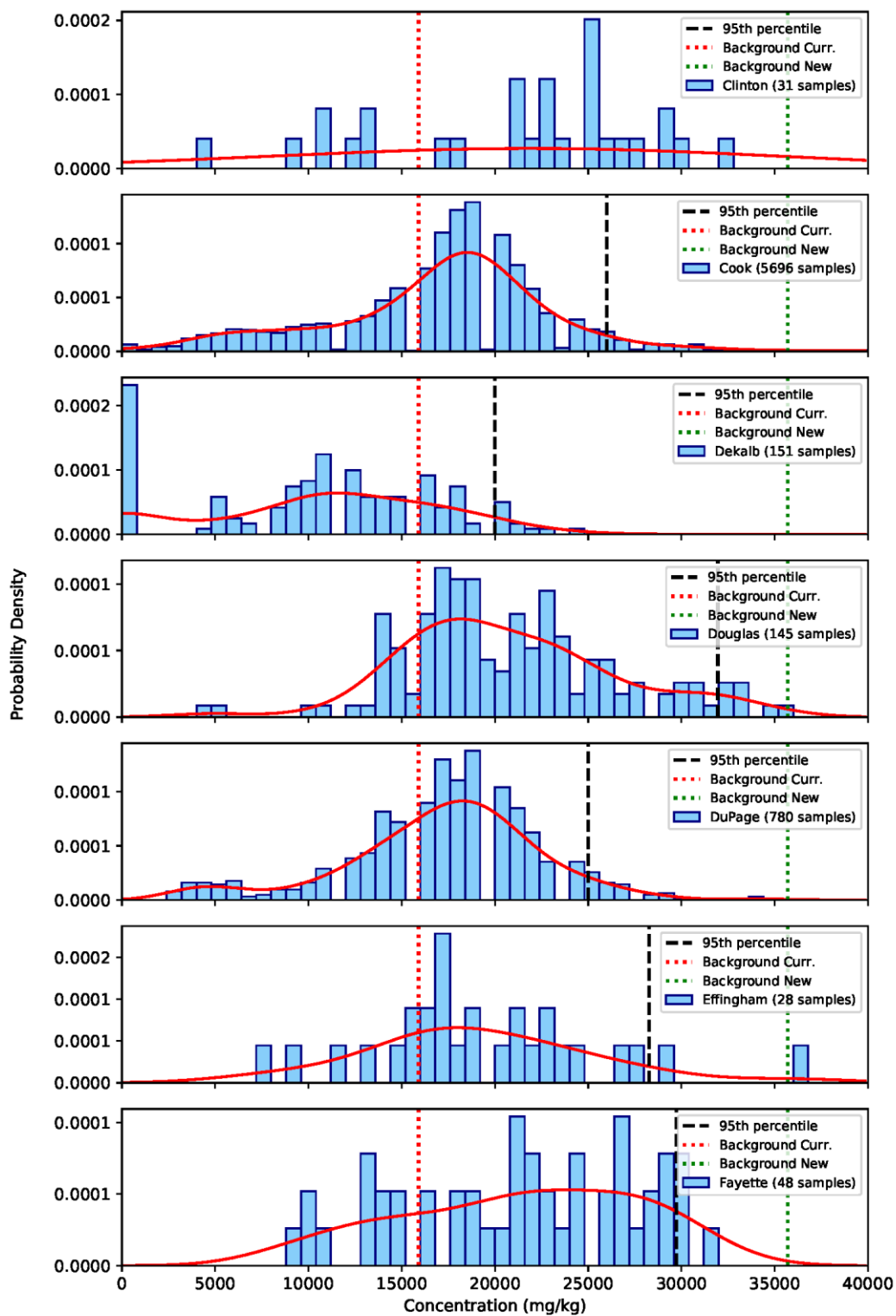


Figure 382. Histogram of RSL iron concentrations by Illinois county, REC (mg/kg), part 2

# Iron Concentration by County, page 3 of 10

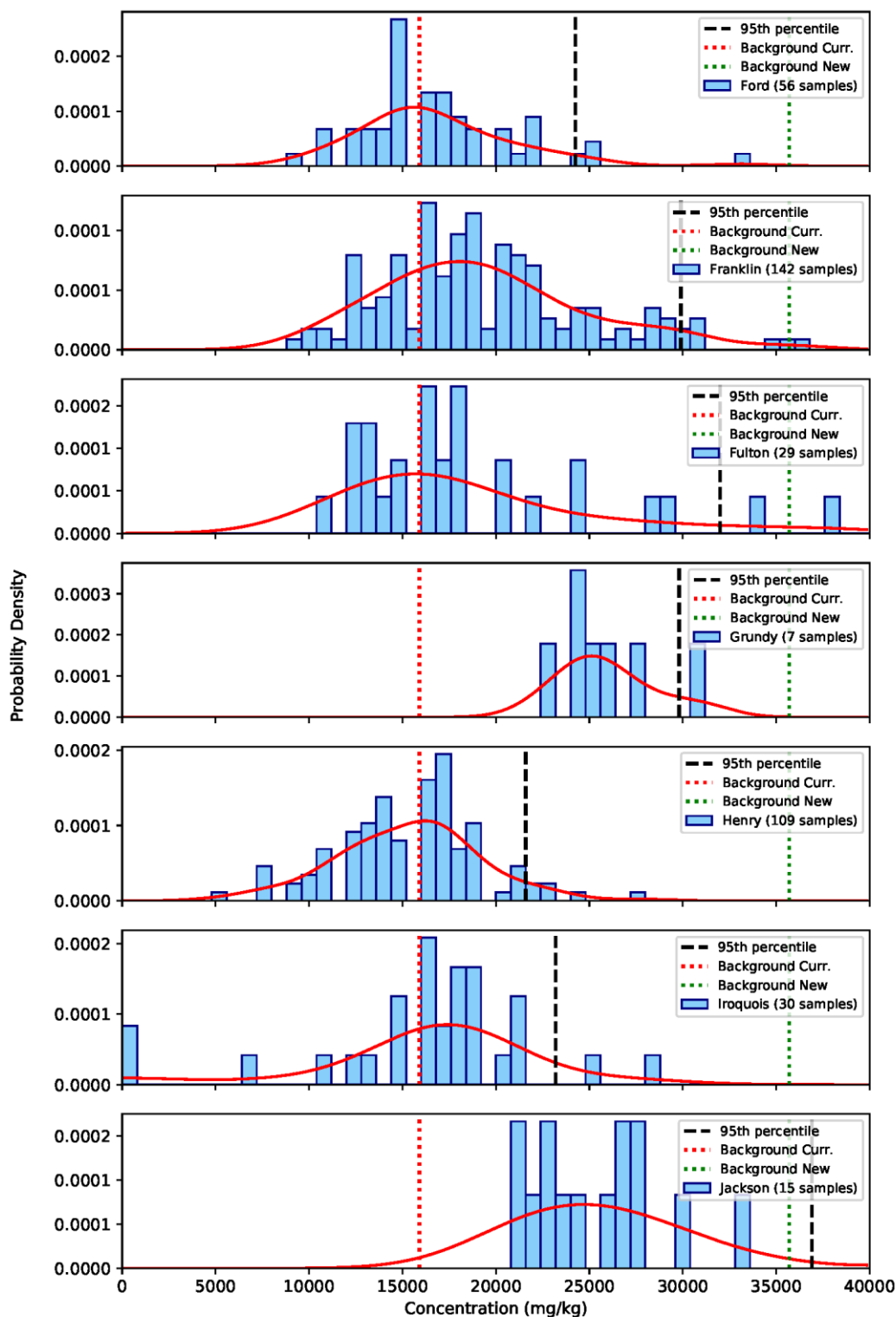


Figure 383. Histogram of RSL iron concentrations by Illinois county, REC (mg/kg), part 3

Iron Concentration by County, page 4 of 10

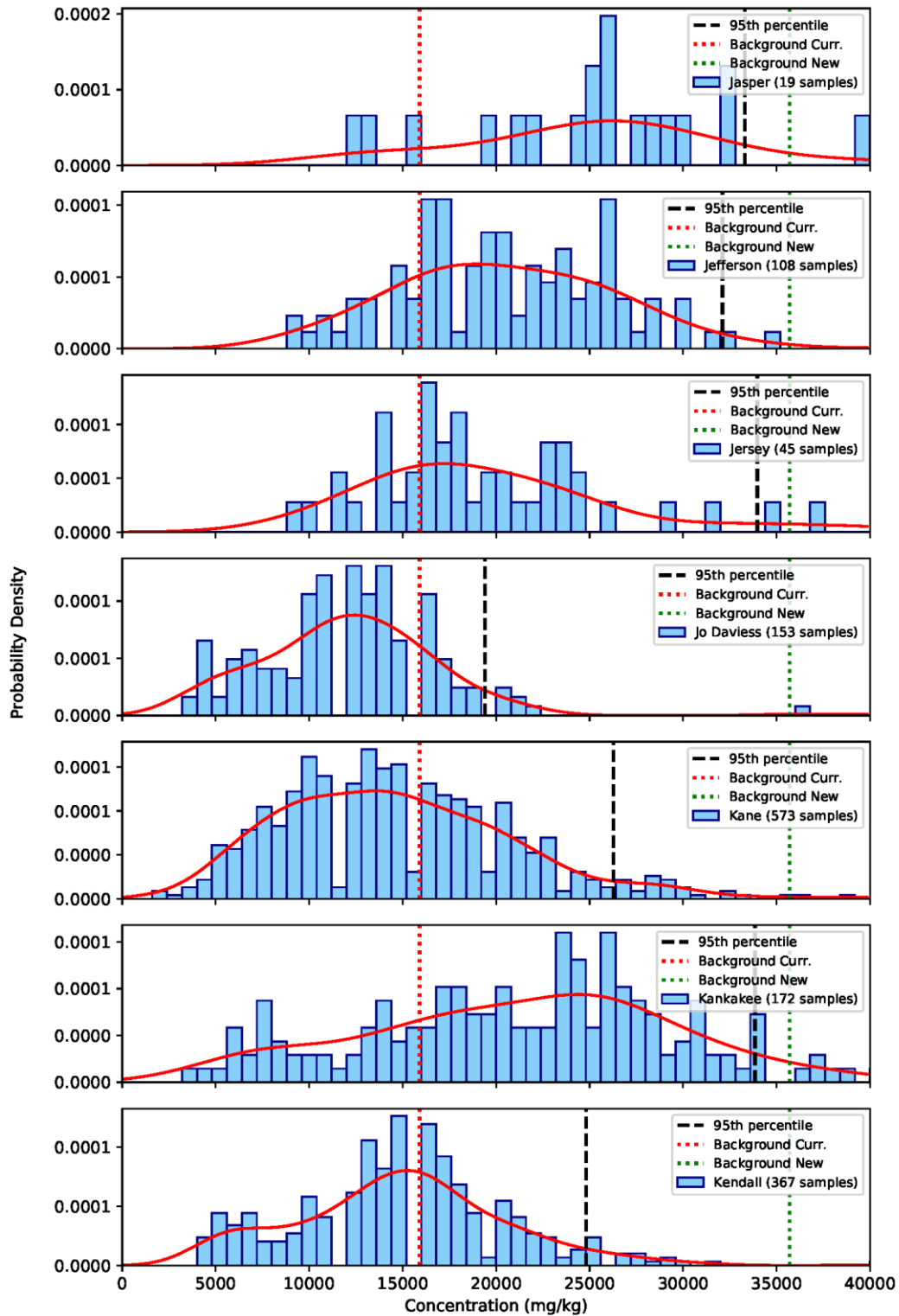


Figure 384. Histogram of RSL iron concentrations by Illinois county, REC (mg/kg), part 4

Iron Concentration by County, page 5 of 10

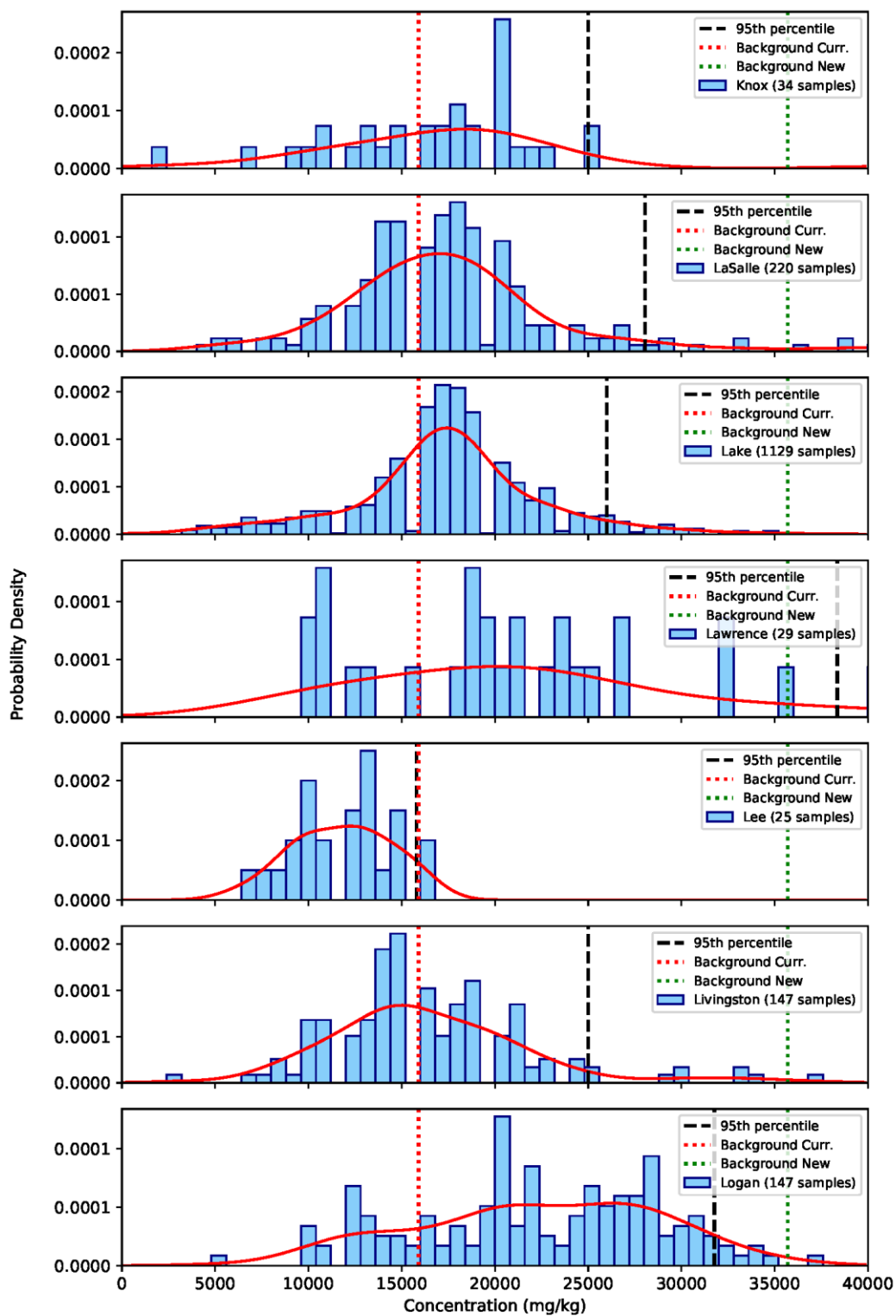


Figure 385. Histogram of RSL iron concentrations by Illinois county, REC (mg/kg), part 5

# Iron Concentration by County, page 6 of 10

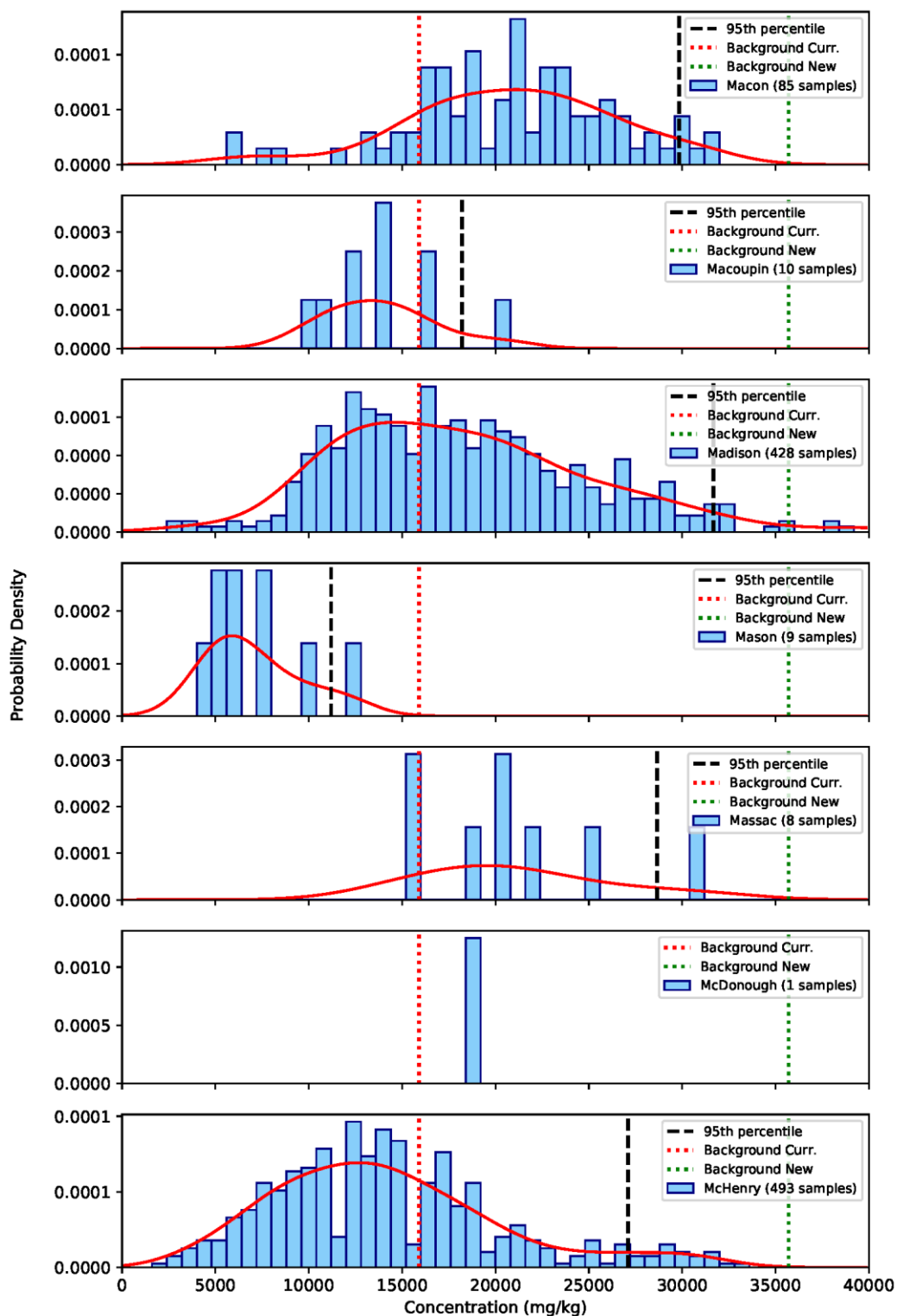


Figure 386. Histogram of RSL iron concentrations by Illinois county, REC (mg/kg), part 6

Iron Concentration by County, page 7 of 10

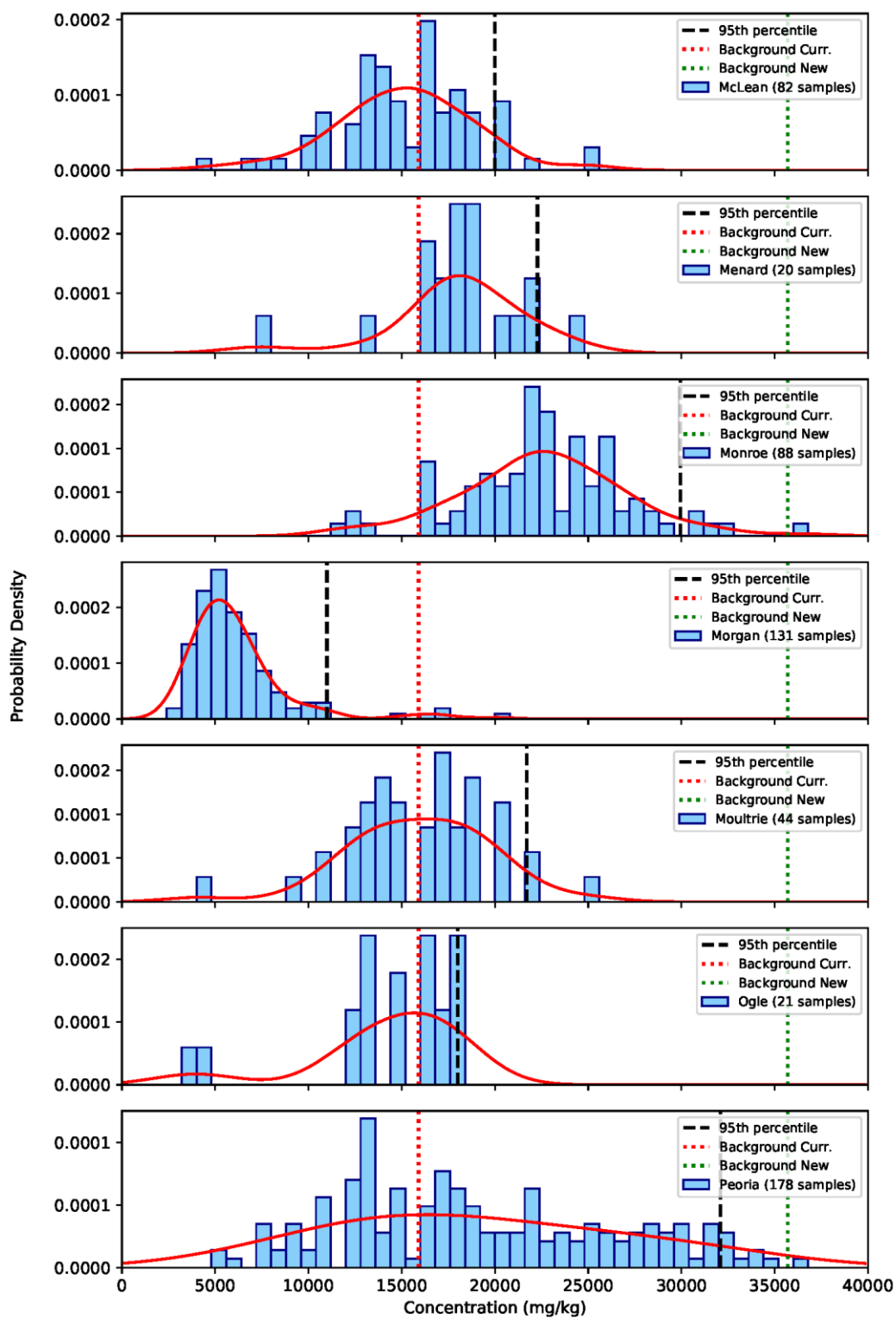


Figure 387. Histogram of RSL iron concentrations by Illinois county, REC (mg/kg), part 7

Iron Concentration by County, page 8 of 10

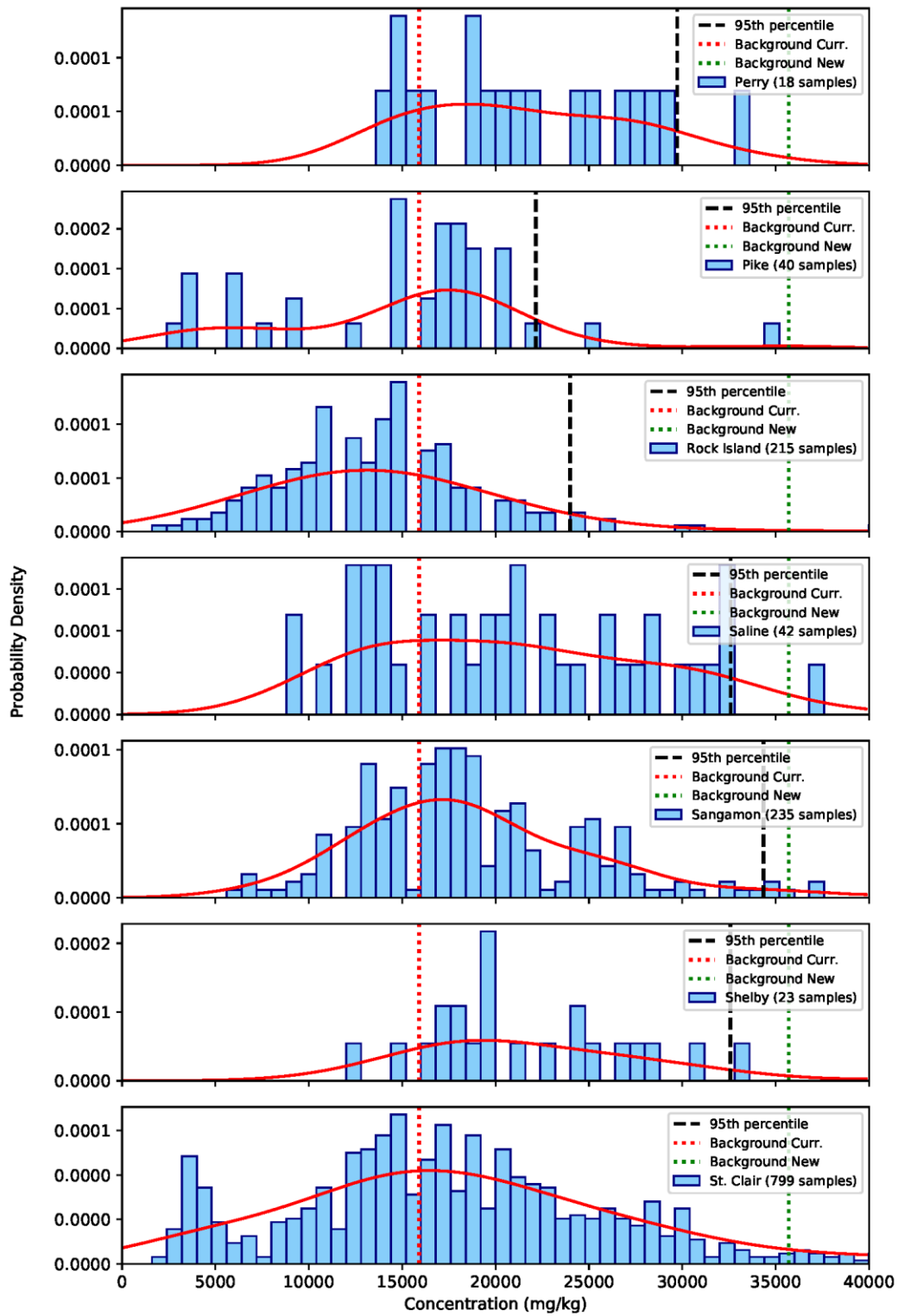


Figure 388. Histogram of RSL iron concentrations by Illinois county, REC (mg/kg), part 8

Iron Concentration by County, page 9 of 10

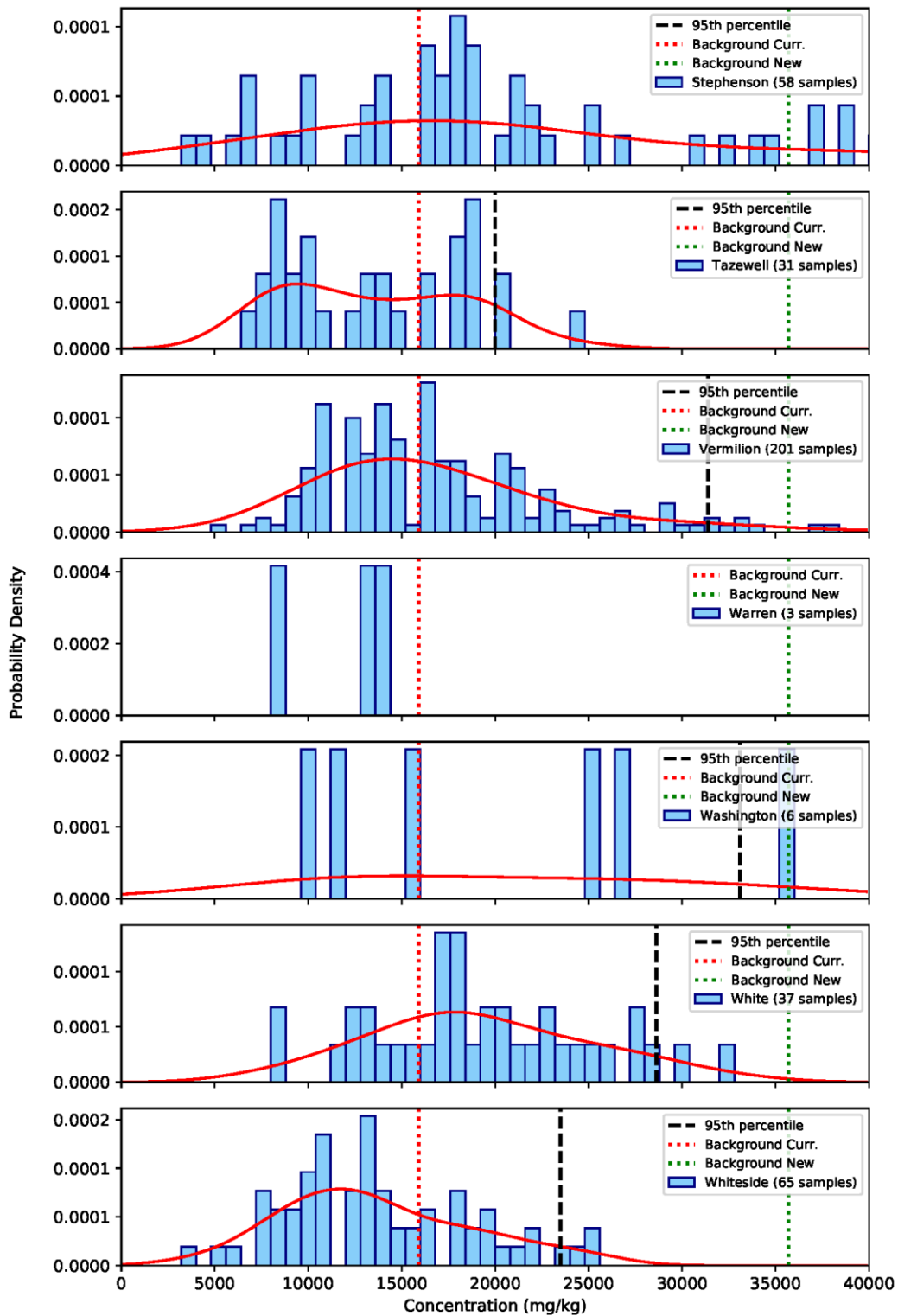


Figure 389. Histogram of RSL iron concentrations by Illinois county, REC (mg/kg), part 9



Iron Concentration by County, page 10 of 10

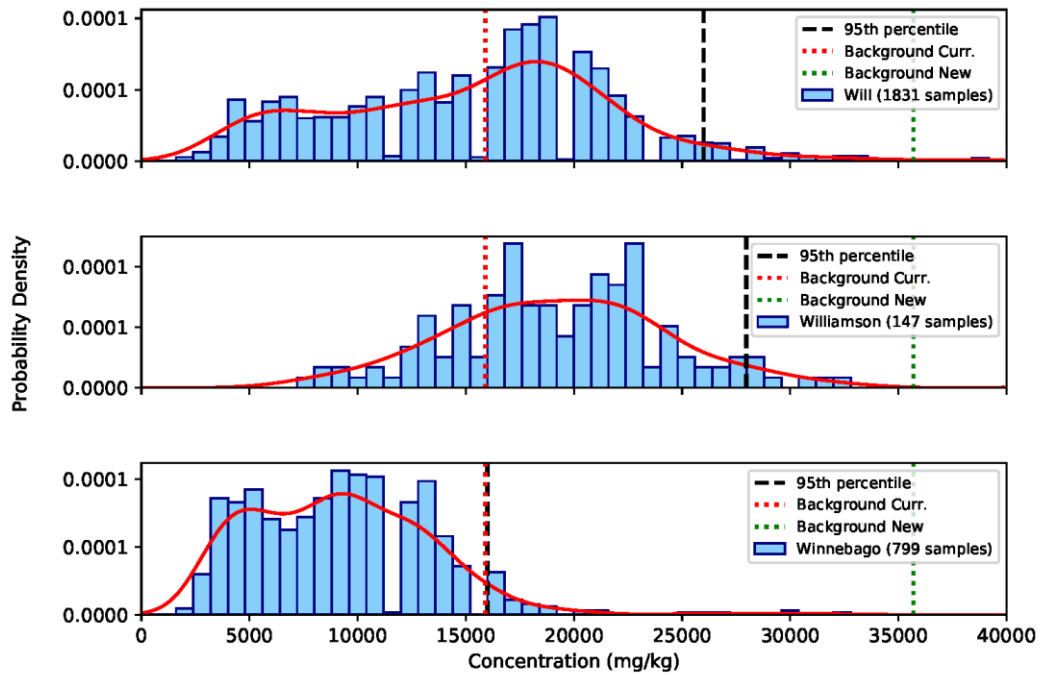


Figure 390. Histogram of RSL iron concentrations by Illinois county, REC (mg/kg), part 10

Iron Concentration for 95th Percentile by County: REC Sites

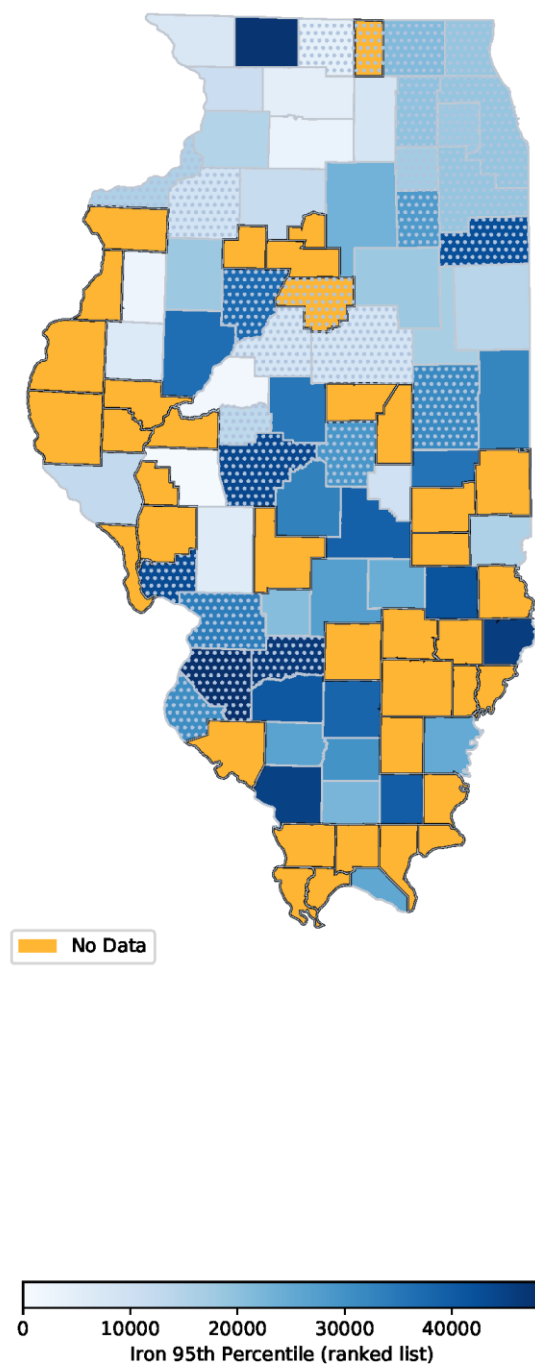
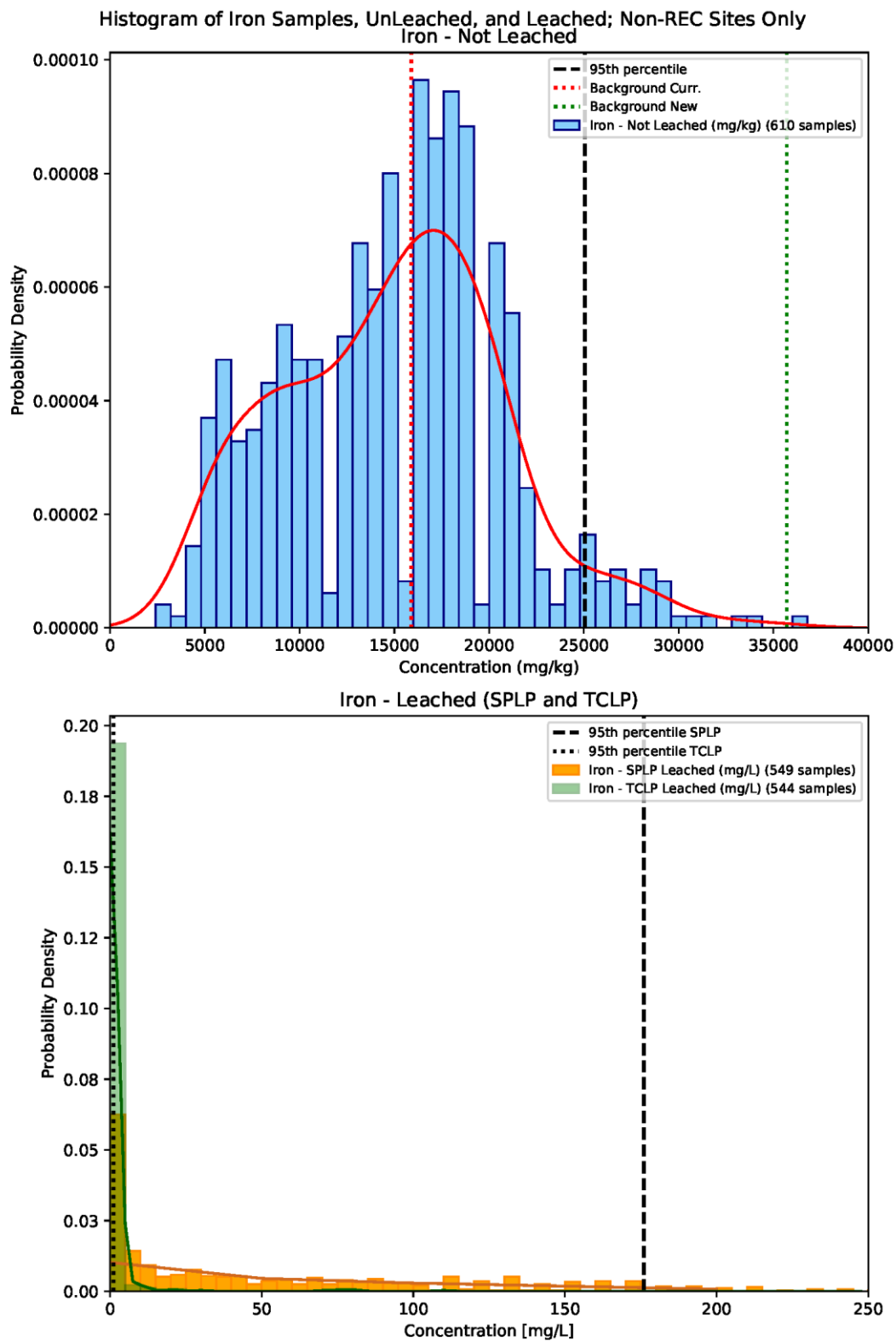


Figure 391. Map of RSL iron 95th percentile concentration by Illinois county, REC (mg/kg)

0 1000 2000 3000 4000 5000  
Number of Samples

461

## K.2 IRON NON-REC



**Figure 393. Histogram of RSL iron concentrations, Non-REC (mg/kg)**

Iron Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

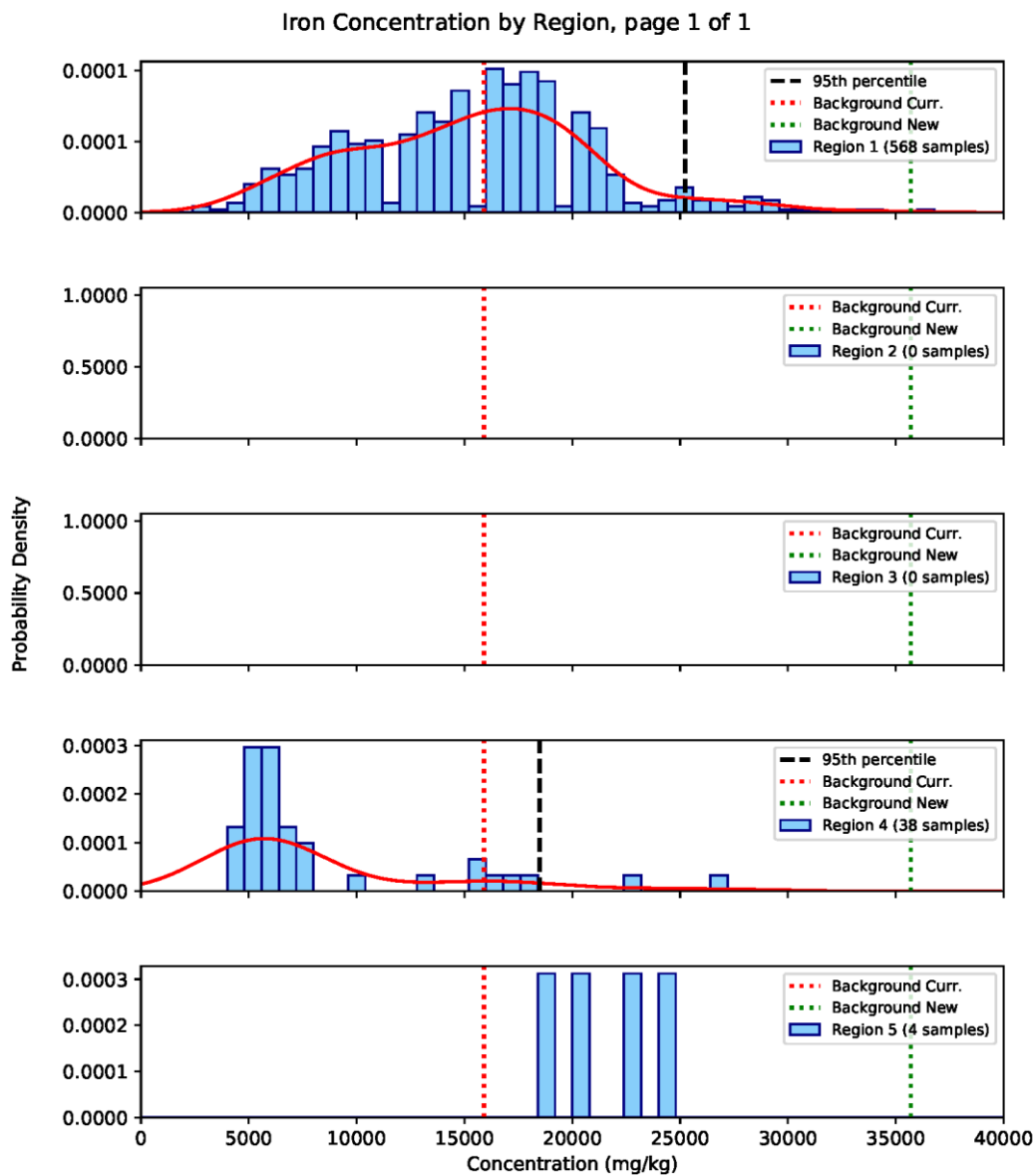


Figure 394. Histogram of RSL iron concentrations by IDOT Region, Non-REC (mg/kg)

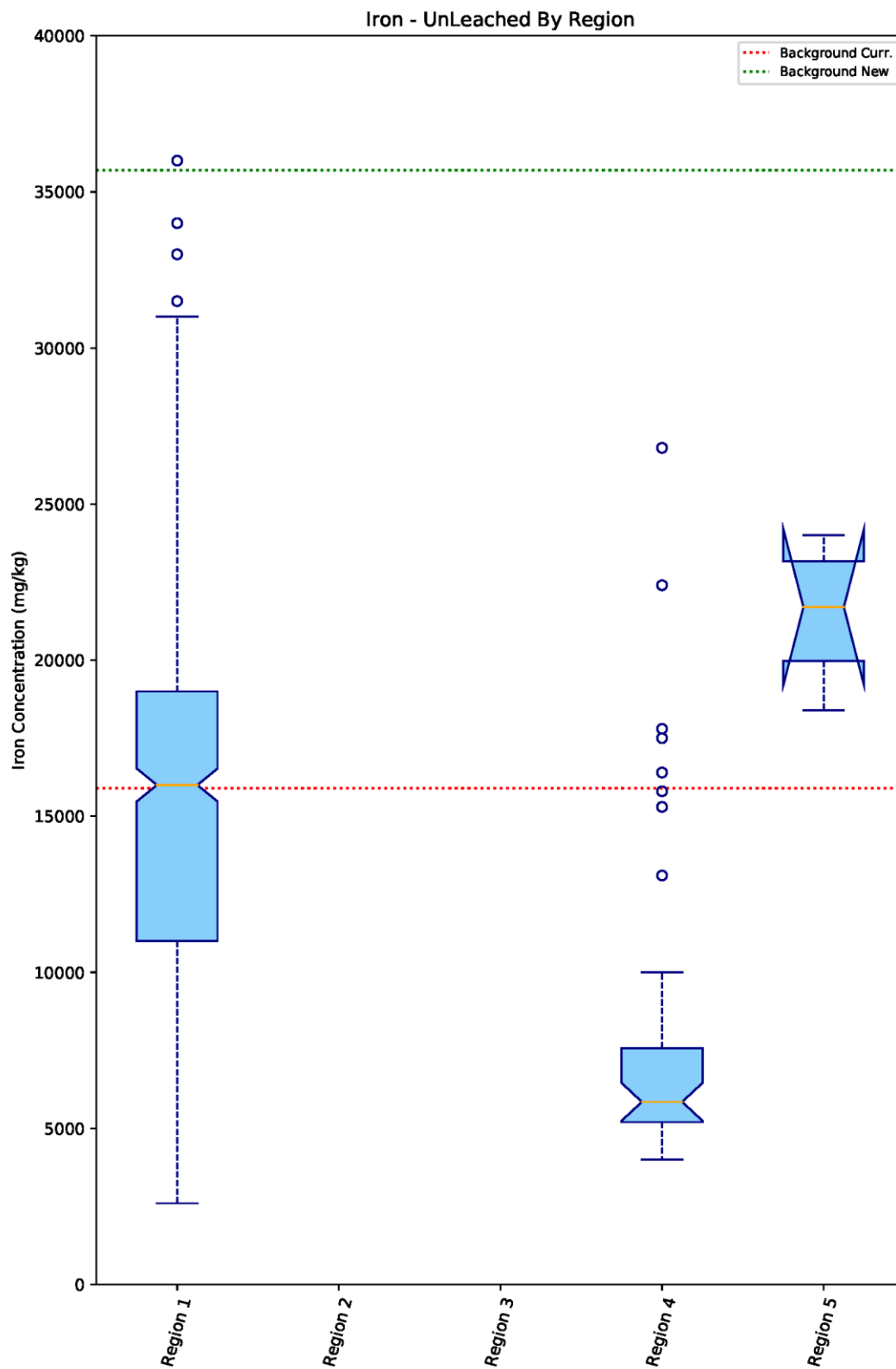


Figure 395. Boxplot of RSL iron concentrations by IDOT Region, Non-REC (mg/kg)



# Iron Concentration by District, page 1 of 2

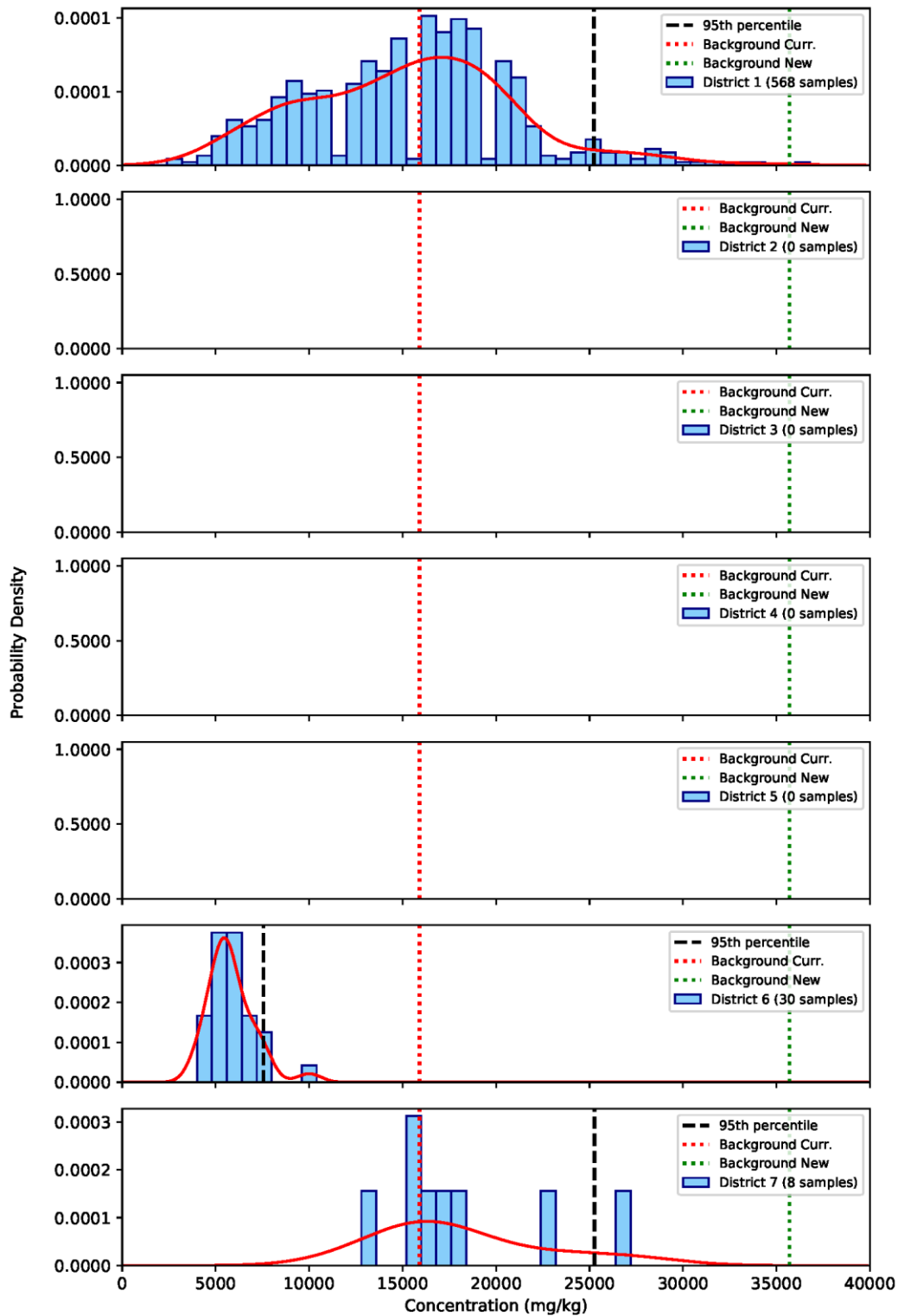


Figure 396. Histogram of RSL iron concentrations by IDOT District, Non-REC (mg/kg), part 1

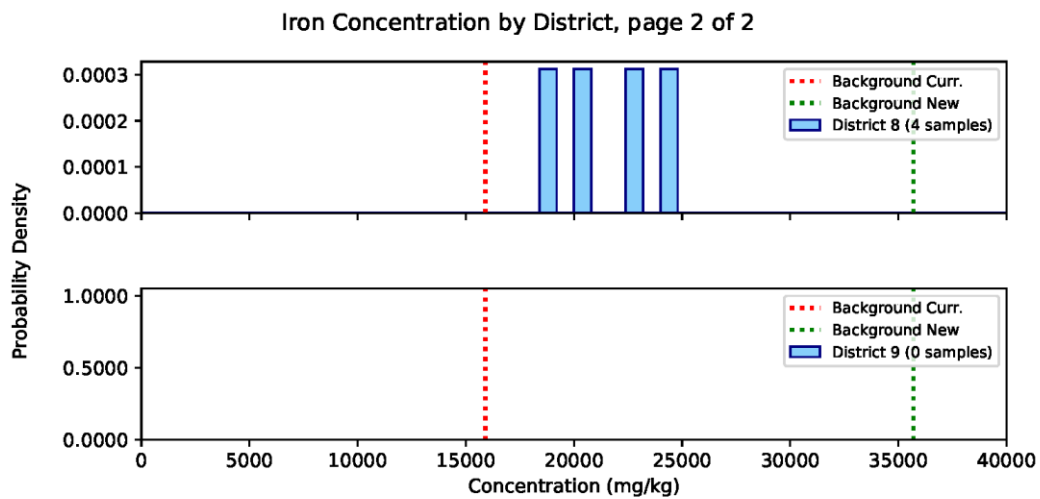
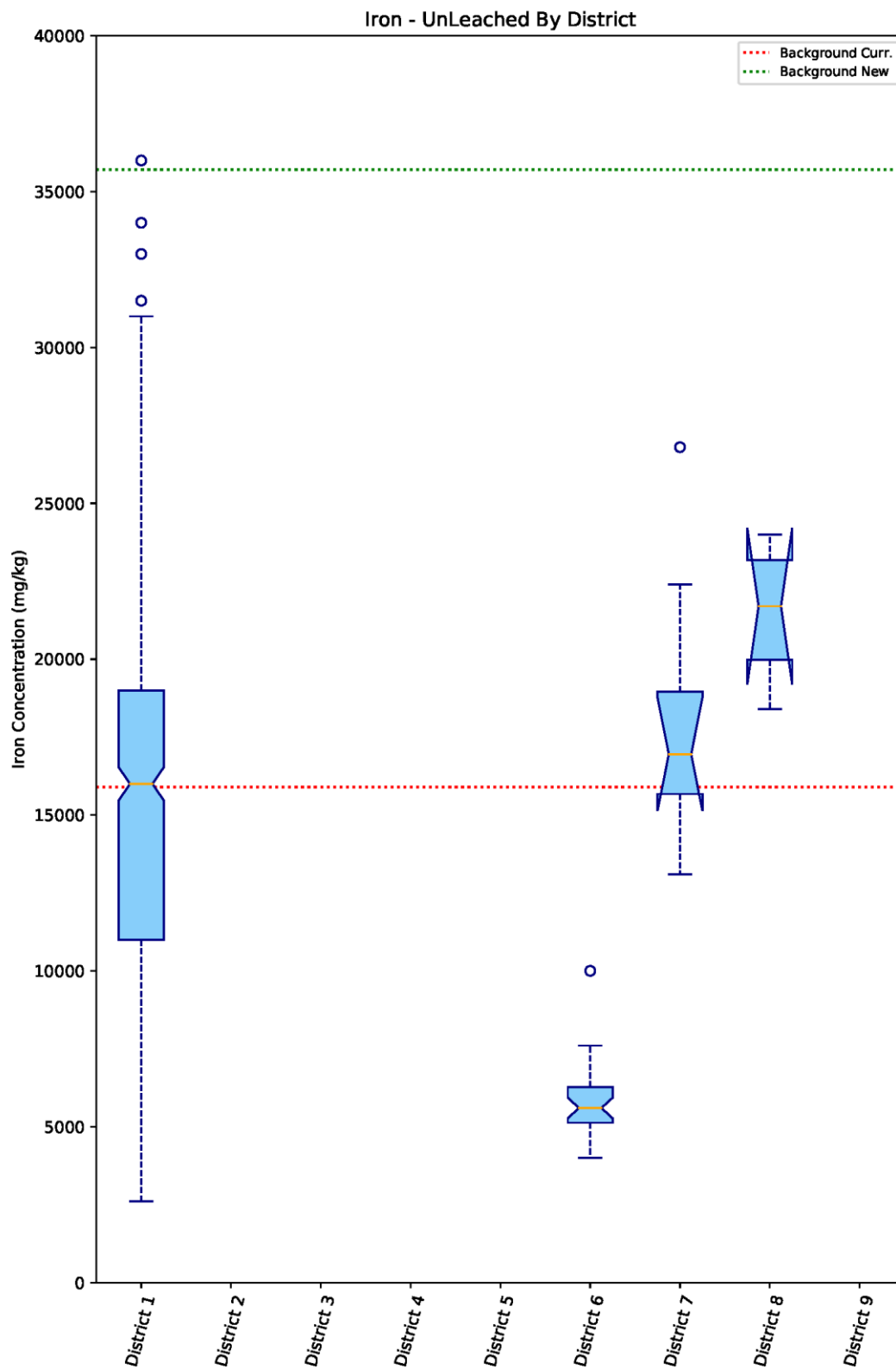


Figure 397. Histogram of RSL iron concentrations by IDOT District, Non-REC (mg/kg), part 2



**Figure 398. Boxplot of RSL iron concentrations by IDOT District, Non-REC (mg/kg)**

# Iron Concentration by County, page 1 of 2

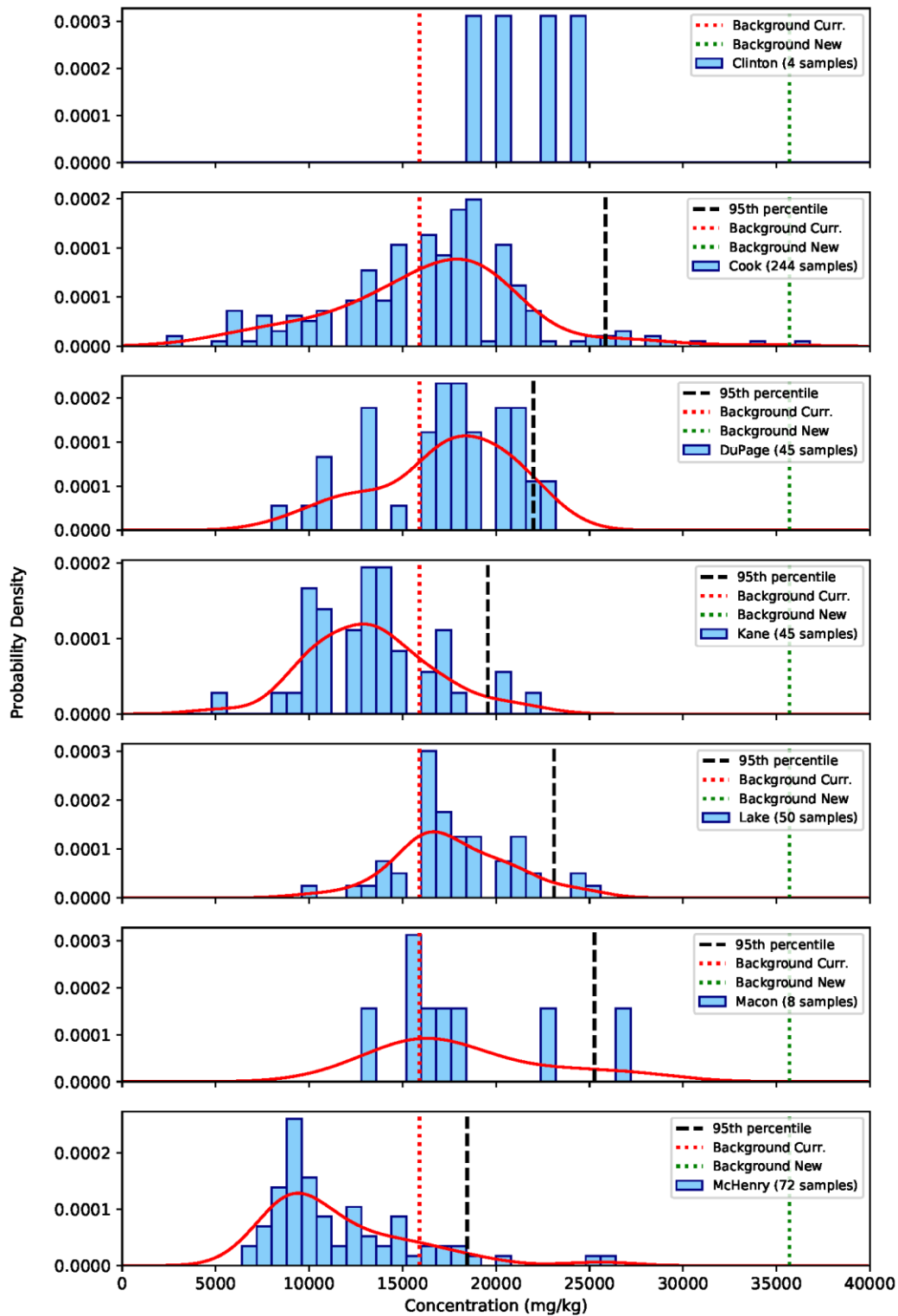


Figure 399. Histogram of RSL iron concentrations by Illinois county, Non-REC (mg/kg), part 1

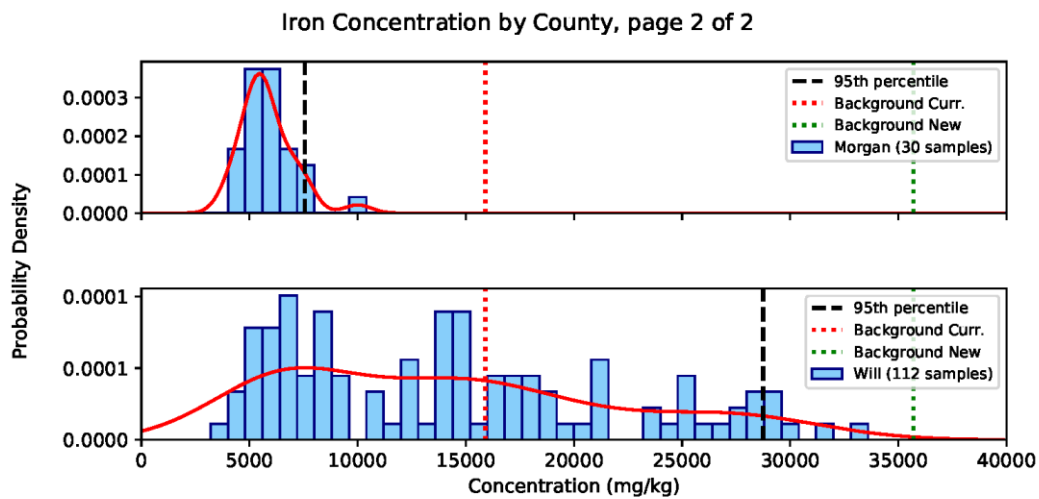


Figure 400. Histogram of RSL iron concentrations by Illinois county, Non-REC (mg/kg), part 2

Iron Concentration for 95th Percentile by County: Non-REC Sites

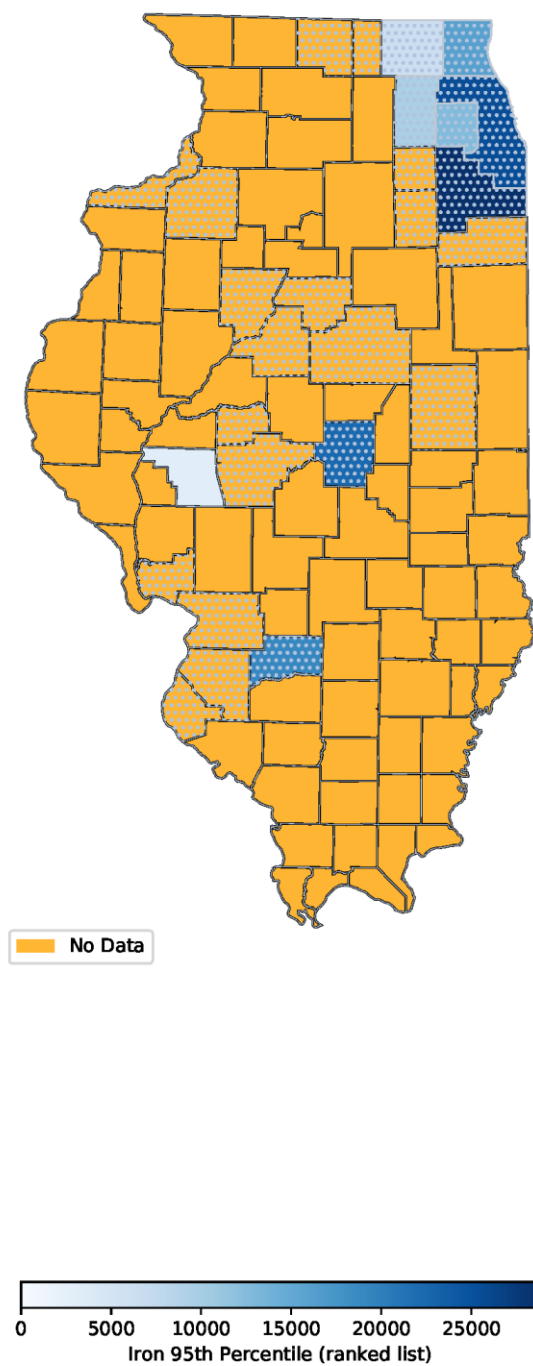
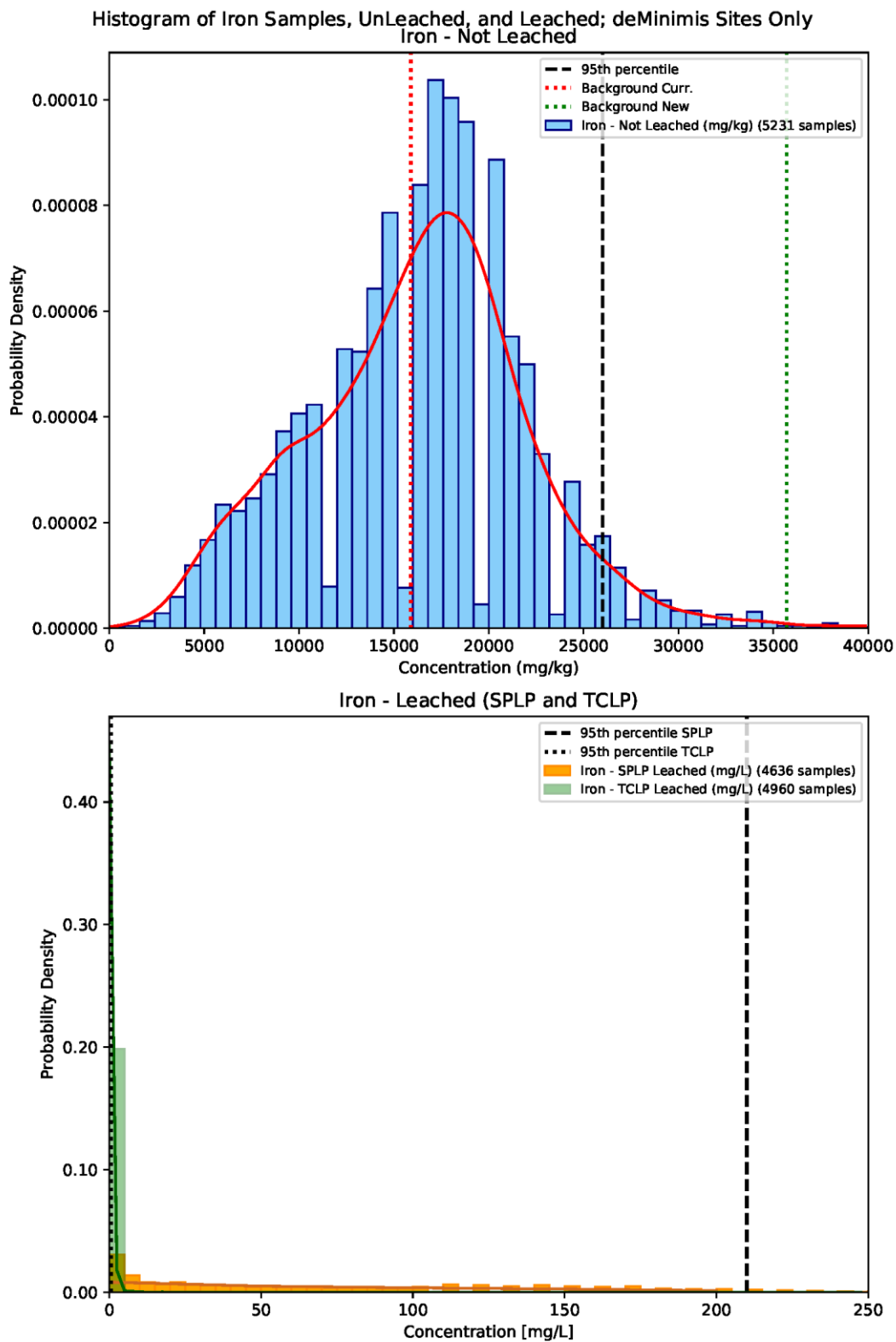


Figure 401. Map of RSL iron 95th percentile concentration by Illinois county, Non-REC (mg/kg)

473

### K.3 IRON DE MINIMIS





**Figure 403. Histogram of RSL iron concentrations, de minimis (mg/kg)**

Iron Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

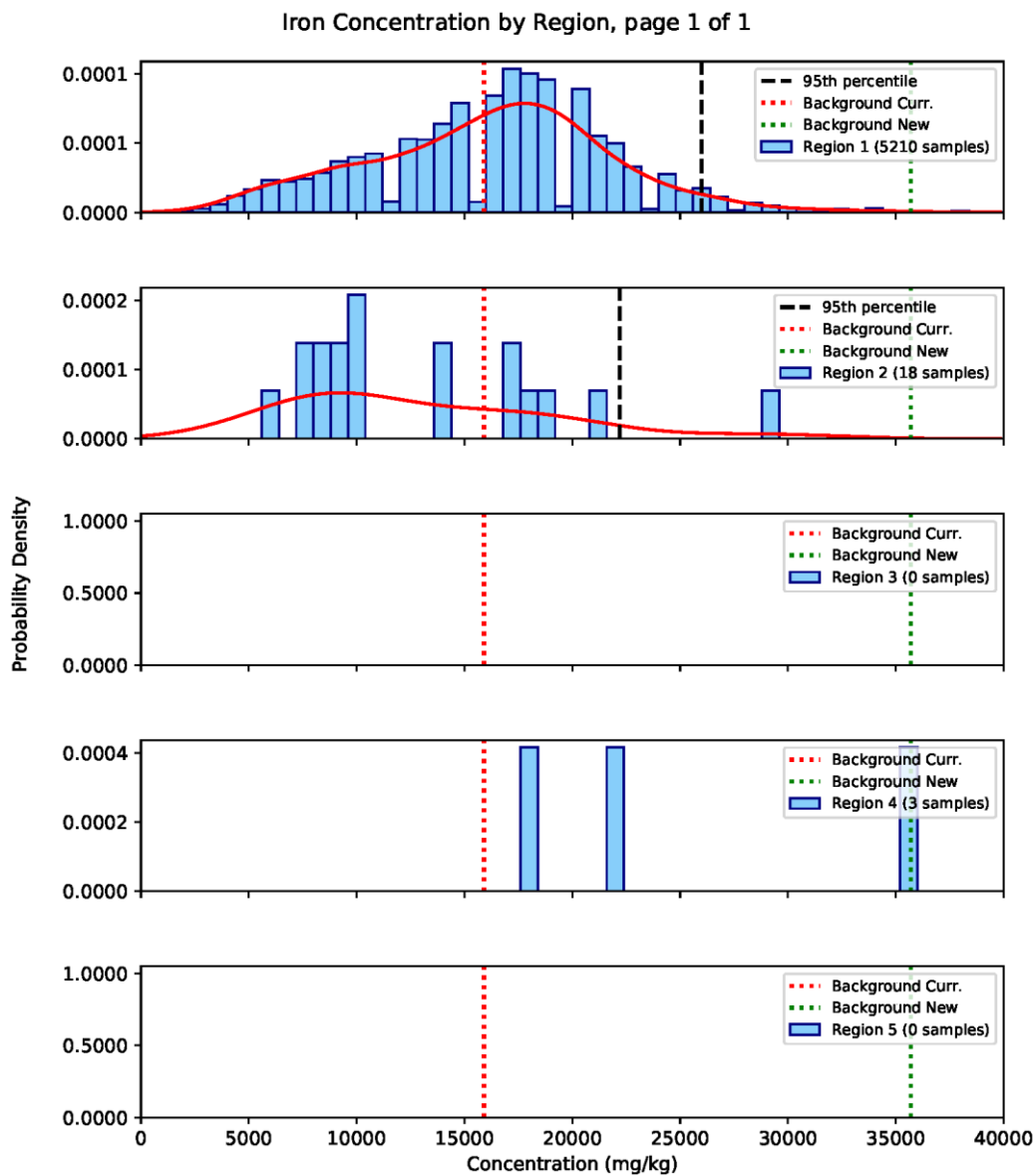


Figure 404. Histogram of RSL iron concentrations by IDOT Region, de minimis (mg/kg)

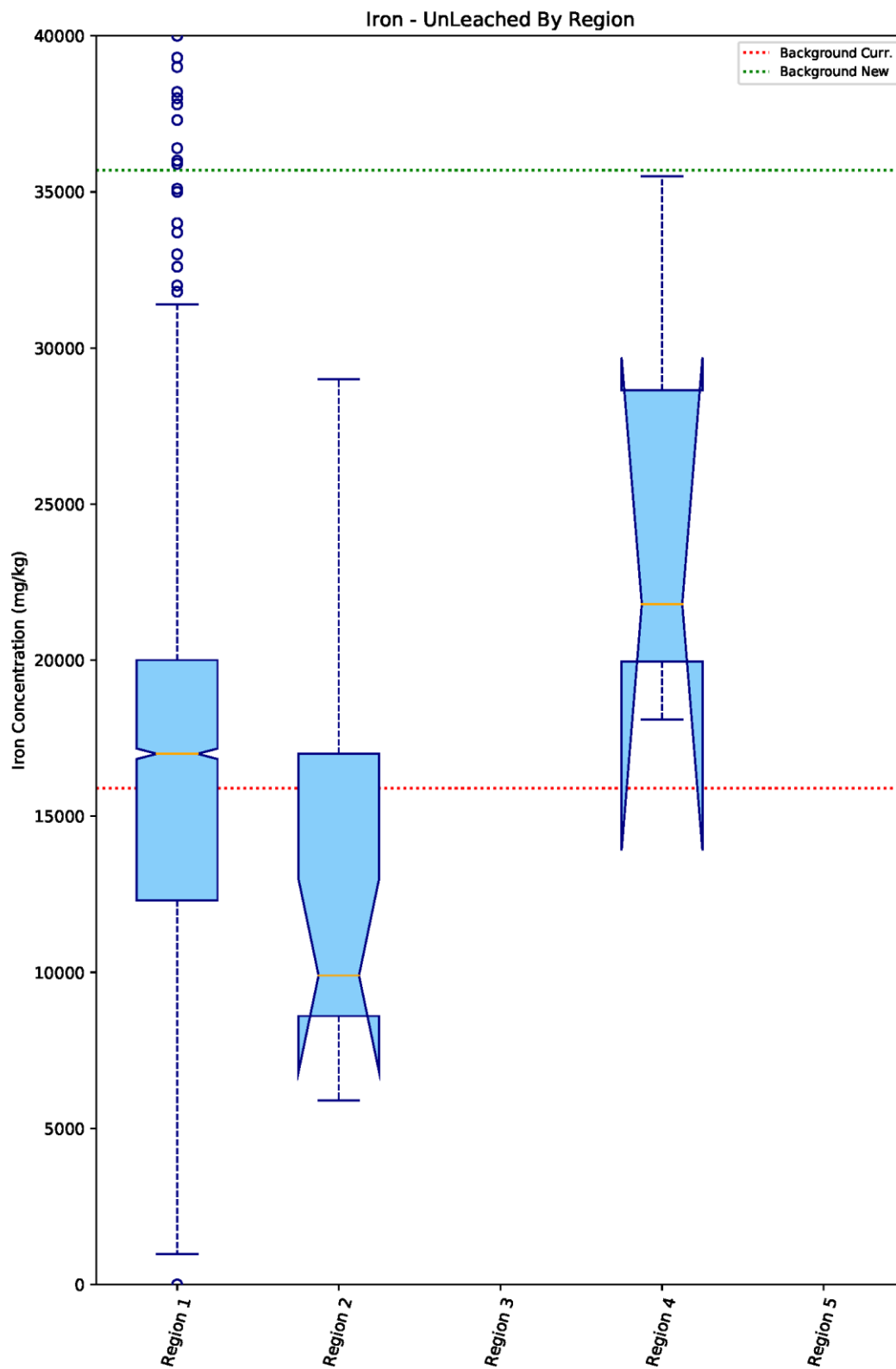


Figure 405. Boxplot of RSL iron concentrations by IDOT Region, de minimis (mg/kg)

# Iron Concentration by District, page 1 of 2

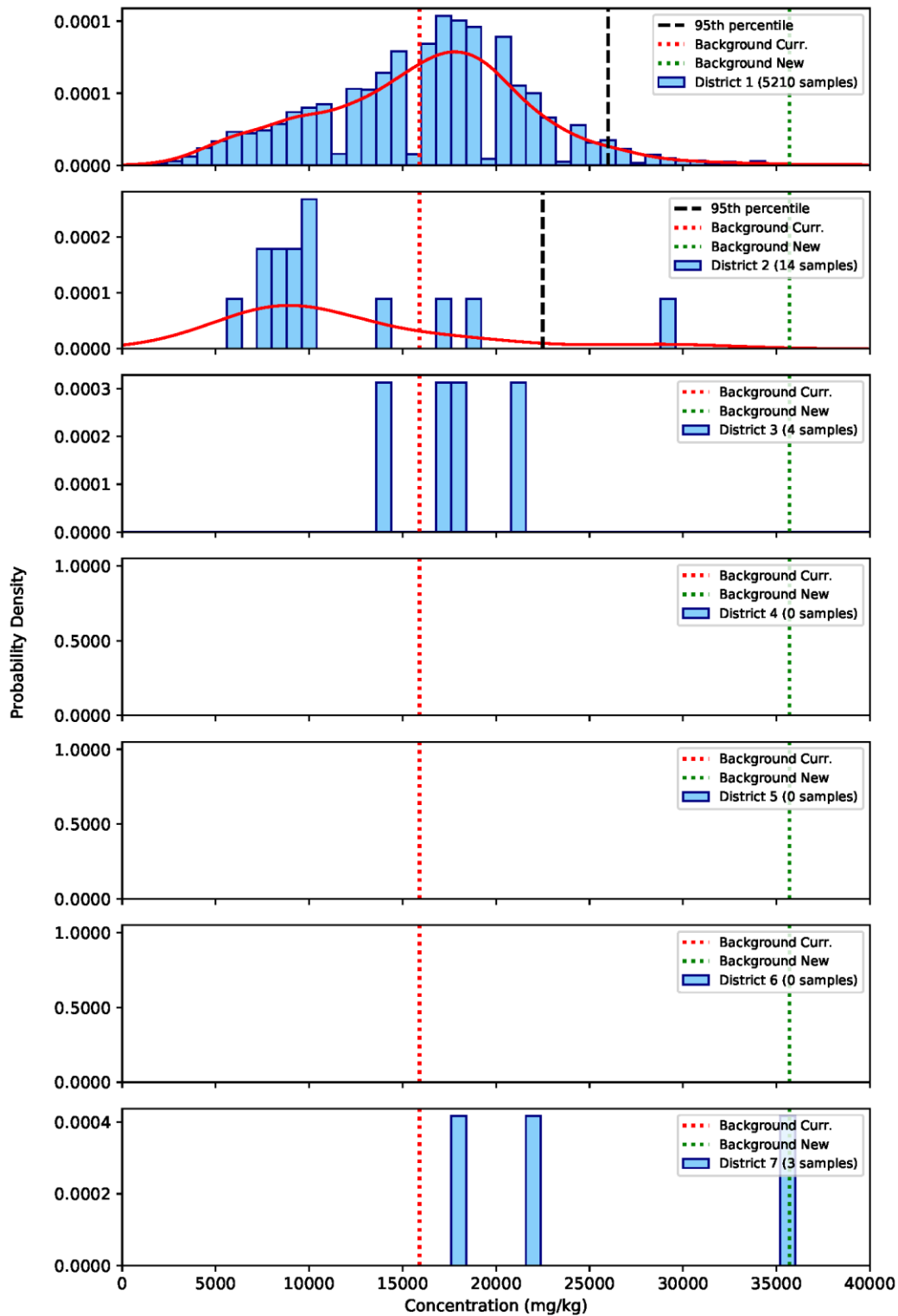


Figure 406. Histogram of RSL iron concentrations by IDOT District, de minimis (mg/kg), part 1

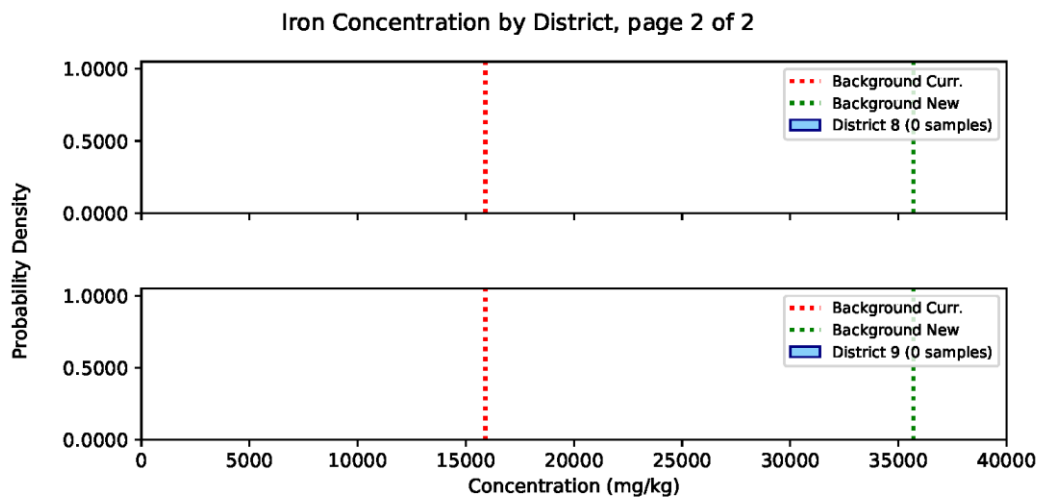


Figure 407. Histogram of RSL iron concentrations by IDOT District, de minimis (mg/kg), part 2

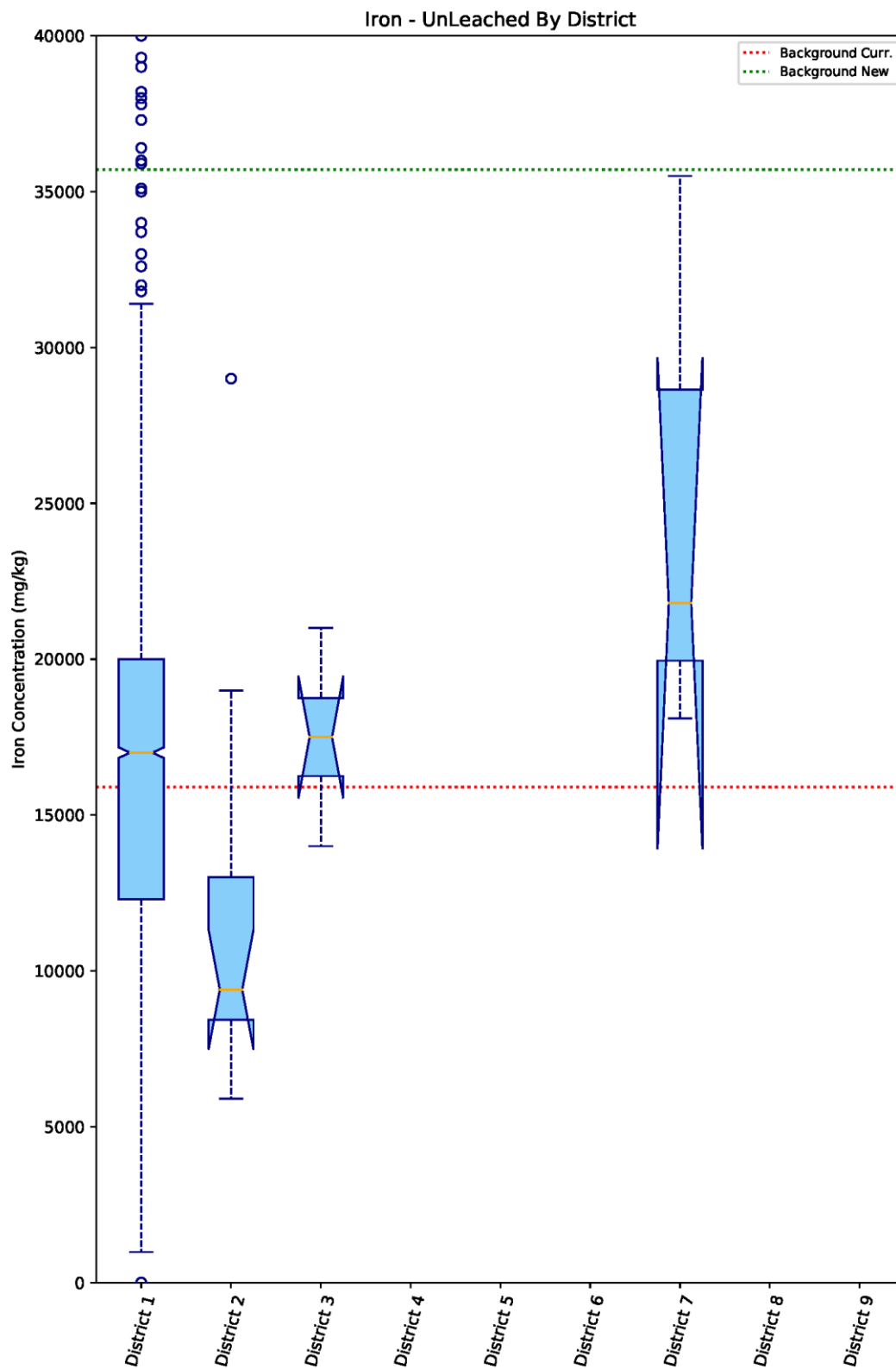


Figure 408. Boxplot of RSL iron concentrations by IDOT District, de minimis (mg/kg)

# Iron Concentration by County, page 1 of 2

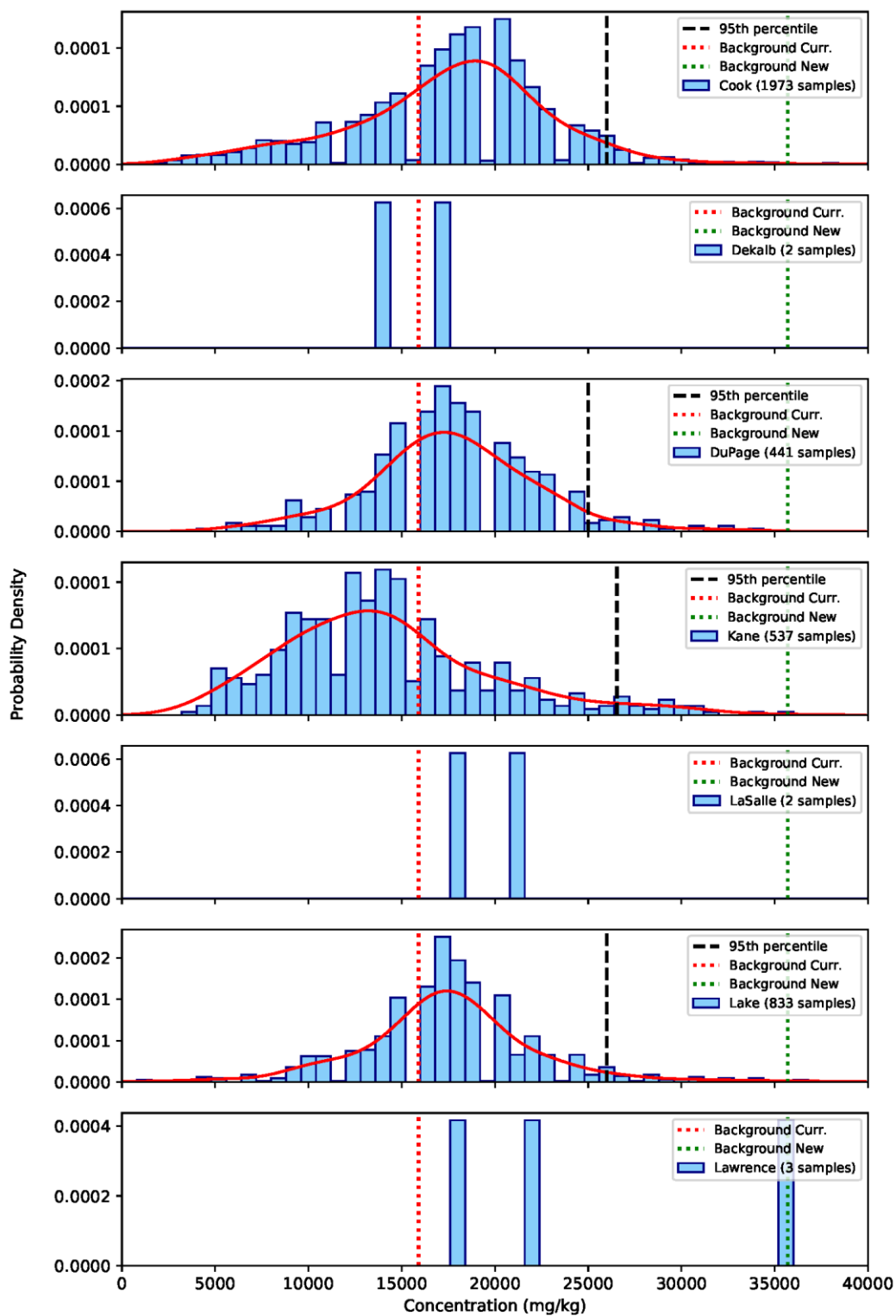


Figure 409. Histogram of RSL iron concentrations by Illinois county, de minimis (mg/kg), part 1



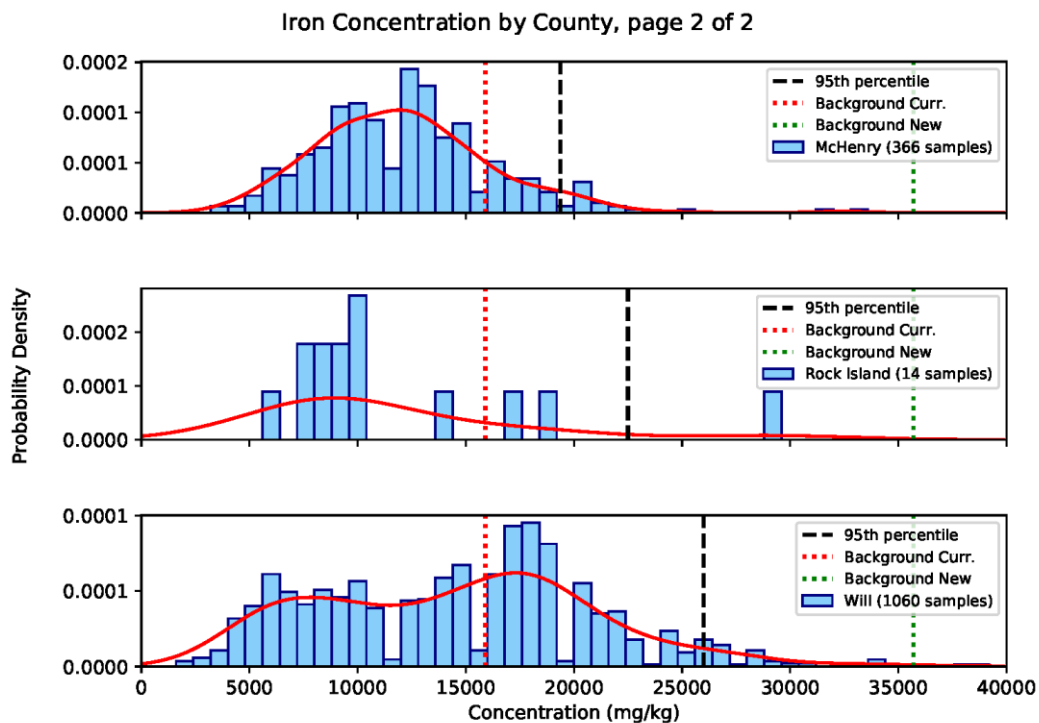


Figure 410. Histogram of RSL iron concentrations by Illinois county, de minimis (mg/kg), part 2

Iron Concentration for 95th Percentile by County: deMinimis Sites

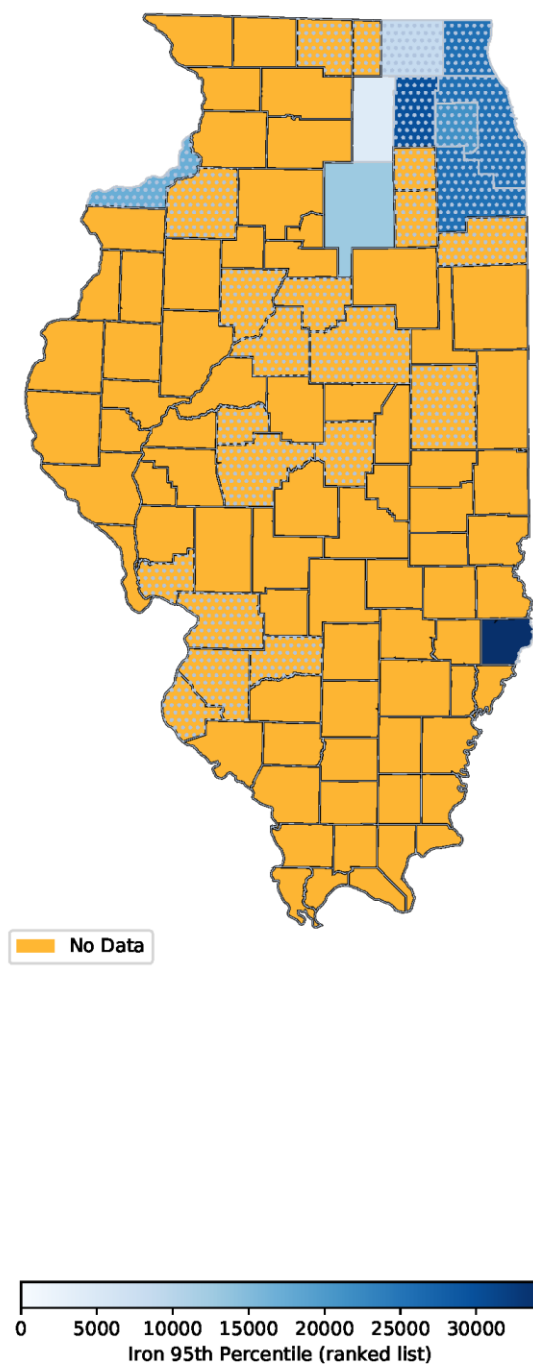


Figure 411. Map of RSL iron 95th percentile concentration by Illinois county, de minimis (mg/kg)

Number of Iron Samples by County: deMinimis Sites

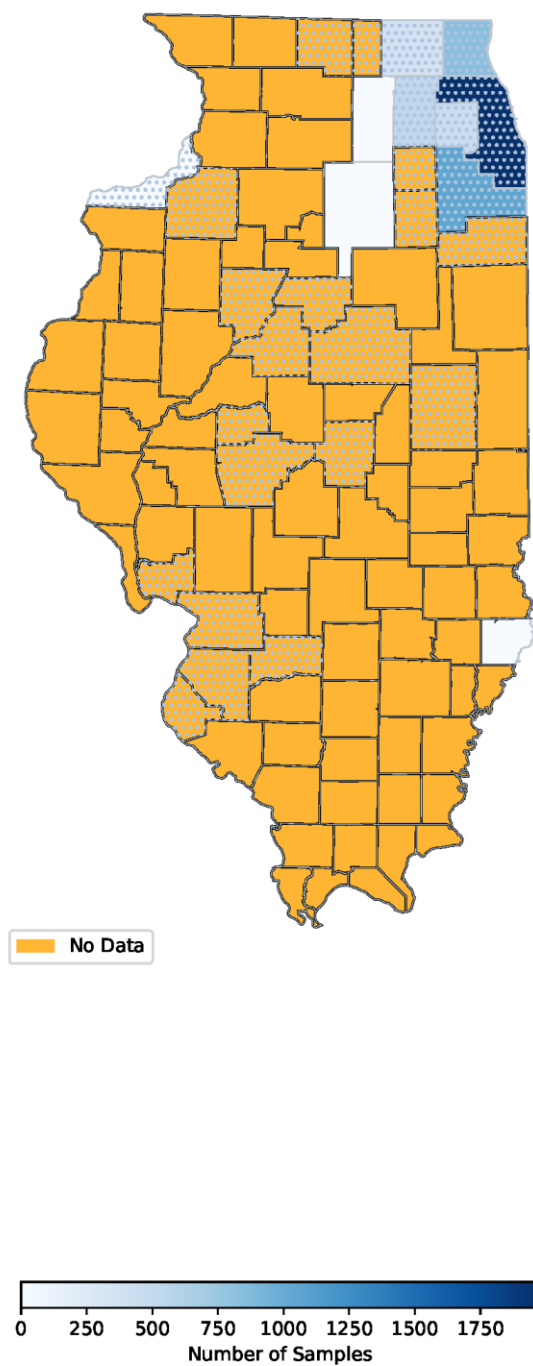
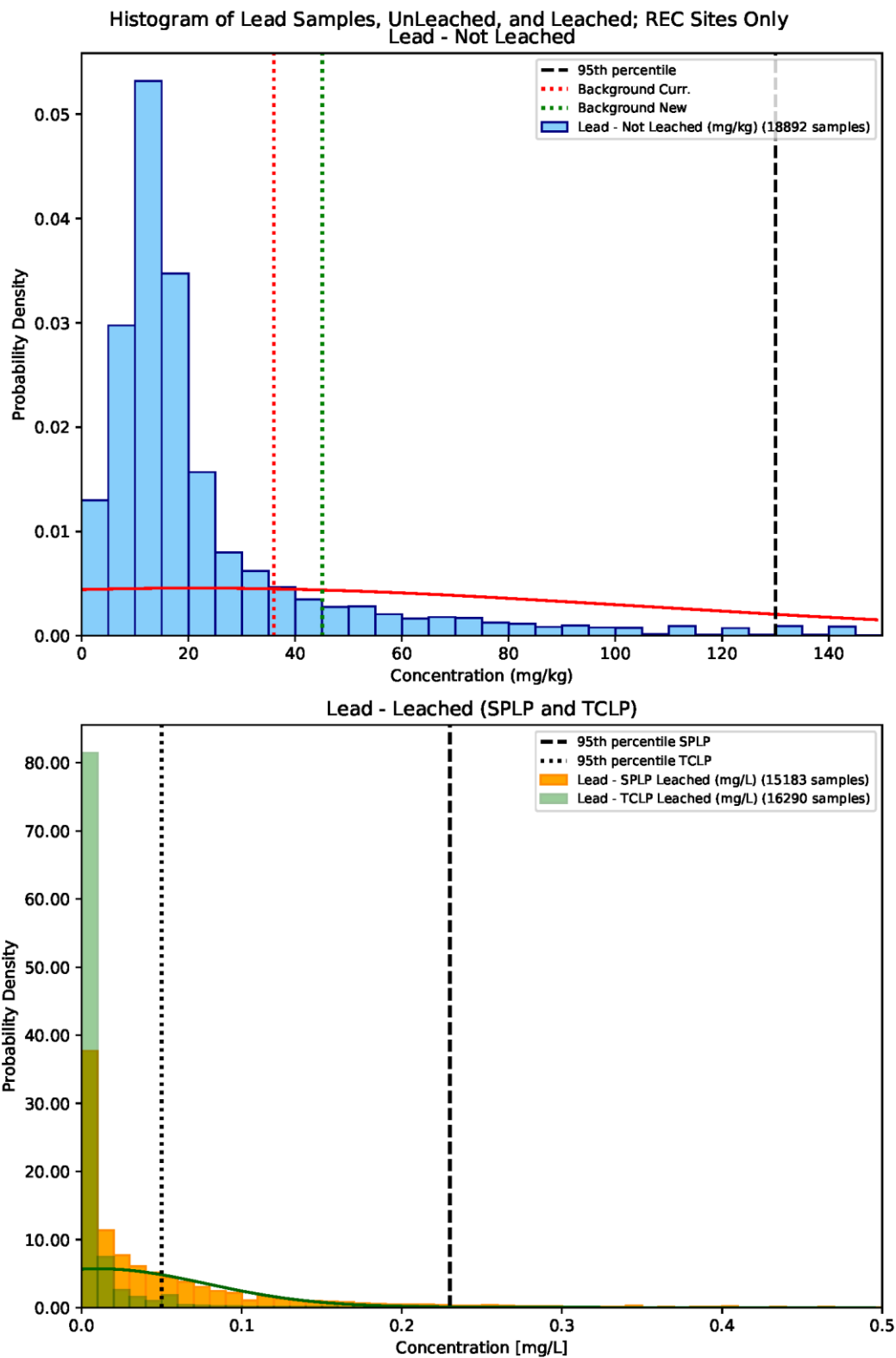


Figure 412. Map of RSL iron sample quantity by Illinois county, de minimis (mg/kg)

## **APPENDIX L. ANALYTE ANALYSIS: LEAD**

### **L.1 LEAD REC**



**Figure 413. Histogram of RSL lead concentrations, REC (mg/kg)**

Lead Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

# Lead Concentration by Region, page 1 of 1

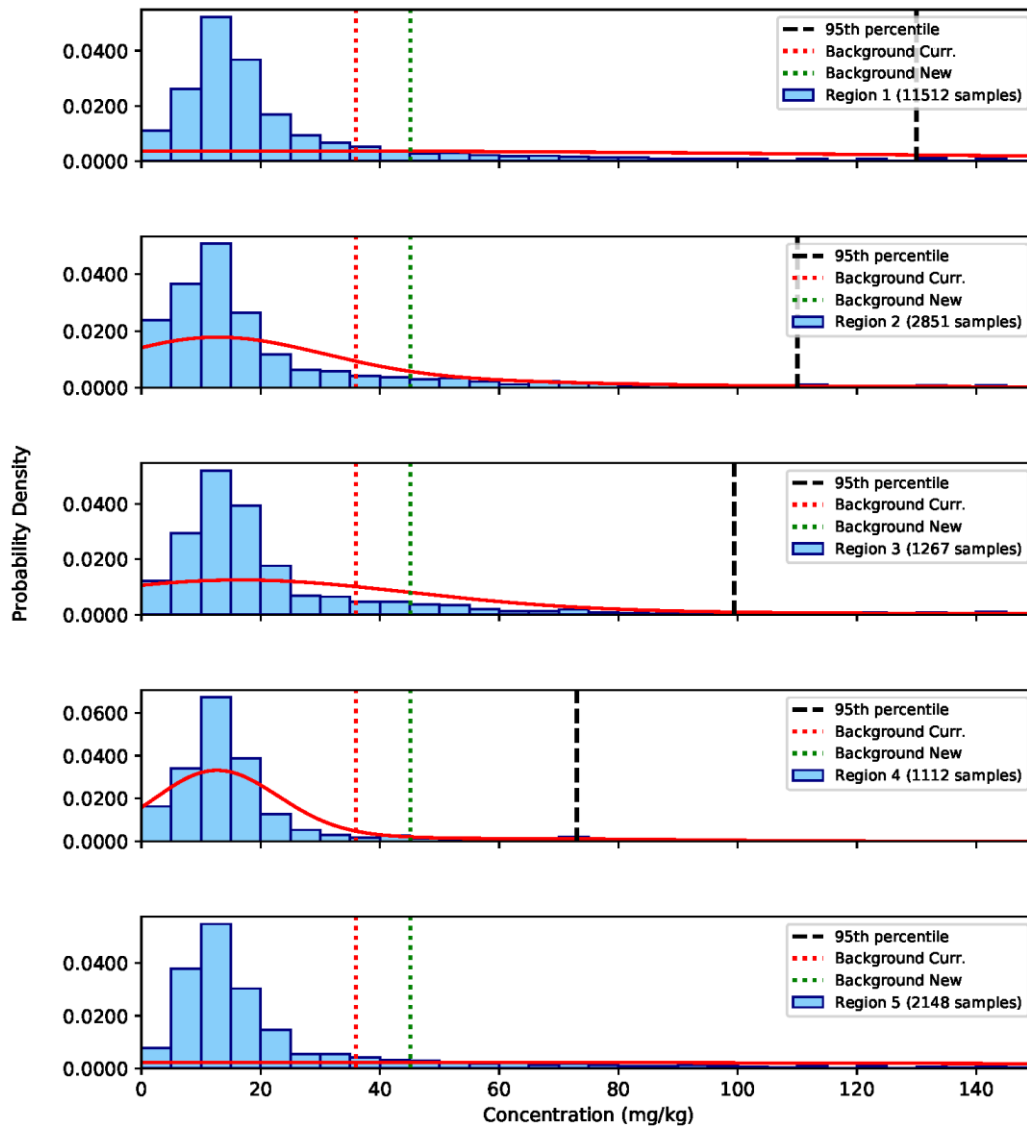


Figure 414. Histogram of RSL lead concentrations by IDOT Region, REC (mg/kg)

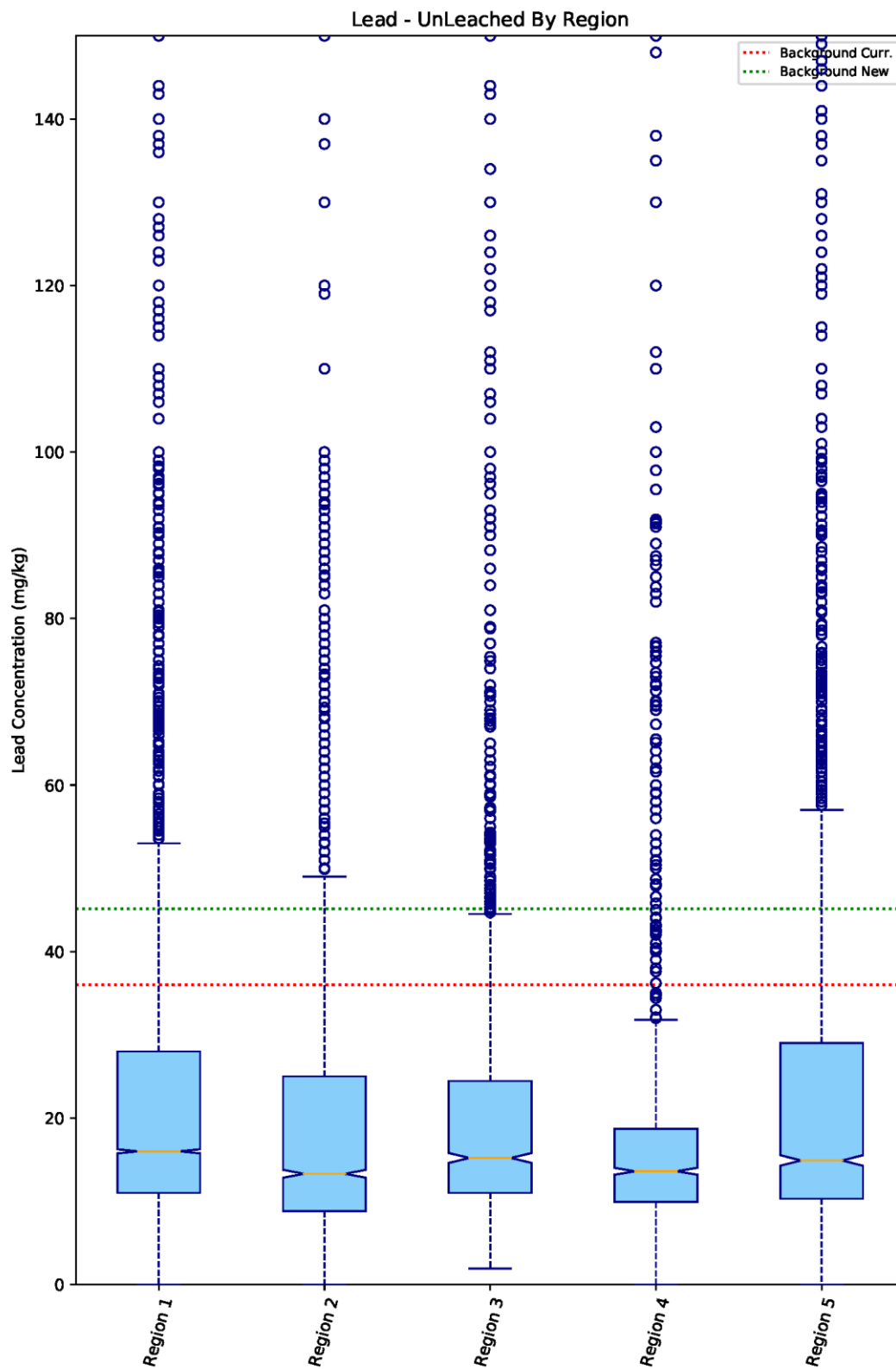


Figure 415. Boxplot of RSL lead concentrations by IDOT Region, REC (mg/kg)



# Lead Concentration by District, page 1 of 2

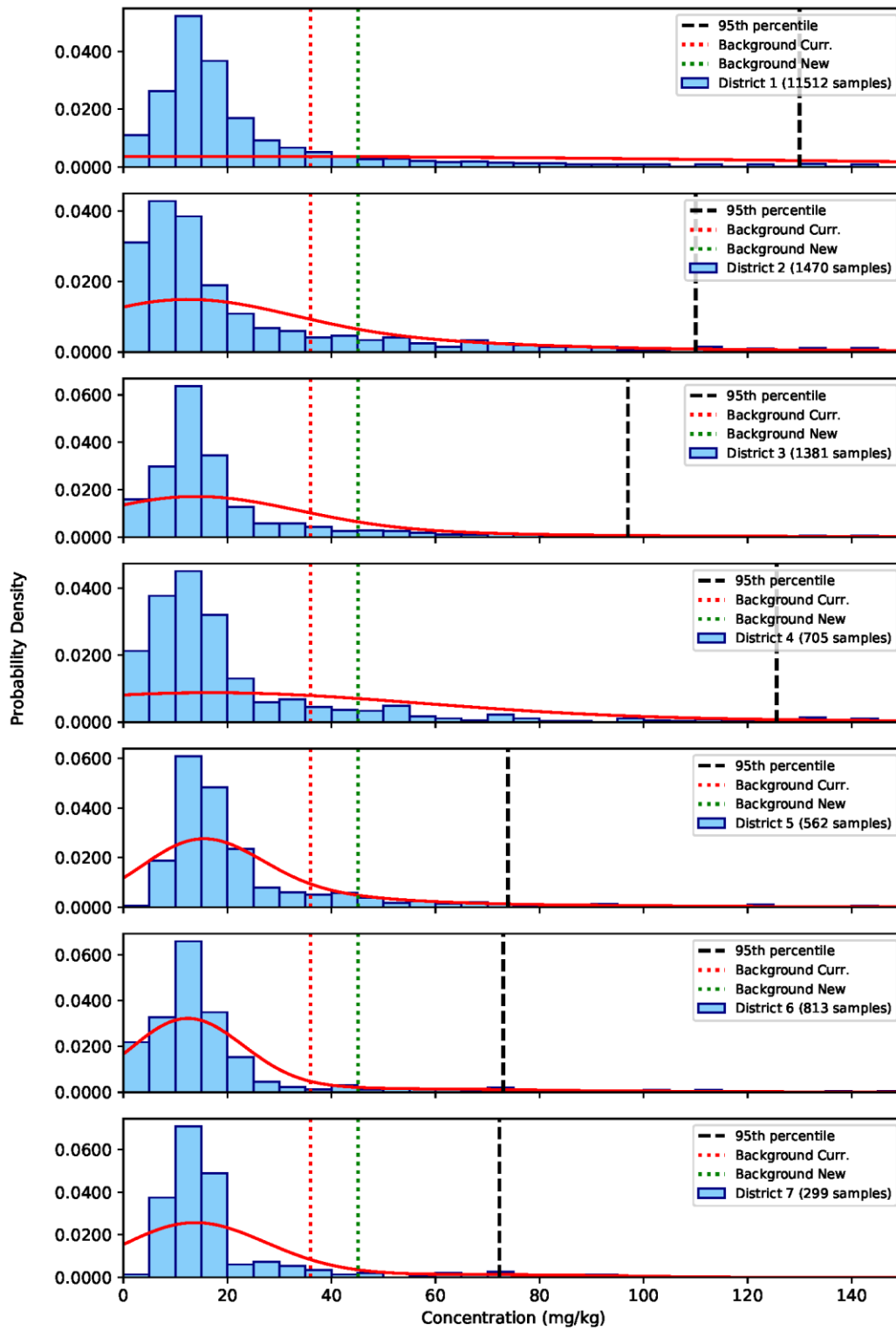


Figure 416. Histogram of RSL lead concentrations by IDOT District, REC (mg/kg), part 1

Lead Concentration by District, page 2 of 2

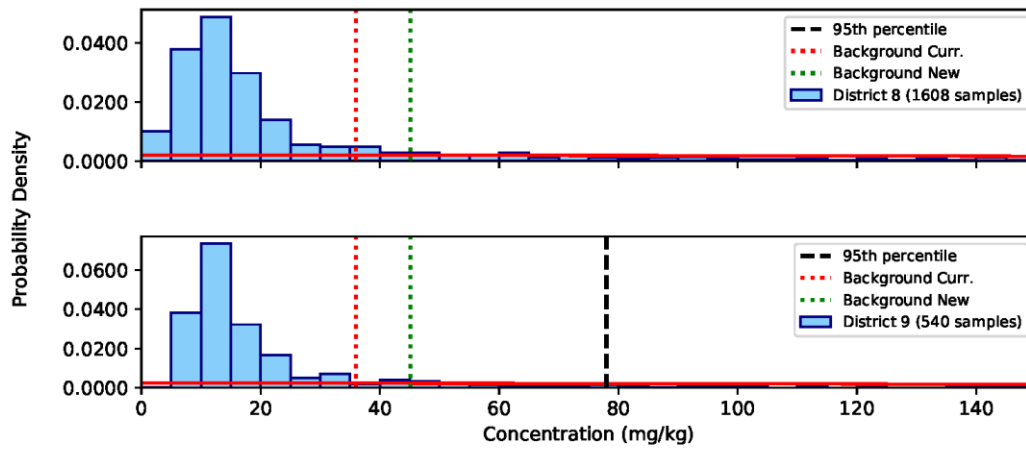


Figure 417. Histogram of RSL lead concentrations by IDOT District, REC (mg/kg), part 2

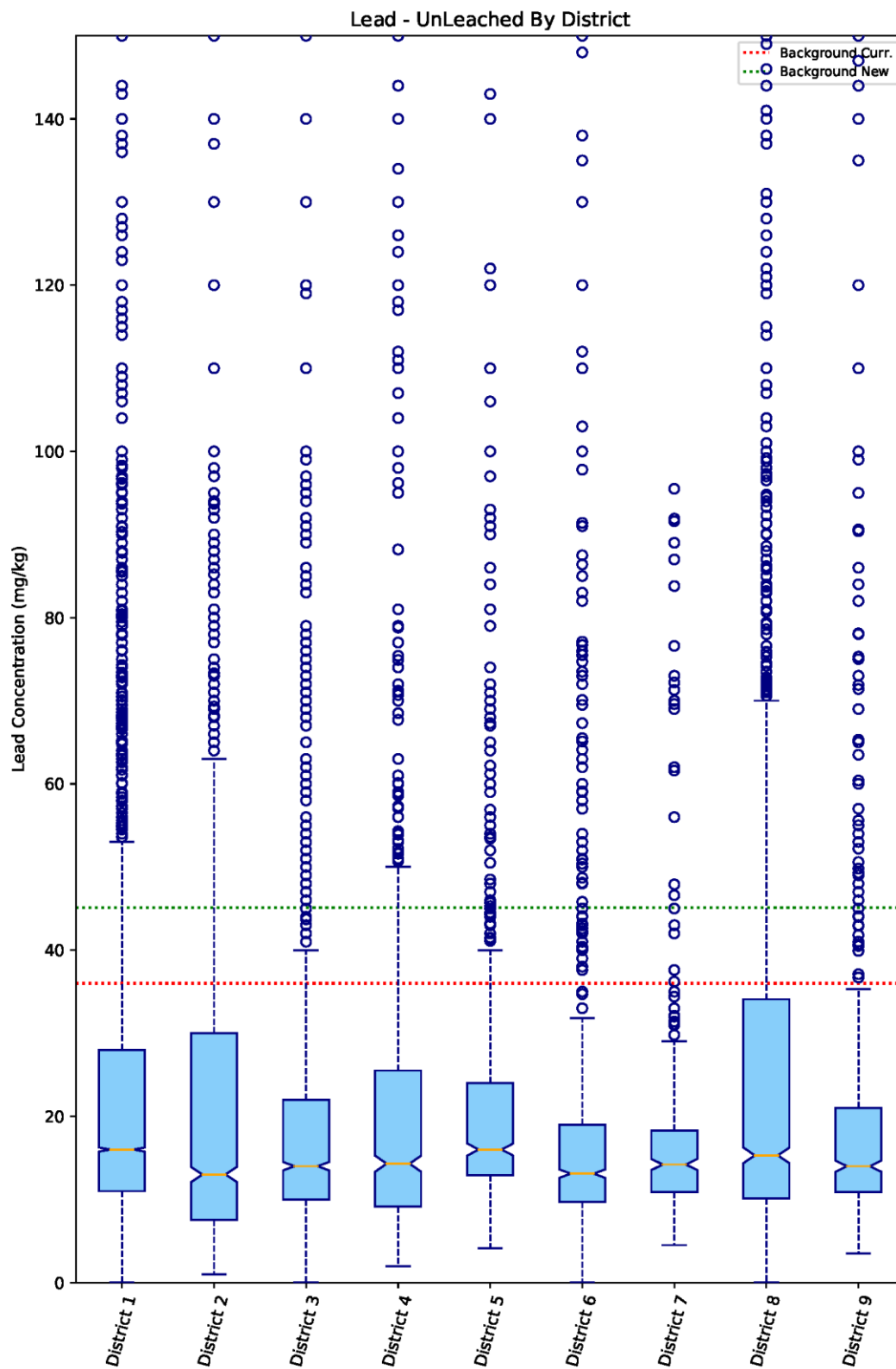


Figure 418. Boxplot of RSL lead concentrations by IDOT District, REC (mg/kg)

# Lead Concentration by County, page 1 of 10

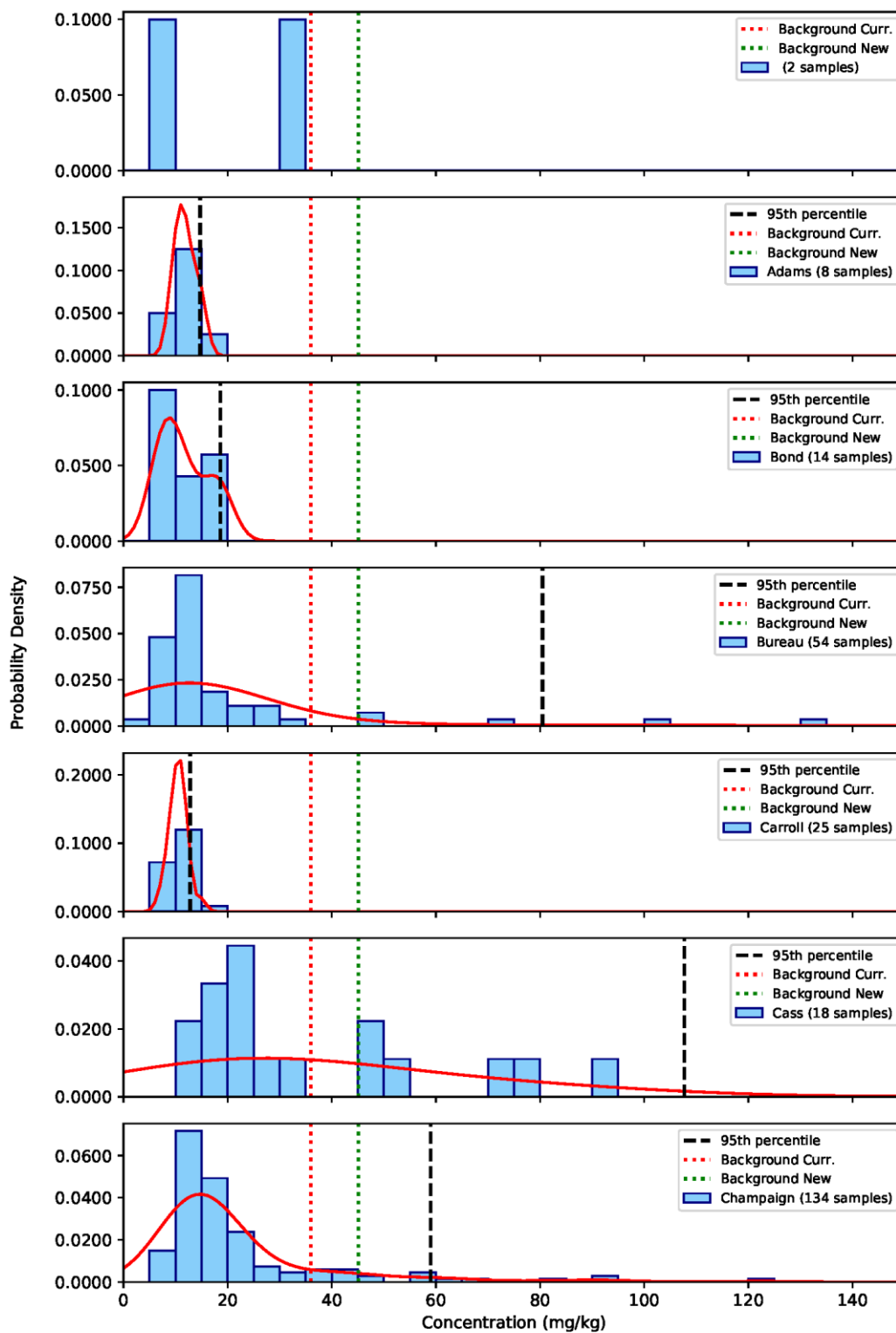


Figure 419. Histogram of RSL lead concentrations by Illinois county, REC (mg/kg), part 1

Lead Concentration by County, page 2 of 10

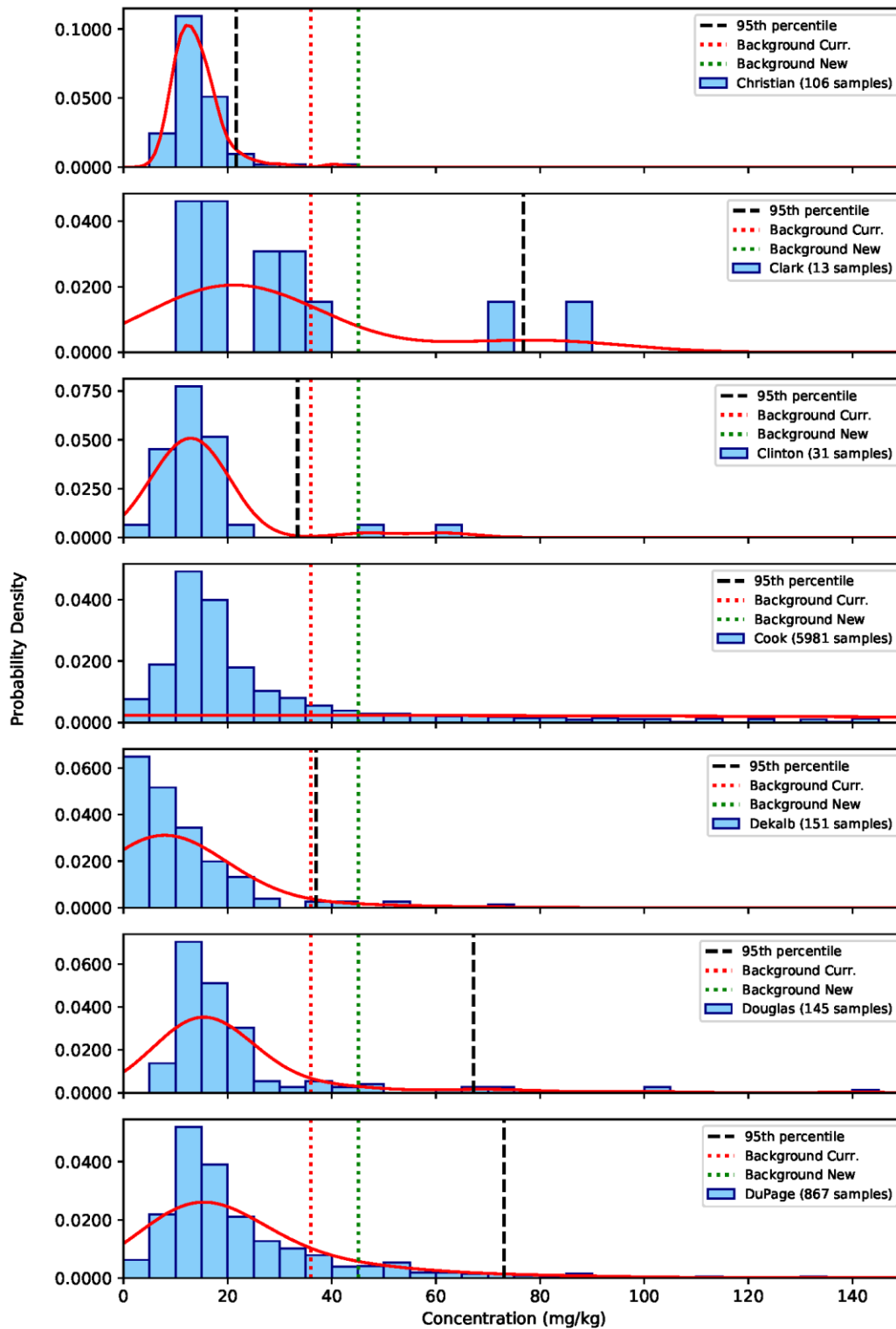


Figure 420. Histogram of RSL lead concentrations by Illinois county, REC (mg/kg), part 2

# Lead Concentration by County, page 3 of 10

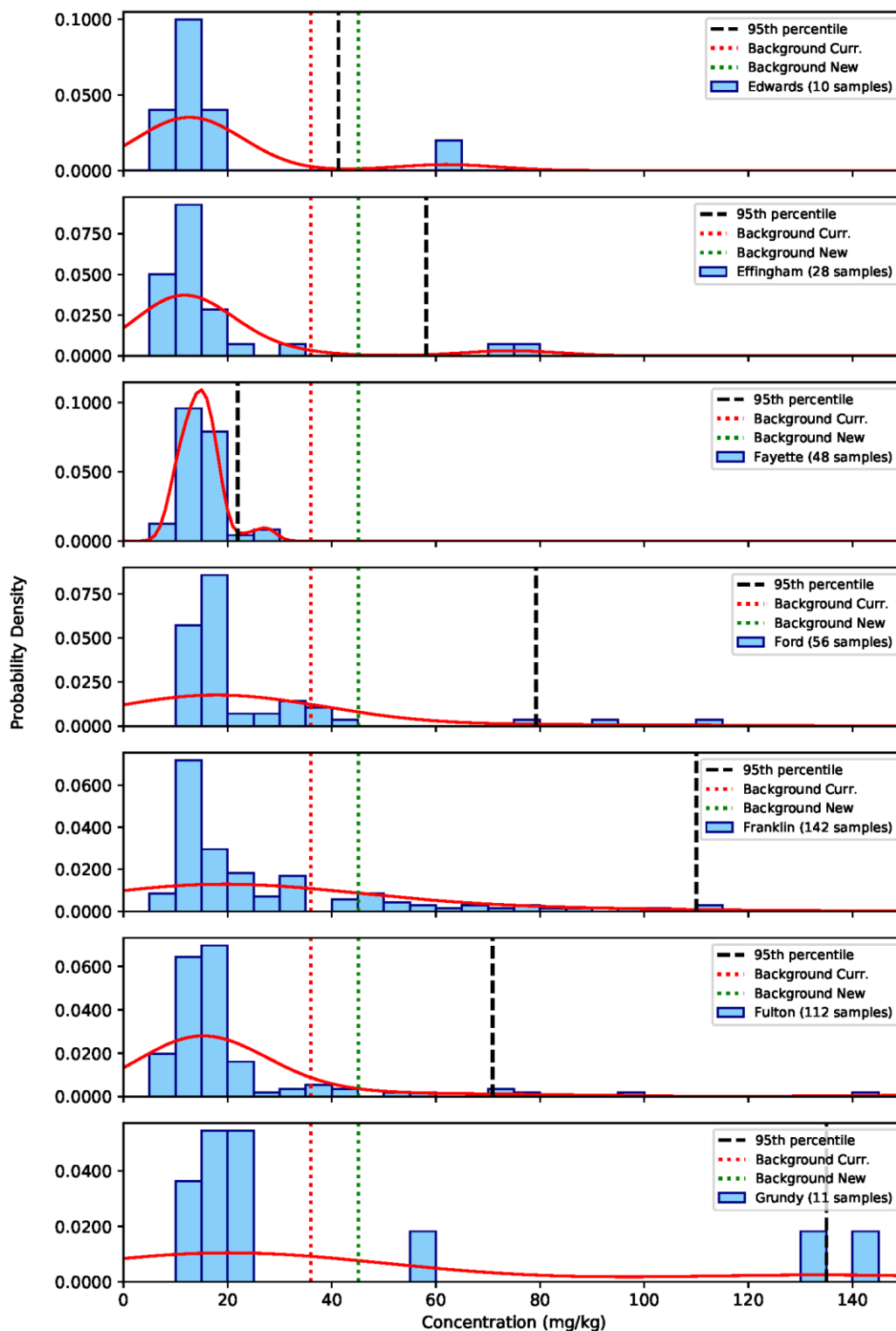


Figure 421. Histogram of RSL lead concentrations by Illinois county, REC (mg/kg), part 3

# Lead Concentration by County, page 4 of 10

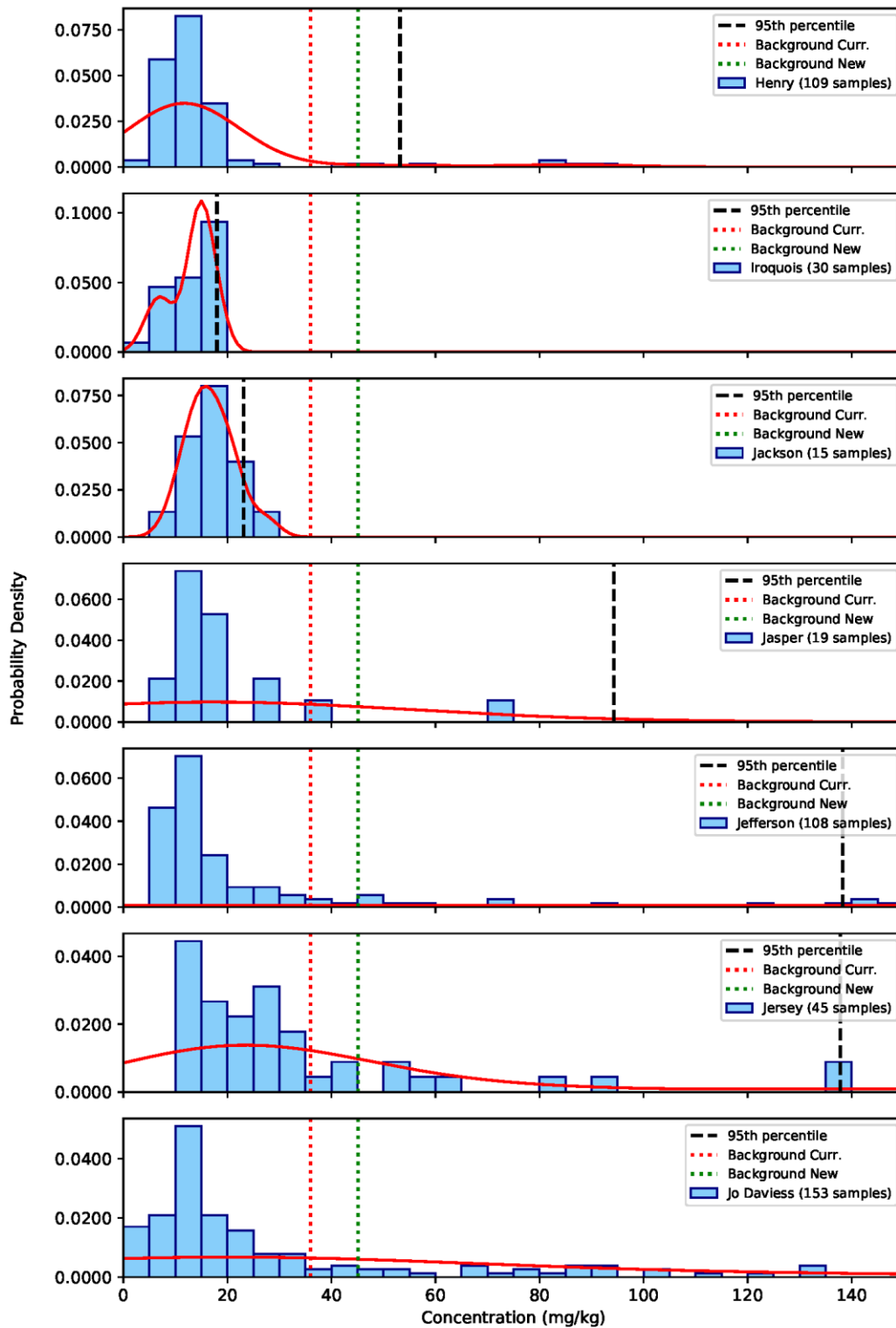


Figure 422. Histogram of RSL lead concentrations by Illinois county, REC (mg/kg), part 4

# Lead Concentration by County, page 5 of 10

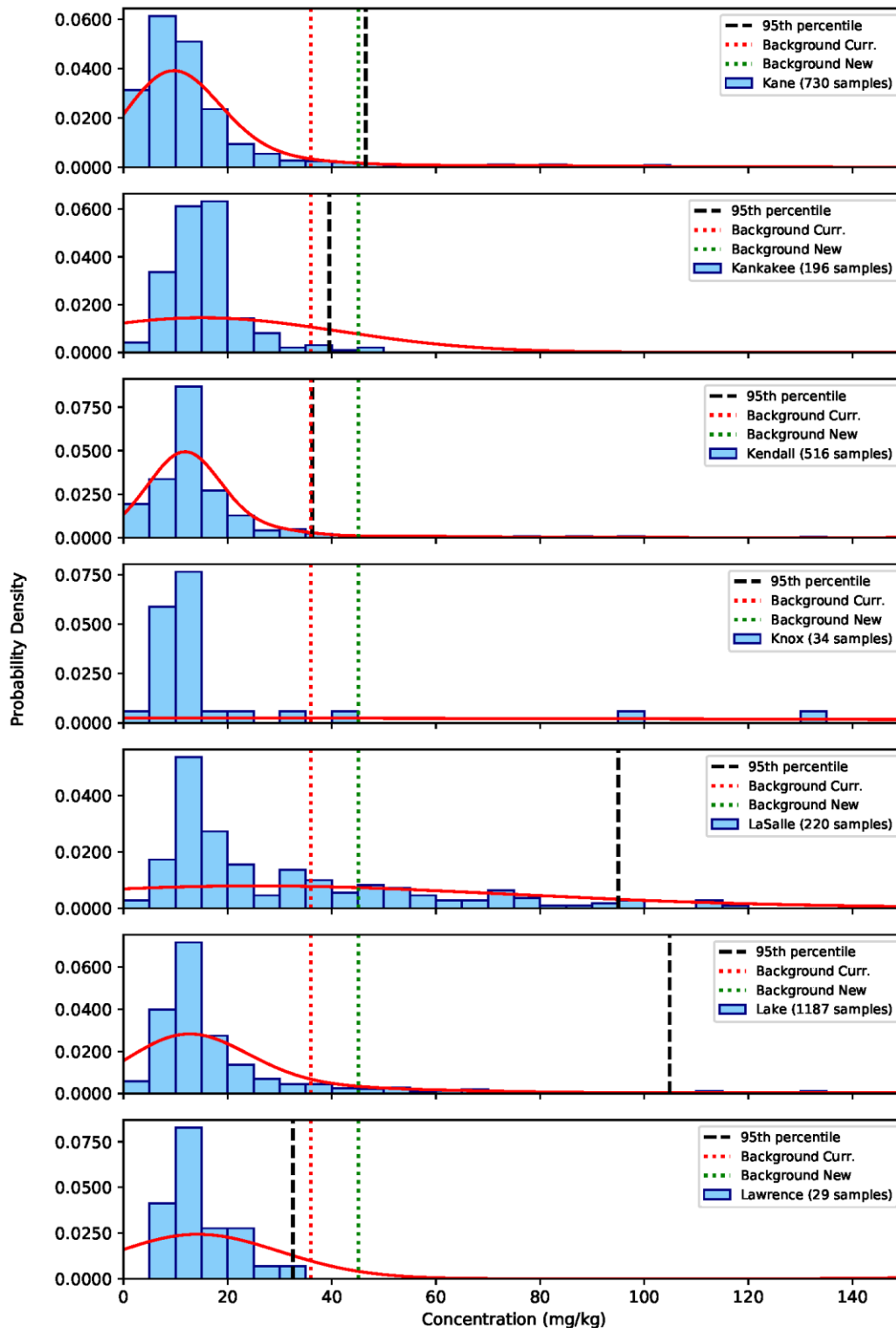


Figure 423. Histogram of RSL lead concentrations by Illinois county, REC (mg/kg), part 5



# Lead Concentration by County, page 6 of 10

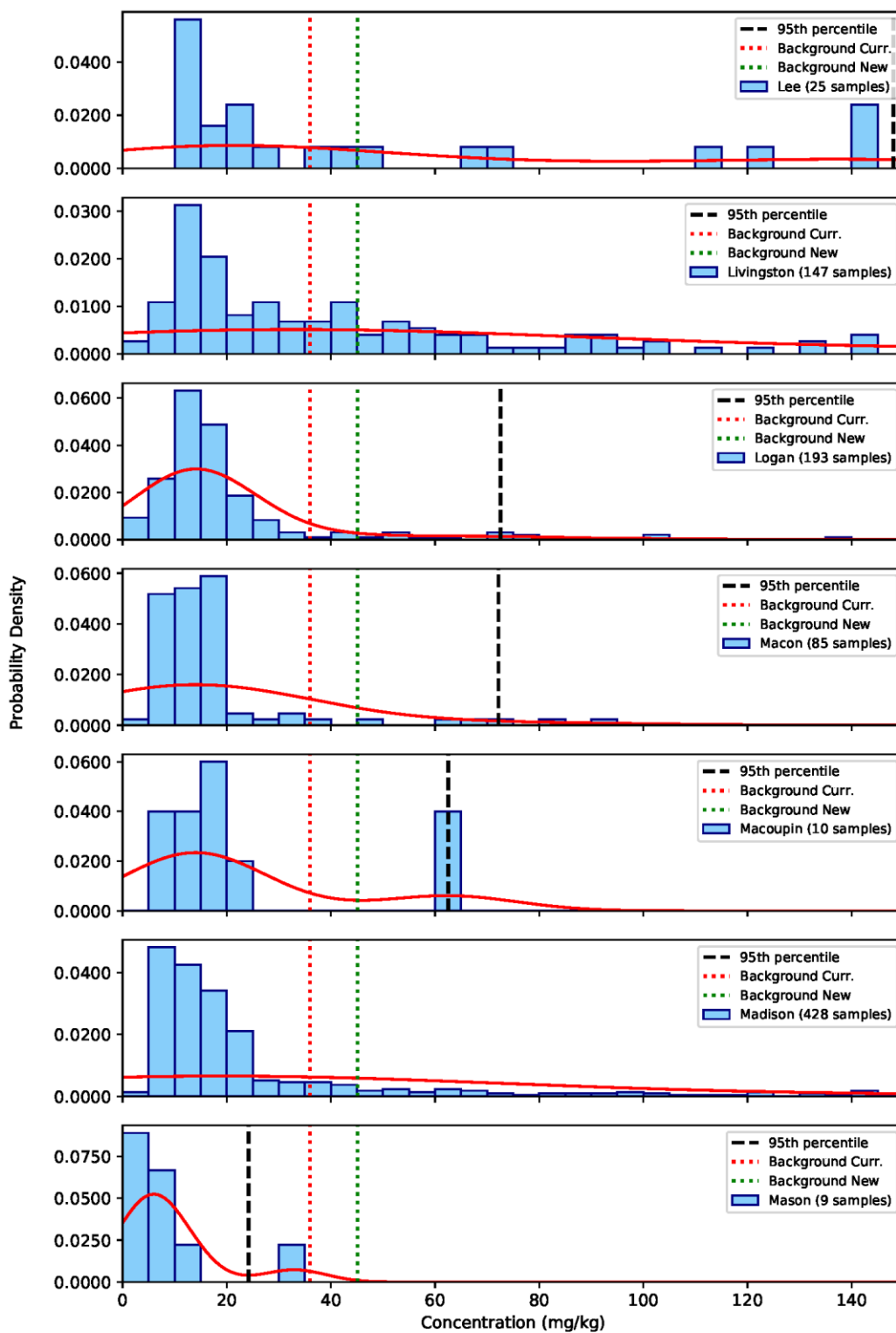


Figure 424. Histogram of RSL lead concentrations by Illinois county, REC (mg/kg), part 6

# Lead Concentration by County, page 7 of 10

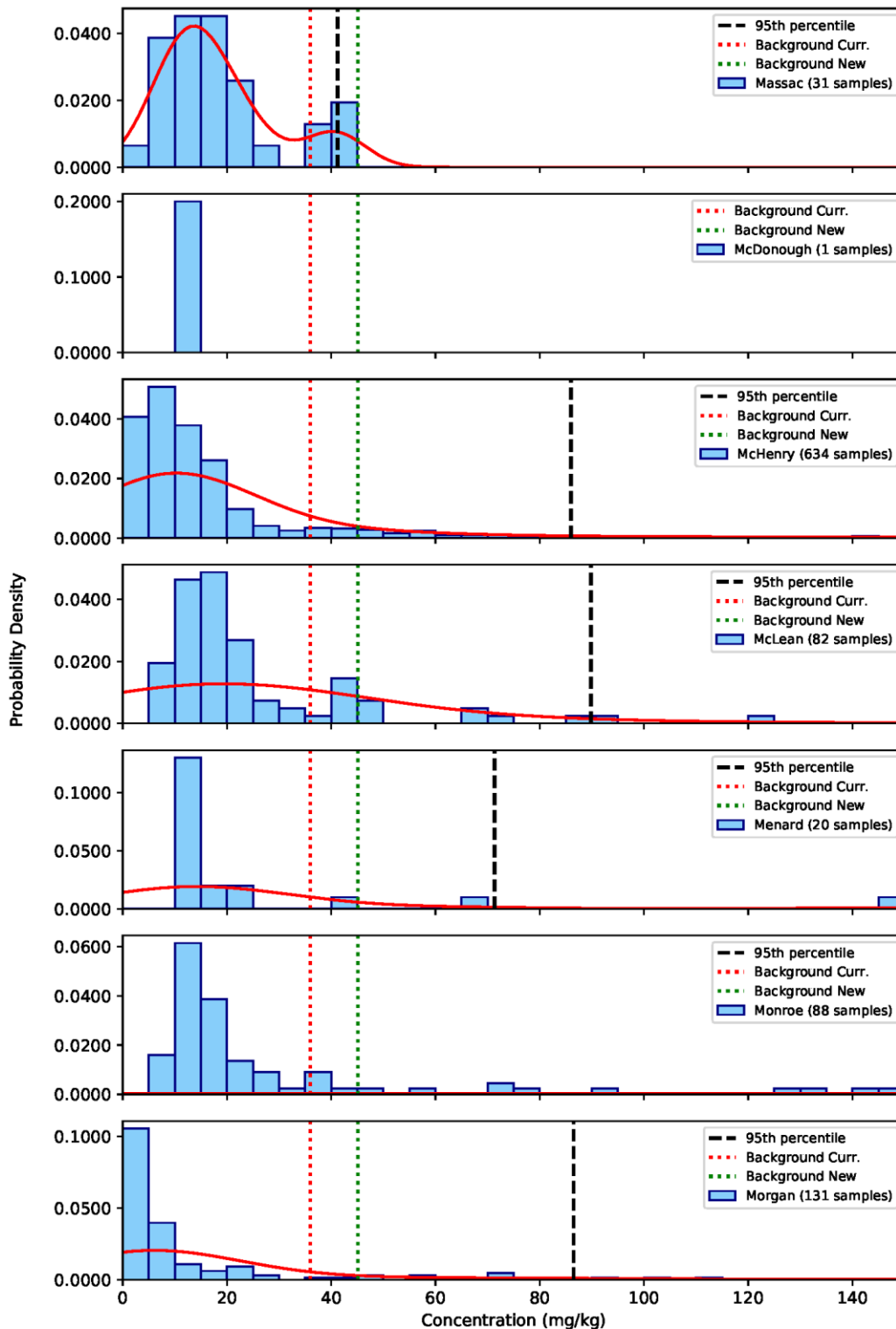


Figure 425. Histogram of RSL lead concentrations by Illinois county, REC (mg/kg), part 7

# Lead Concentration by County, page 8 of 10

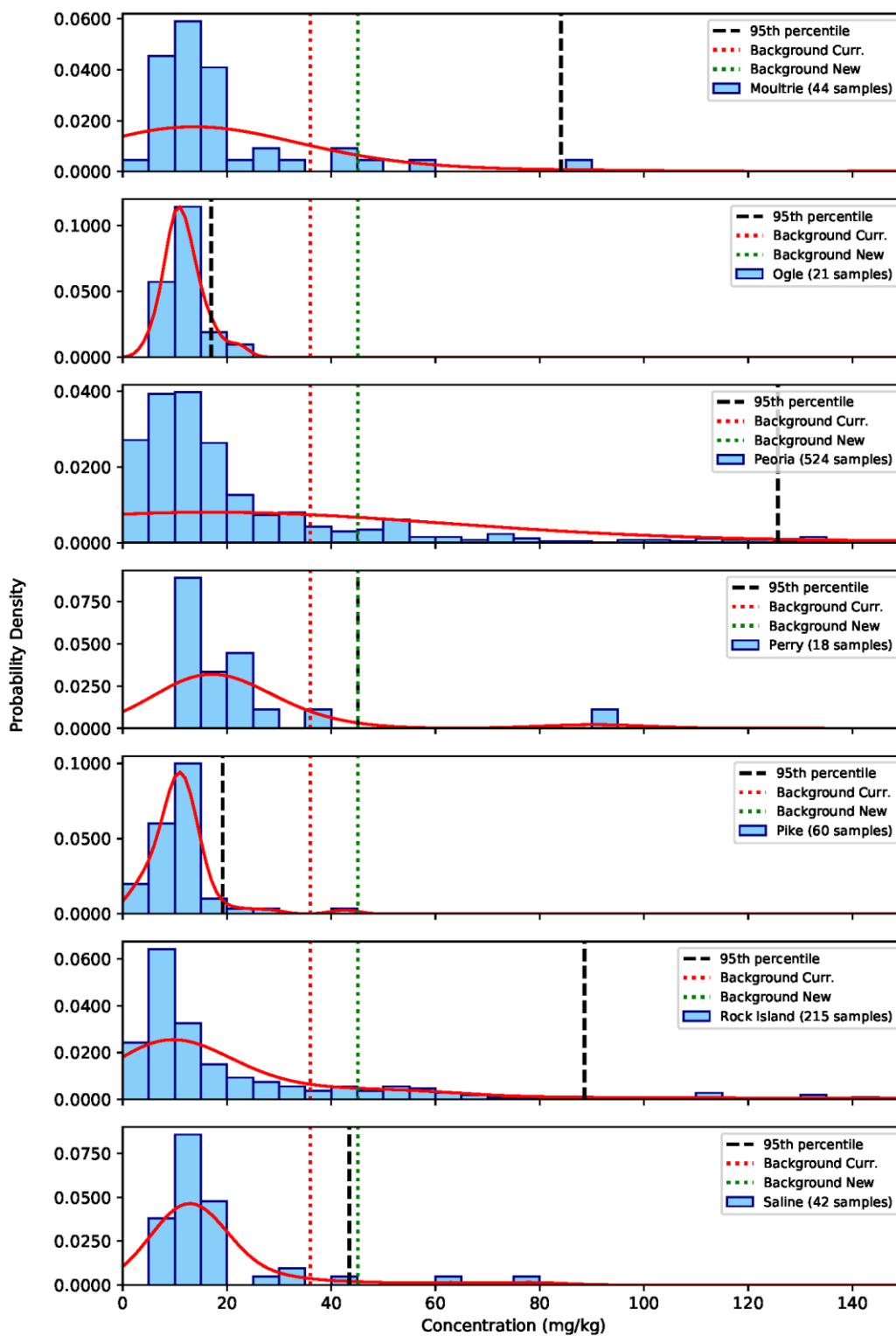


Figure 426. Histogram of RSL lead concentrations by Illinois county, REC (mg/kg), part 8

Lead Concentration by County, page 9 of 10

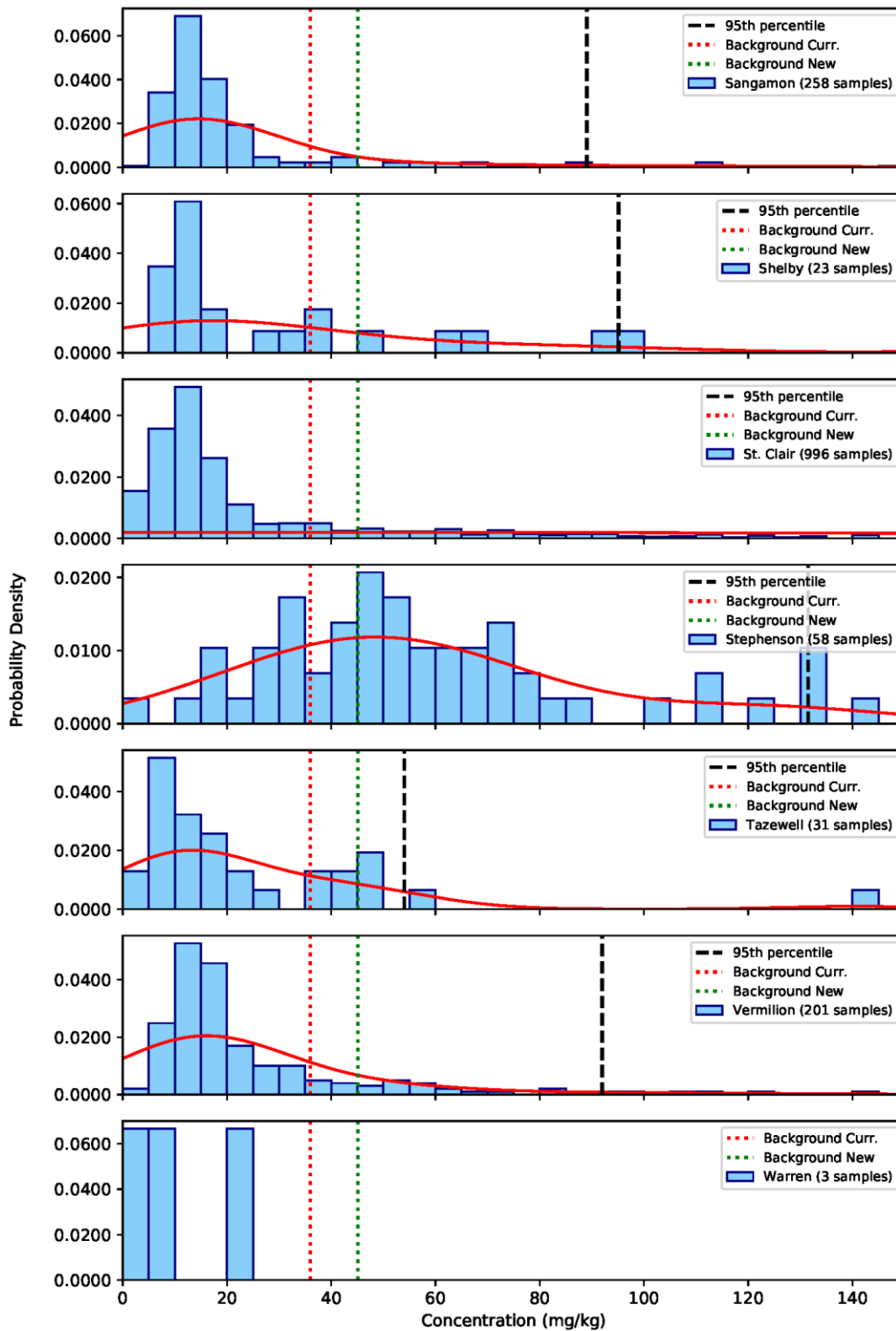


Figure 427. Histogram of RSL lead concentrations by Illinois county, REC (mg/kg), part 9

Lead Concentration by County, page 10 of 10

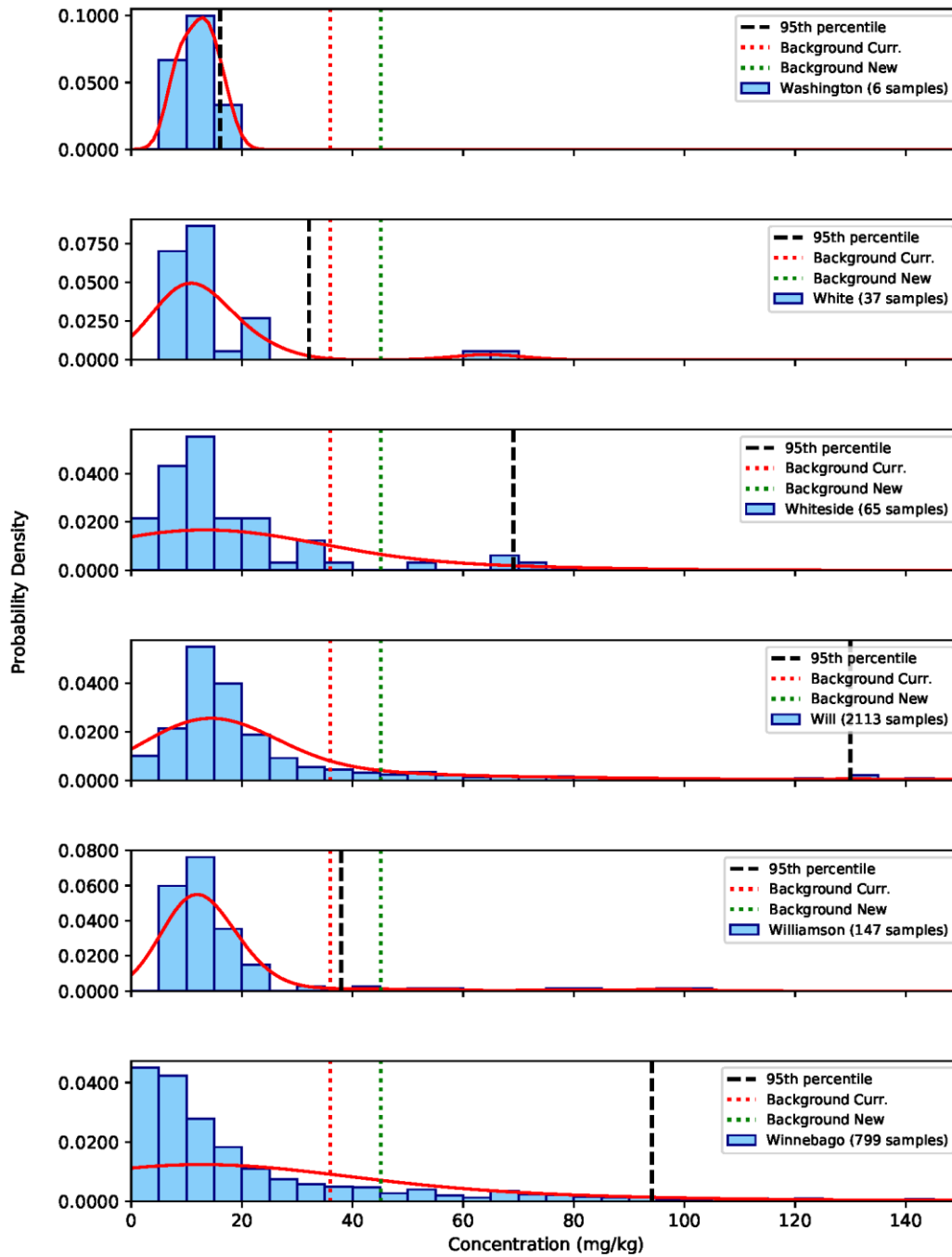


Figure 428. Histogram of RSL lead concentrations by Illinois county, REC (mg/kg), part 10

Lead Concentration for 95th Percentile by County: REC Sites

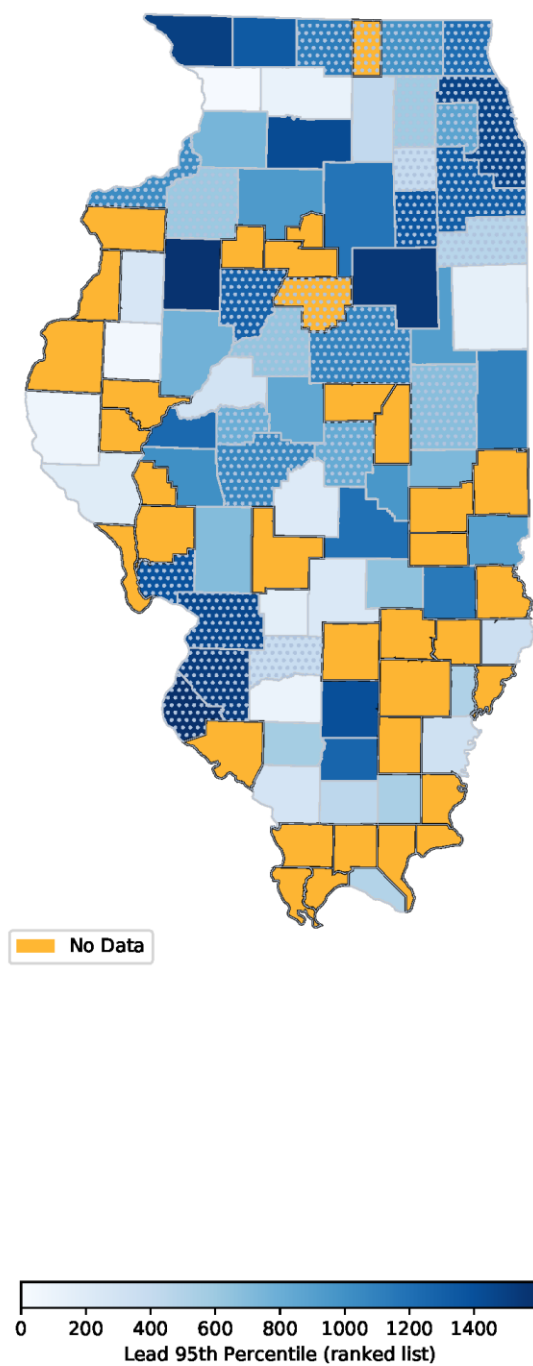


Figure 429. Map of RSL lead 95th percentile concentration by Illinois county, REC (mg/kg)

Number of Lead Samples by County: REC Sites

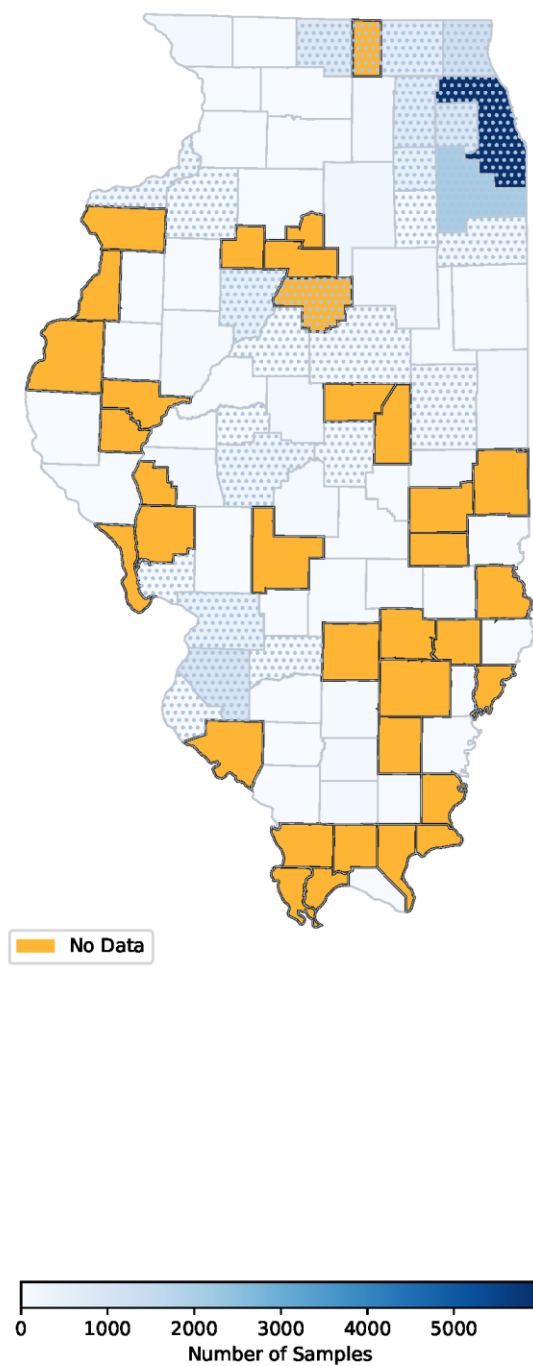
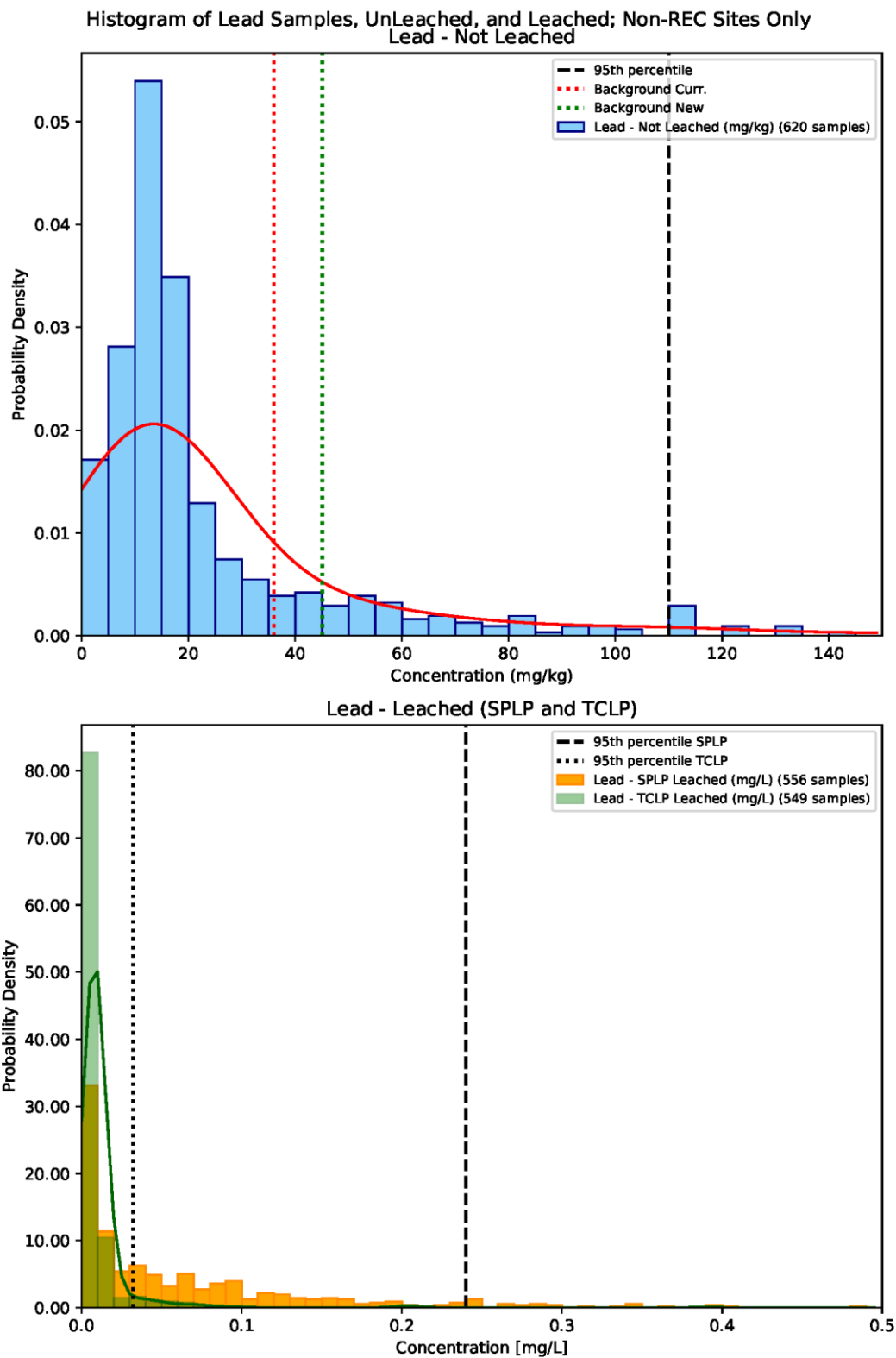


Figure 430. Map of RSL lead sample quantity by Illinois county, REC (mg/kg)

## L.2 LEAD NON-REC





**Figure 431. Histogram of RSL lead concentrations, Non-REC (mg/kg)**

Lead Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

Lead Concentration by Region, page 1 of 1

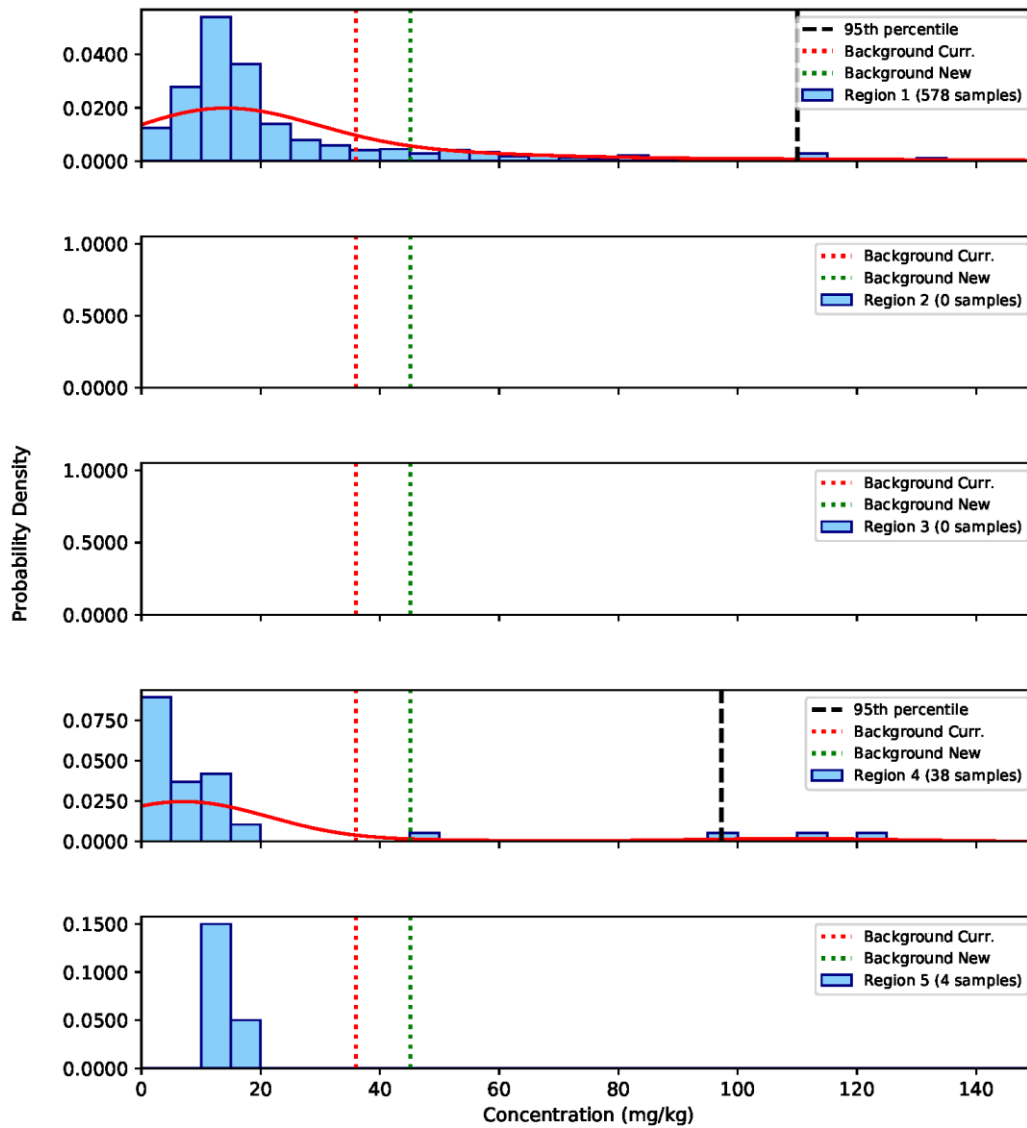
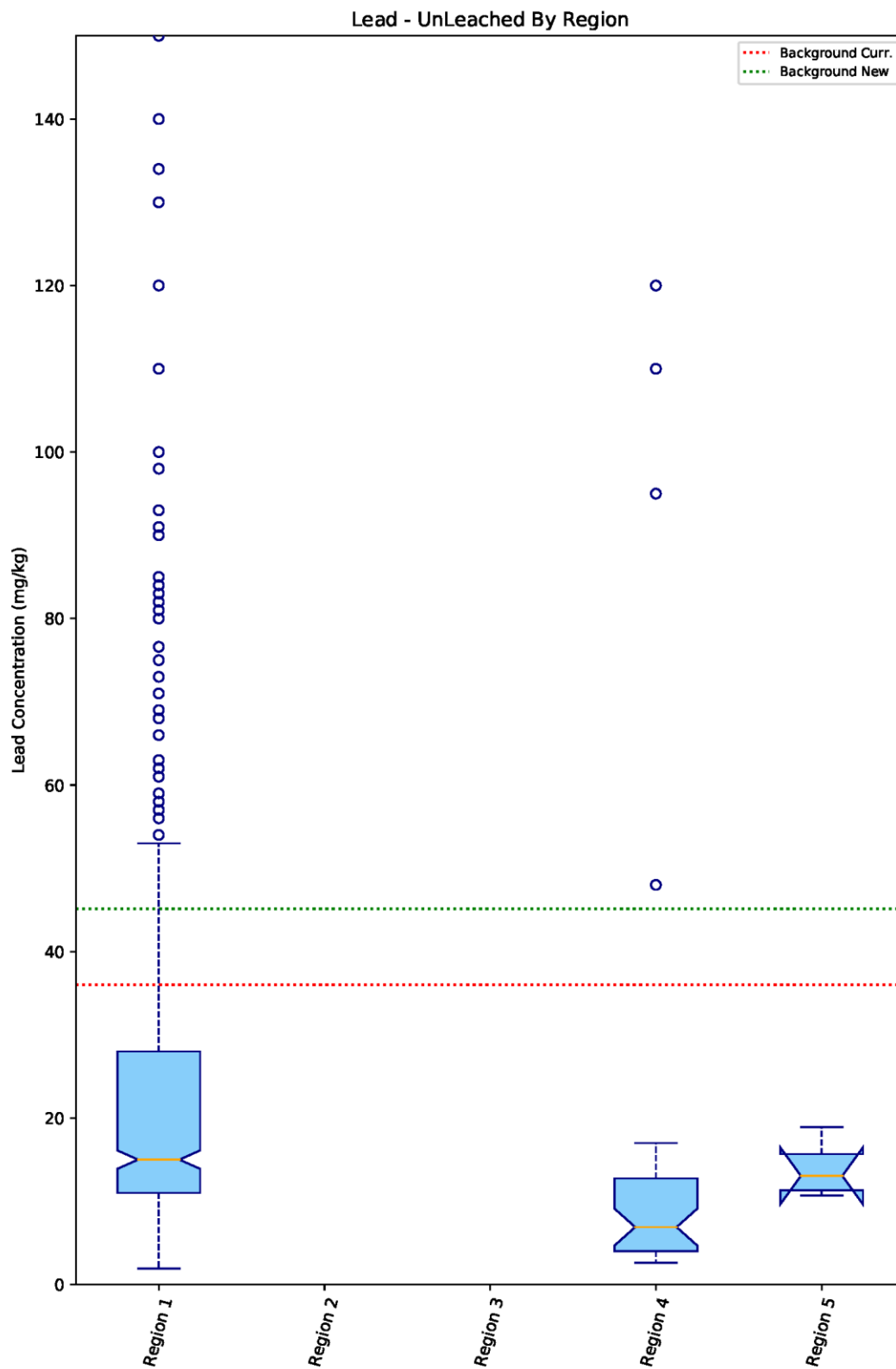


Figure 432. Histogram of RSL lead concentrations by IDOT Region, Non-REC (mg/kg)



**Figure 433. Boxplot of RSL lead concentrations by IDOT Region, Non-REC (mg/kg)**

Lead Concentration by District, page 1 of 2

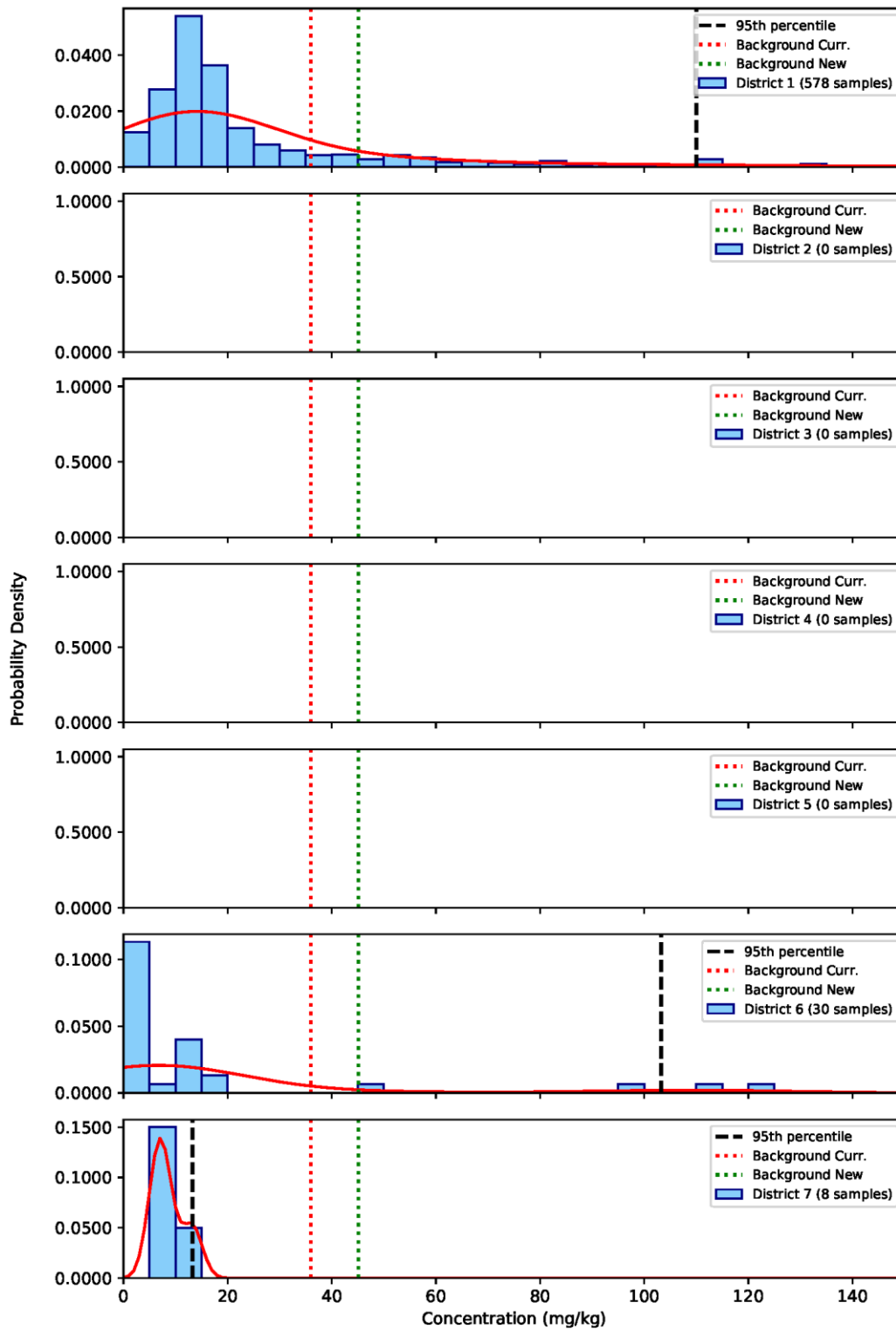


Figure 434. Histogram of RSL lead concentrations by IDOT District, Non-REC (mg/kg), part 1

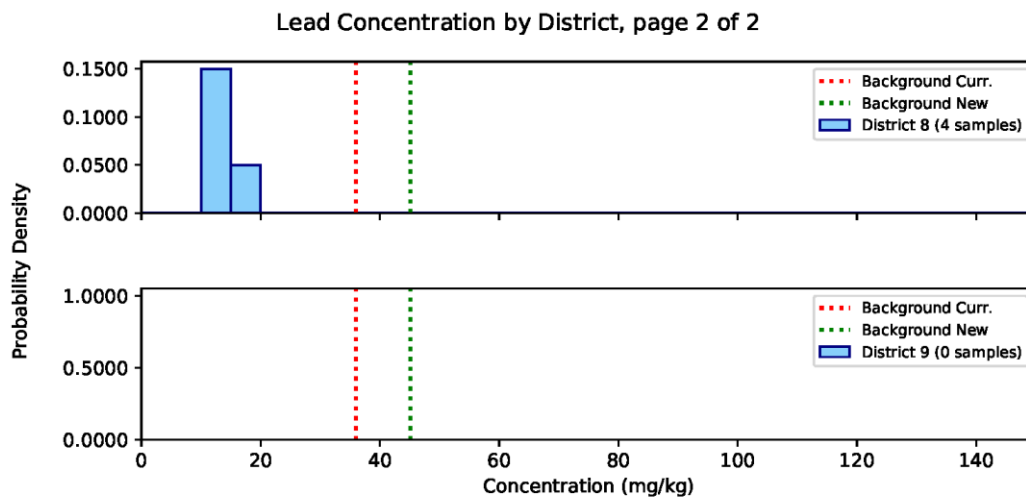
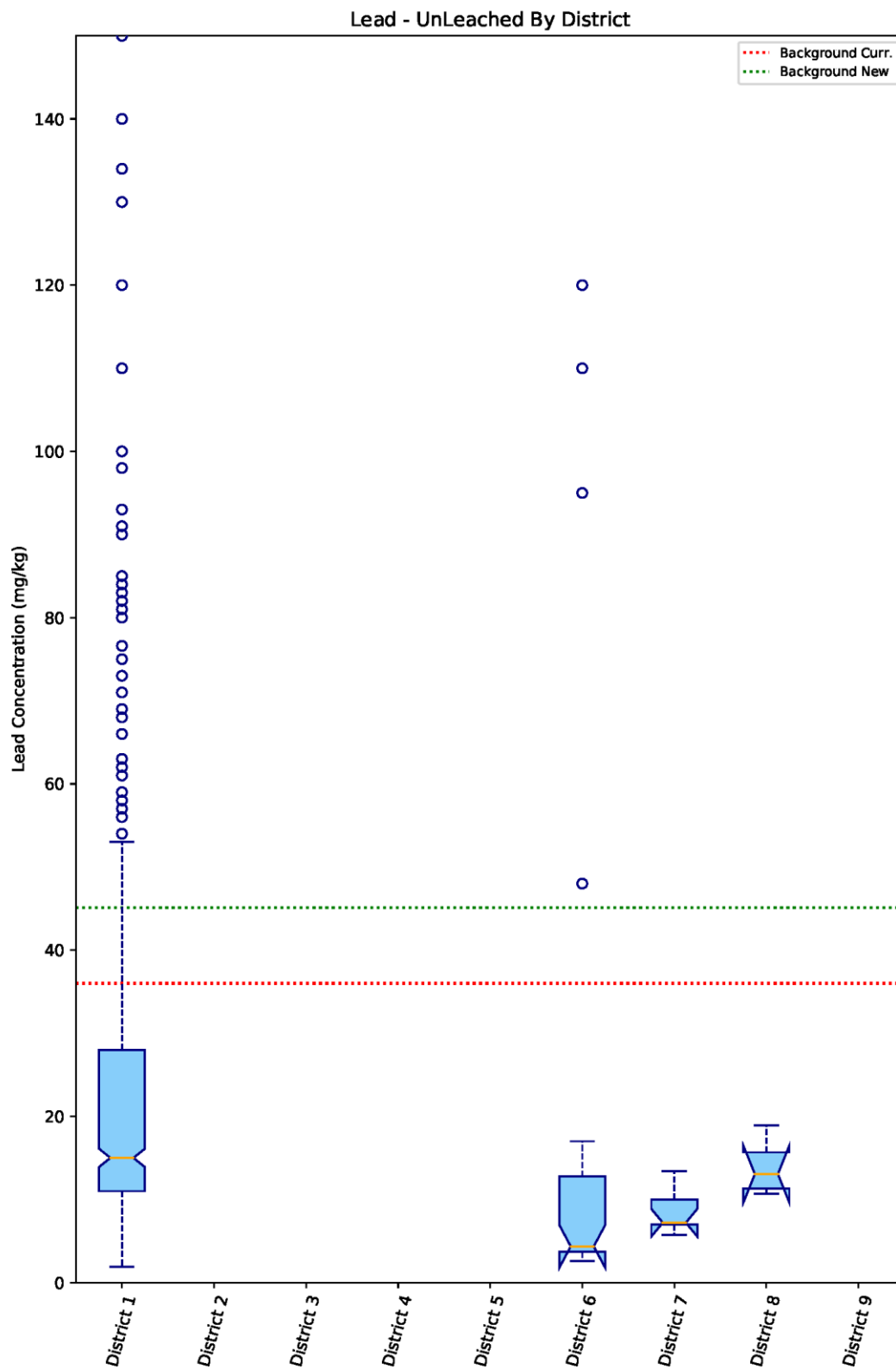


Figure 435. Histogram of RSL lead concentrations by IDOT District, Non-REC (mg/kg), part 2



**Figure 436. Boxplot of RSL lead concentrations by IDOT District, Non-REC (mg/kg)**

# Lead Concentration by County, page 1 of 2

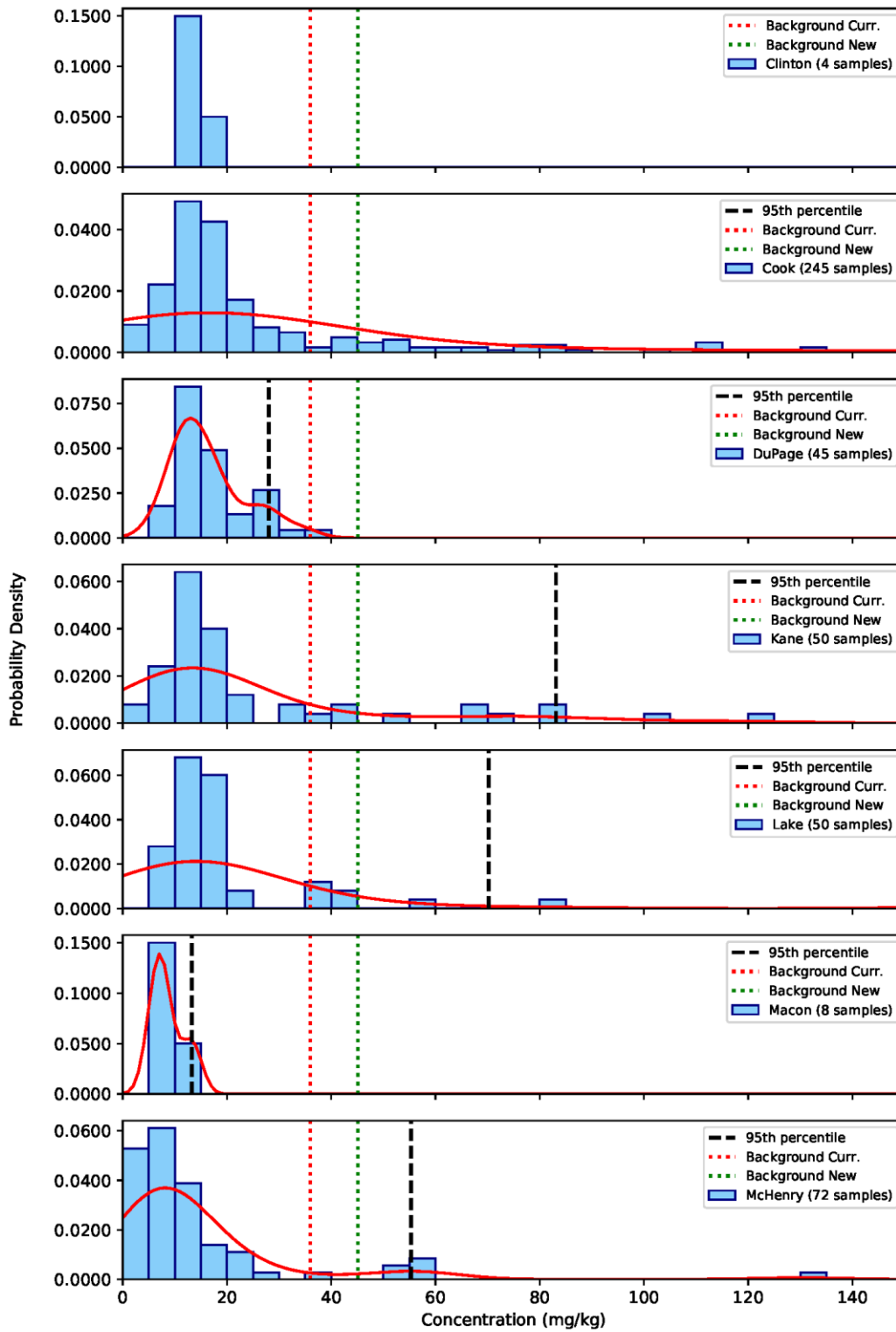


Figure 437. Histogram of RSL lead concentrations by Illinois county, Non-REC (mg/kg), part 1



Lead Concentration by County, page 2 of 2

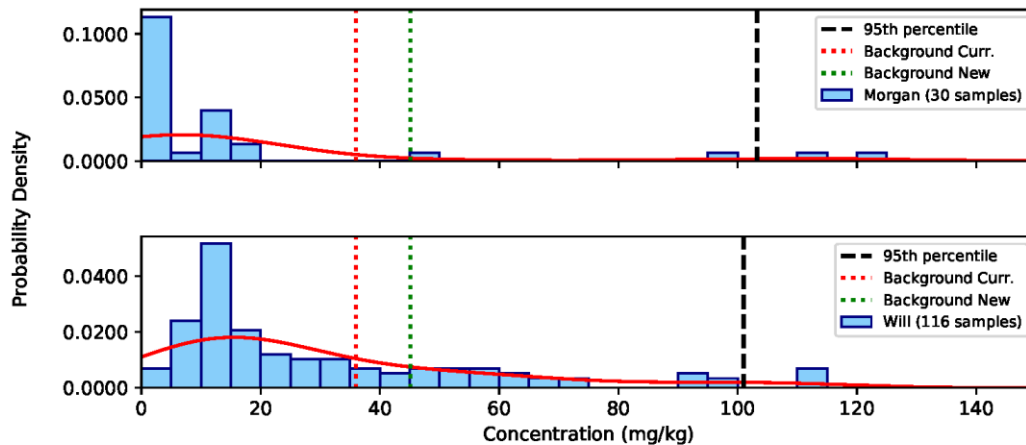


Figure 438. Histogram of RSL lead concentrations by Illinois county, Non-REC (mg/kg), part 2

Lead Concentration for 95th Percentile by County: Non-REC Sites

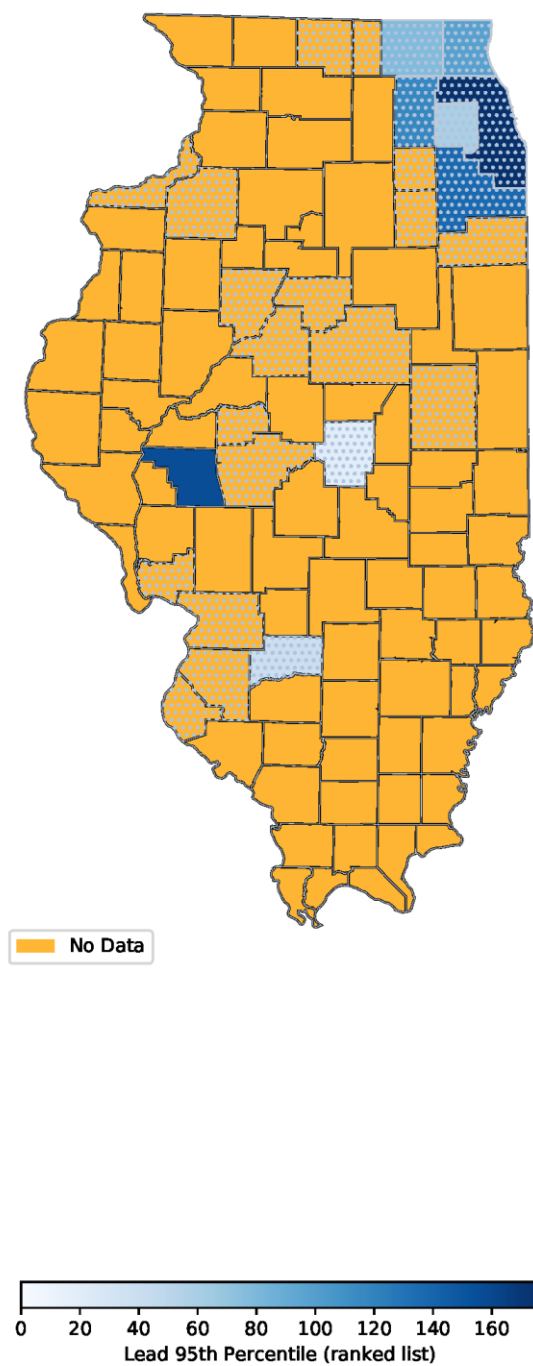


Figure 439. Map of RSL lead 95th percentile concentration by Illinois county, Non-REC (mg/kg)

Number of Lead Samples by County: Non-REC Sites

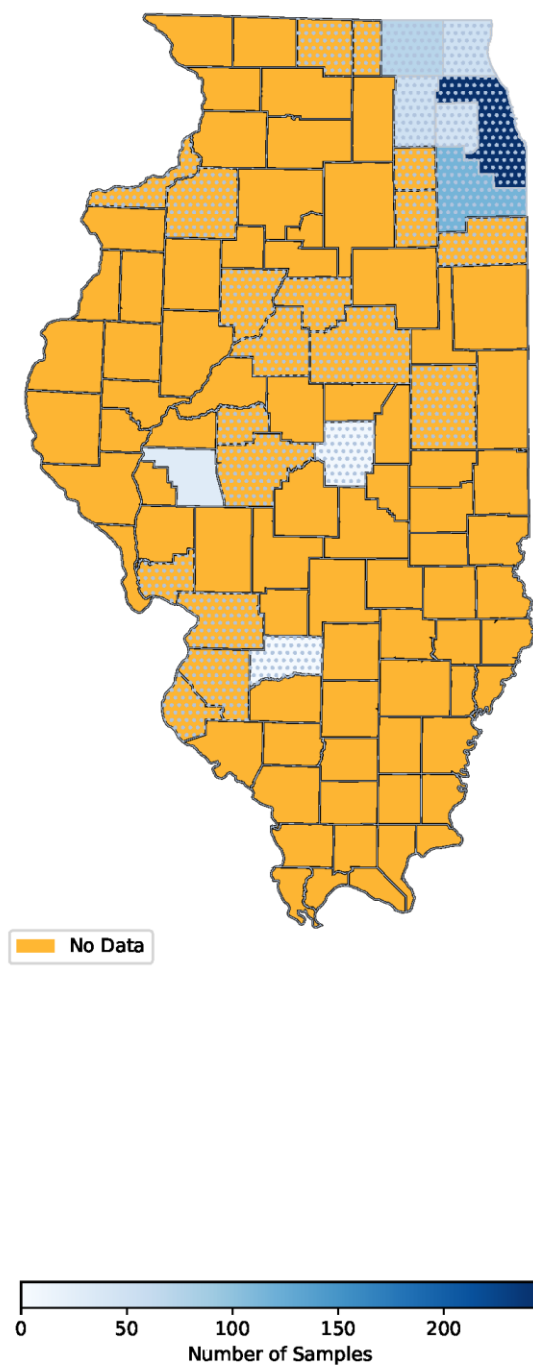


Figure 440. Map of RSL lead sample quantity by Illinois county, Non-REC (mg/kg)

### **L.3 LEAD DE MINIMIS**

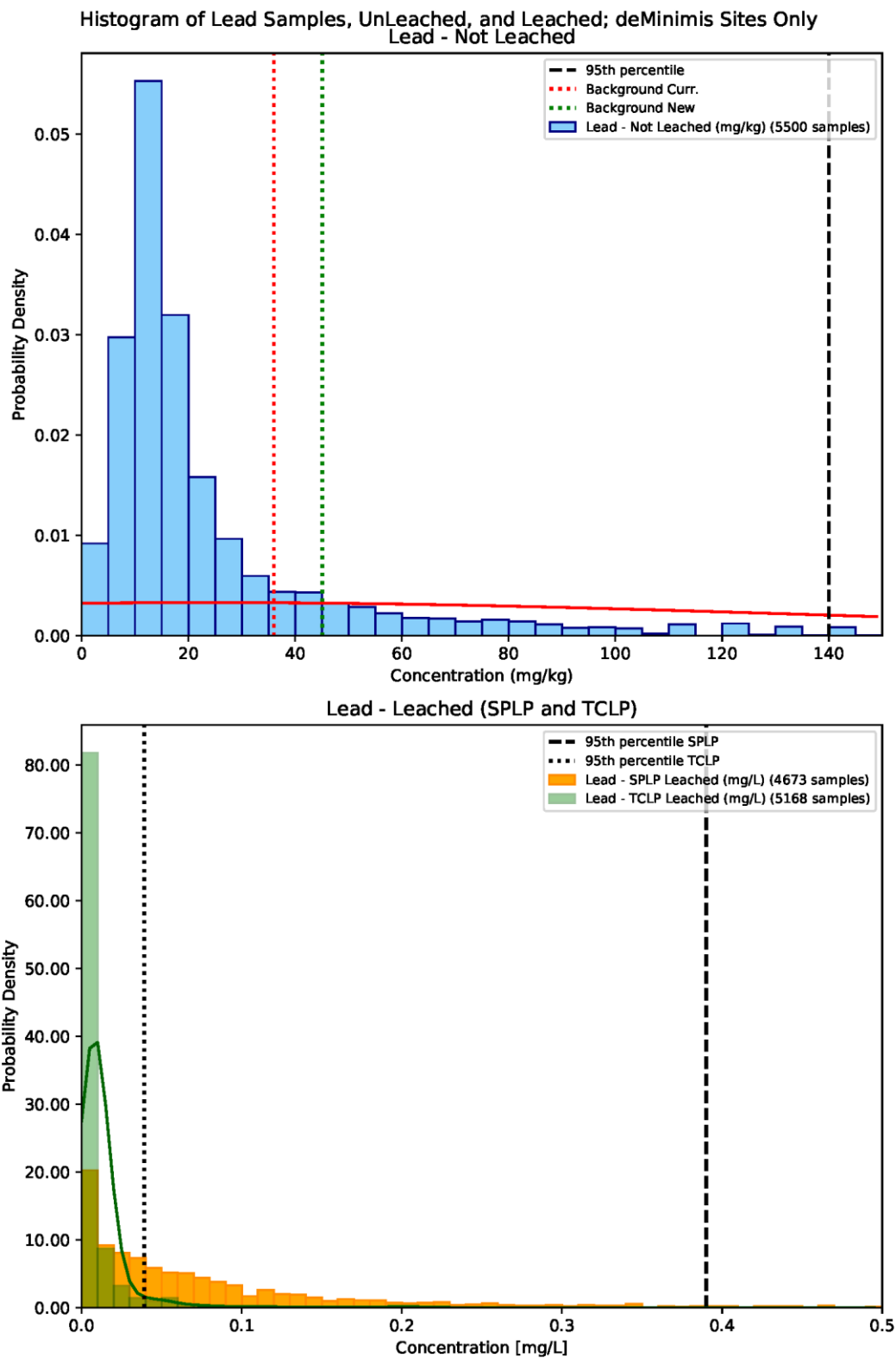


Figure 441. Histogram of RSL lead concentrations, de minimis (mg/kg)

Lead Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

Lead Concentration by Region, page 1 of 1

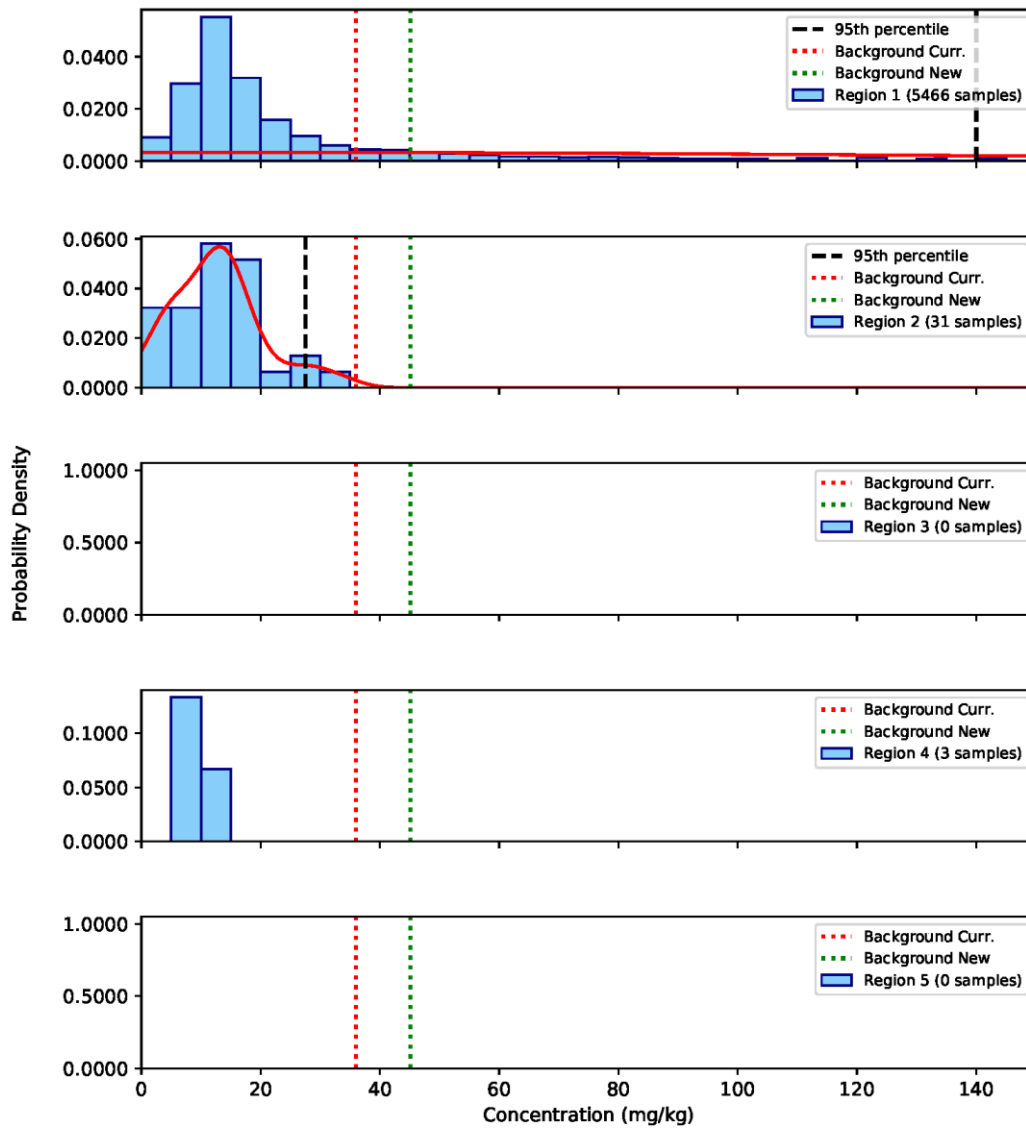


Figure 442. Histogram of RSL lead concentrations by IDOT Region, de minimis (mg/kg)

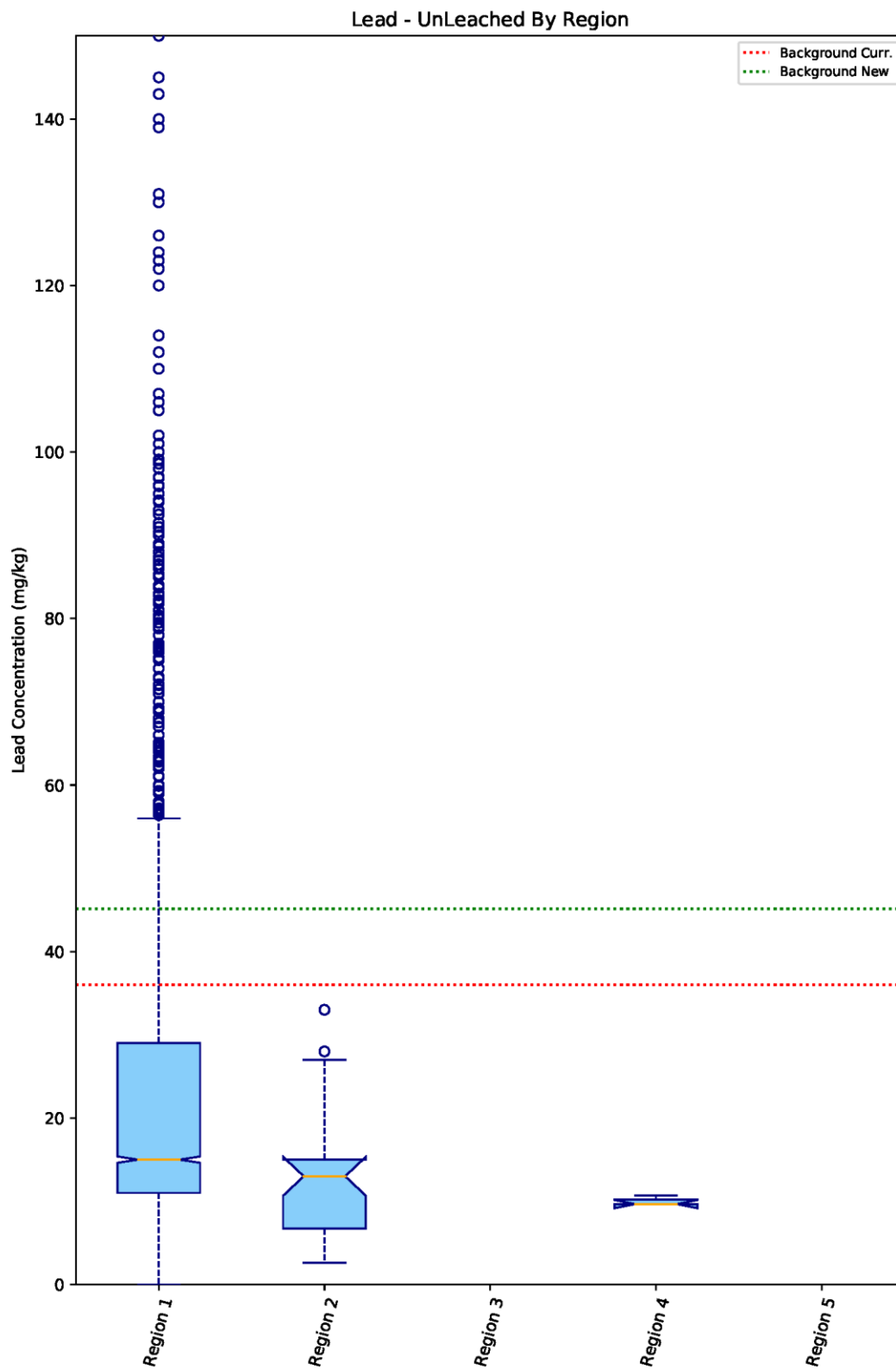


Figure 443. Boxplot of RSL lead concentrations by IDOT Region, de minimis (mg/kg)



Lead Concentration by District, page 1 of 2

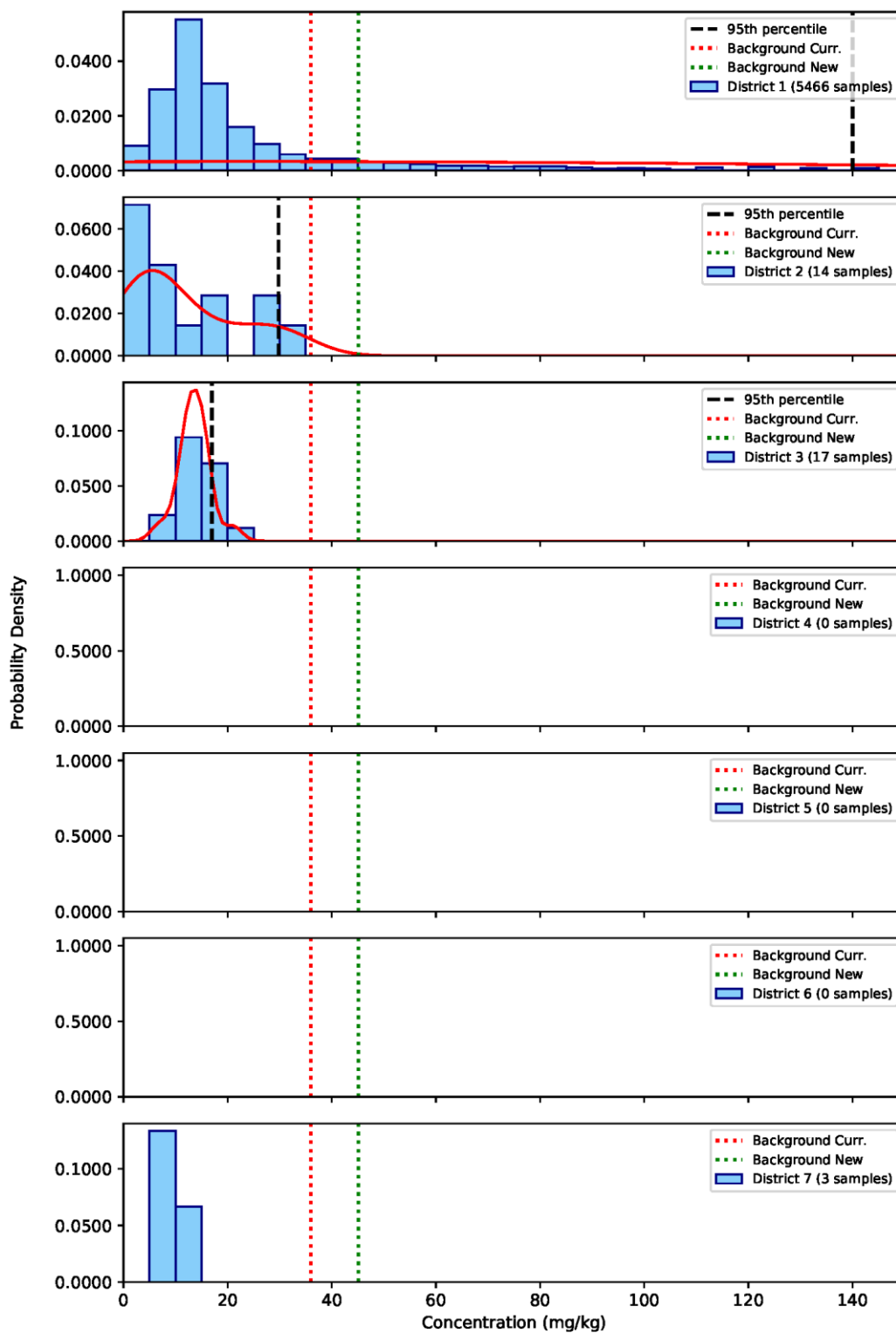


Figure 444. Histogram of RSL lead concentrations by IDOT District, de minimis (mg/kg), part 1

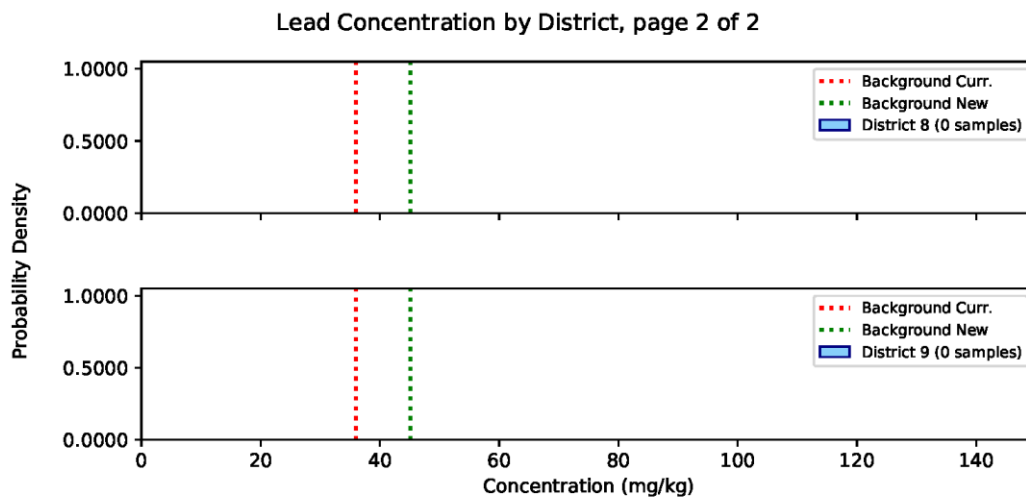


Figure 445. Histogram of RSL lead concentrations by IDOT District, de minimis (mg/kg), part 2

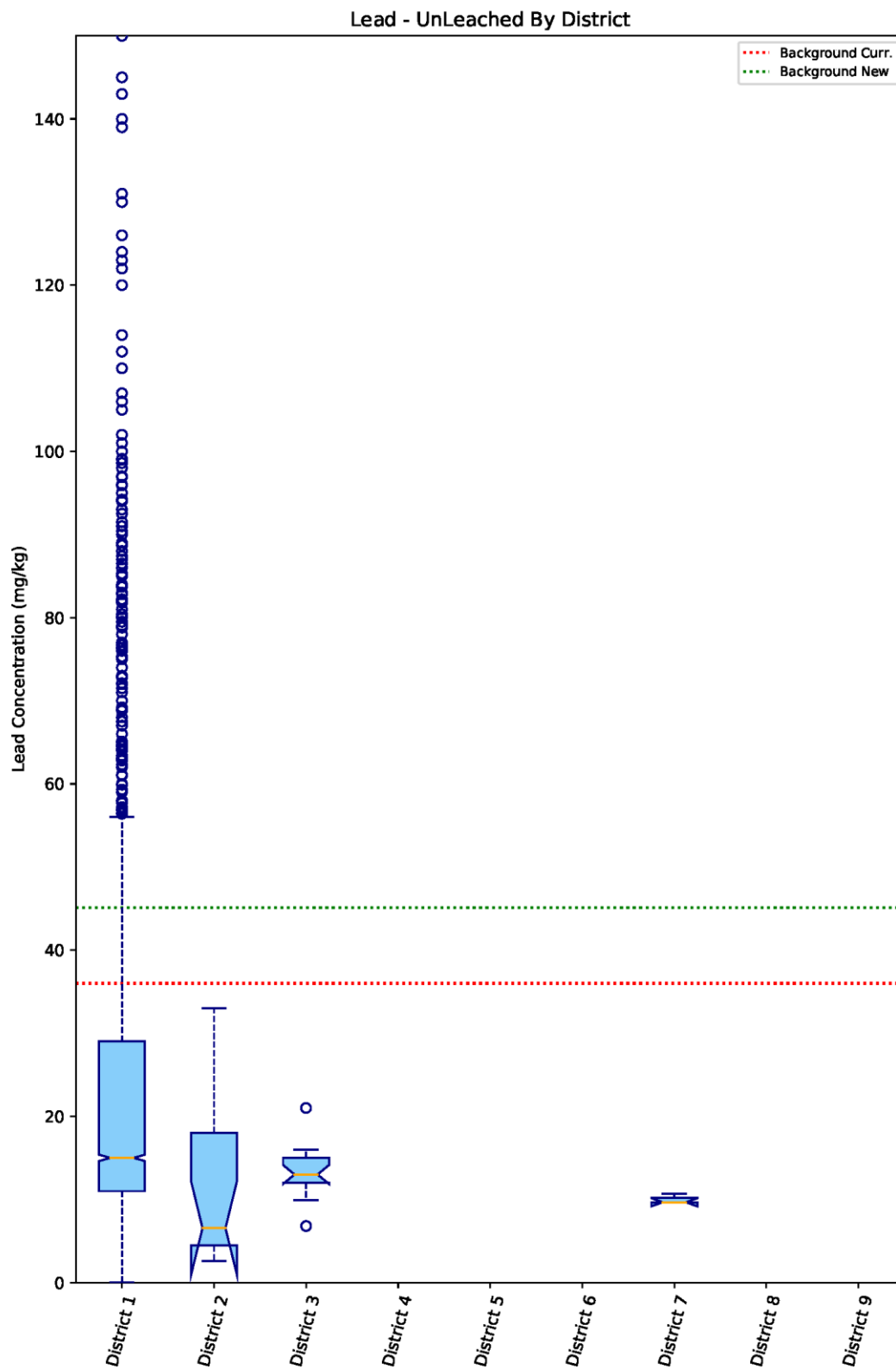


Figure 446. Boxplot of RSL lead concentrations by IDOT District, de minimis (mg/kg)

# Lead Concentration by County, page 1 of 2

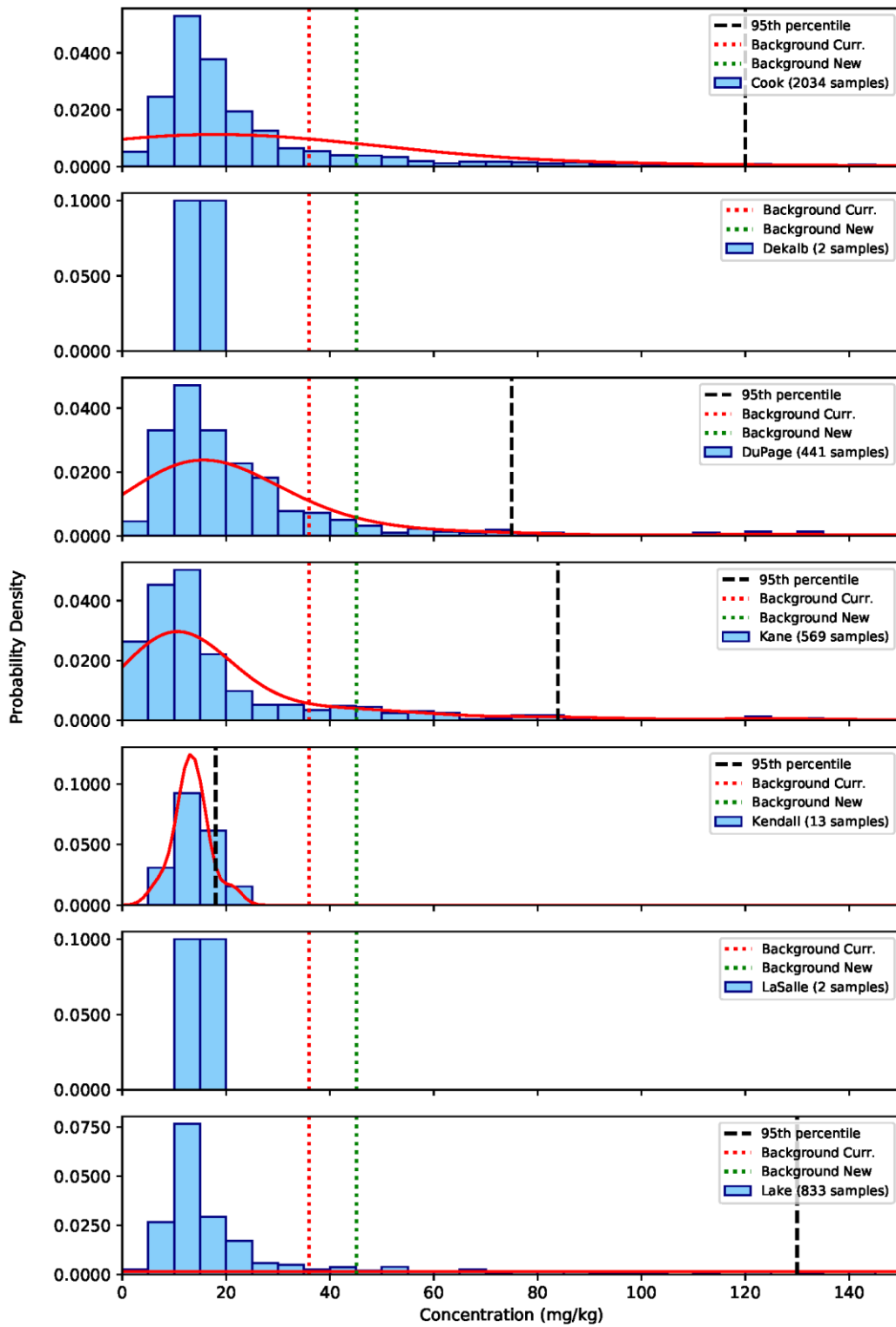


Figure 447. Histogram of RSL lead concentrations by Illinois county, de minimis (mg/kg), part 1

# Lead Concentration by County, page 2 of 2

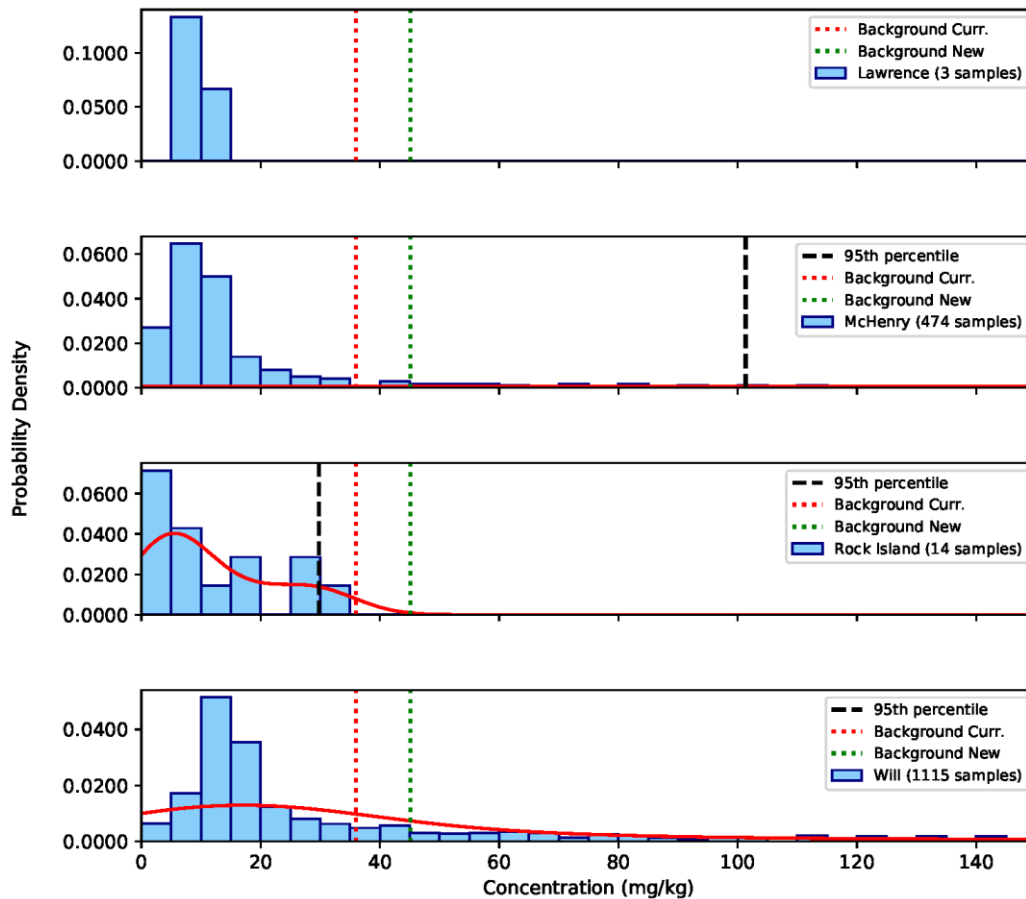


Figure 448. Histogram of RSL lead concentrations by Illinois county, de minimis (mg/kg), part 2

Lead Concentration for 95th Percentile by County: deMinimis Sites

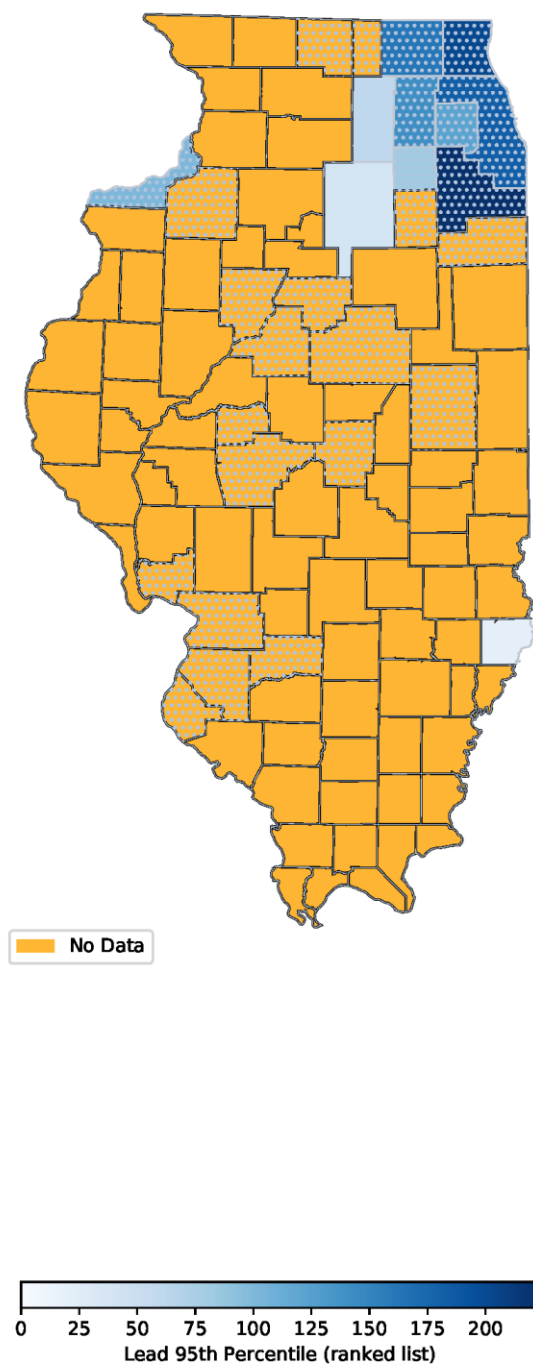


Figure 449. Map of RSL lead 95th percentile concentration by Illinois county, de minimis (mg/kg)

Number of Lead Samples by County: deMinimis Sites

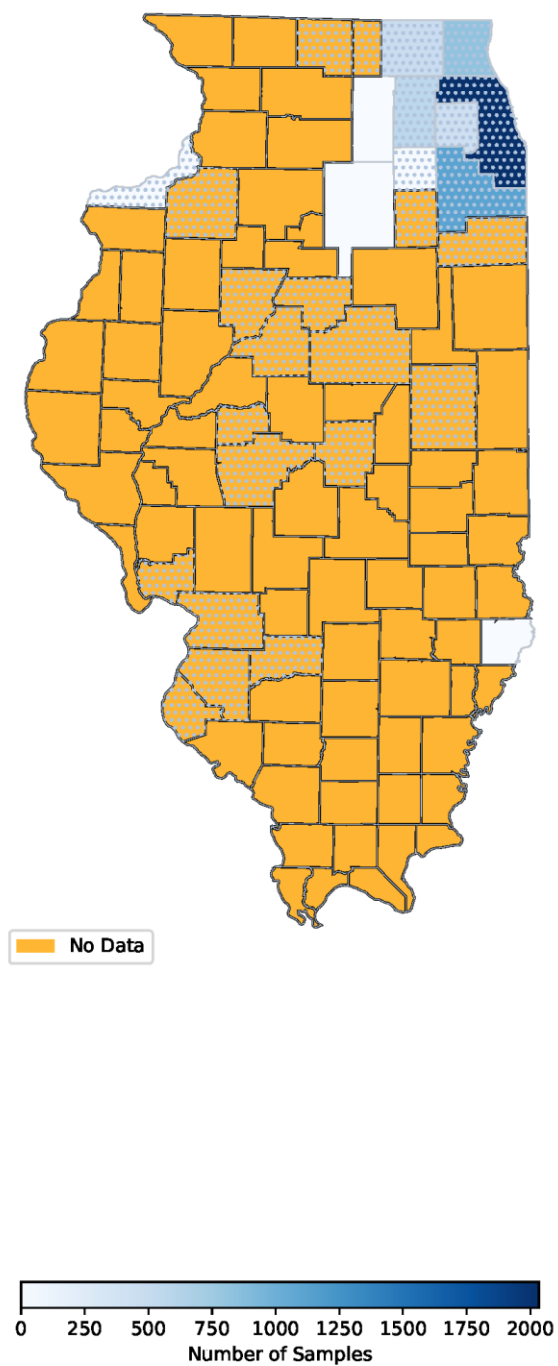


Figure 450. Map of RSL lead sample quantity by Illinois county, de minimis (mg/kg)

## **APPENDIX M. ANALYTE ANALYSIS: MAGNESIUM**

### **M.1 MAGNESIUM REC**



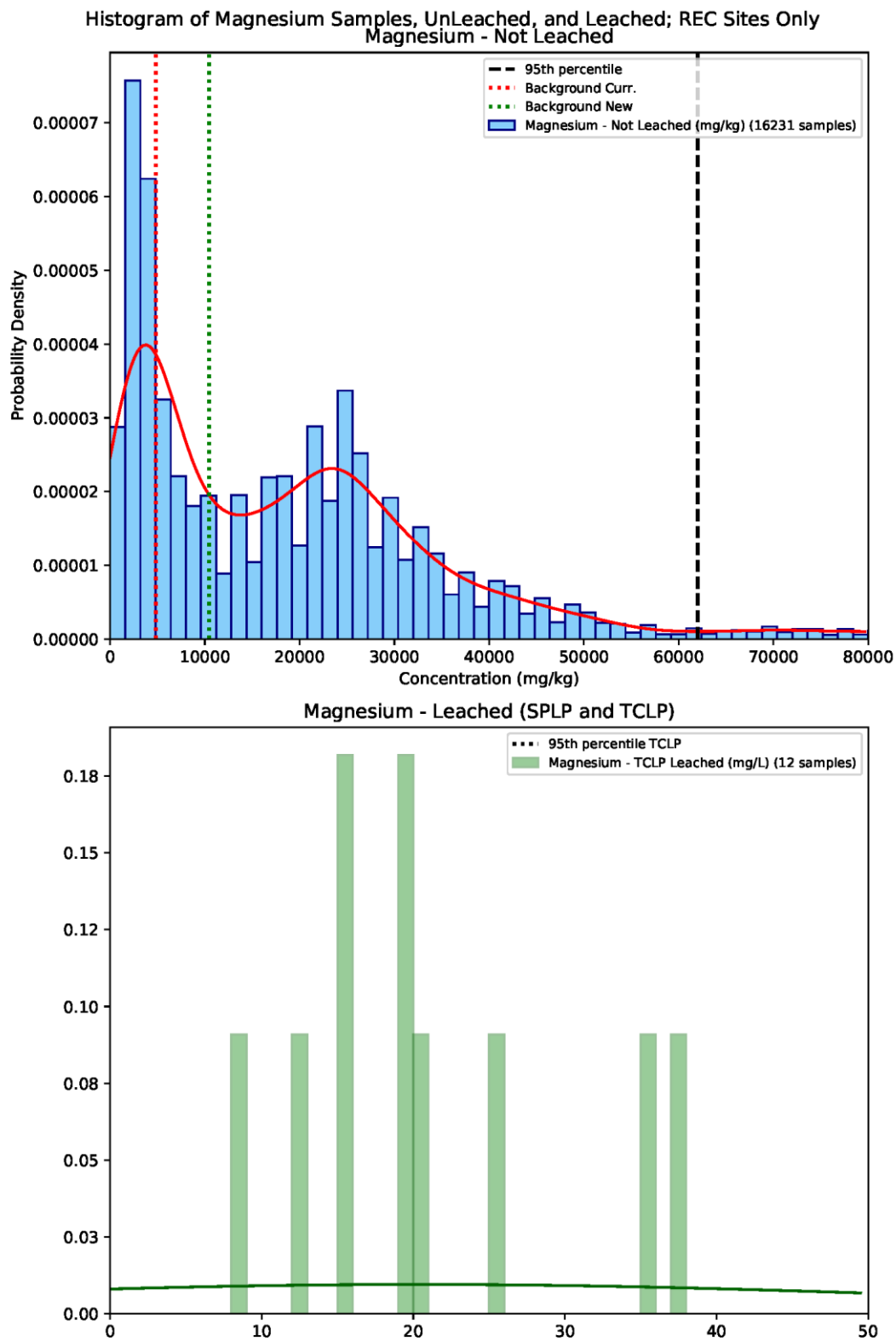


Figure 451. Histogram of RSL magnesium concentrations, REC (mg/kg)

**Magnesium Unleached Concentration (mg/kg)**

- 1) Region
- 2) District
- 3) County

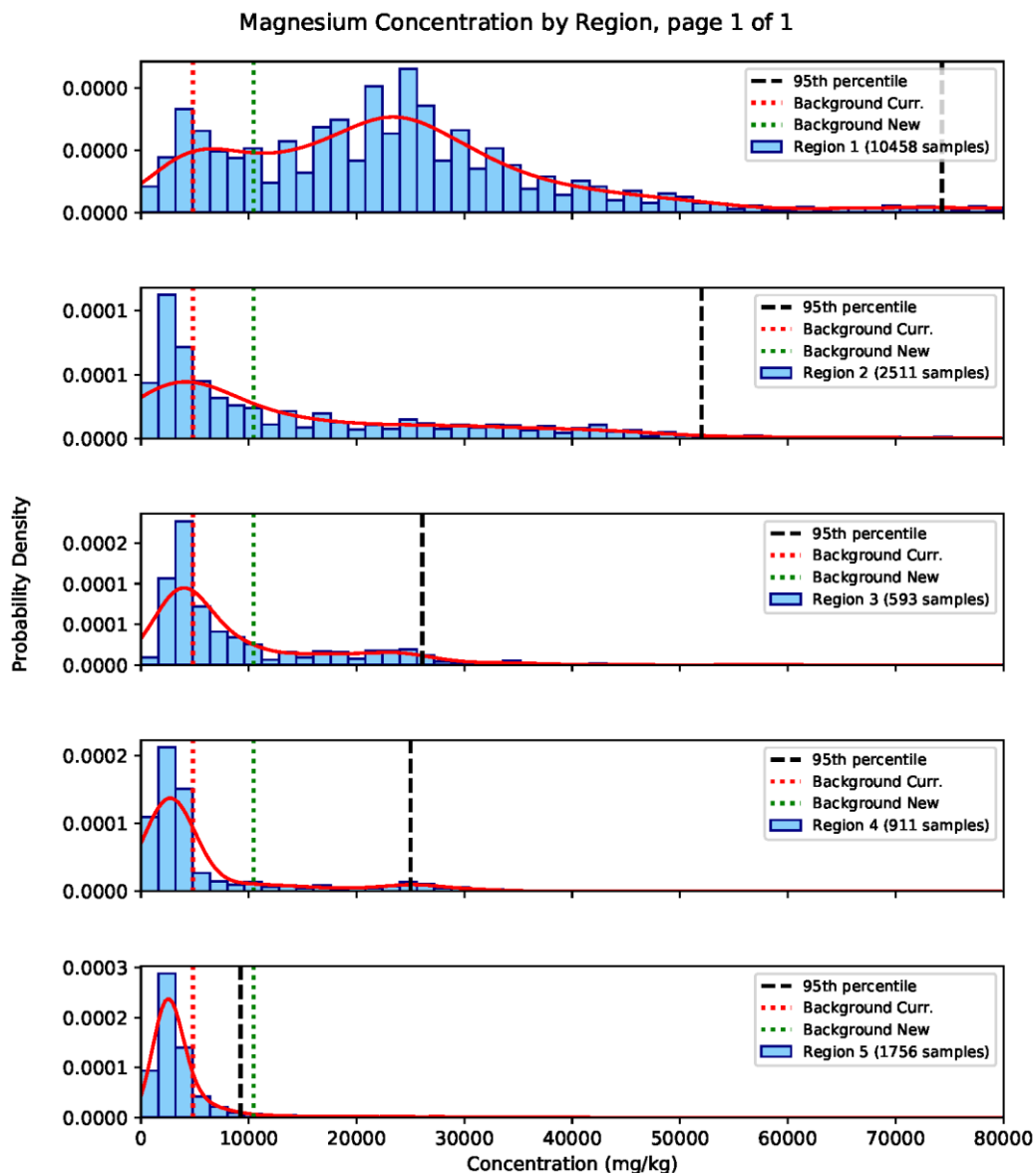


Figure 452. Histogram of RSL magnesium concentrations by IDOT Region, REC (mg/kg)

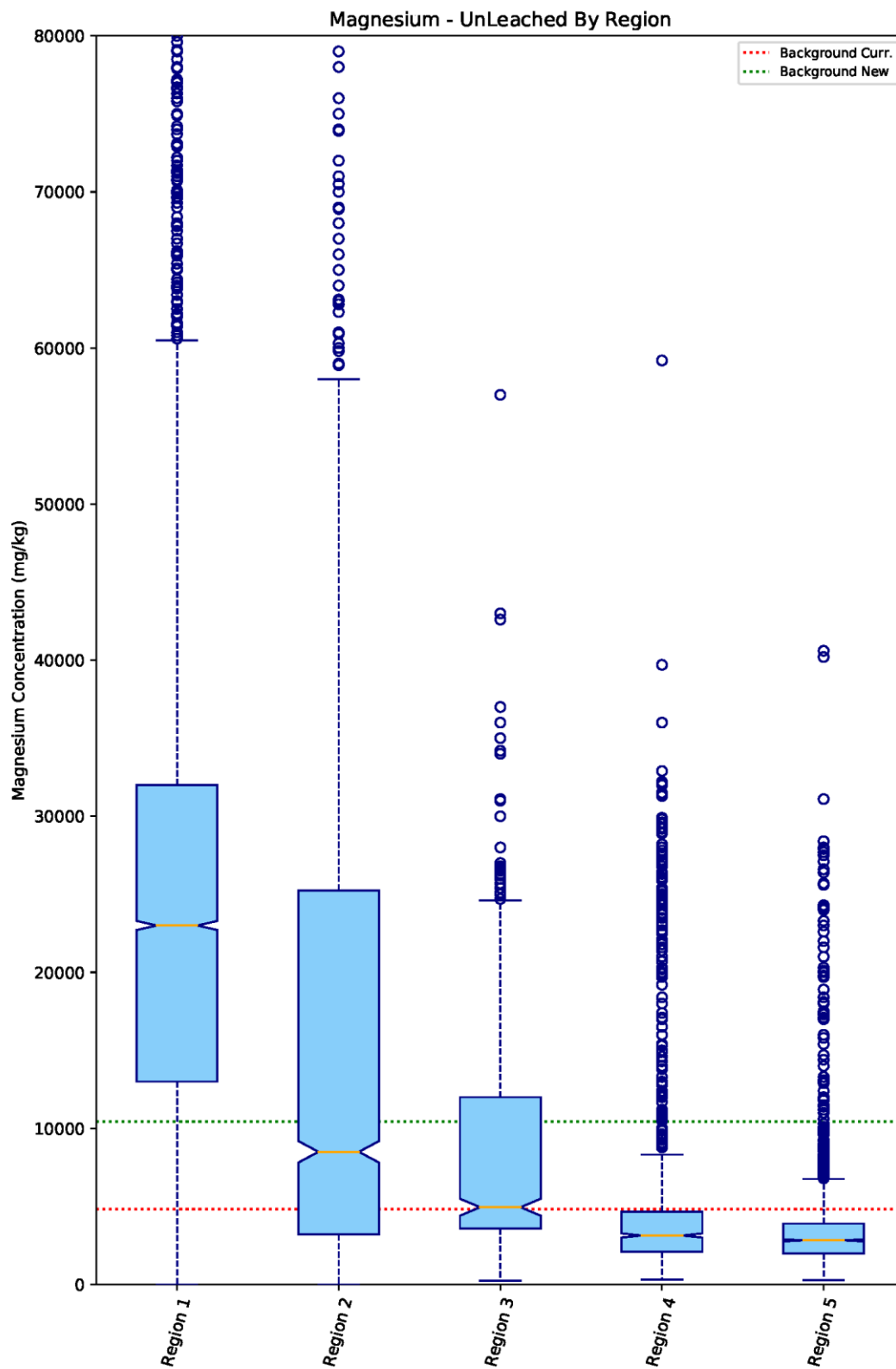


Figure 453. Boxplot of RSL magnesium concentrations by IDOT Region, REC (mg/kg)

# Magnesium Concentration by District, page 1 of 2

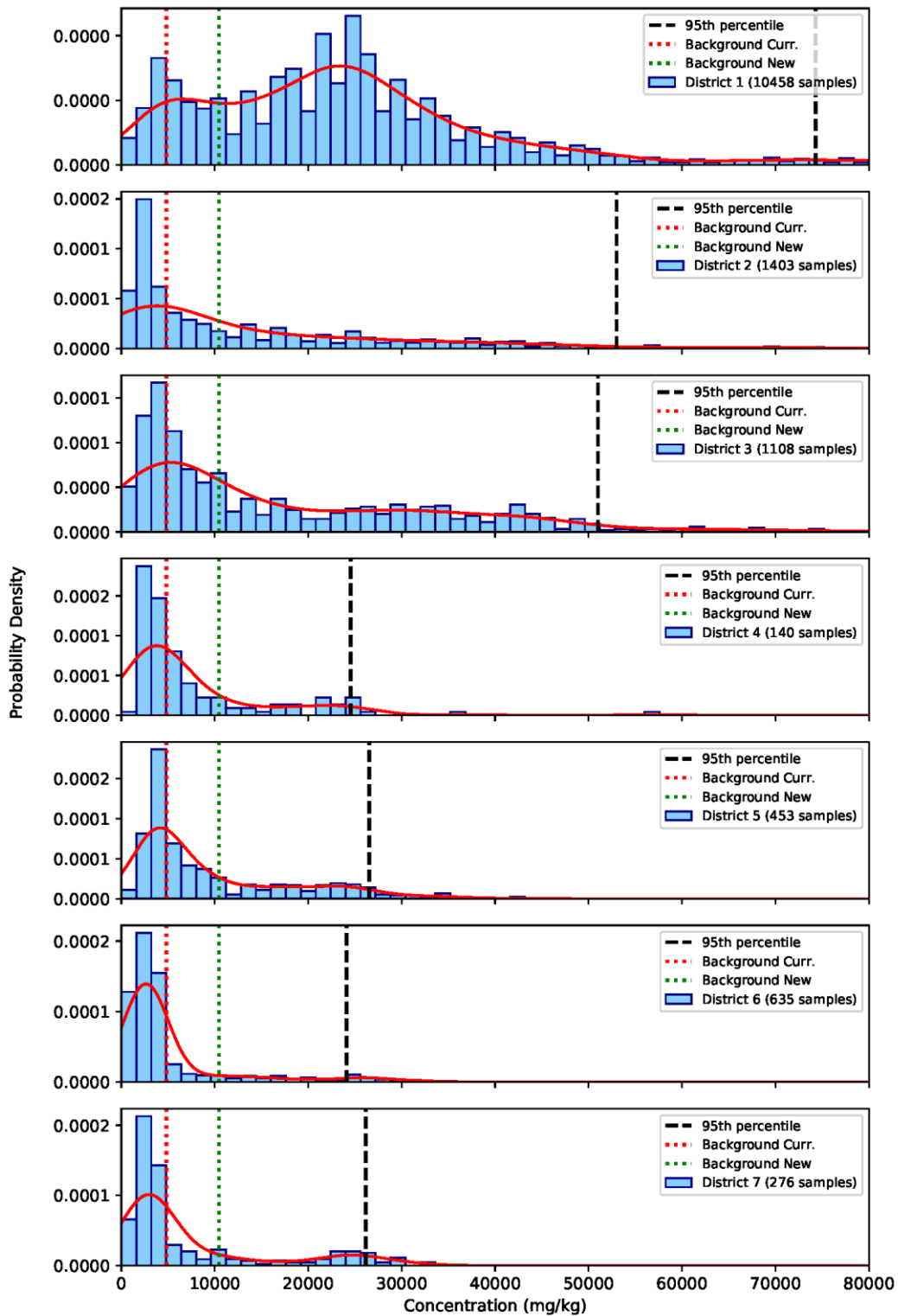


Figure 454. Histogram of RSL magnesium concentrations by IDOT District, REC (mg/kg), part 1

Magnesium Concentration by District, page 2 of 2

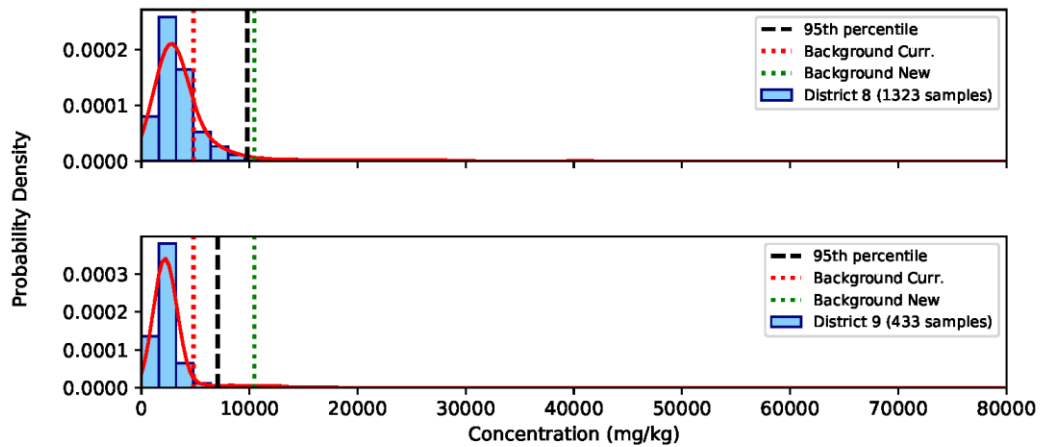


Figure 455. Histogram of RSL magnesium concentrations by IDOT District, REC (mg/kg), part 2

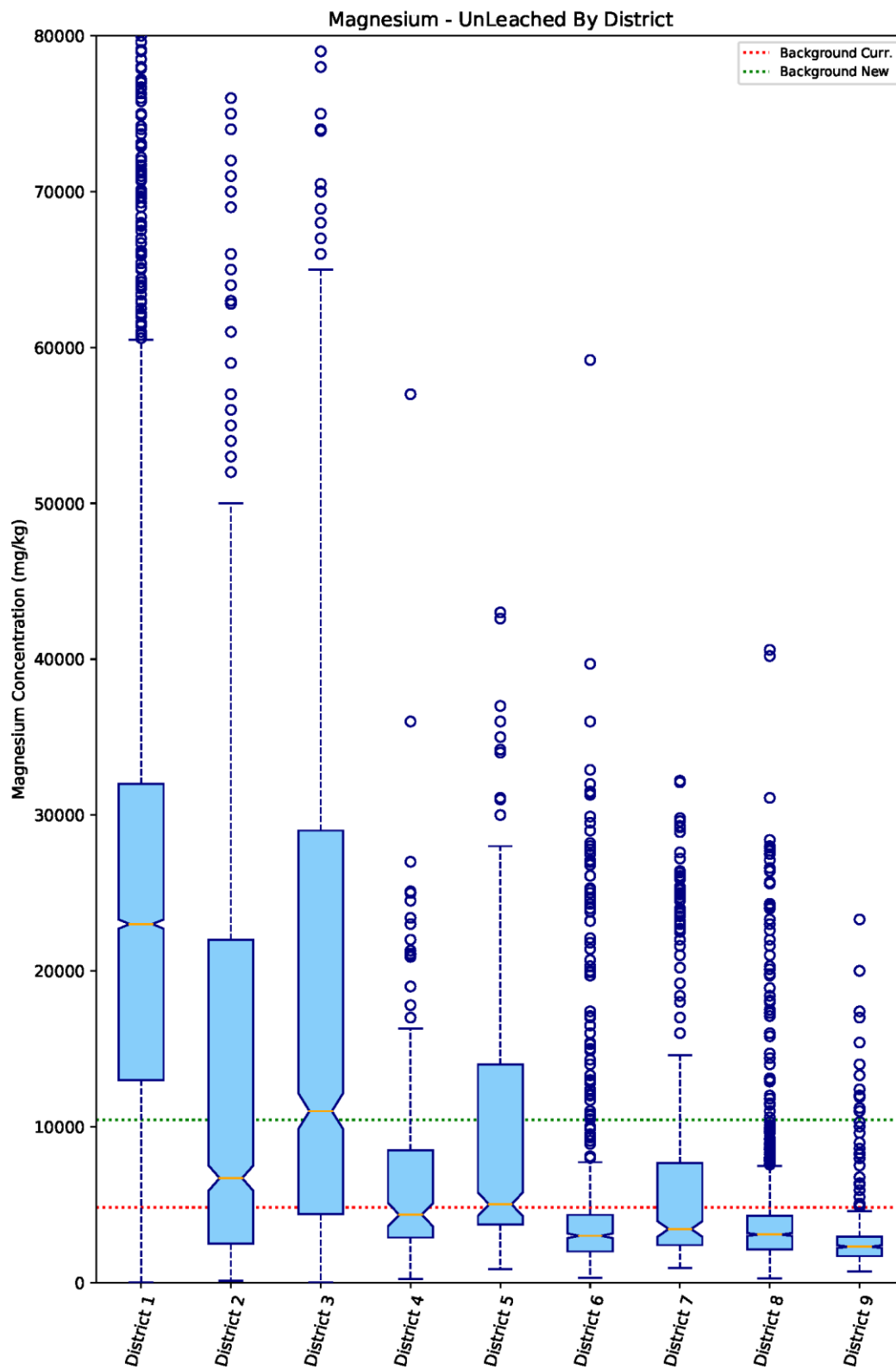


Figure 456. Boxplot of RSL magnesium concentrations by IDOT District, REC (mg/kg)

# Magnesium Concentration by County, page 1 of 10

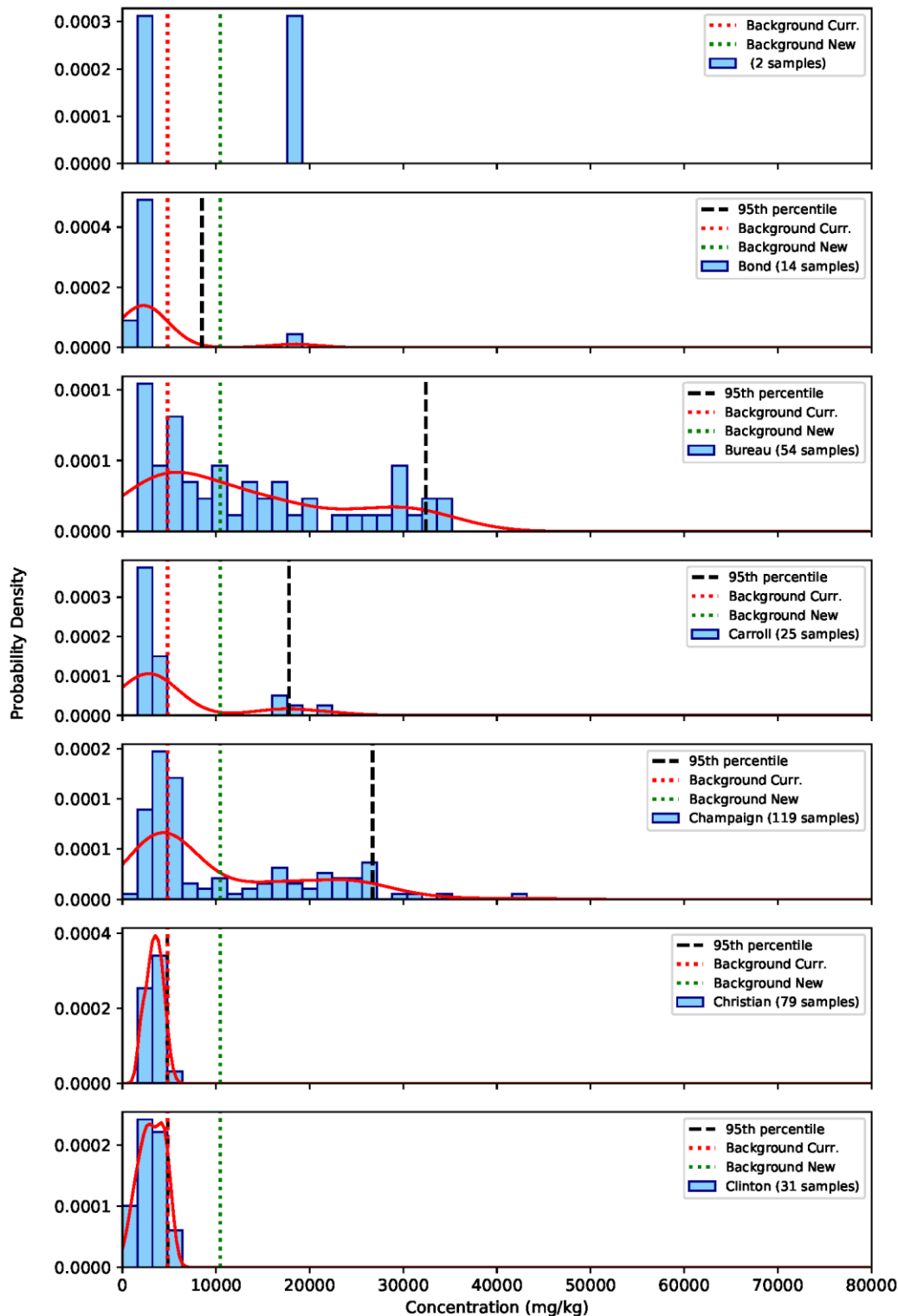


Figure 457. Histogram of RSL magnesium concentrations by Illinois county, REC (mg/kg), part 1



# Magnesium Concentration by County, page 2 of 10

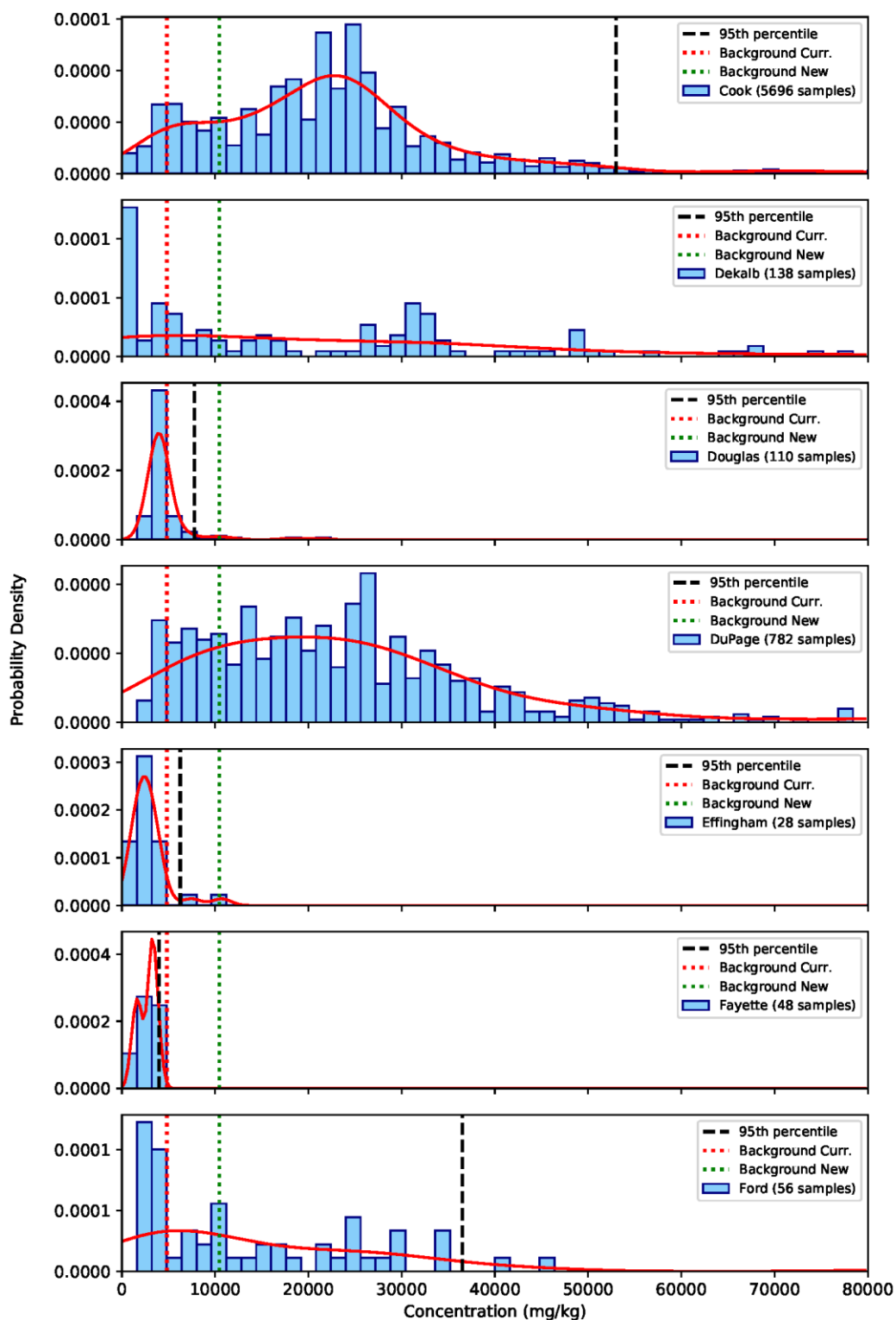


Figure 458. Histogram of RSL magnesium concentrations by Illinois county, REC (mg/kg), part 2

# Magnesium Concentration by County, page 3 of 10

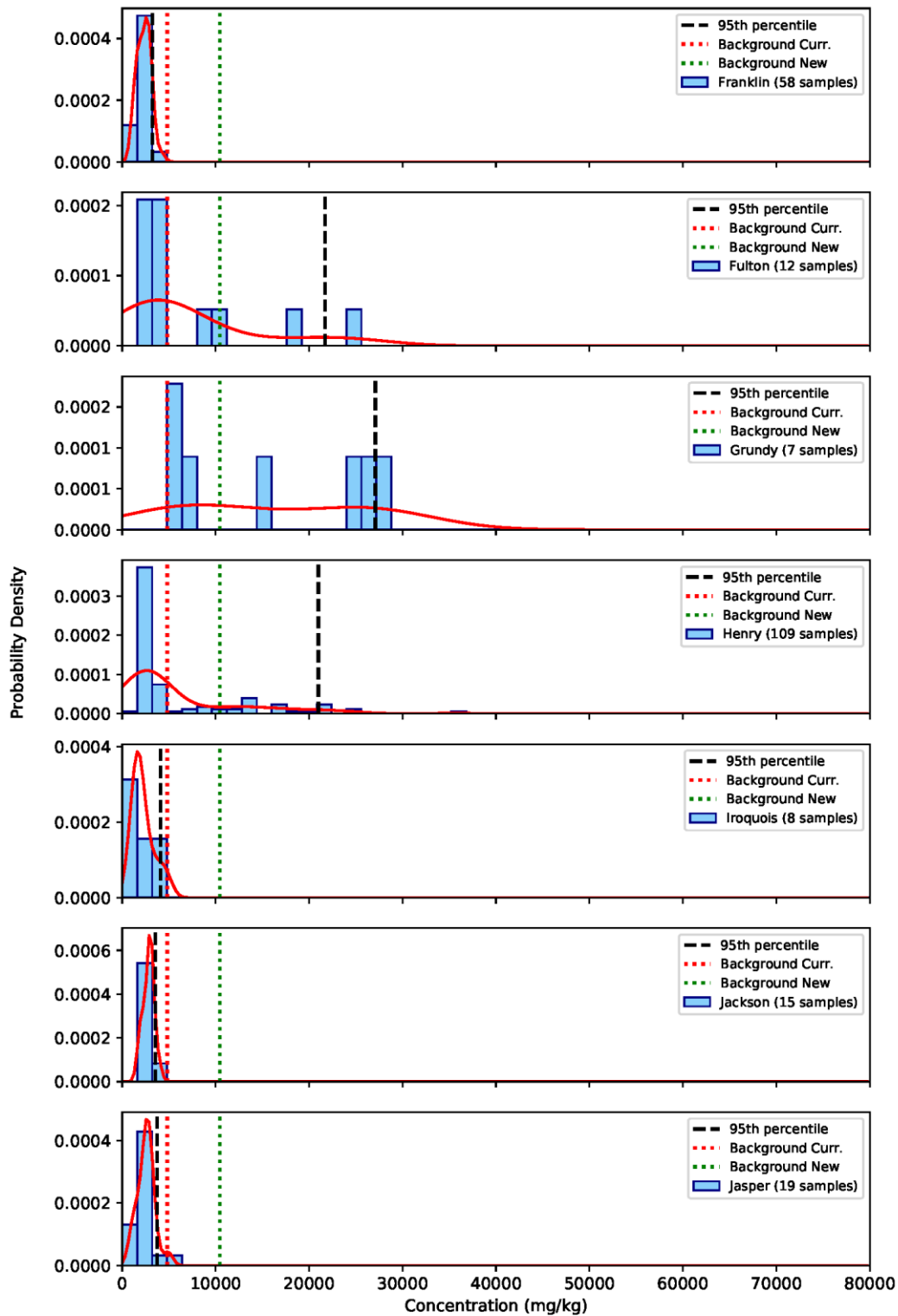


Figure 459. Histogram of RSL magnesium concentrations by Illinois county, REC (mg/kg), part 3

Magnesium Concentration by County, page 4 of 10

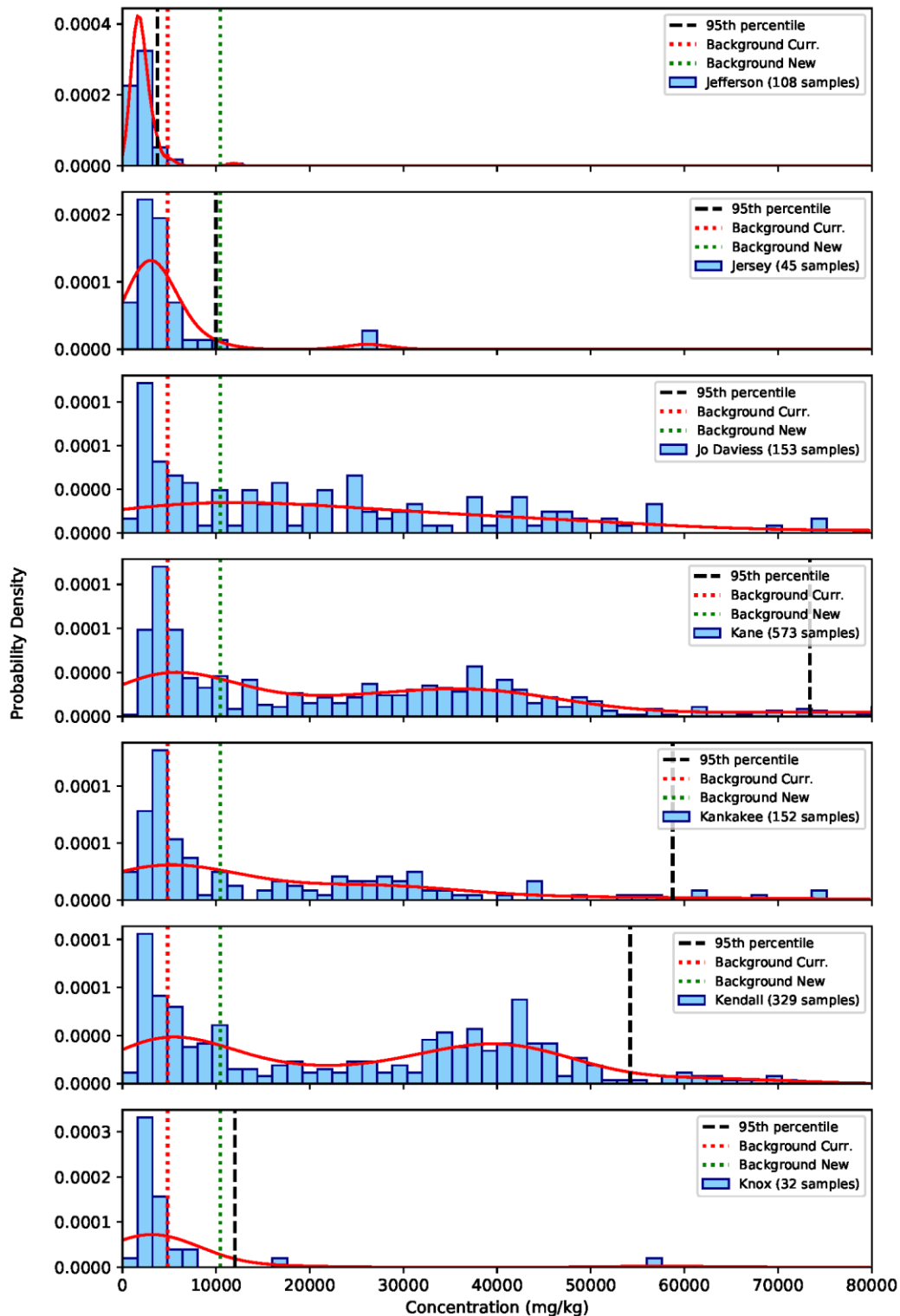


Figure 460. Histogram of RSL magnesium concentrations by Illinois county, REC (mg/kg), part 4

Magnesium Concentration by County, page 5 of 10

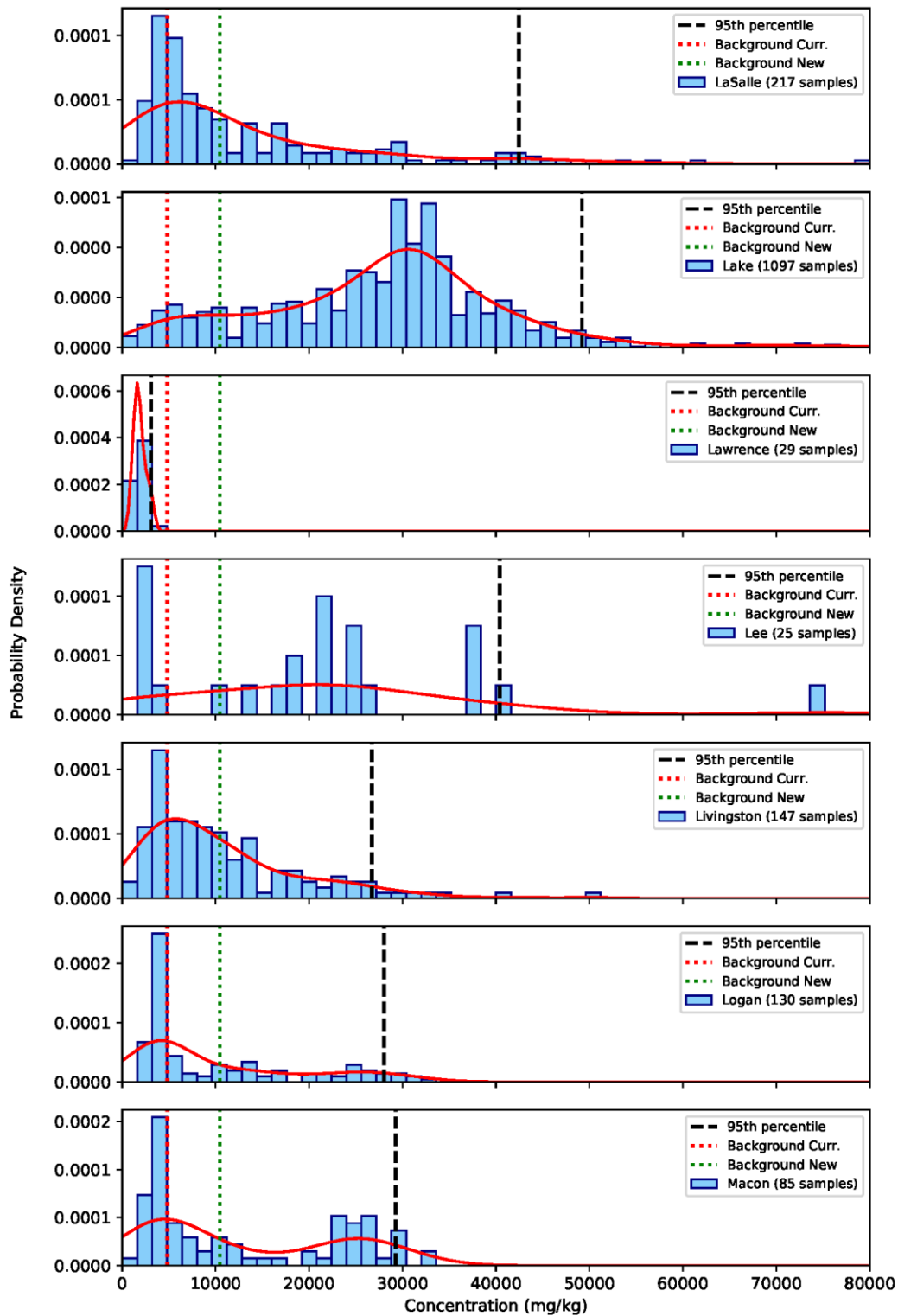


Figure 461. Histogram of RSL magnesium concentrations by Illinois county, REC (mg/kg), part 5

# Magnesium Concentration by County, page 6 of 10

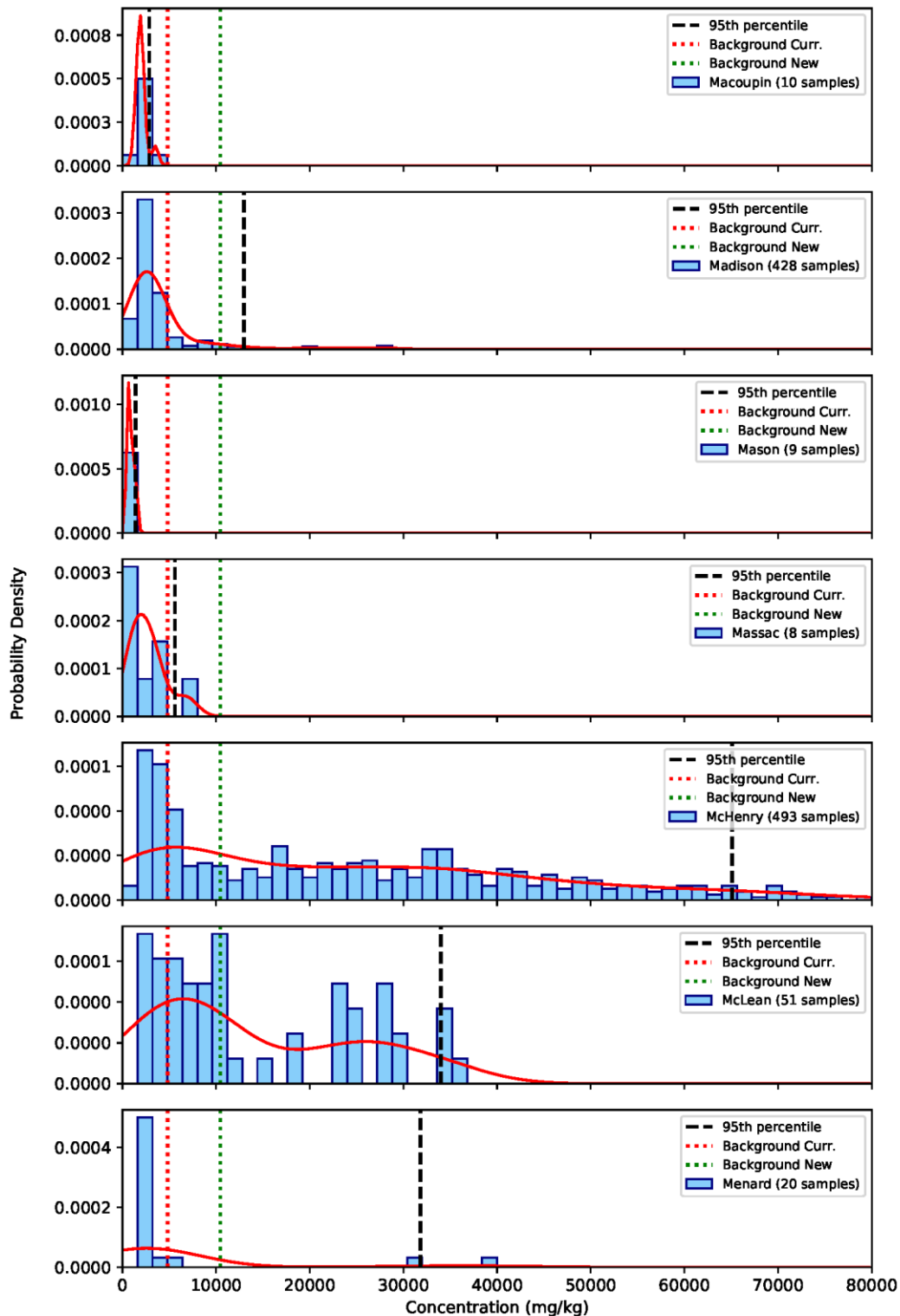


Figure 462. Histogram of RSL magnesium concentrations by Illinois county, REC (mg/kg), part 6

# Magnesium Concentration by County, page 7 of 10

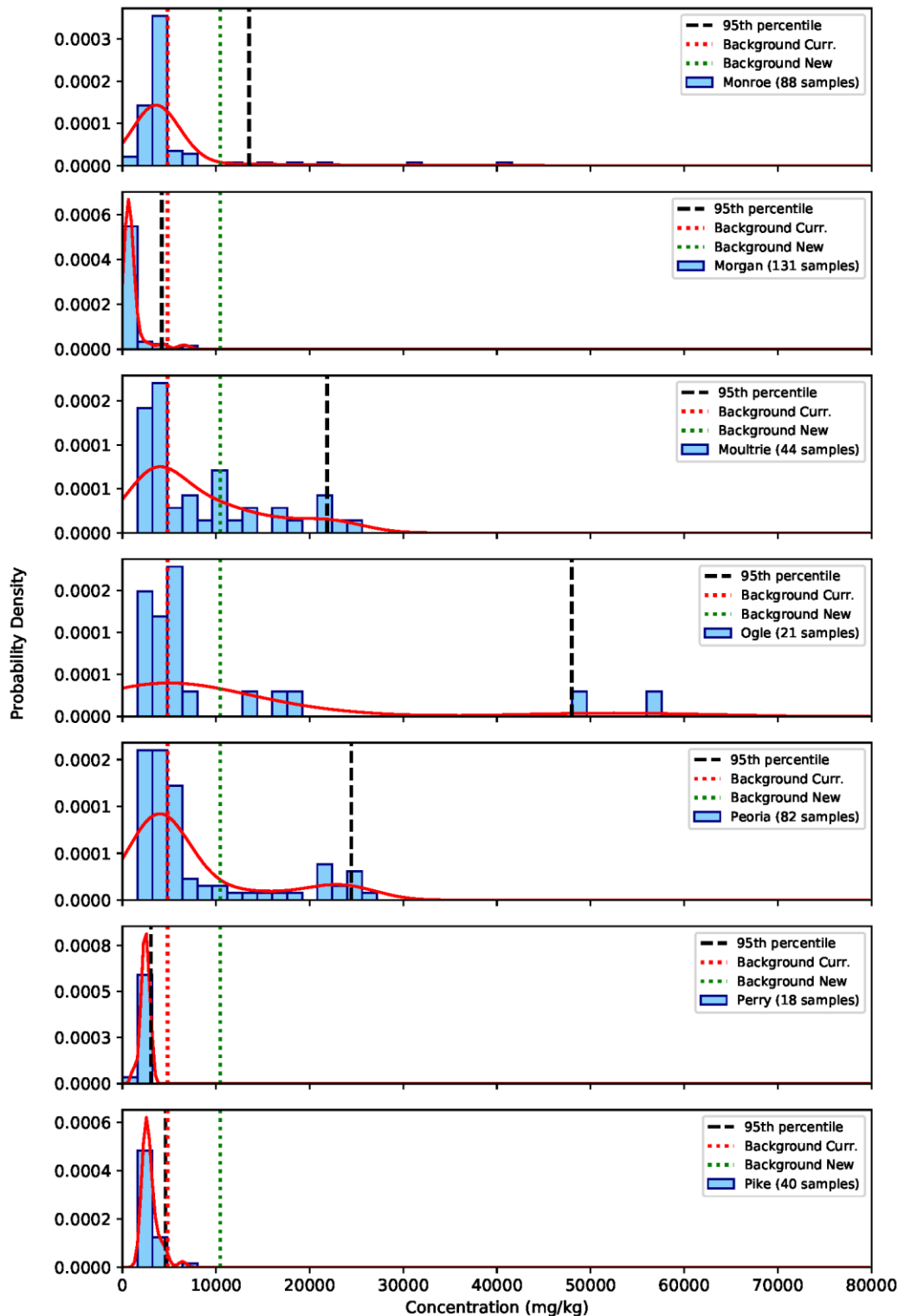


Figure 463. Histogram of RSL magnesium concentrations by Illinois county, REC (mg/kg), part 7

Magnesium Concentration by County, page 8 of 10

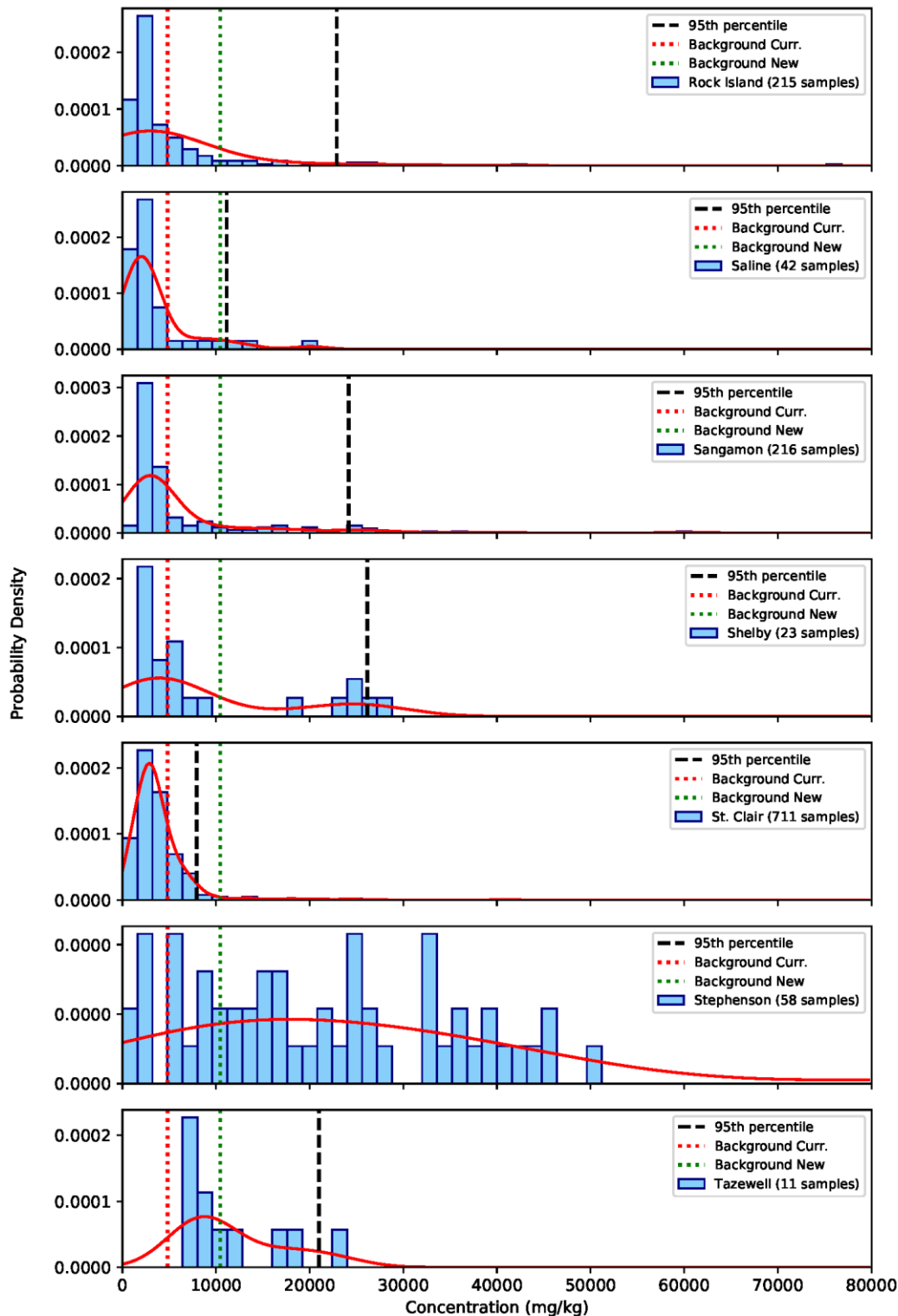


Figure 464. Histogram of RSL magnesium concentrations by Illinois county, REC (mg/kg), part 8

# Magnesium Concentration by County, page 9 of 10

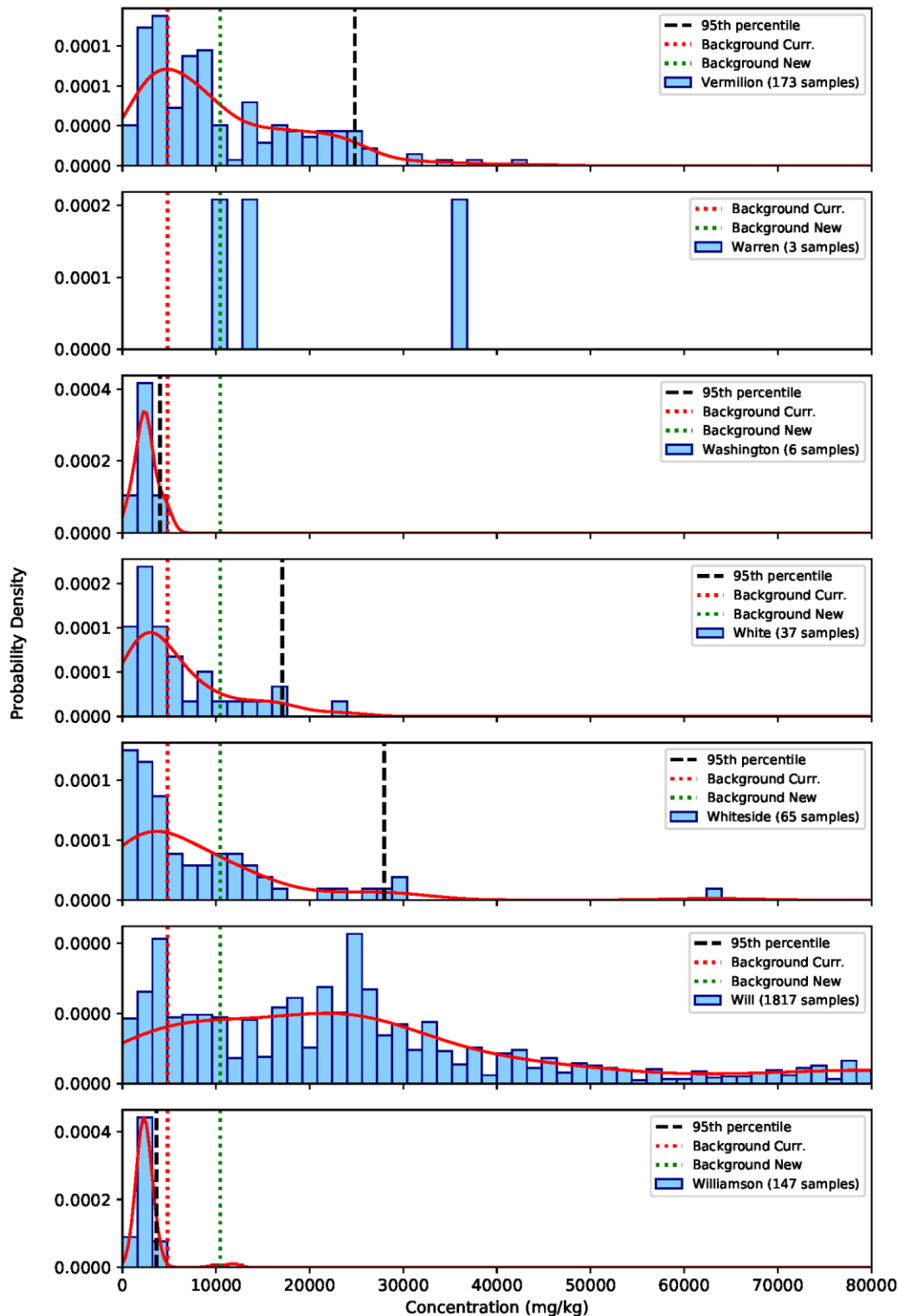


Figure 465. Histogram of RSL magnesium concentrations by Illinois county, REC (mg/kg), part 9



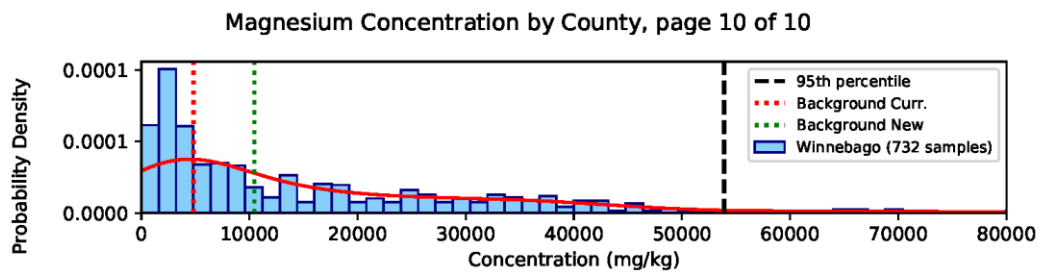


Figure 466. Histogram of RSL magnesium concentrations by Illinois county, REC (mg/kg), part 10

Magnesium Concentration for 95th Percentile by County: REC Sites

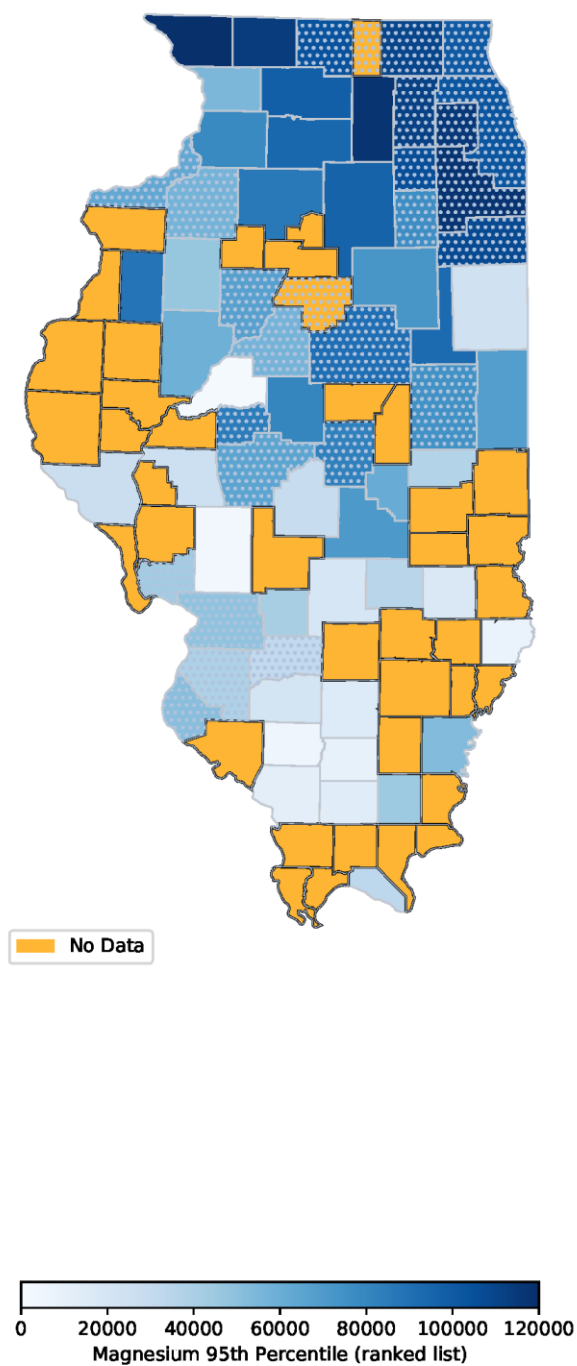


Figure 467. Map of RSL magnesium 95th percentile concentration by Illinois county, REC (mg/kg)

Number of Magnesium Samples by County: REC Sites

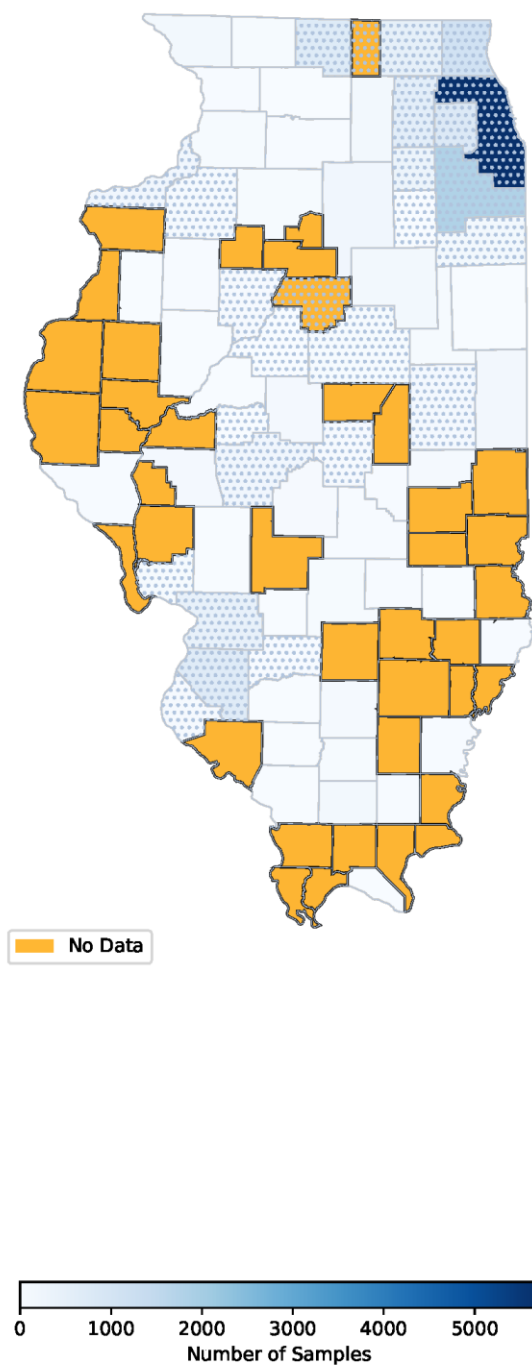


Figure 468. Map of RSL magnesium sample quantity by Illinois county, REC (mg/kg)

## M.2 MAGNESIUM NON-REC

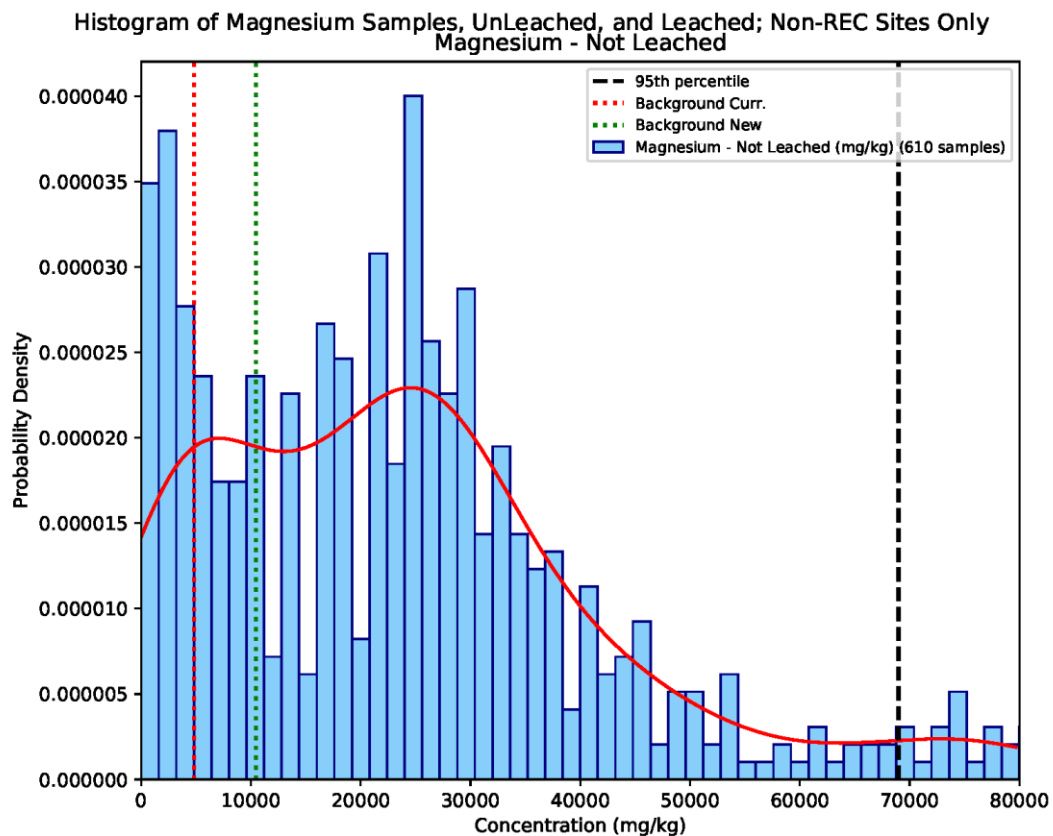


Figure 469. Histogram of RSL magnesium concentrations, Non-REC (mg/kg)

**Magnesium Unleached Concentration (mg/kg)**

1) Region

2) District

3) County

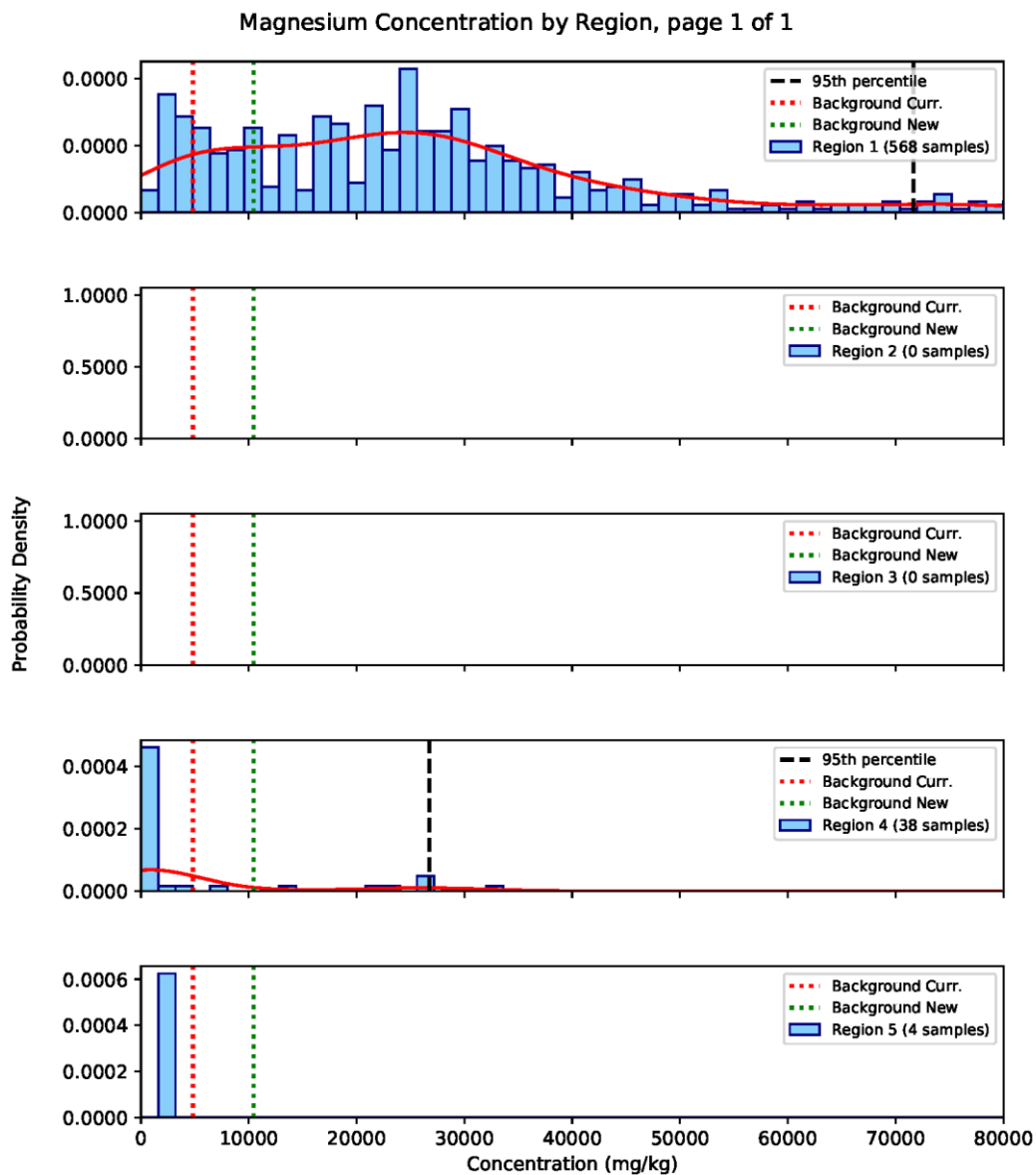
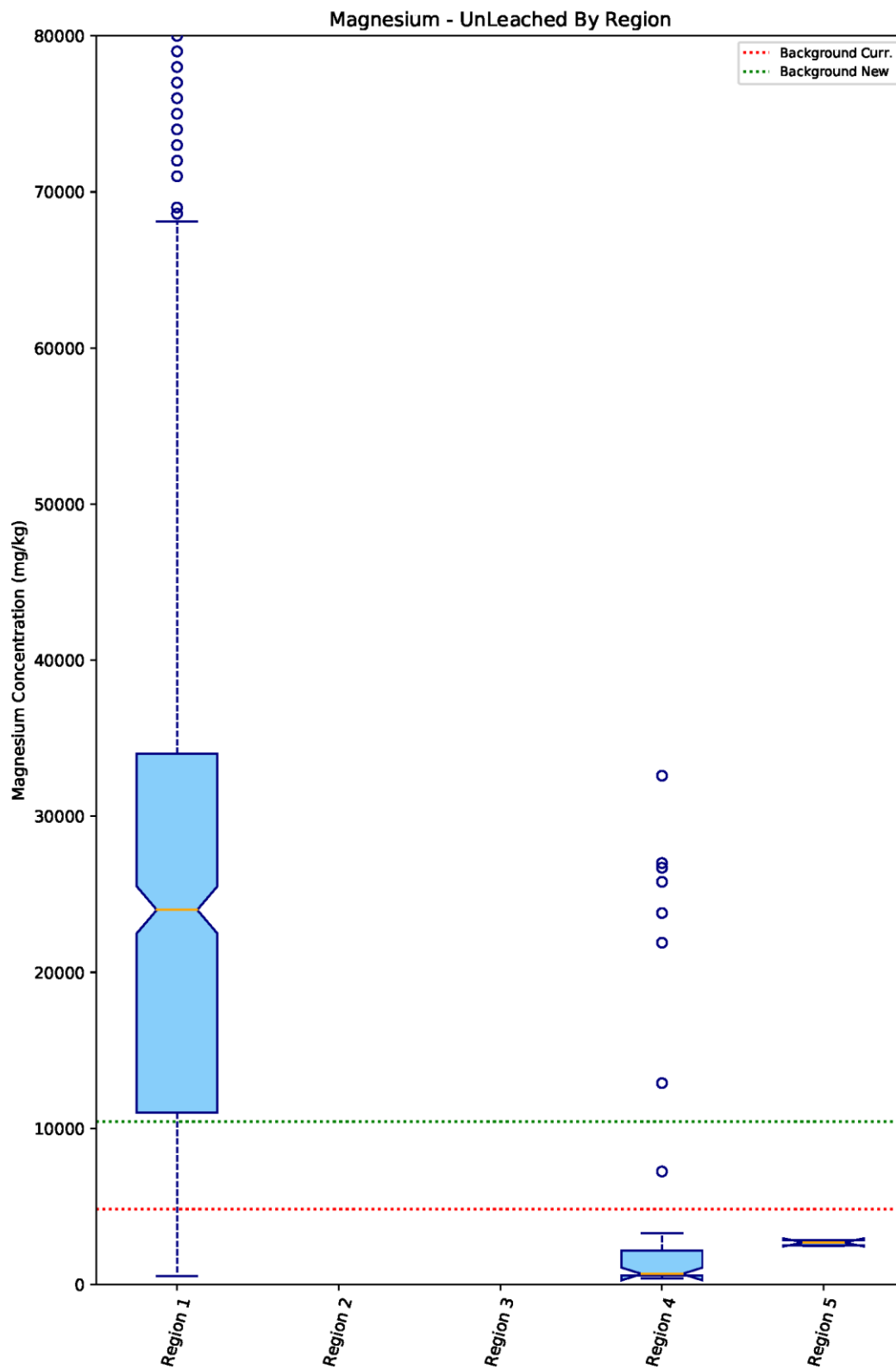


Figure 470. Histogram of RSL magnesium concentrations by IDOT Region, Non-REC (mg/kg)



**Figure 471. Boxplot of RSL magnesium concentrations by IDOT Region, Non-REC (mg/kg)**



Magnesium Concentration by District, page 1 of 2

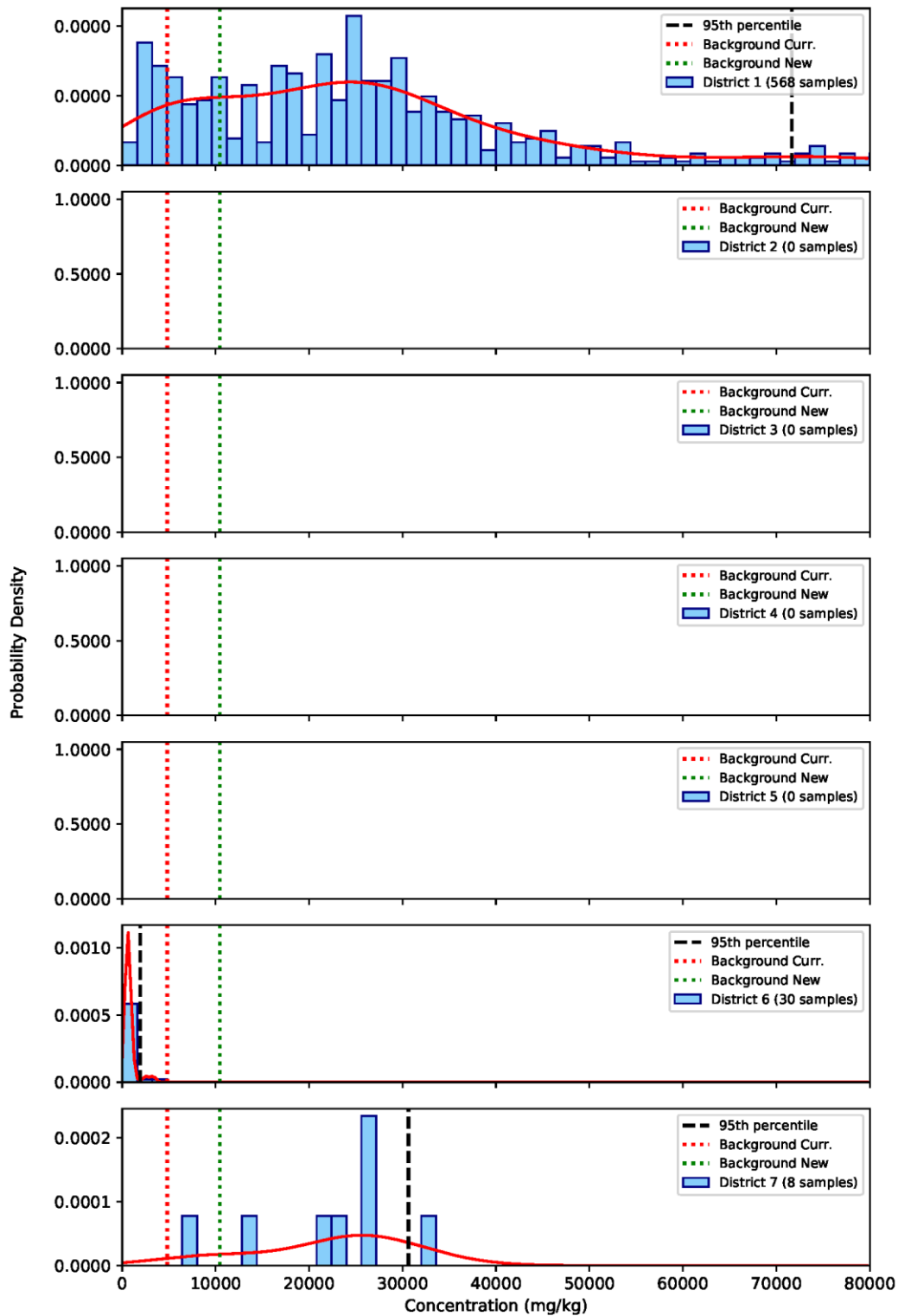


Figure 472. Histogram of RSL magnesium concentrations by IDOT District, Non-REC (mg/kg), part 1

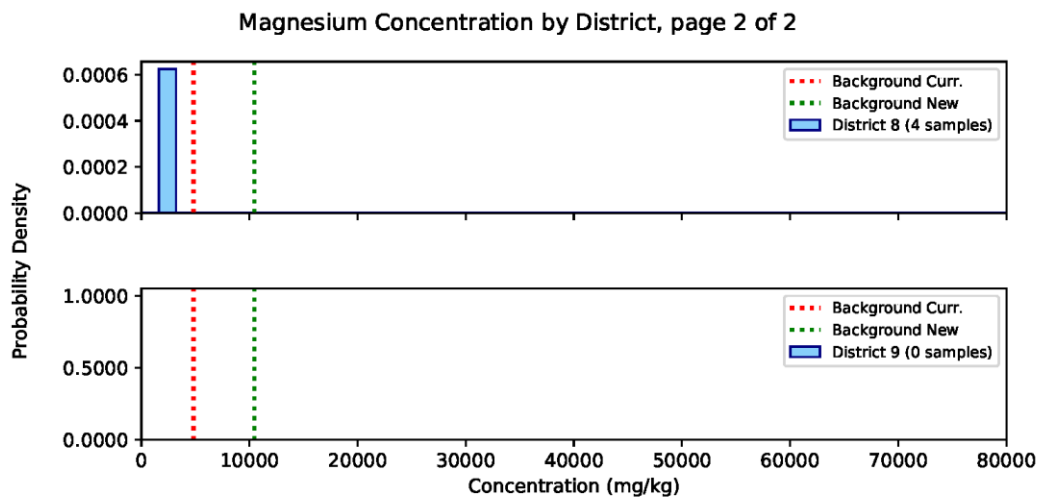


Figure 473. Histogram of RSL magnesium concentrations by IDOT District, Non-REC (mg/kg), part 2

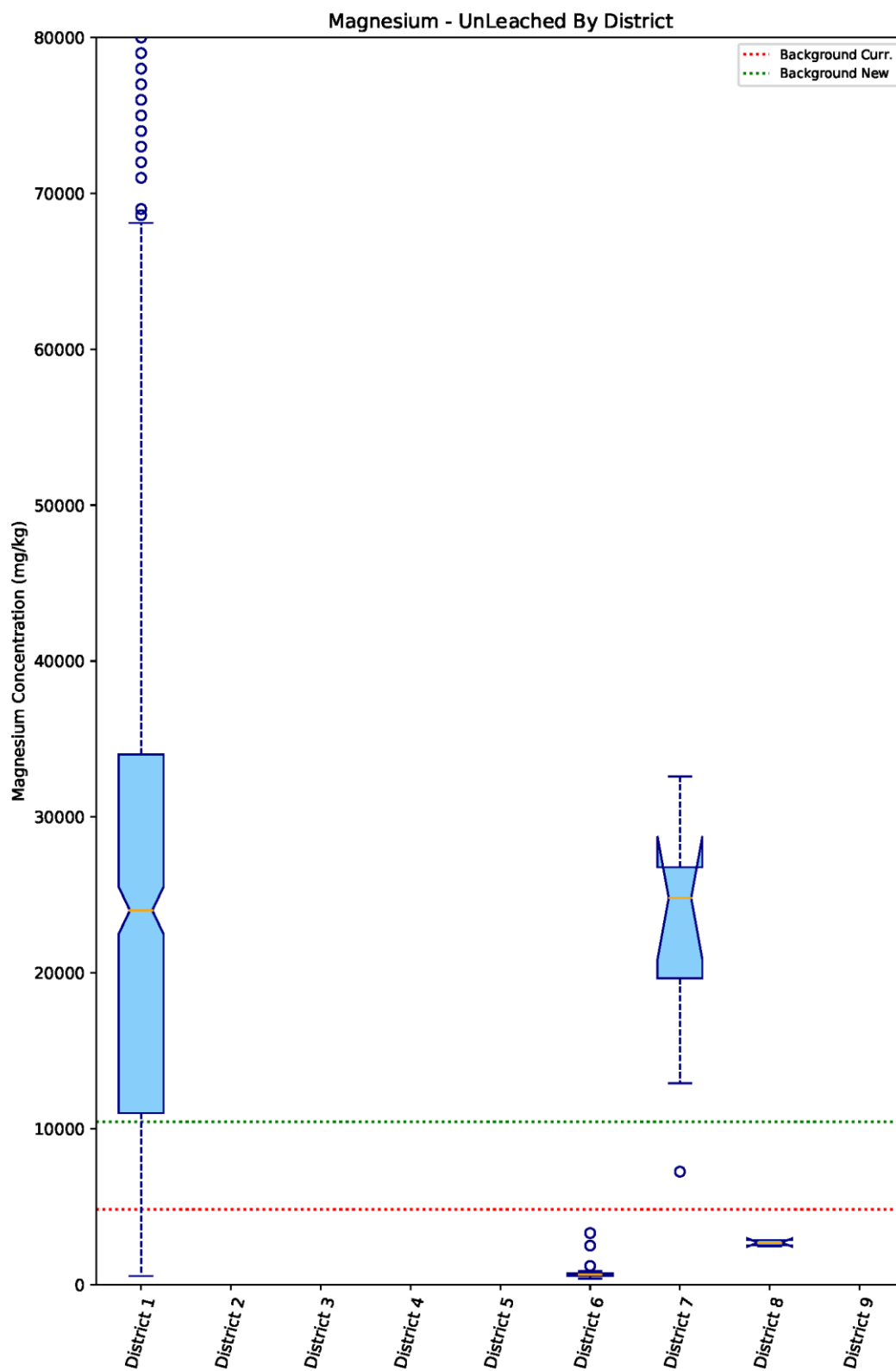


Figure 474. Boxplot of RSL magnesium concentrations by IDOT District, Non-REC (mg/kg)

# Magnesium Concentration by County, page 1 of 2

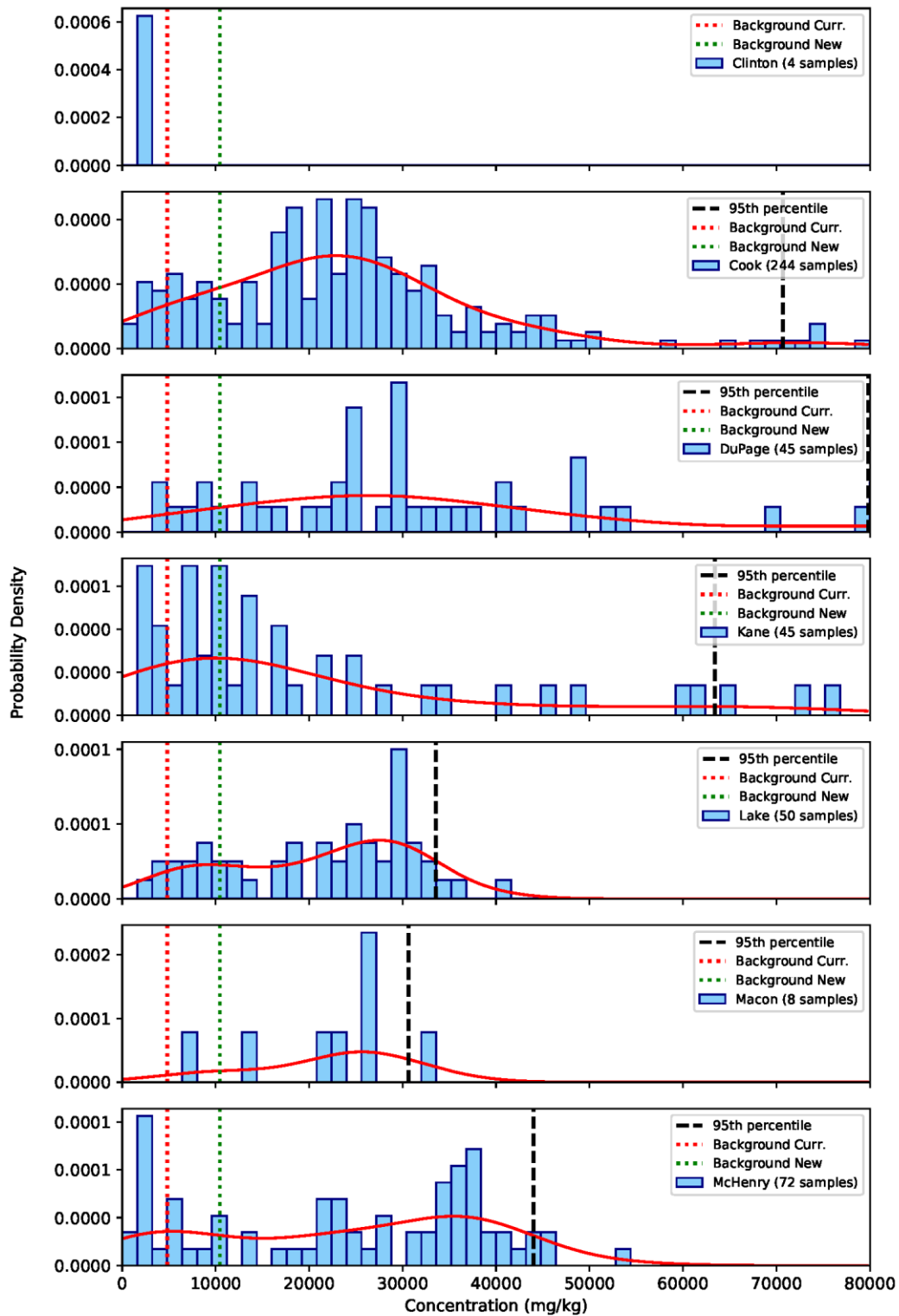


Figure 475. Histogram of RSL magnesium concentrations by Illinois county, Non-REC (mg/kg), part 1

Magnesium Concentration by County, page 2 of 2

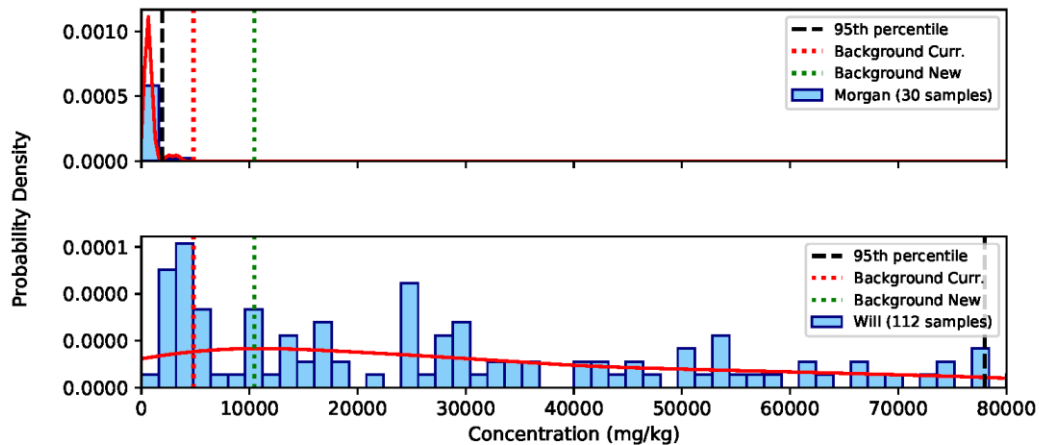


Figure 476. Histogram of RSL magnesium concentrations by Illinois county, Non-REC (mg/kg), part 2

Magnesium Concentration for 95th Percentile by County: Non-REC Sites

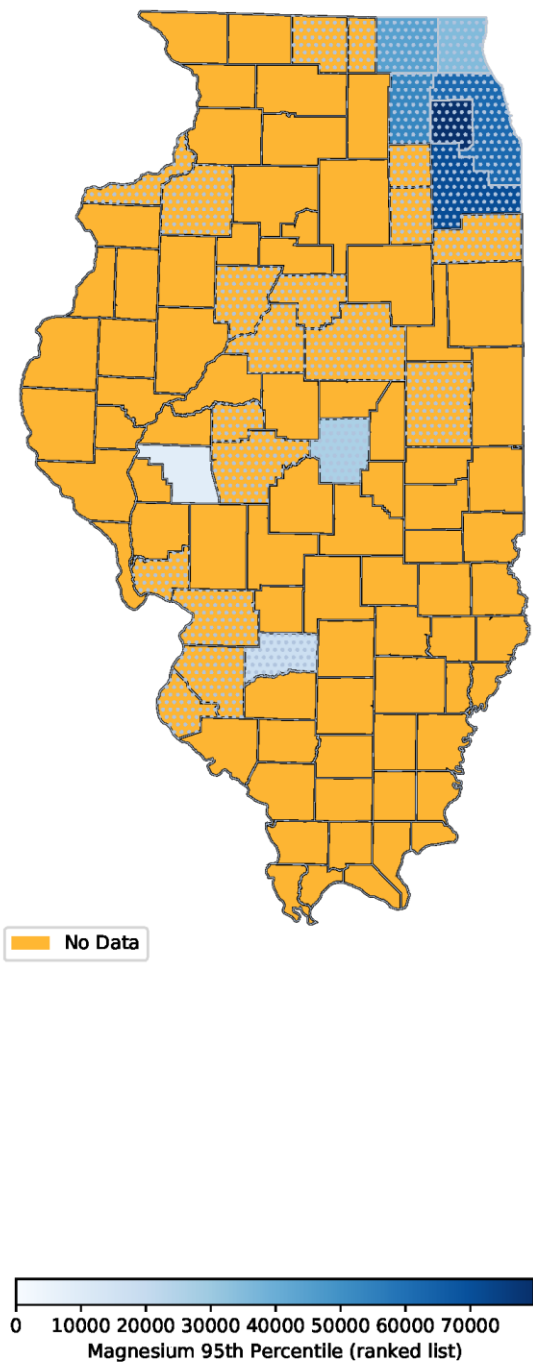


Figure 477. Map of RSL magnesium 95th percentile concentration by Illinois county, Non-REC (mg/kg)

Number of Magnesium Samples by County: Non-REC Sites

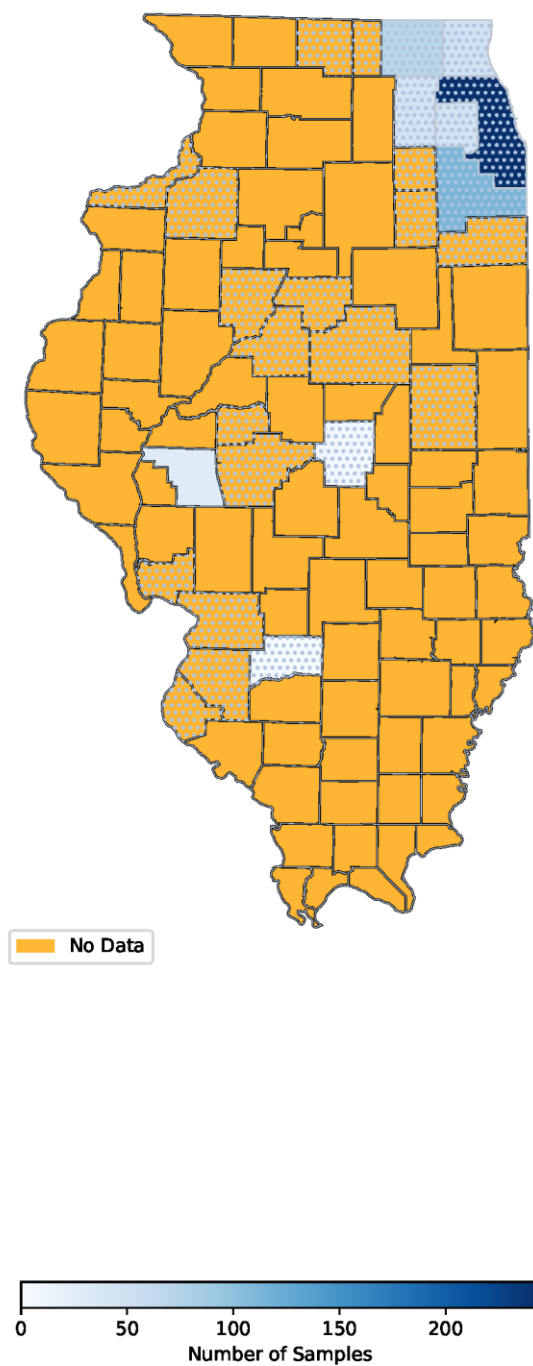


Figure 478. Map of RSL magnesium sample quantity by Illinois county, Non-REC (mg/kg)

### **M.3 MAGNESIUM DE MINIMIS**



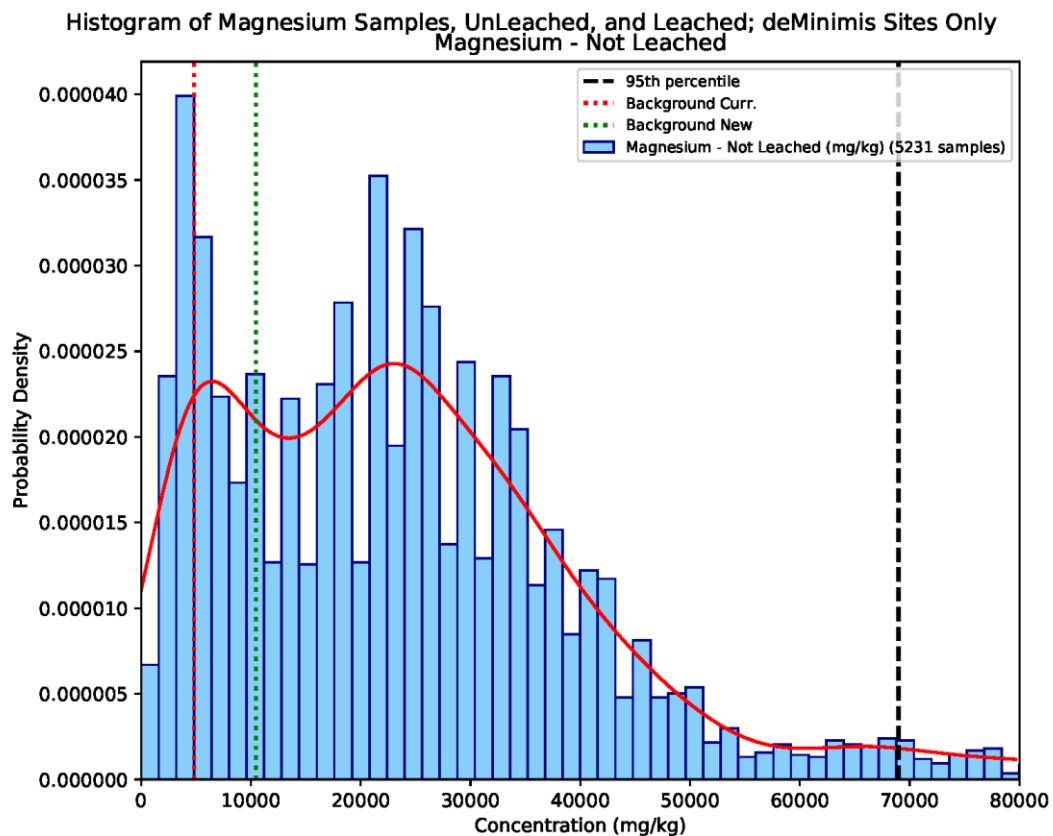


Figure 479. Histogram of RSL magnesium concentrations, de minimis (mg/kg)

**Magnesium Unleached Concentration (mg/kg)**

1) Region

2) District

3) County

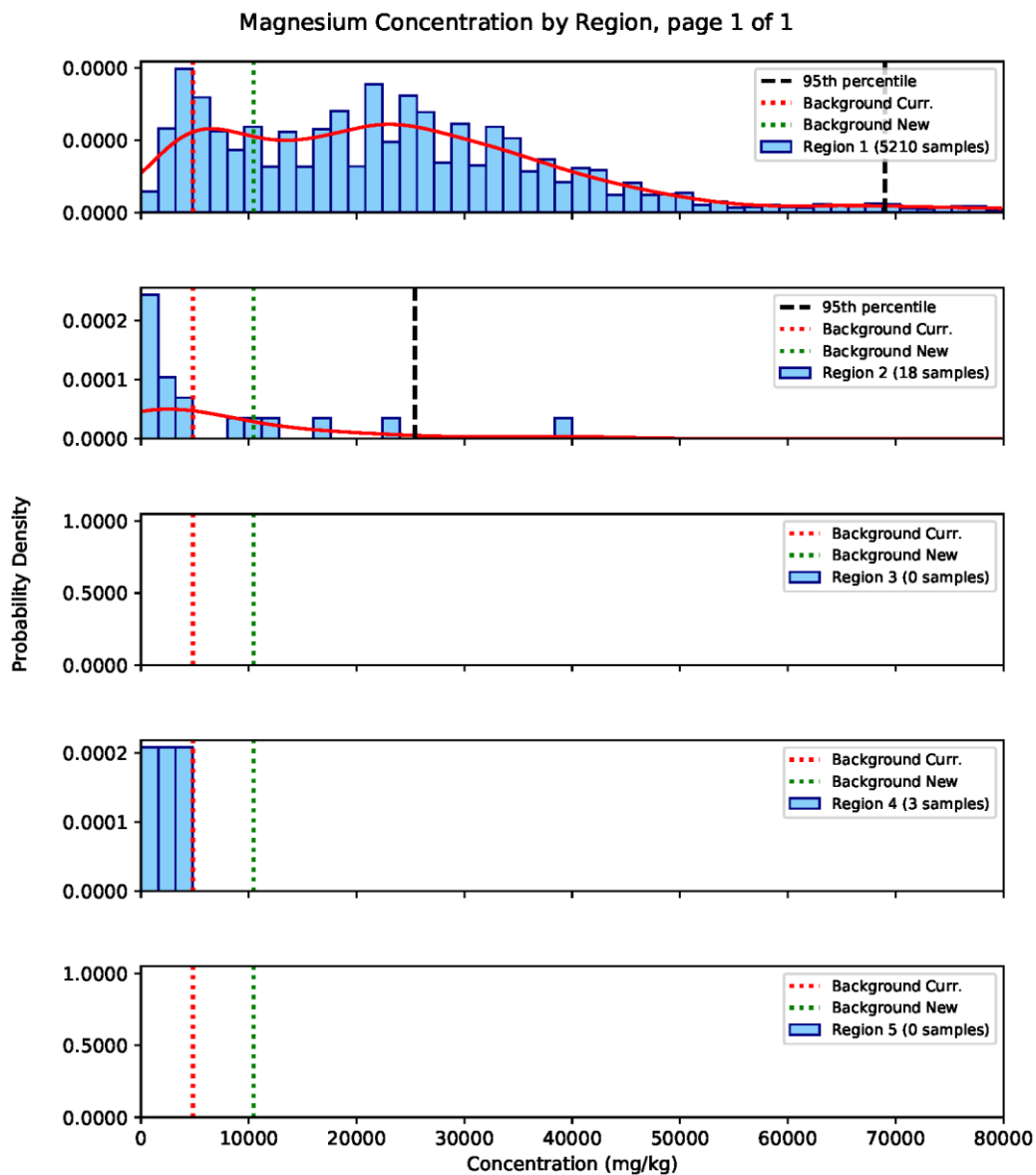


Figure 480. Histogram of RSL magnesium concentrations by IDOT Region, de minimis (mg/kg)

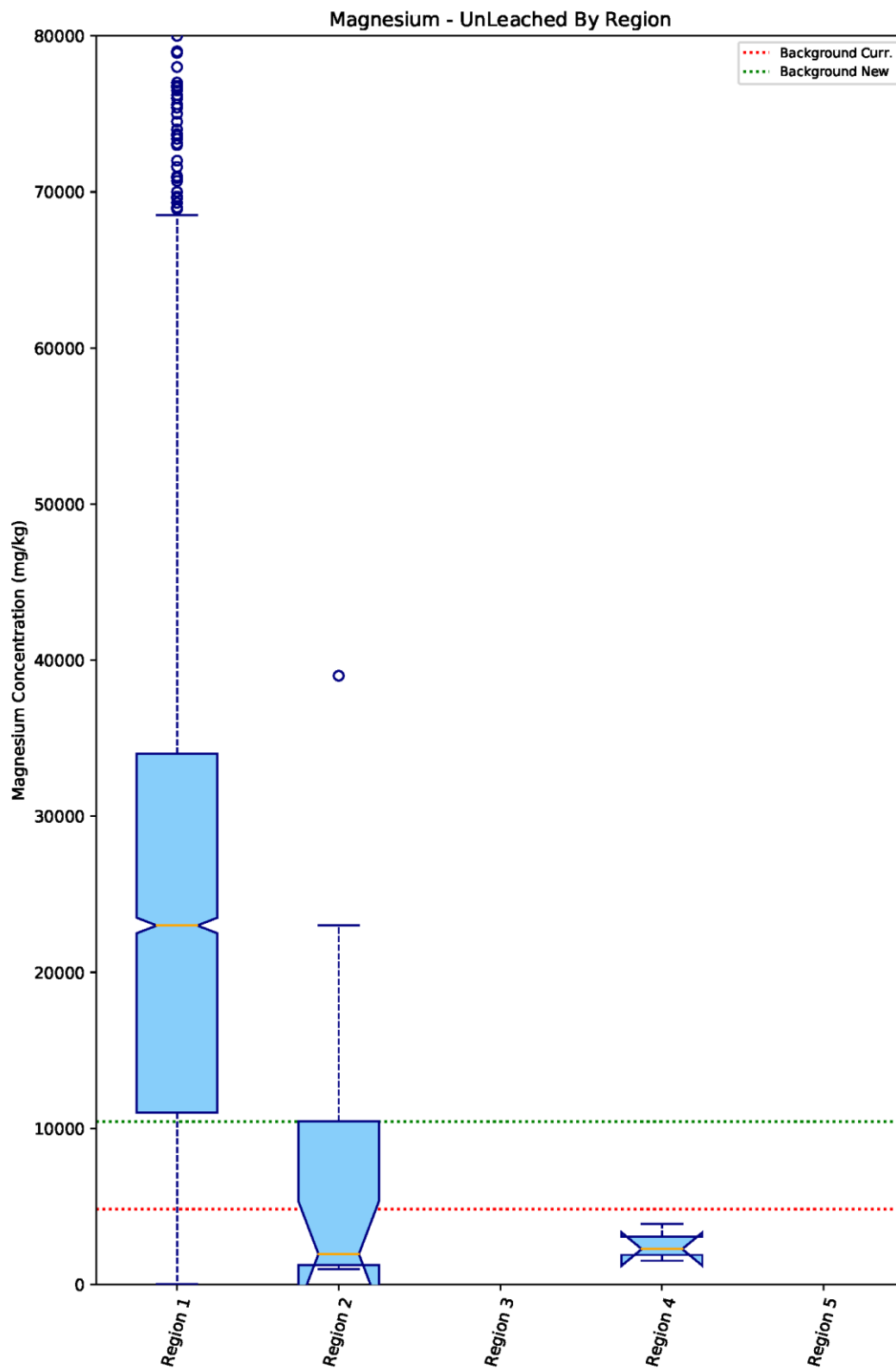


Figure 481. Boxplot of RSL magnesium concentrations by IDOT Region, de minimis (mg/kg)

Magnesium Concentration by District, page 1 of 2

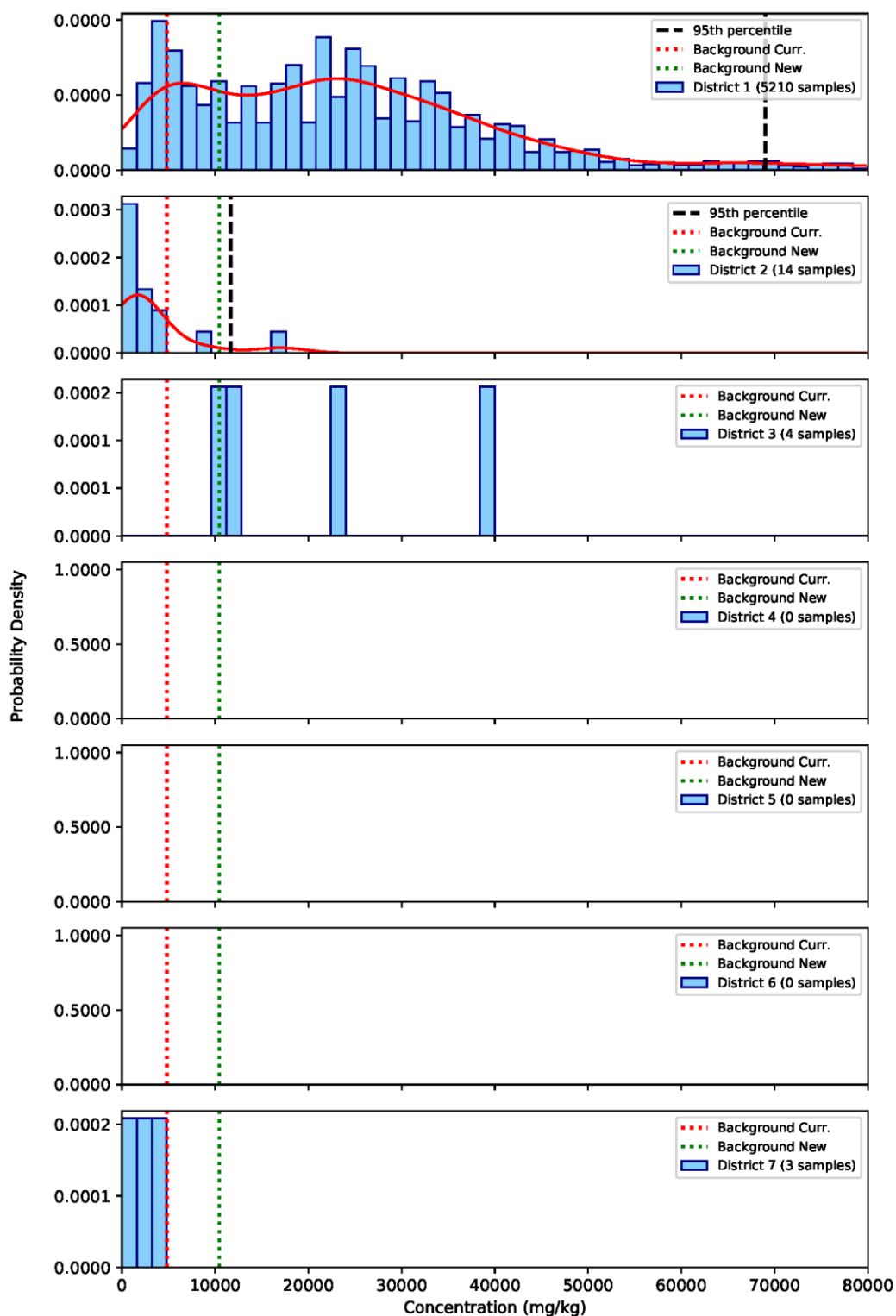


Figure 482. Histogram of RSL magnesium concentrations by IDOT District, de minimis (mg/kg), part

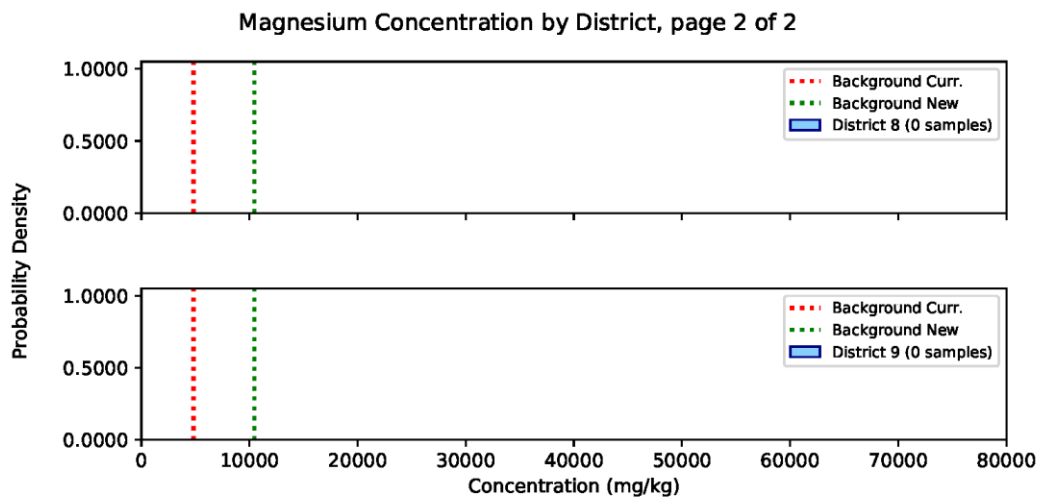


Figure 483. Histogram of RSL magnesium concentrations by IDOT District, de minimis (mg/kg), part 2

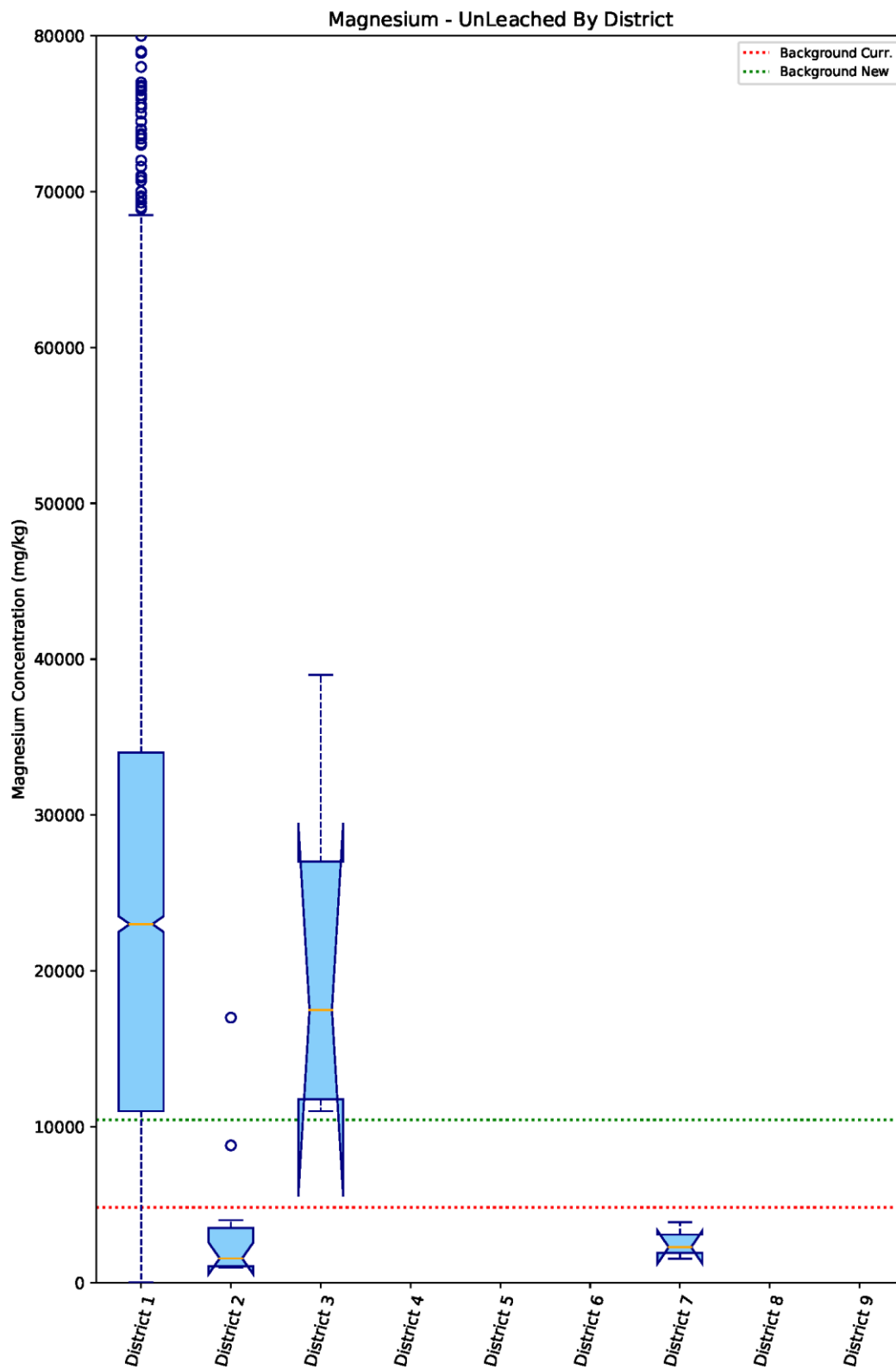


Figure 484. Boxplot of RSL magnesium concentrations by IDOT District, de minimis (mg/kg)

# Magnesium Concentration by County, page 1 of 2

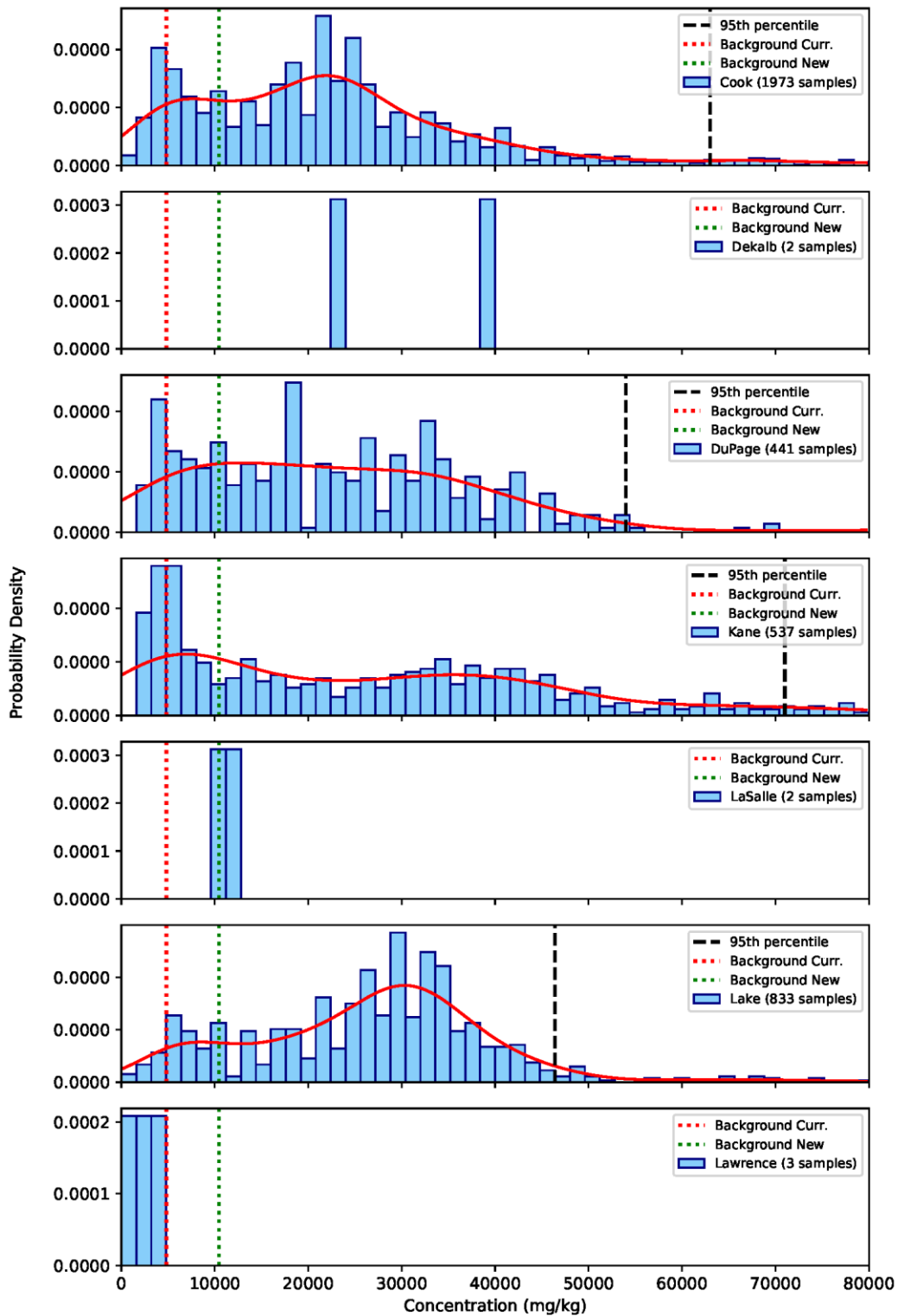


Figure 485. Histogram of RSL magnesium concentrations by Illinois county, de minimis (mg/kg), part 1



# Magnesium Concentration by County, page 2 of 2

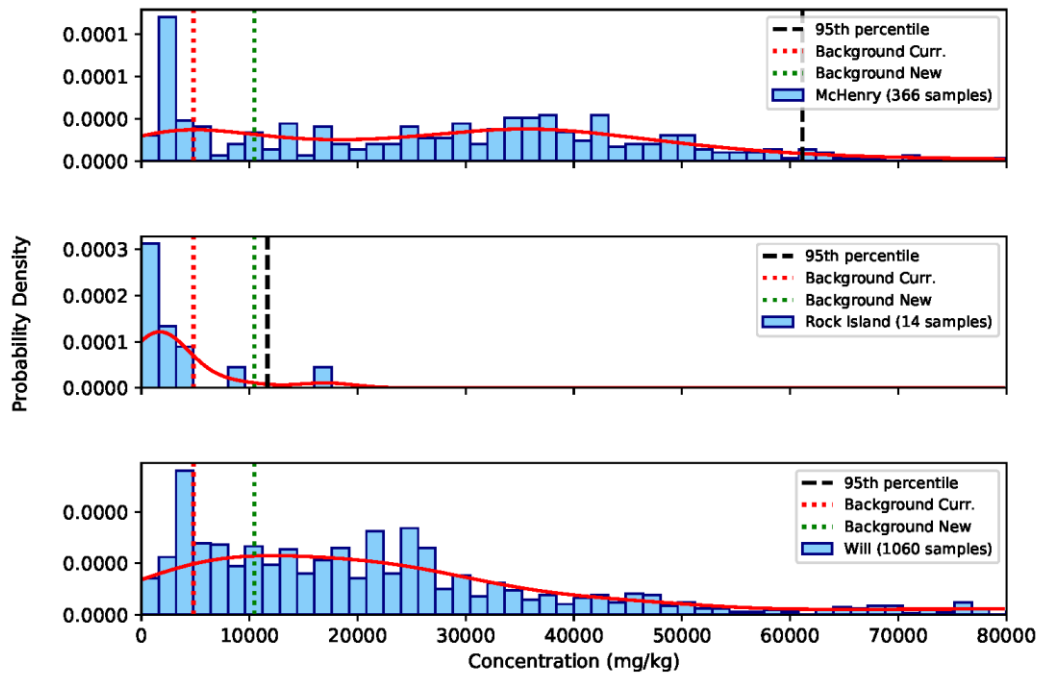


Figure 486. Histogram of RSL magnesium concentrations by Illinois county, de minimis (mg/kg), part 2

Magnesium Concentration for 95th Percentile by County: deMinimis Sites

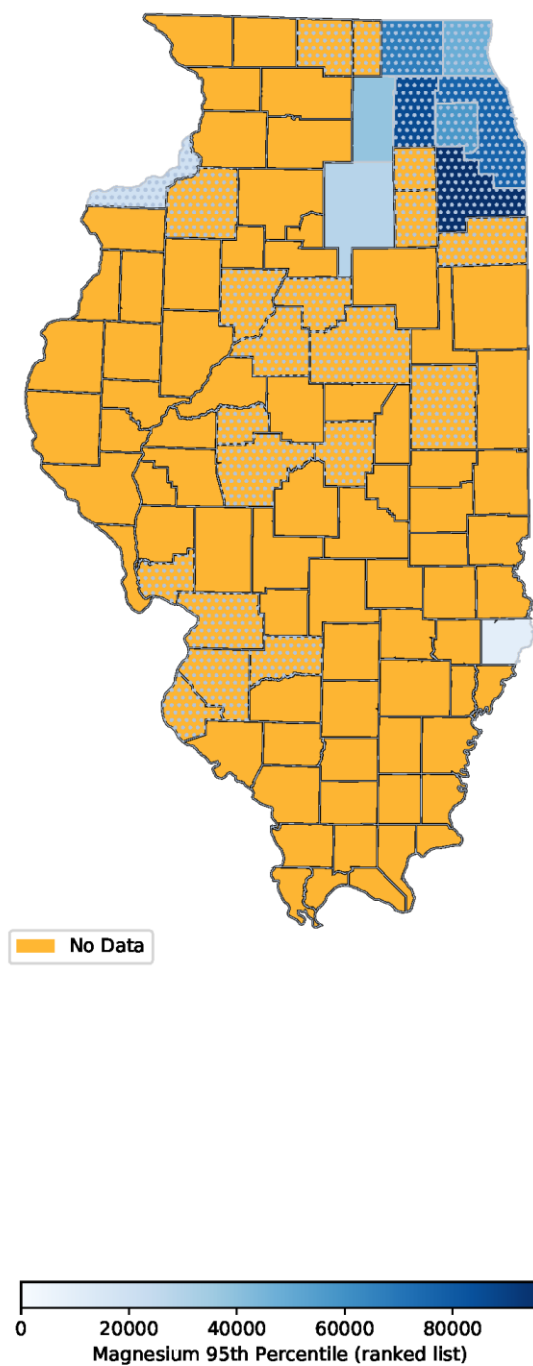


Figure 487. Map of RSL magnesium 95th percentile concentration by Illinois county, de minimis (mg/kg)

Number of Magnesium Samples by County: deMinimis Sites

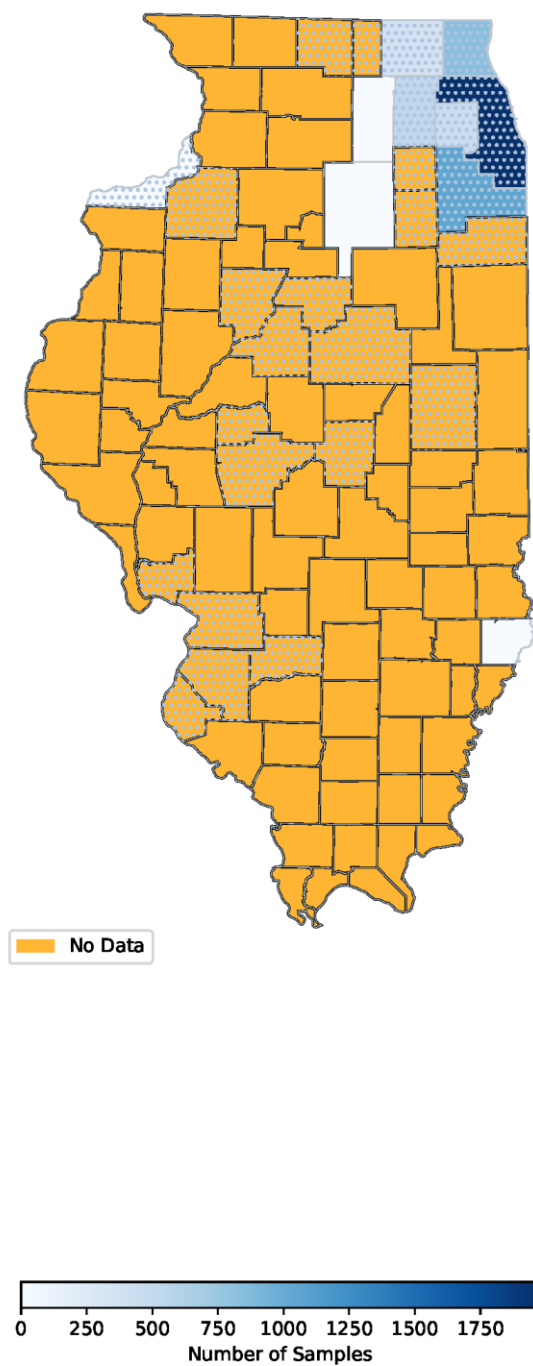
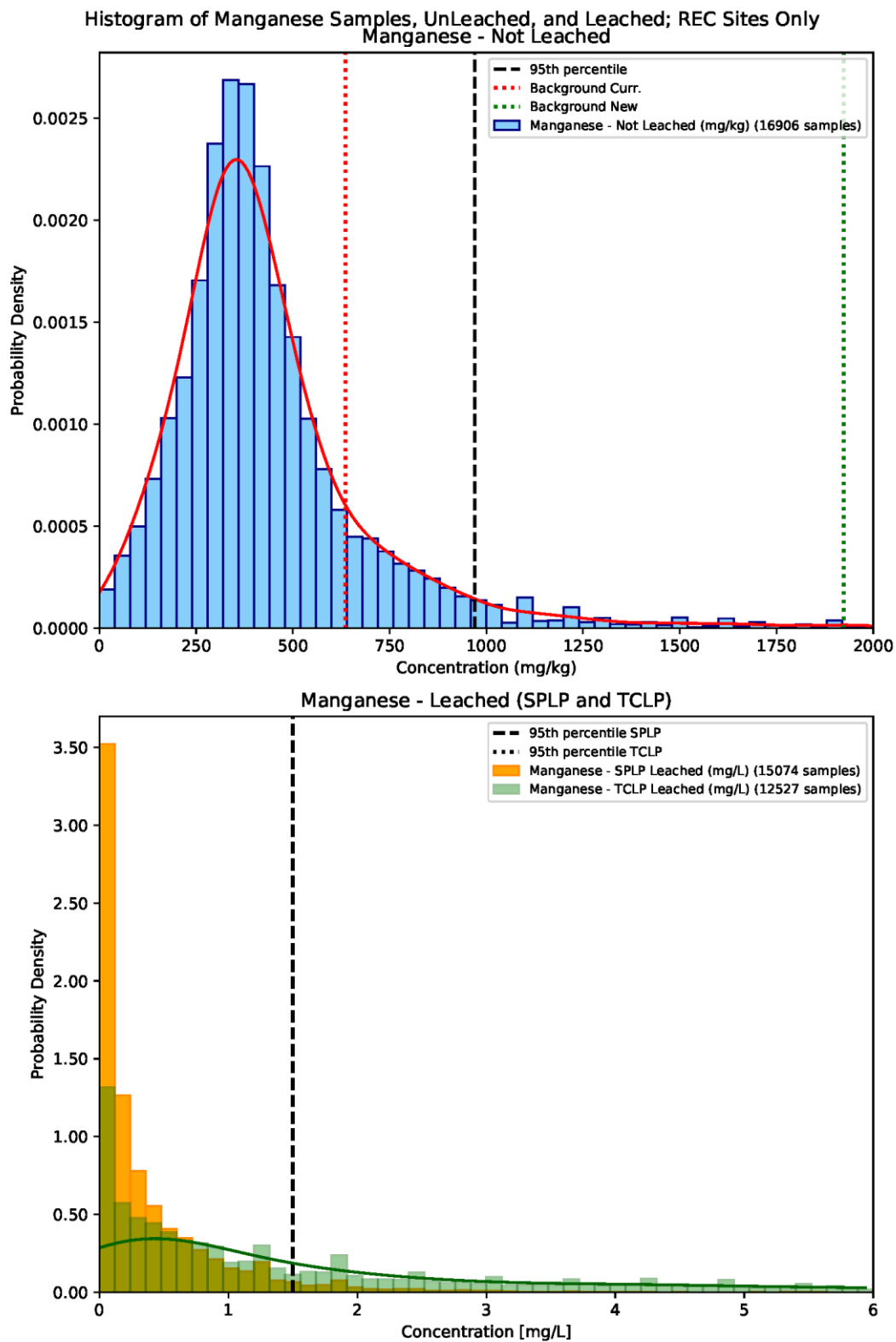


Figure 488. Map of RSL magnesium sample quantity by Illinois county, de minimis (mg/kg)

## **APPENDIX N. ANALYTE ANALYSIS: MANGANESE**

### **N.1 MANGANESE REC**



**Figure 489. Histogram of RSL manganese concentrations, REC (mg/kg)**

**Manganese Unleached Concentration (mg/kg)**

1) Region

2) District

3) County

# Manganese Concentration by Region, page 1 of 1

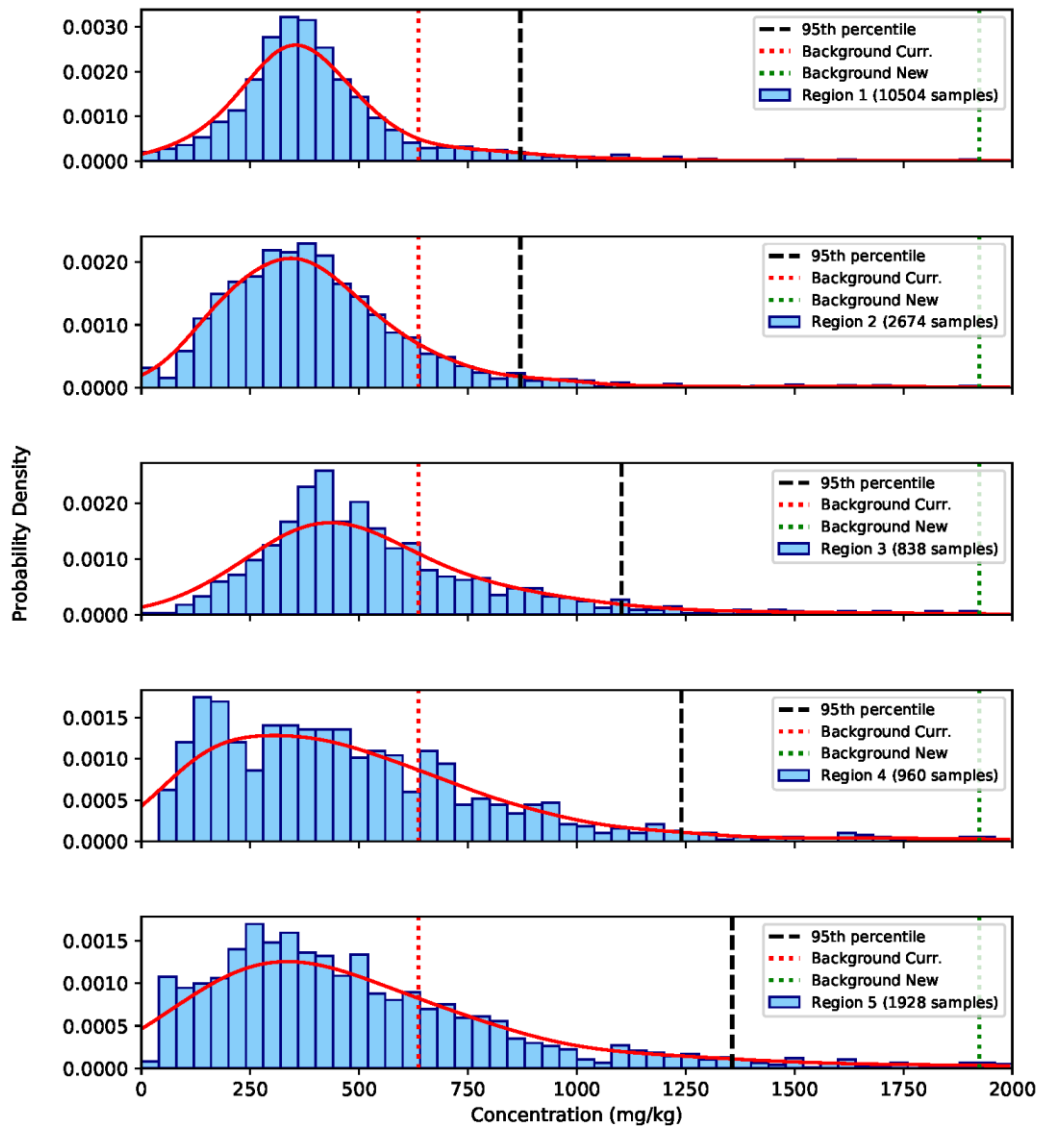


Figure 490. Histogram of RSL manganese concentrations by IDOT Region, REC (mg/kg)

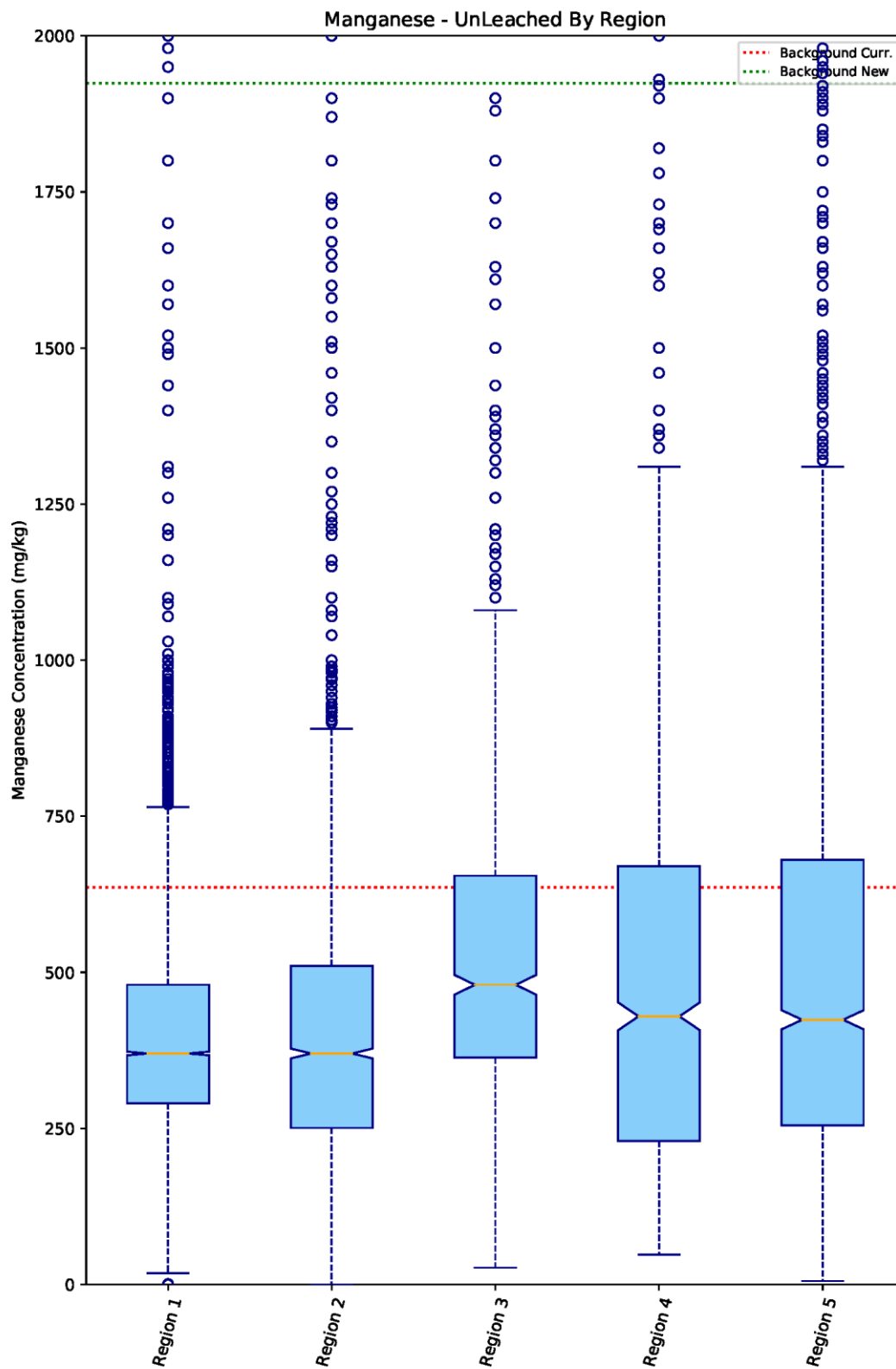


Figure 491. Boxplot of RSL manganese concentrations by IDOT Region, REC (mg/kg)



Manganese Concentration by District, page 1 of 2

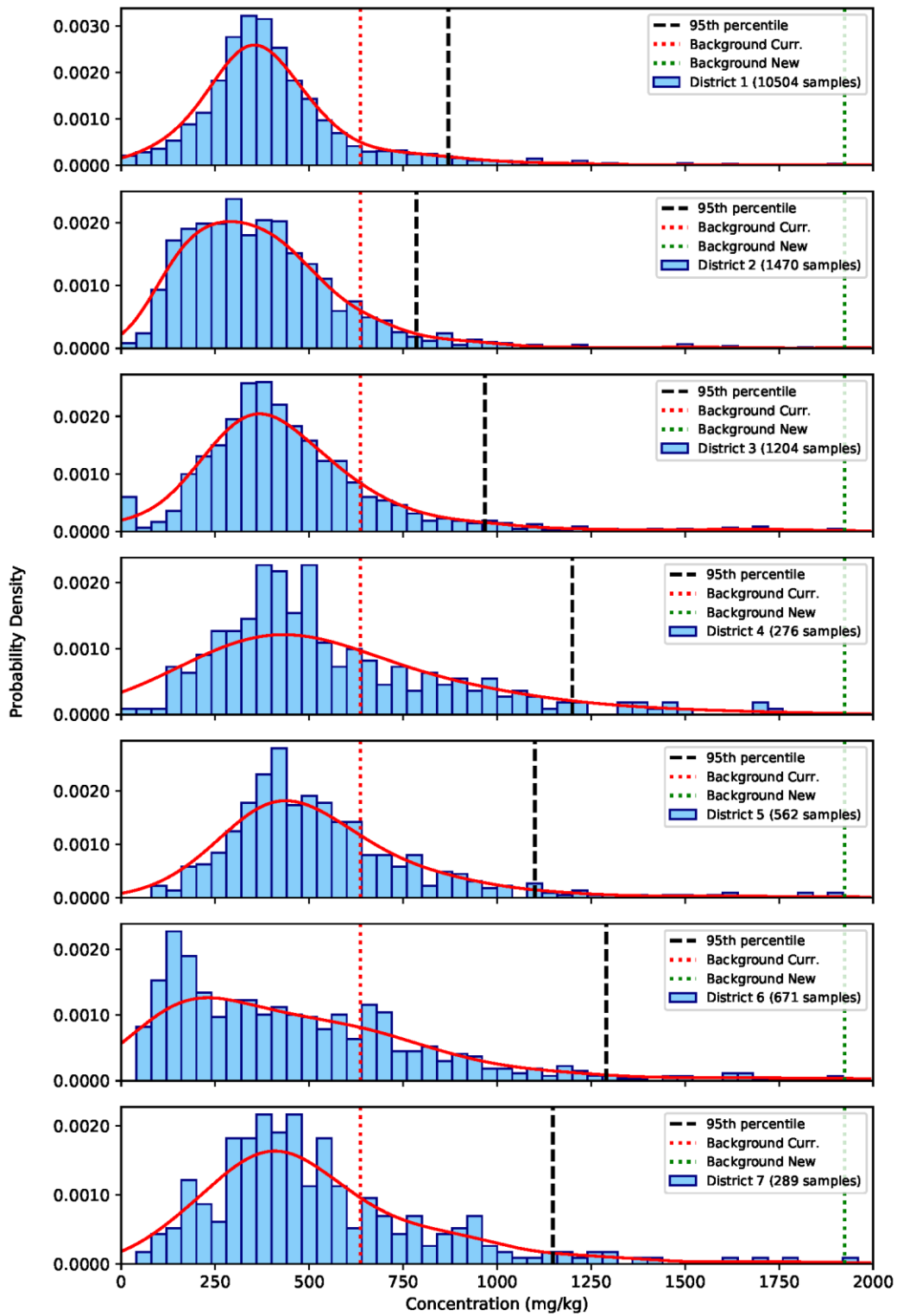


Figure 492. Histogram of RSL manganese concentrations by IDOT District, REC (mg/kg), part 1

Manganese Concentration by District, page 2 of 2

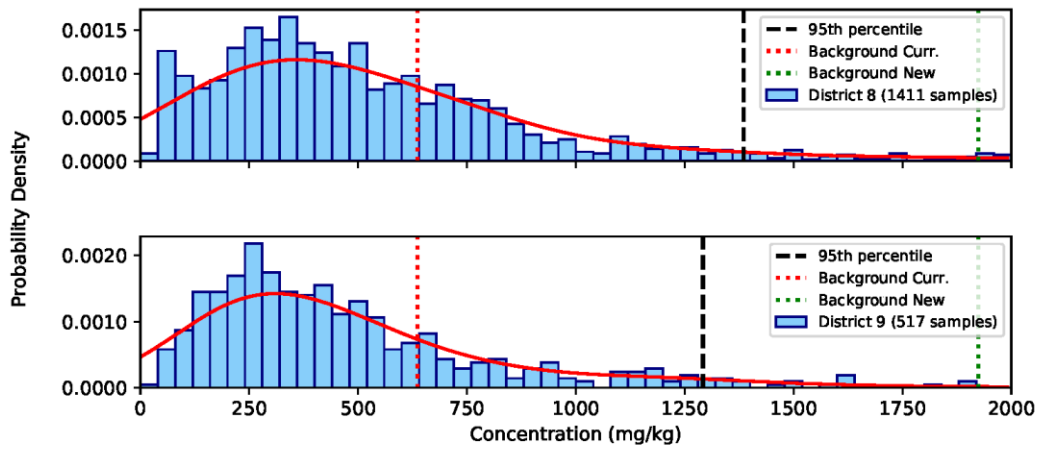


Figure 493. Histogram of RSL manganese concentrations by IDOT District, REC (mg/kg), part 2

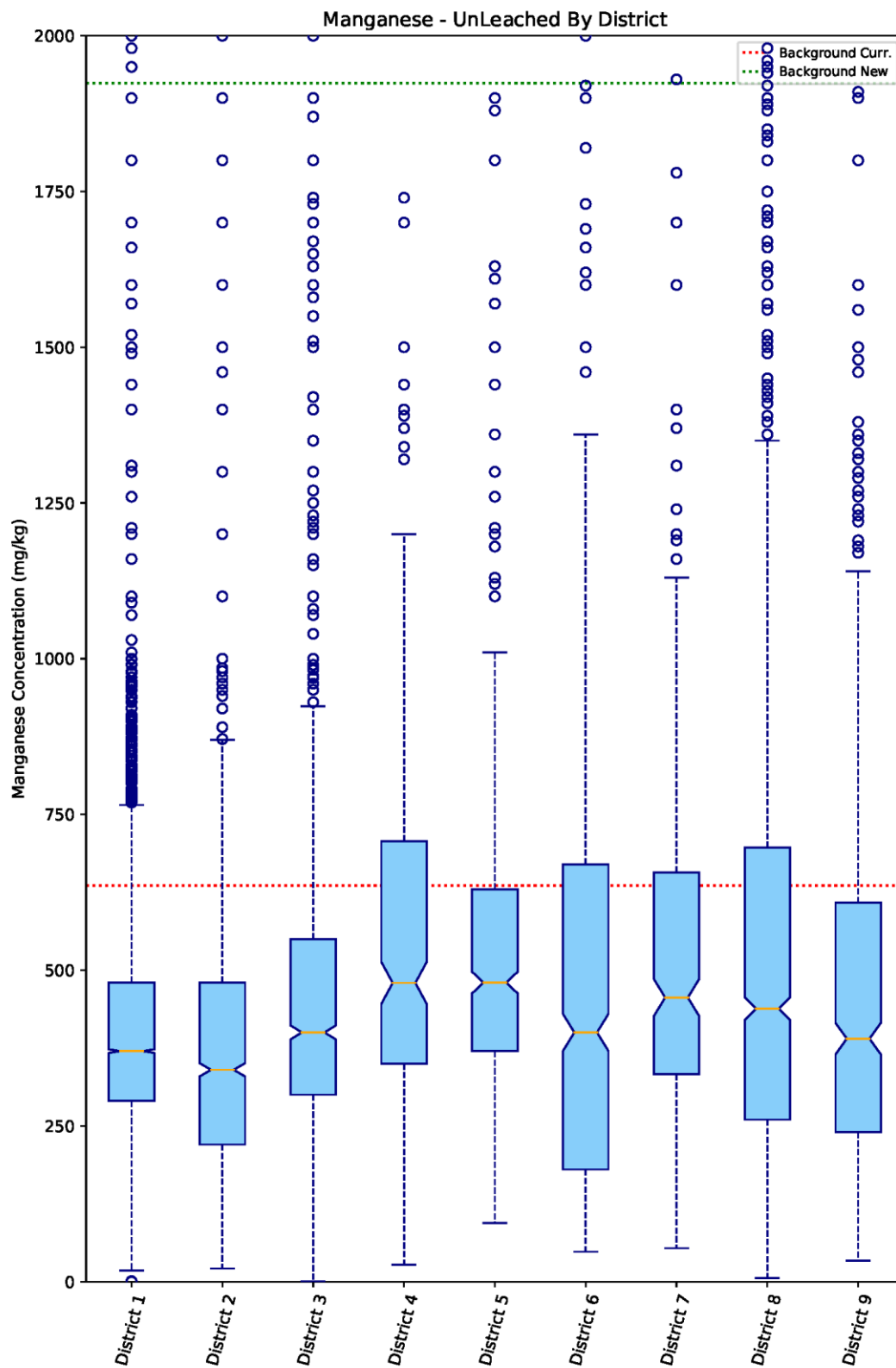


Figure 494. Boxplot of RSL manganese concentrations by IDOT District, REC (mg/kg)

Manganese Concentration by County, page 1 of 10

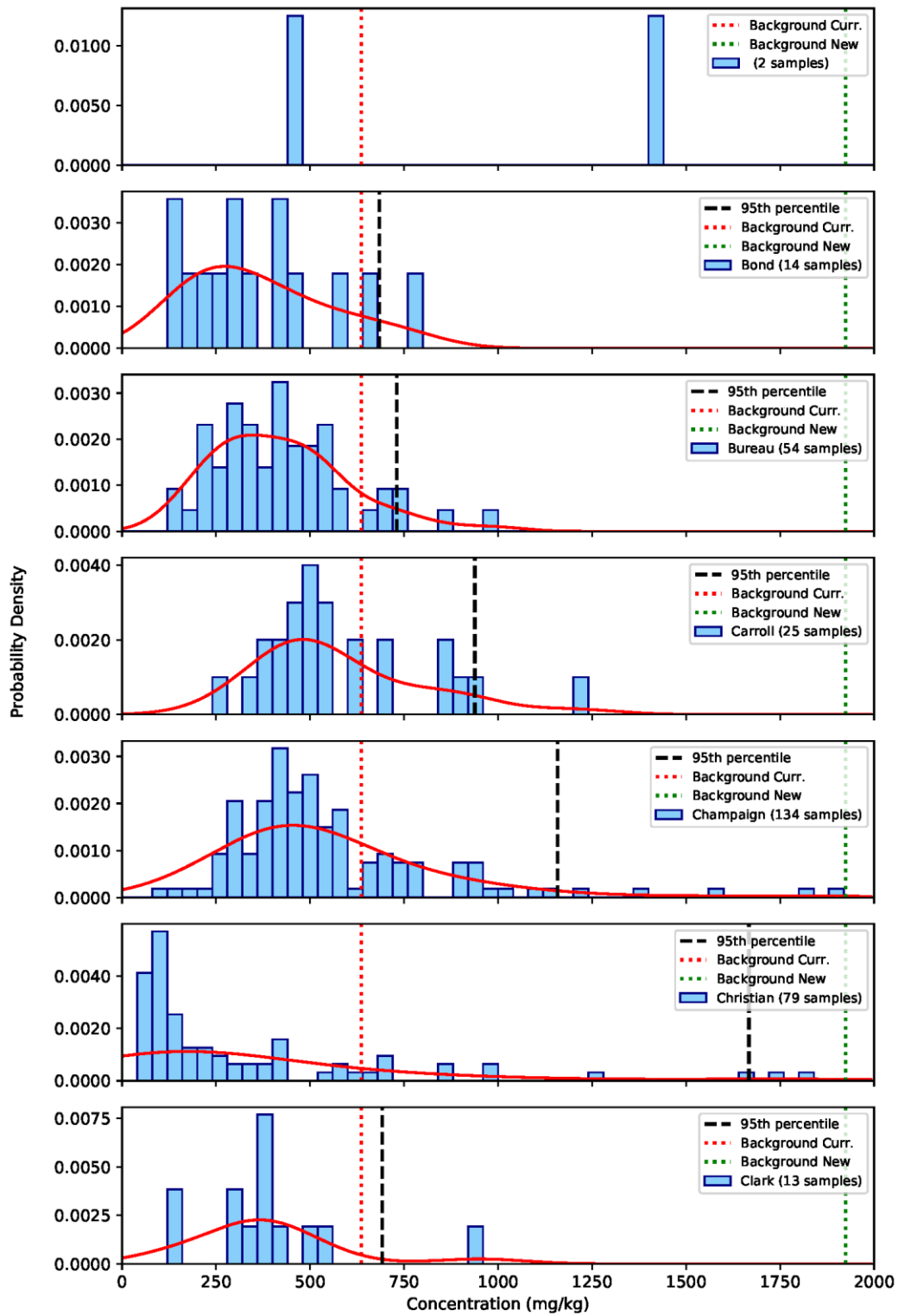


Figure 495. Histogram of RSL manganese concentrations by Illinois county, REC (mg/kg), part 1

Manganese Concentration by County, page 2 of 10

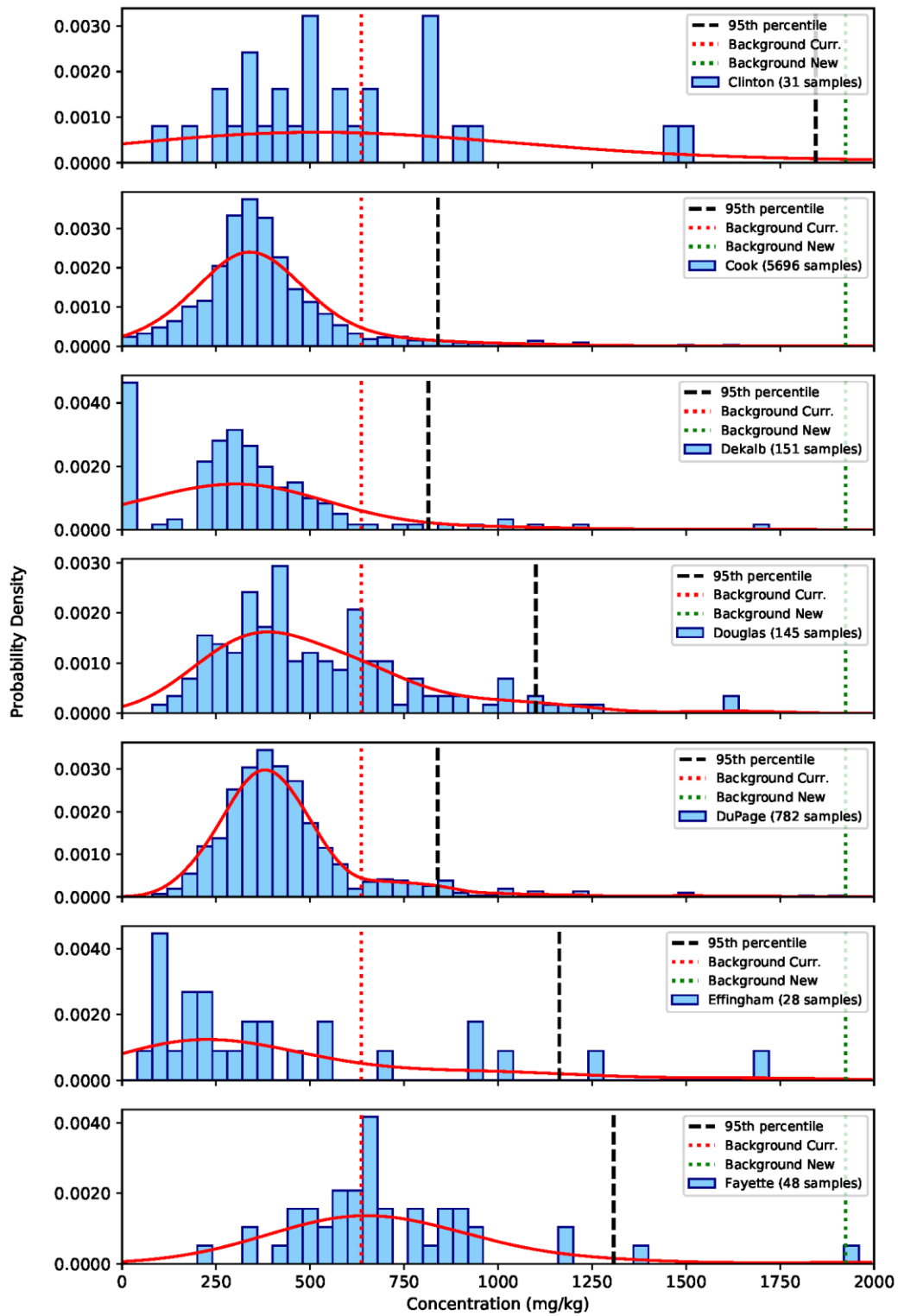


Figure 496. Histogram of RSL manganese concentrations by Illinois county, REC (mg/kg), part 2

Manganese Concentration by County, page 3 of 10

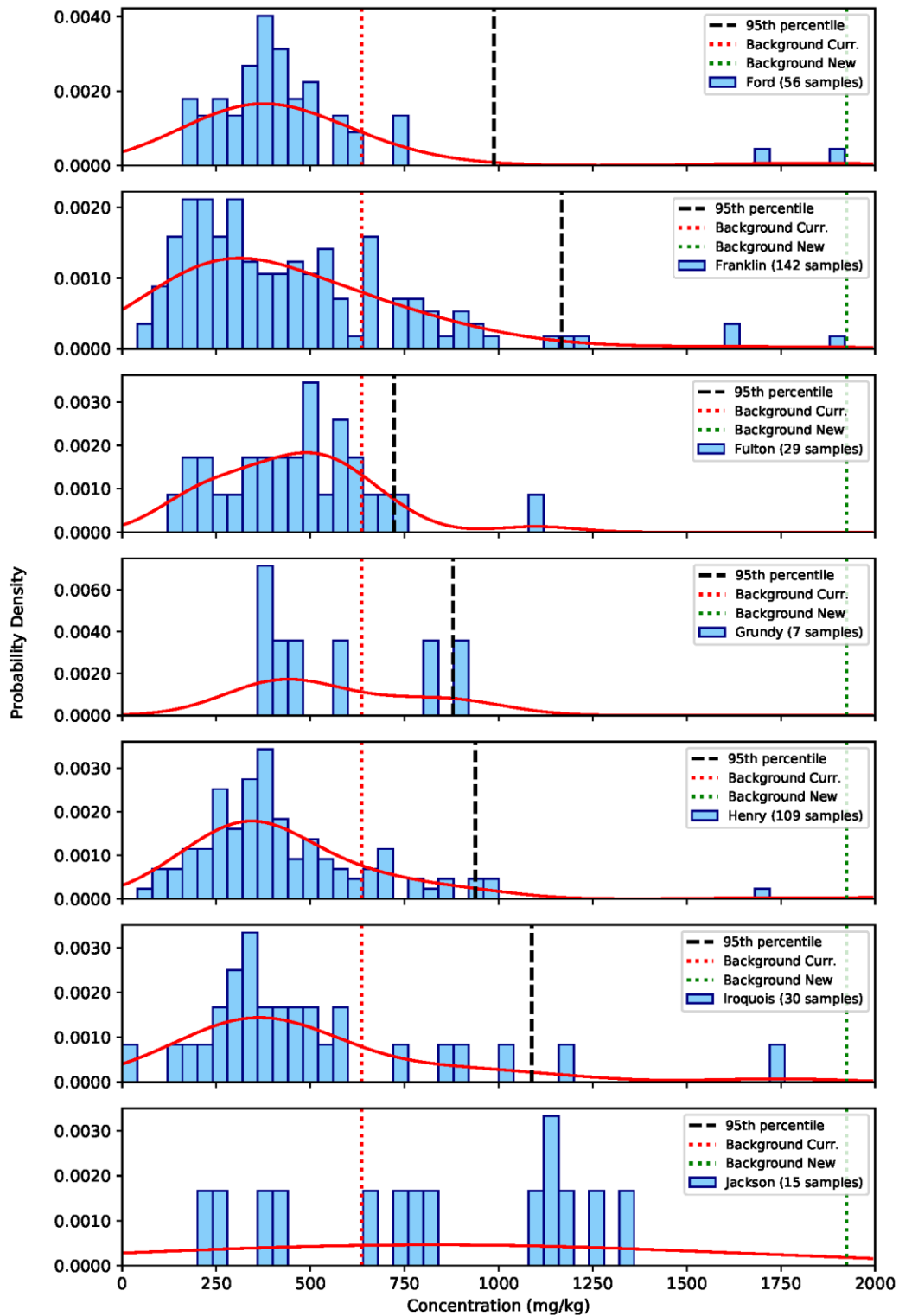


Figure 497. Histogram of RSL manganese concentrations by Illinois county, REC (mg/kg), part 3

Manganese Concentration by County, page 4 of 10

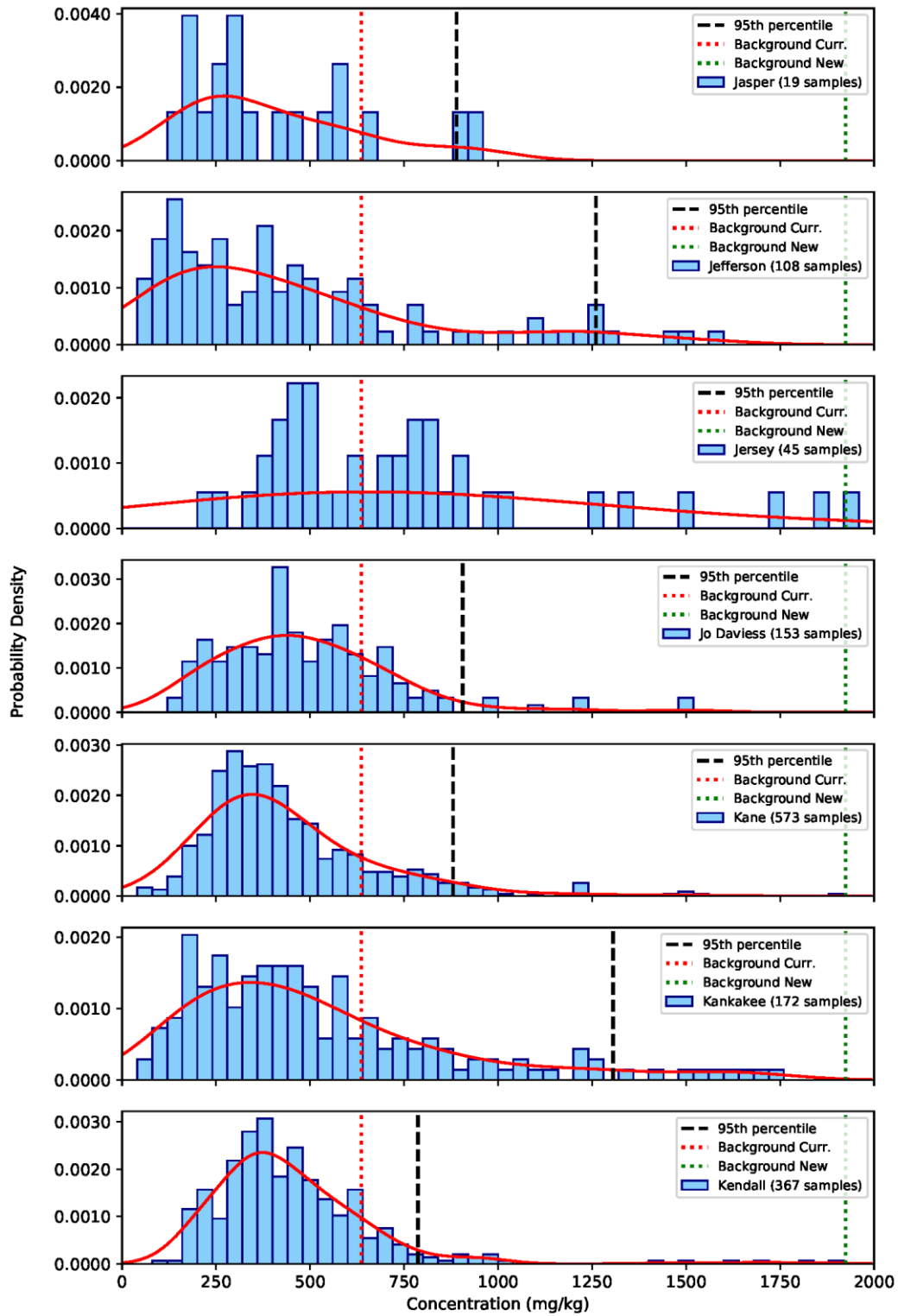


Figure 498. Histogram of RSL manganese concentrations by Illinois county, REC (mg/kg), part 4

Manganese Concentration by County, page 5 of 10

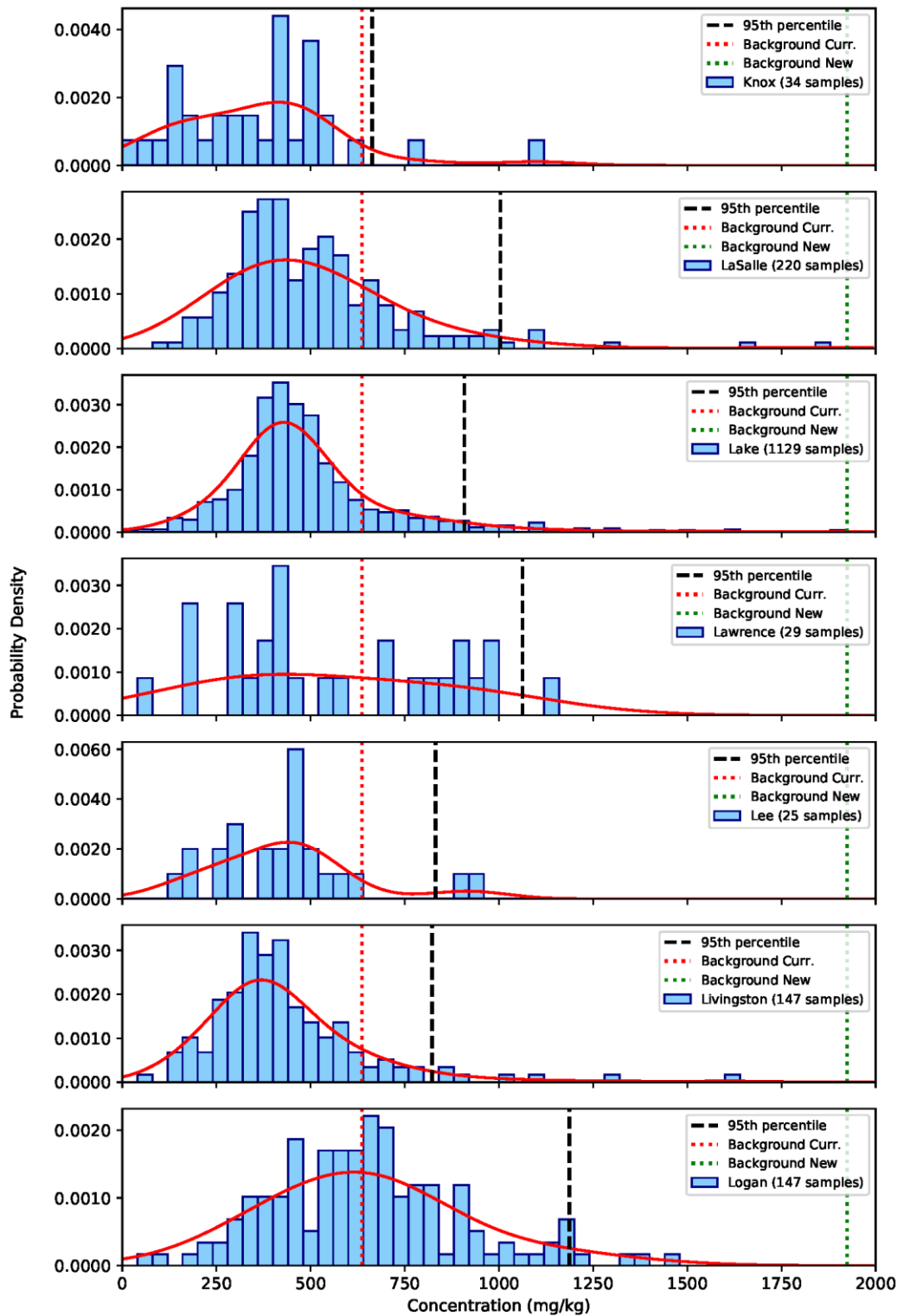


Figure 499. Histogram of RSL manganese concentrations by Illinois county, REC (mg/kg), part 5



Manganese Concentration by County, page 6 of 10

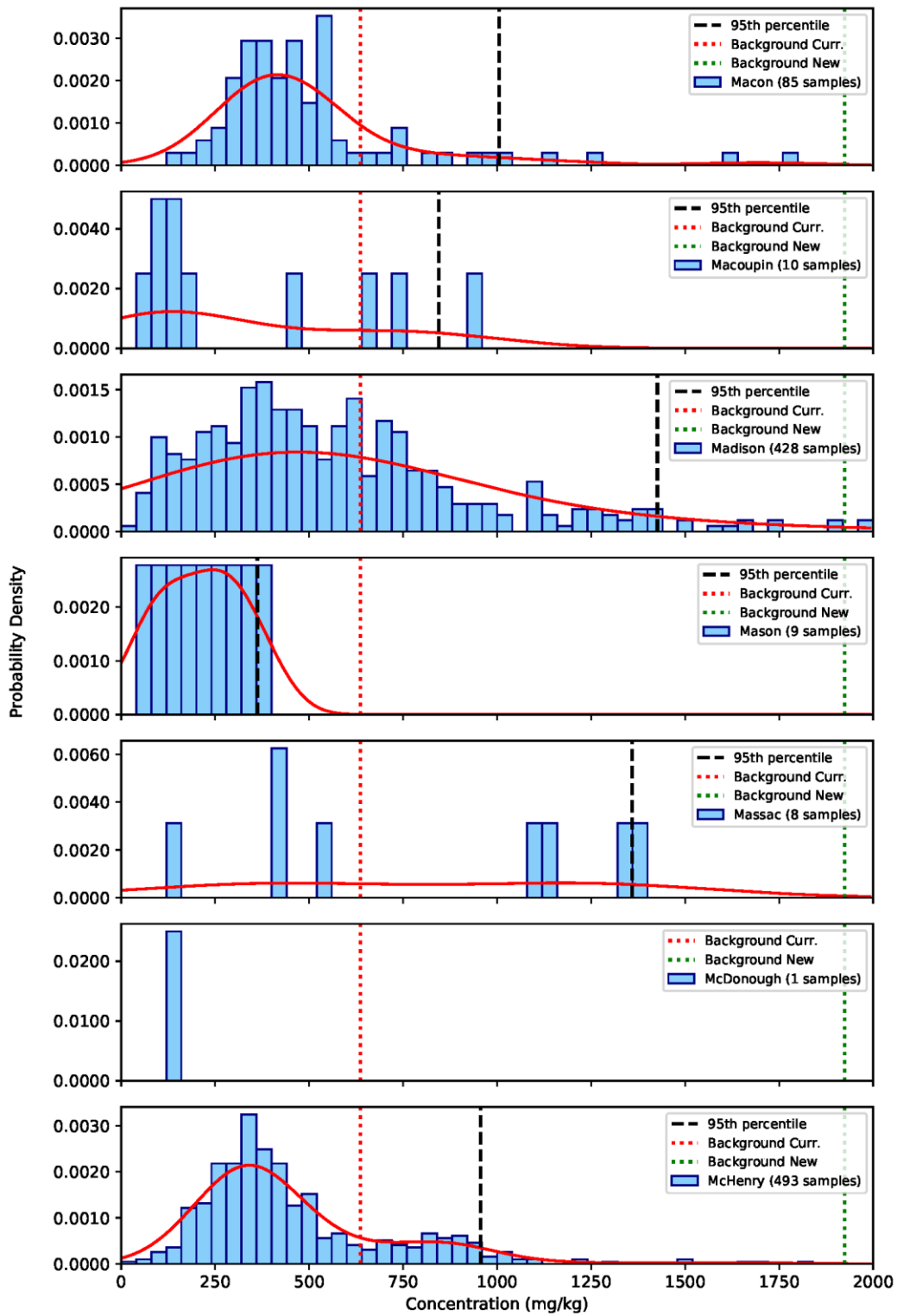


Figure 500. Histogram of RSL manganese concentrations by Illinois county, REC (mg/kg), part 6

Manganese Concentration by County, page 7 of 10

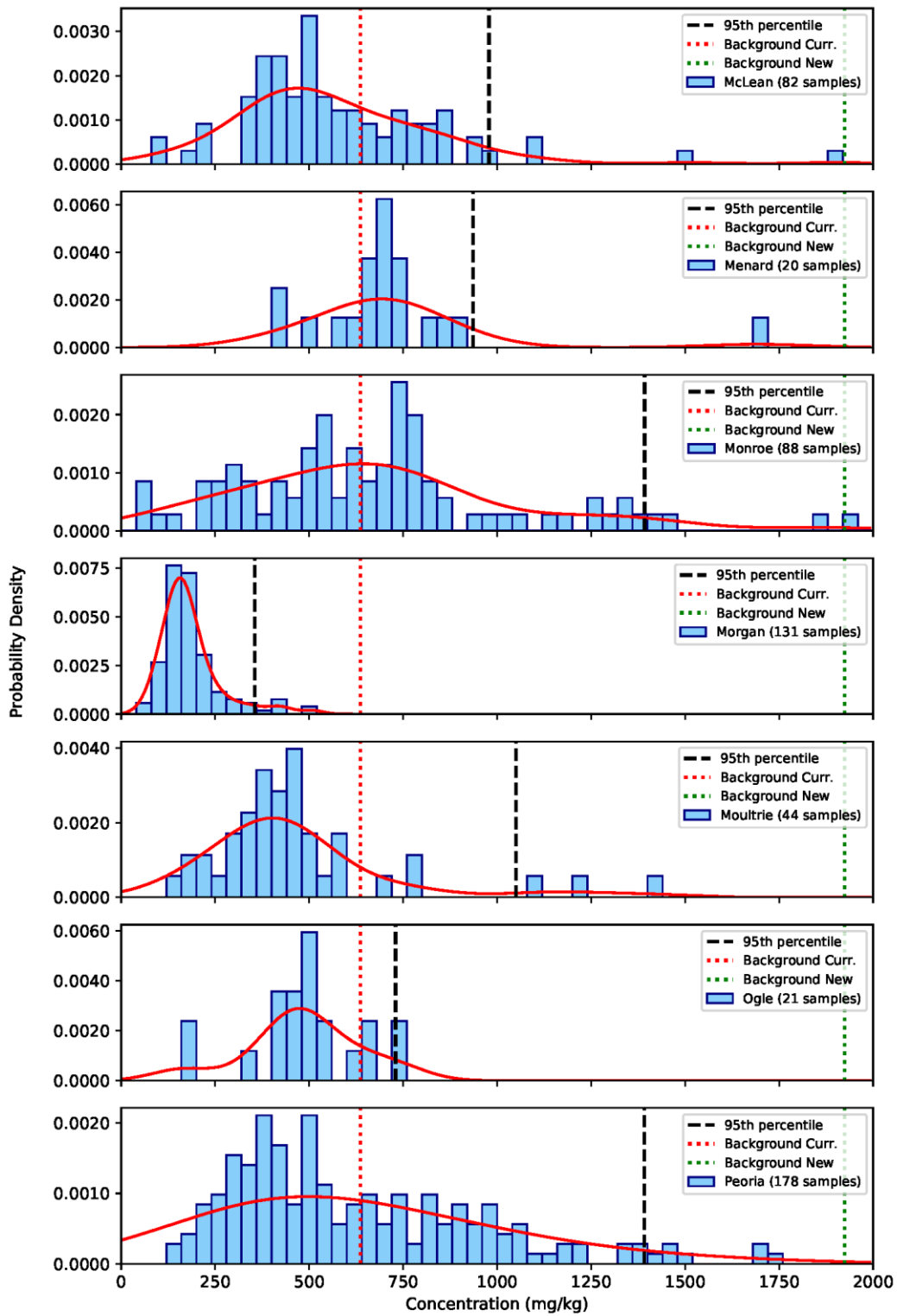


Figure 501. Histogram of RSL manganese concentrations by Illinois county, REC (mg/kg), part 7

Manganese Concentration by County, page 8 of 10

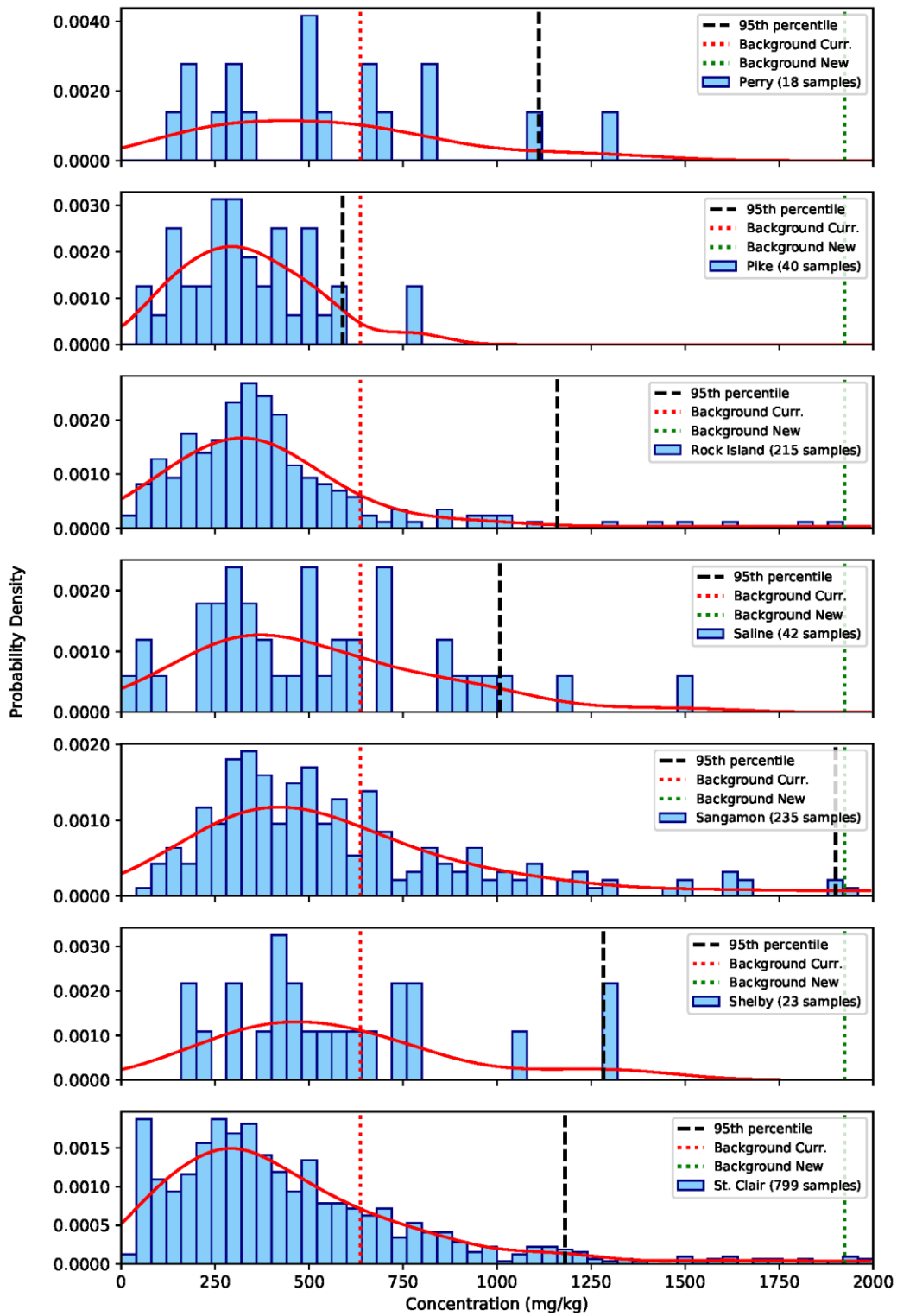


Figure 502. Histogram of RSL manganese concentrations by Illinois county, REC (mg/kg), part 8

Manganese Concentration by County, page 9 of 10

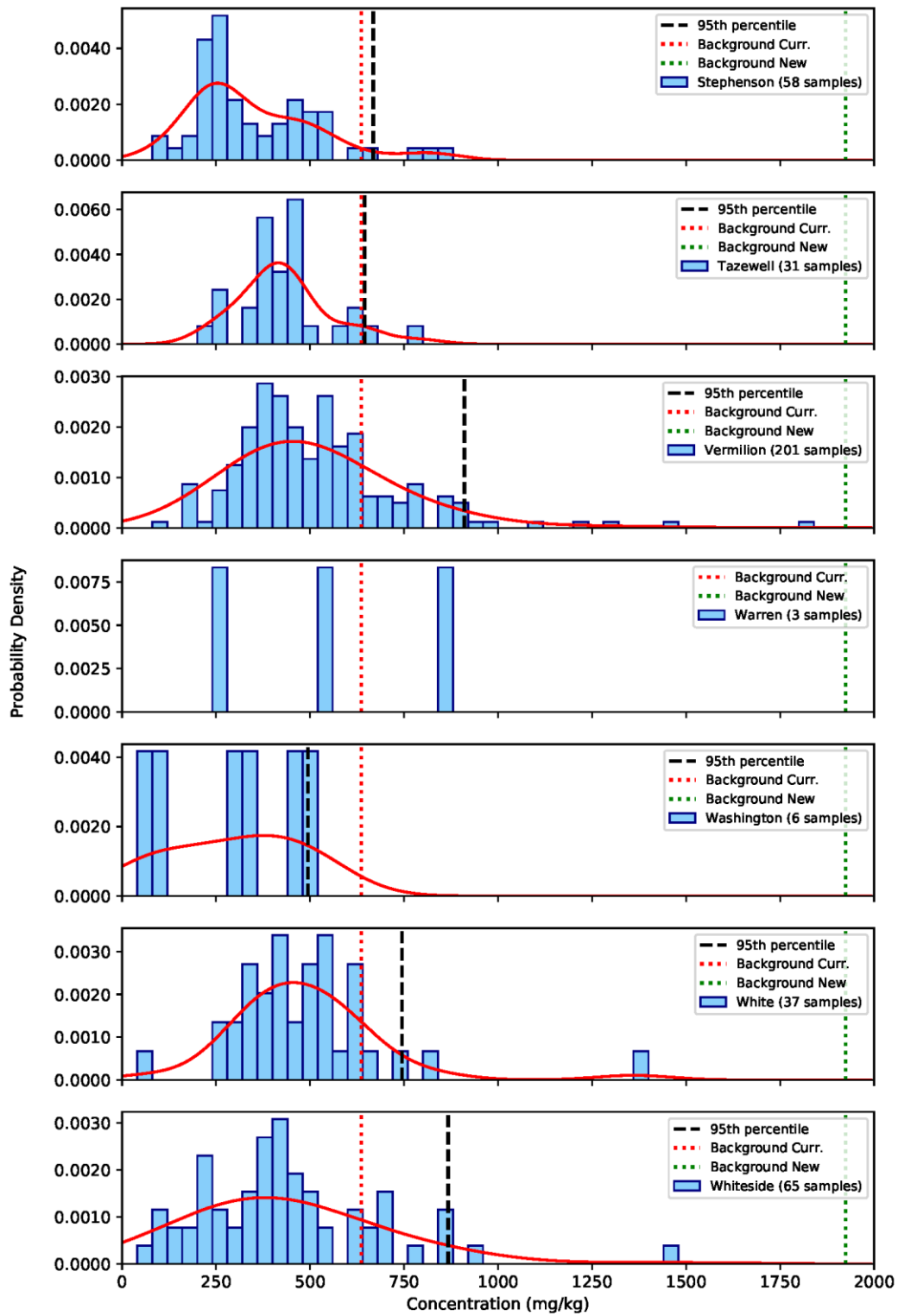


Figure 503. Histogram of RSL manganese concentrations by Illinois county, REC (mg/kg), part 9

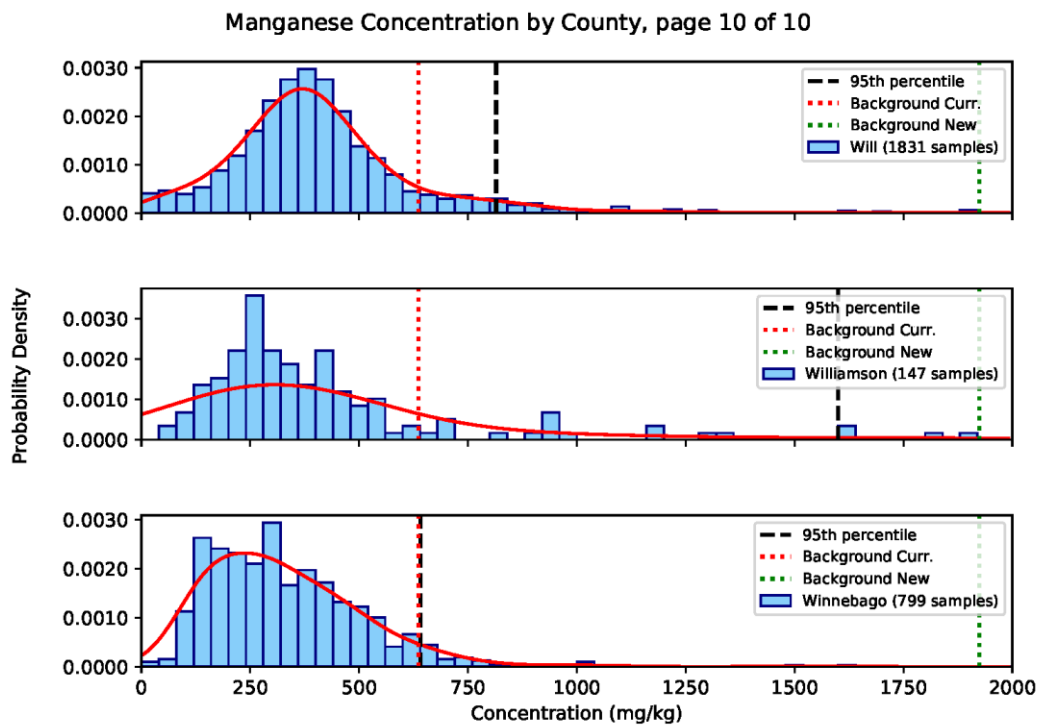


Figure 504. Histogram of RSL manganese concentrations by Illinois county, REC (mg/kg), part 10

Manganese Concentration for 95th Percentile by County: REC Sites

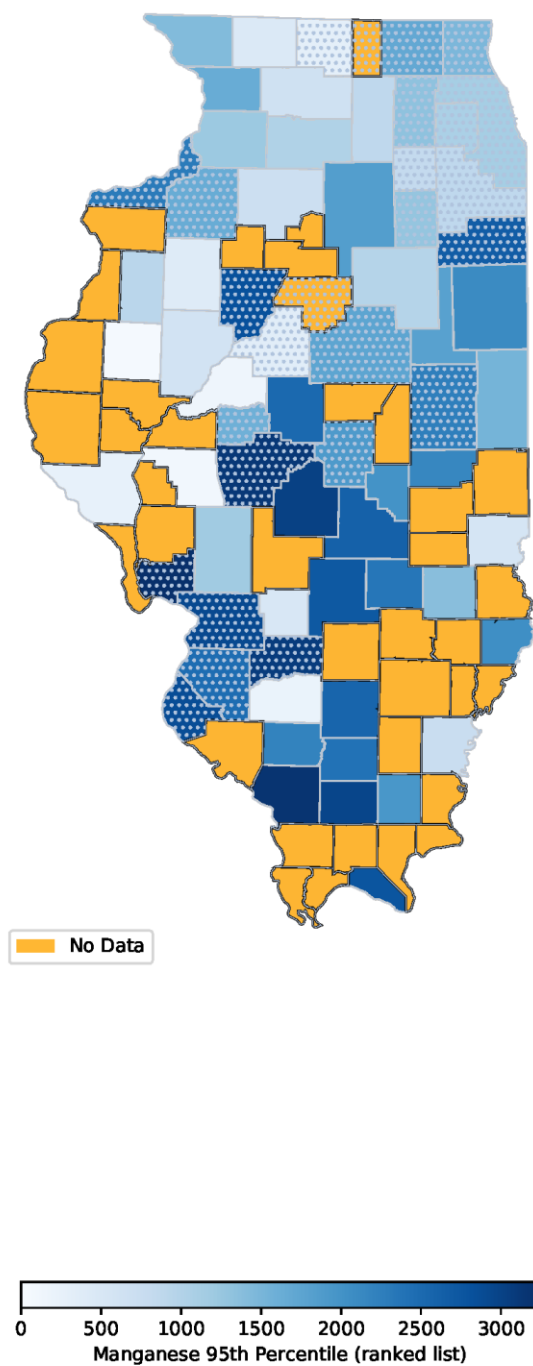


Figure 505. Map of RSL manganese 95th percentile concentration by Illinois county, REC (mg/kg)

Number of Manganese Samples by County: REC Sites

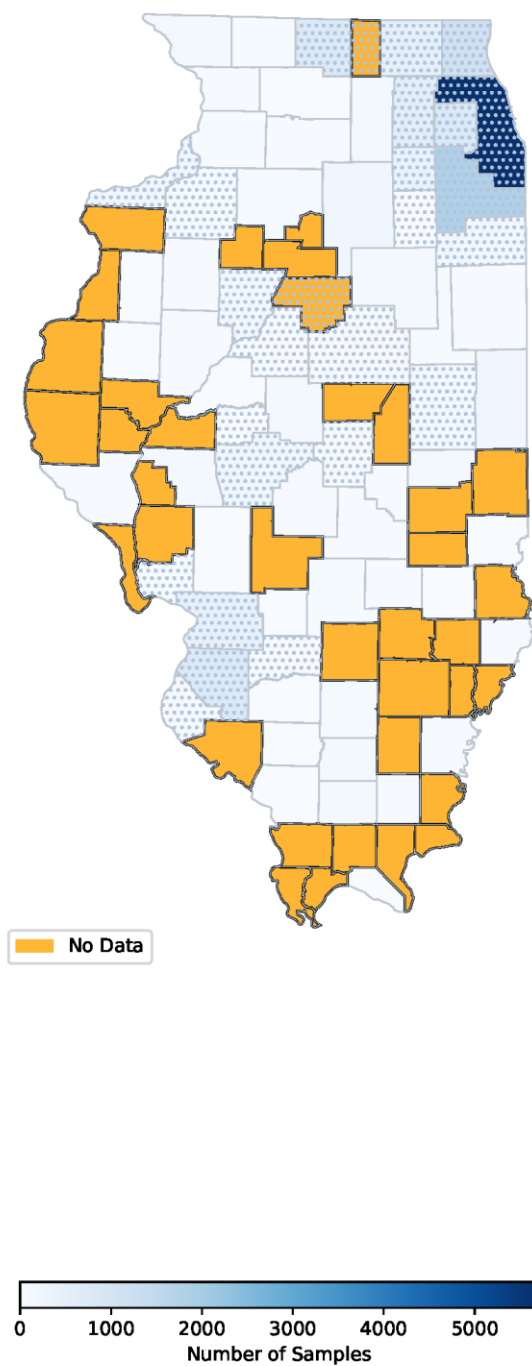
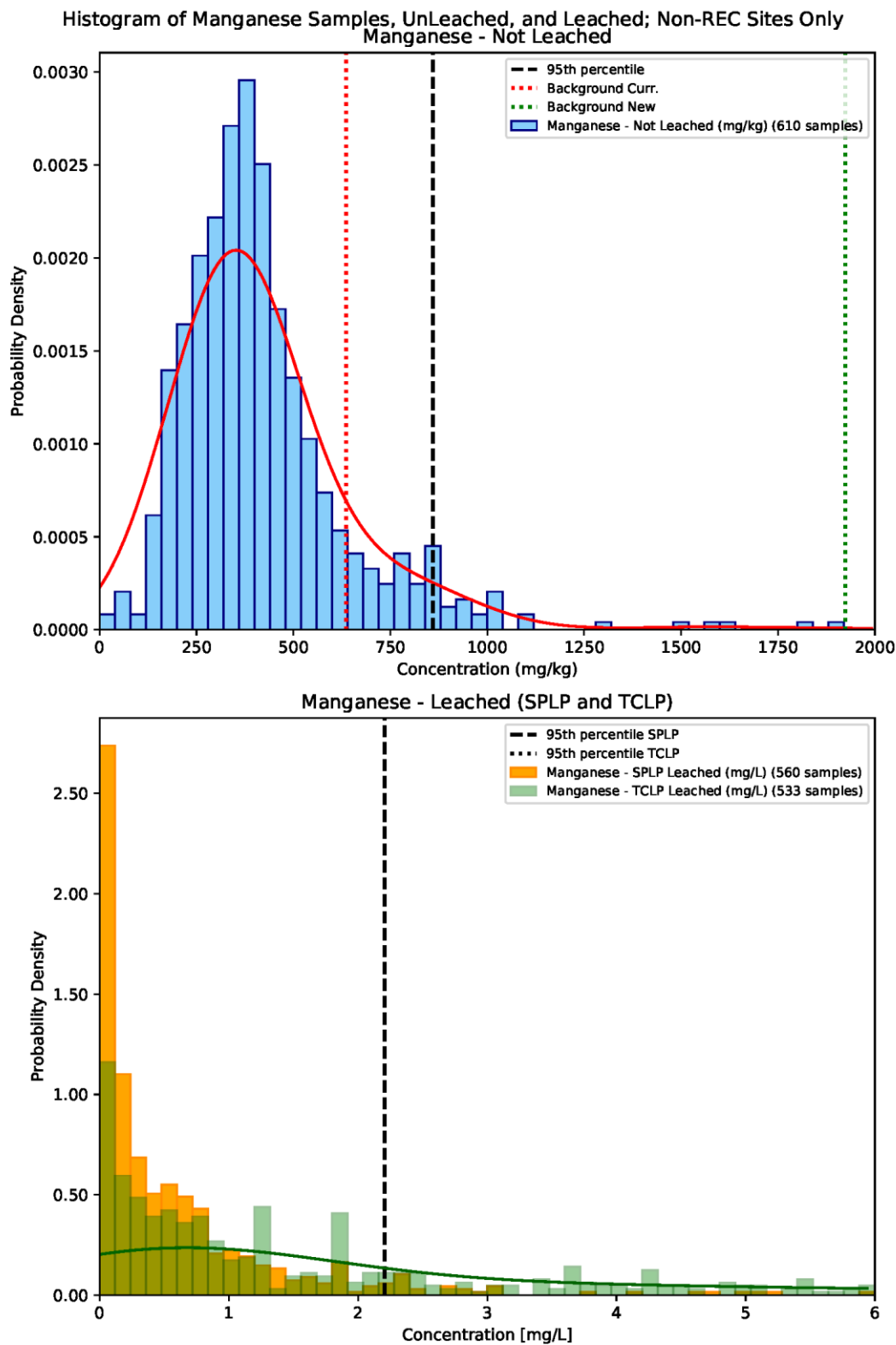


Figure 506. Map of RSL manganese sample quantity by Illinois county, REC (mg/kg)

## N.2 MANGANESE NON-REC





**Figure 507. Histogram of RSL manganese concentrations, Non-REC (mg/kg)**

**Manganese Unleached Concentration (mg/kg)**

1) Region

2) District

3) County

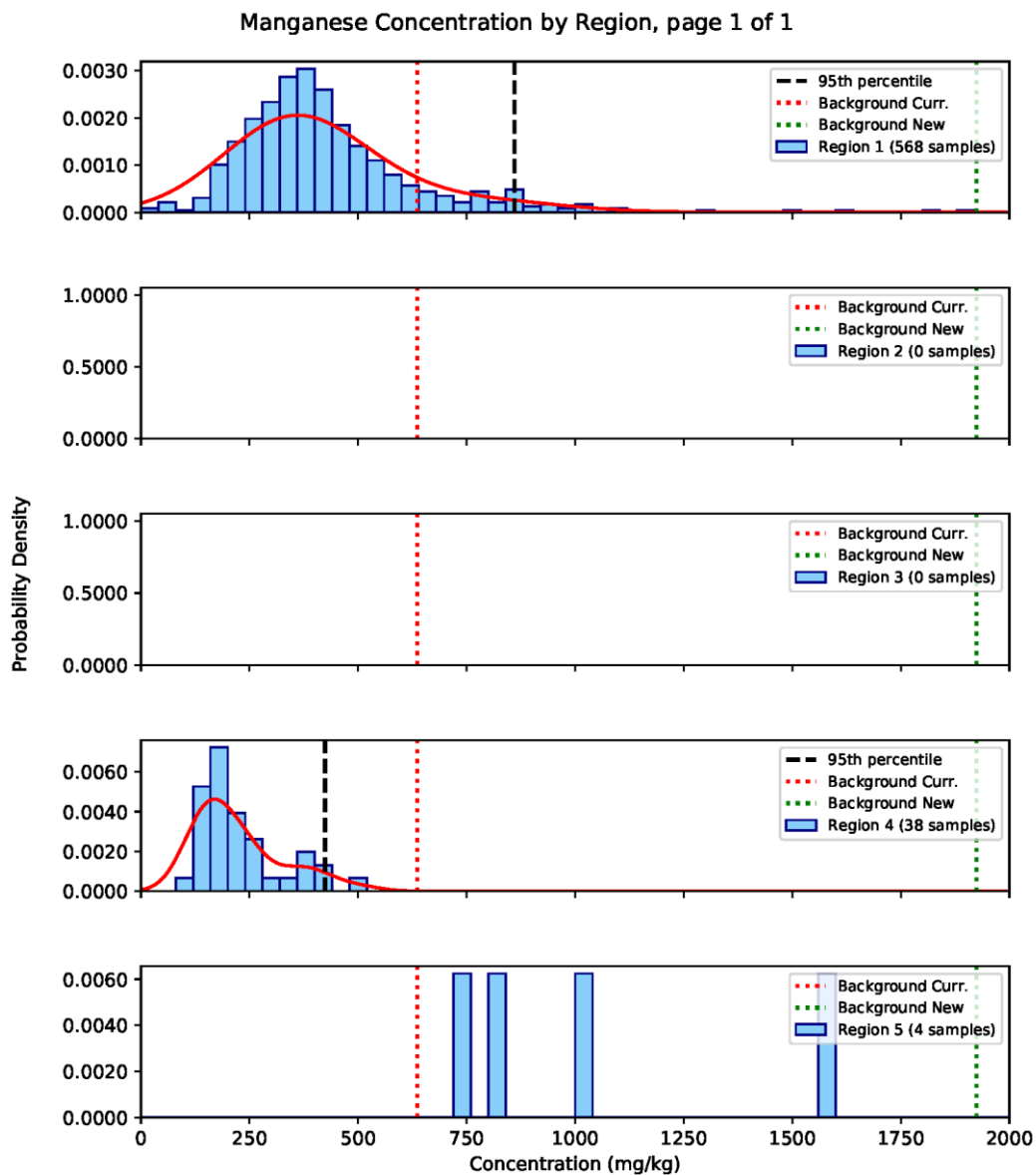


Figure 508. Histogram of RSL manganese concentrations by IDOT Region, Non-REC (mg/kg)

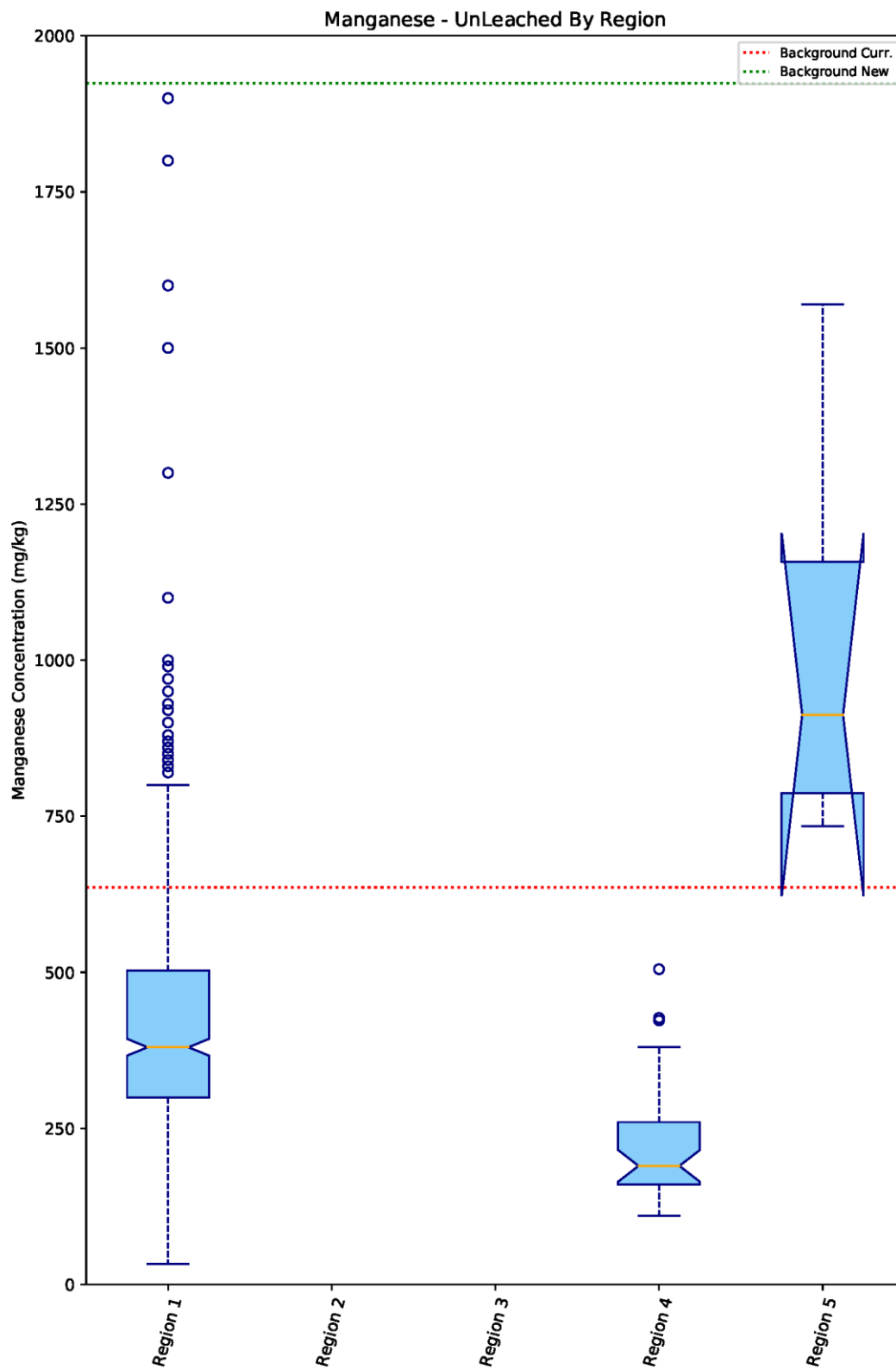


Figure 509. Boxplot of RSL manganese concentrations by IDOT Region, Non-REC (mg/kg)

Manganese Concentration by District, page 1 of 2

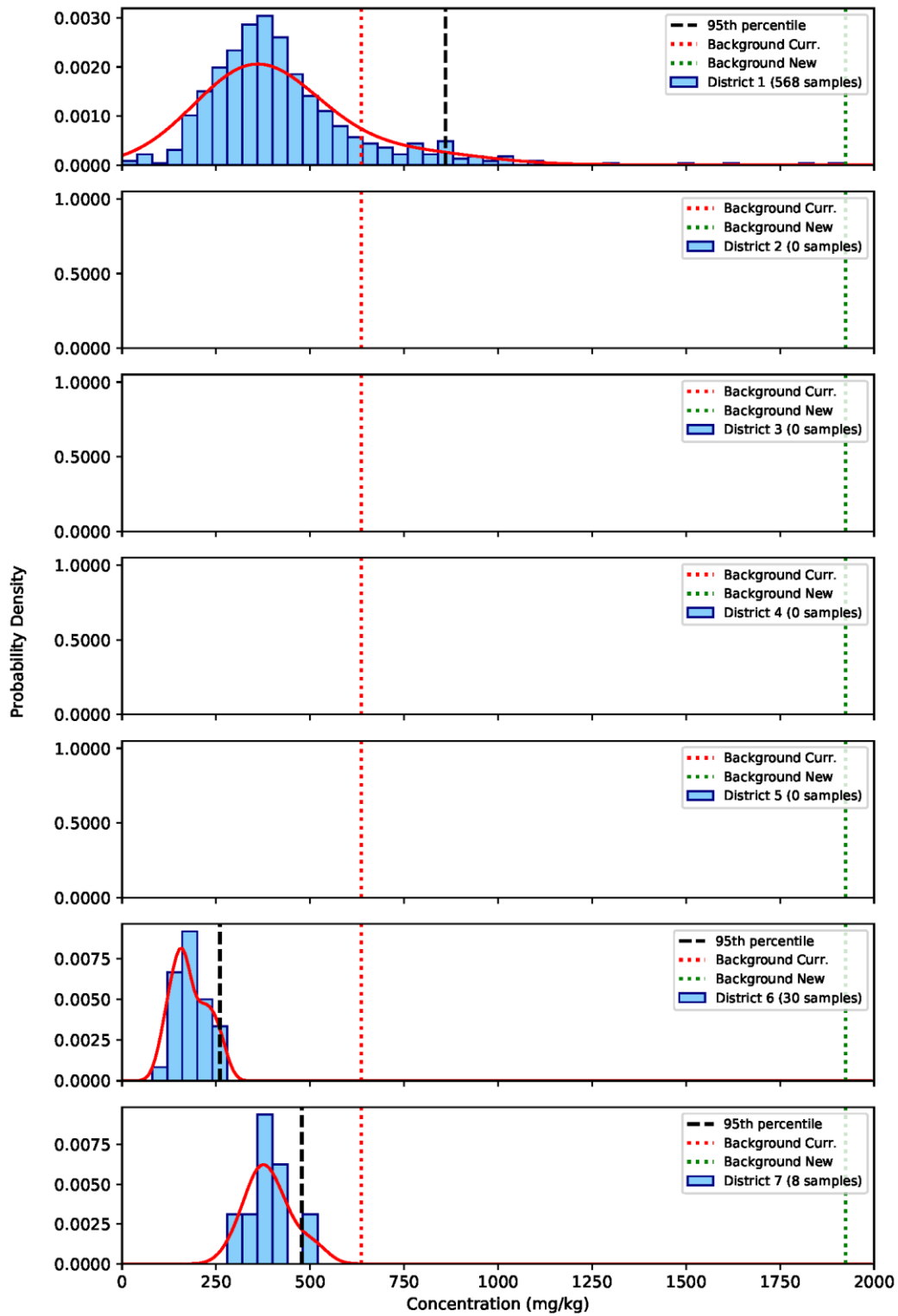


Figure 510. Histogram of RSL manganese concentrations by IDOT District, Non-REC (mg/kg), part 1

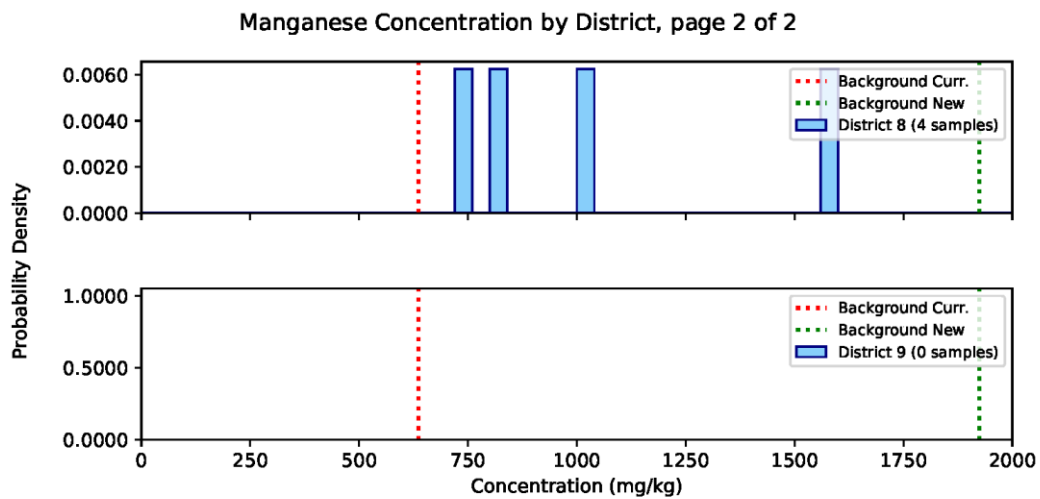


Figure 511. Histogram of RSL manganese concentrations by IDOT District, Non-REC (mg/kg), part 2

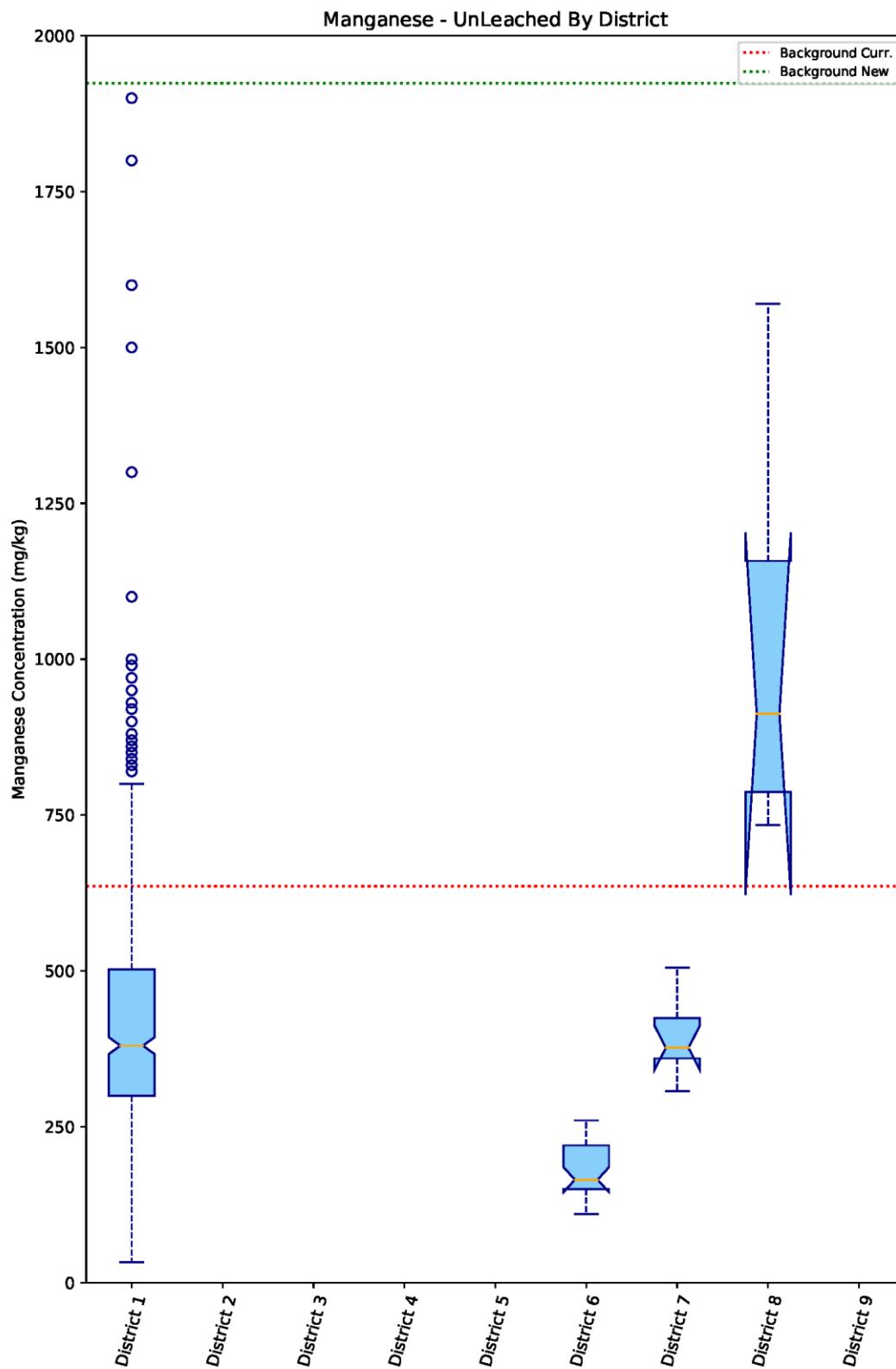


Figure 512. Boxplot of RSL manganese concentrations by IDOT District, Non-REC (mg/kg)

Manganese Concentration by County, page 1 of 2

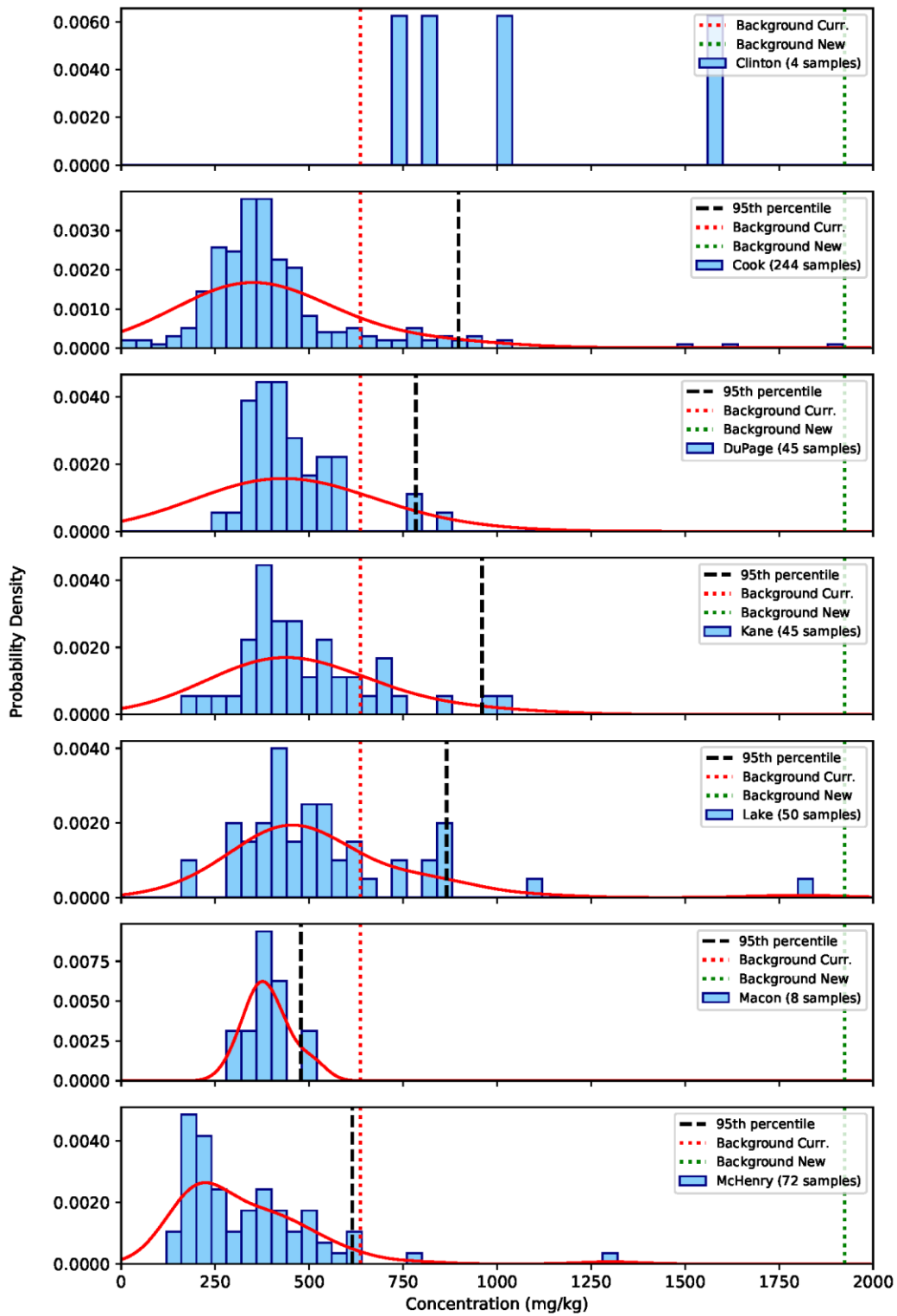


Figure 513. Histogram of RSL manganese concentrations by Illinois county, Non-REC (mg/kg), part 1



Manganese Concentration by County, page 2 of 2

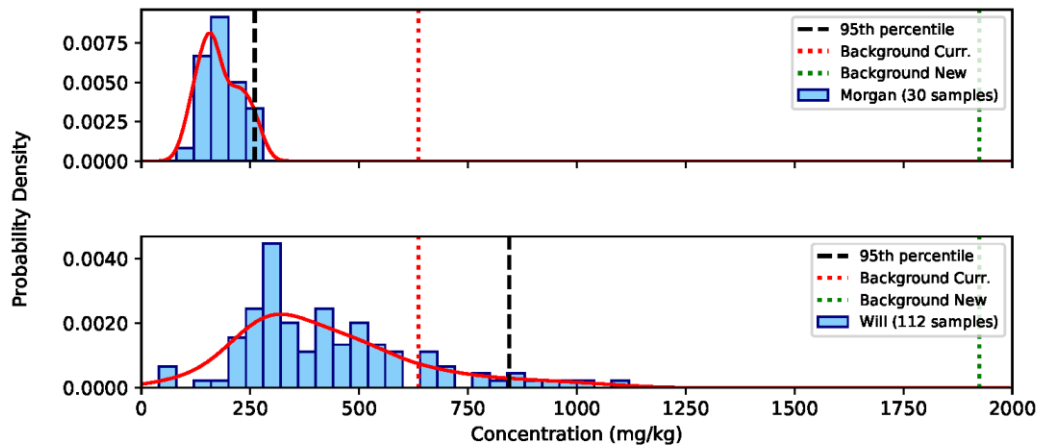


Figure 514. Histogram of RSL manganese concentrations by Illinois county, Non-REC (mg/kg), part 2

Manganese Concentration for 95th Percentile by County: Non-REC Sites

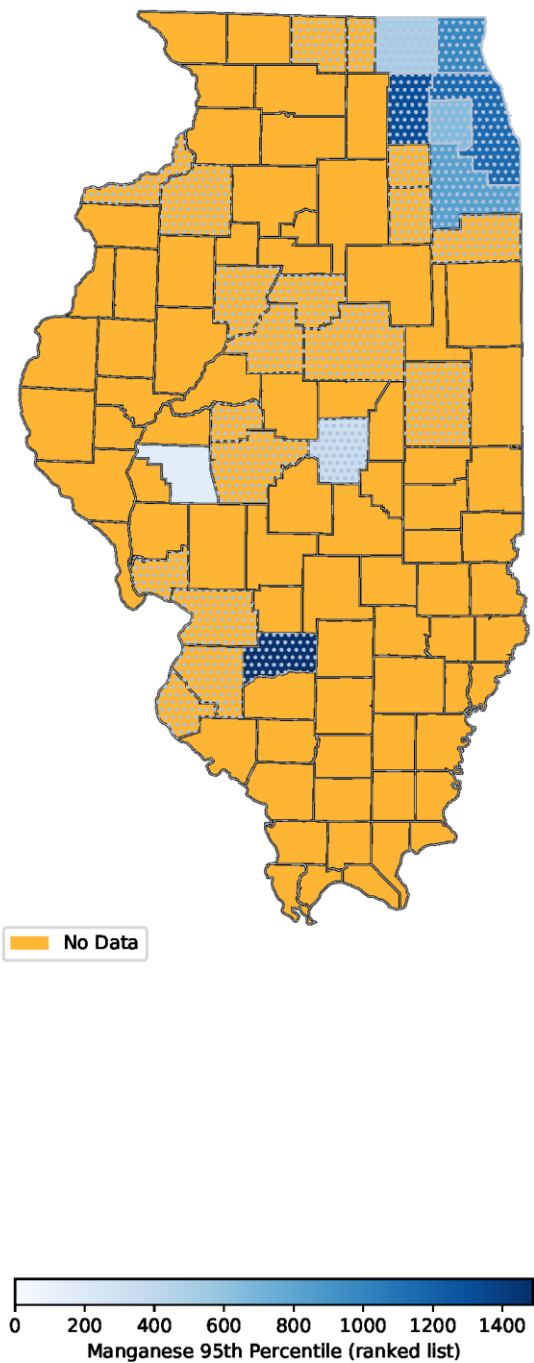


Figure 515. Map of RSL manganese 95th percentile concentration by Illinois county, Non-REC (mg/kg)

Number of Manganese Samples by County: Non-REC Sites

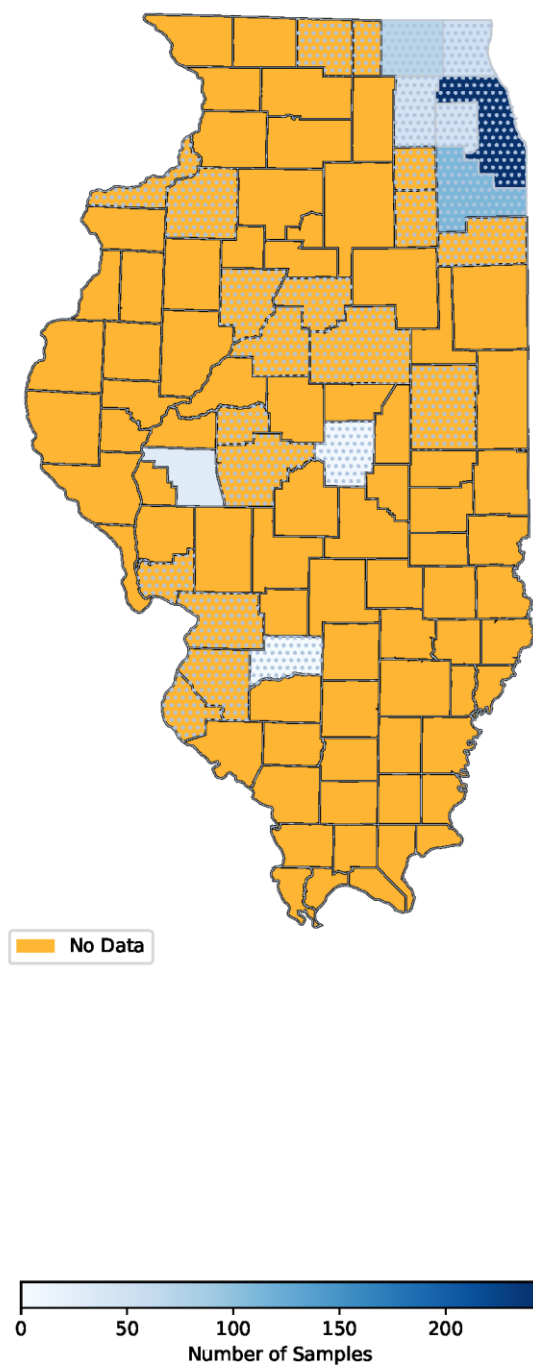
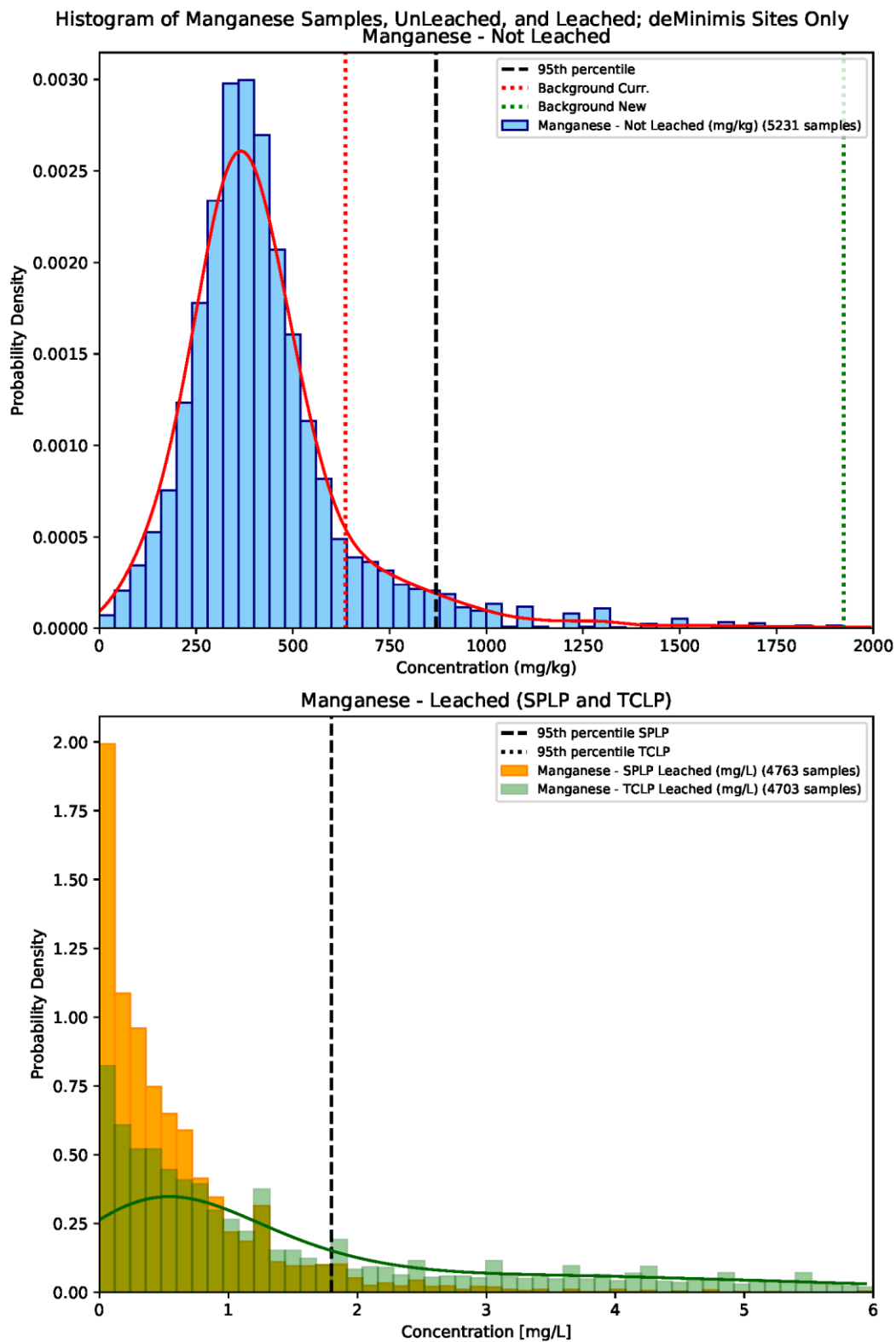


Figure 516. Map of RSL manganese sample quantity by Illinois county, Non-REC (mg/kg)

### **N.3 MANGANESE DE MINIMIS**



**Figure 517. Histogram of RSL manganese concentrations, de minimis (mg/kg)**

**Manganese Unleached Concentration (mg/kg)**

1) Region

2) District

3) County

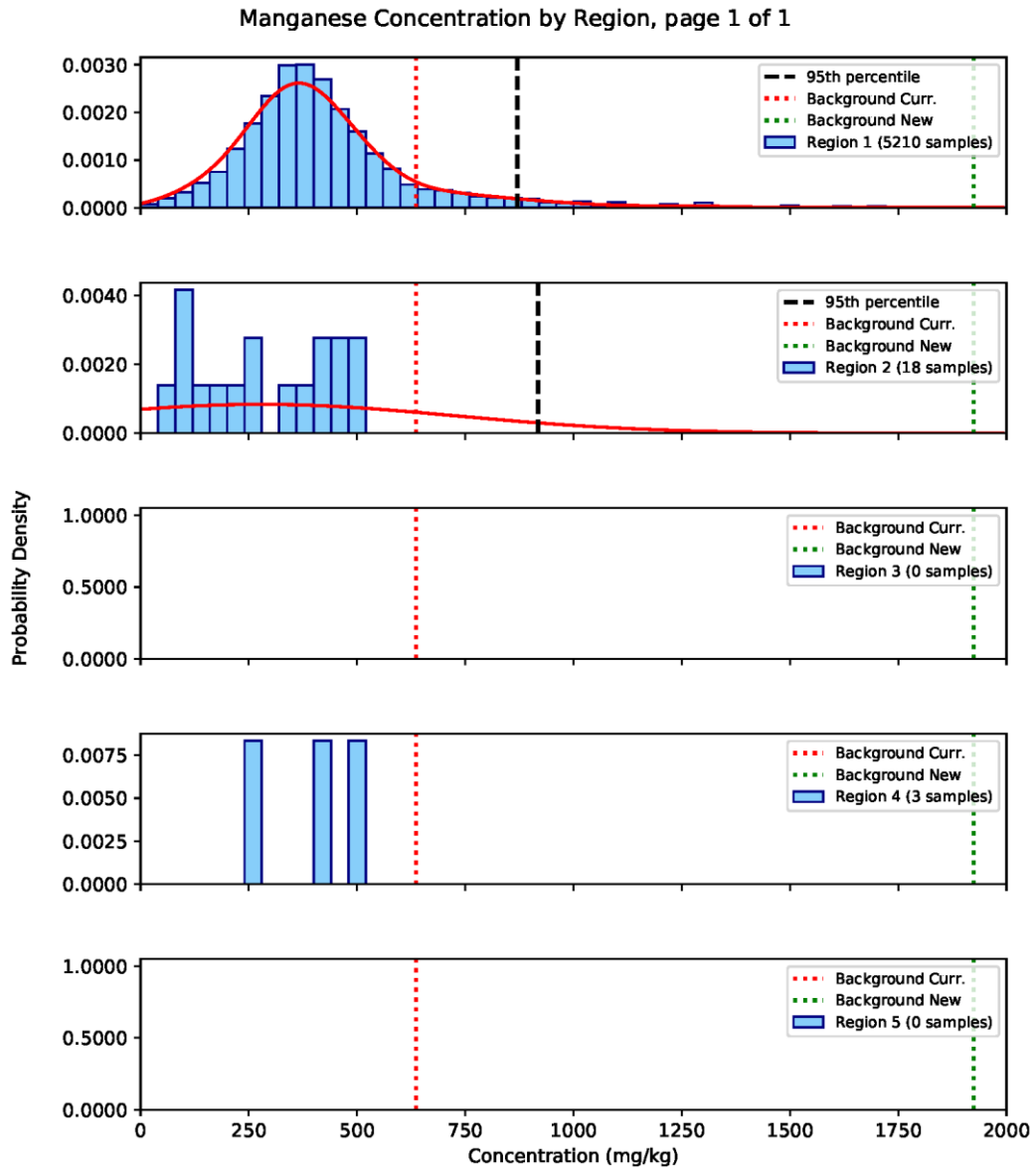


Figure 518. Histogram of RSL manganese concentrations by IDOT Region, de minimis (mg/kg)

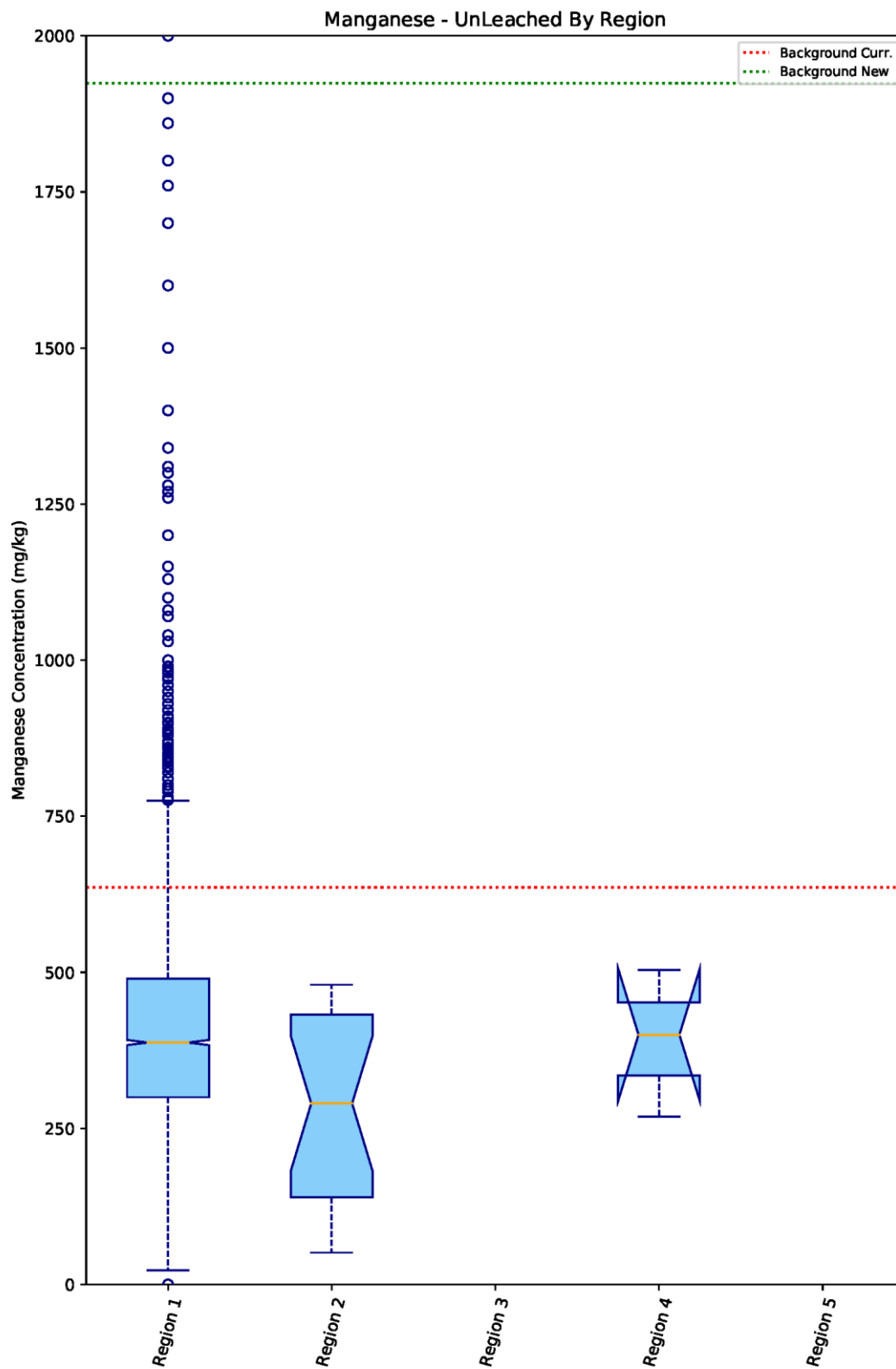


Figure 519. Boxplot of RSL manganese concentrations by IDOT Region, de minimis (mg/kg)



Manganese Concentration by District, page 1 of 2

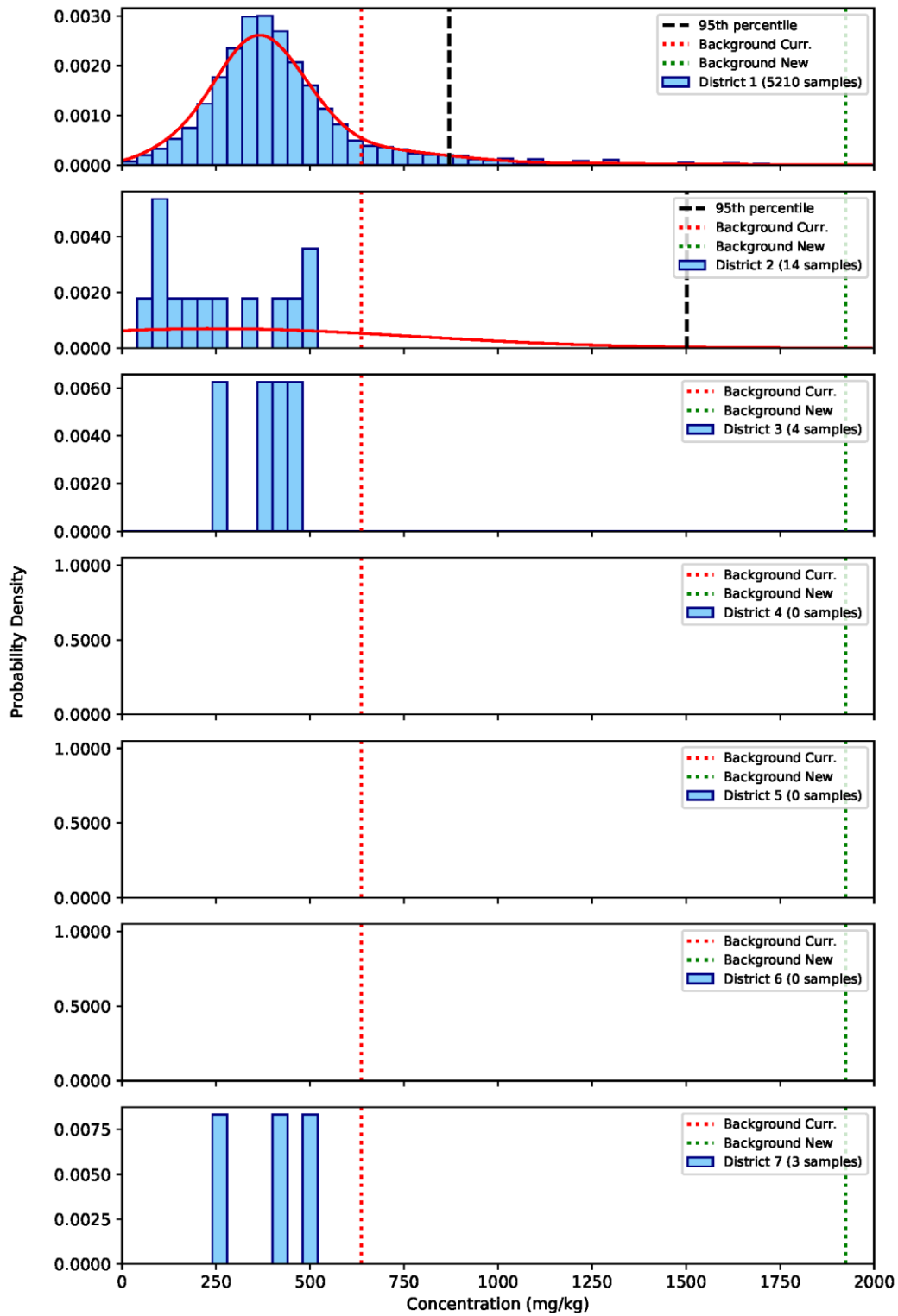


Figure 520. Histogram of RSL manganese concentrations by IDOT District, de minimis (mg/kg), part

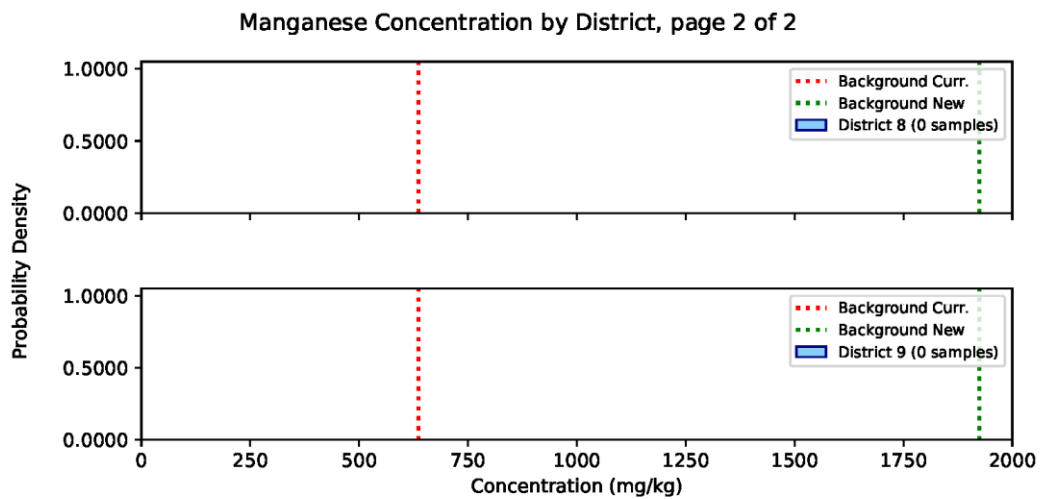


Figure 521. Histogram of RSL manganese concentrations by IDOT District, de minimis (mg/kg), part  
2

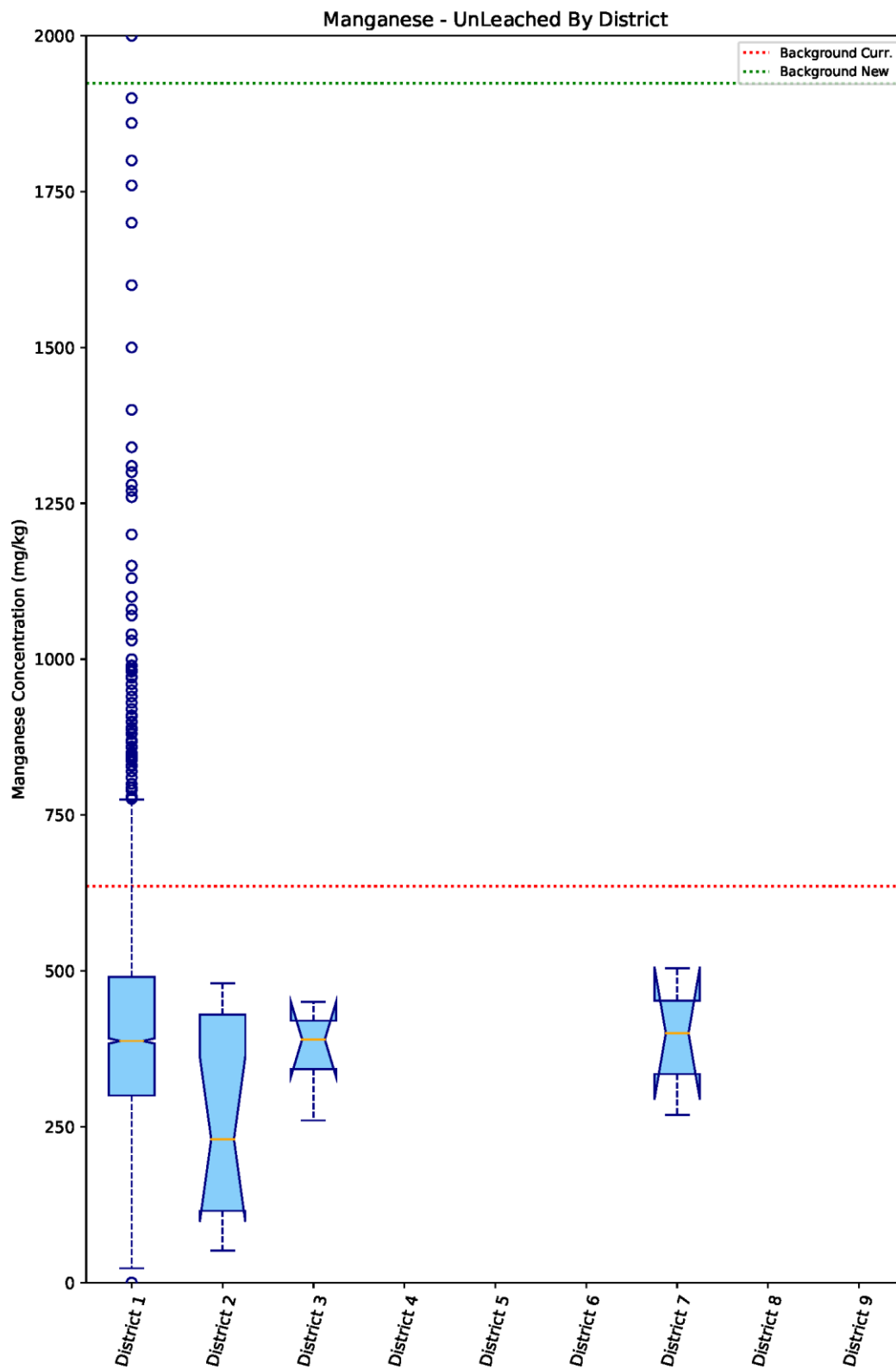


Figure 522. Boxplot of RSL manganese concentrations by IDOT District, de minimis (mg/kg)

Manganese Concentration by County, page 1 of 2

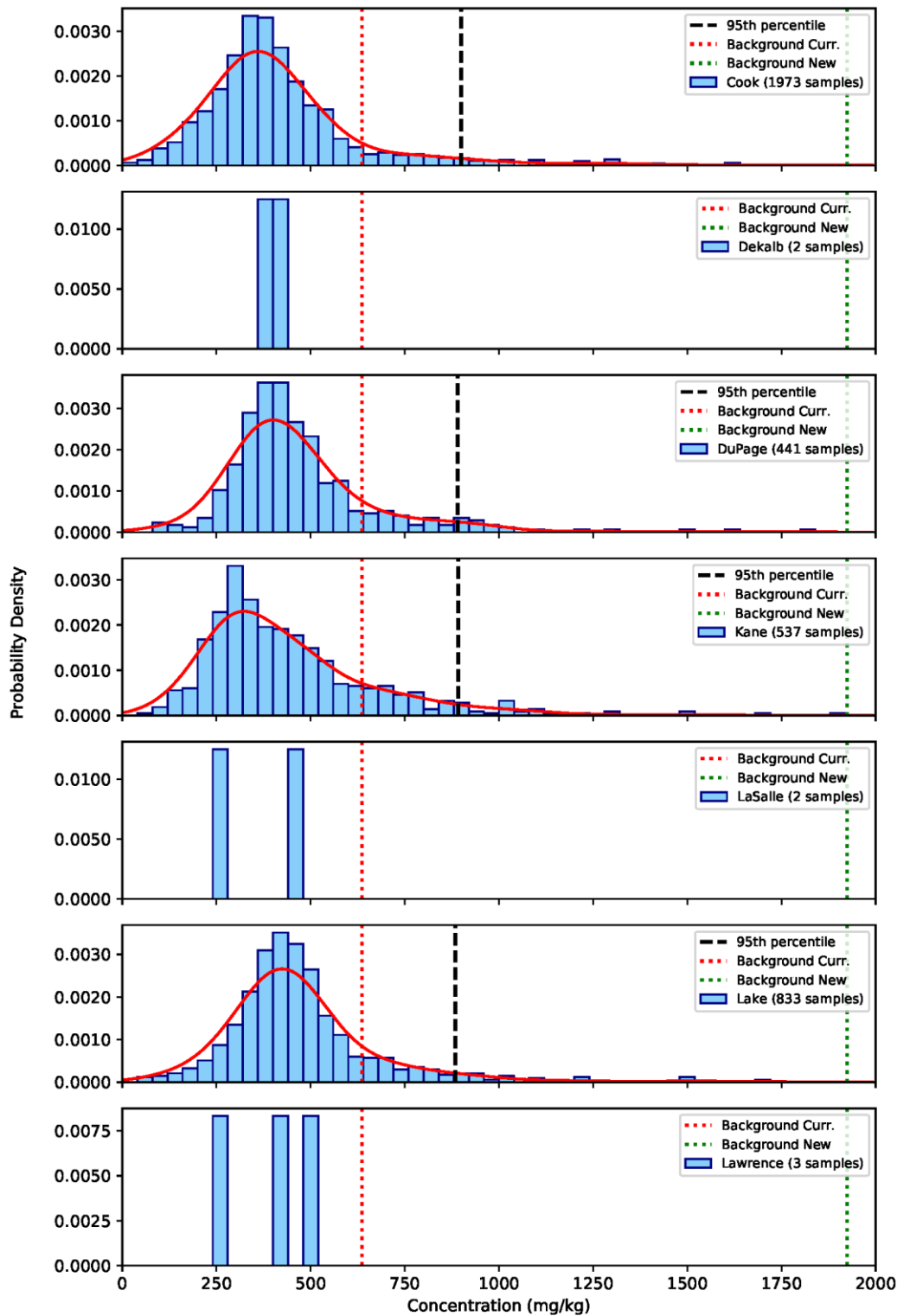


Figure 523. Histogram of RSL manganese concentrations by Illinois county, de minimis (mg/kg), part

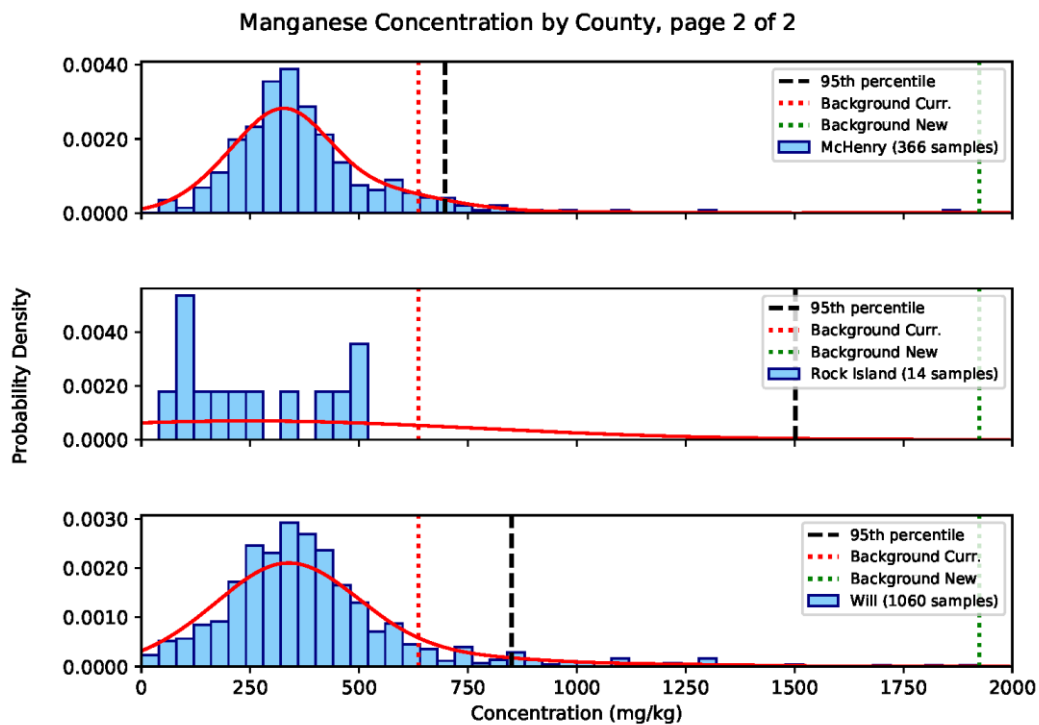


Figure 524. Histogram of RSL manganese concentrations by Illinois county, de minimis (mg/kg), part 2

Manganese Concentration for 95th Percentile by County: deMinimis Sites

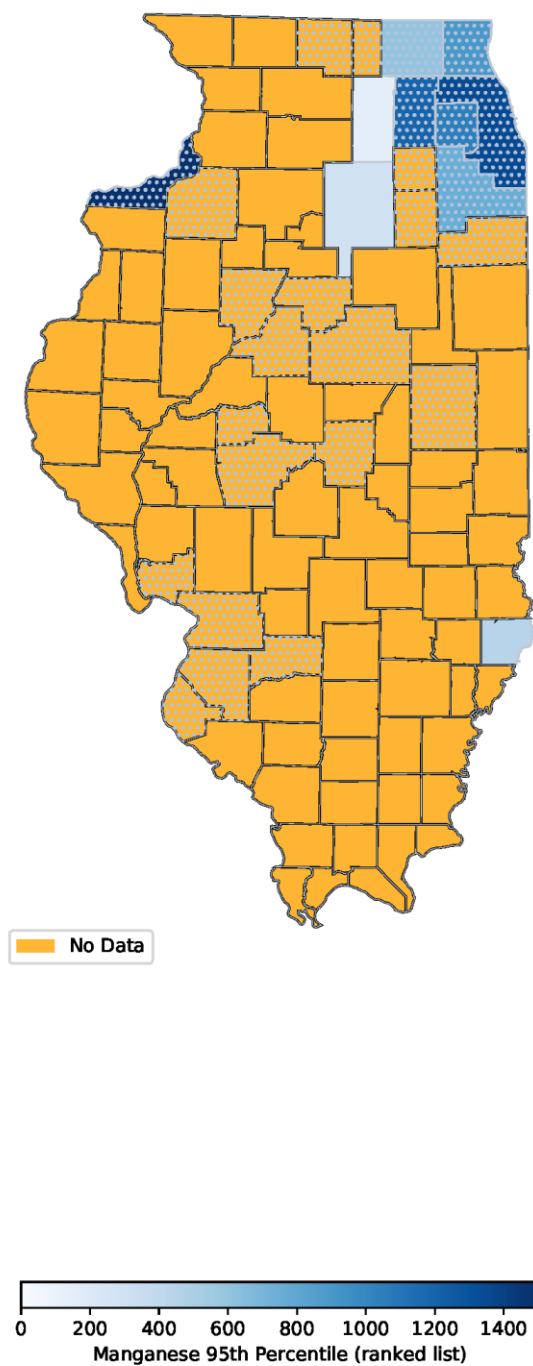


Figure 525. Map of RSL manganese 95th percentile concentration by Illinois county, de minimis (mg/kg)

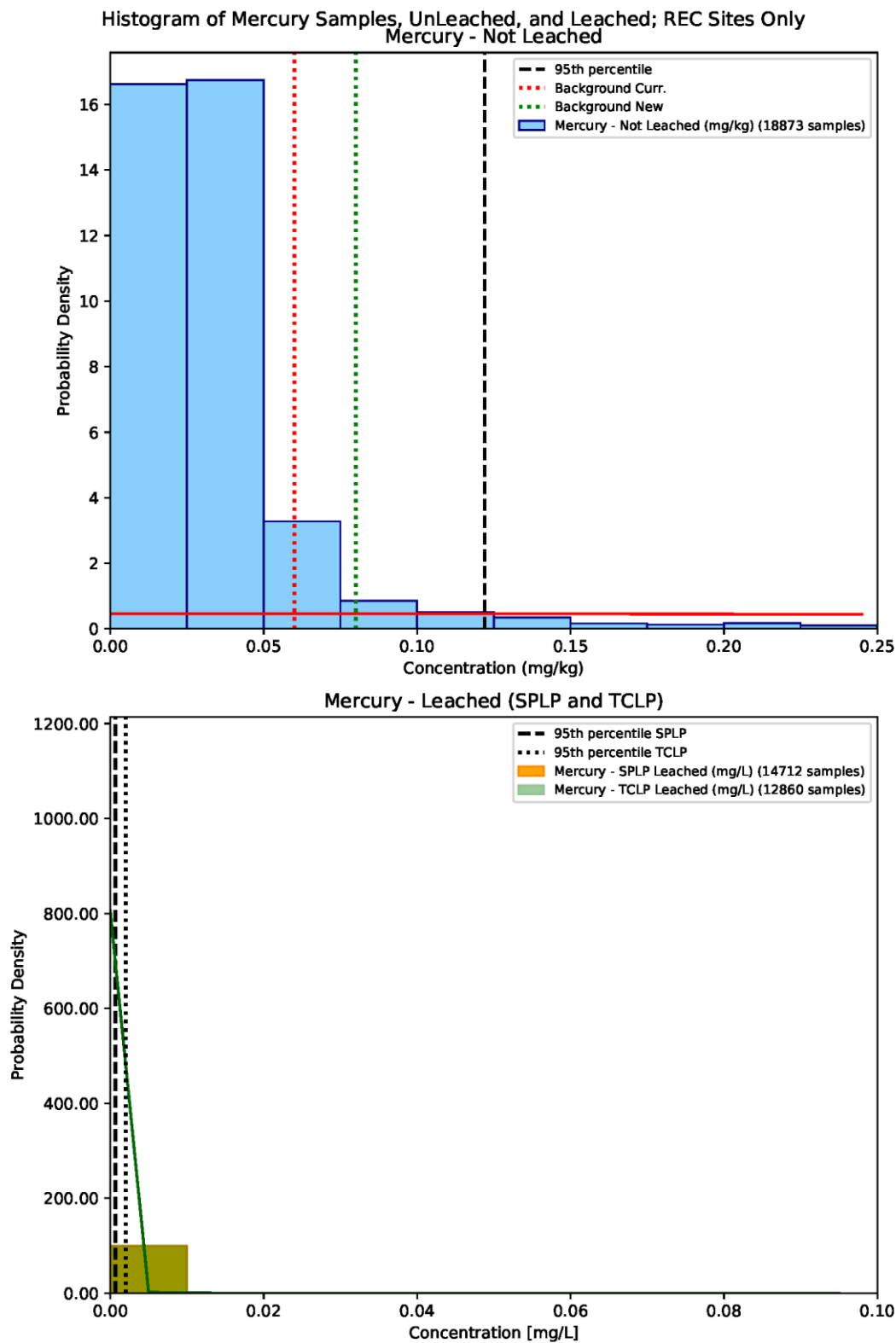
This map of Illinois displays the counties colored according to the number of years since the last census. The legend indicates four categories: 0-10 years (solid orange), 11-20 years (orange with dots), 21-30 years (light blue with dots), and 31+ years (dark blue with dots). The map shows that most counties have been within 10 years of a census, with some counties in the north and east having been 21-30 years or more since the last census. A few counties are white, indicating no data.

617

## **APPENDIX O. ANALYTE ANALYSIS: MERCURY**

### **O.1 MERCURY REC**





**Figure 527. Histogram of RSL mercury concentrations, REC (mg/kg)**

**Mercury Unleached Concentration (mg/kg)**

- 1) Region
- 2) District
- 3) County

# Mercury Concentration by Region, page 1 of 1

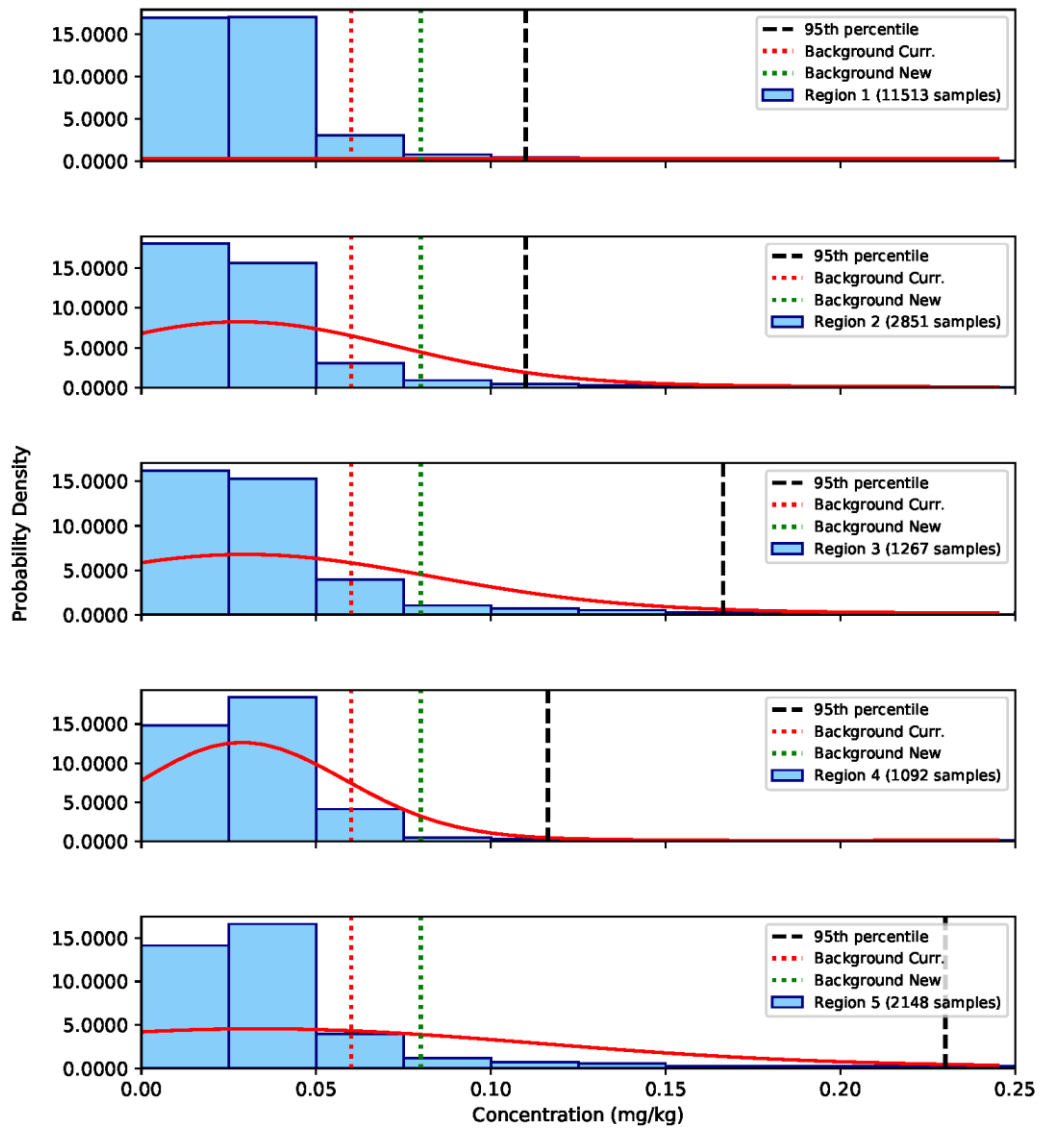


Figure 528. Histogram of RSL mercury concentrations by IDOT Region, REC (mg/kg)

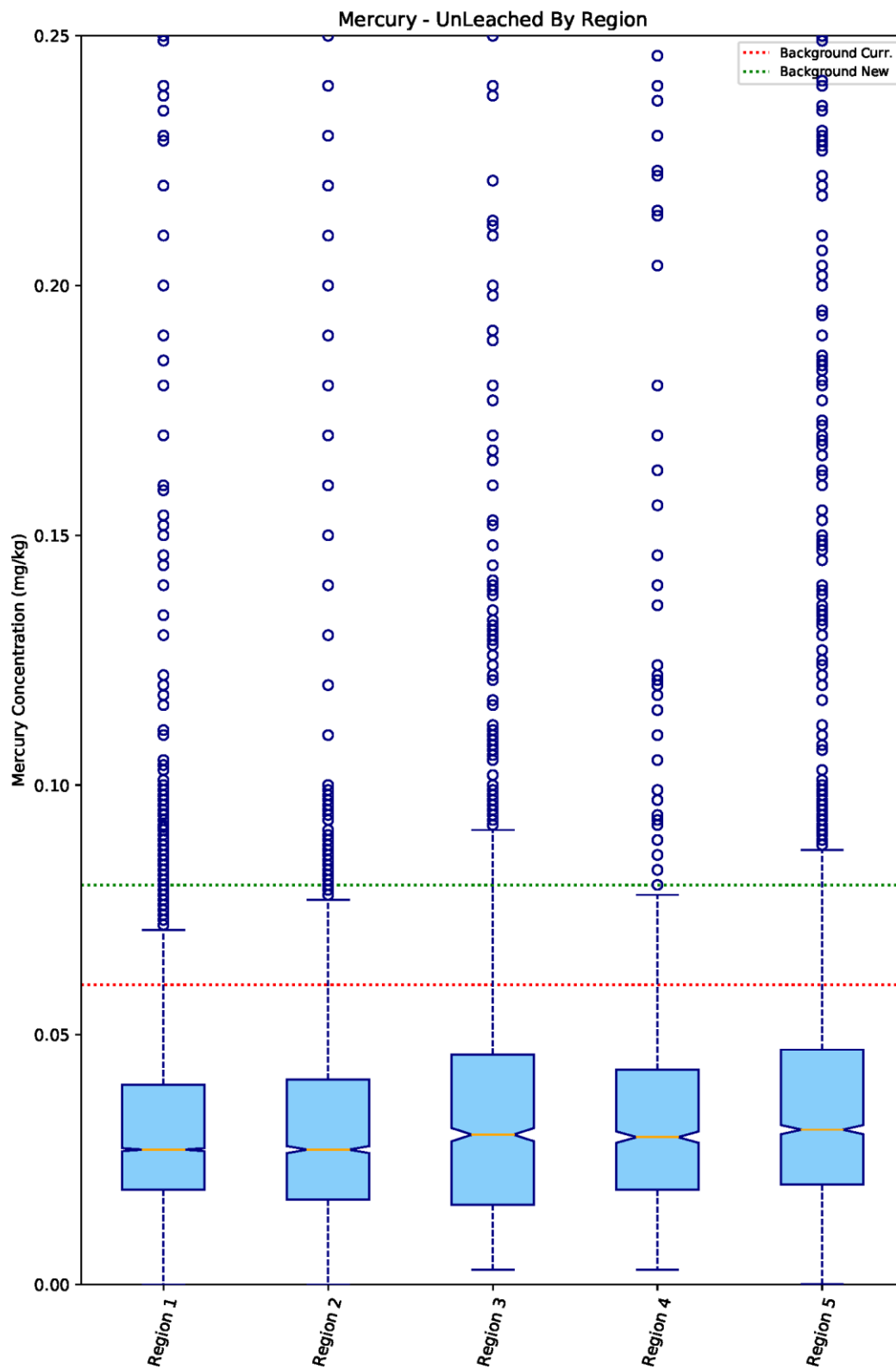


Figure 529. Boxplot of RSL mercury concentrations by IDOT Region, REC (mg/kg)

Mercury Concentration by District, page 1 of 2

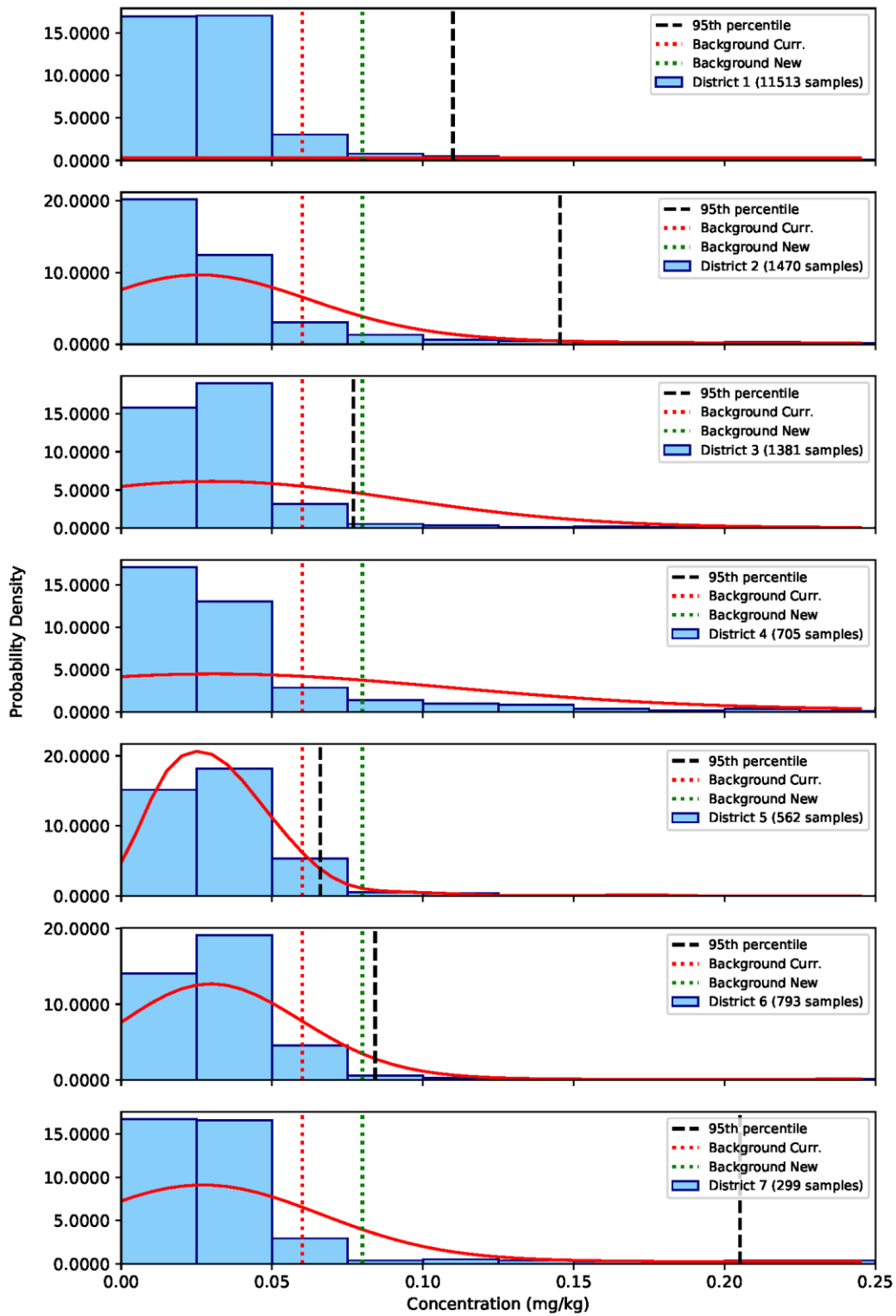


Figure 530. Histogram of RSL mercury concentrations by IDOT District, REC (mg/kg), part 1

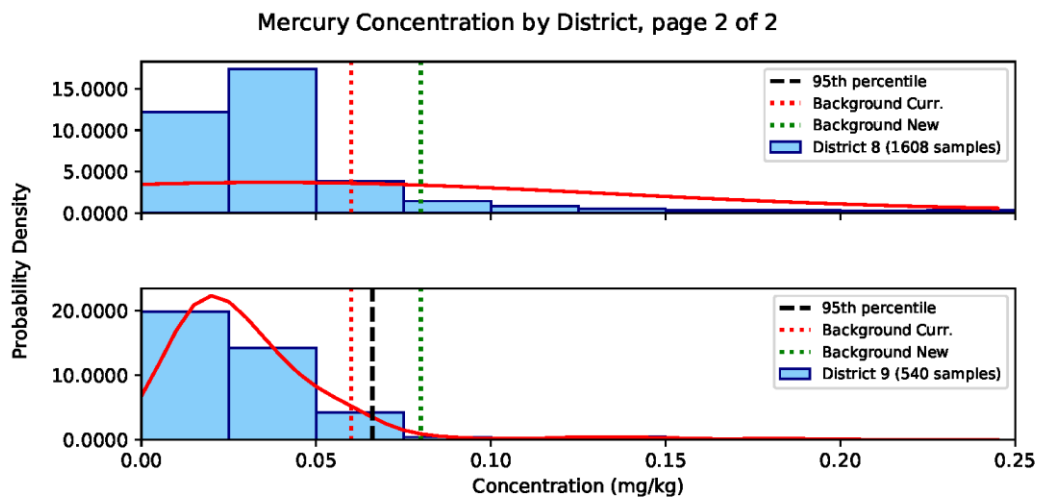


Figure 531. Histogram of RSL mercury concentrations by IDOT District, REC (mg/kg), part 2

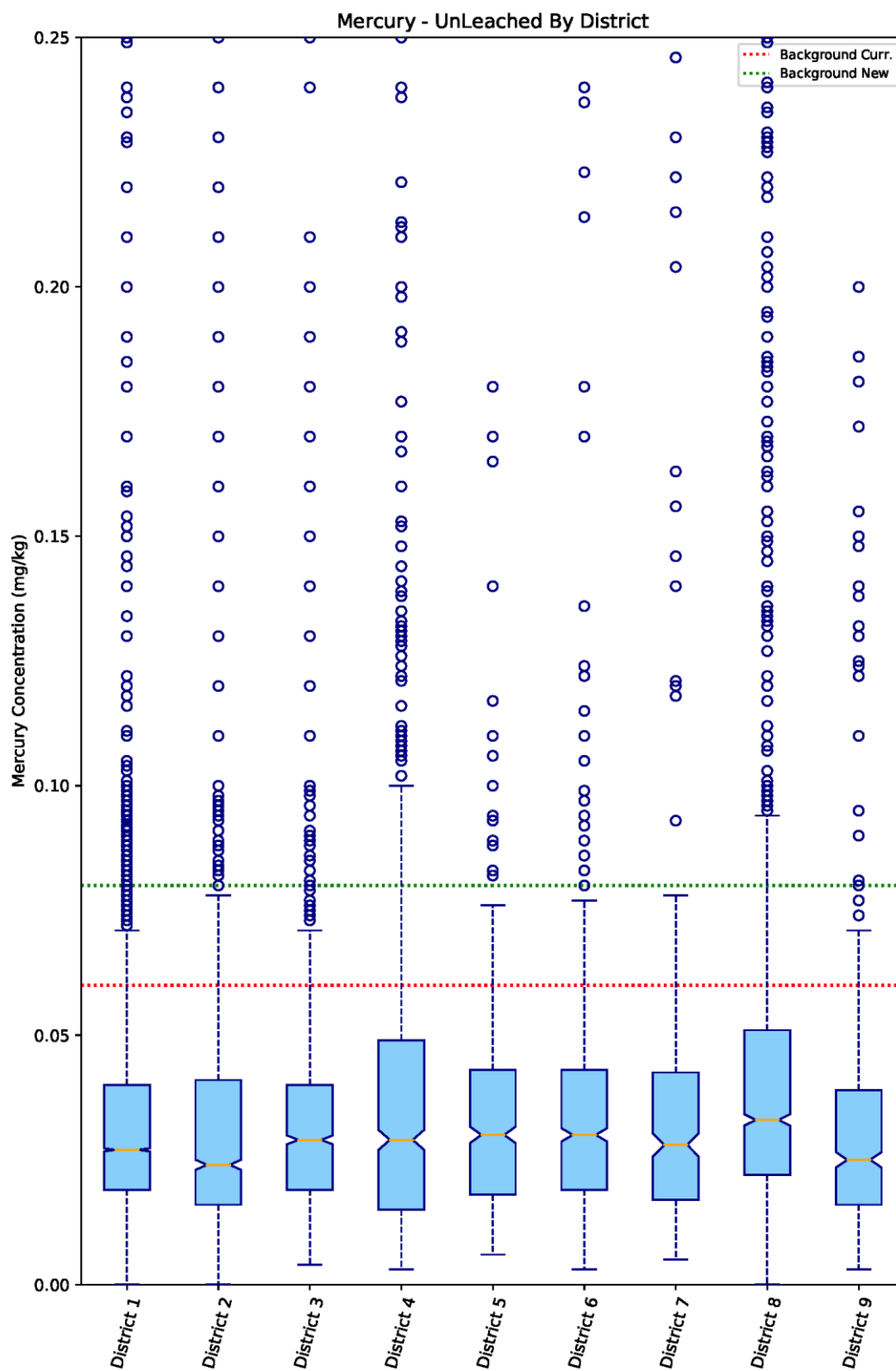


Figure 532. Boxplot of RSL mercury concentrations by IDOT District, REC (mg/kg)

# Mercury Concentration by County, page 1 of 10

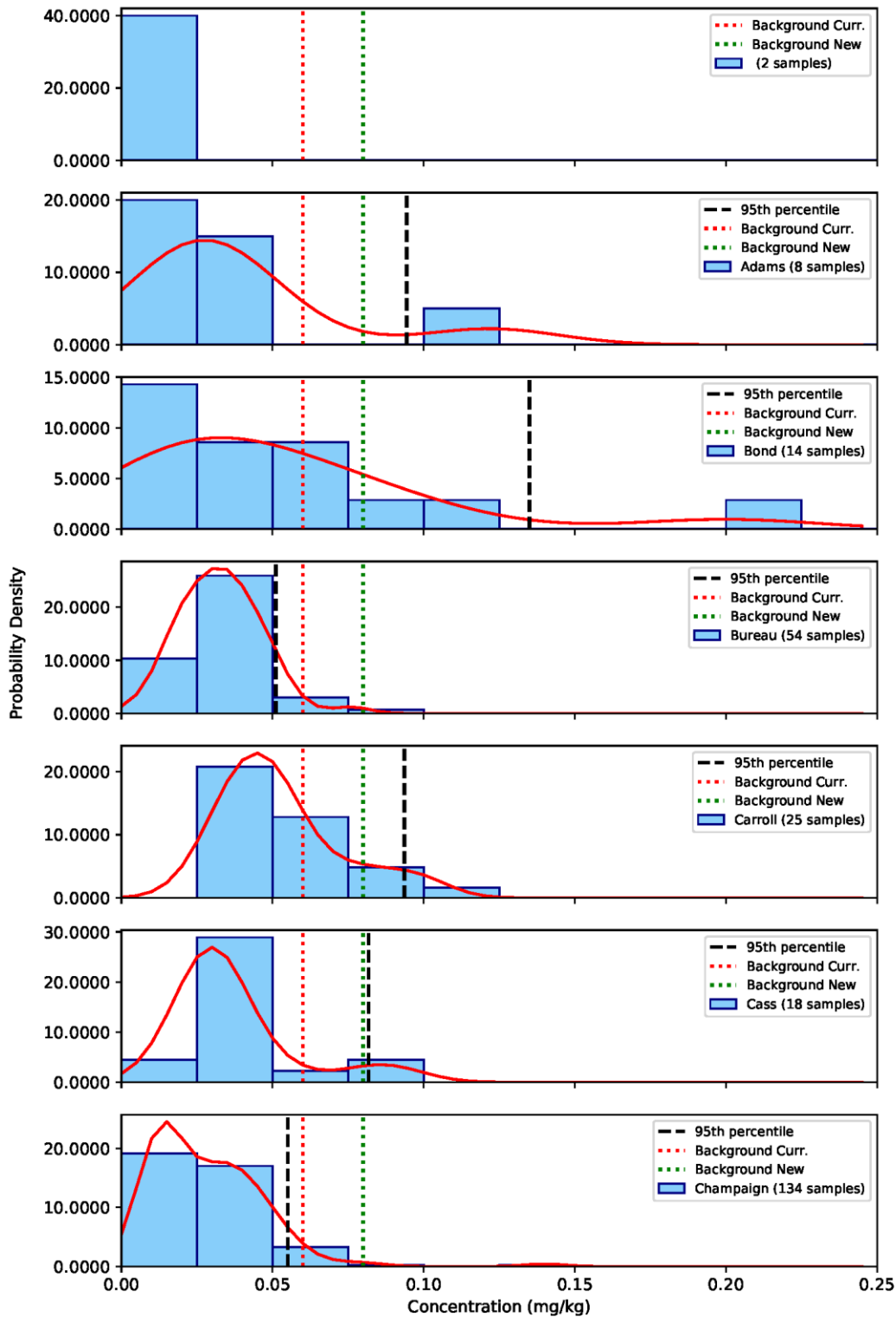


Figure 533. Histogram of RSL mercury concentrations by Illinois county, REC (mg/kg), part 1



Mercury Concentration by County, page 2 of 10

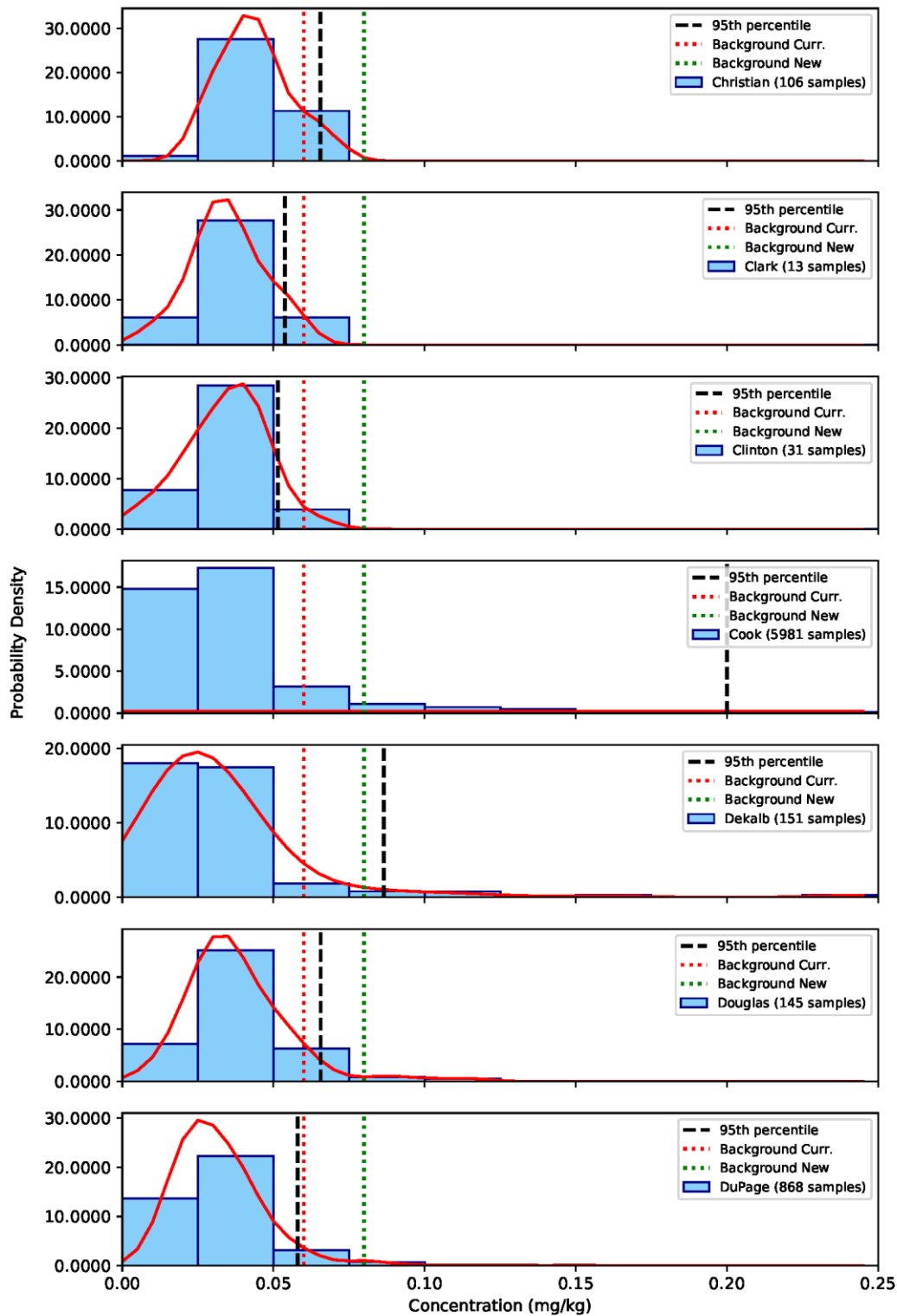


Figure 534. Histogram of RSL mercury concentrations by Illinois county, REC (mg/kg), part 2

Mercury Concentration by County, page 3 of 10

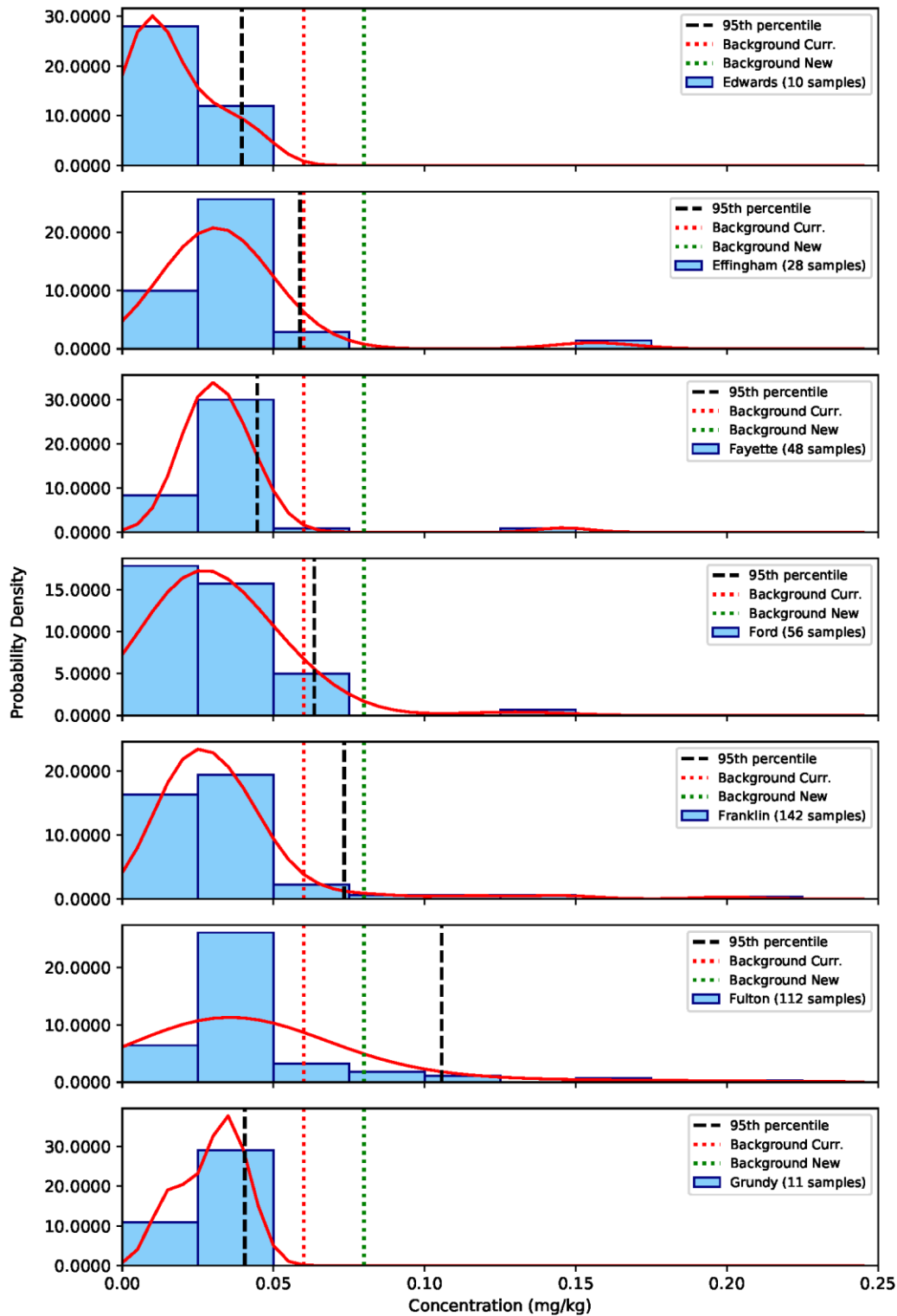


Figure 535. Histogram of RSL mercury concentrations by Illinois county, REC (mg/kg), part 3

Mercury Concentration by County, page 4 of 10

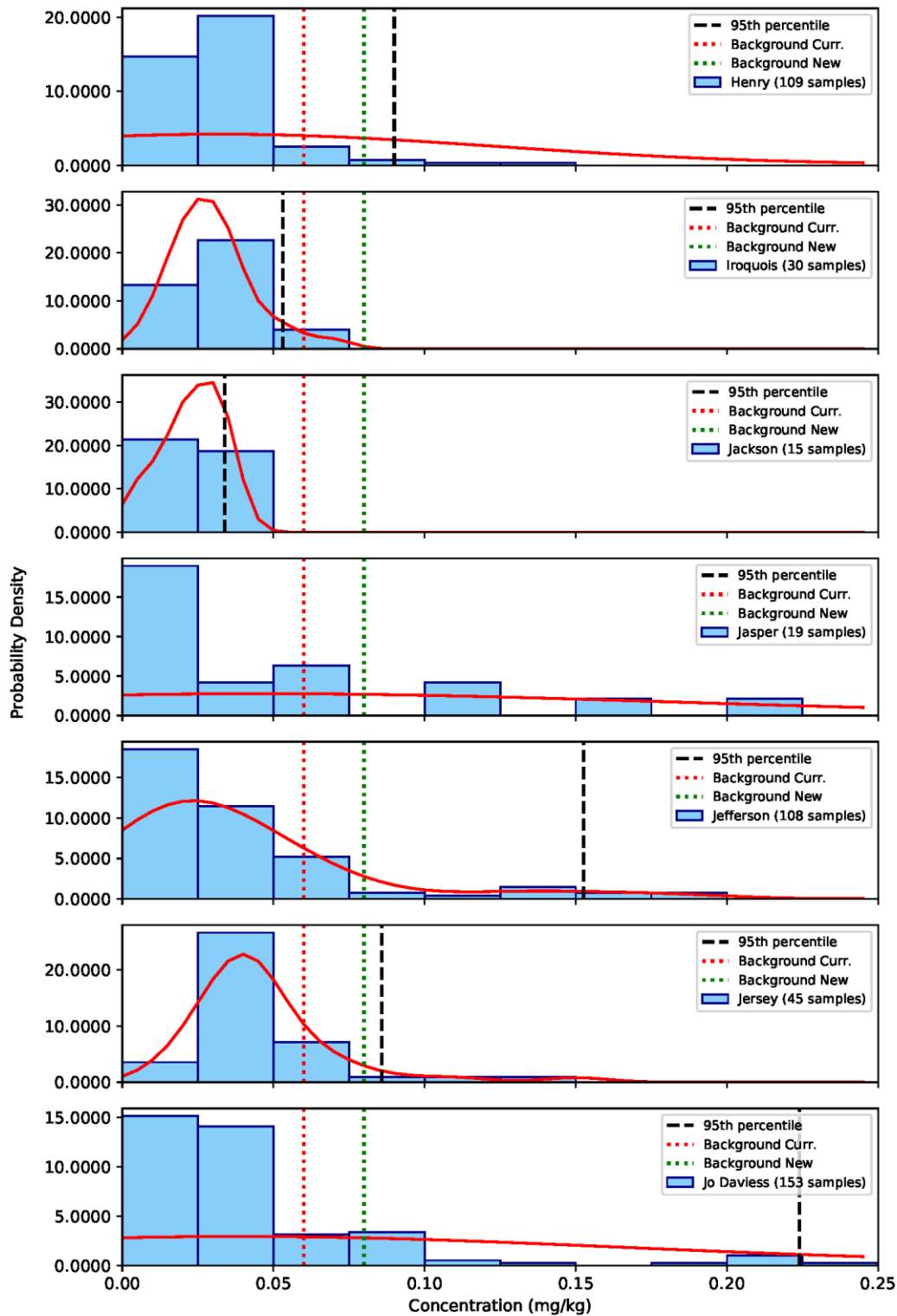


Figure 536. Histogram of RSL mercury concentrations by Illinois county, REC (mg/kg), part 4

Mercury Concentration by County, page 5 of 10

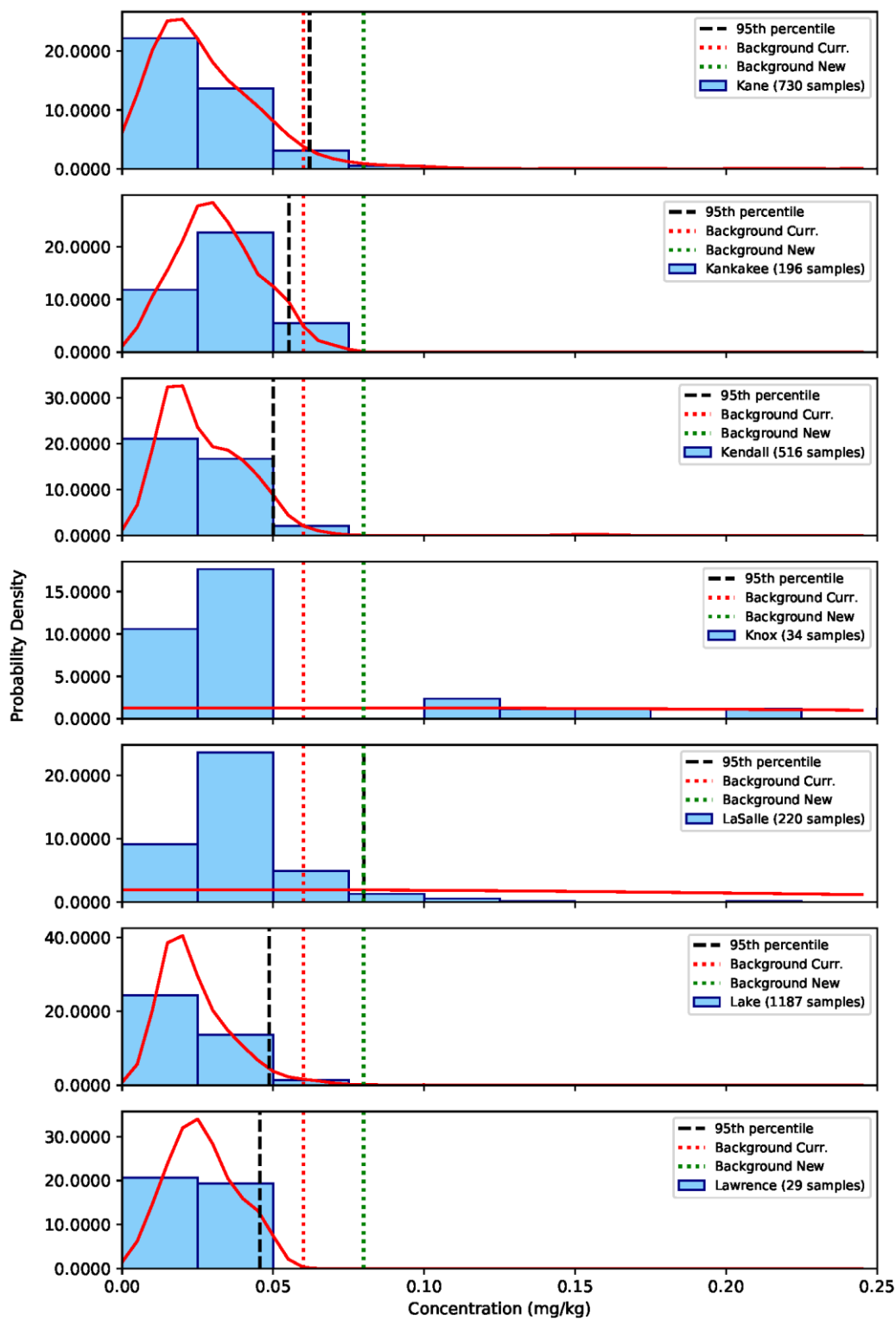


Figure 537. Histogram of RSL mercury concentrations by Illinois county, REC (mg/kg), part 5

Mercury Concentration by County, page 6 of 10

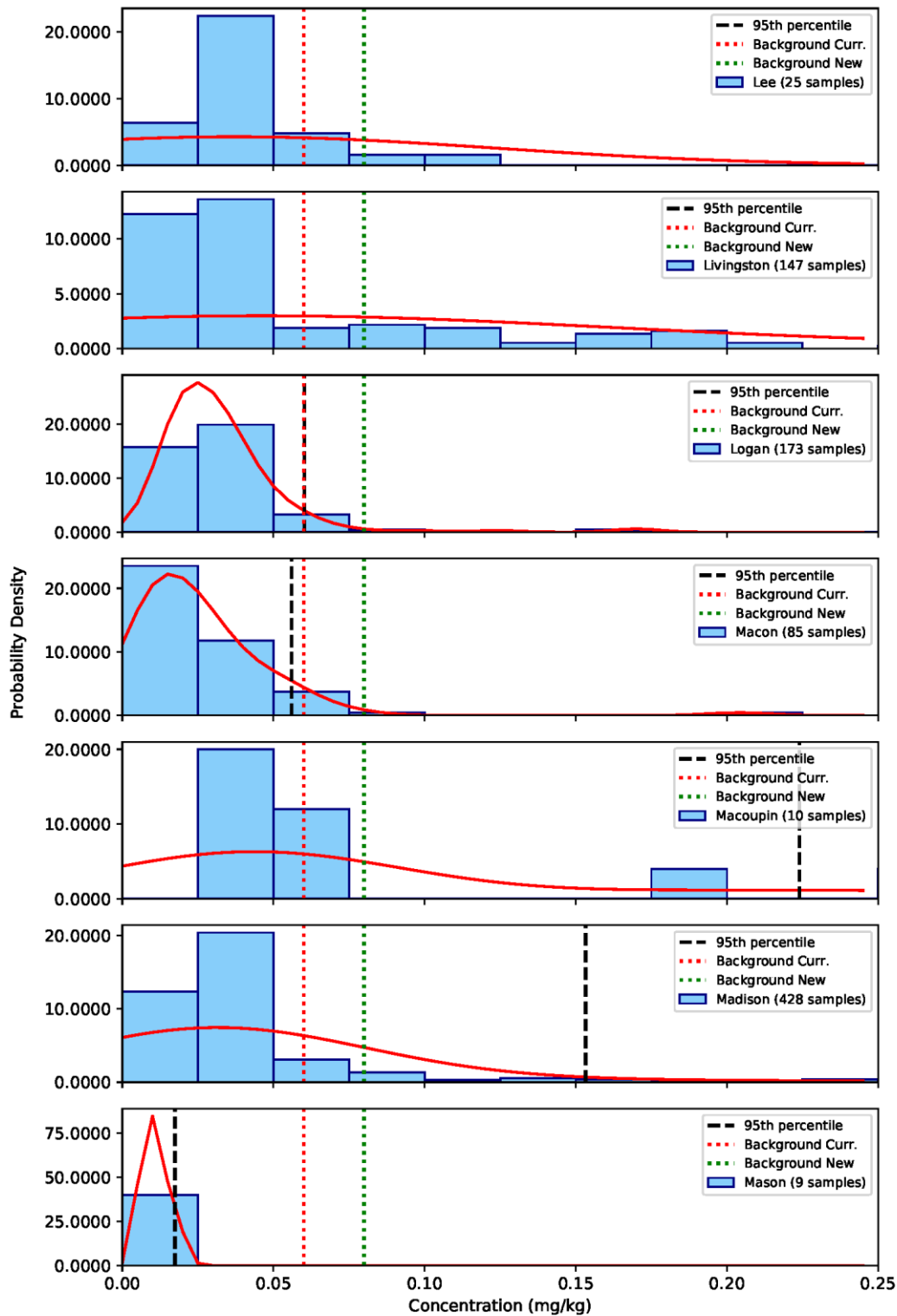


Figure 538. Histogram of RSL mercury concentrations by Illinois county, REC (mg/kg), part 6

Mercury Concentration by County, page 7 of 10

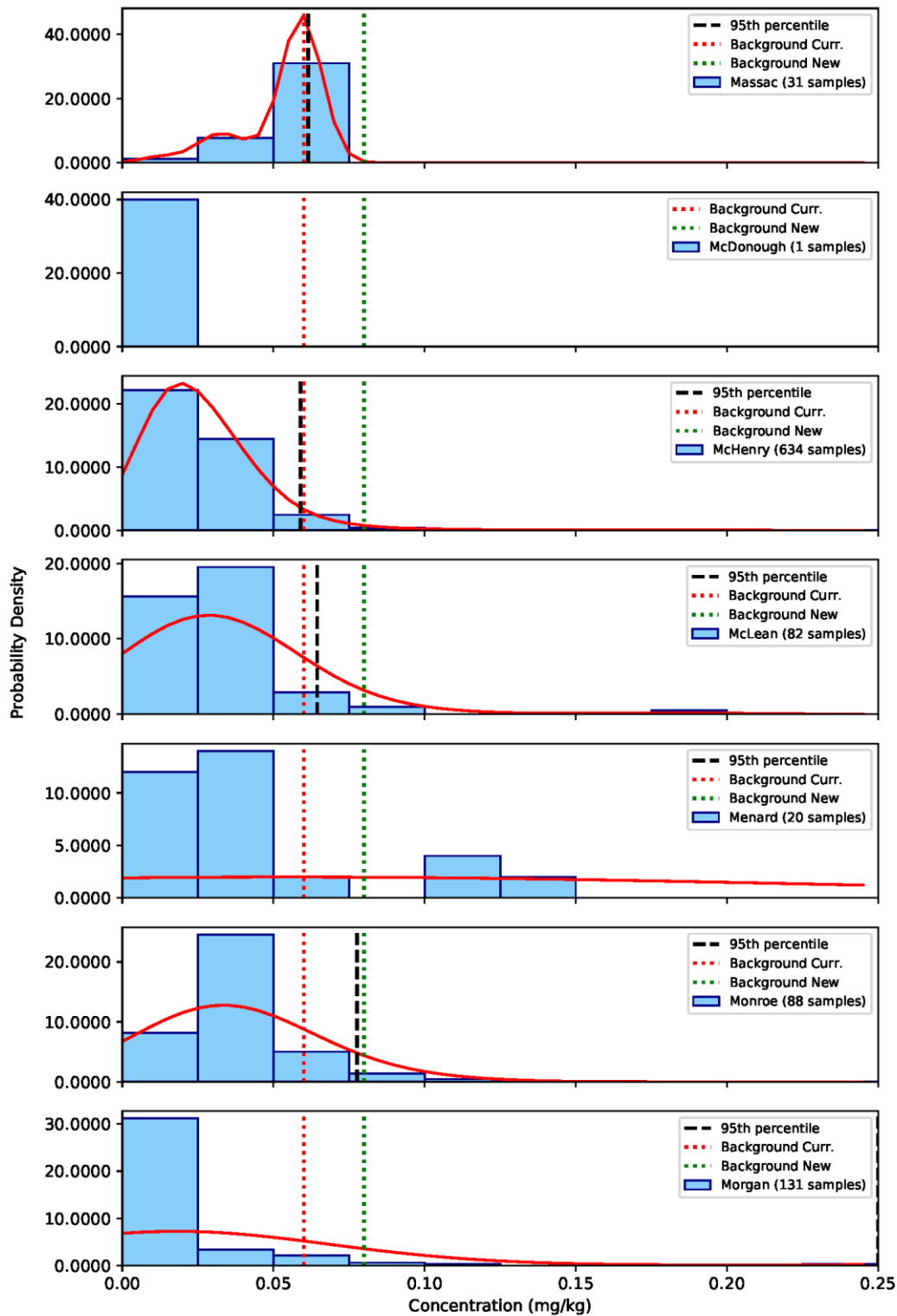


Figure 539. Histogram of RSL mercury concentrations by Illinois county, REC (mg/kg), part 7

Mercury Concentration by County, page 8 of 10

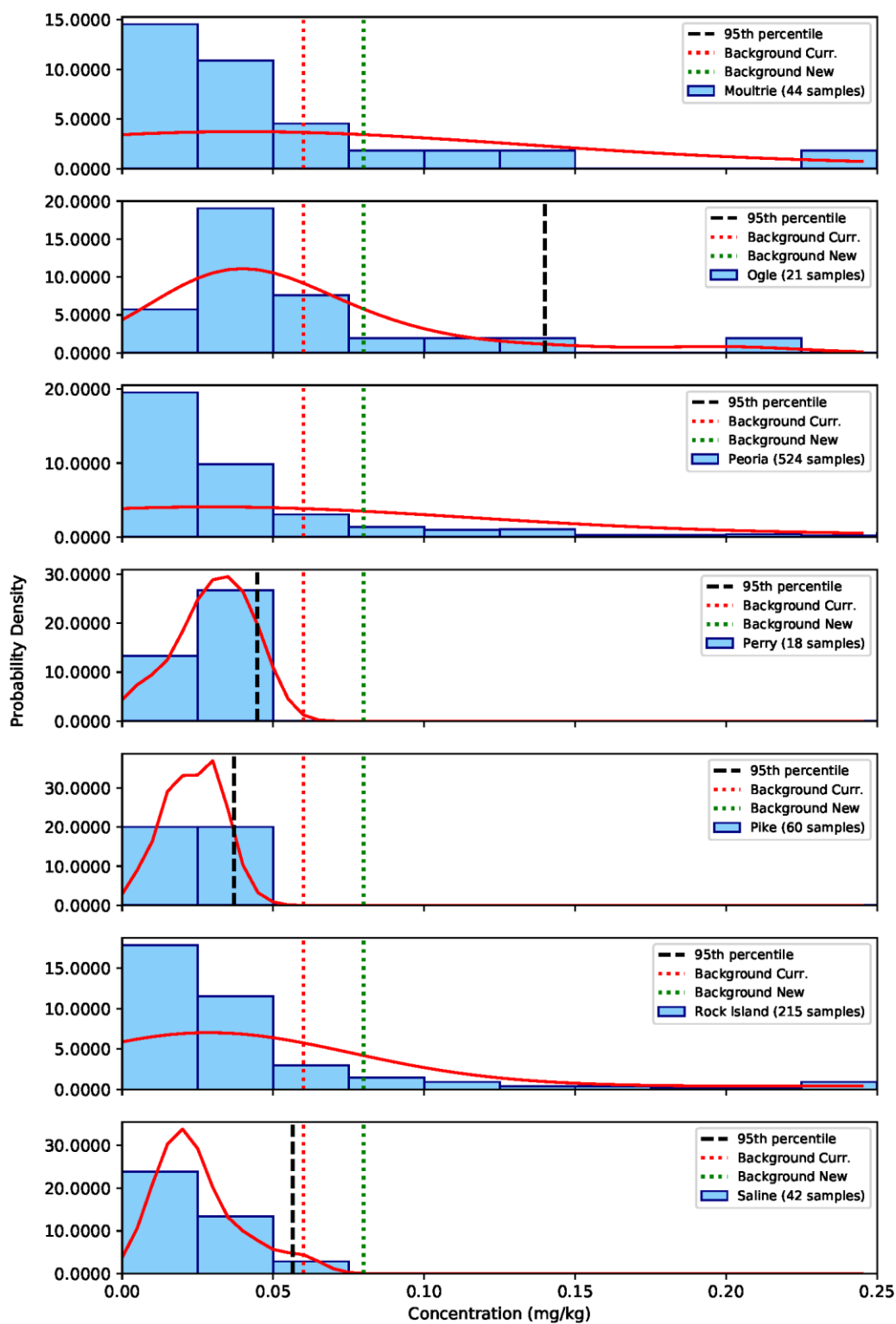


Figure 540. Histogram of RSL mercury concentrations by Illinois county, REC (mg/kg), part 8

Mercury Concentration by County, page 9 of 10

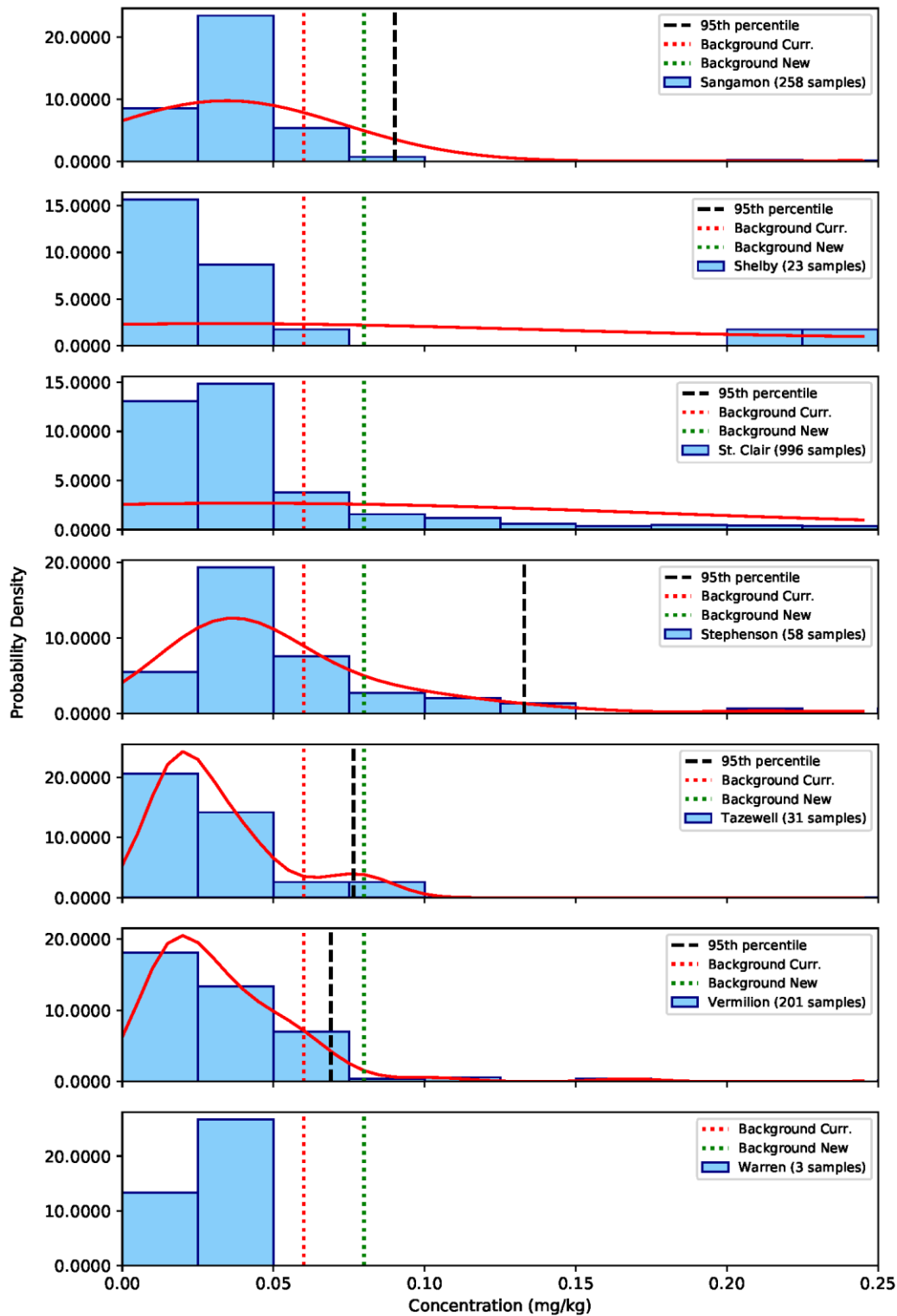


Figure 541. Histogram of RSL mercury concentrations by Illinois county, REC (mg/kg), part 9



# Mercury Concentration by County, page 10 of 10

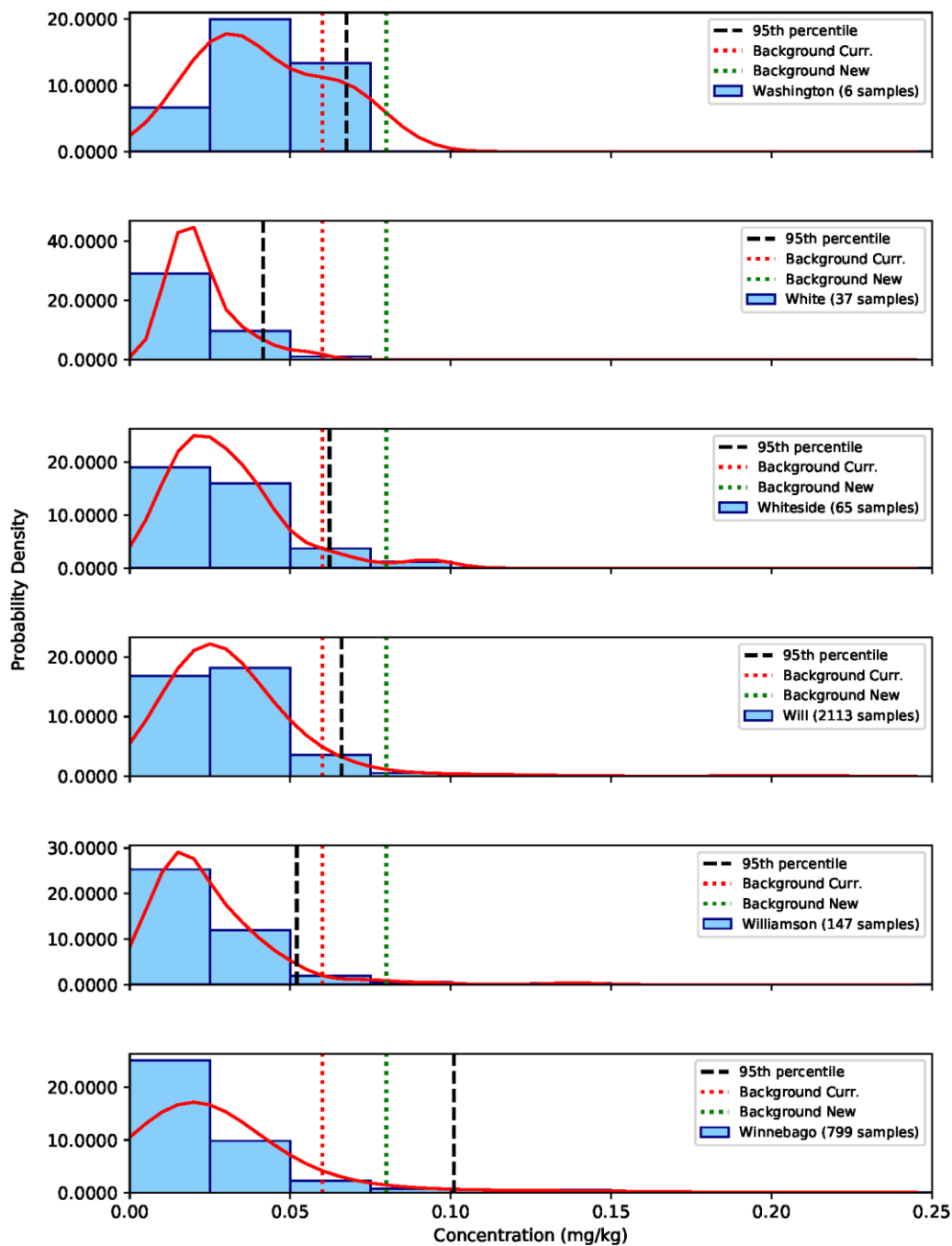


Figure 542. Histogram of RSL mercury concentrations by Illinois county, REC (mg/kg), part 10

Mercury Concentration for 95th Percentile by County: REC Sites

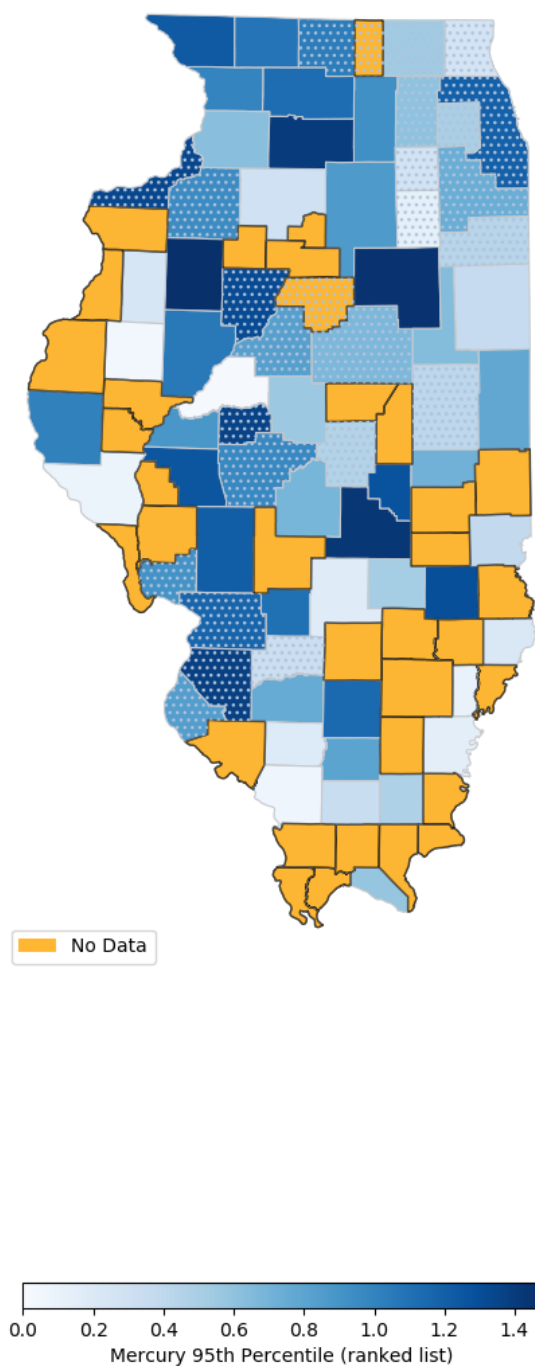


Figure 543. Map of RSL mercury 95th percentile concentration by Illinois county, REC (mg/kg)

Number of Mercury Samples by County: REC Sites

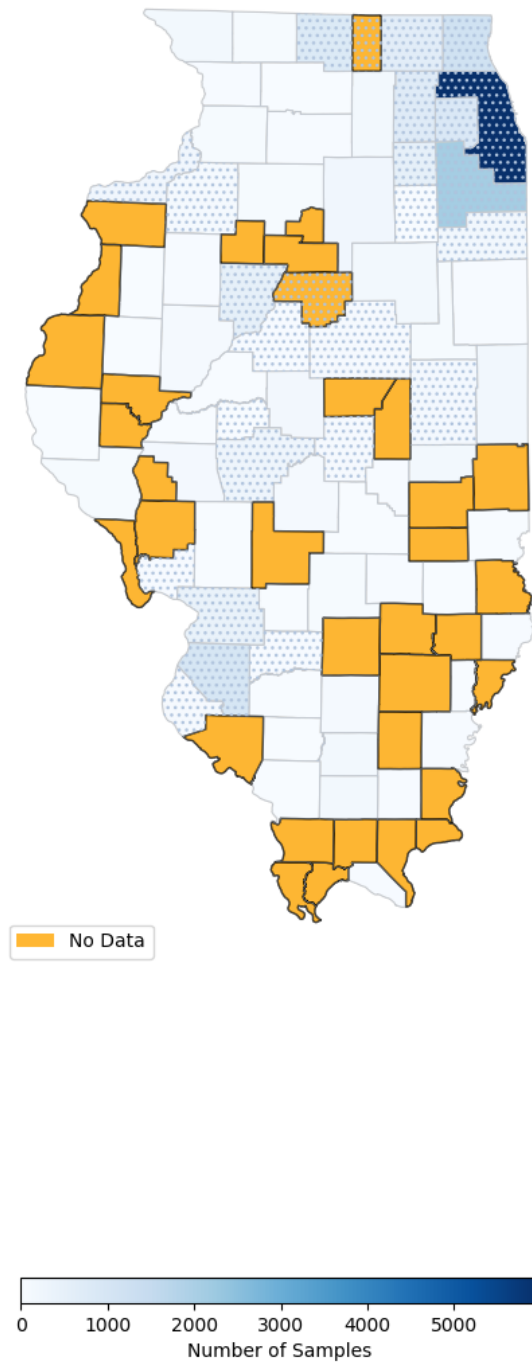


Figure 544. Map of RSL mercury sample quantity by Illinois county, REC (mg/kg)

## O.2 MERCURY NON-REC

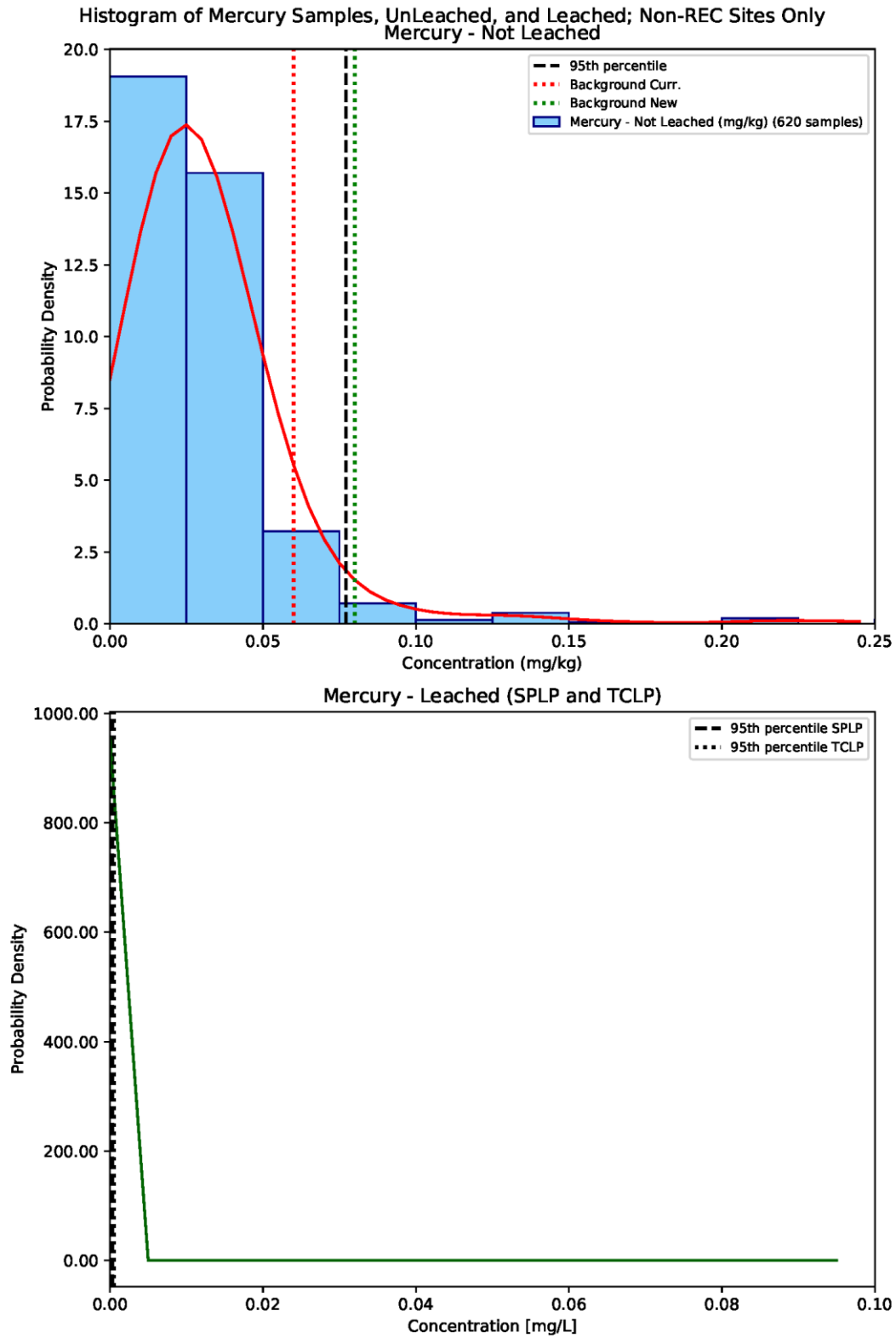


Figure 545. Histogram of RSL mercury concentrations, Non-REC (mg/kg)

Mercury Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

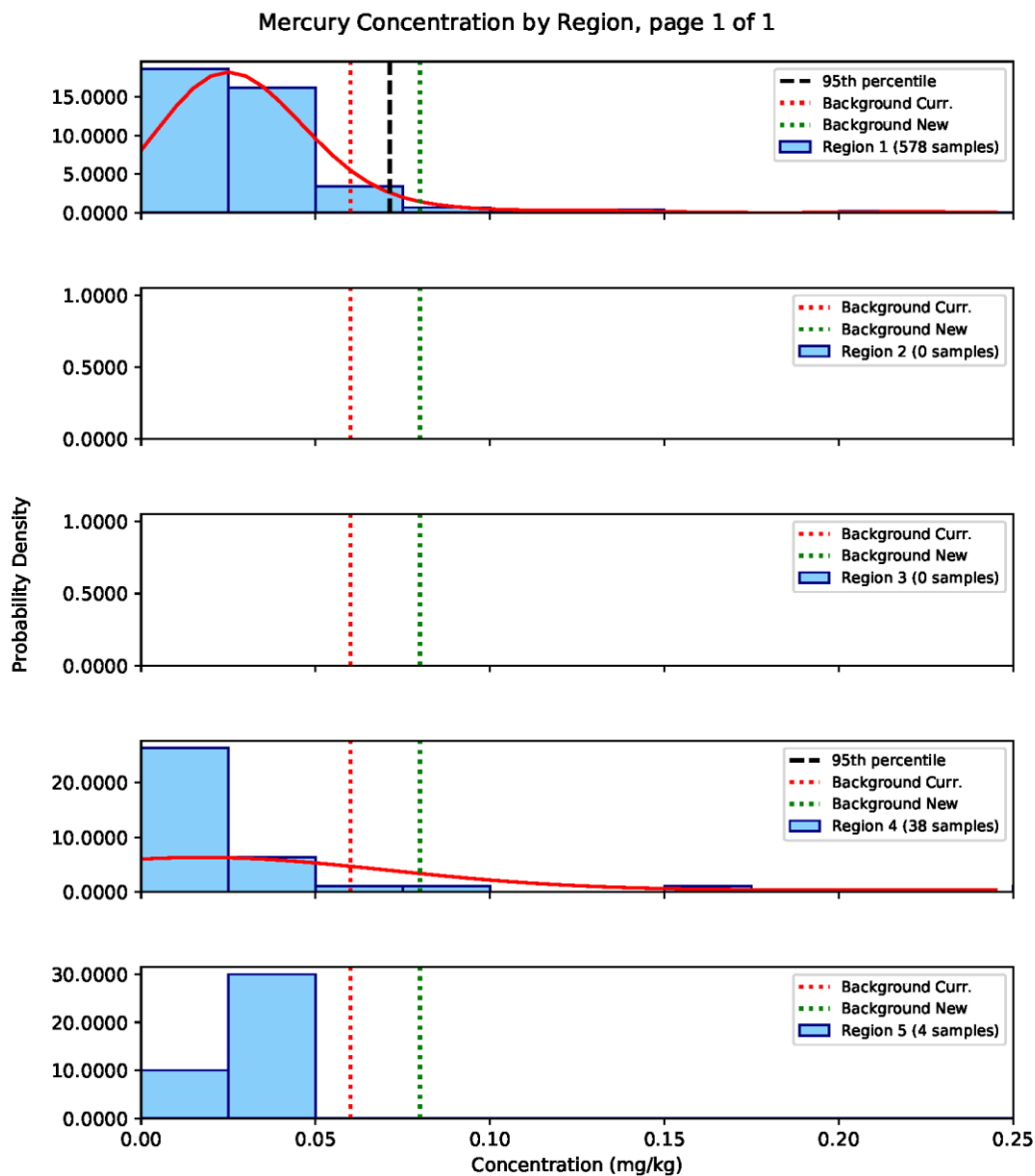


Figure 546. Histogram of RSL mercury concentrations by IDOT Region, Non-REC (mg/kg)

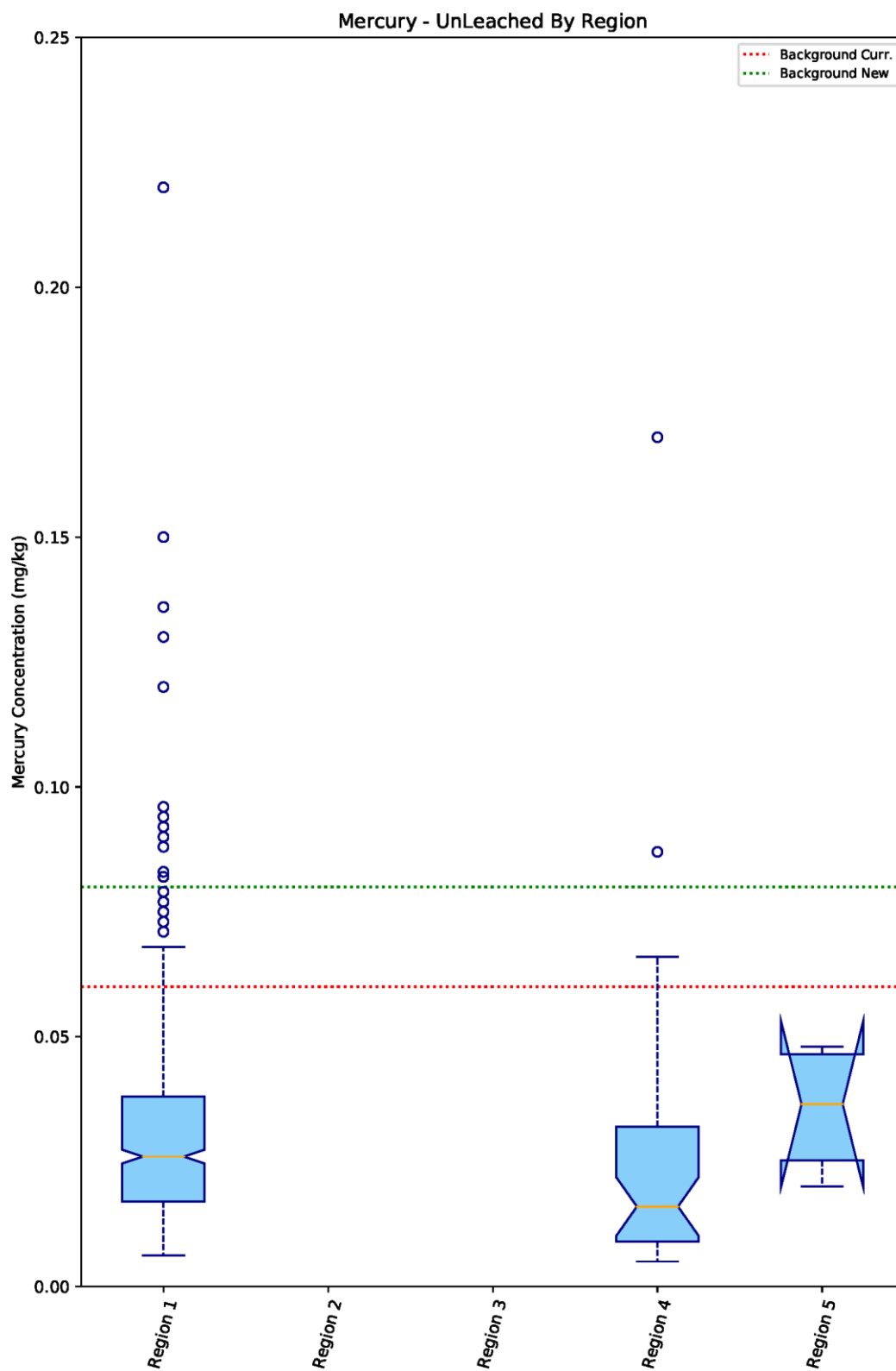


Figure 547. Boxplot of RSL mercury concentrations by IDOT Region, Non-REC (mg/kg)



Mercury Concentration by District, page 1 of 2

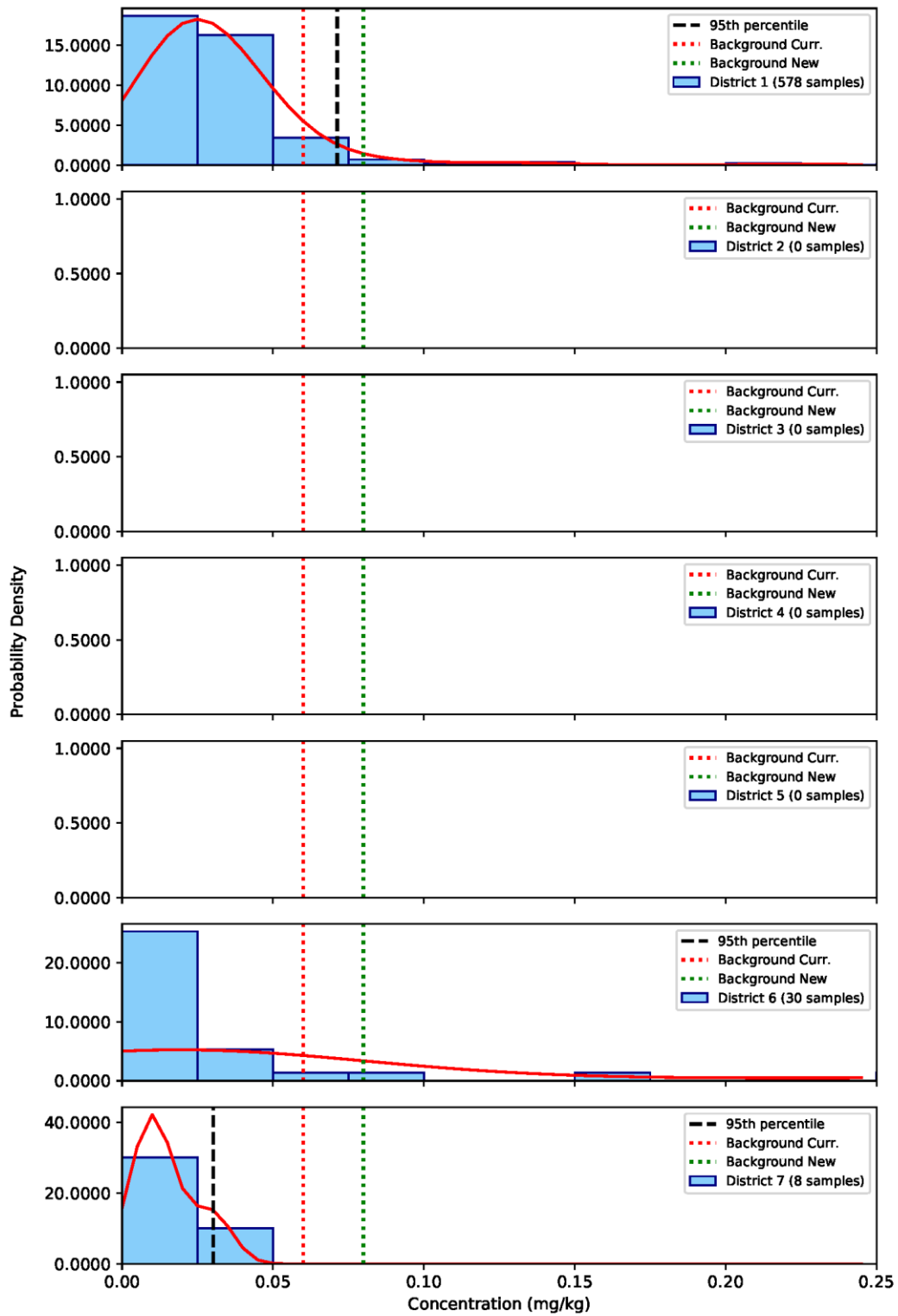


Figure 548. Histogram of RSL mercury concentrations by IDOT District, Non-REC (mg/kg), part 1

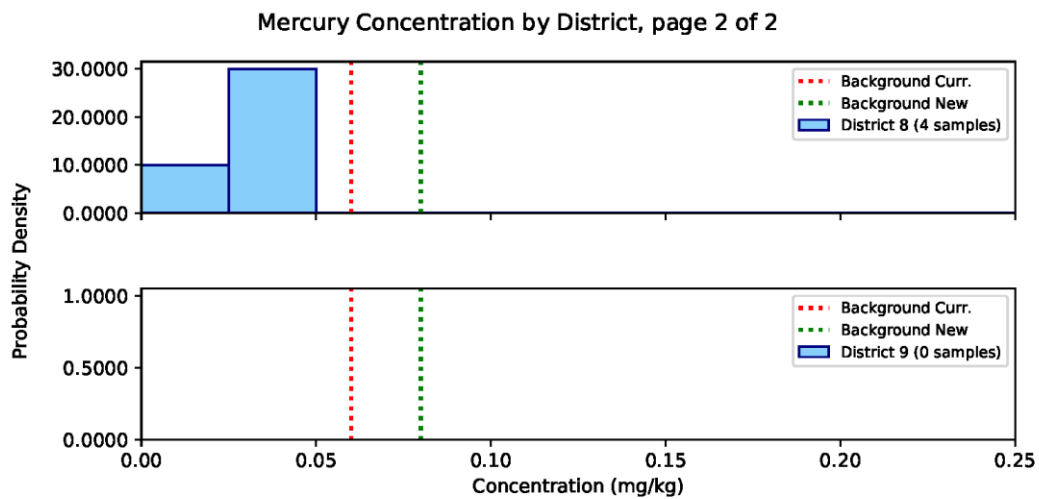


Figure 549. Histogram of RSL mercury concentrations by IDOT District, Non-REC (mg/kg), part 2

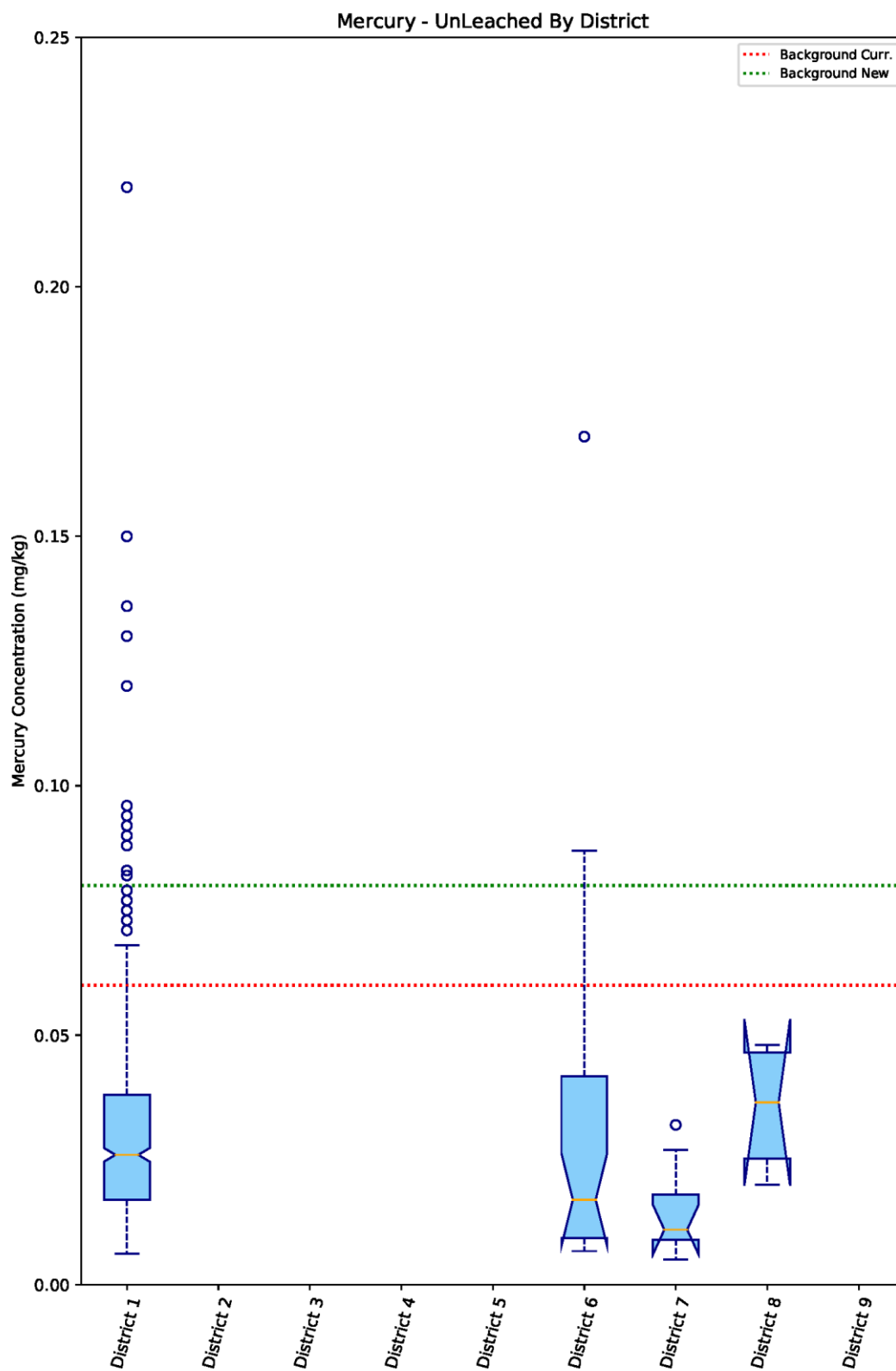


Figure 550. Boxplot of RSL mercury concentrations by IDOT District, Non-REC (mg/kg)

Mercury Concentration by County, page 1 of 2

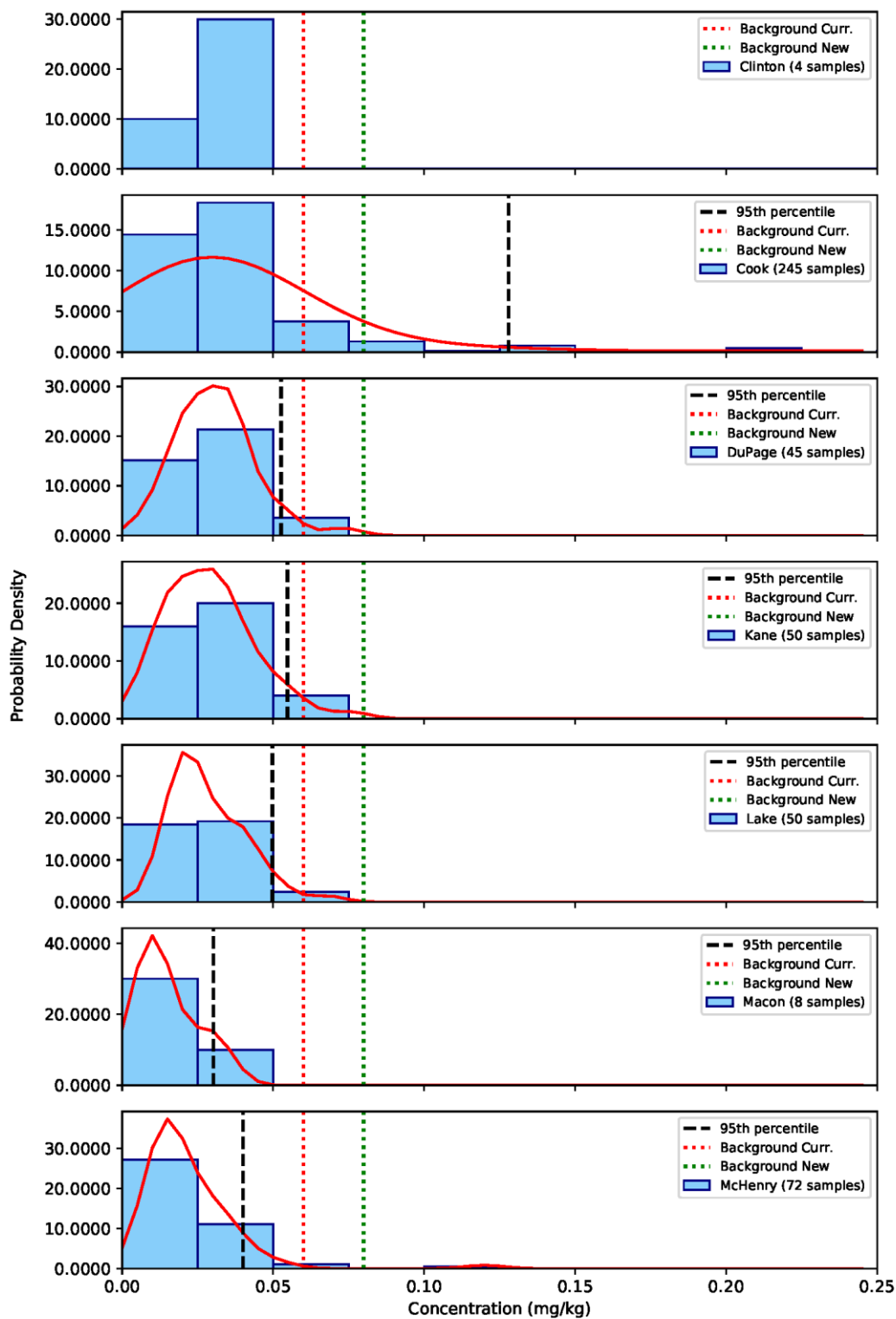


Figure 551. Histogram of RSL mercury concentrations by Illinois county, Non-REC (mg/kg), part 1

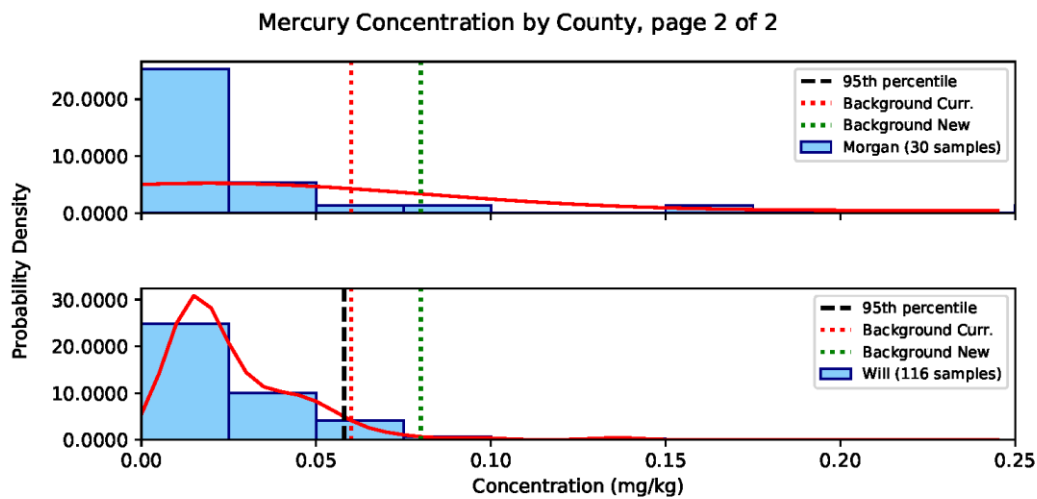


Figure 552. Histogram of RSL mercury concentrations by Illinois county, Non-REC (mg/kg), part 2

Mercury Concentration for 95th Percentile by County: Non-REC Sites

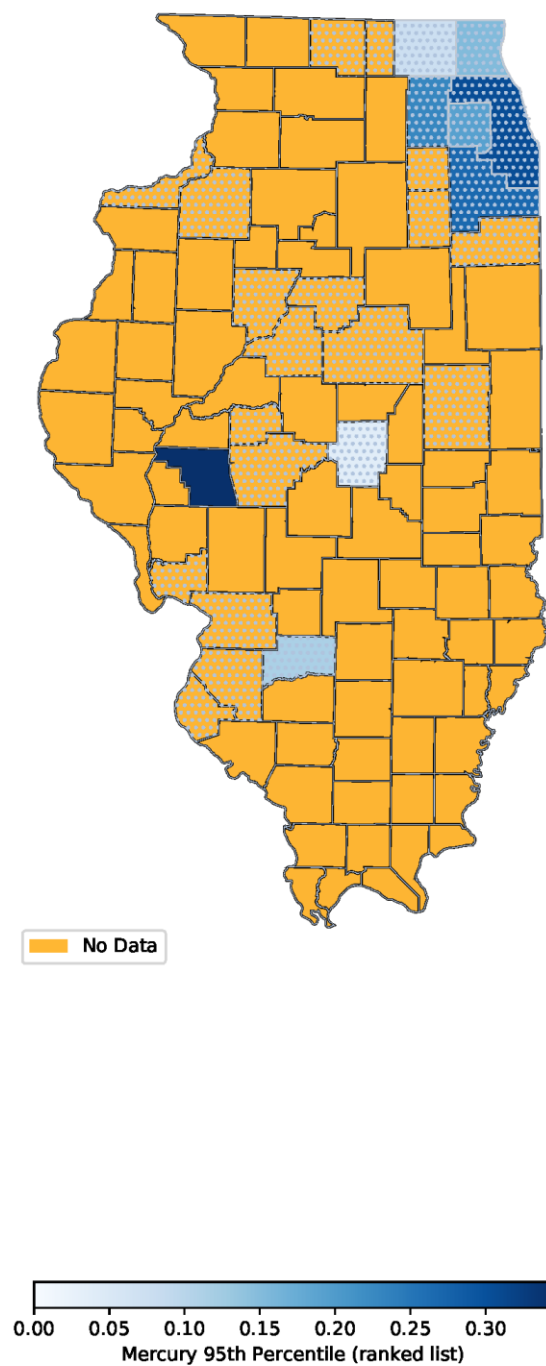


Figure 553. Map of RSL mercury 95th percentile concentration by Illinois county, Non-REC (mg/kg)

Number of Mercury Samples by County: Non-REC Sites

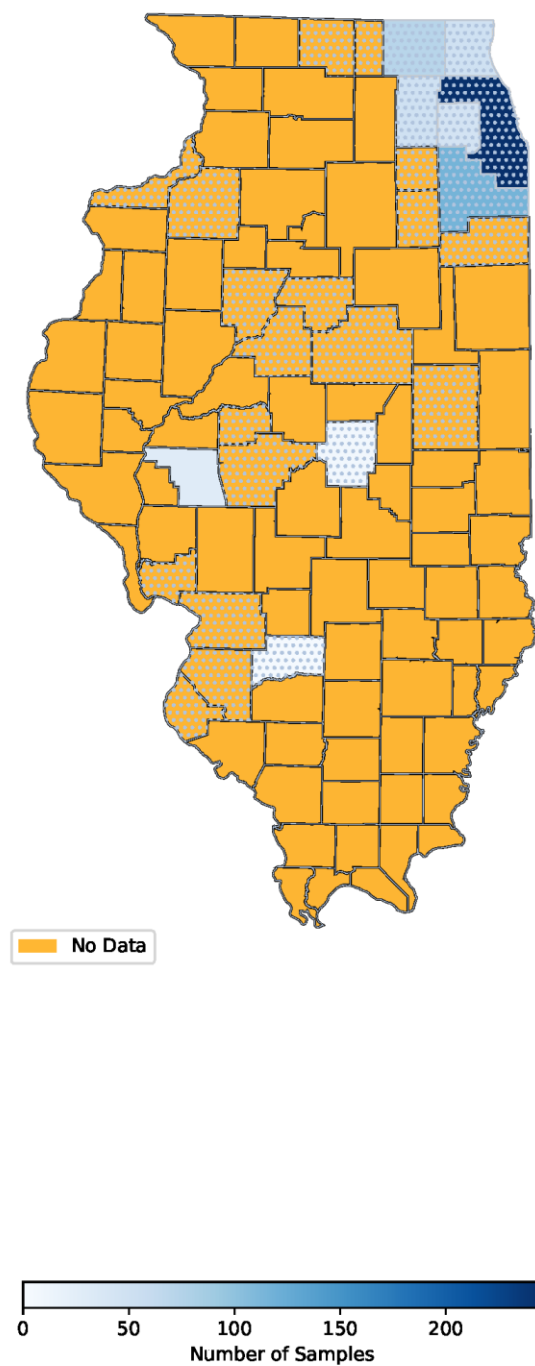


Figure 554. Map of RSL mercury sample quantity by Illinois county, Non-REC (mg/kg)

### **O.3 MERCURY DE MINIMIS**



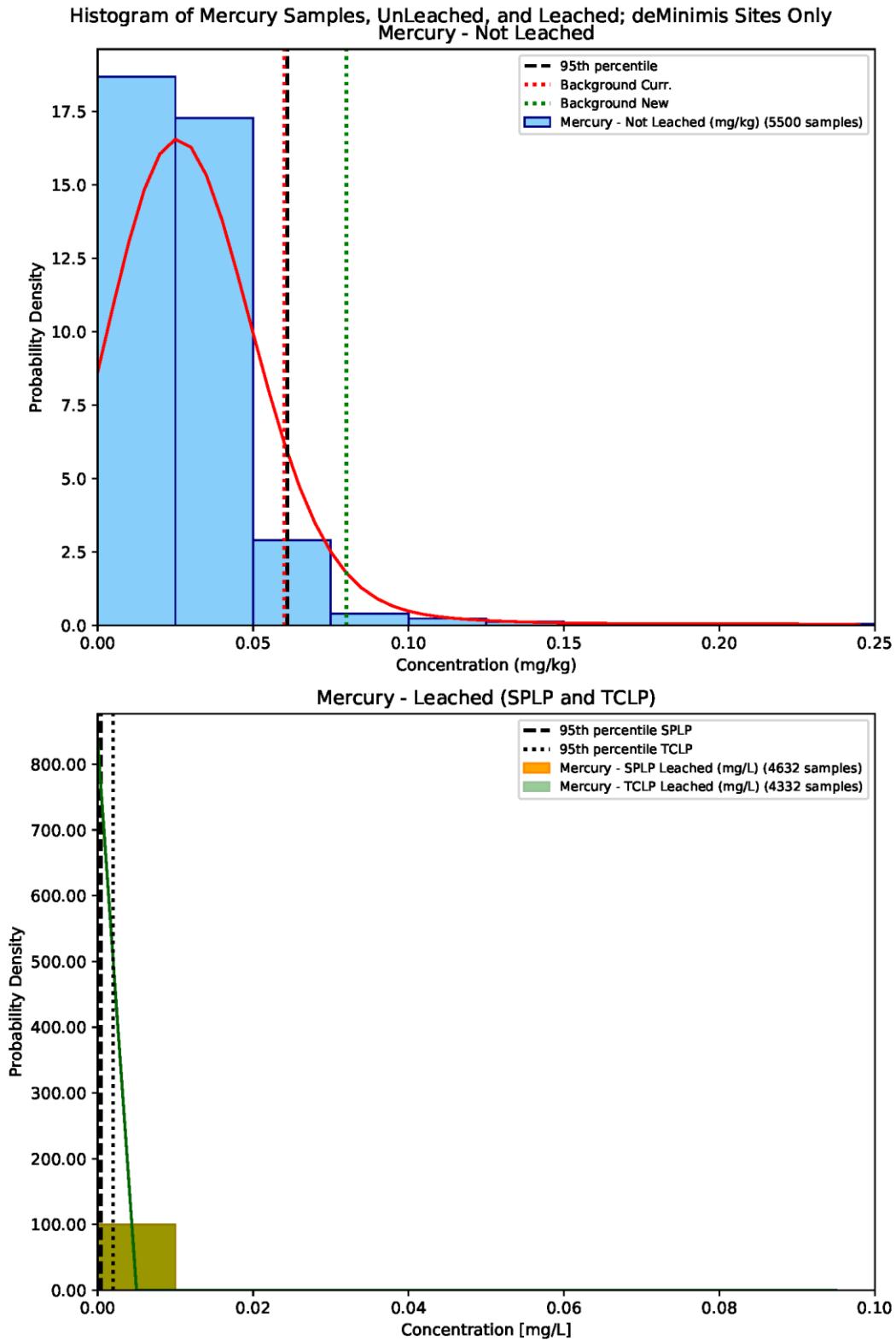


Figure 555. Histogram of RSL mercury concentrations, de minimis (mg/kg)

**Mercury Unleached Concentration (mg/kg)**

- 1) Region
- 2) District
- 3) County

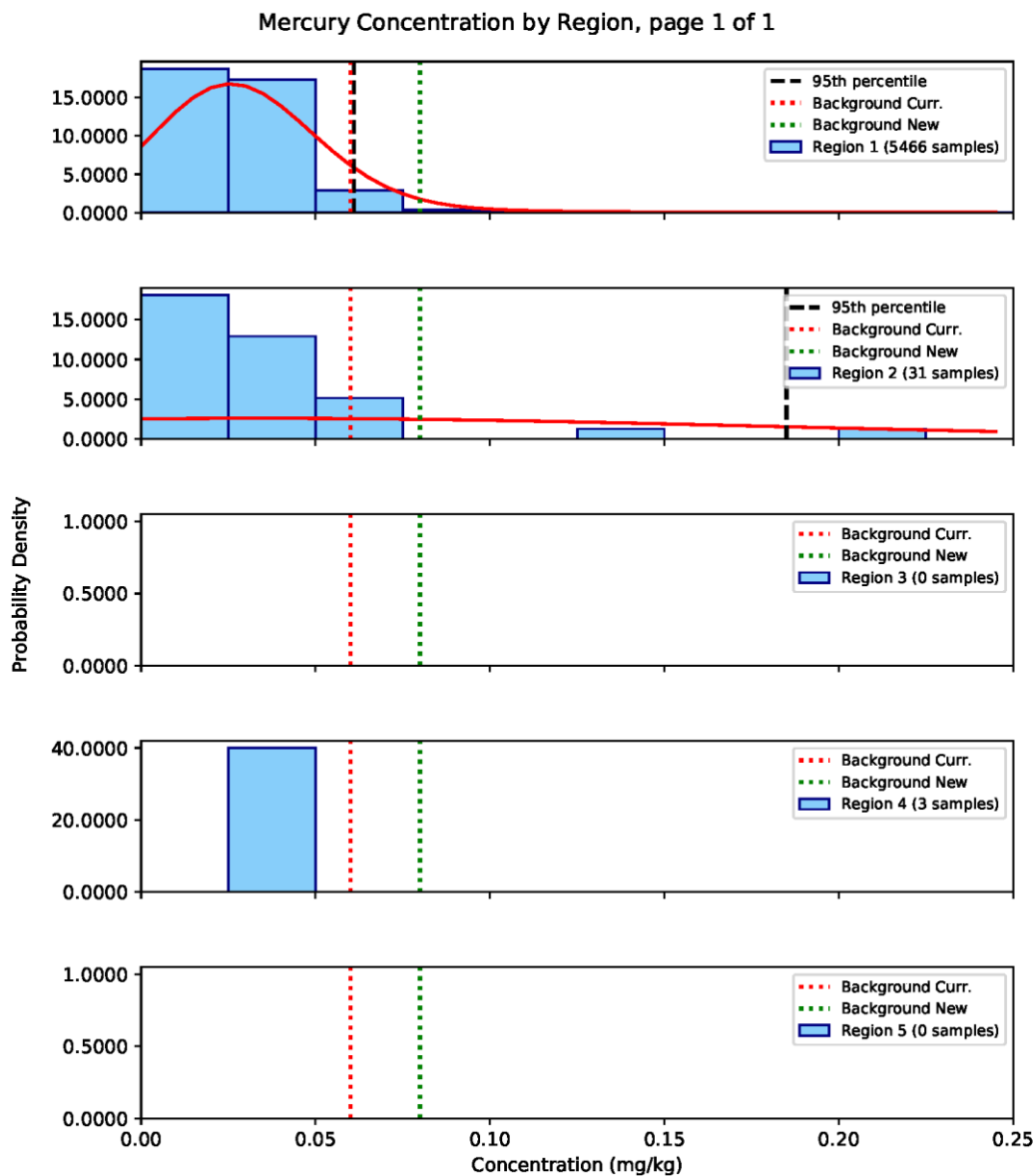


Figure 556. Histogram of RSL mercury concentrations by IDOT Region, de minimis (mg/kg)

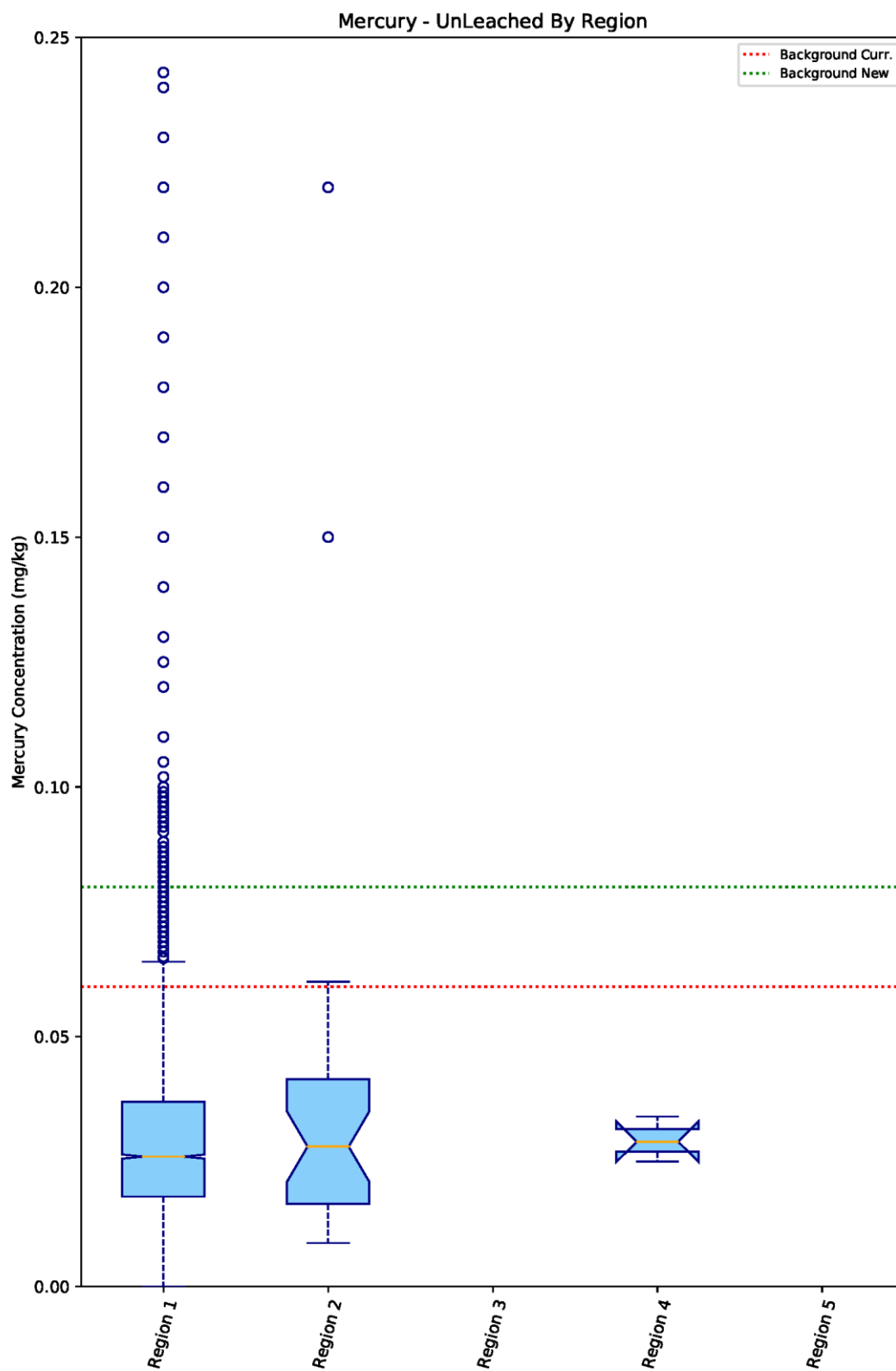


Figure 557. Boxplot of RSL mercury concentrations by IDOT Region, de minimis (mg/kg)

# Mercury Concentration by District, page 1 of 2

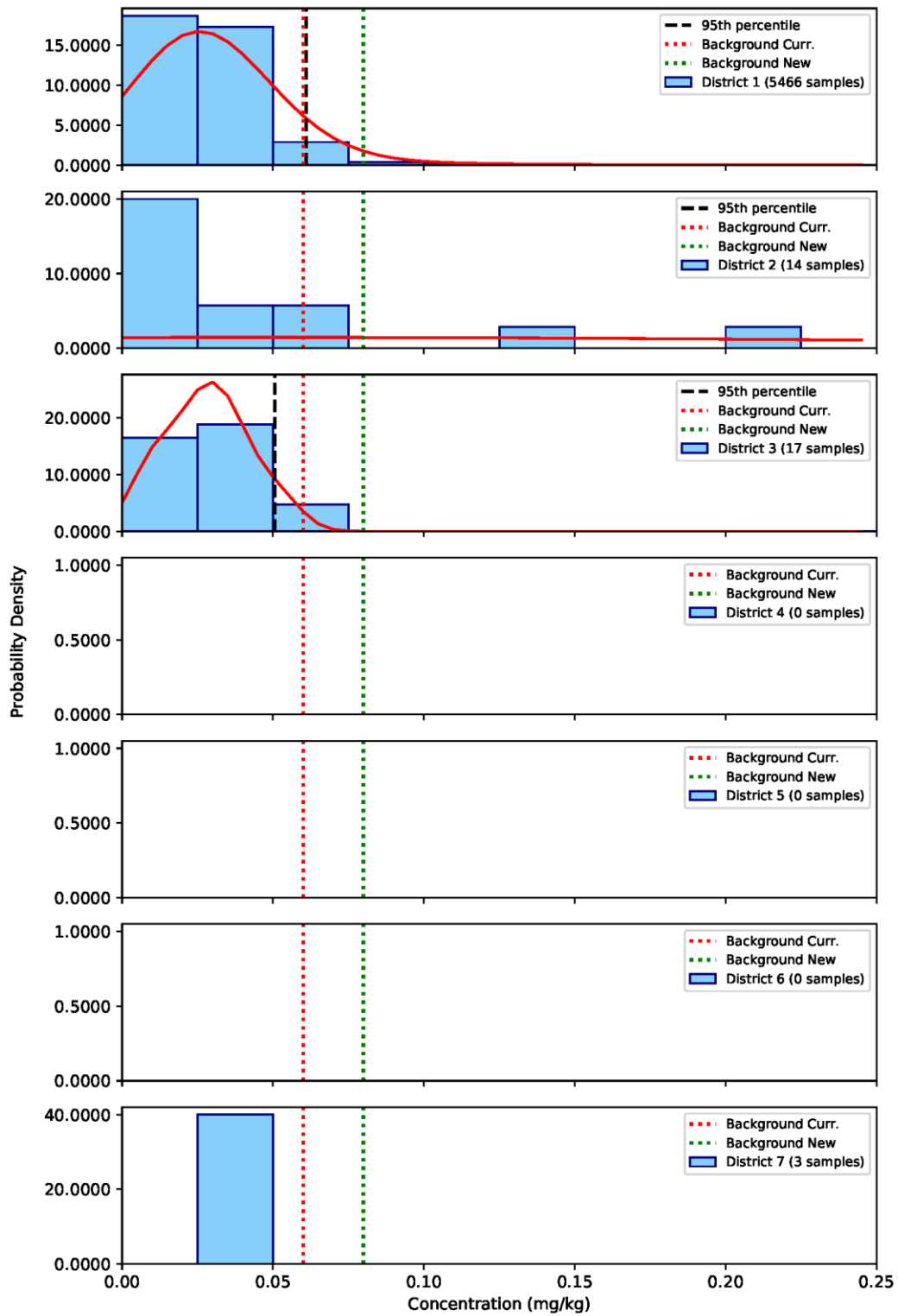


Figure 558. Histogram of RSL mercury concentrations by IDOT District, de minimis (mg/kg), part 1

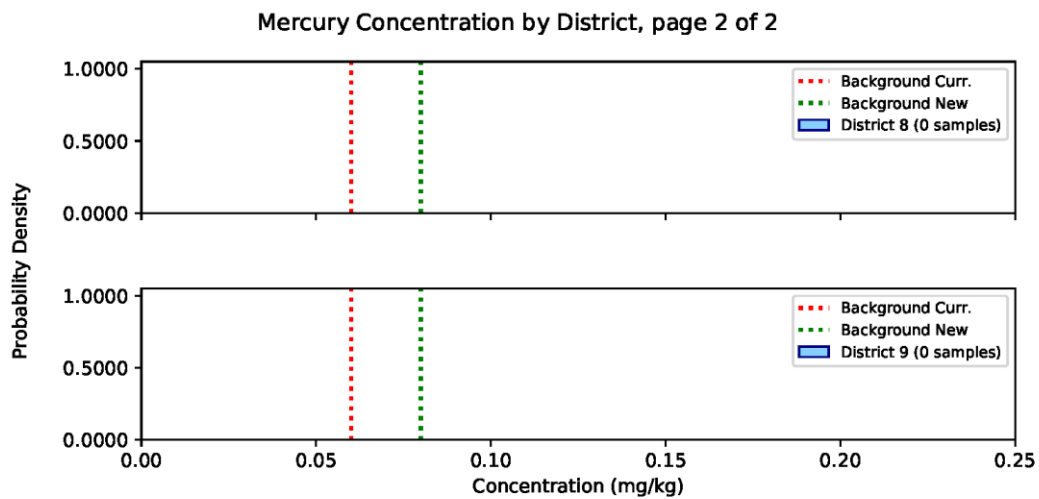


Figure 559. Histogram of RSL mercury concentrations by IDOT District, de minimis (mg/kg), part 2

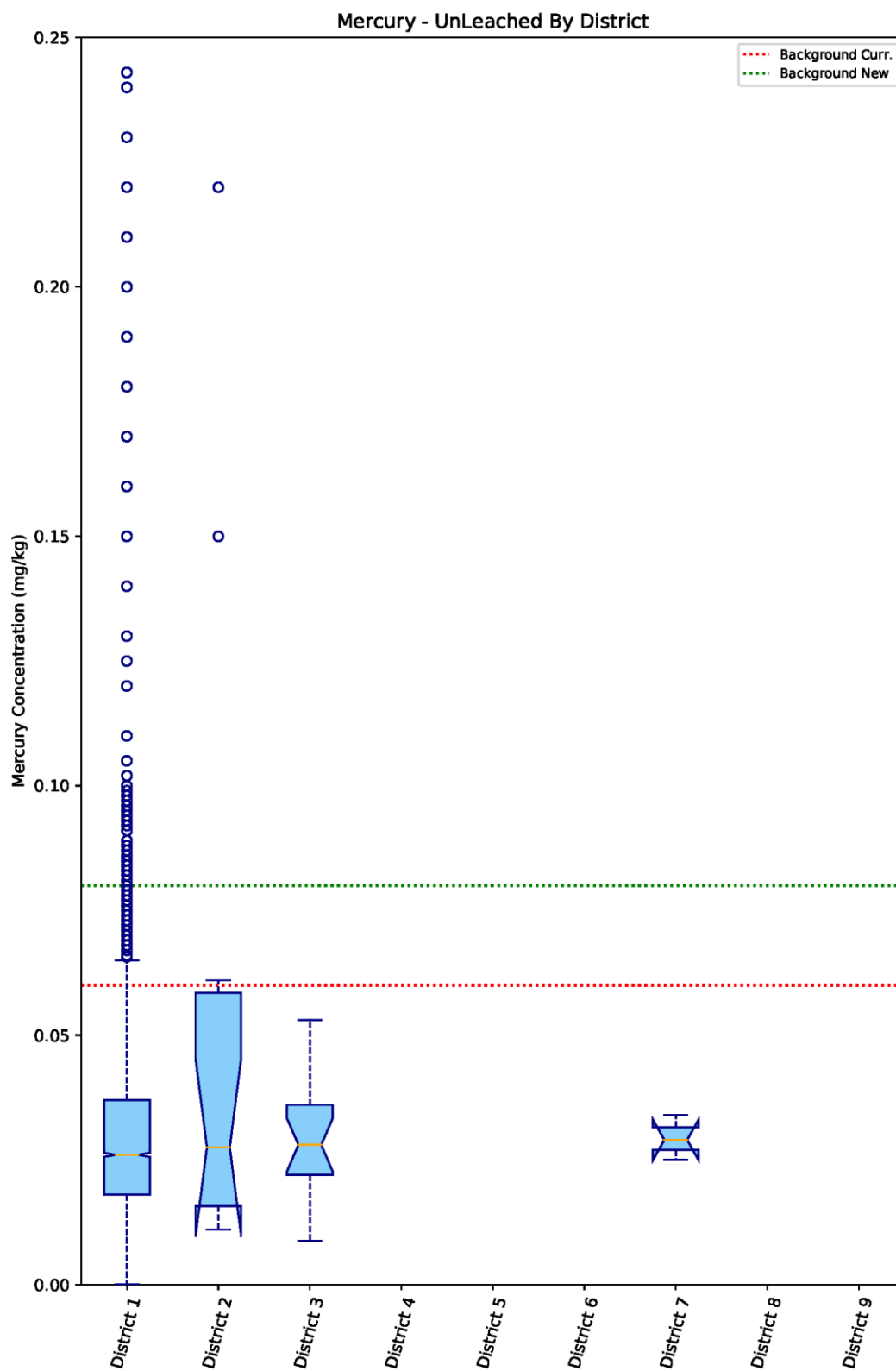


Figure 560. Boxplot of RSL mercury concentrations by IDOT District, de minimis (mg/kg)

Mercury Concentration by County, page 1 of 2

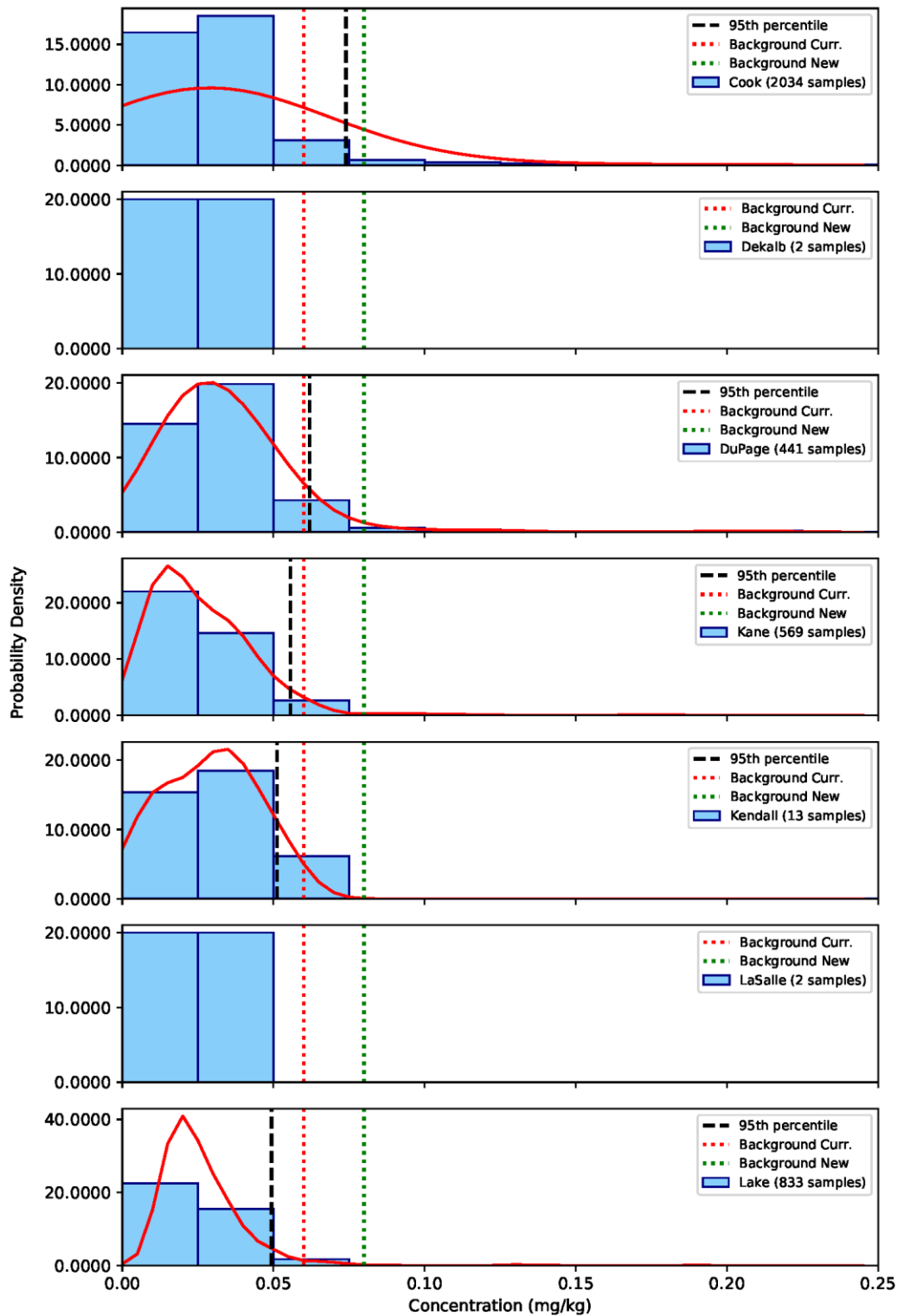


Figure 561. Histogram of RSL mercury concentrations by Illinois county, de minimis (mg/kg), part 1



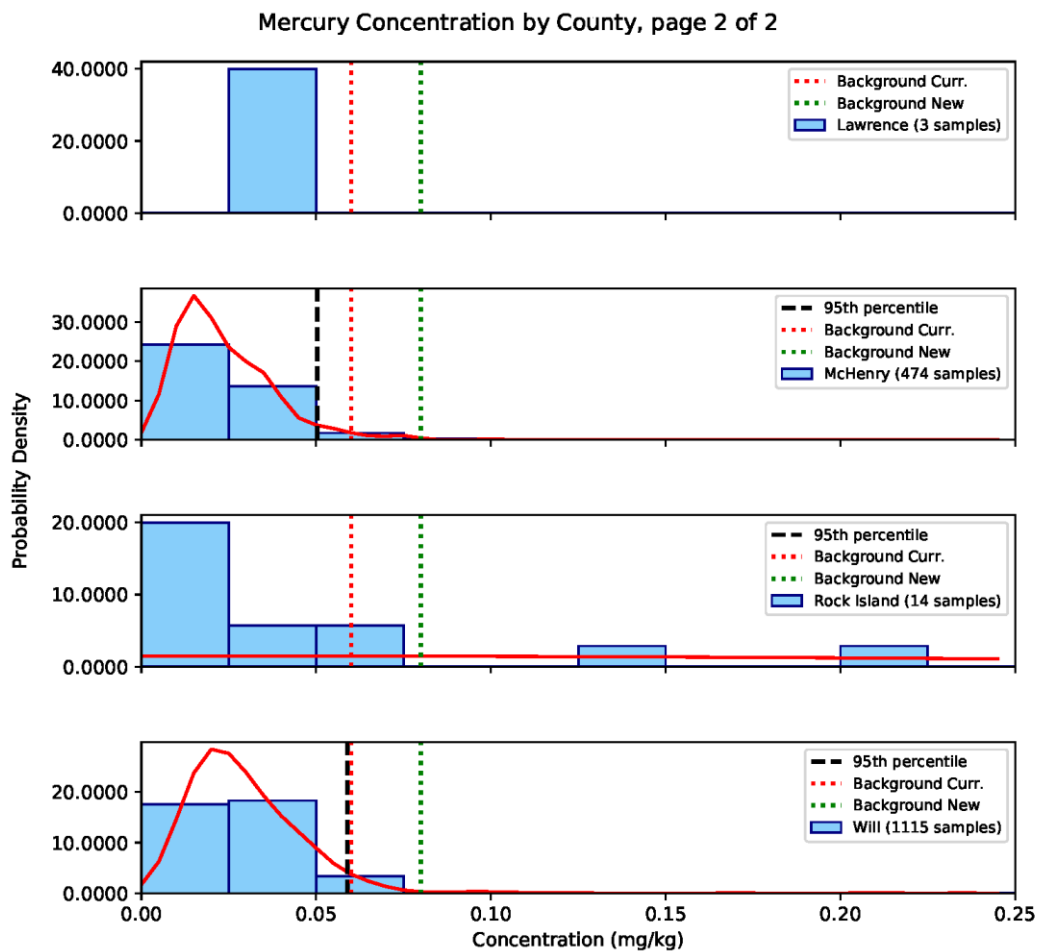
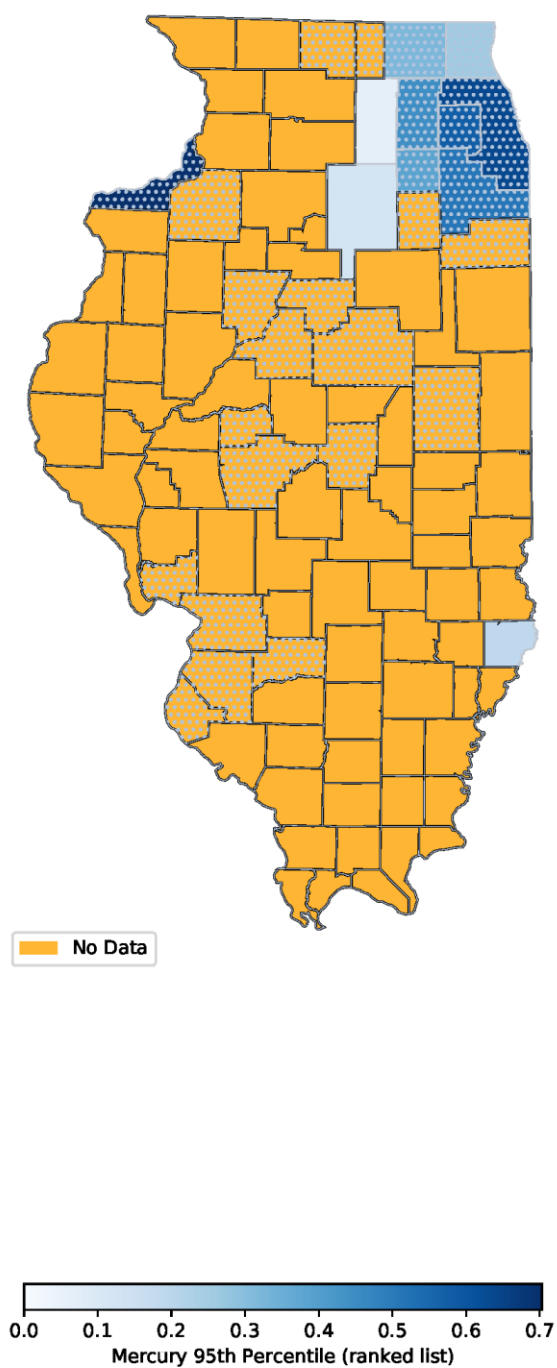


Figure 562. Histogram of RSL mercury concentrations by Illinois county, de minimis (mg/kg), part 2

Mercury Concentration for 95th Percentile by County: deMinimis Sites



**Figure 563. Map of RSL mercury 95th percentile concentration by Illinois county, de minimis (mg/kg)**

Number of Mercury Samples by County: deMinimis Sites

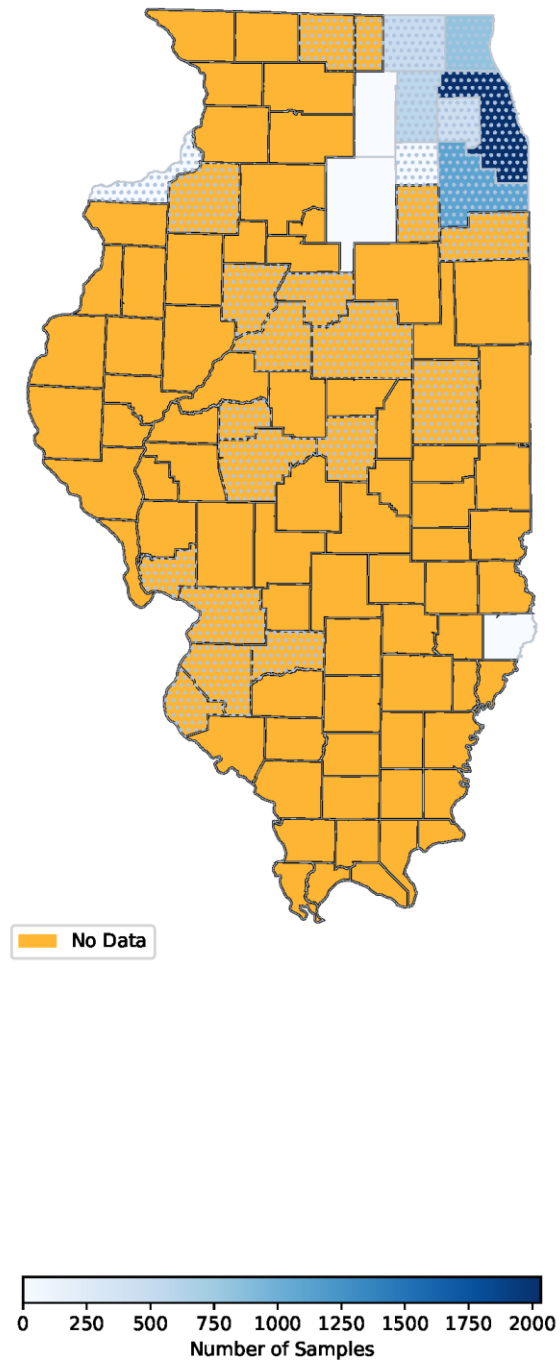
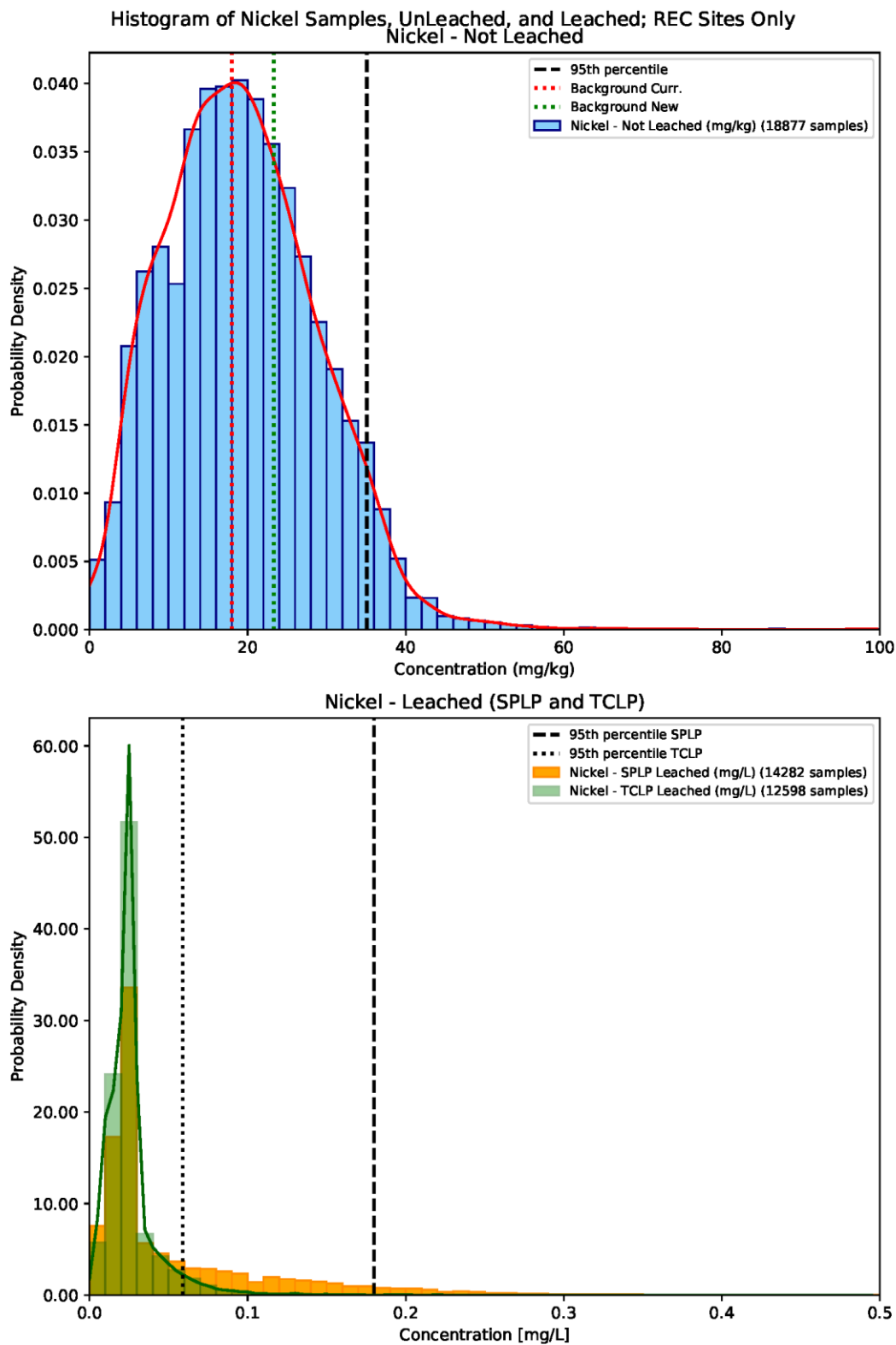


Figure 564. Map of RSL mercury sample quantity by Illinois county, de minimis (mg/kg)

## **APPENDIX P. ANALYTE ANALYSIS: NICKEL**

### **P.1 NICKEL REC**



**Figure 565. Histogram of RSL nickel concentrations, REC (mg/kg)**

Nickel Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

# Nickel Concentration by Region, page 1 of 1

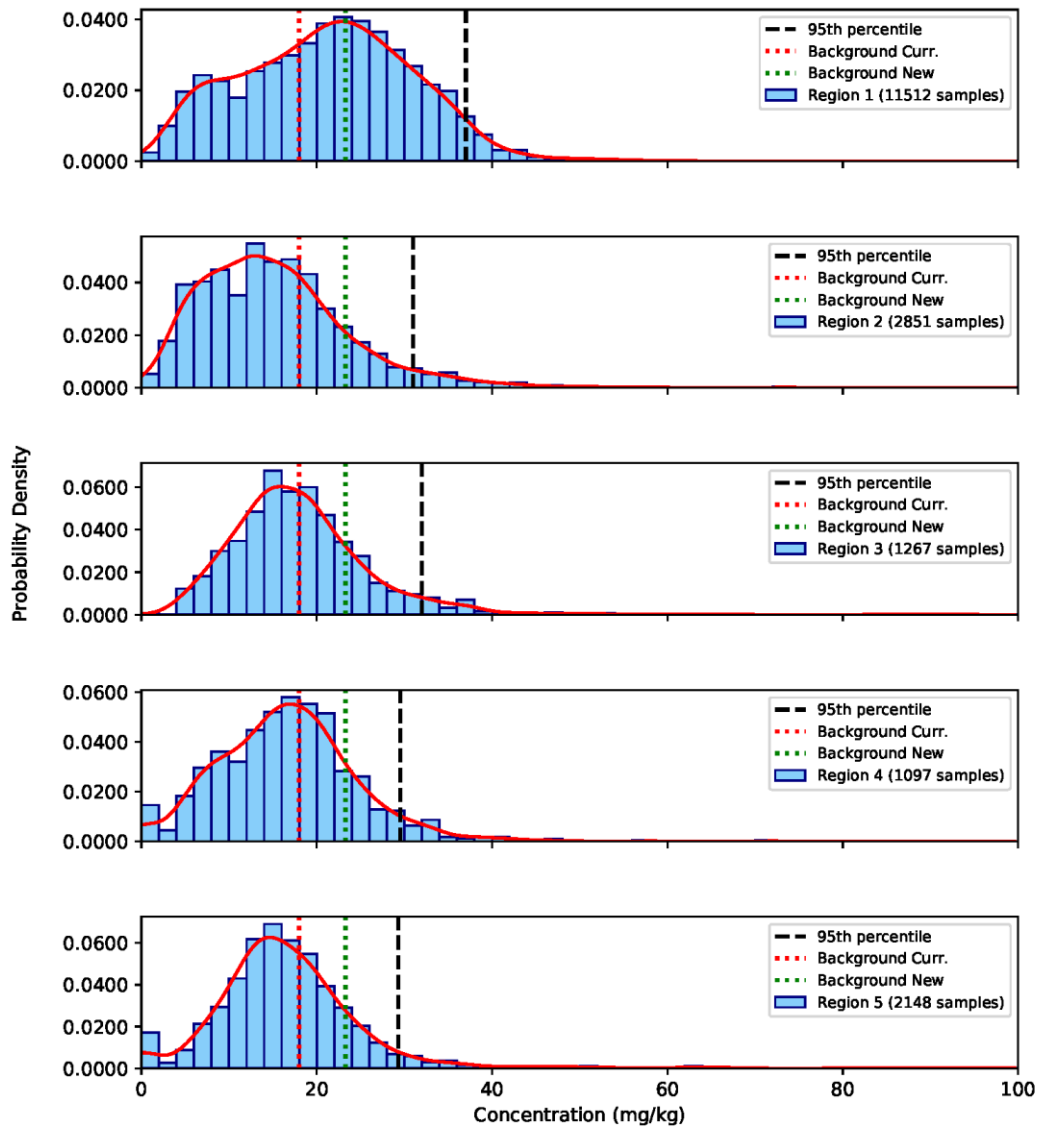


Figure 566. Histogram of RSL nickel concentrations by IDOT Region, REC (mg/kg)

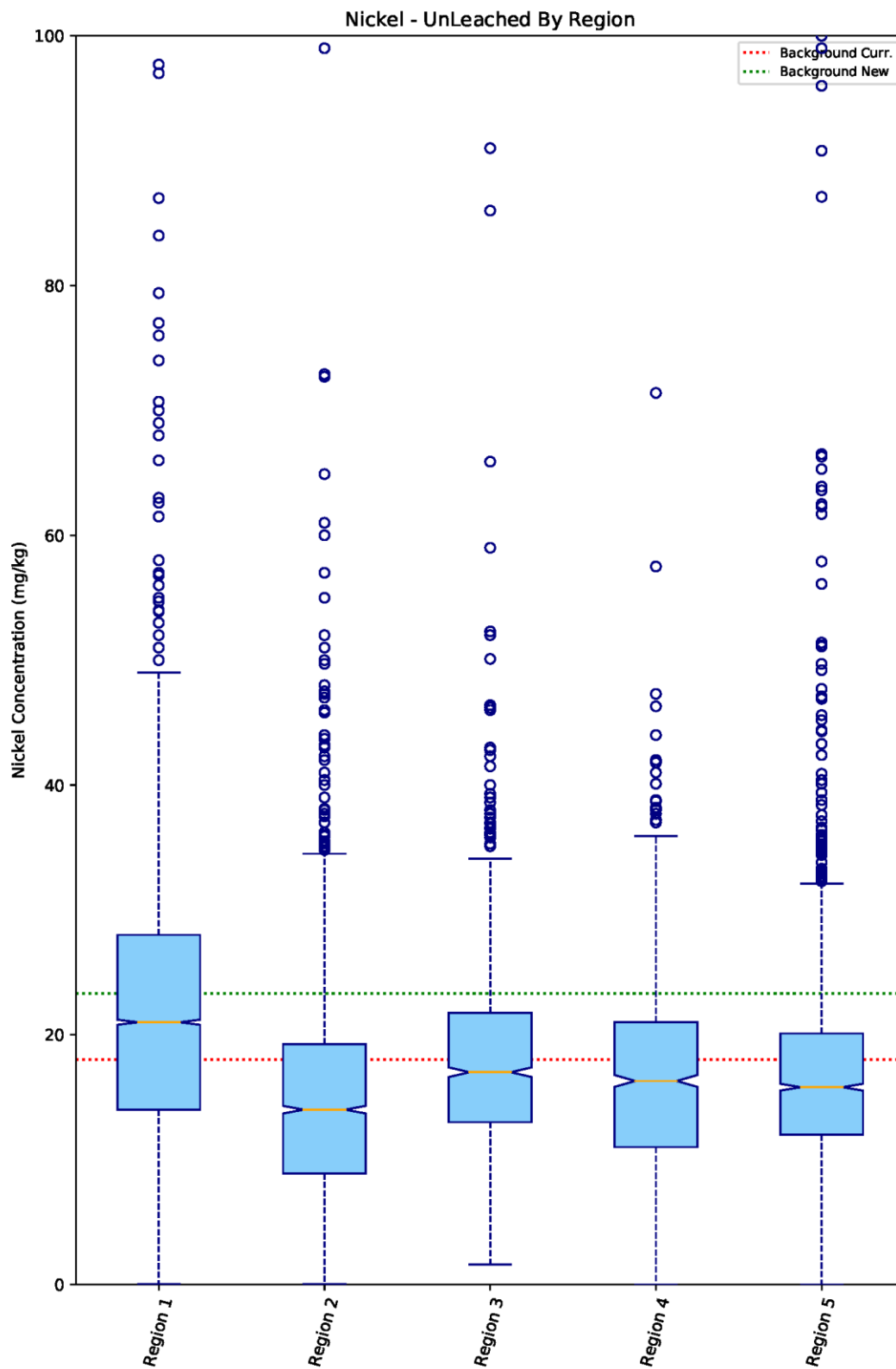


Figure 567. Boxplot of RSL nickel concentrations by IDOT Region, REC (mg/kg)



# Nickel Concentration by District, page 1 of 2

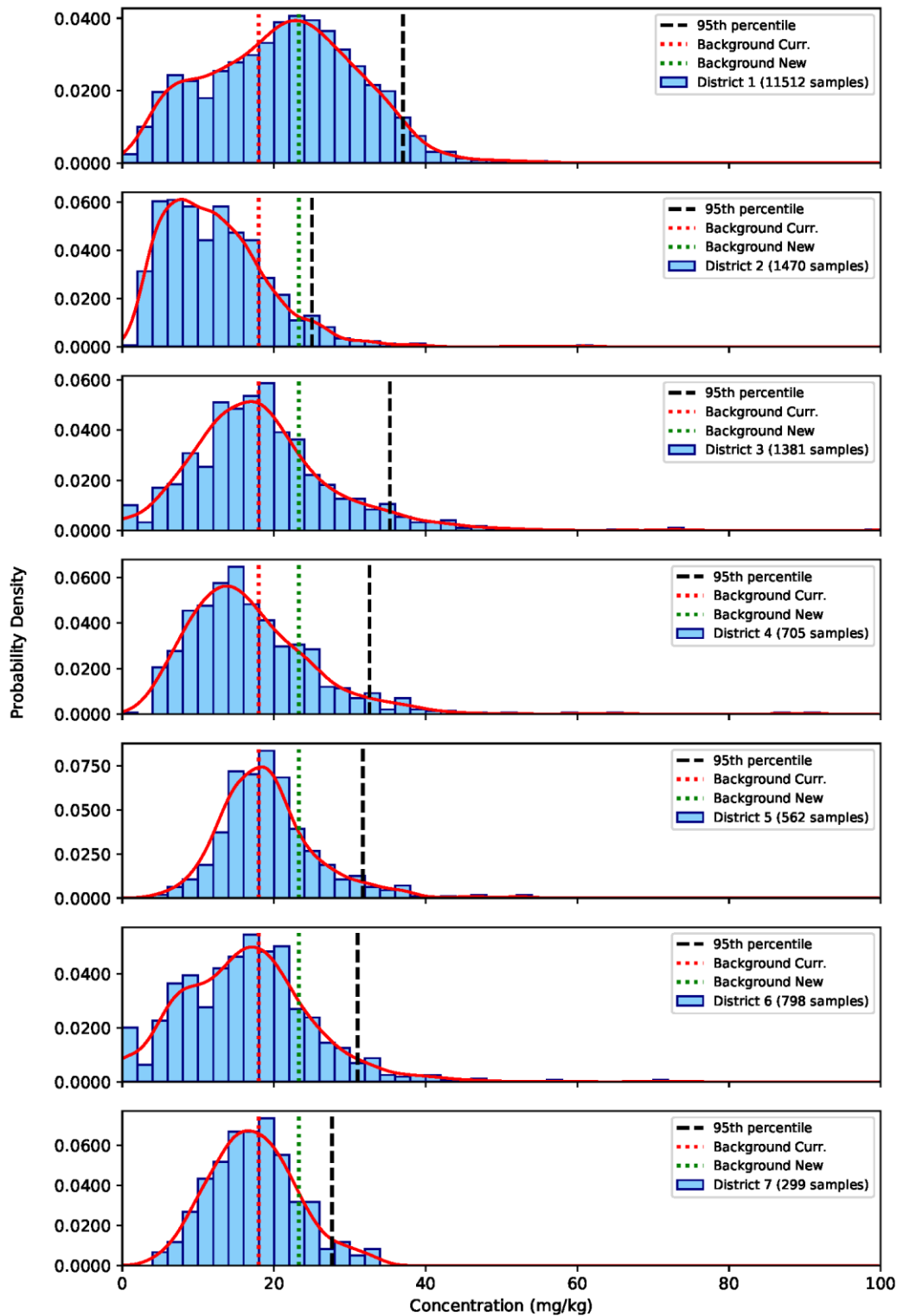


Figure 568. Histogram of RSL nickel concentrations by IDOT District, REC (mg/kg), part 1

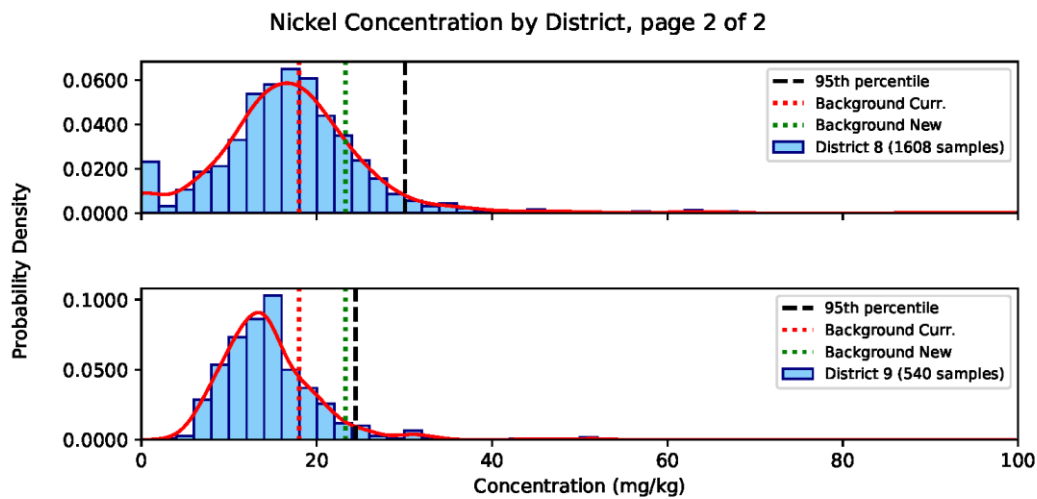


Figure 569. Histogram of RSL nickel concentrations by IDOT District, REC (mg/kg), part 2

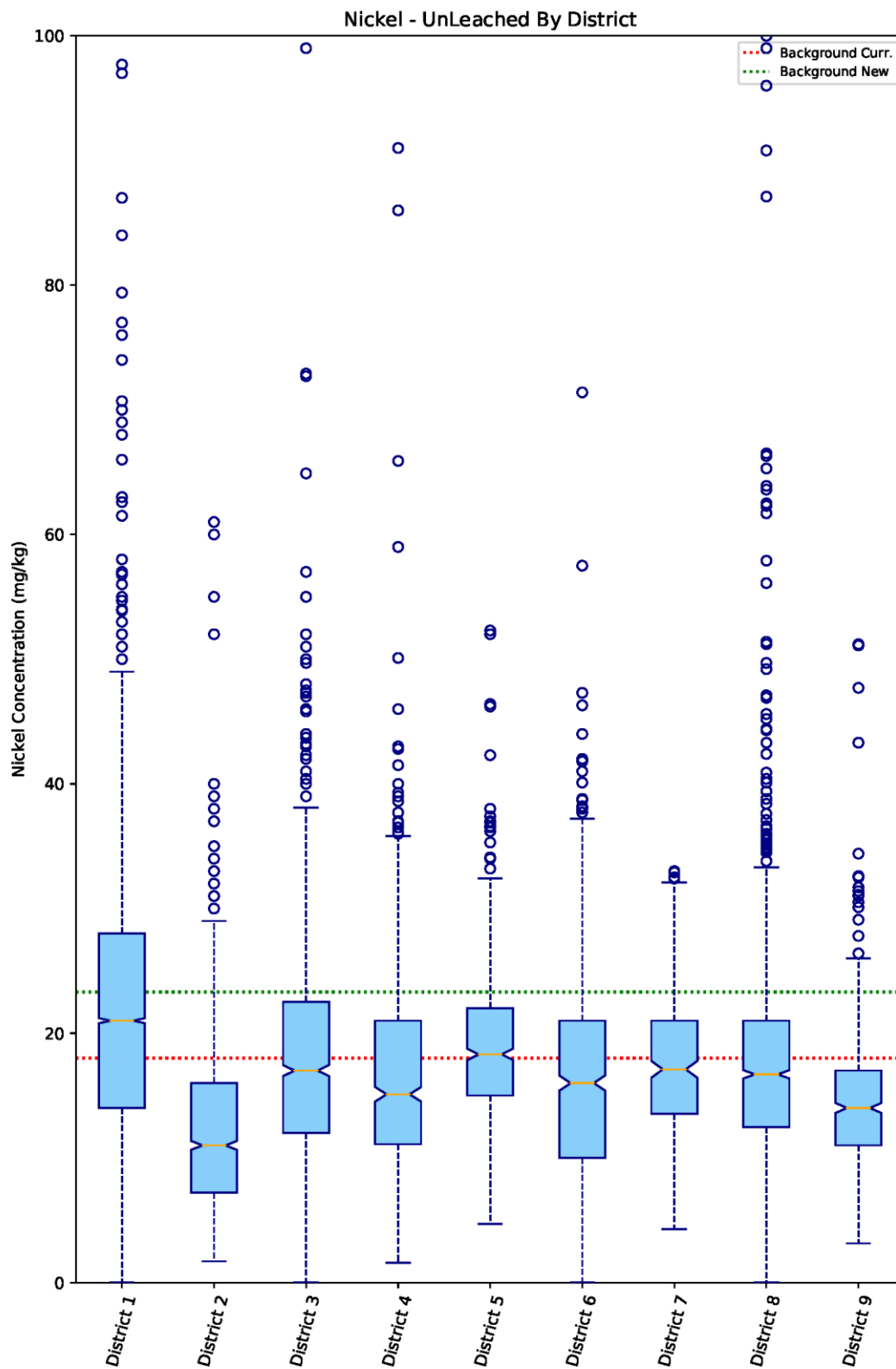


Figure 570. Boxplot of RSL nickel concentrations by IDOT District, REC (mg/kg)

Nickel Concentration by County, page 1 of 10

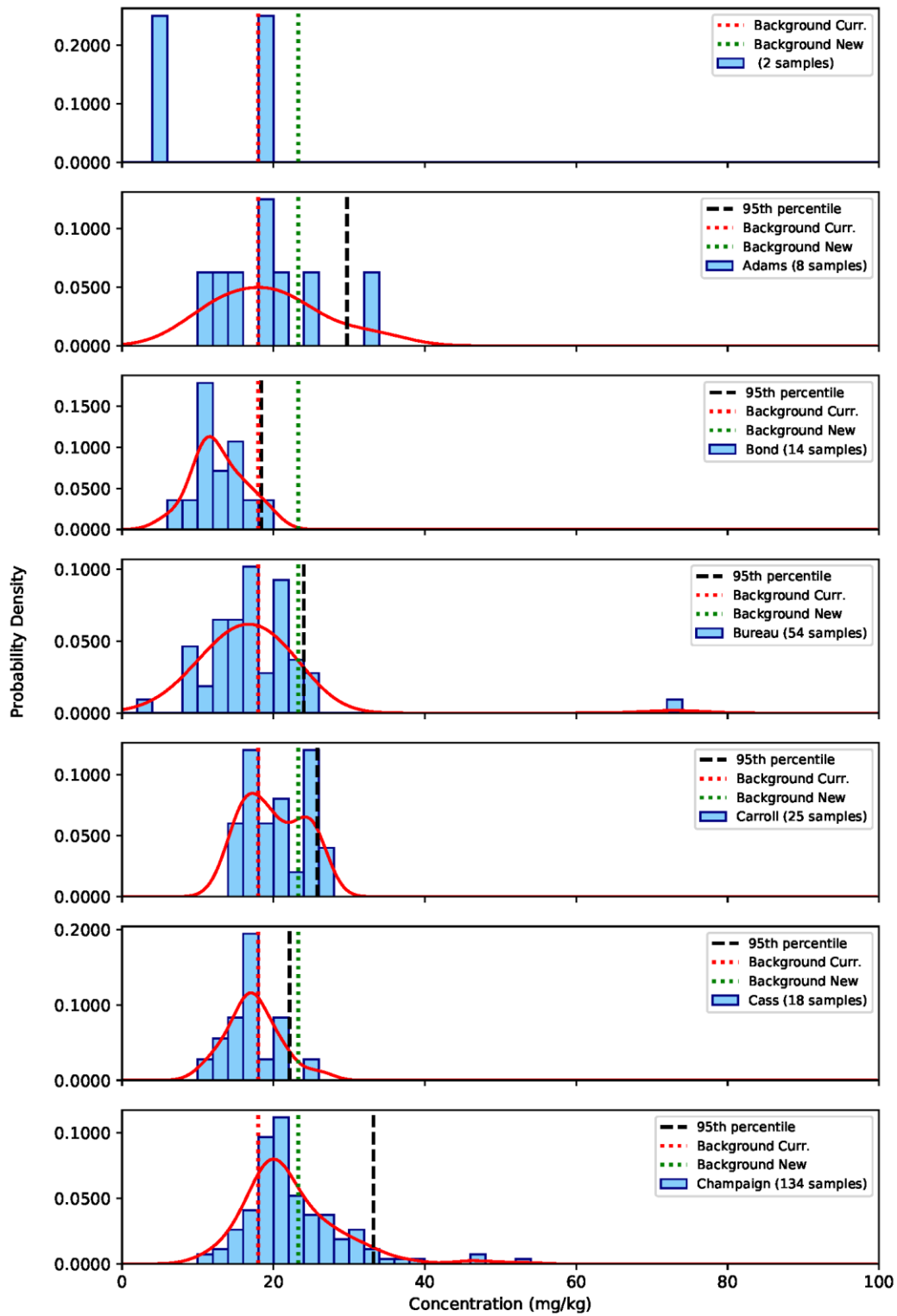


Figure 571. Histogram of RSL nickel concentrations by Illinois county, REC (mg/kg), part 1

Nickel Concentration by County, page 2 of 10

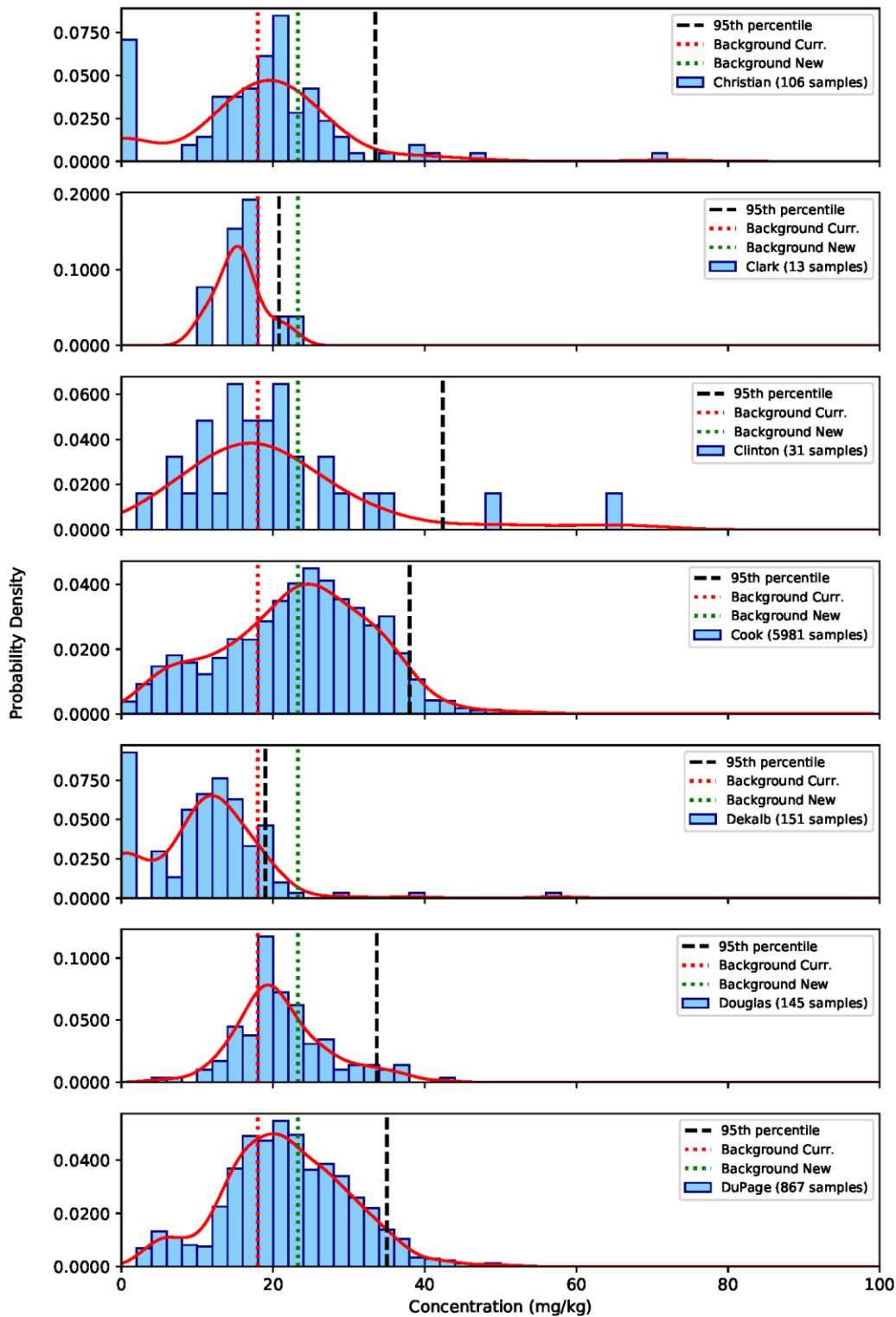


Figure 572. Histogram of RSL nickel concentrations by Illinois county, REC (mg/kg), part 2

Nickel Concentration by County, page 3 of 10

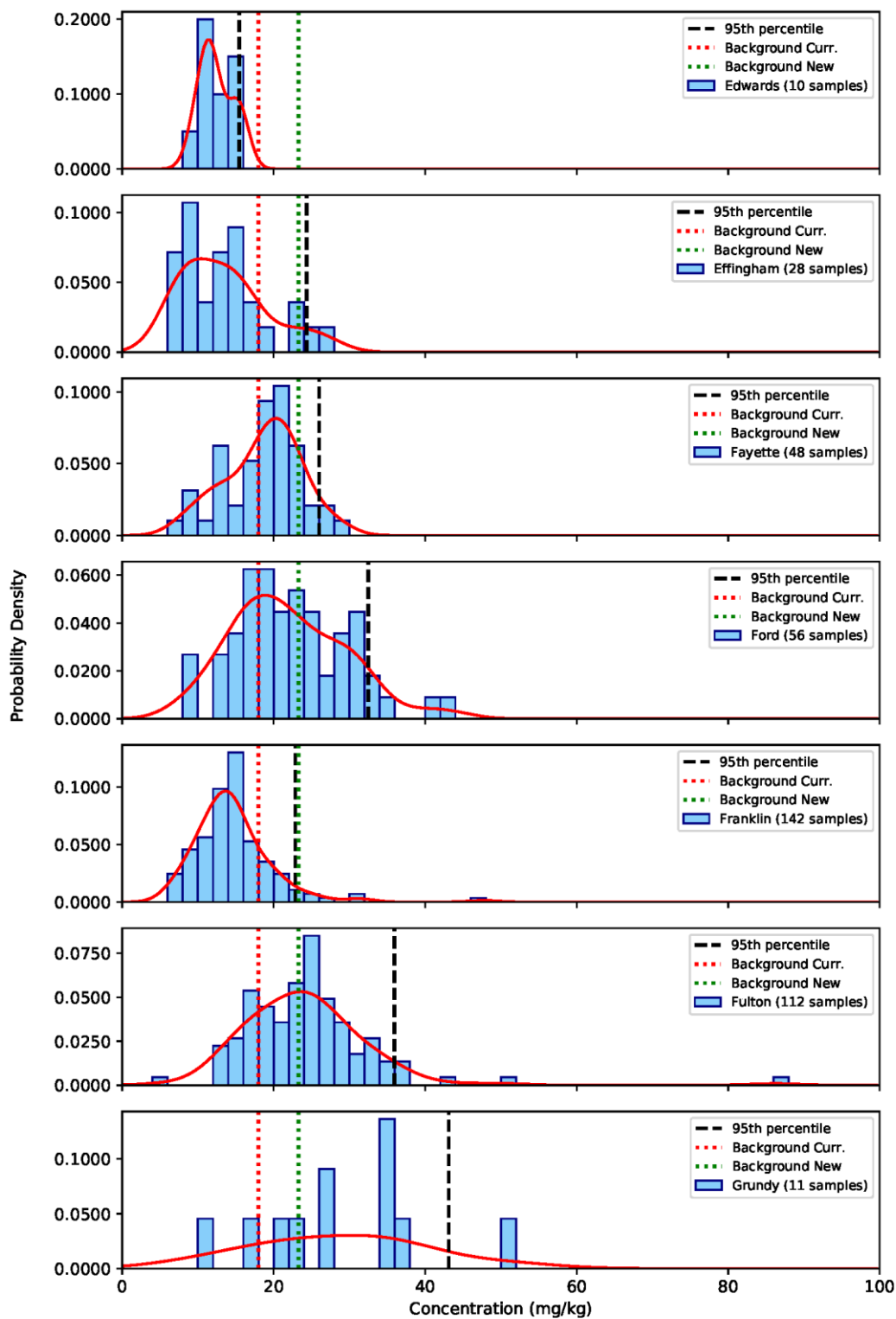


Figure 573. Histogram of RSL nickel concentrations by Illinois county, REC (mg/kg), part 3

Nickel Concentration by County, page 4 of 10

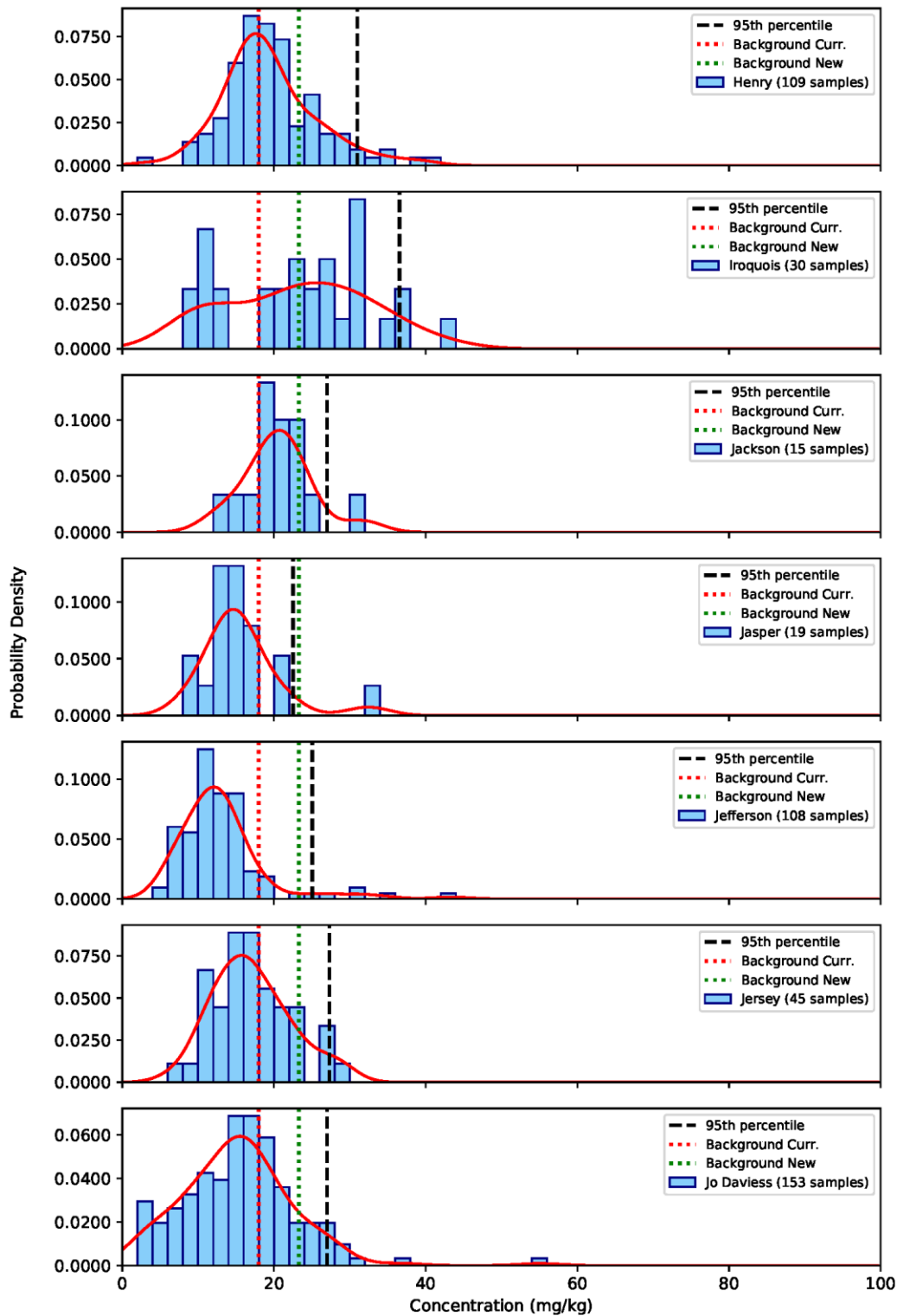


Figure 574. Histogram of RSL nickel concentrations by Illinois county, REC (mg/kg), part 4

# Nickel Concentration by County, page 5 of 10

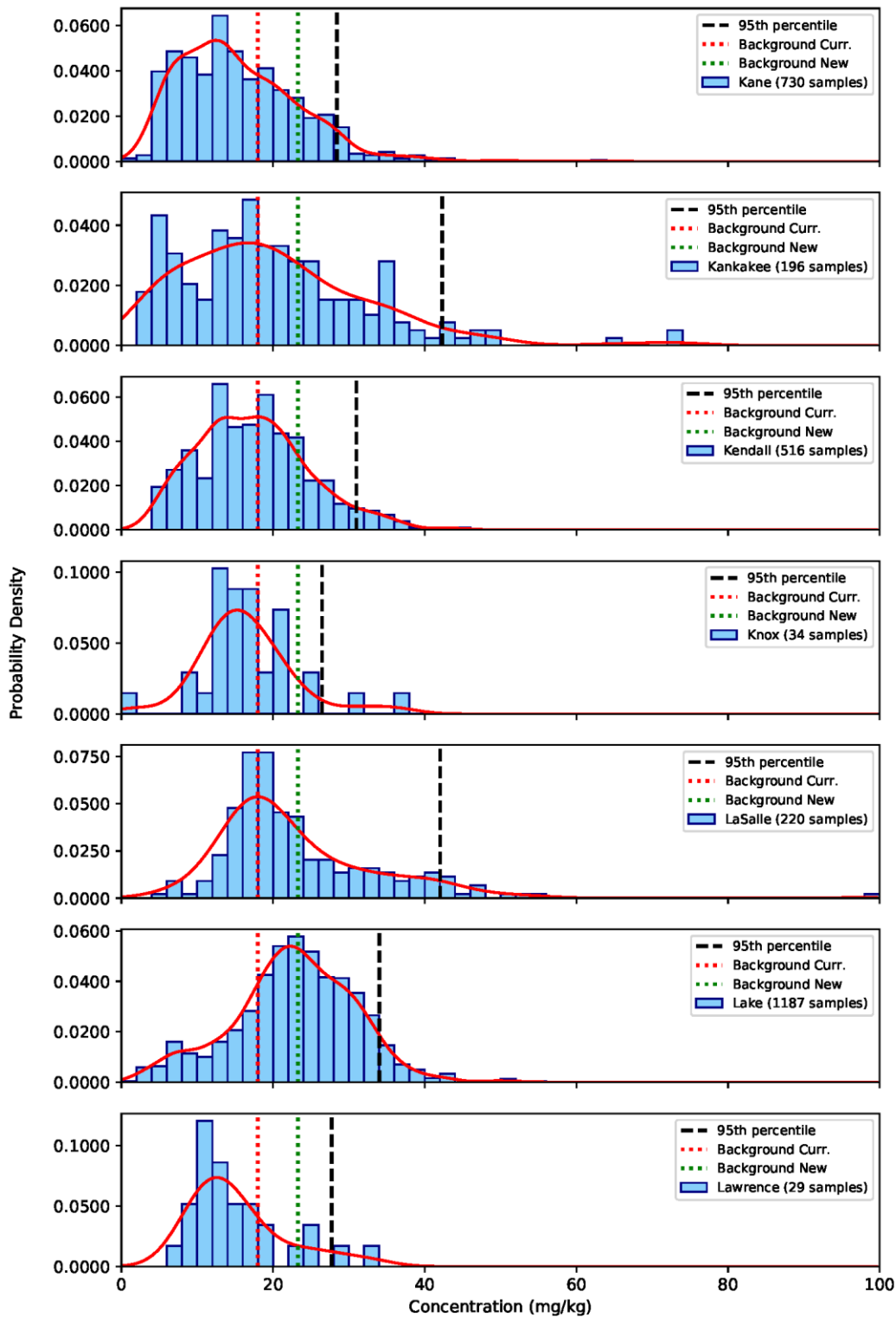


Figure 575. Histogram of RSL nickel concentrations by Illinois county, REC (mg/kg), part 5



Nickel Concentration by County, page 6 of 10

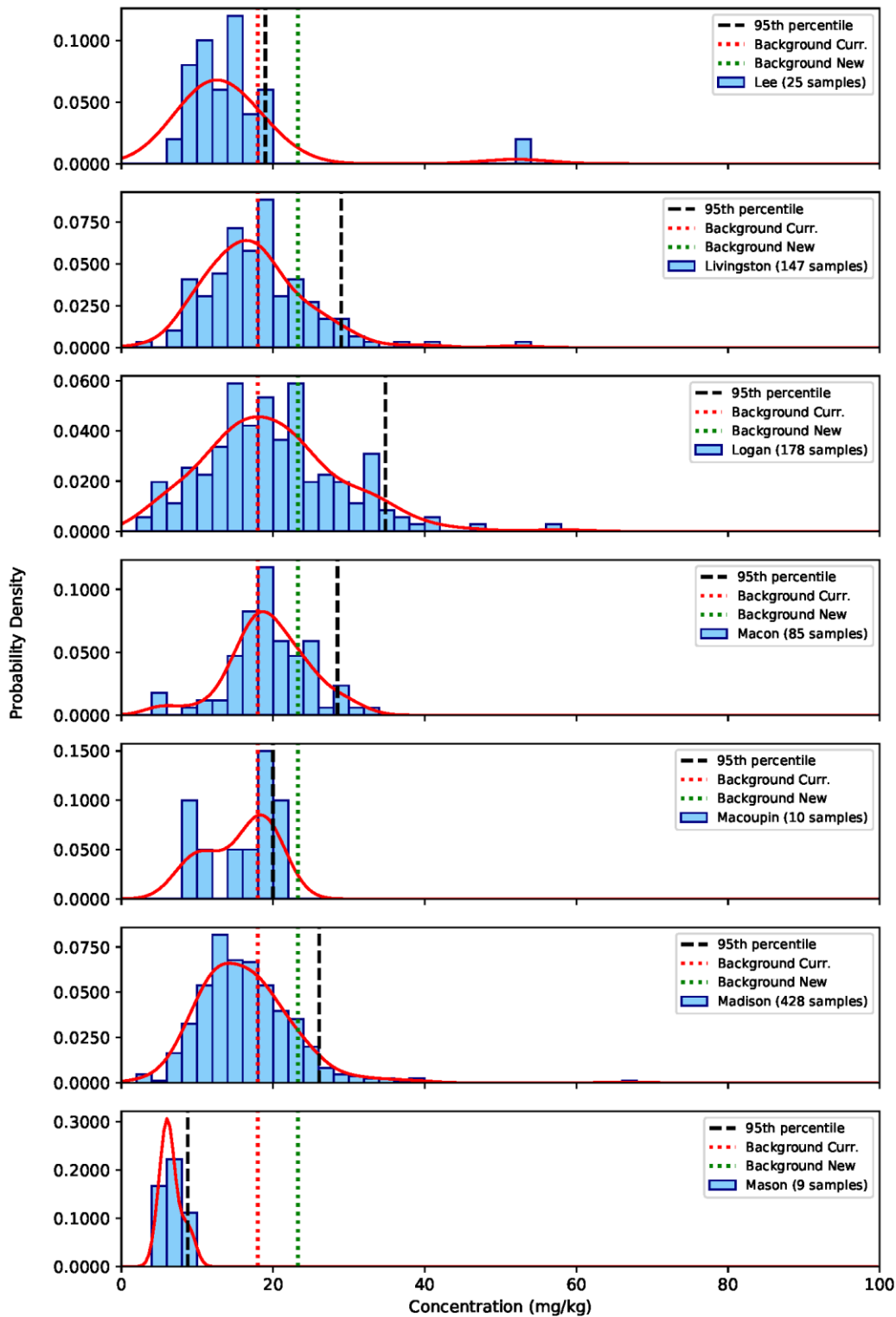


Figure 576. Histogram of RSL nickel concentrations by Illinois county, REC (mg/kg), part 6

Nickel Concentration by County, page 7 of 10

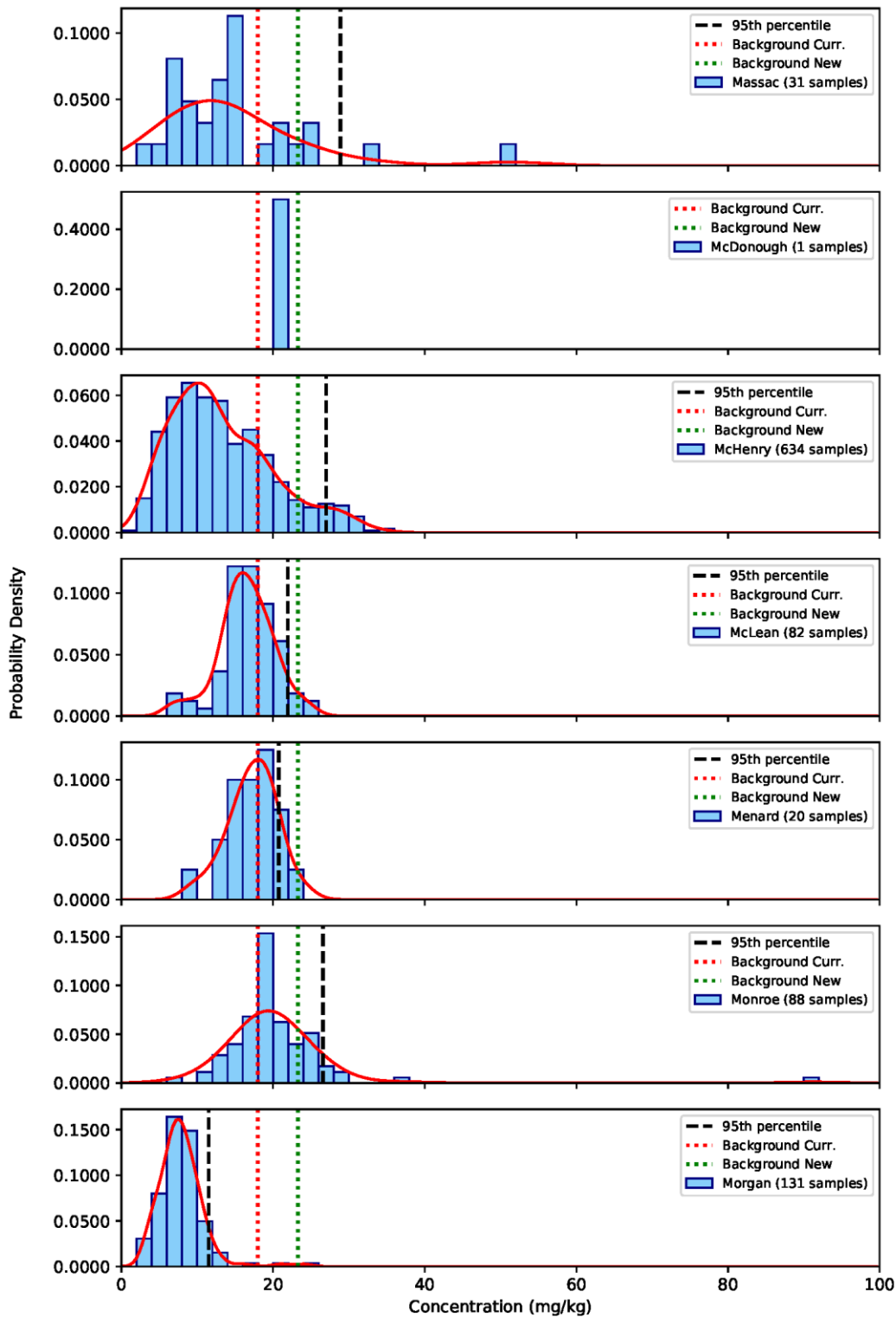


Figure 577. Histogram of RSL nickel concentrations by Illinois county, REC (mg/kg), part 7

Nickel Concentration by County, page 8 of 10

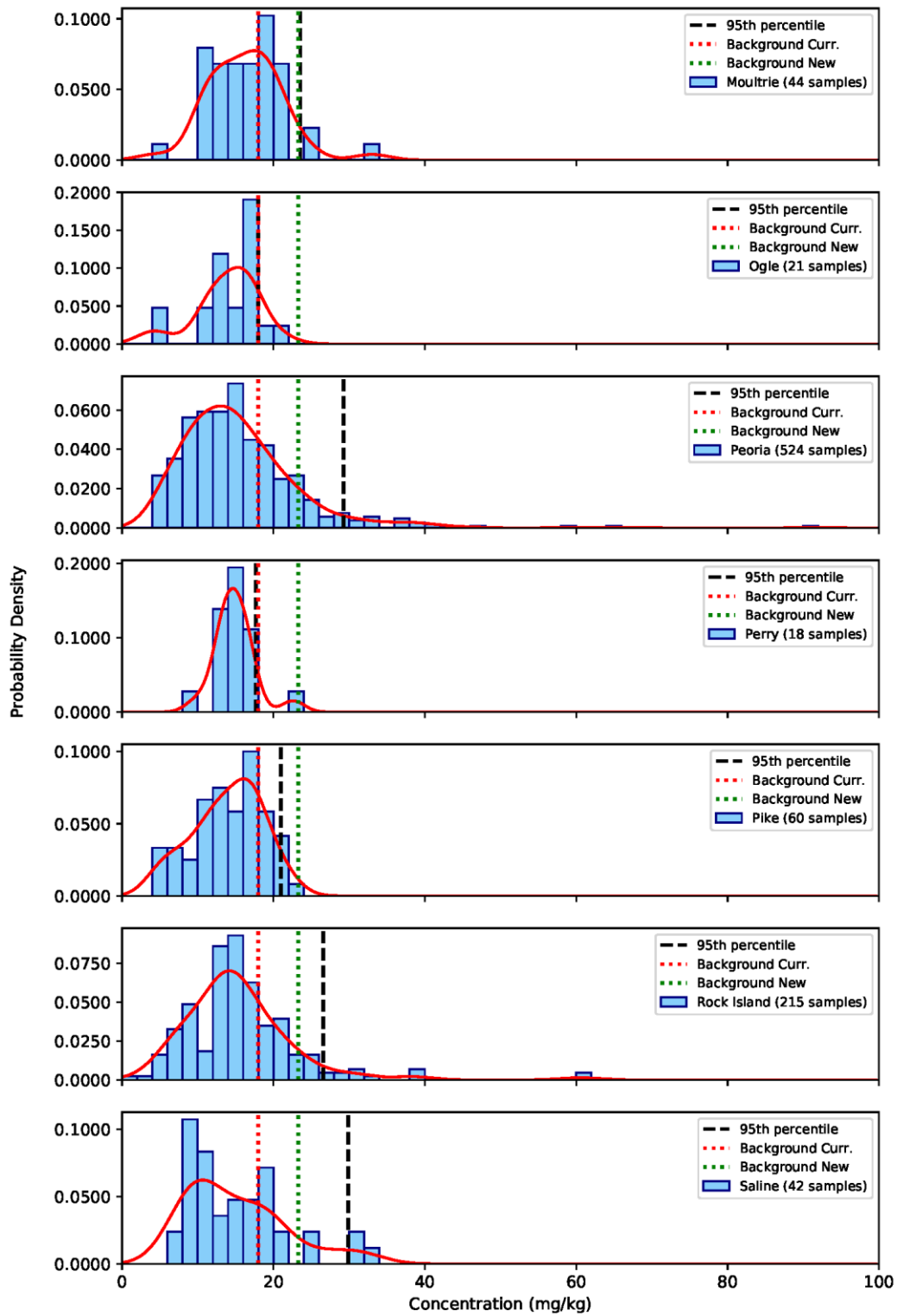


Figure 578. Histogram of RSL nickel concentrations by Illinois county, REC (mg/kg), part 8

Nickel Concentration by County, page 9 of 10

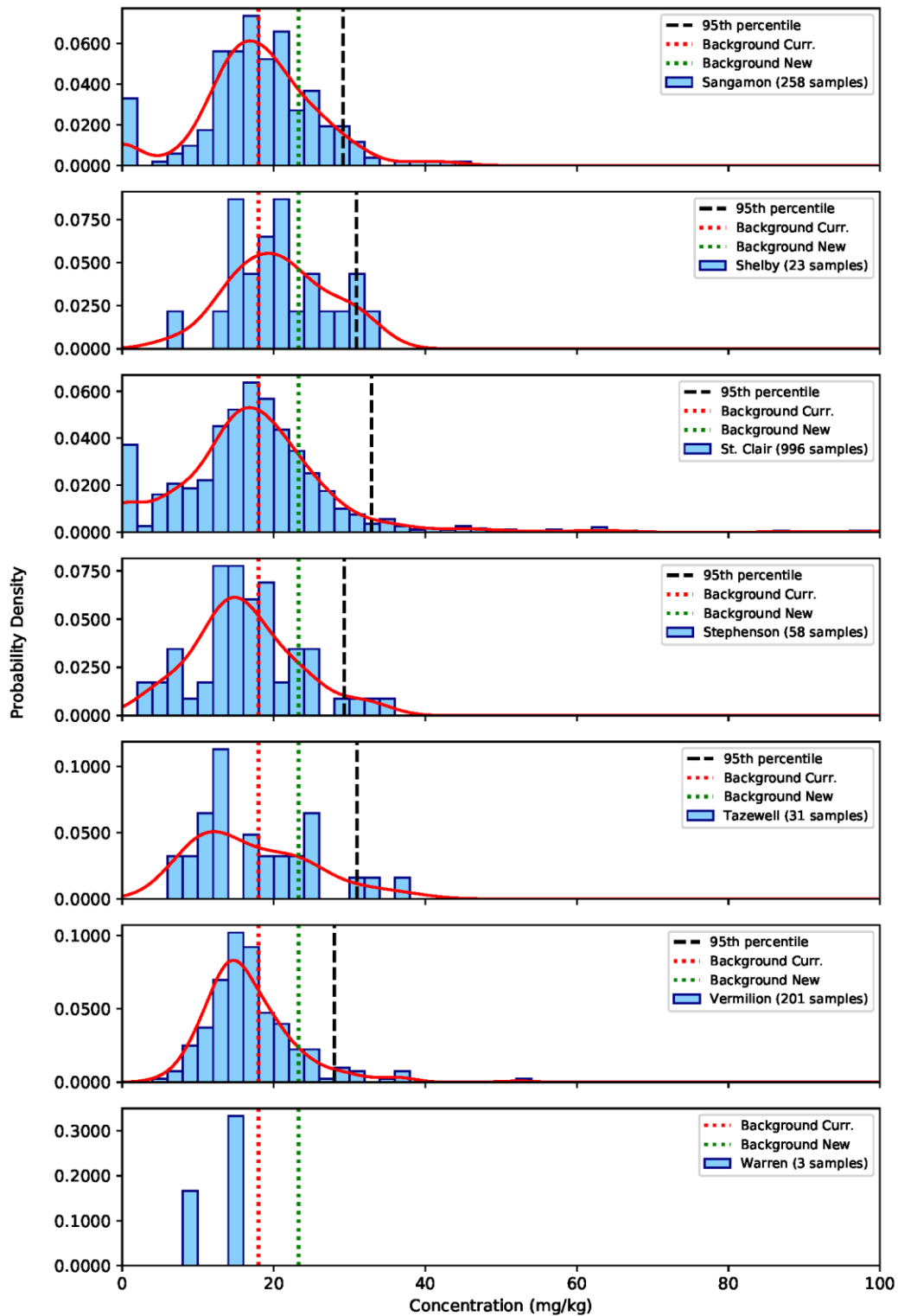


Figure 579. Histogram of RSL nickel concentrations by Illinois county, REC (mg/kg), part 9

Nickel Concentration by County, page 10 of 10

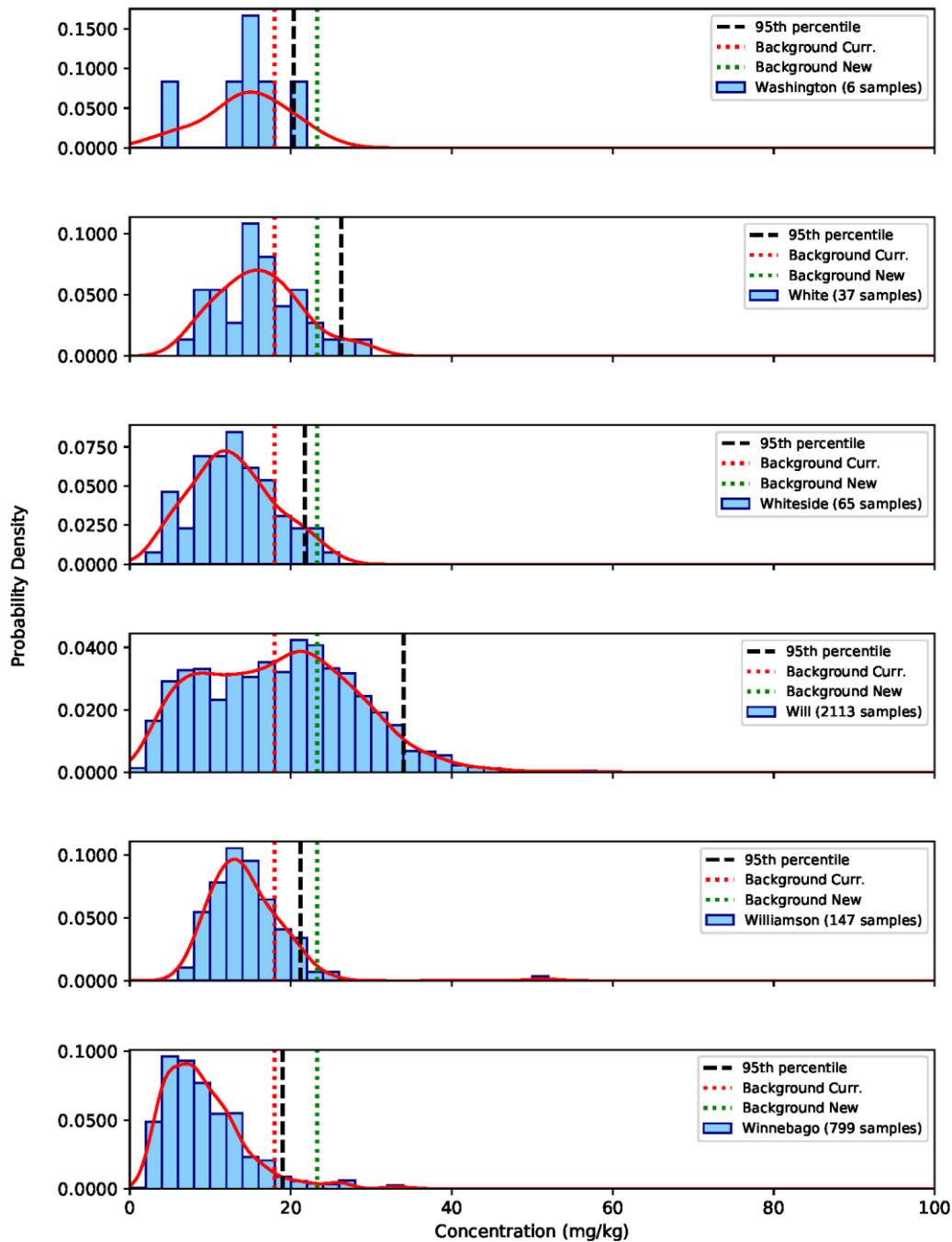


Figure 580. Histogram of RSL nickel concentrations by Illinois county, REC (mg/kg), part 10

Nickel Concentration for 95th Percentile by County: REC Sites

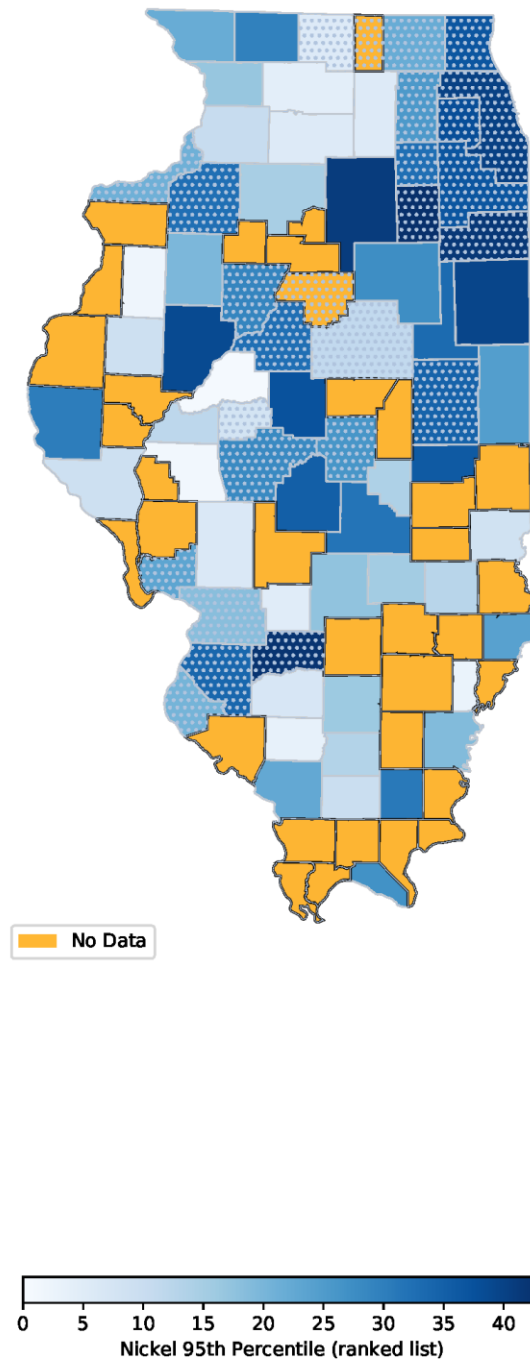


Figure 581. Map of RSL nickel 95th percentile concentration by Illinois county, REC (mg/kg)

A map of the United States showing the distribution of three types of English. The map is divided into regions, each represented by a different color and pattern: orange for General American, blue with a dotted pattern for British English, and white for Indian English. The orange regions are primarily in the western and central parts of the country. The blue regions are concentrated in the northern and eastern parts. The white regions are scattered throughout the central and southern parts of the country.

681

## **P.2 NICKEL NON-REC**



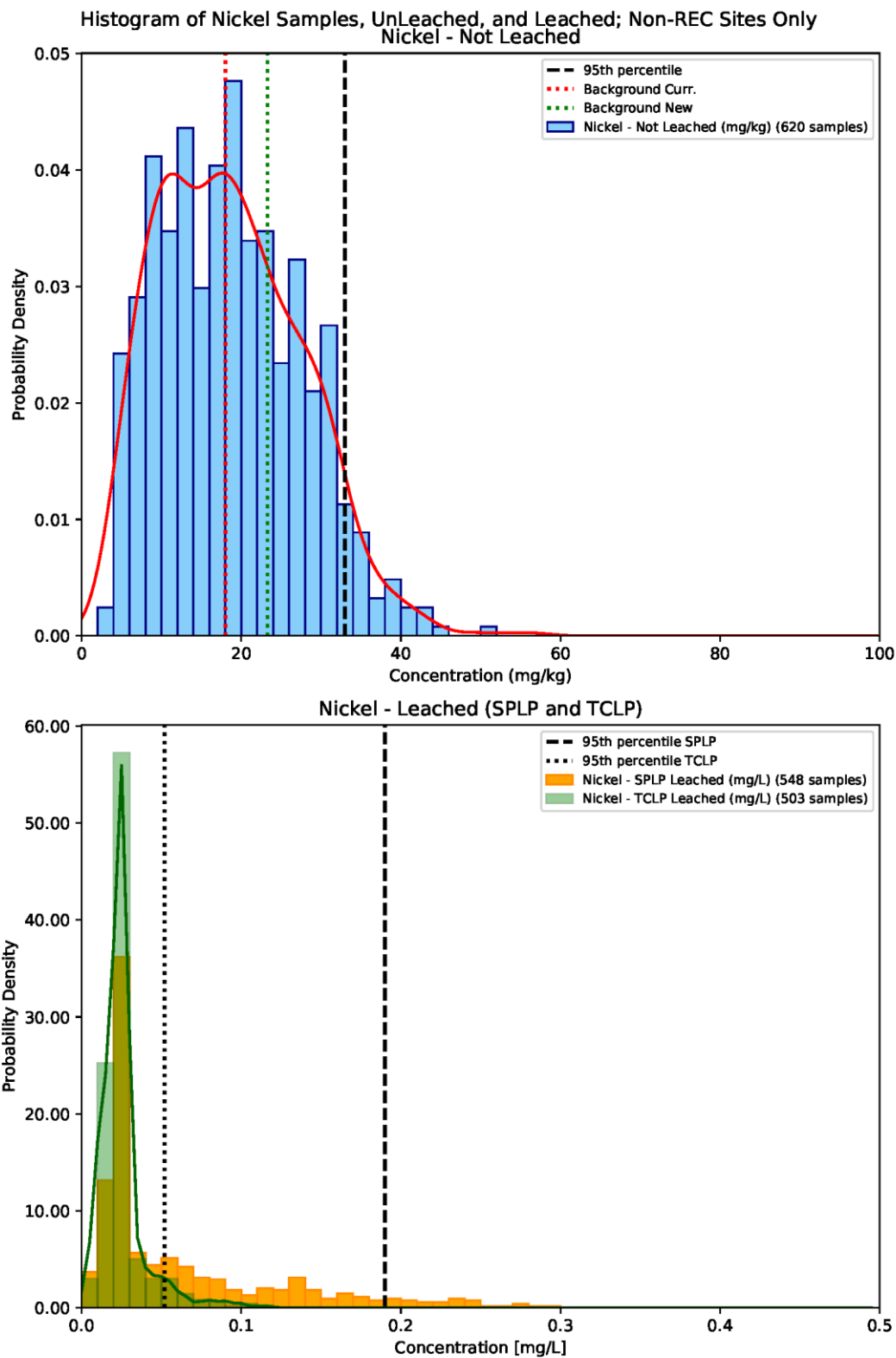


Figure 583. Histogram of RSL nickel concentrations, Non-REC (mg/kg)

Nickel Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

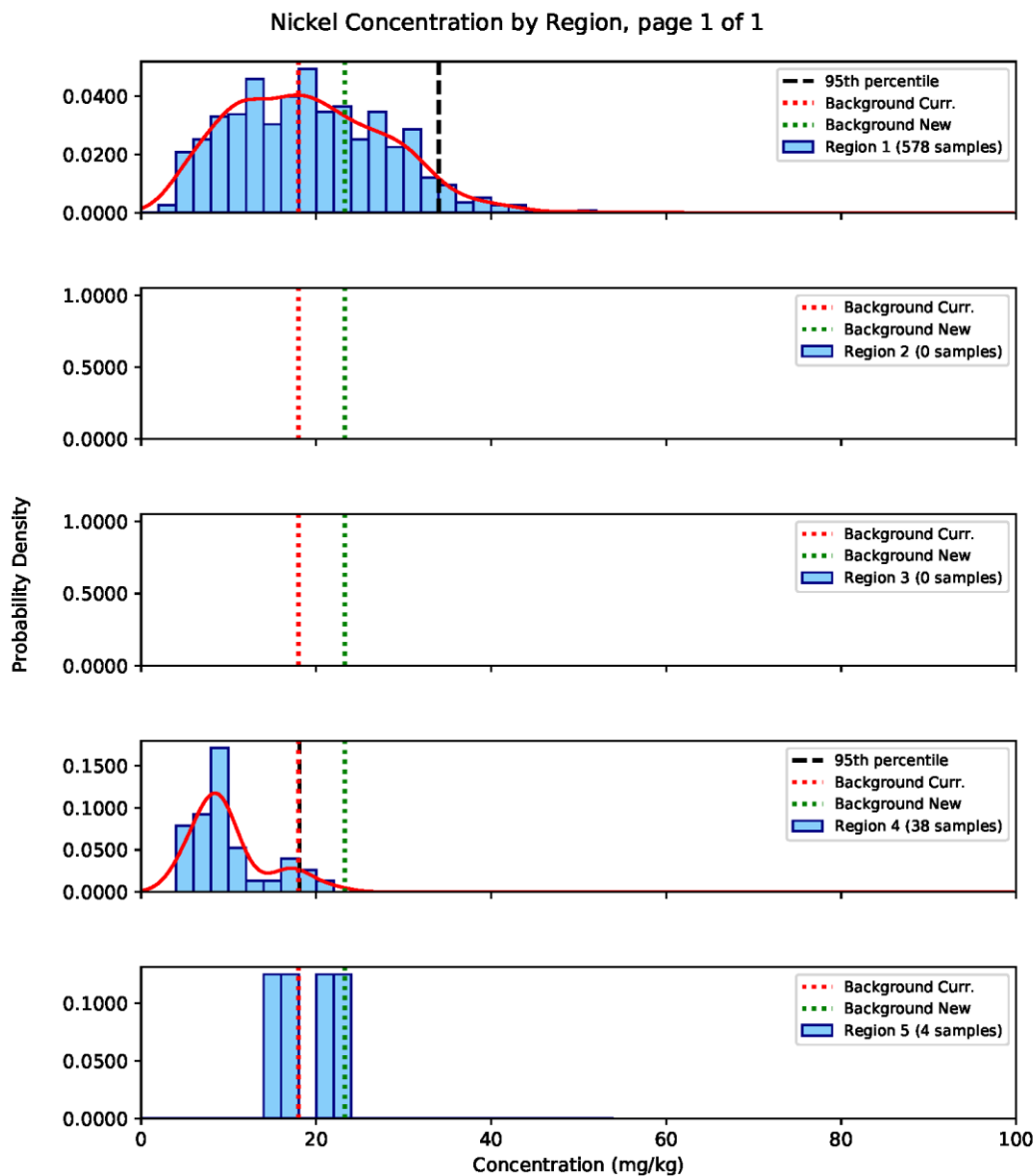
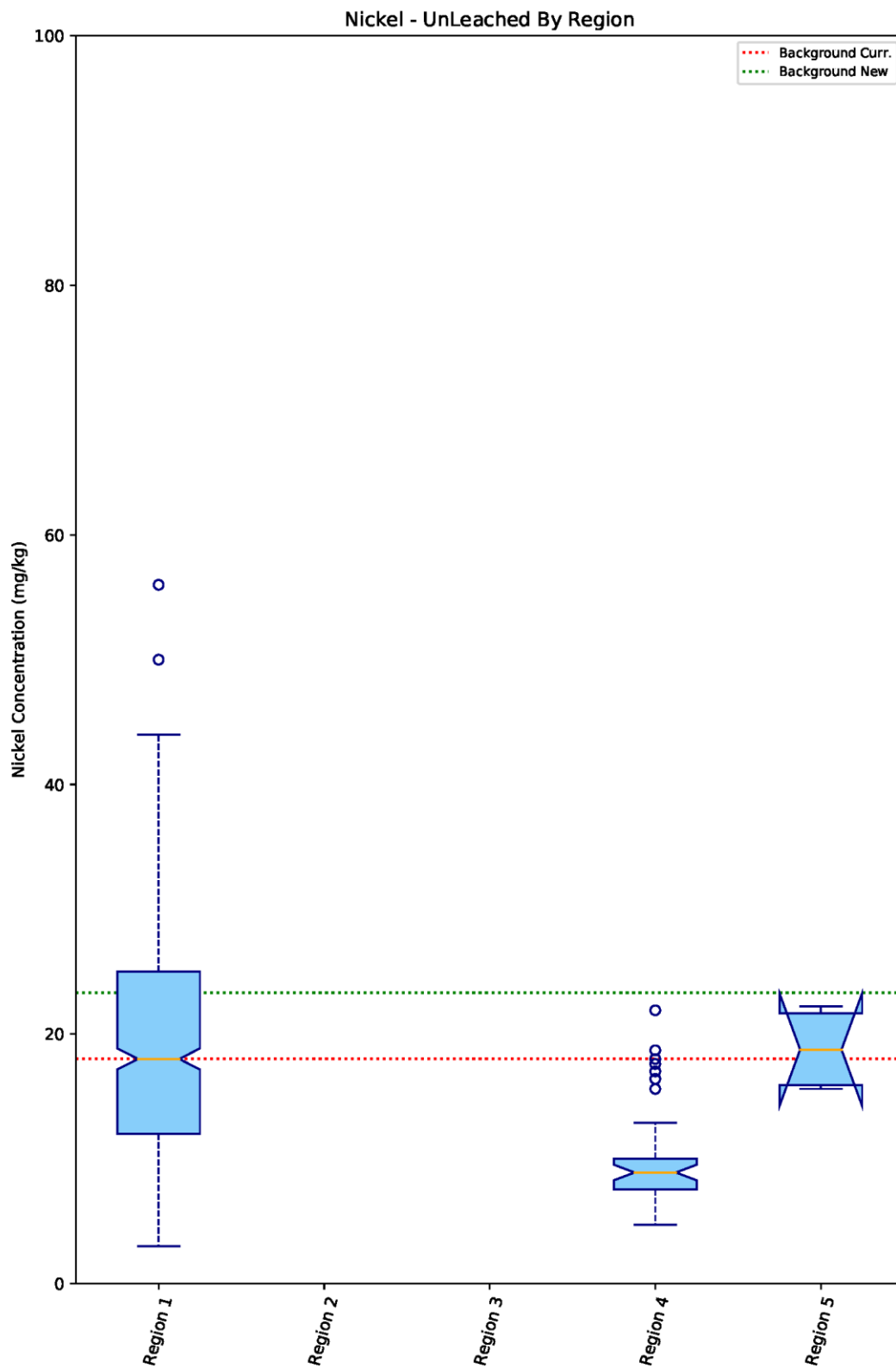


Figure 584. Histogram of RSL nickel concentrations by IDOT Region, Non-REC (mg/kg)



**Figure 585. Boxplot of RSL nickel concentrations by IDOT Region, Non-REC (mg/kg)**

Nickel Concentration by District, page 1 of 2

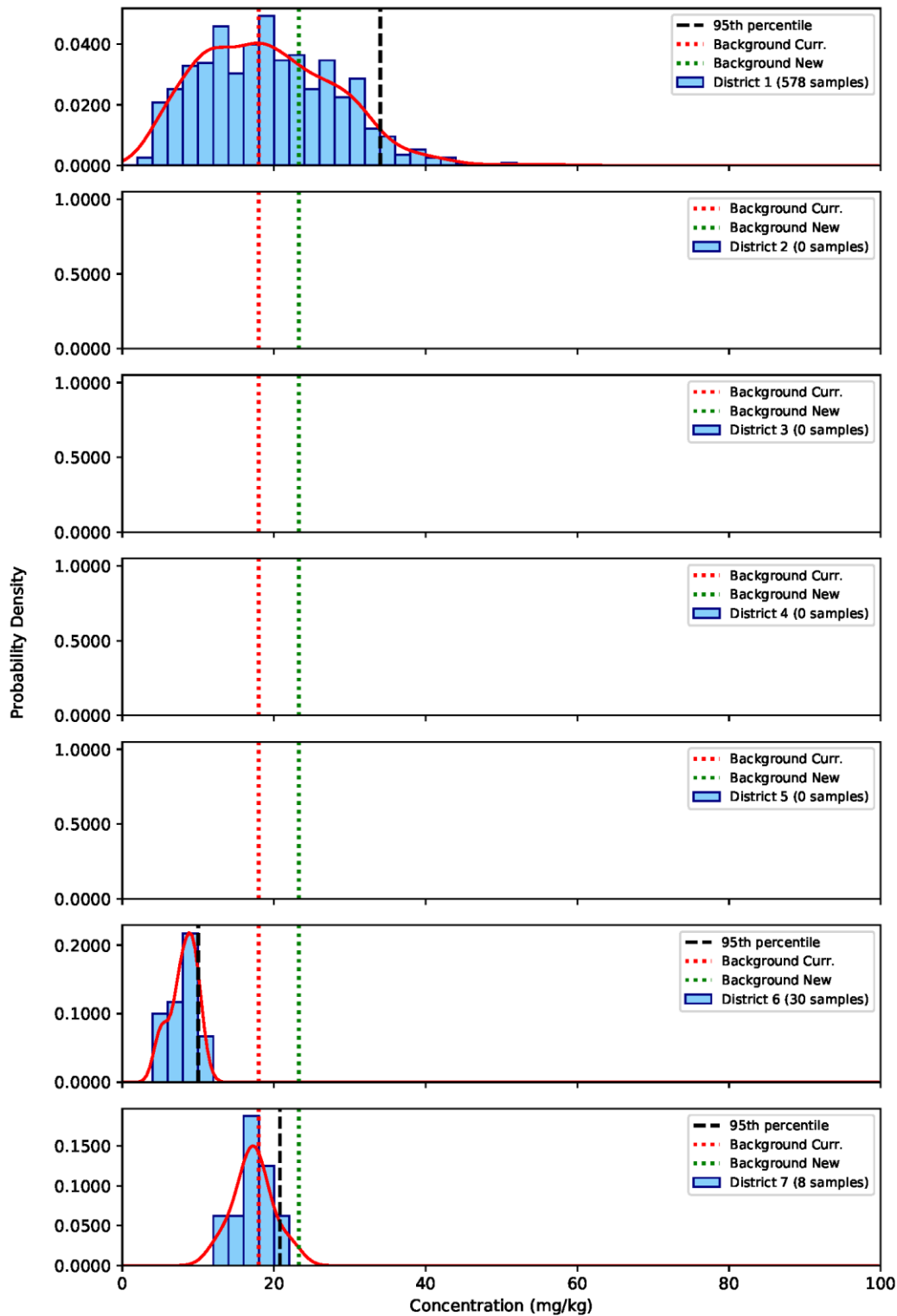


Figure 586. Histogram of RSL nickel concentrations by IDOT District, Non-REC (mg/kg), part 1

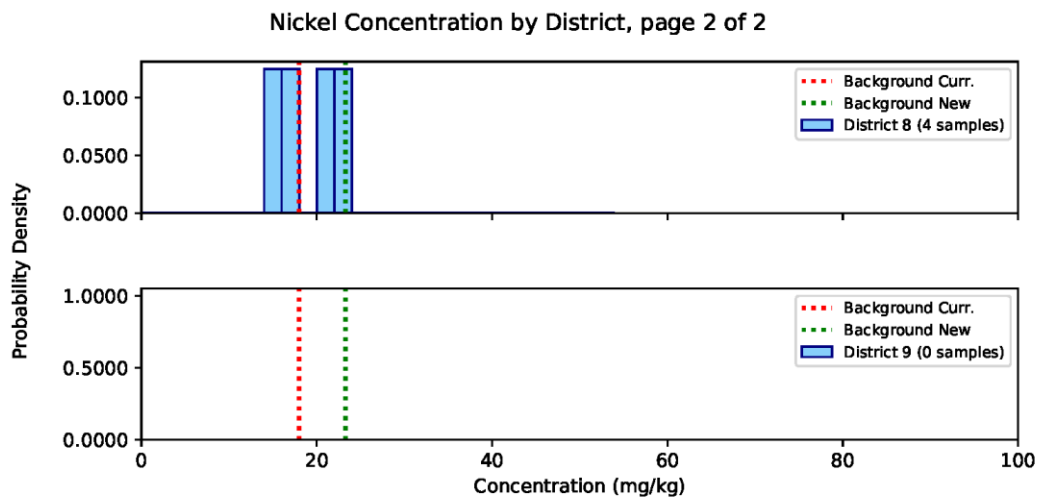
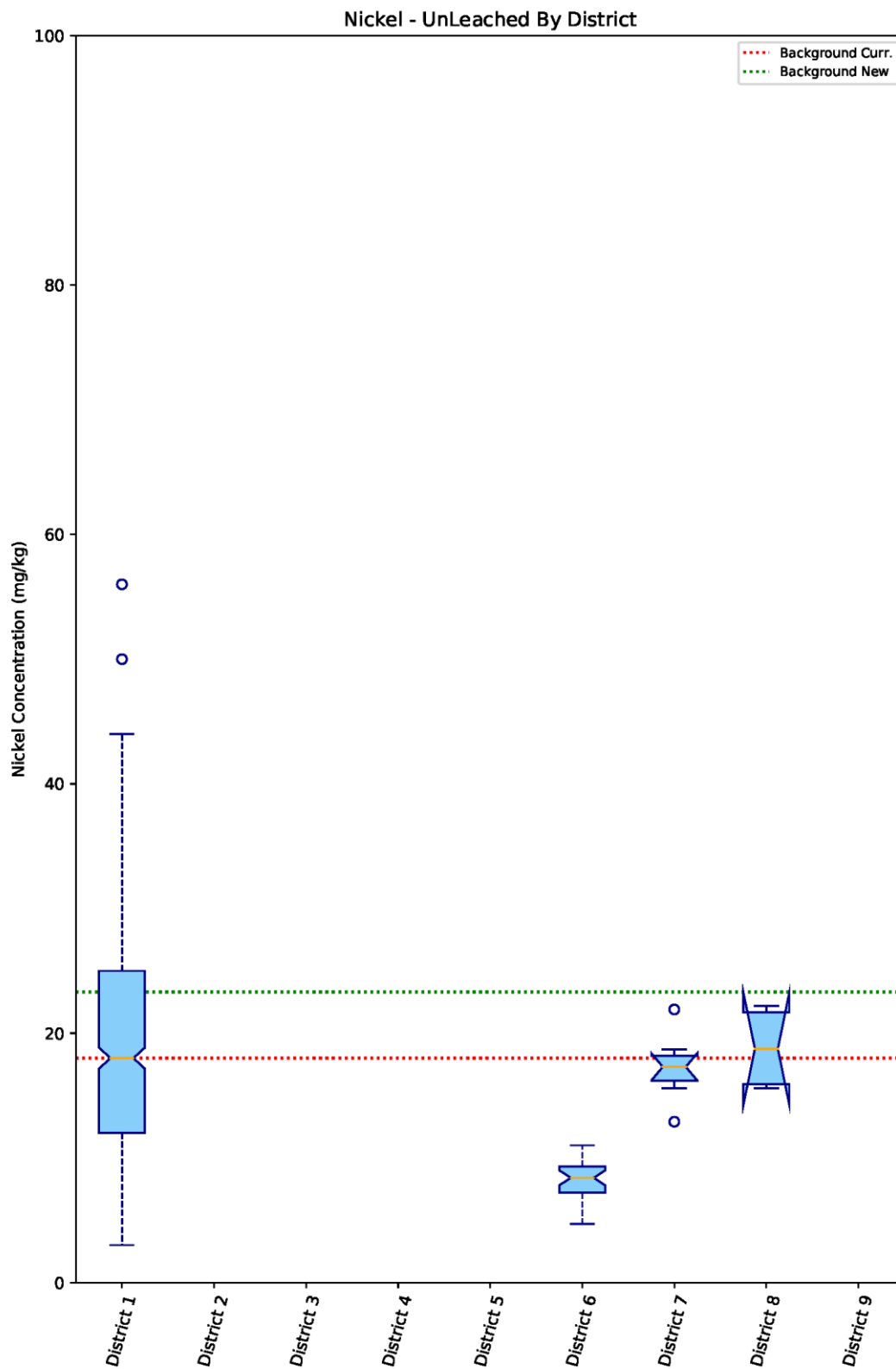


Figure 587. Histogram of RSL nickel concentrations by IDOT District, Non-REC (mg/kg), part 2



**Figure 588. Boxplot of RSL nickel concentrations by IDOT District, Non-REC (mg/kg)**

# Nickel Concentration by County, page 1 of 2

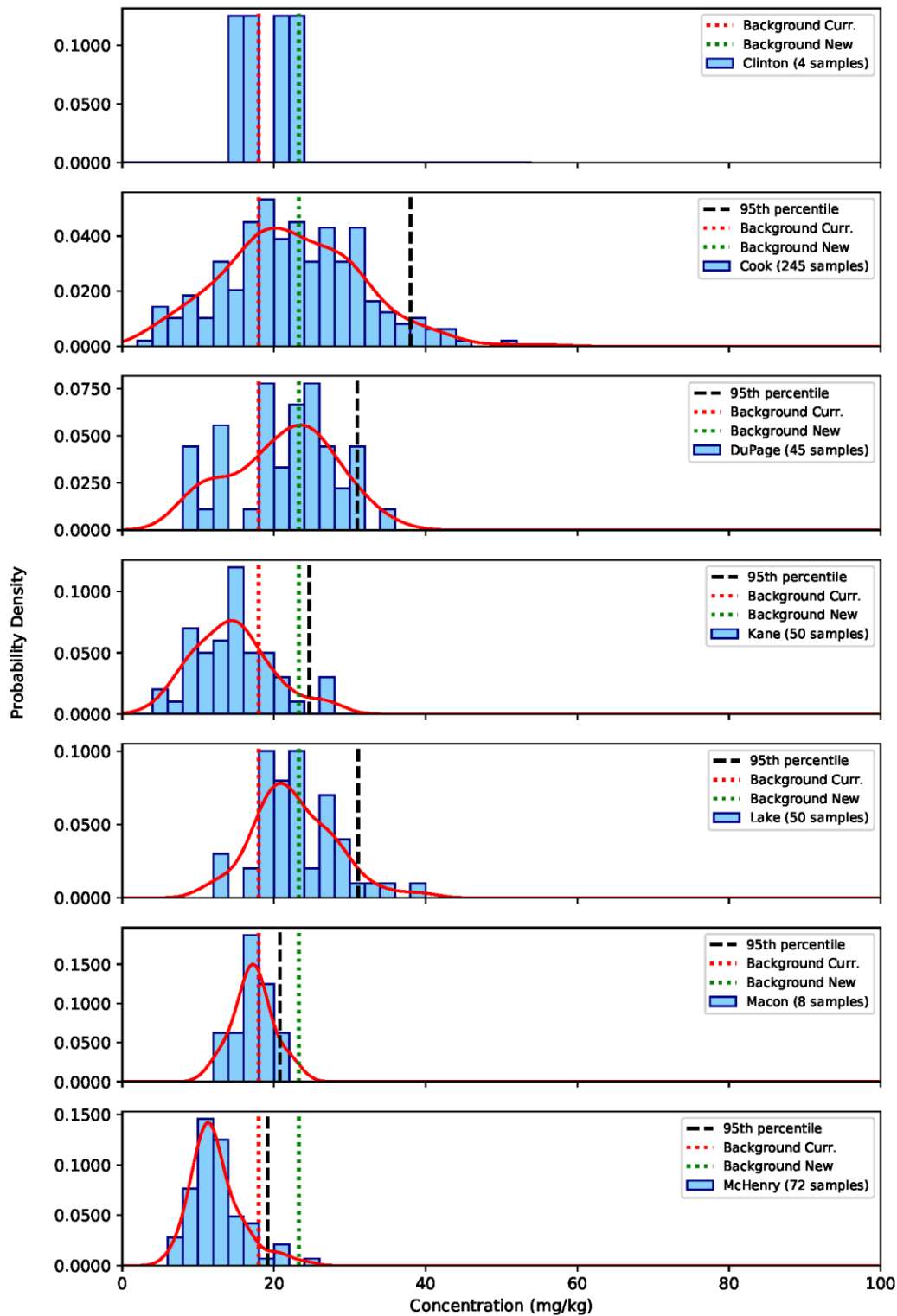


Figure 589. Histogram of RSL nickel concentrations by Illinois county, Non-REC (mg/kg), part 1



Nickel Concentration by County, page 2 of 2

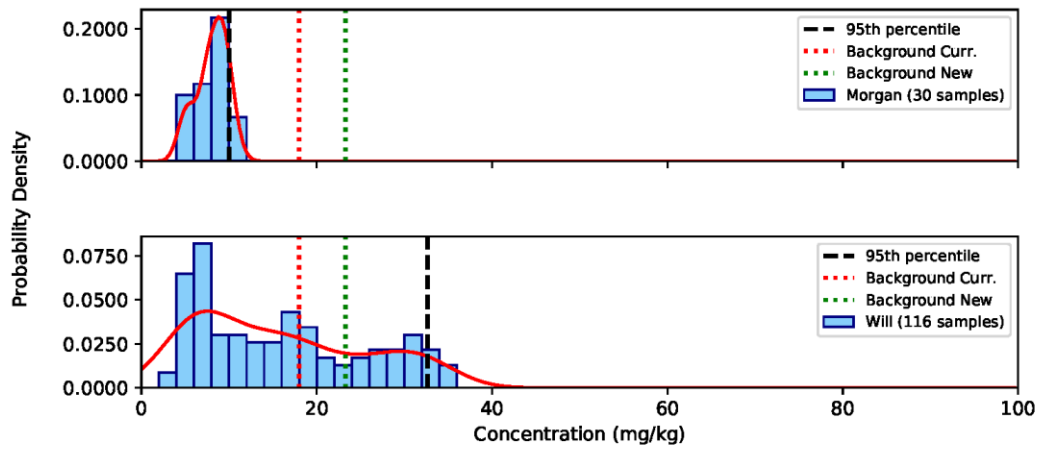


Figure 590. Histogram of RSL nickel concentrations by Illinois county, Non-REC (mg/kg), part 2

Nickel Concentration for 95th Percentile by County: Non-REC Sites

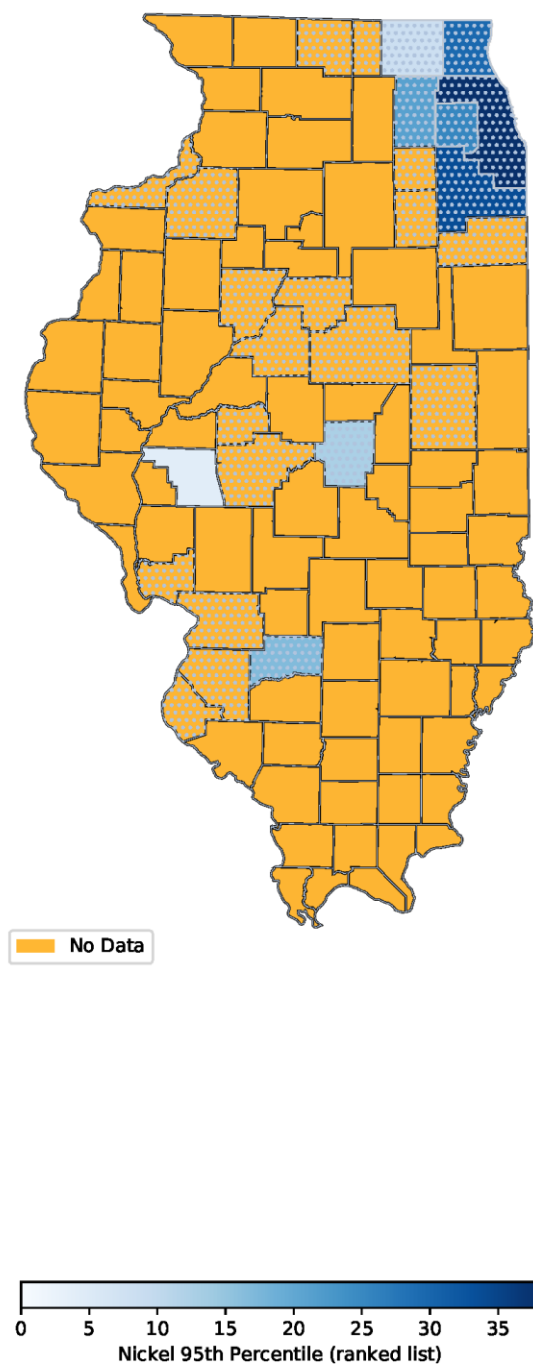
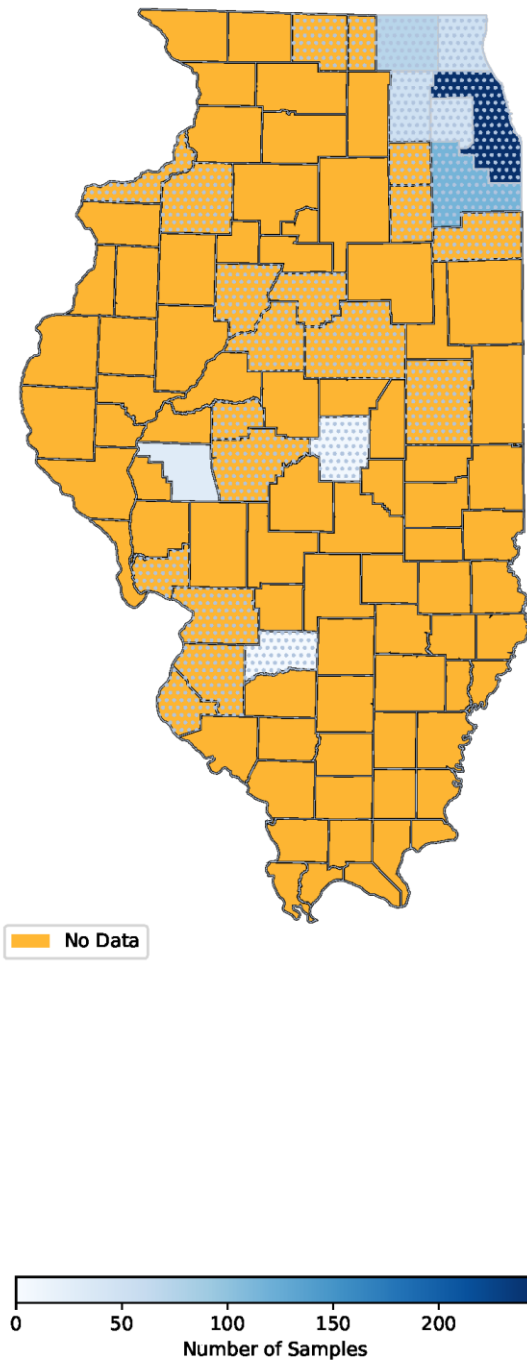


Figure 591. Map of RSL nickel 95th percentile concentration by Illinois county, Non-REC (mg/kg)

### Number of Nickel Samples by County: Non-REC Sites



**Figure 592. Map of RSL nickel sample quantity by Illinois county, Non-REC (mg/kg)**

### **P.3 NICKEL DE MINIMIS**

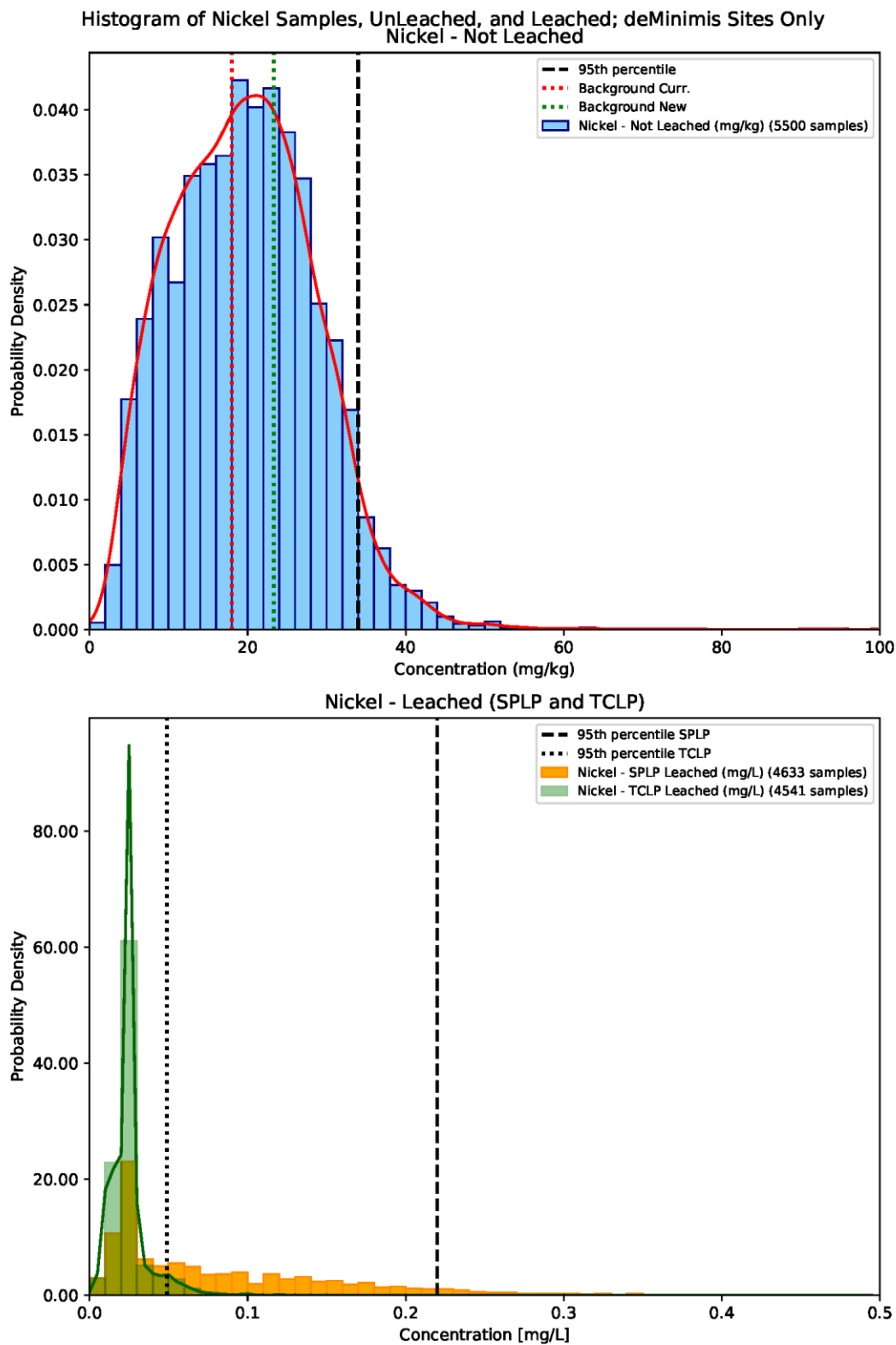


Figure 593. Histogram of RSL nickel concentrations, de minimis (mg/kg)

Nickel Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

Nickel Concentration by Region, page 1 of 1

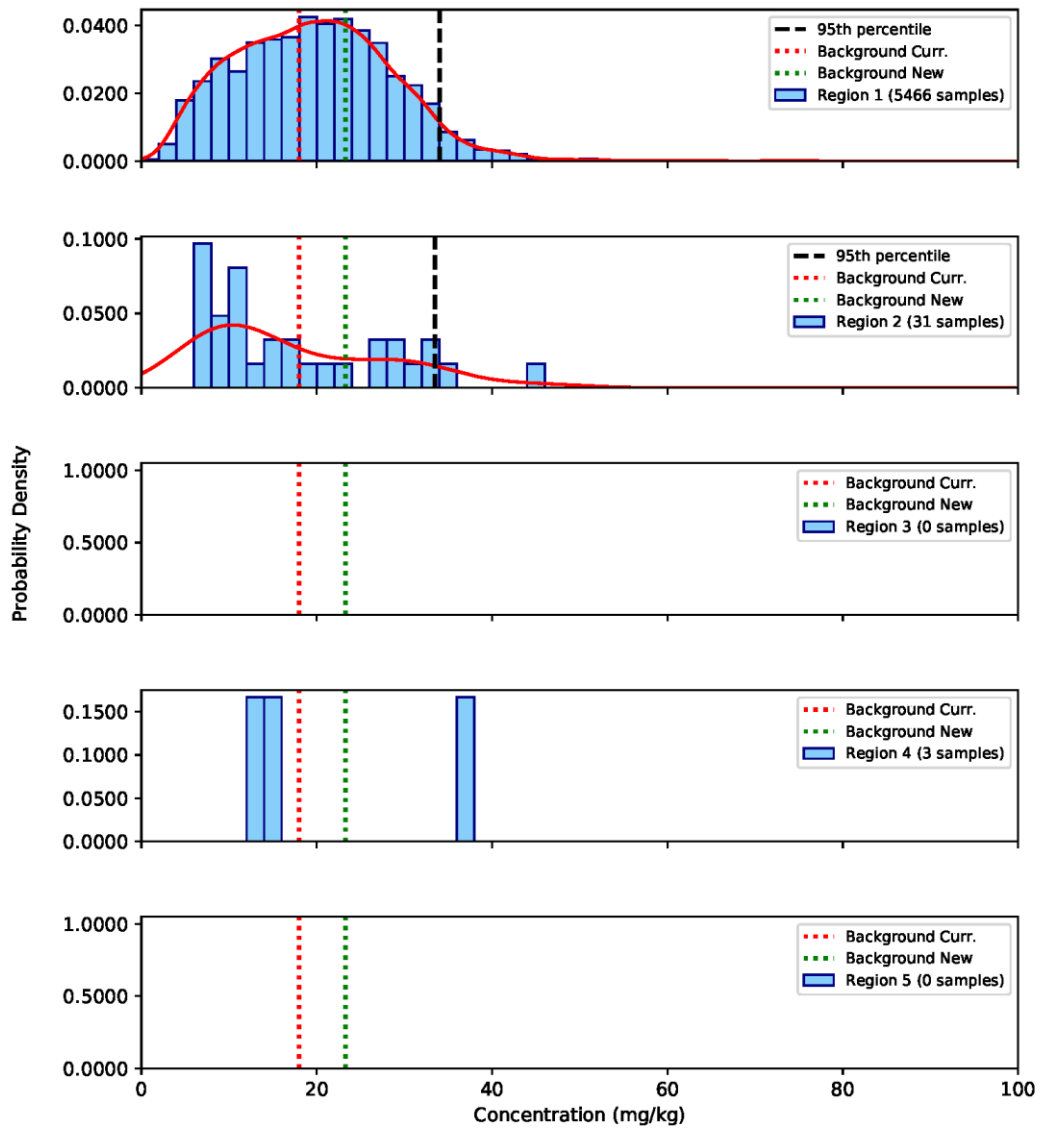


Figure 594. Histogram of RSL nickel concentrations by IDOT Region, de minimis (mg/kg)

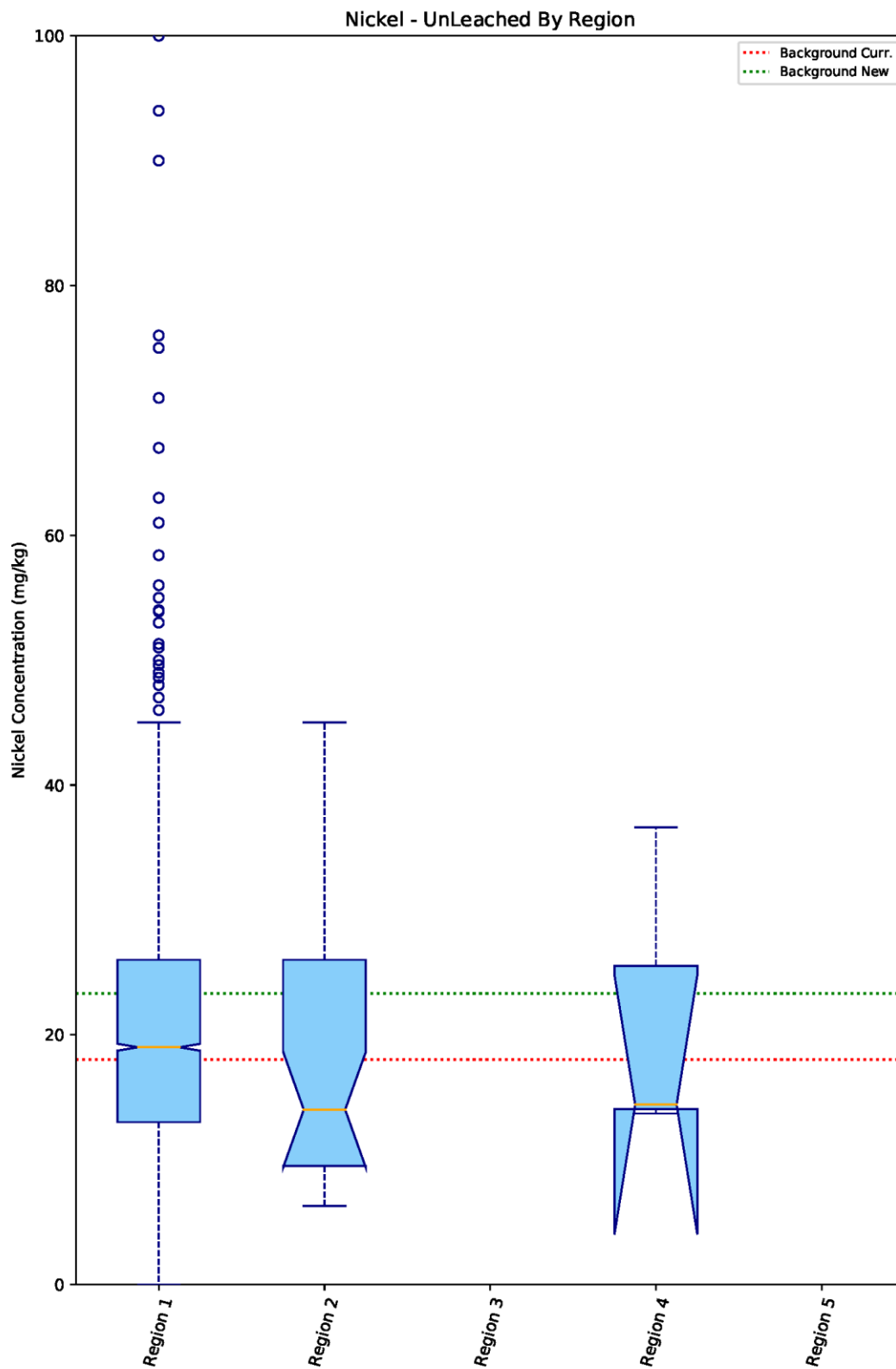


Figure 595. Boxplot of RSL nickel concentrations by IDOT Region, de minimis (mg/kg)



Nickel Concentration by District, page 1 of 2

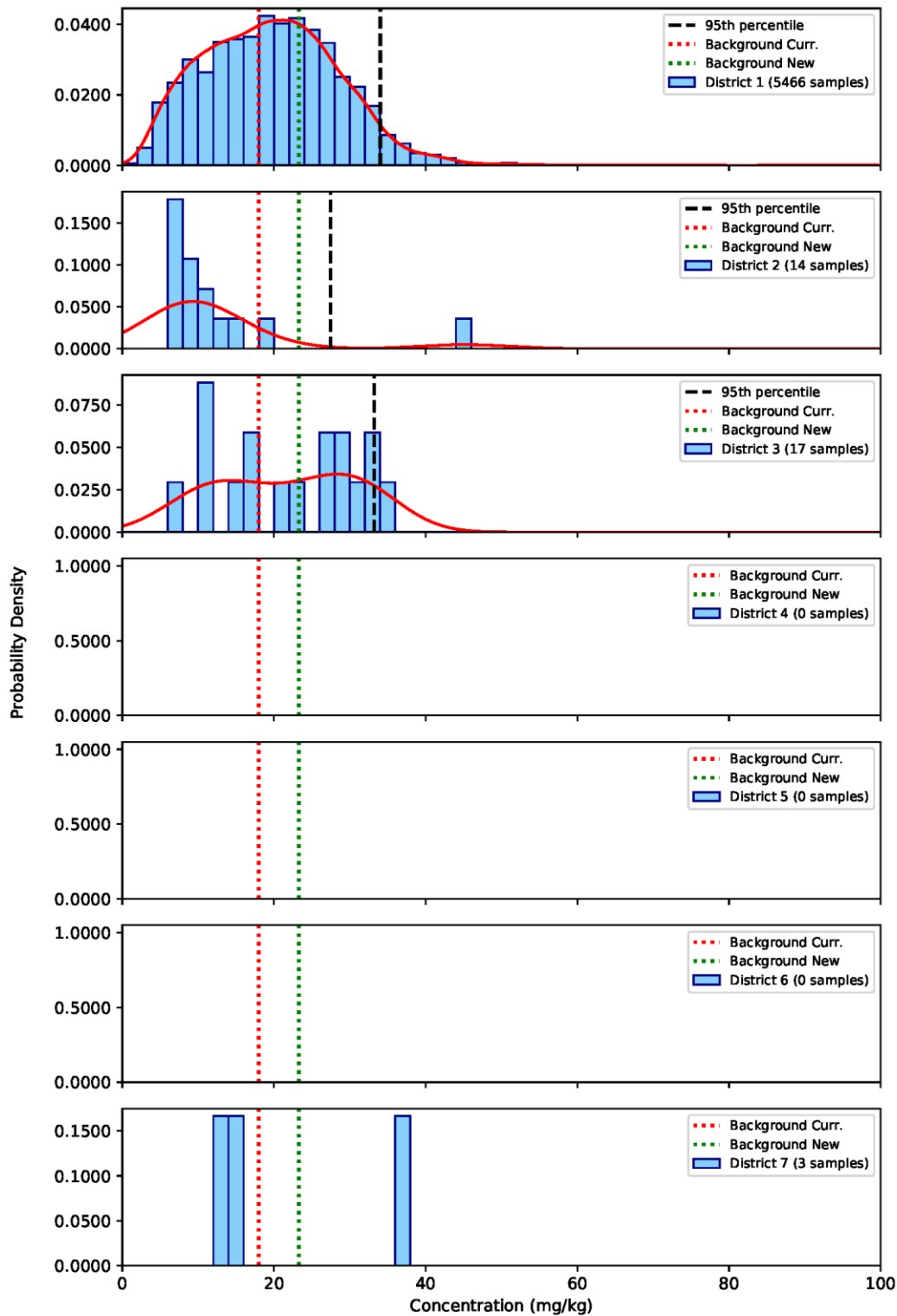


Figure 596. Histogram of RSL nickel concentrations by IDOT District, de minimis (mg/kg), part 1

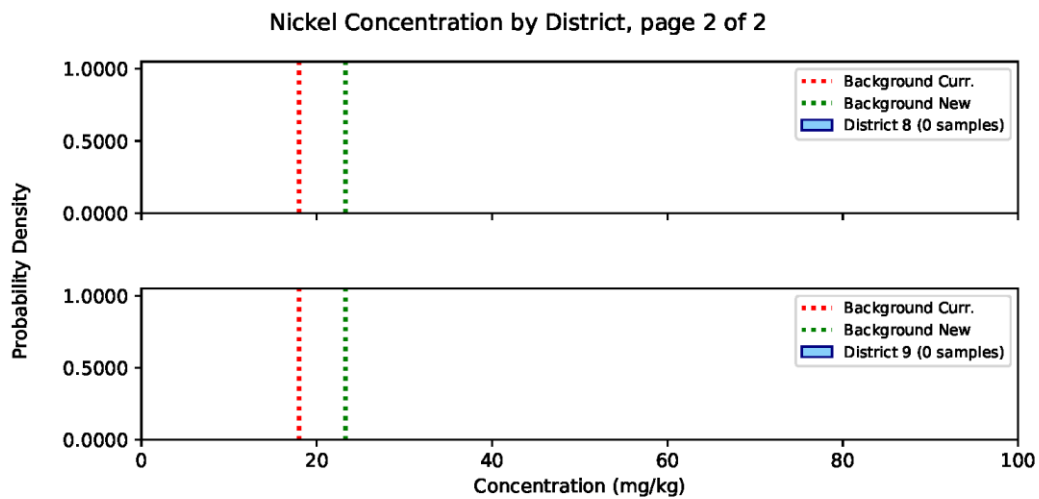
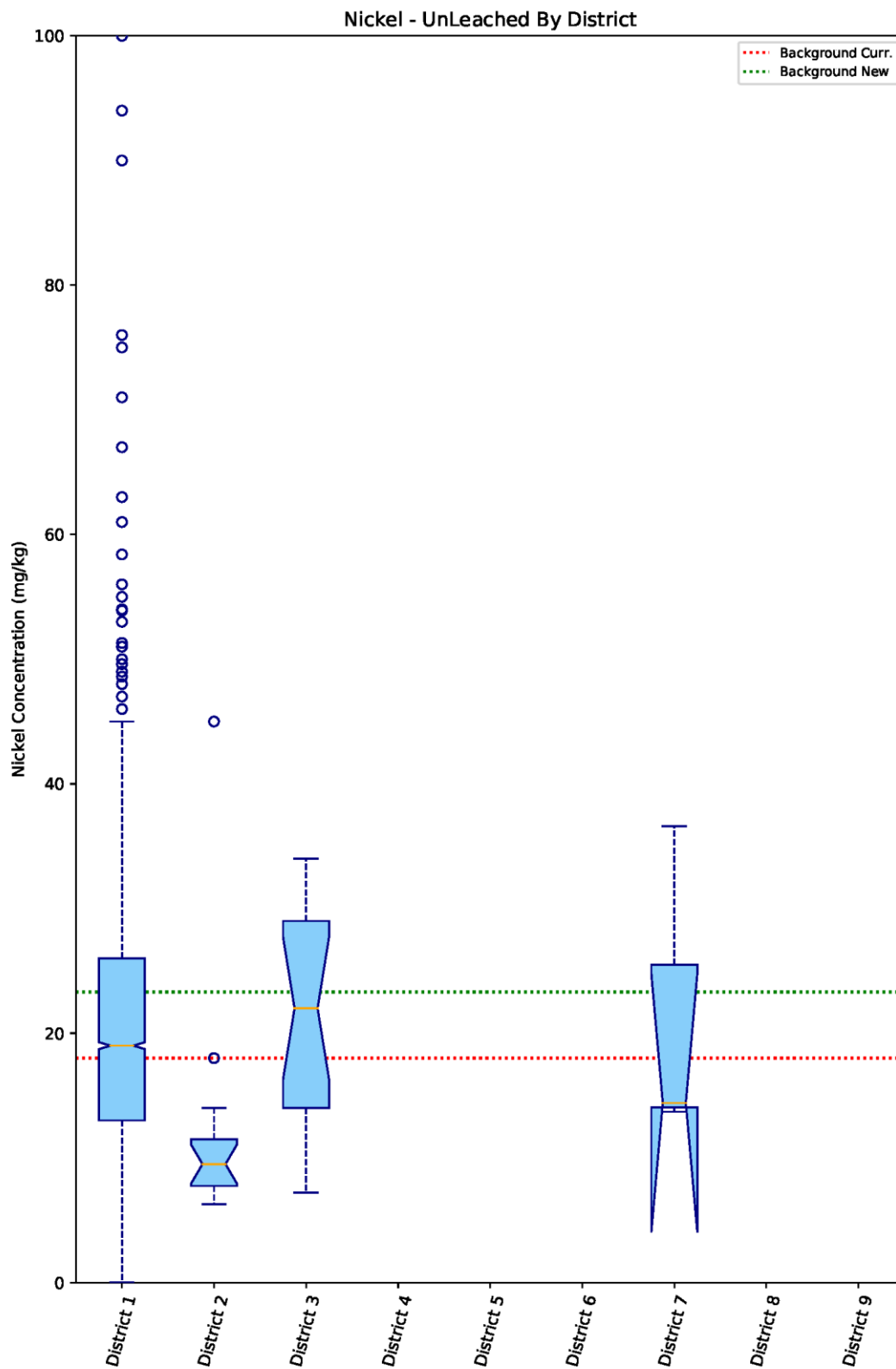


Figure 597. Histogram of RSL nickel concentrations by IDOT District, de minimis (mg/kg), part 2



**Figure 598. Boxplot of RSL nickel concentrations by IDOT District, de minimis (mg/kg)**

# Nickel Concentration by County, page 1 of 2

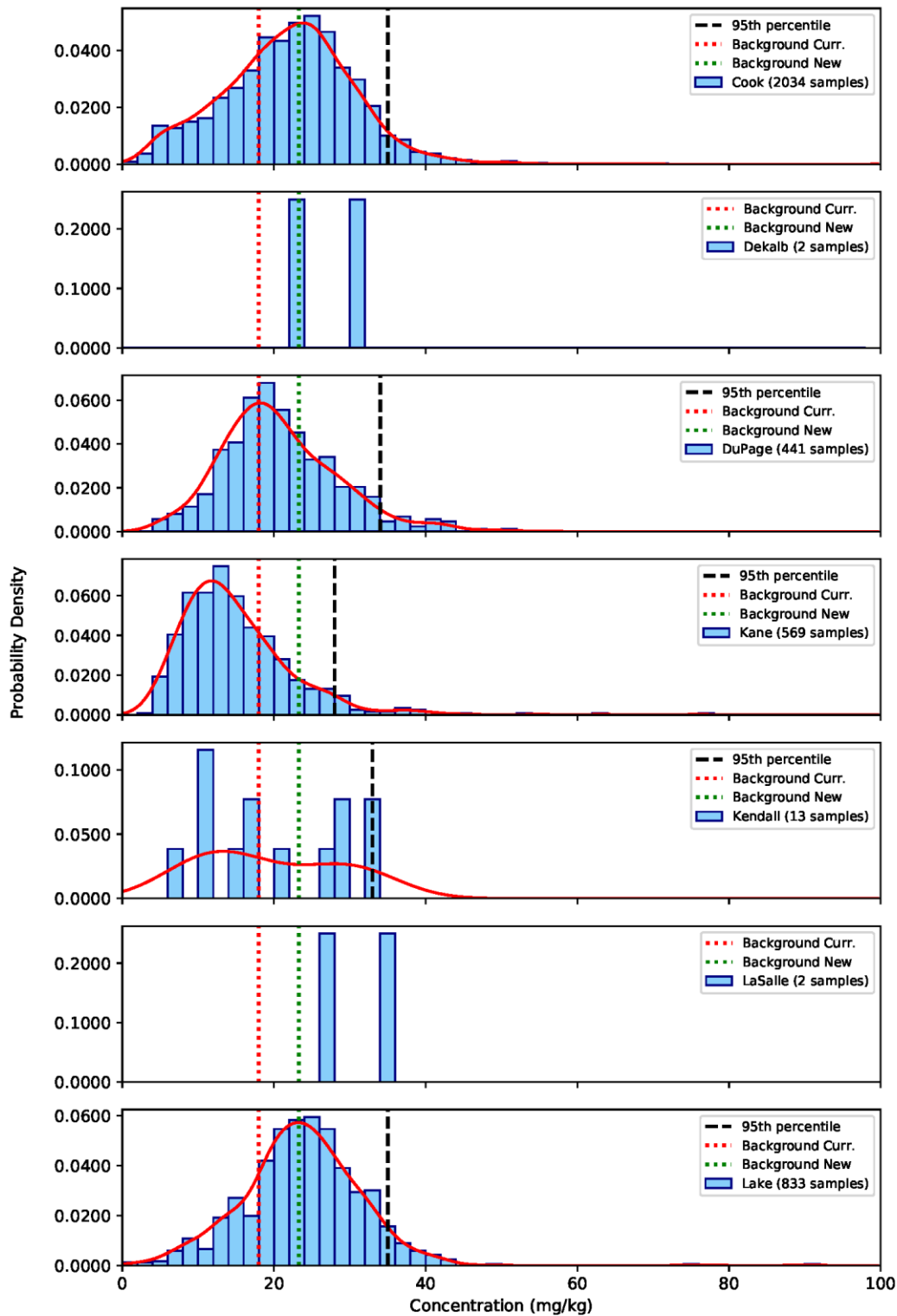


Figure 599. Histogram of RSL nickel concentrations by Illinois county, de minimis (mg/kg), part 1

Nickel Concentration by County, page 2 of 2

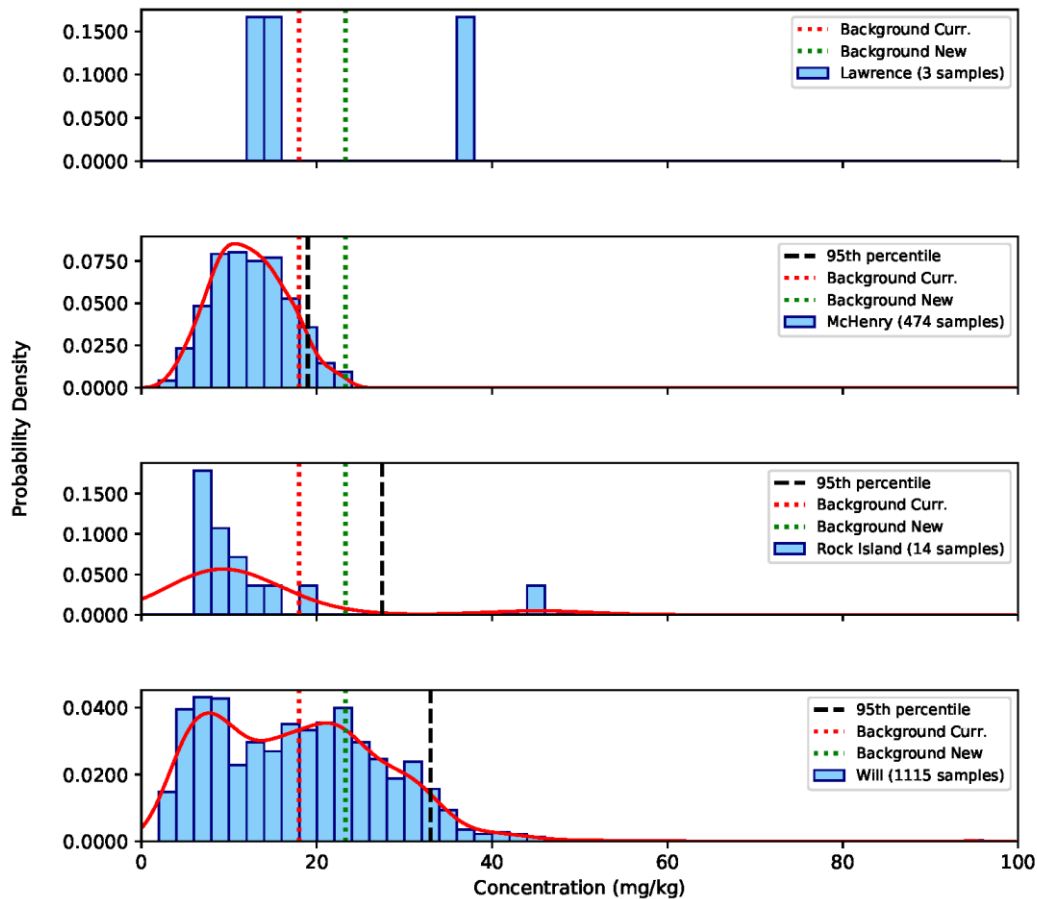


Figure 600. Histogram of RSL nickel concentrations by Illinois county, de minimis (mg/kg), part 2

Nickel Concentration for 95th Percentile by County: deMinimis Sites

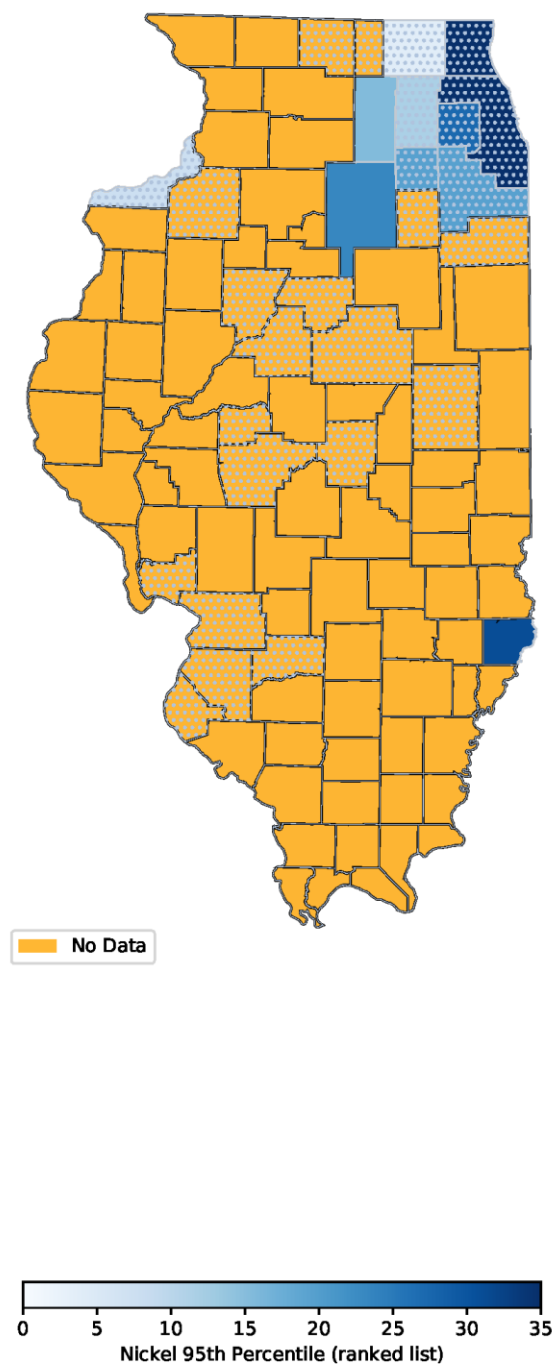


Figure 601. Map of RSL nickel 95th percentile concentration by Illinois county, de minimis (mg/kg)

Number of Nickel Samples by County: deMinimis Sites

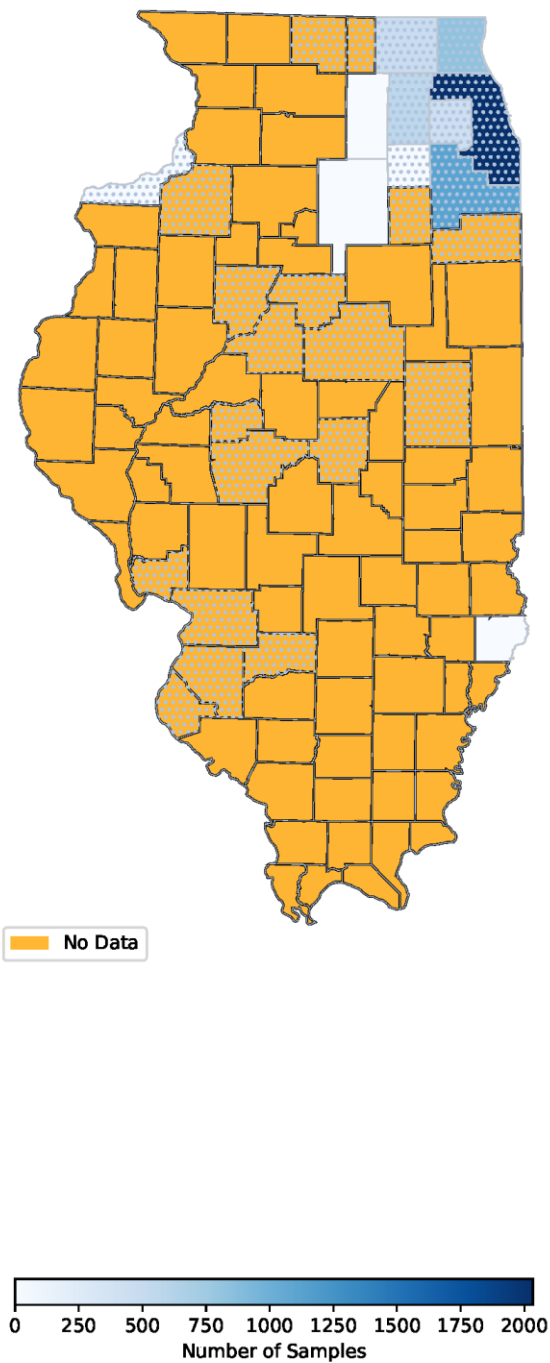


Figure 602. Map of RSL nickel sample quantity by Illinois county, de minimis (mg/kg)

## **APPENDIX Q. ANALYTE ANALYSIS: POTASSIUM**

### **Q.1 POTASSIUM REC**



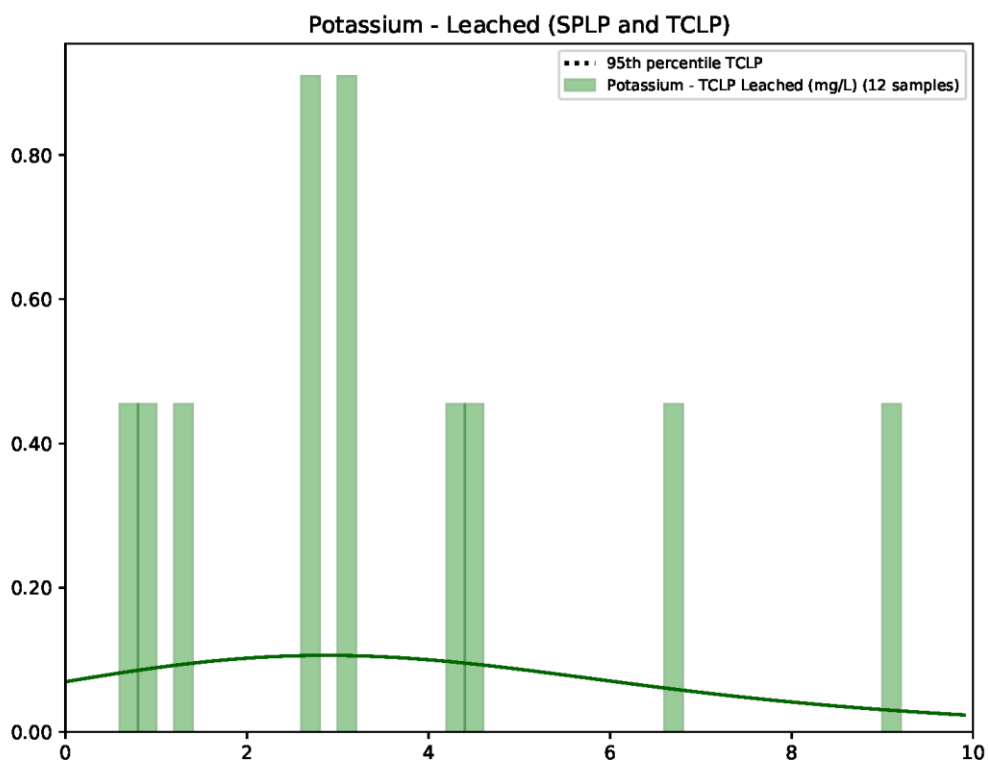
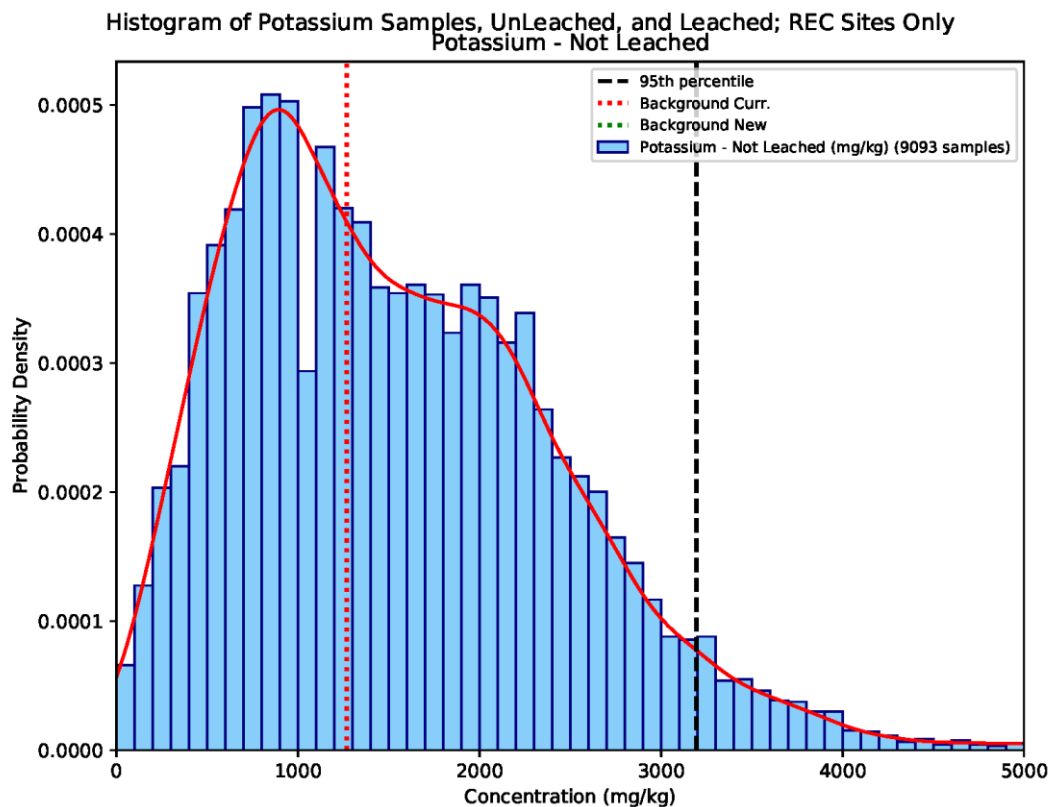


Figure 603. Histogram of RSL potassium concentrations, REC (mg/kg)

Potassium Unleached Concentration (mg/kg)

1) Region

2) District

3) County

Potassium Concentration by Region, page 1 of 1

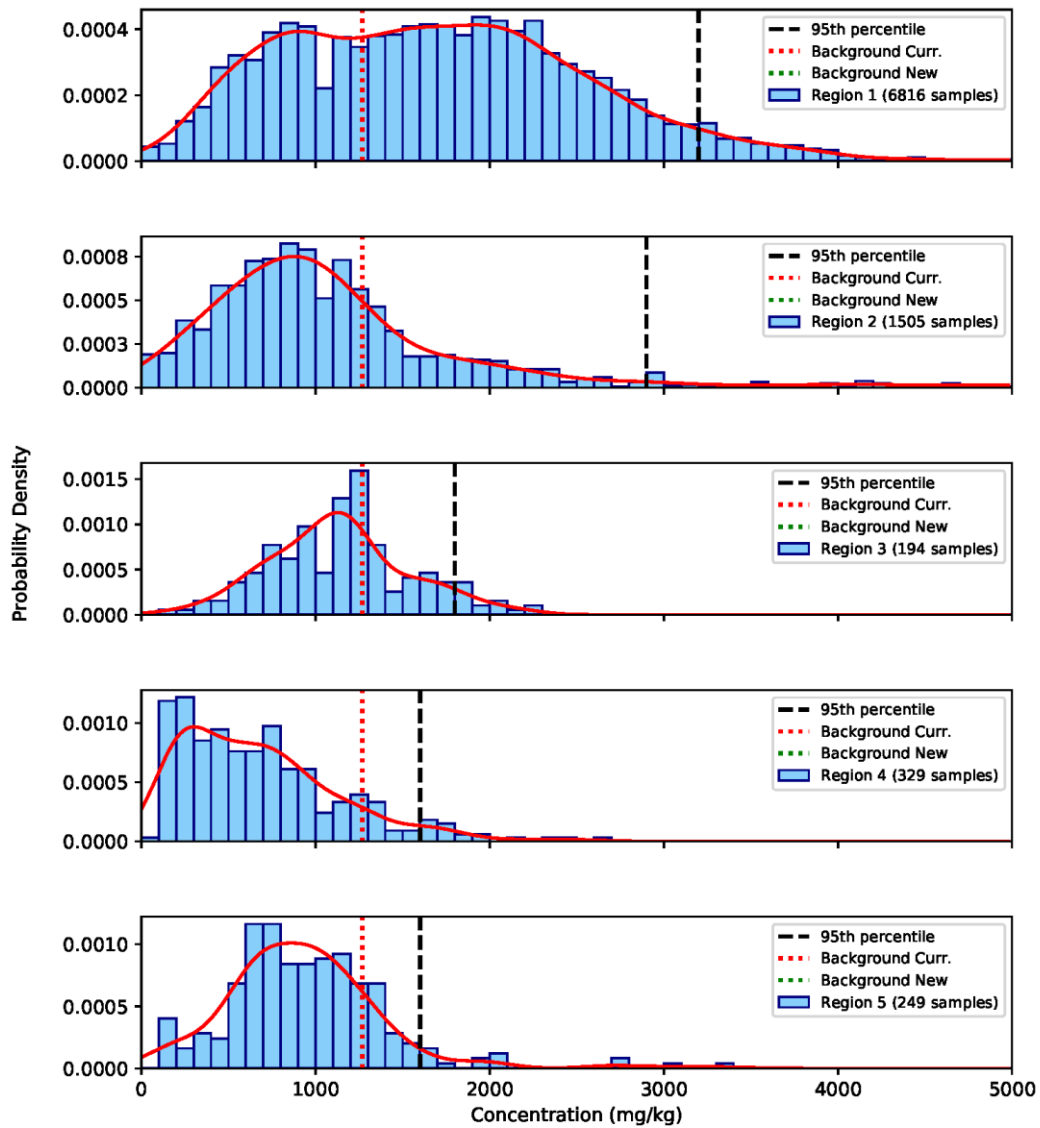


Figure 604. Histogram of RSL potassium concentrations by IDOT Region, REC (mg/kg)

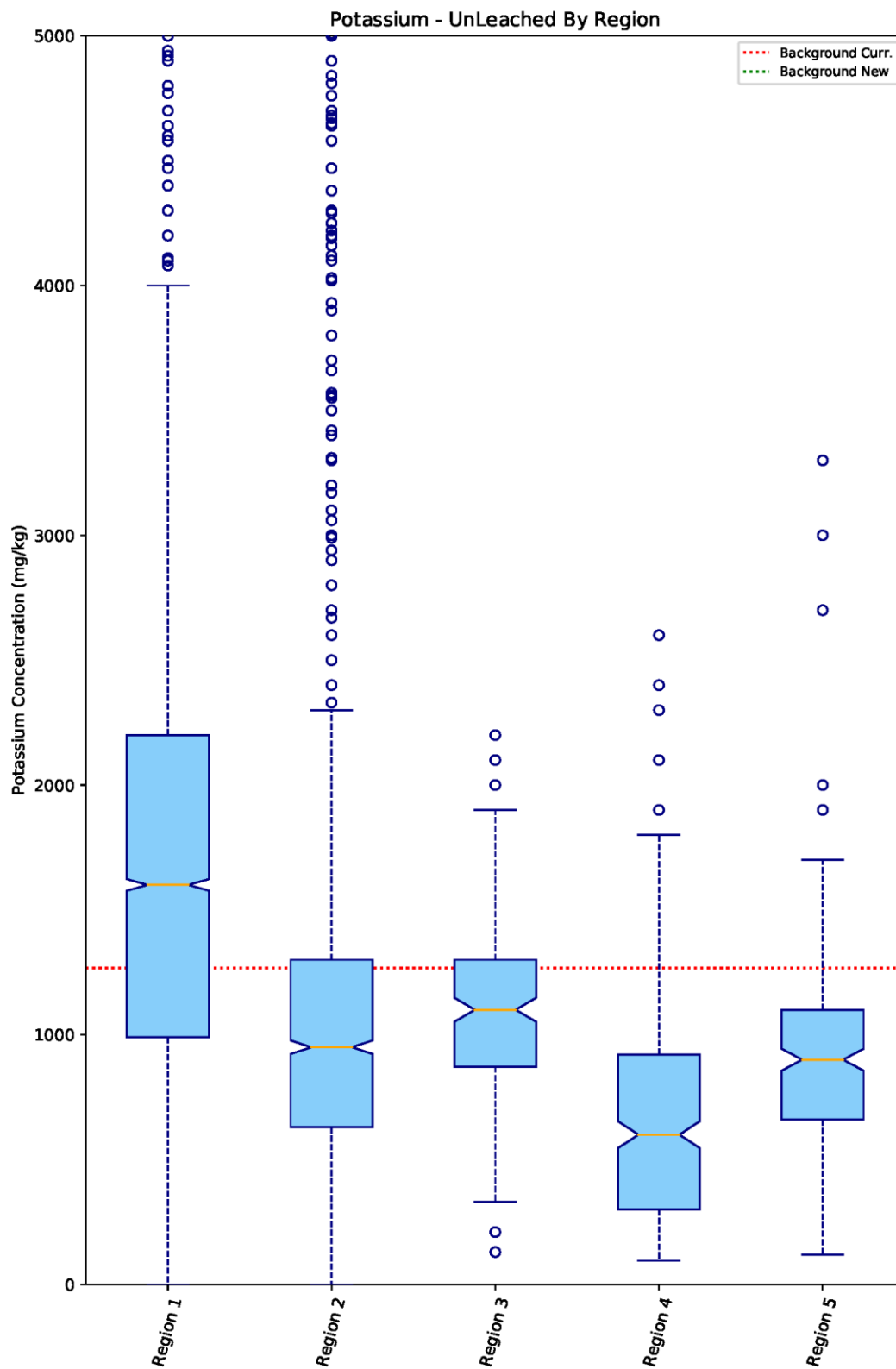


Figure 605. Boxplot of RSL potassium concentrations by IDOT Region, REC (mg/kg)

Potassium Concentration by District, page 1 of 2

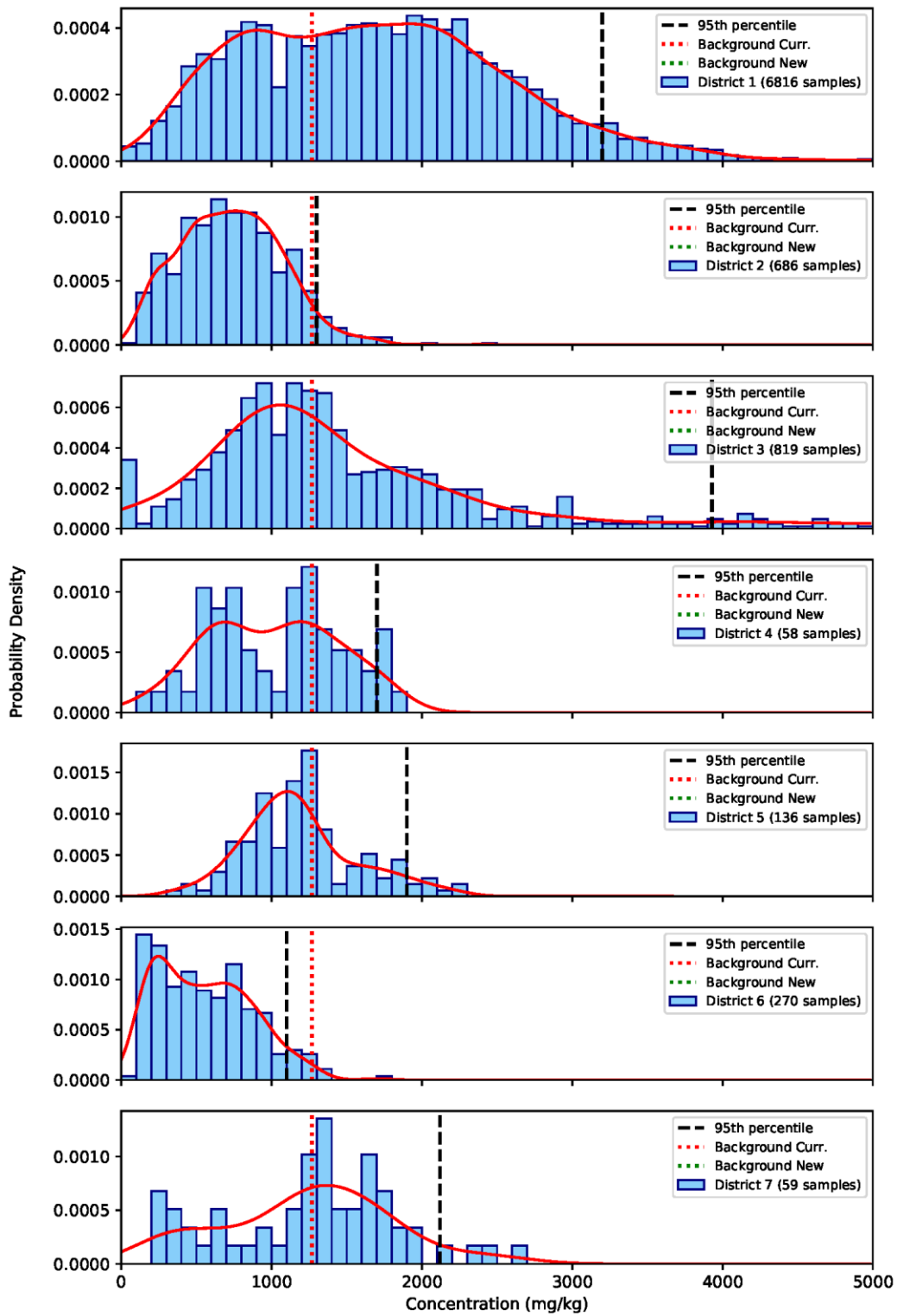


Figure 606. Histogram of RSL potassium concentrations by IDOT District, REC (mg/kg), part 1

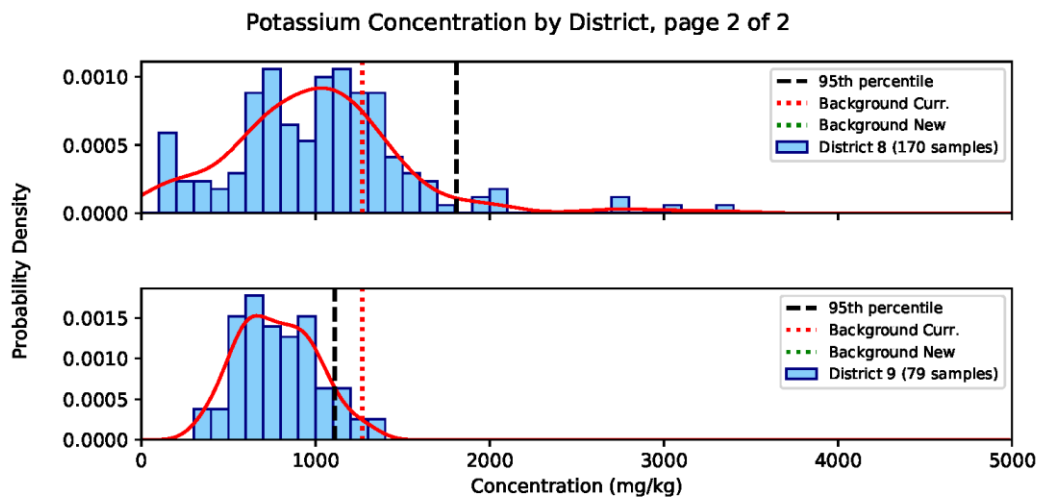


Figure 607. Histogram of RSL potassium concentrations by IDOT District, REC (mg/kg), part 2

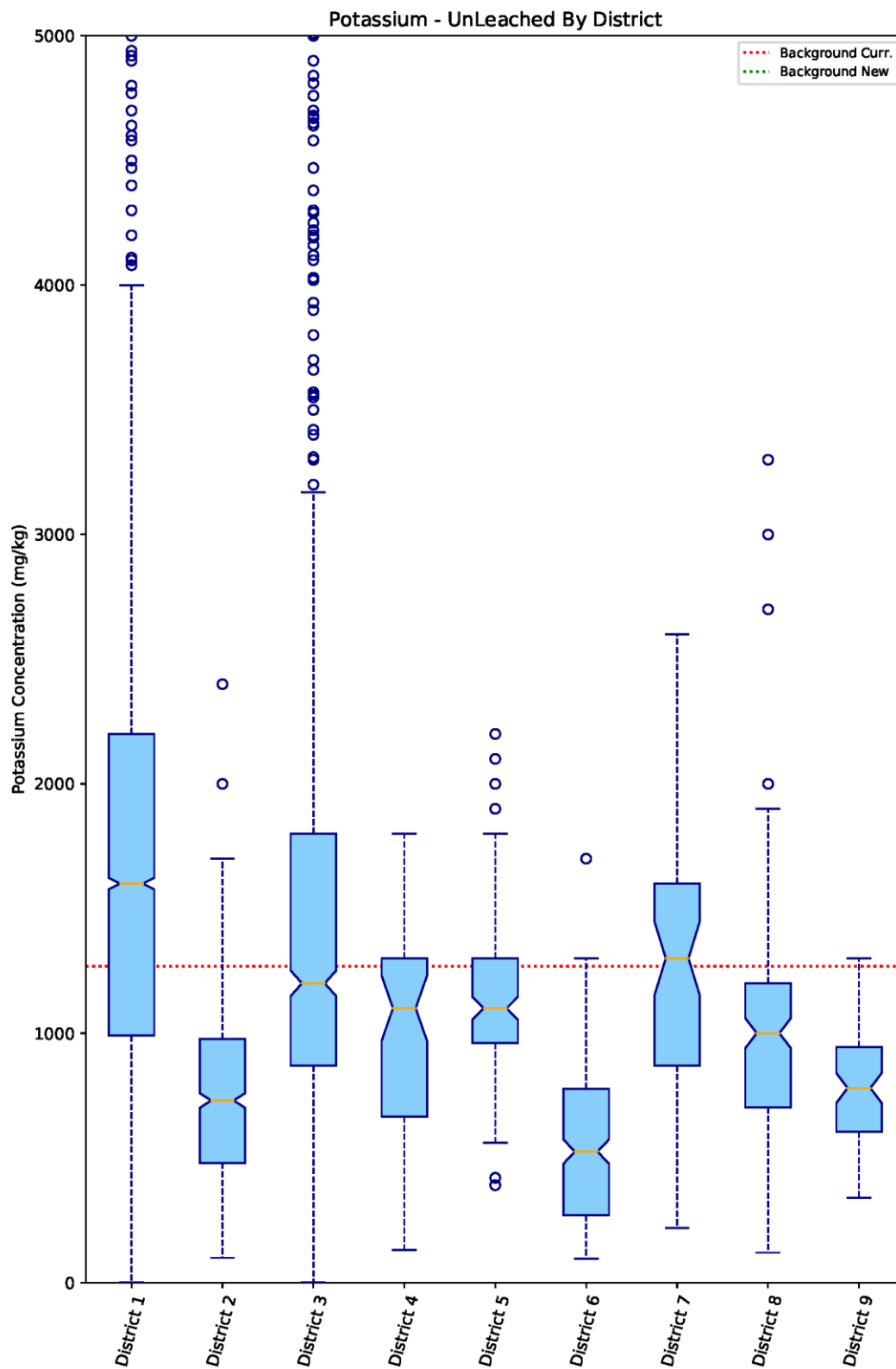


Figure 608. Boxplot of RSL potassium concentrations by IDOT District, REC (mg/kg)

Potassium Concentration by County, page 1 of 5

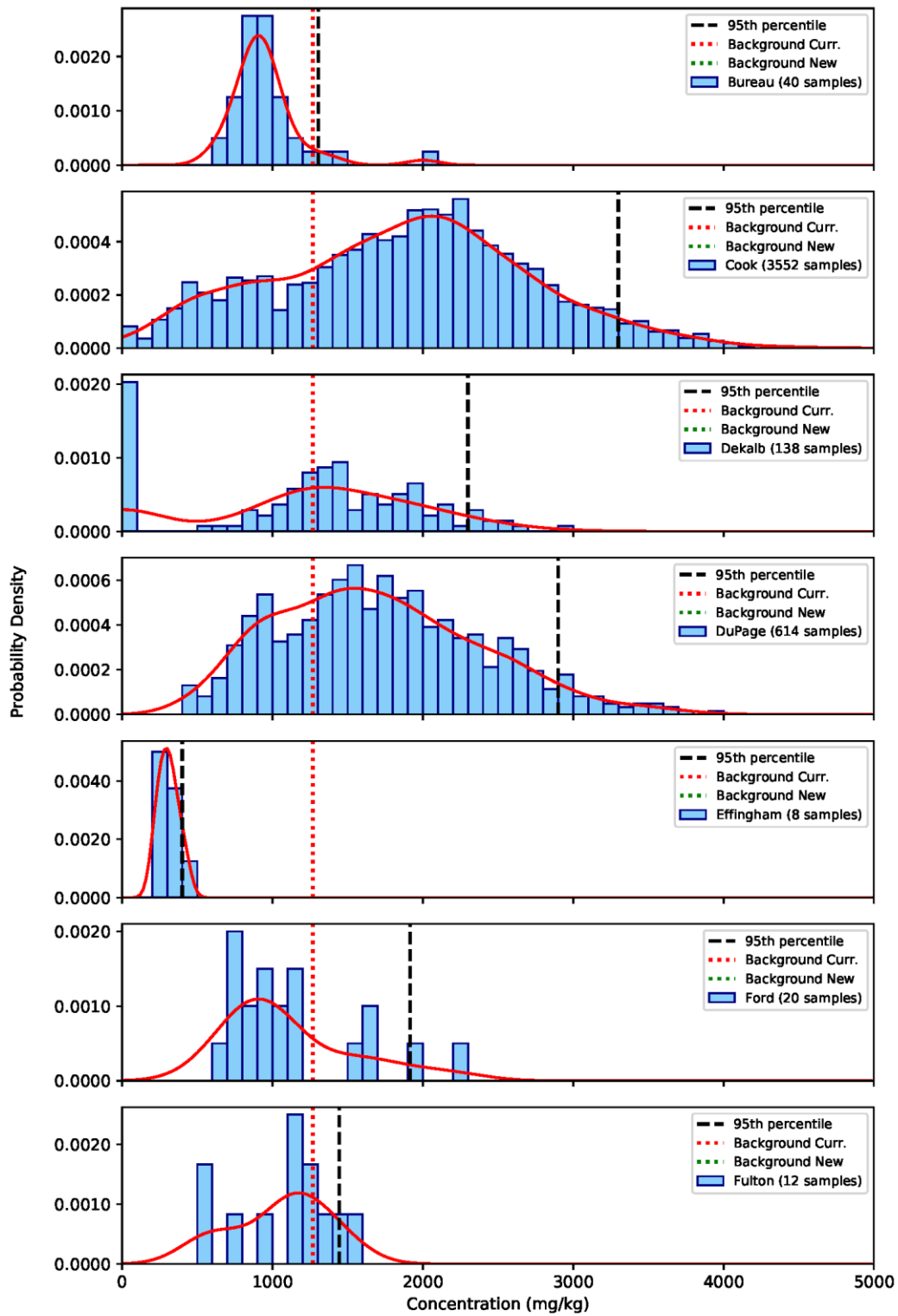


Figure 609. Histogram of RSL potassium concentrations by Illinois county, REC (mg/kg), part 1



Potassium Concentration by County, page 2 of 5

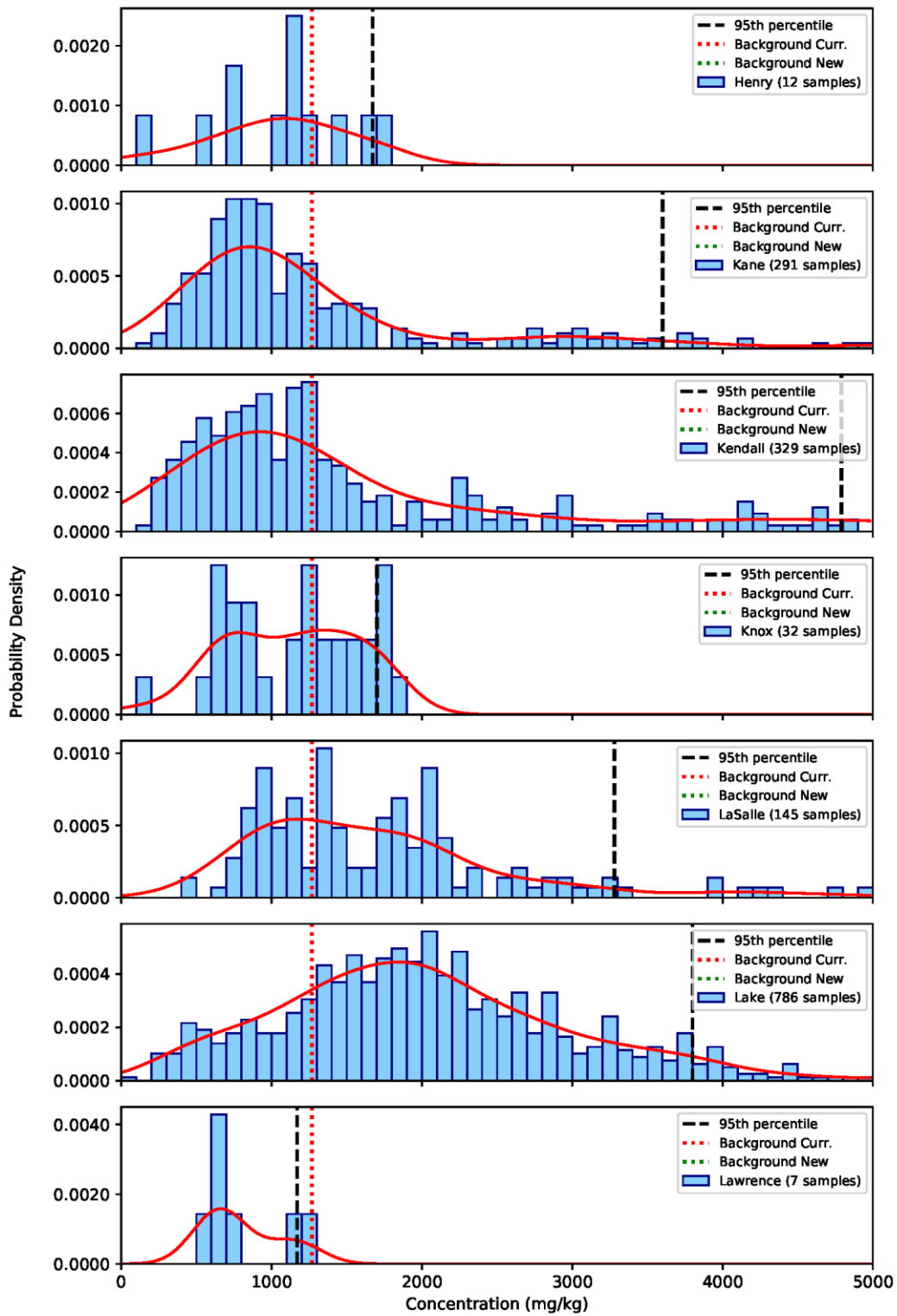


Figure 610. Histogram of RSL potassium concentrations by Illinois county, REC (mg/kg), part 2

Potassium Concentration by County, page 3 of 5

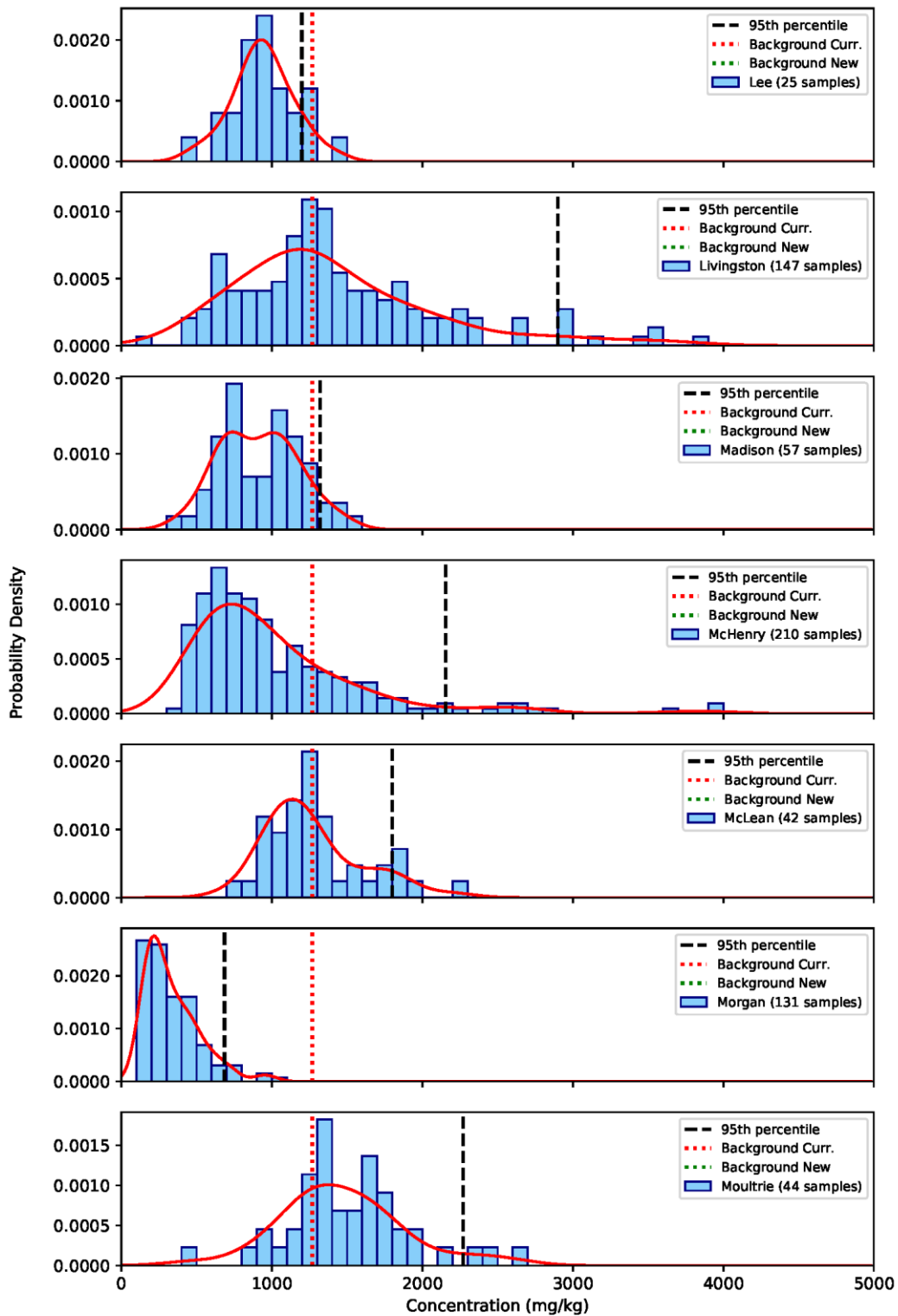


Figure 611. Histogram of RSL potassium concentrations by Illinois county, REC (mg/kg), part 3

Potassium Concentration by County, page 4 of 5

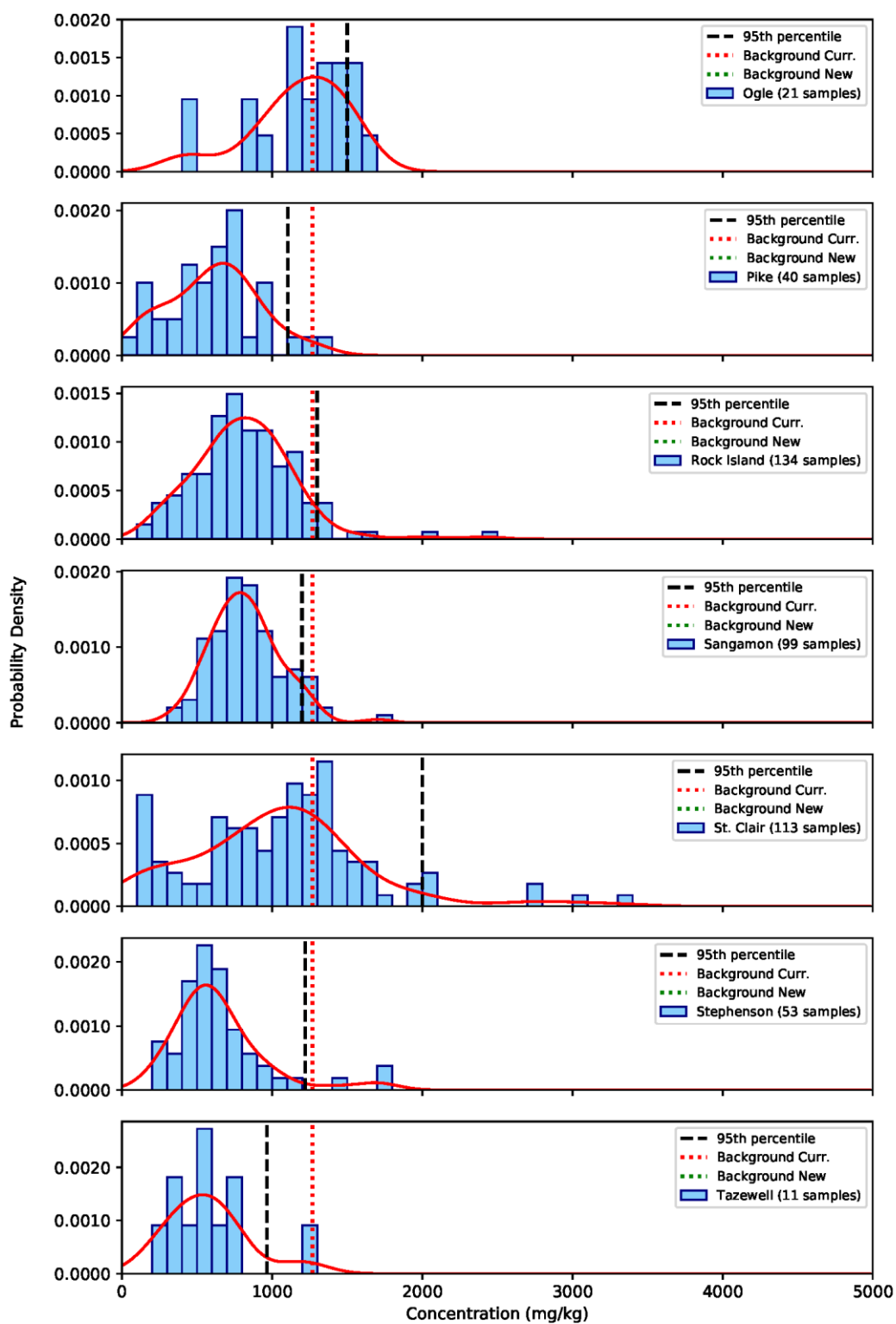


Figure 612. Histogram of RSL potassium concentrations by Illinois county, REC (mg/kg), part 4

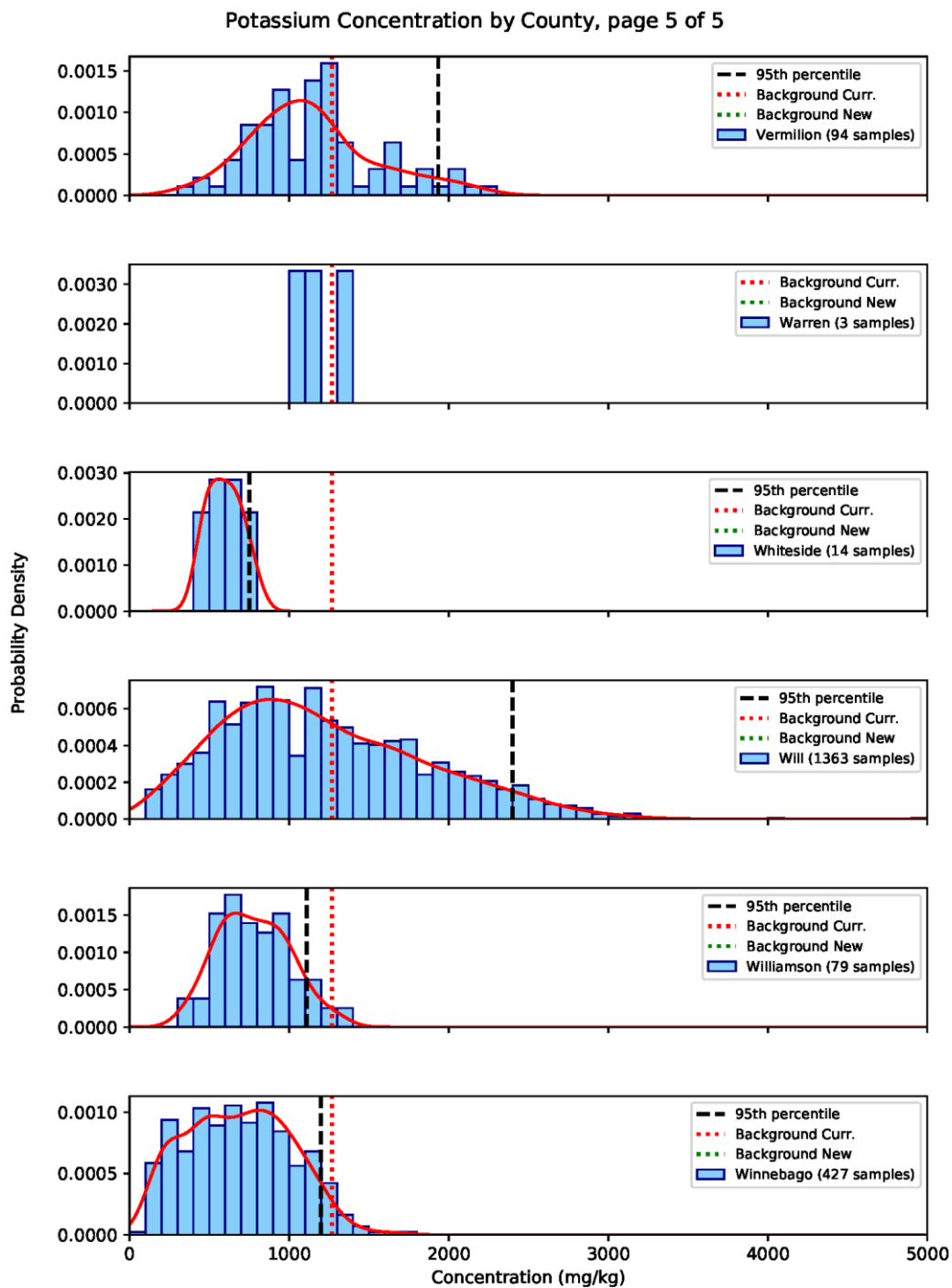


Figure 613. Histogram of RSL potassium concentrations by Illinois county, REC (mg/kg), part 5

Potassium Concentration for 95th Percentile by County: REC Sites

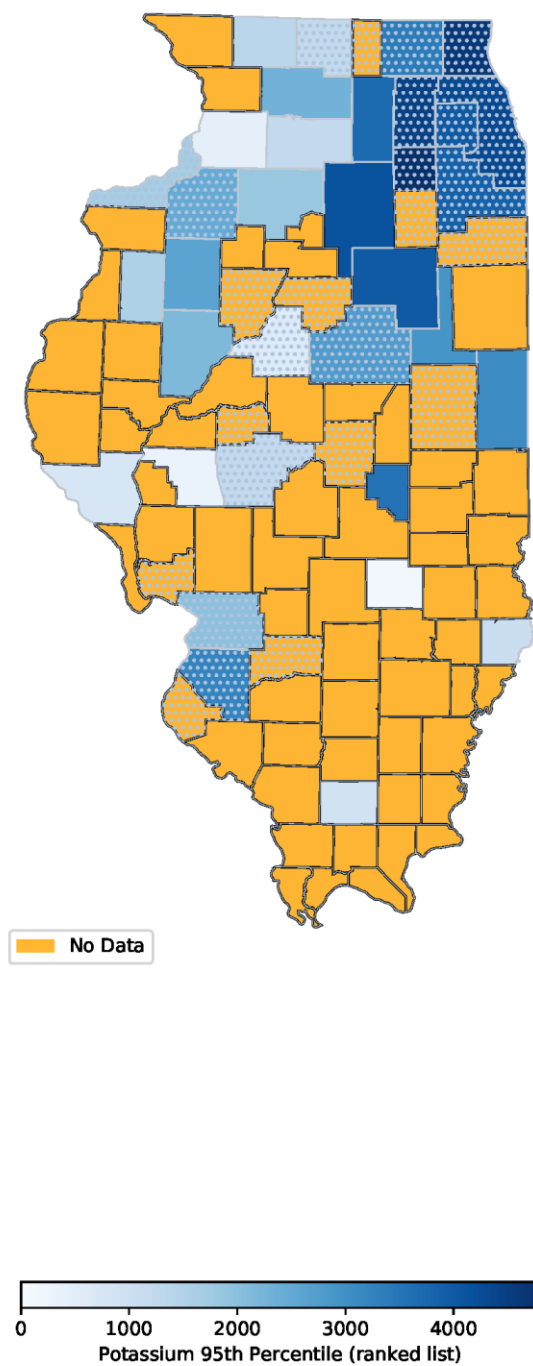


Figure 614. Map of RSL potassium 95th percentile concentration by Illinois county, REC (mg/kg)

Number of Potassium Samples by County: REC Sites

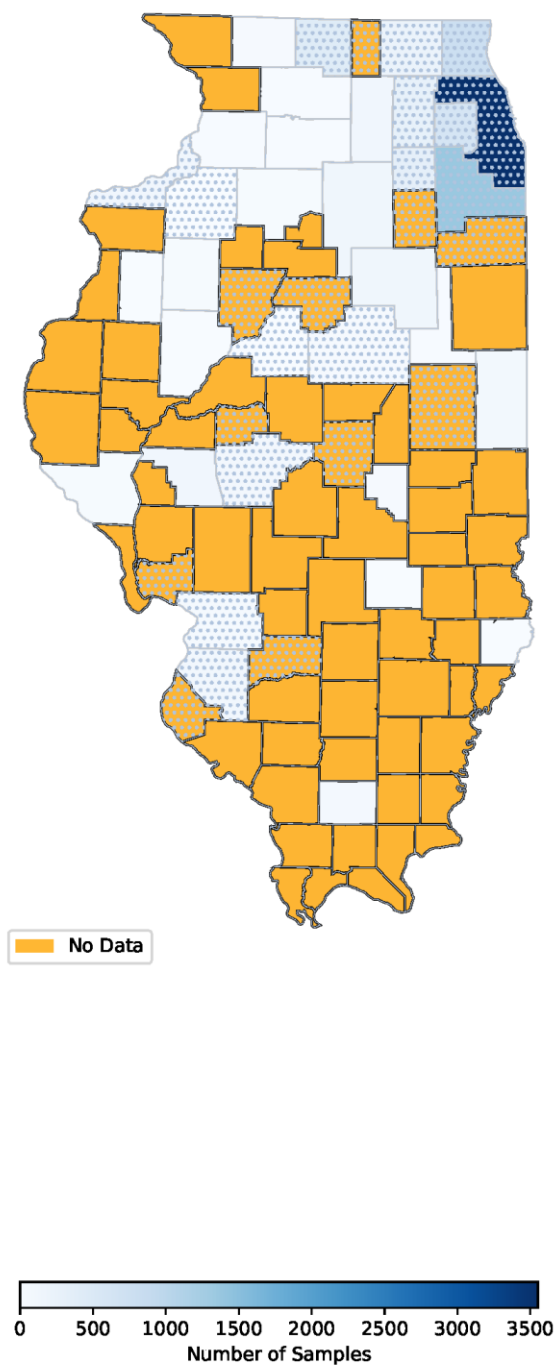


Figure 615. Map of RSL potassium sample quantity by Illinois county, REC (mg/kg)

## Q.2 POTASSIUM NON-REC

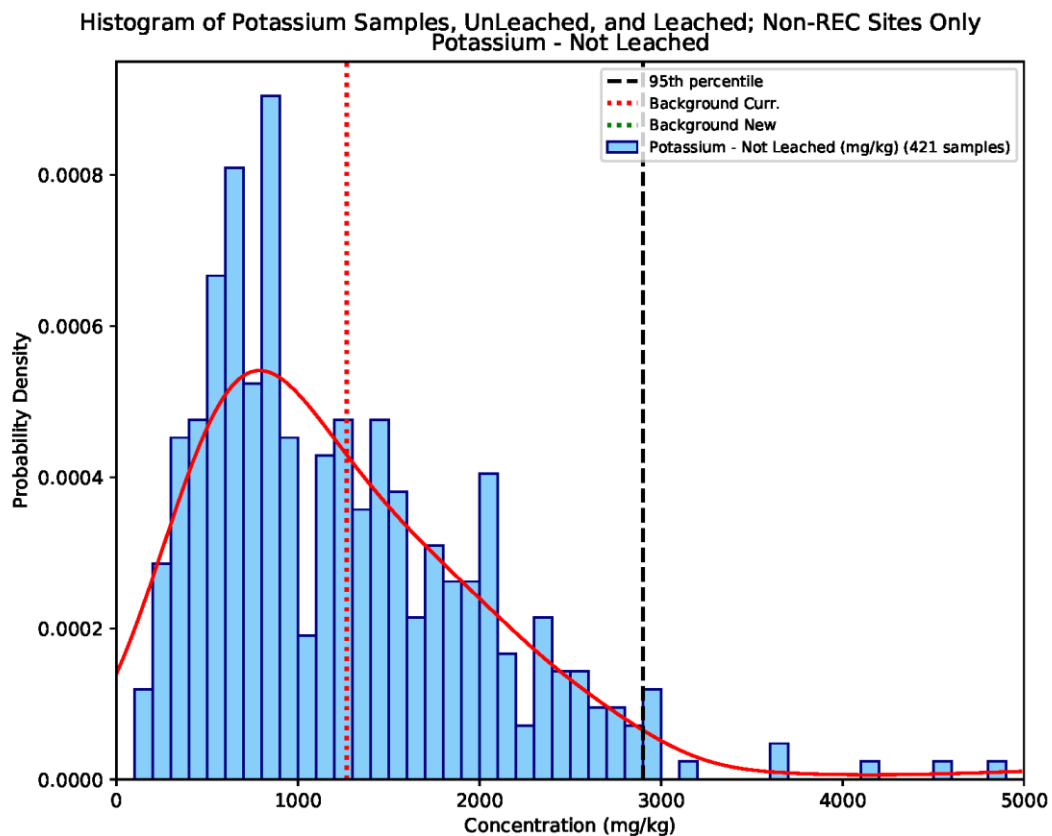


Figure 616. Histogram of RSL potassium concentrations, Non-REC (mg/kg)



Potassium Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

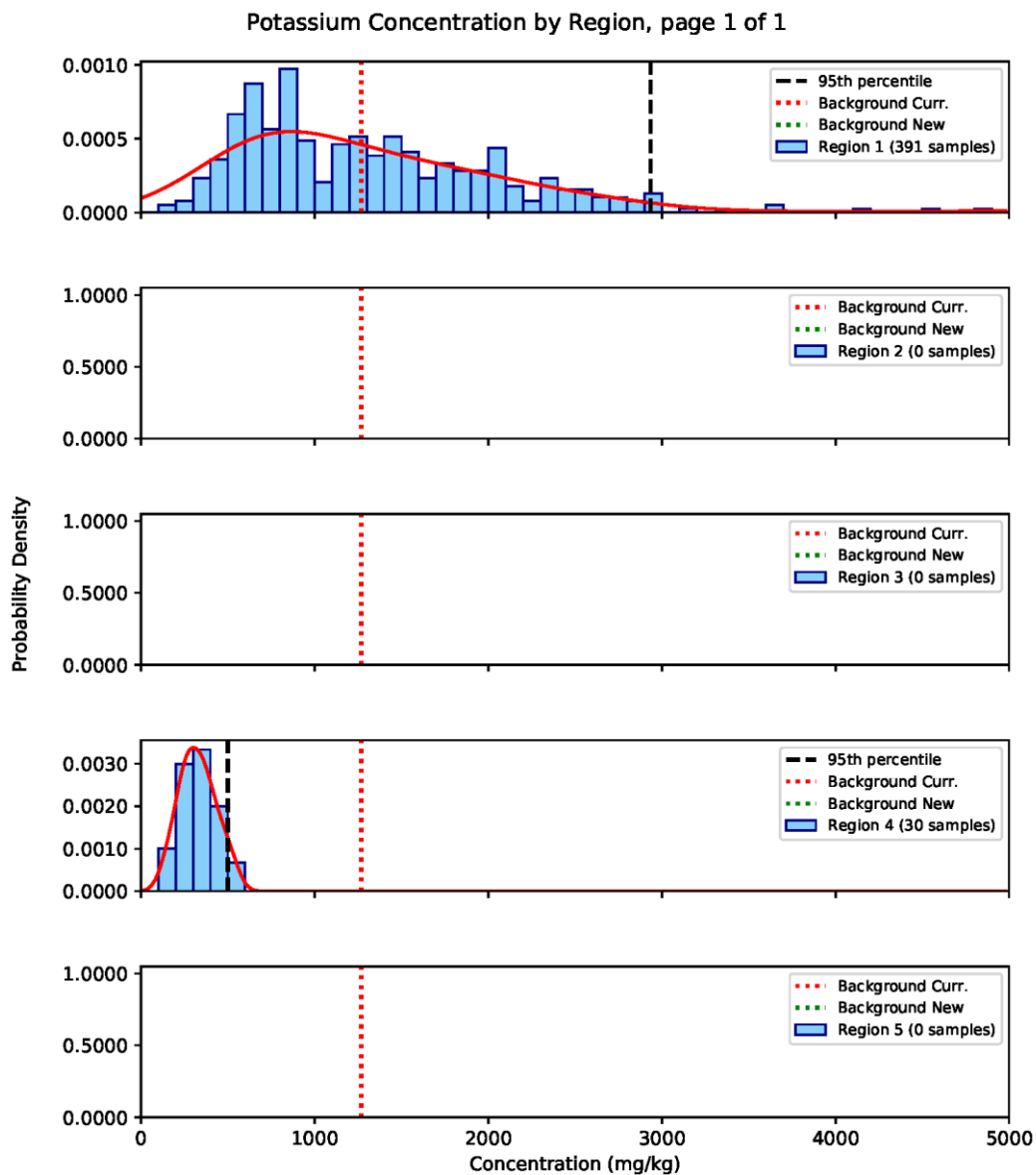


Figure 617. Histogram of RSL potassium concentrations by IDOT Region, Non-REC (mg/kg)

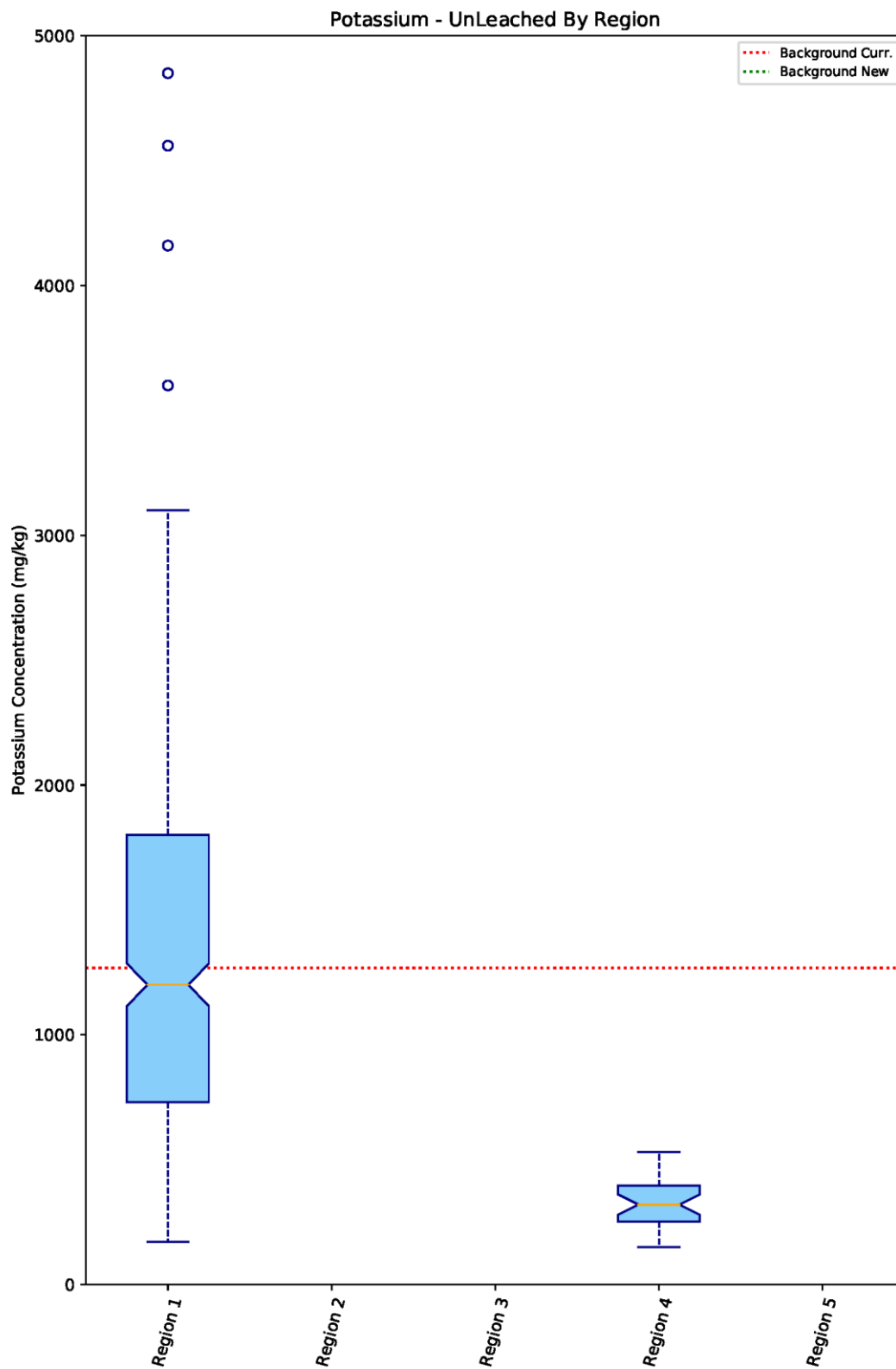


Figure 618. Boxplot of RSL potassium concentrations by IDOT Region, Non-REC (mg/kg)

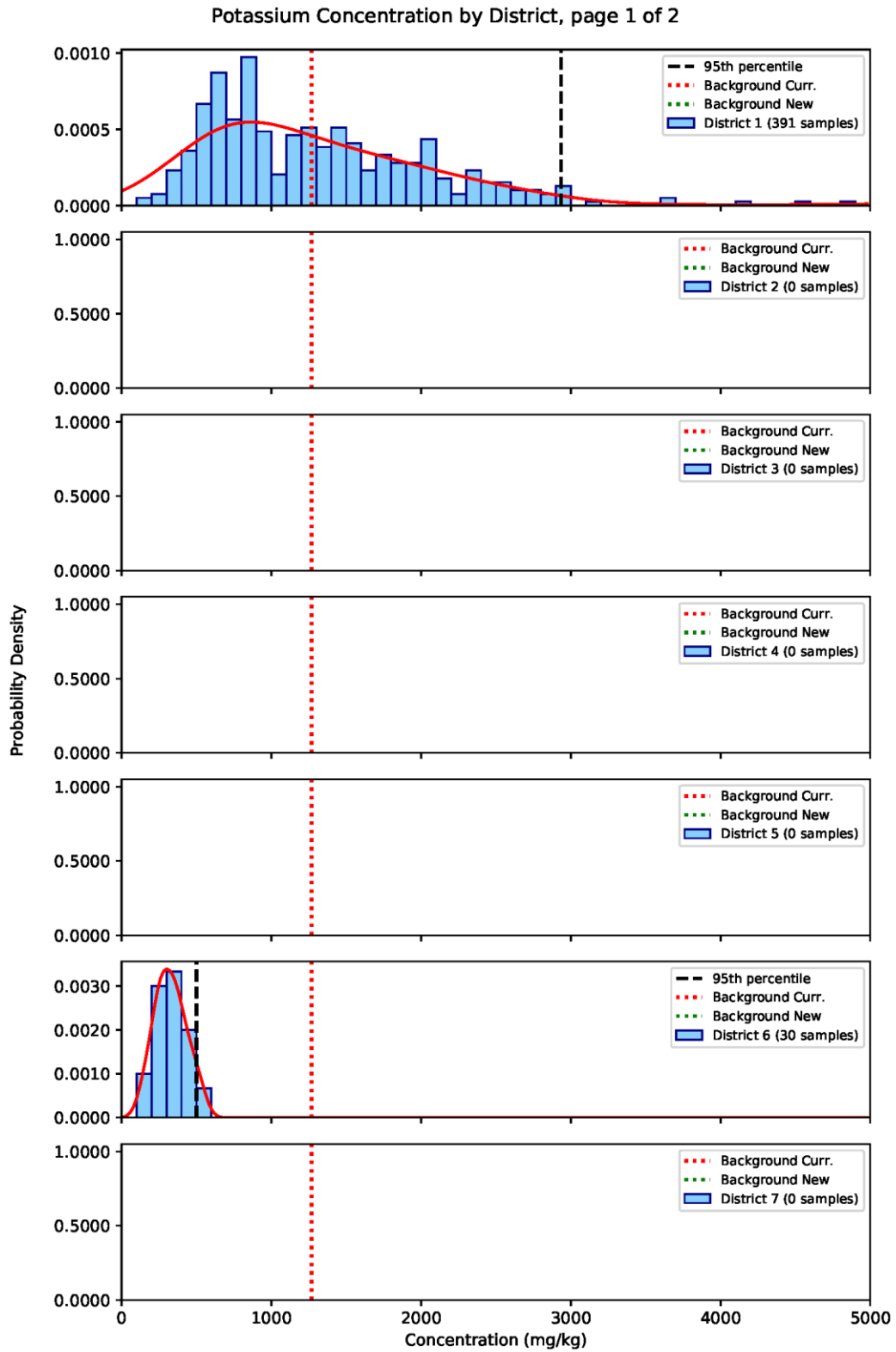


Figure 619. Histogram of RSL potassium concentrations by IDOT District, Non-REC (mg/kg), part 1

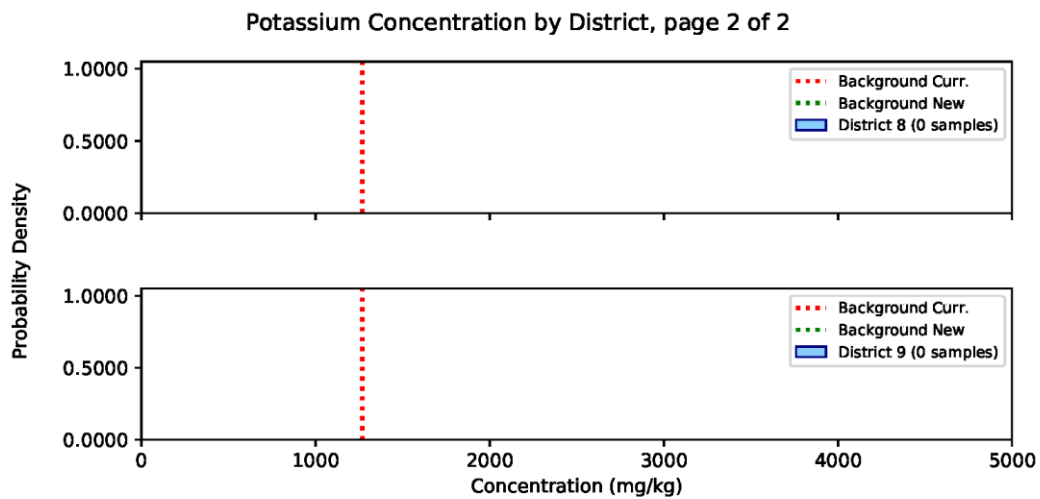


Figure 620. Histogram of RSL potassium concentrations by IDOT District, Non-REC (mg/kg), part 2

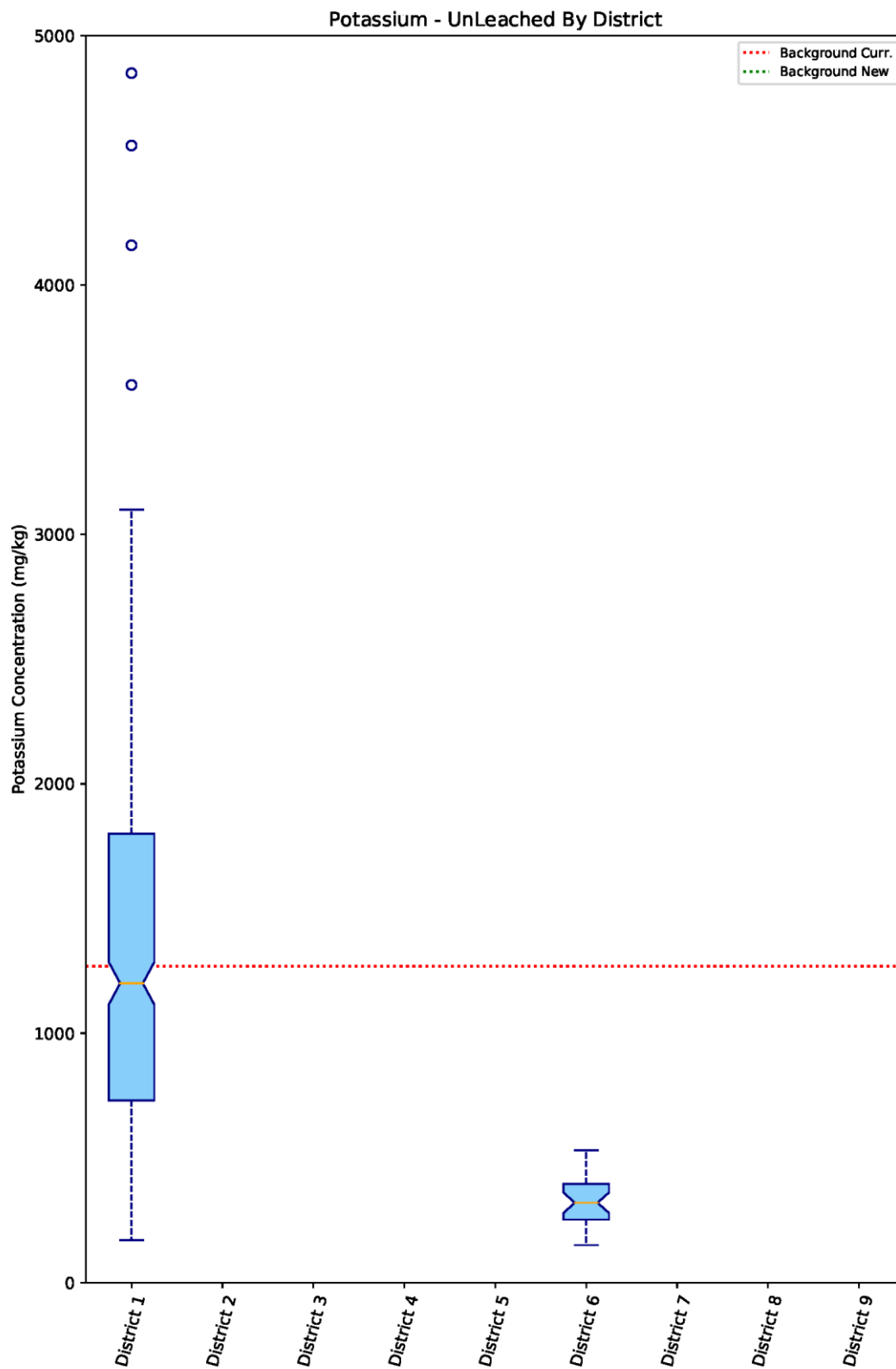


Figure 621. Boxplot of RSL potassium concentrations by IDOT District, Non-REC (mg/kg)

Potassium Concentration by County, page 1 of 1

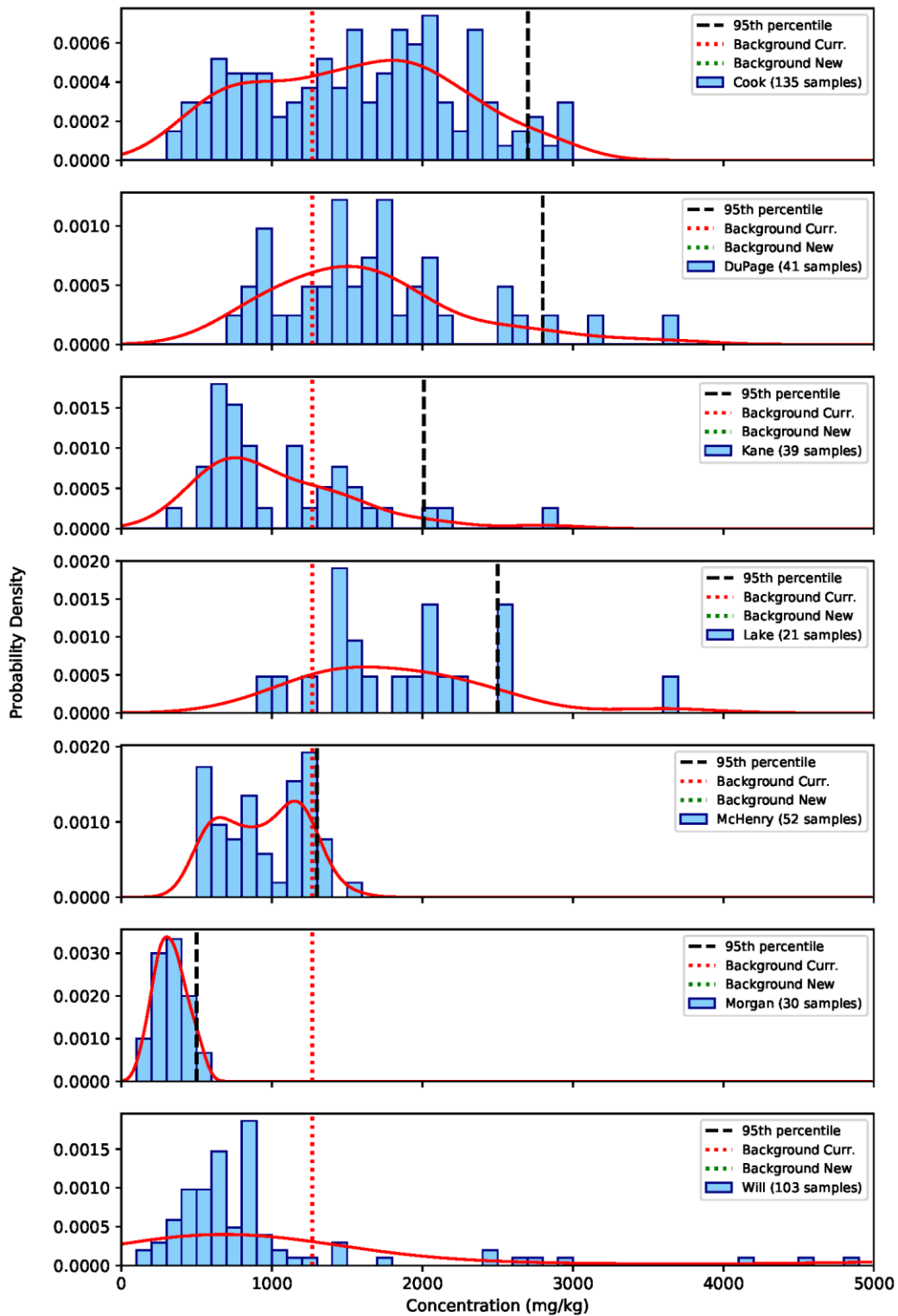


Figure 622. Histogram of RSL potassium concentrations by Illinois county, Non-REC (mg/kg)

Potassium Concentration for 95th Percentile by County: Non-REC Sites

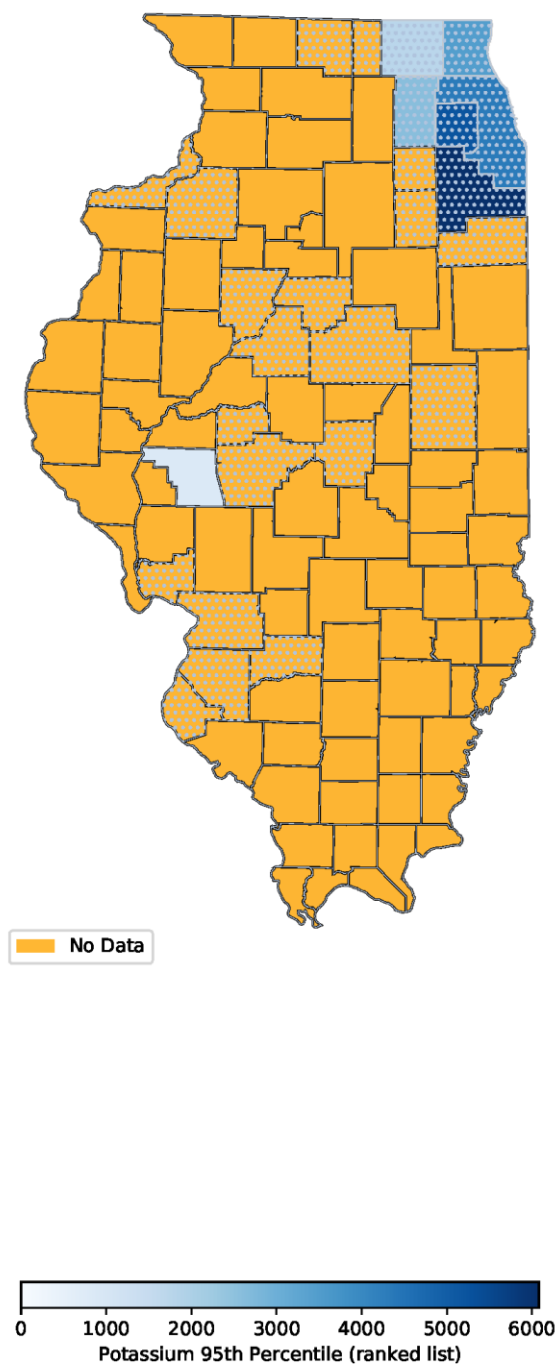


Figure 623. Map of RSL potassium 95th percentile concentration by Illinois county, Non-REC (mg/kg)



Number of Potassium Samples by County: Non-REC Sites

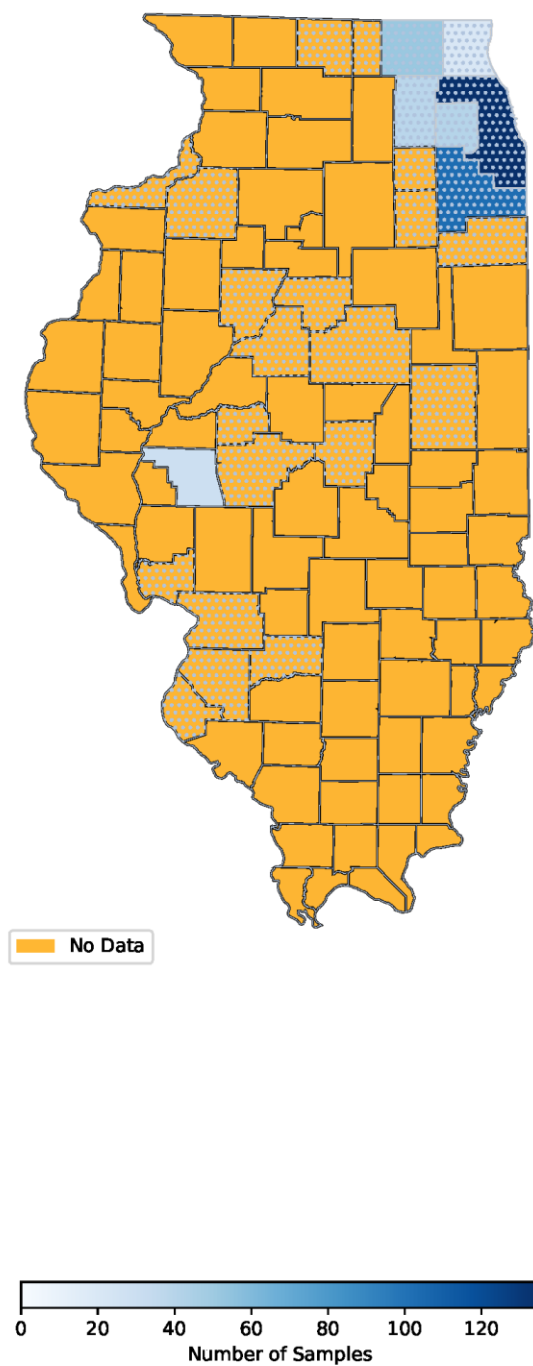


Figure 624. Map of RSL potassium sample quantity by Illinois county, Non-REC (mg/kg)

### Q.3 POTASSIUM DE MINIMIS

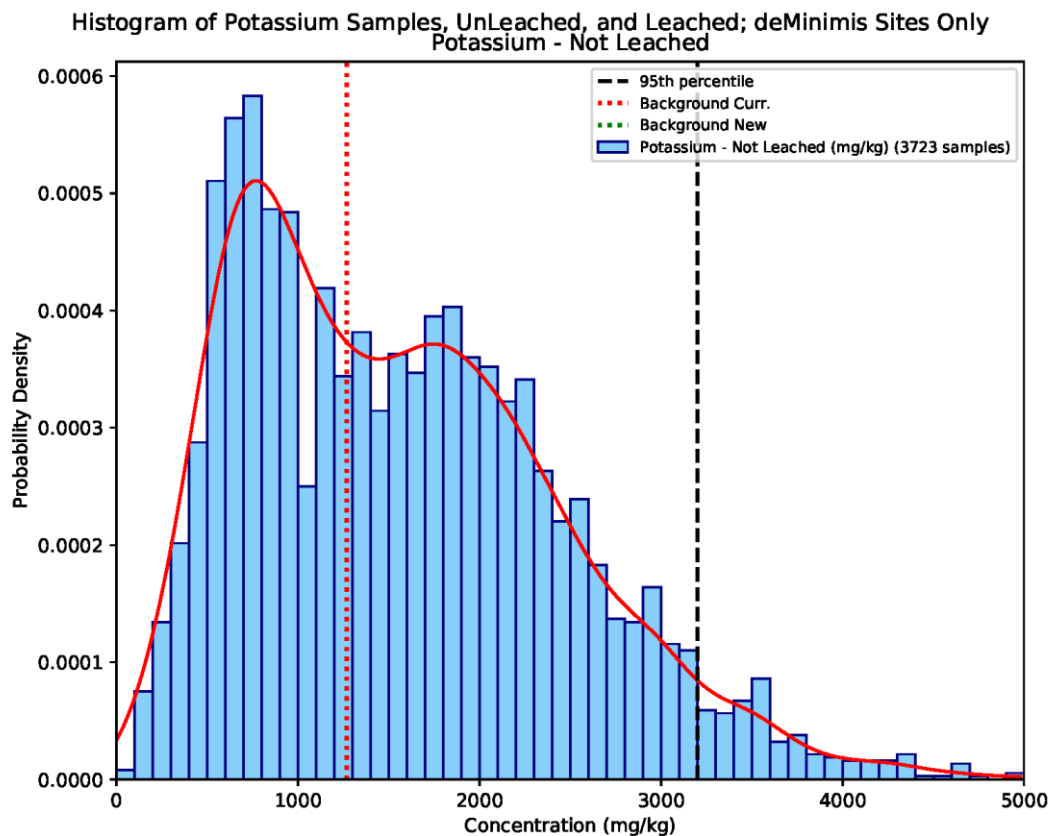


Figure 625. Histogram of RSL potassium concentrations, de minimis (mg/kg)

Potassium Unleached Concentration (mg/kg)

1) Region

2) District

3) County

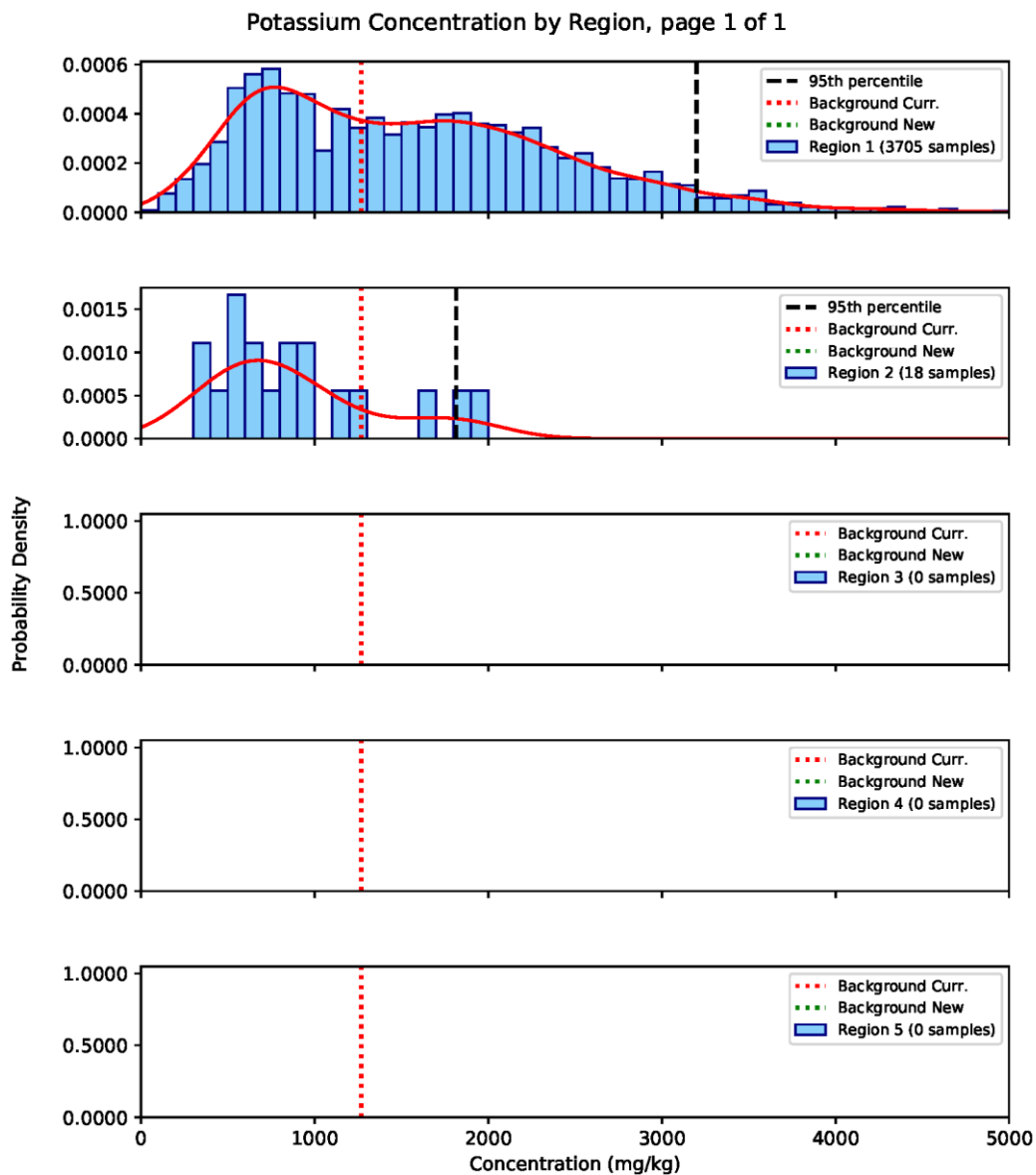


Figure 626. Histogram of RSL potassium concentrations by IDOT Region, de minimis (mg/kg)

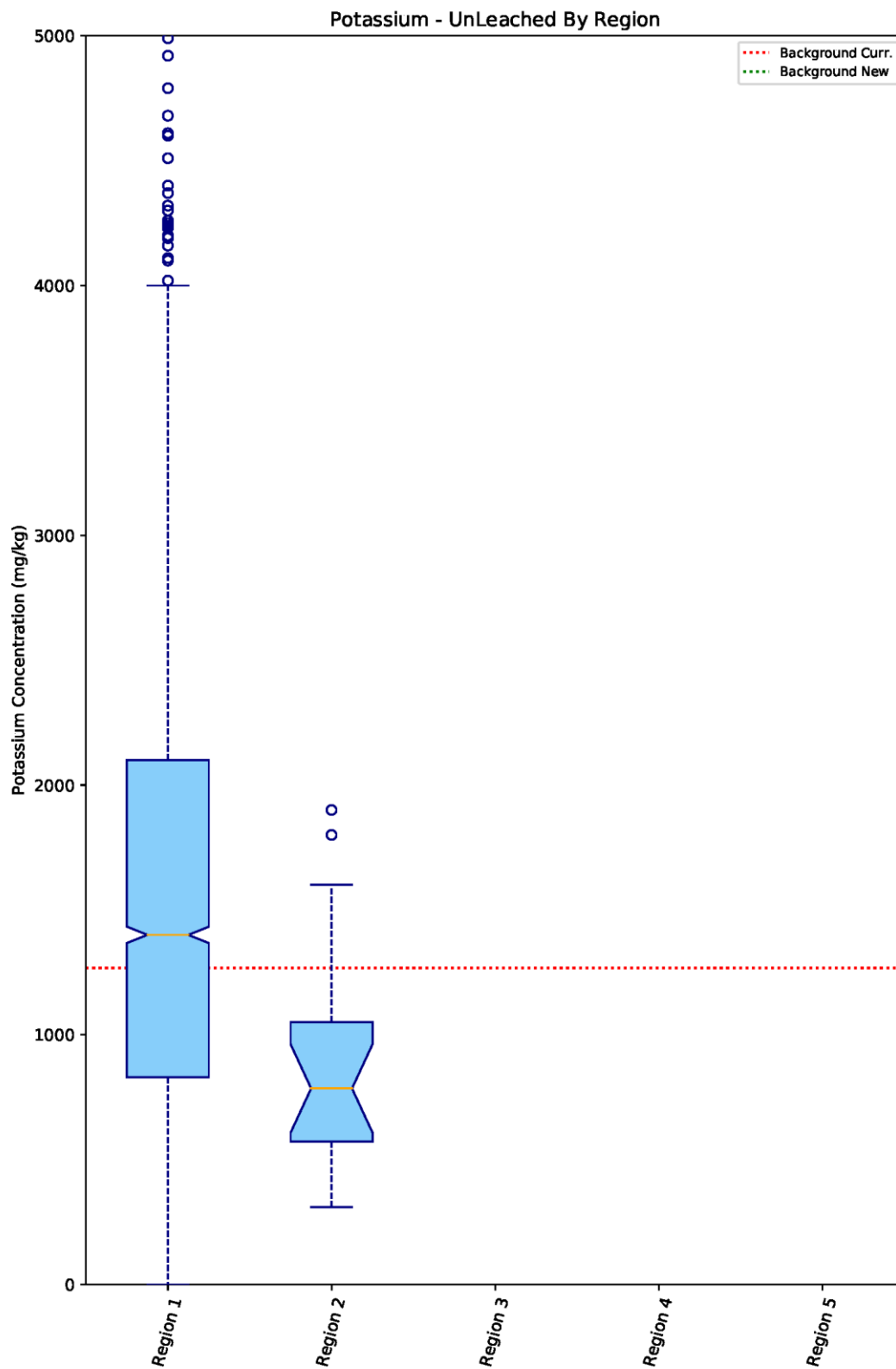


Figure 627. Boxplot of RSL potassium concentrations by IDOT Region, de minimis (mg/kg)

Potassium Concentration by District, page 1 of 2

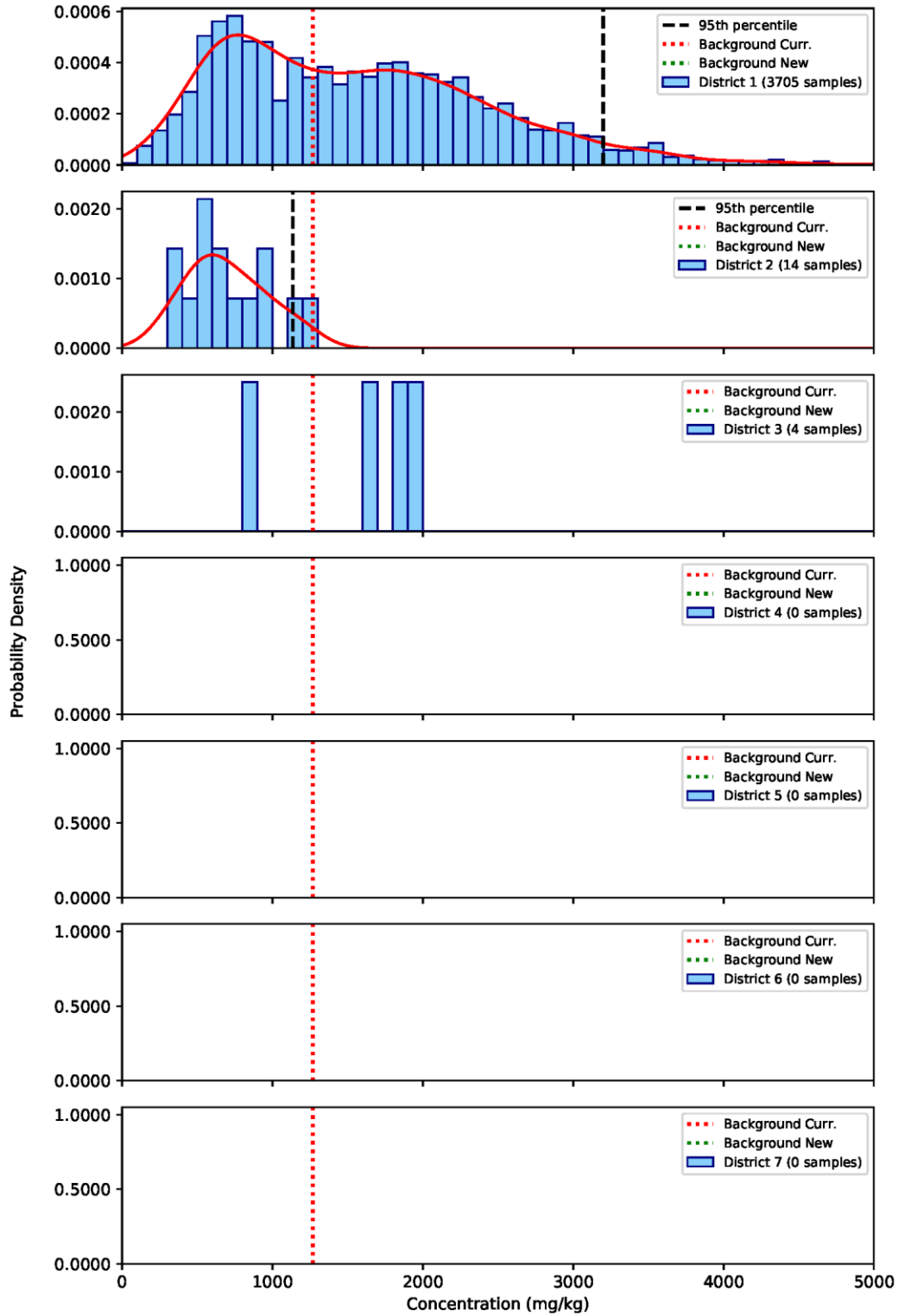


Figure 628. Histogram of RSL potassium concentrations by IDOT District, de minimis (mg/kg), part 1

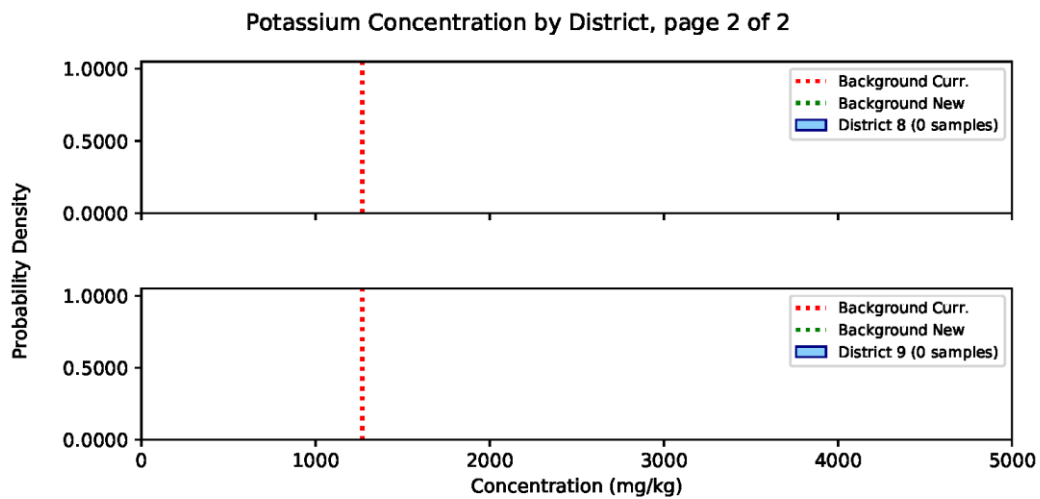


Figure 629. Histogram of RSL potassium concentrations by IDOT District, de minimis (mg/kg), part 2



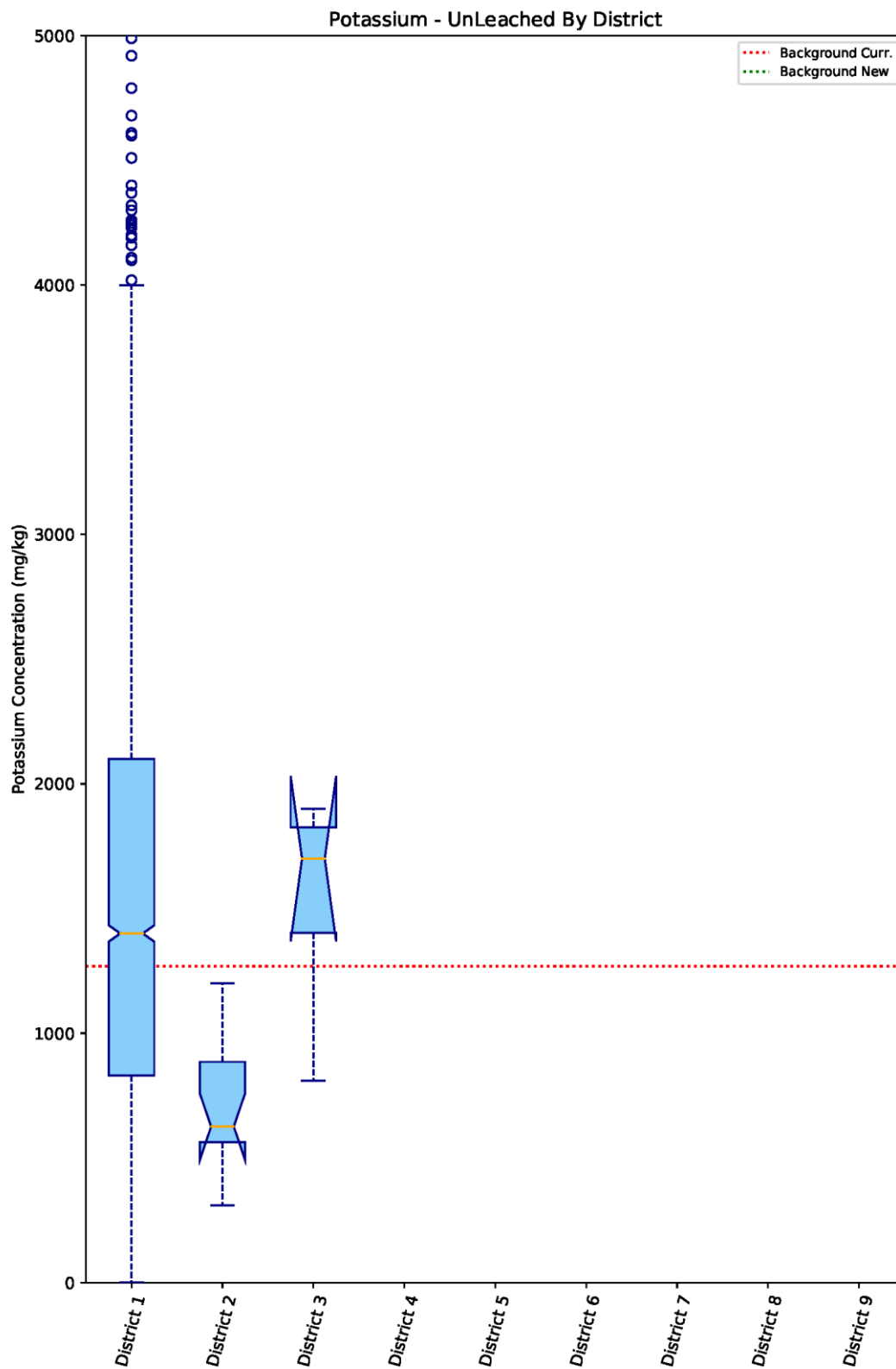


Figure 630. Boxplot of RSL potassium concentrations by IDOT District, de minimis (mg/kg)

Potassium Concentration by County, page 1 of 2

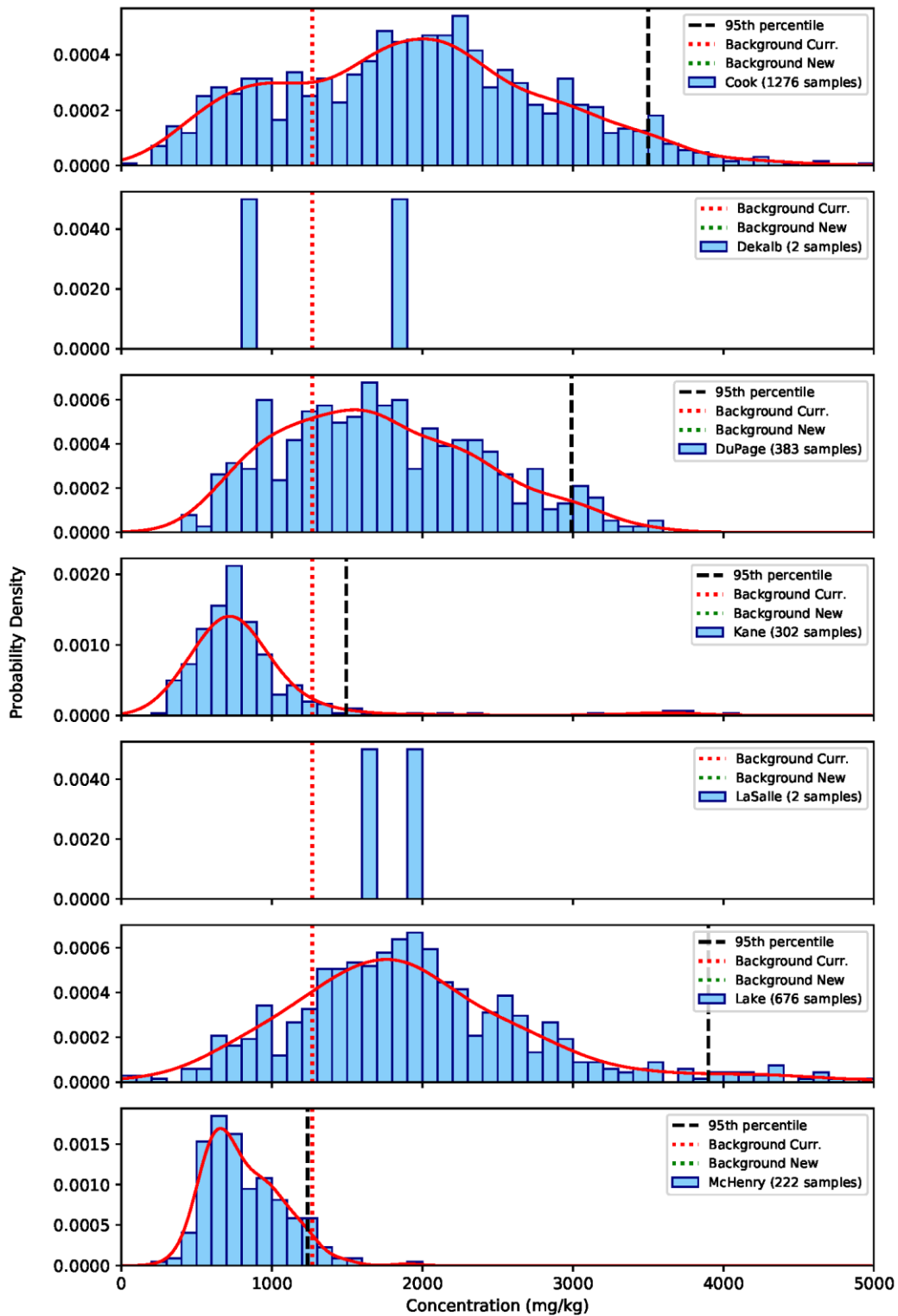


Figure 631. Histogram of RSL potassium concentrations by Illinois county, de minimis (mg/kg), part

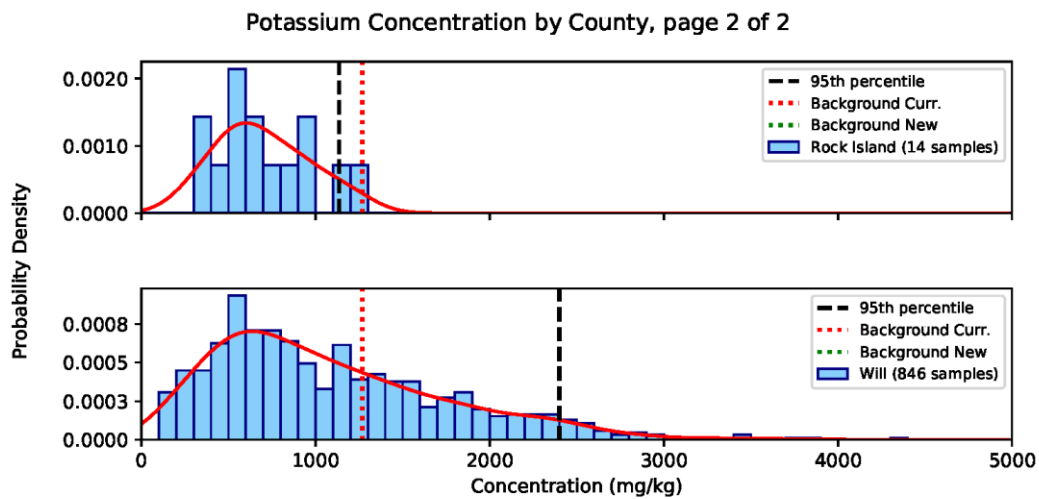


Figure 632. Histogram of RSL potassium concentrations by Illinois county, de minimis (mg/kg), part 2

Potassium Concentration for 95th Percentile by County: deMinimis Sites

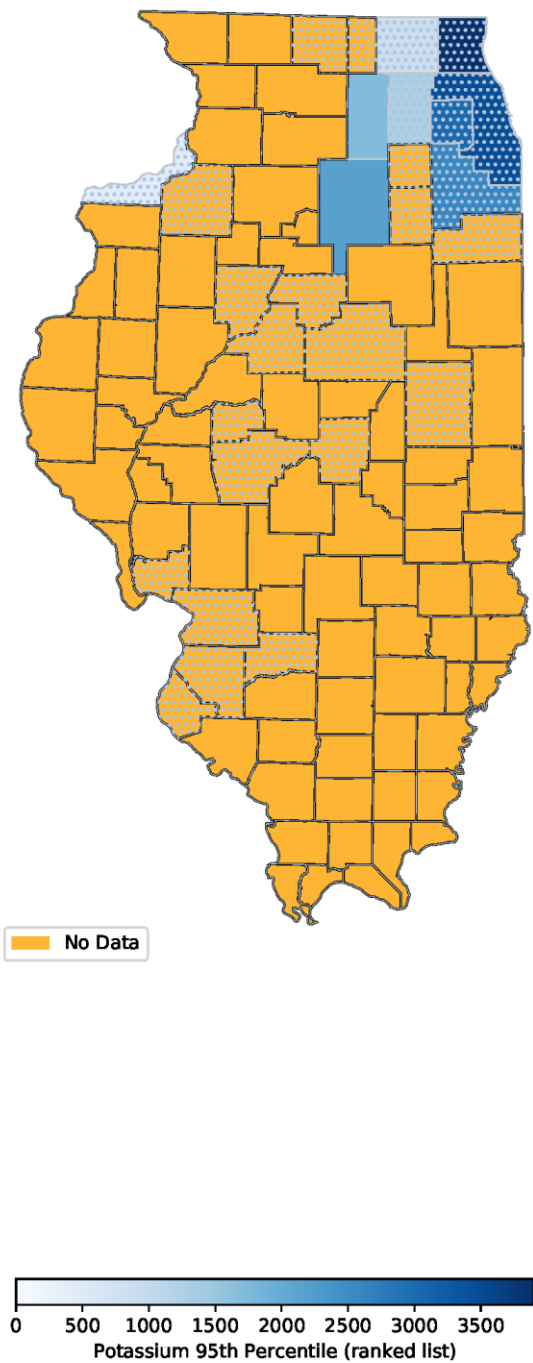


Figure 633. Map of RSL potassium 95th percentile concentration by Illinois county, de minimis (mg/kg)

Number of Potassium Samples by County: deMinimis Sites

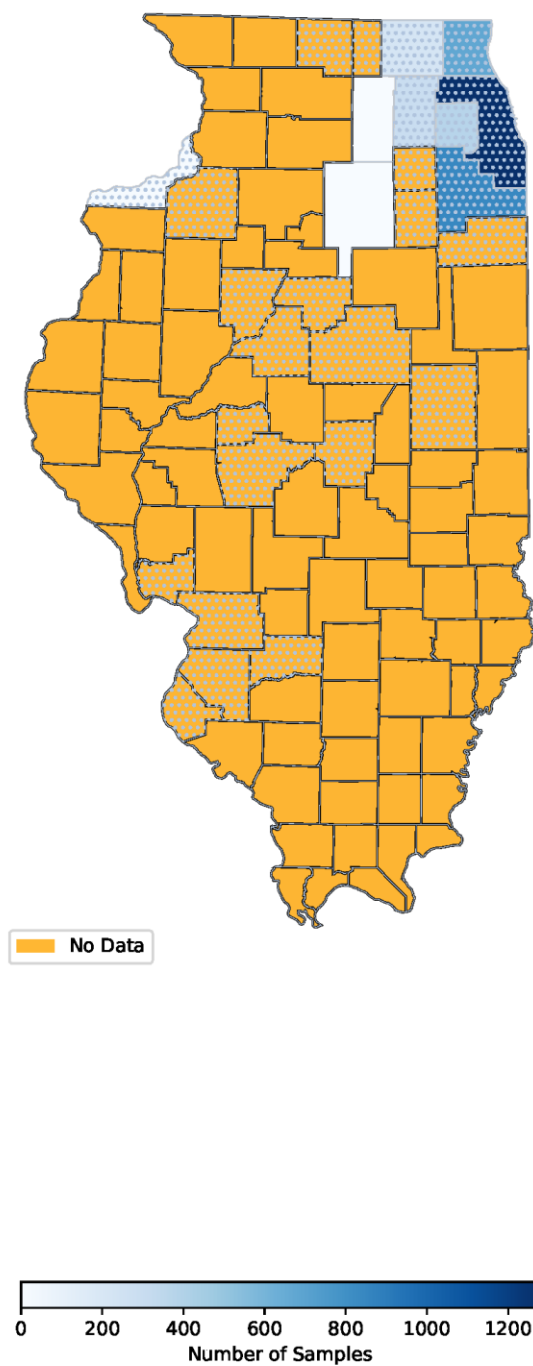


Figure 634. Map of RSL potassium sample quantity by Illinois county, de minimis (mg/kg)

## **APPENDIX R. ANALYTE ANALYSIS: SELENIUM**

### **R.1 SELENIUM REC**

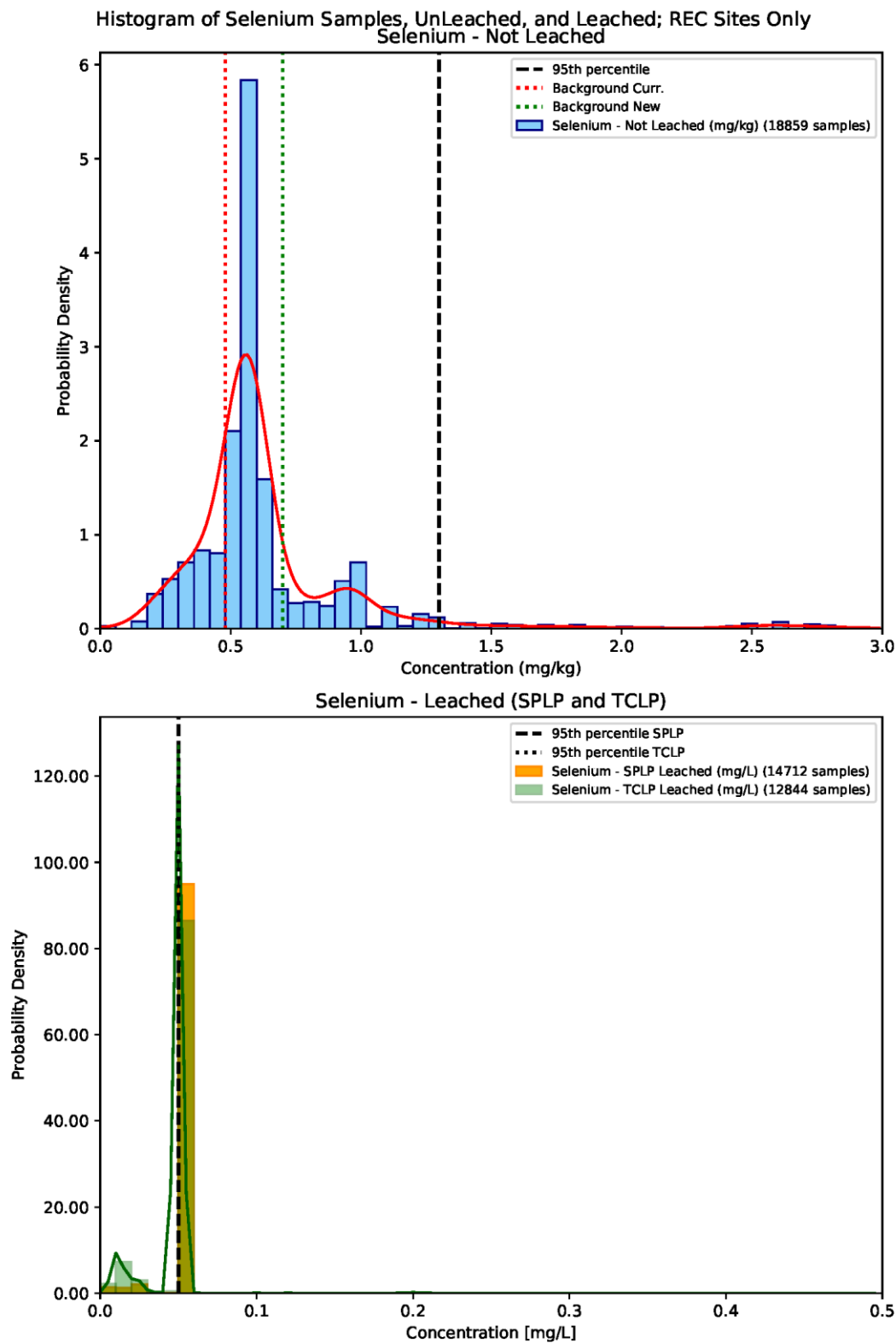


Figure 635. Histogram of RSL selenium concentrations, REC (mg/kg)

**Selenium Unleached Concentration (mg/kg)**

1) Region

2) District

3) County



# Selenium Concentration by Region, page 1 of 1

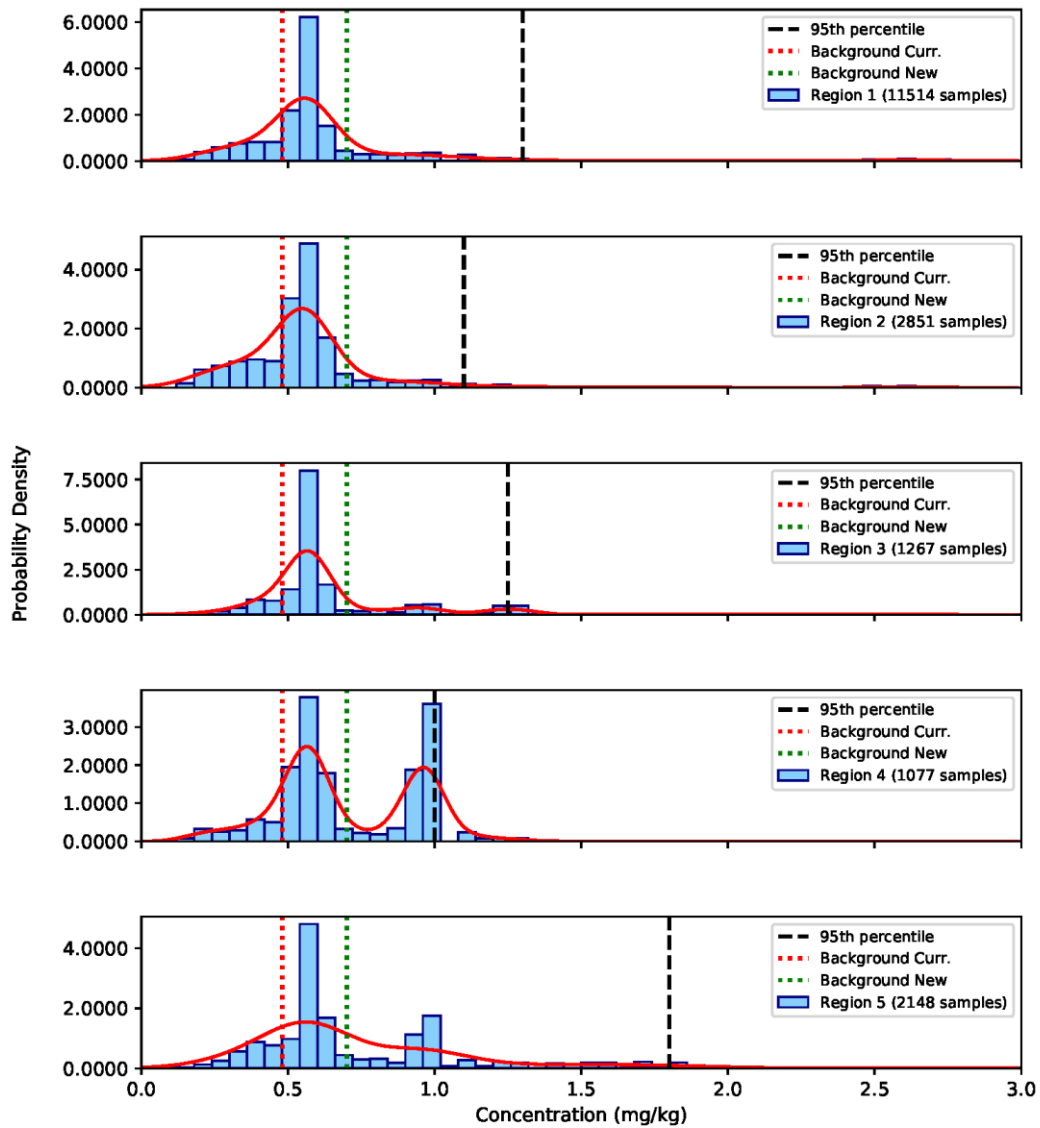


Figure 636. Histogram of RSL selenium concentrations by IDOT Region, REC (mg/kg)

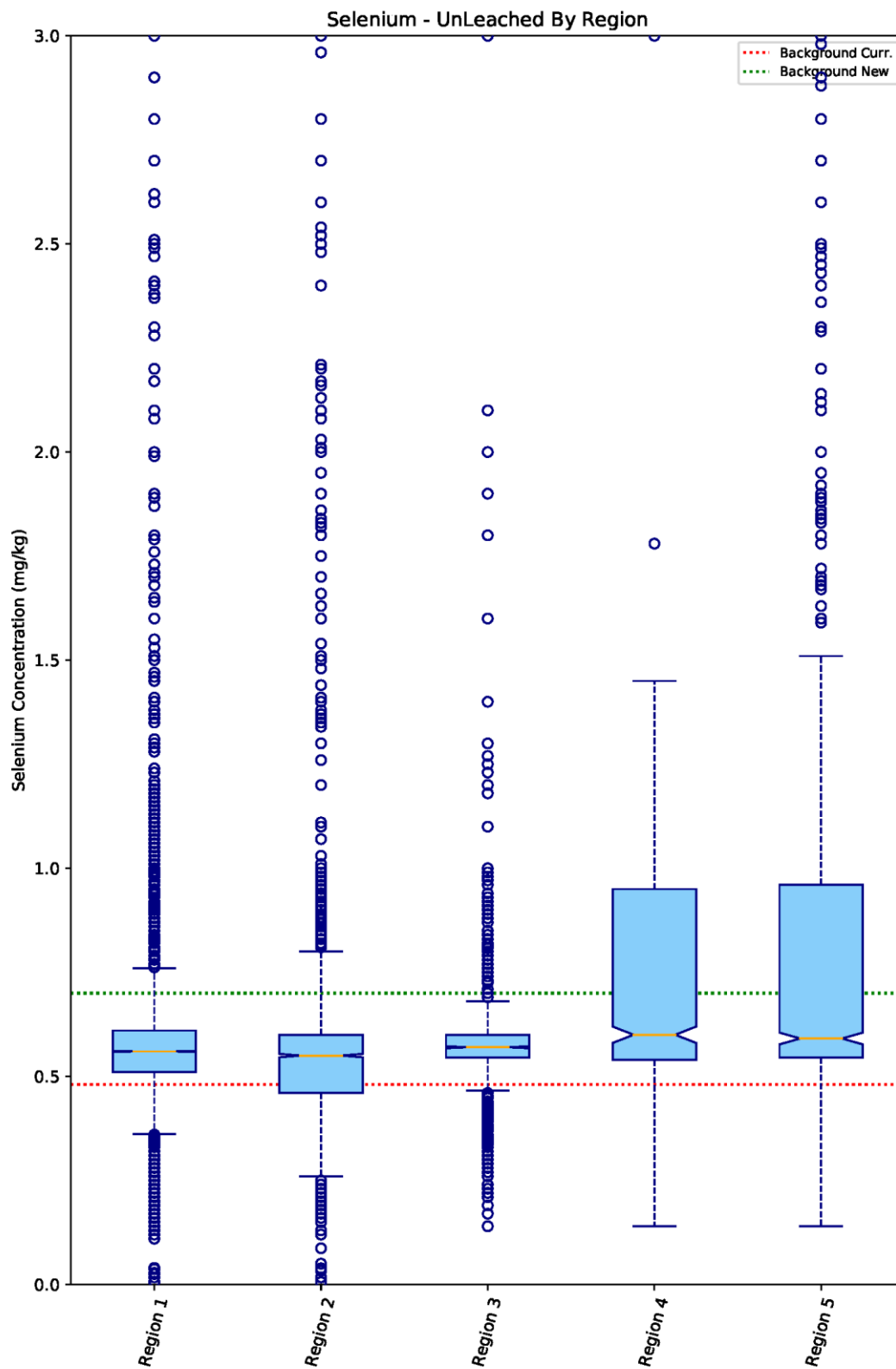


Figure 637. Boxplot of RSL selenium concentrations by IDOT Region, REC (mg/kg)

# Selenium Concentration by District, page 1 of 2

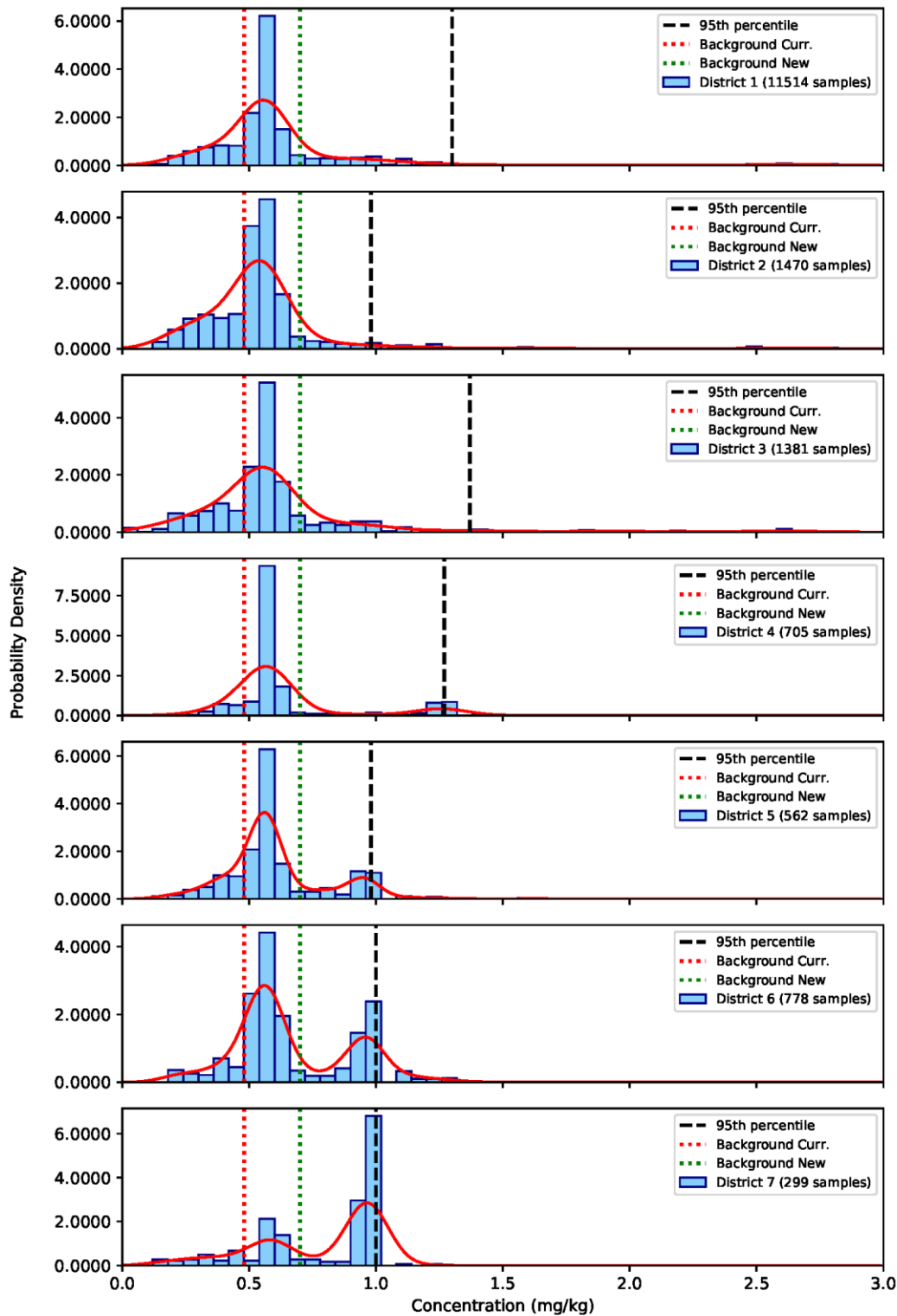


Figure 638. Histogram of RSL selenium concentrations by IDOT District, REC (mg/kg), part 1

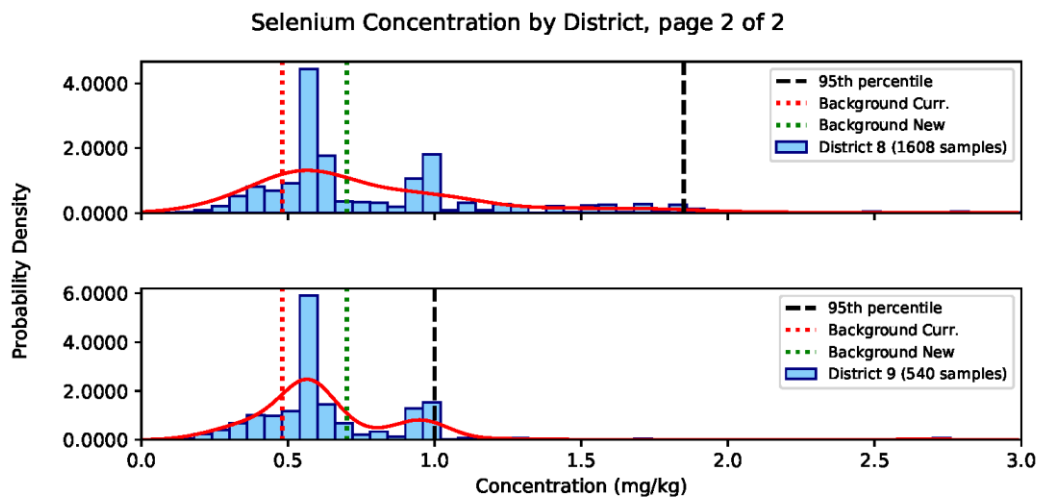


Figure 639. Histogram of RSL selenium concentrations by IDOT District, REC (mg/kg), part 2

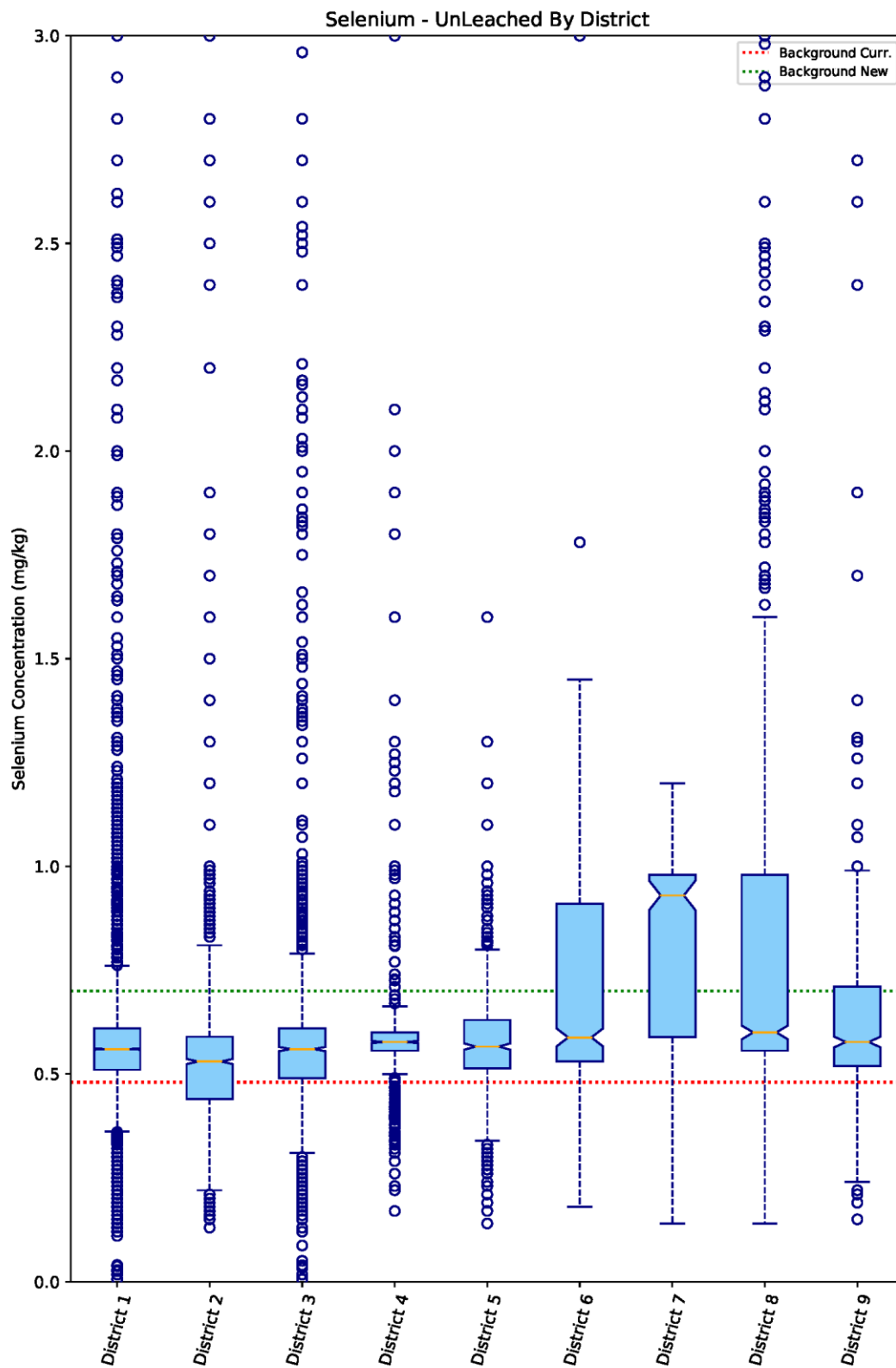


Figure 640. Boxplot of RSL selenium concentrations by IDOT District, REC (mg/kg)

# Selenium Concentration by County, page 1 of 10

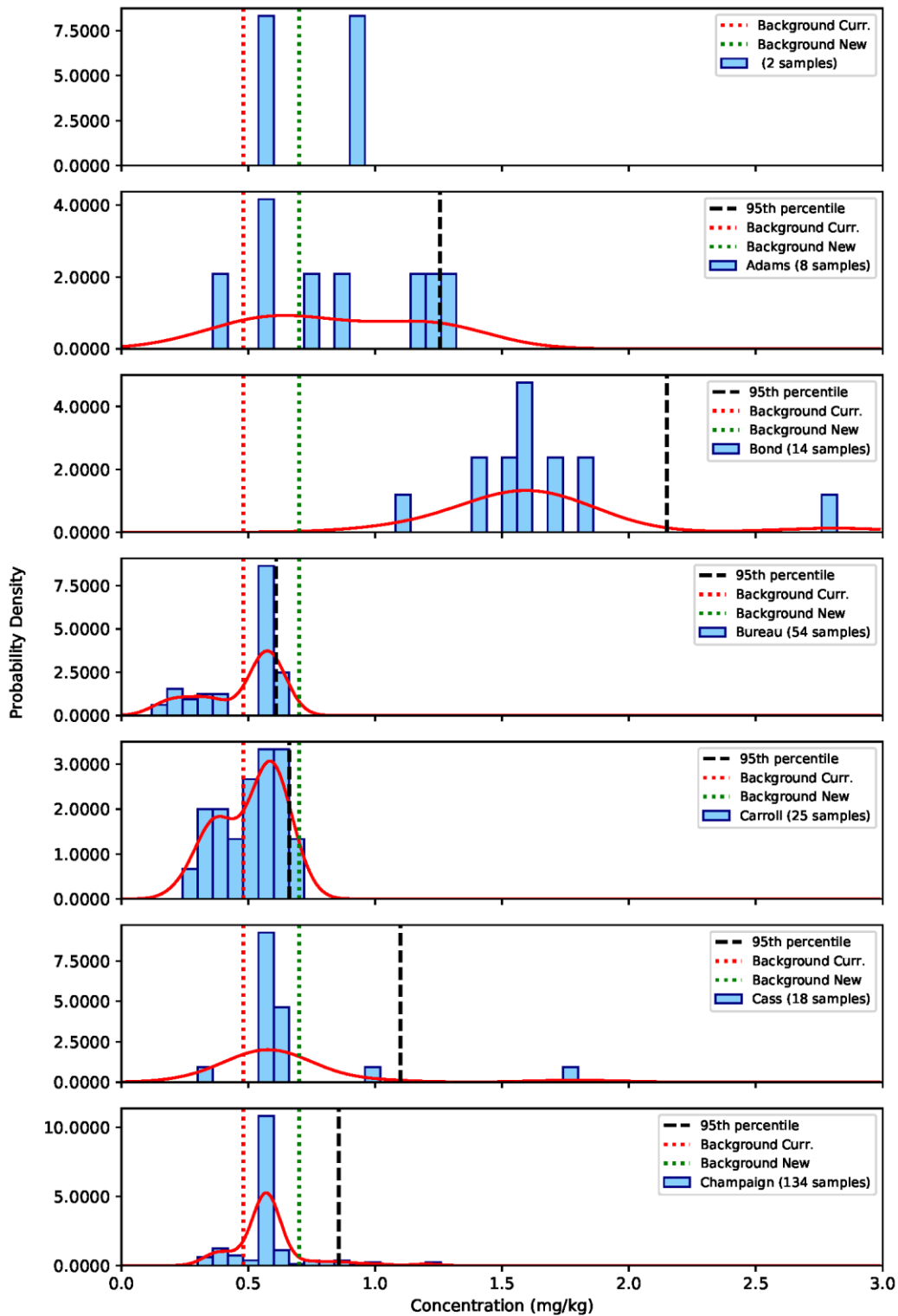


Figure 641. Histogram of RSL selenium concentrations by Illinois county, REC (mg/kg), part 1

# Selenium Concentration by County, page 2 of 10

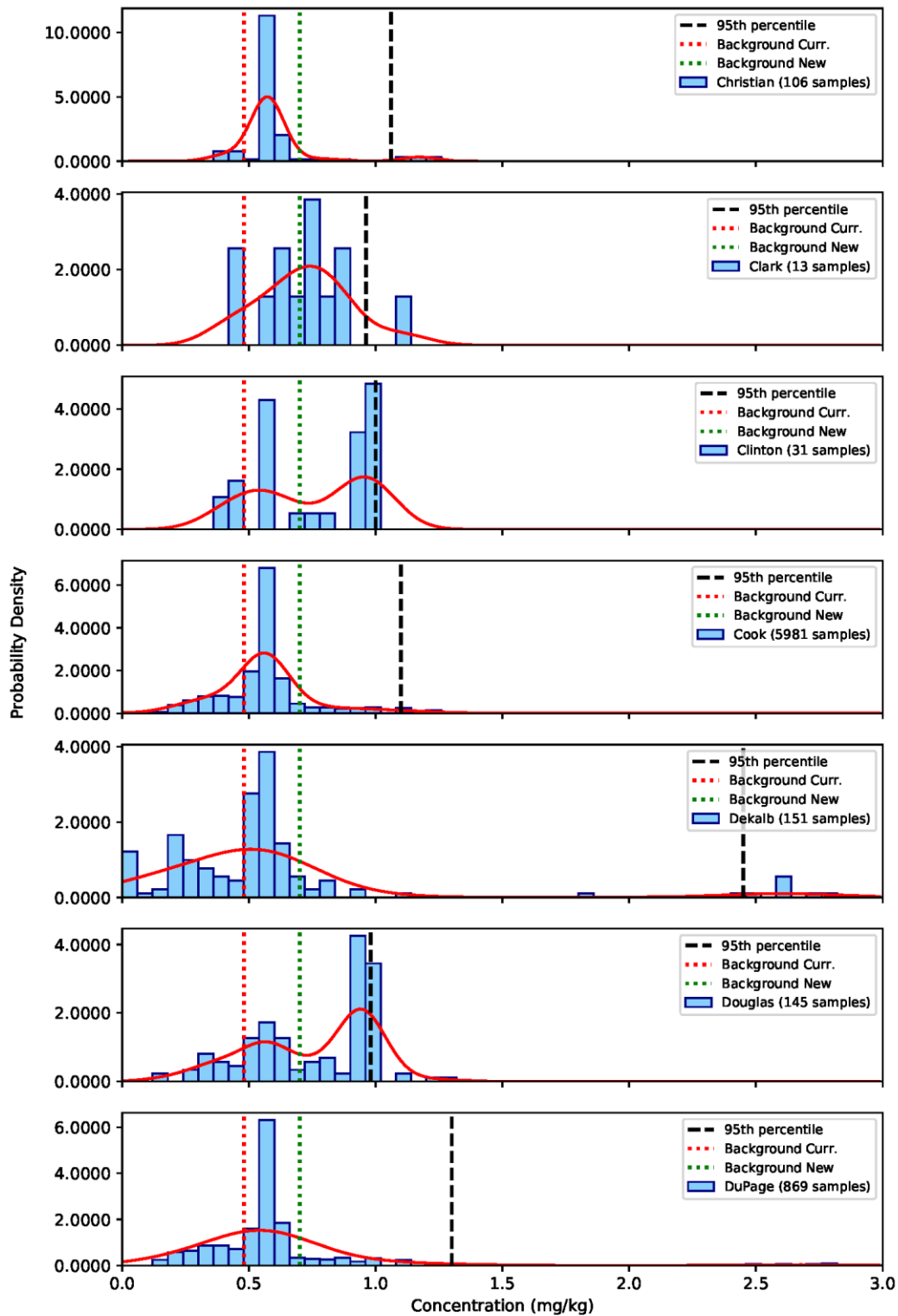


Figure 642. Histogram of RSL selenium concentrations by Illinois county, REC (mg/kg), part 2

Selenium Concentration by County, page 3 of 10

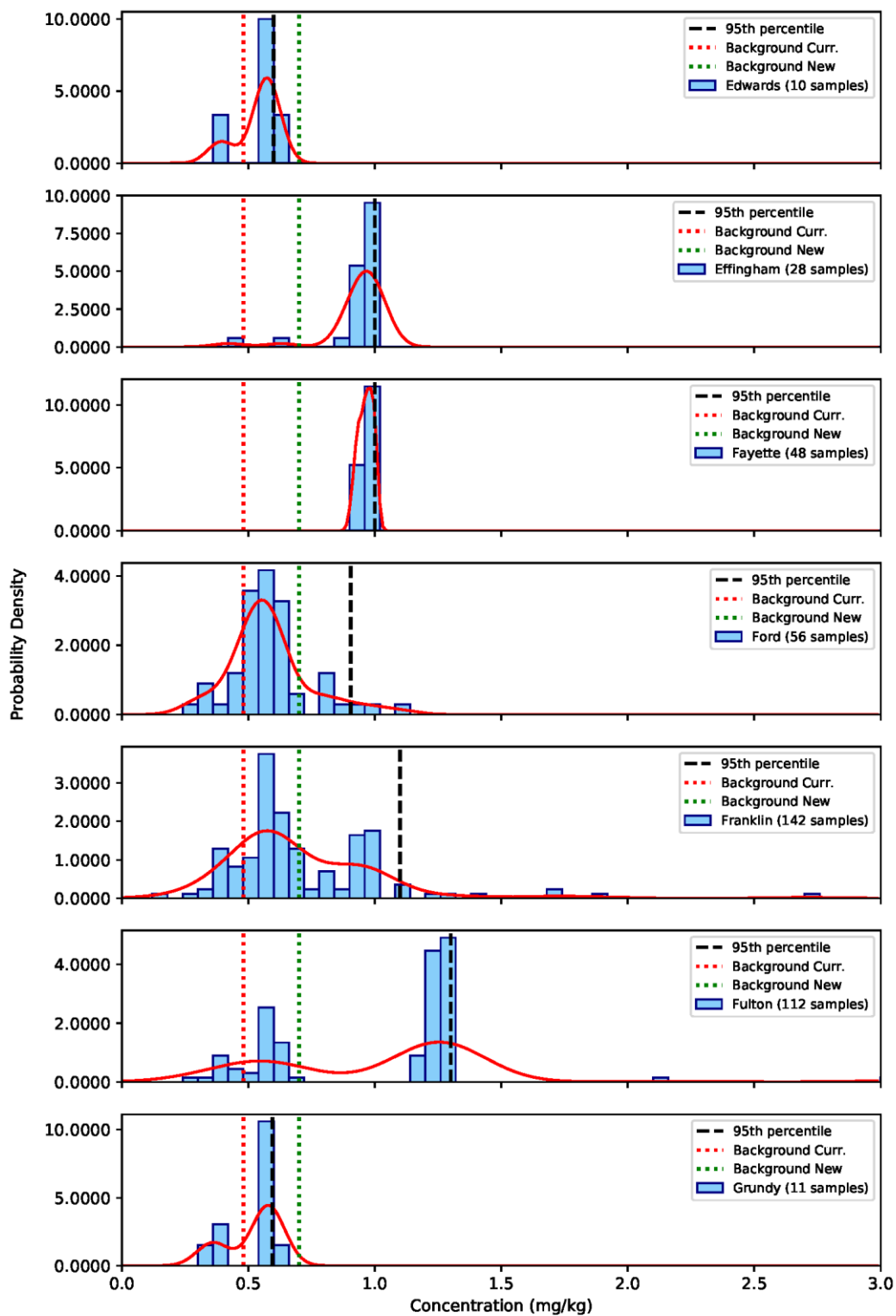


Figure 643. Histogram of RSL selenium concentrations by Illinois county, REC (mg/kg), part 3



# Selenium Concentration by County, page 4 of 10

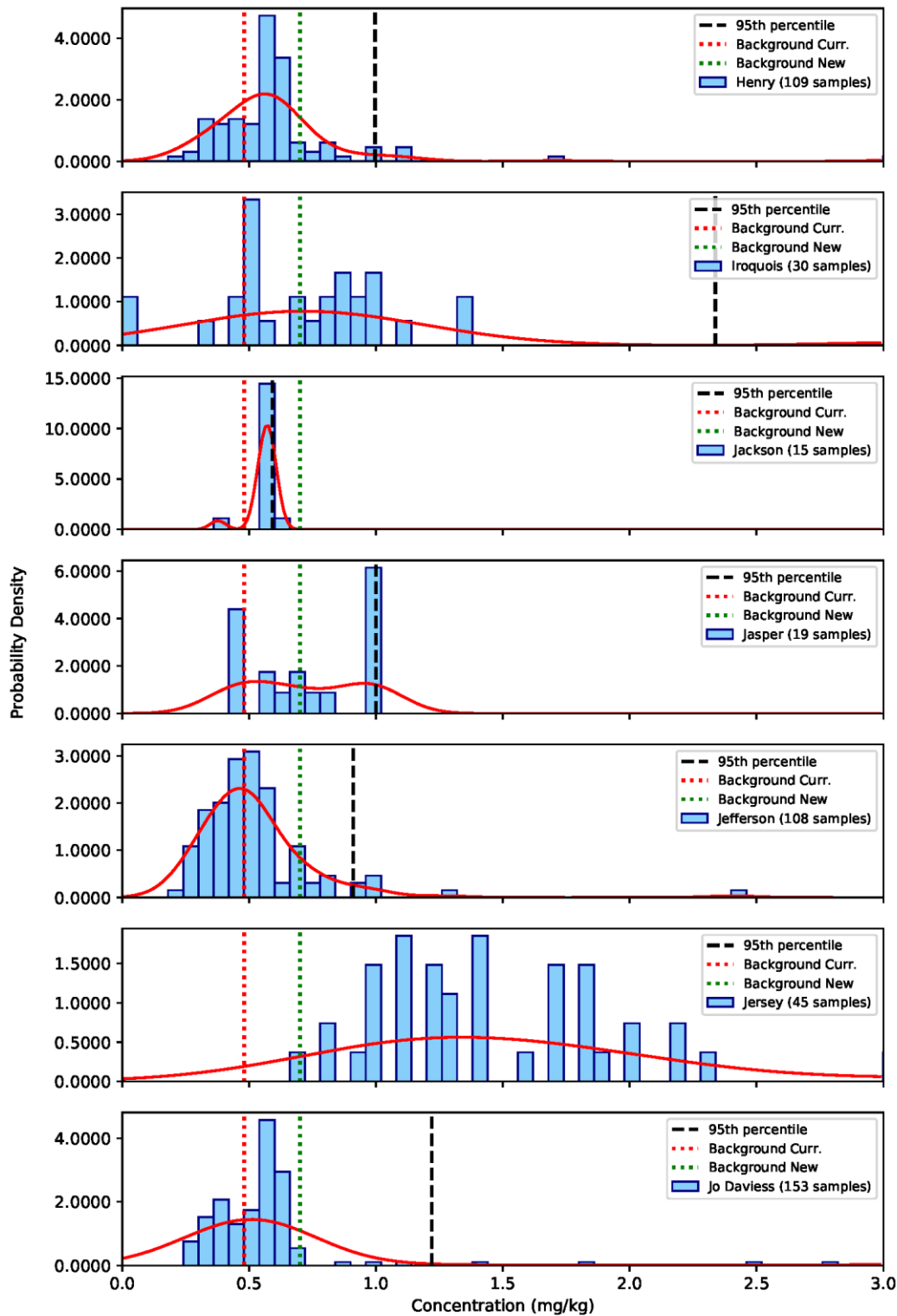


Figure 644. Histogram of RSL selenium concentrations by Illinois county, REC (mg/kg), part 4

# Selenium Concentration by County, page 5 of 10

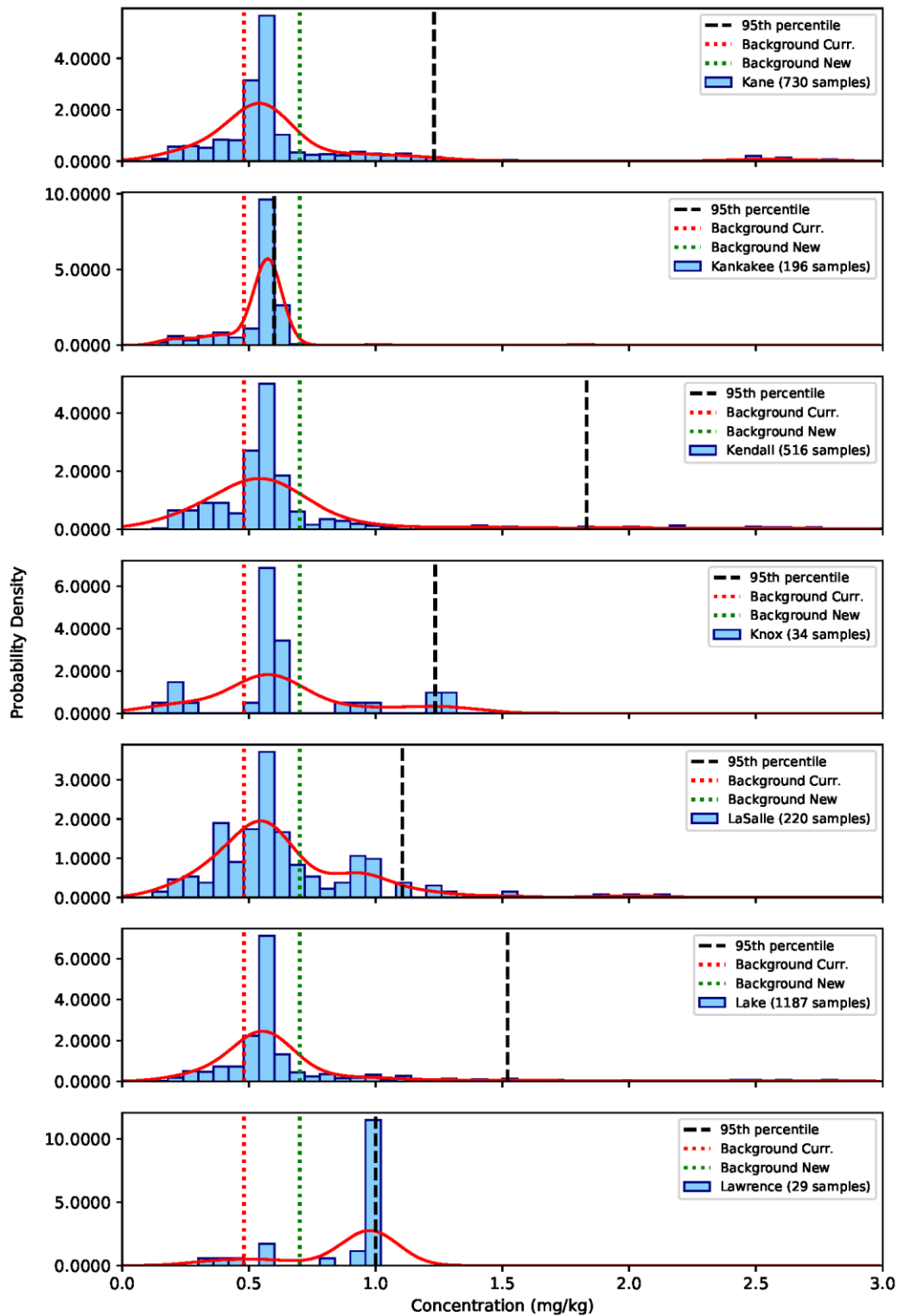


Figure 645. Histogram of RSL selenium concentrations by Illinois county, REC (mg/kg), part 5

# Selenium Concentration by County, page 6 of 10

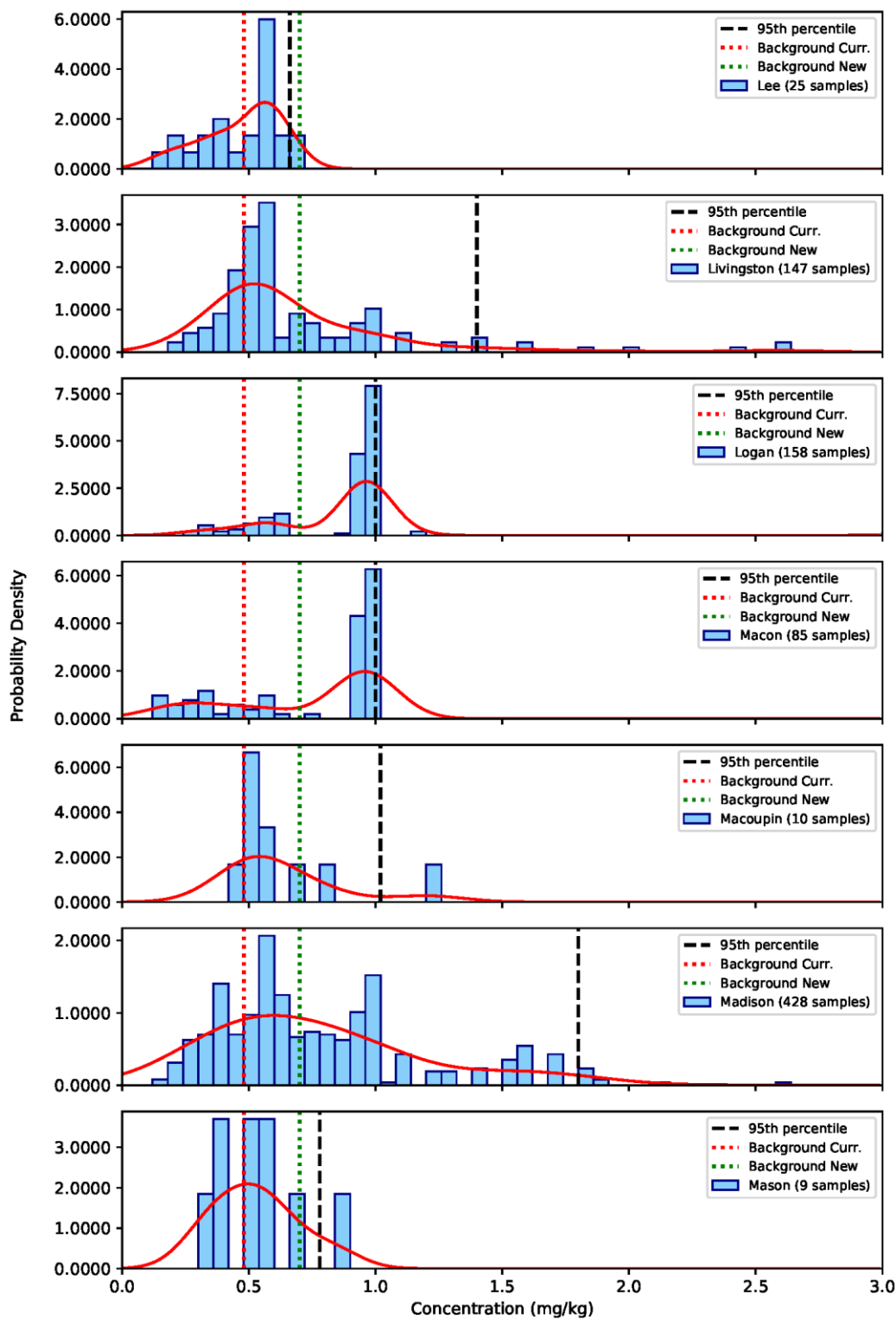


Figure 646. Histogram of RSL selenium concentrations by Illinois county, REC (mg/kg), part 6

# Selenium Concentration by County, page 7 of 10

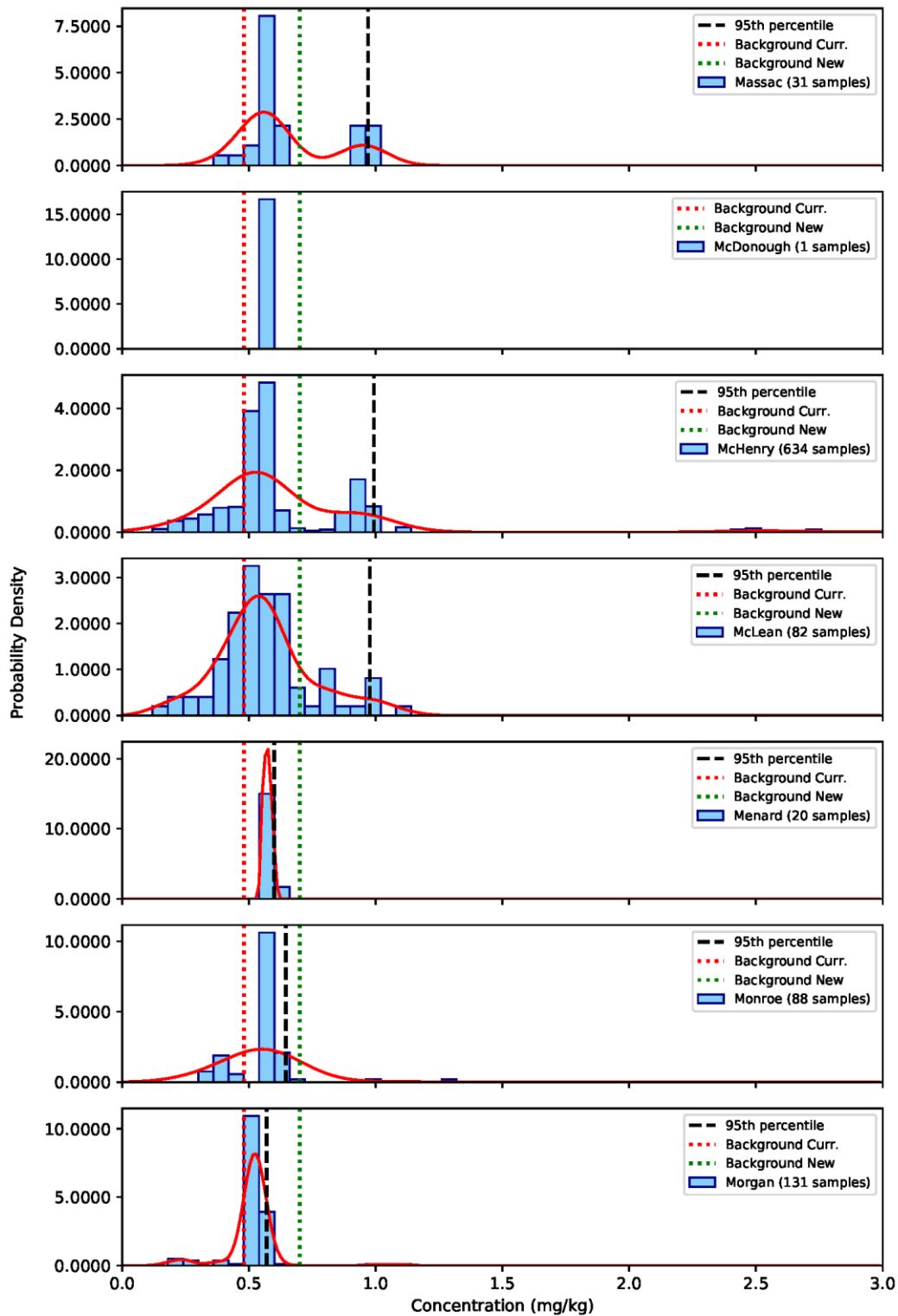


Figure 647. Histogram of RSL selenium concentrations by Illinois county, REC (mg/kg), part 7

# Selenium Concentration by County, page 8 of 10

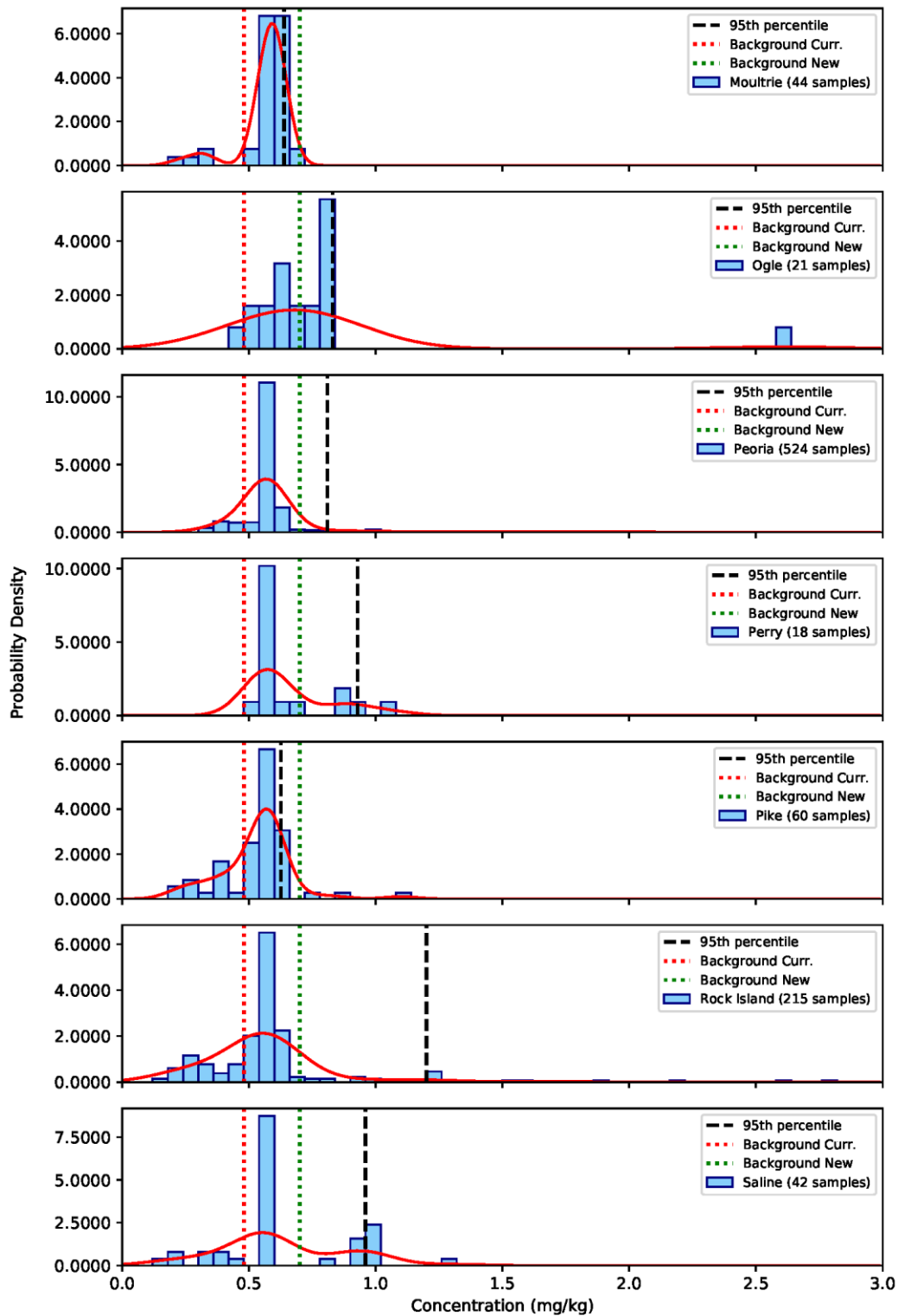


Figure 648. Histogram of RSL selenium concentrations by Illinois county, REC (mg/kg), part 8

# Selenium Concentration by County, page 9 of 10

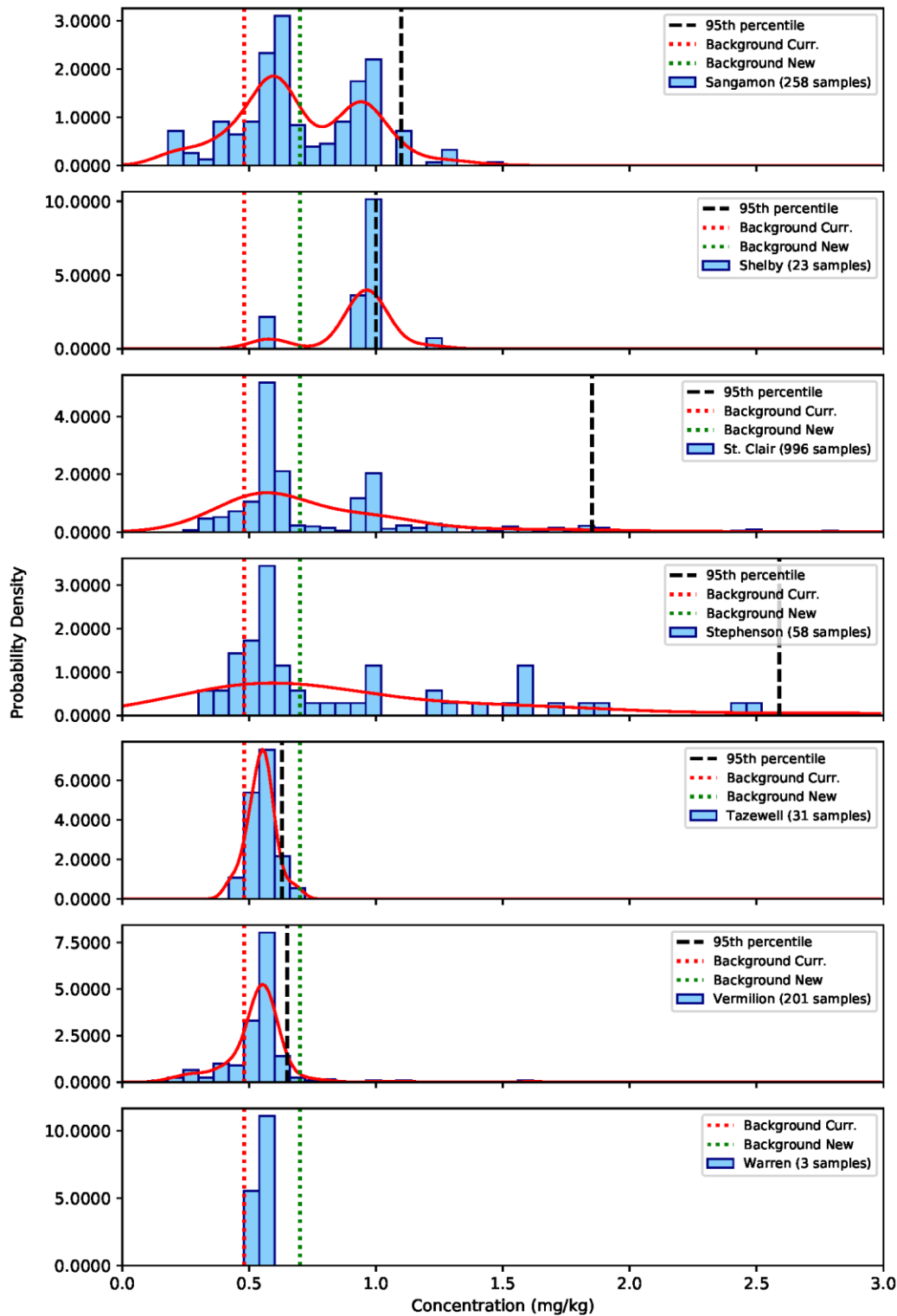


Figure 649. Histogram of RSL selenium concentrations by Illinois county, REC (mg/kg), part 9

Selenium Concentration by County, page 10 of 10

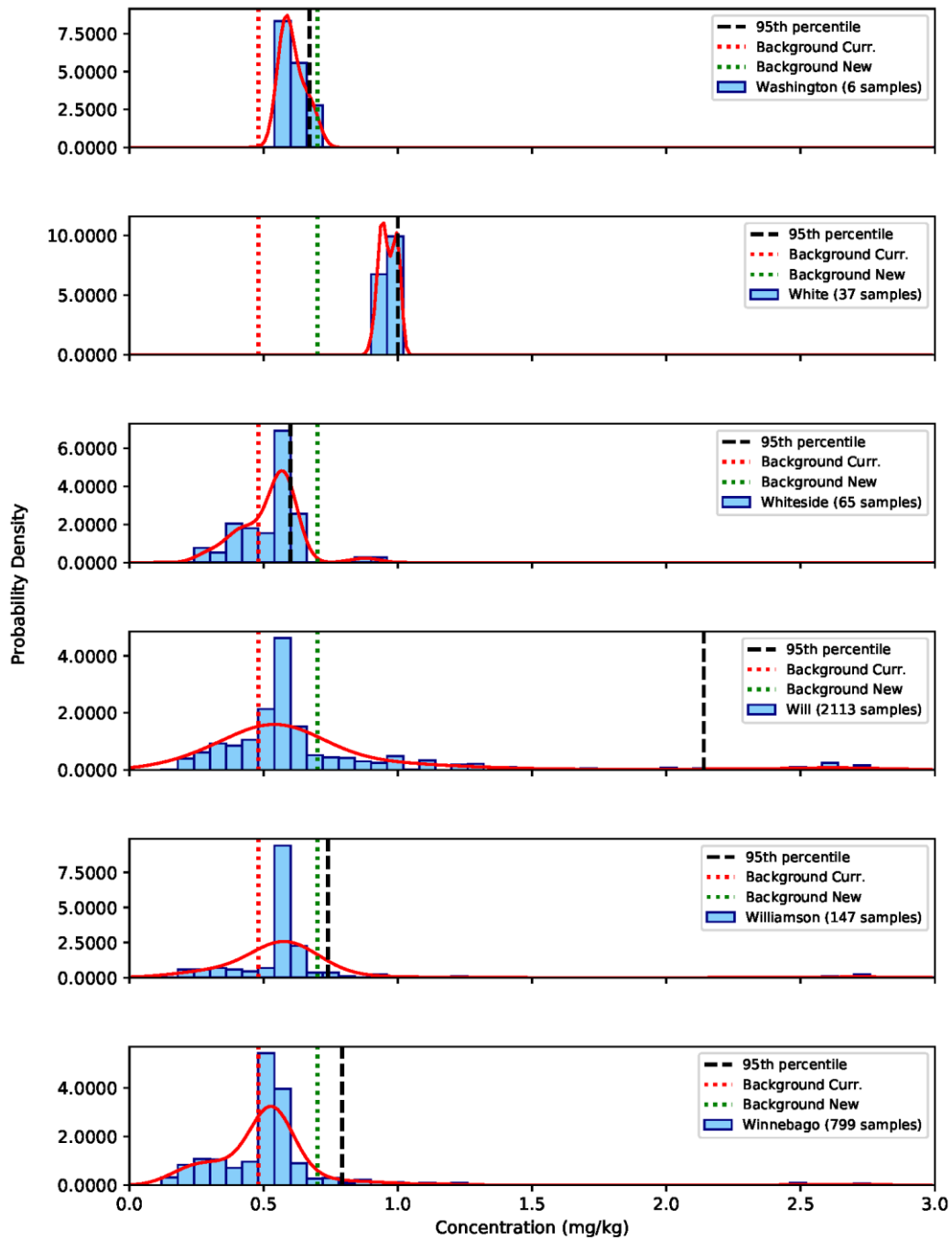


Figure 650. Histogram of RSL selenium concentrations by Illinois county, REC (mg/kg), part 10

Selenium Concentration for 95th Percentile by County: REC Sites

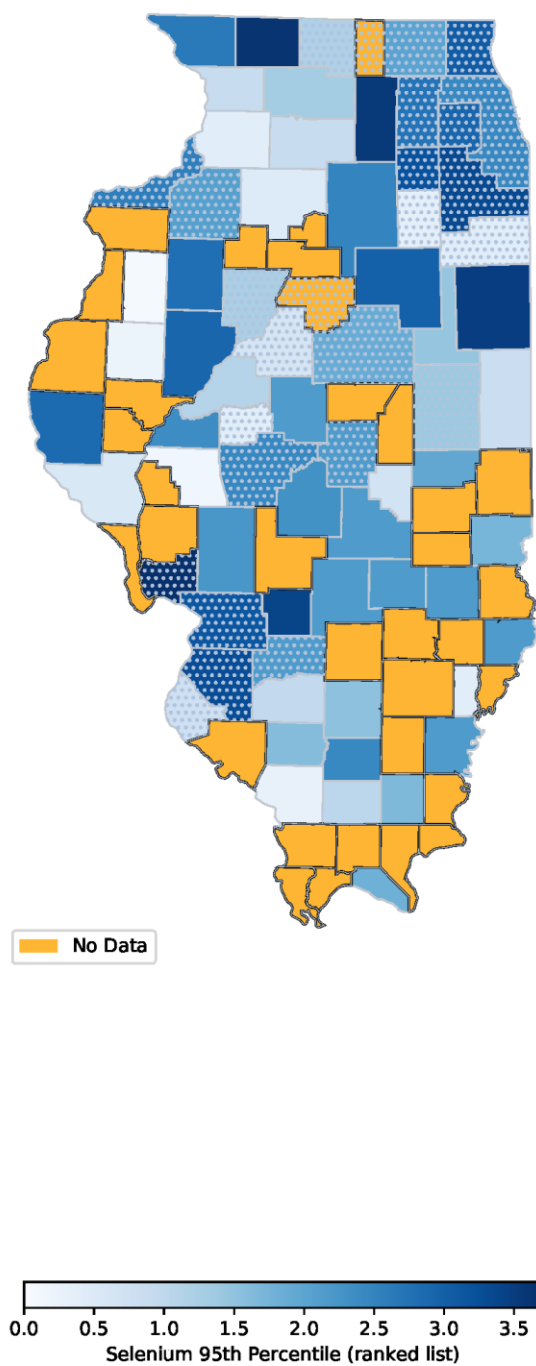


Figure 651. Map of RSL selenium 95th percentile concentration by Illinois county, REC (mg/kg)



763

## **R.2 SELENIUM NON-REC**

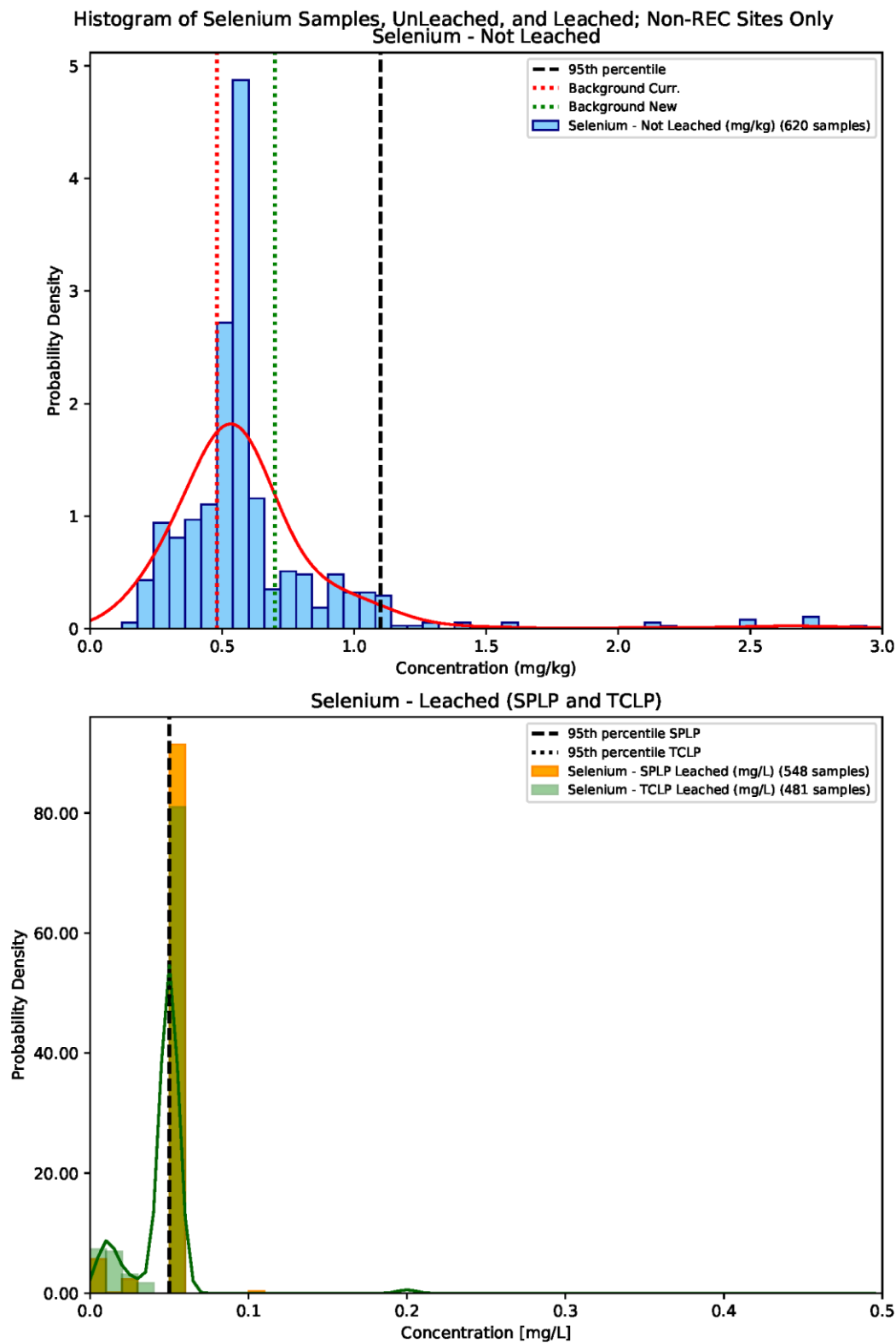


Figure 653. Histogram of RSL selenium concentrations, Non-REC (mg/kg)

**Selenium Unleached Concentration (mg/kg)**

1) Region

2) District

3) County

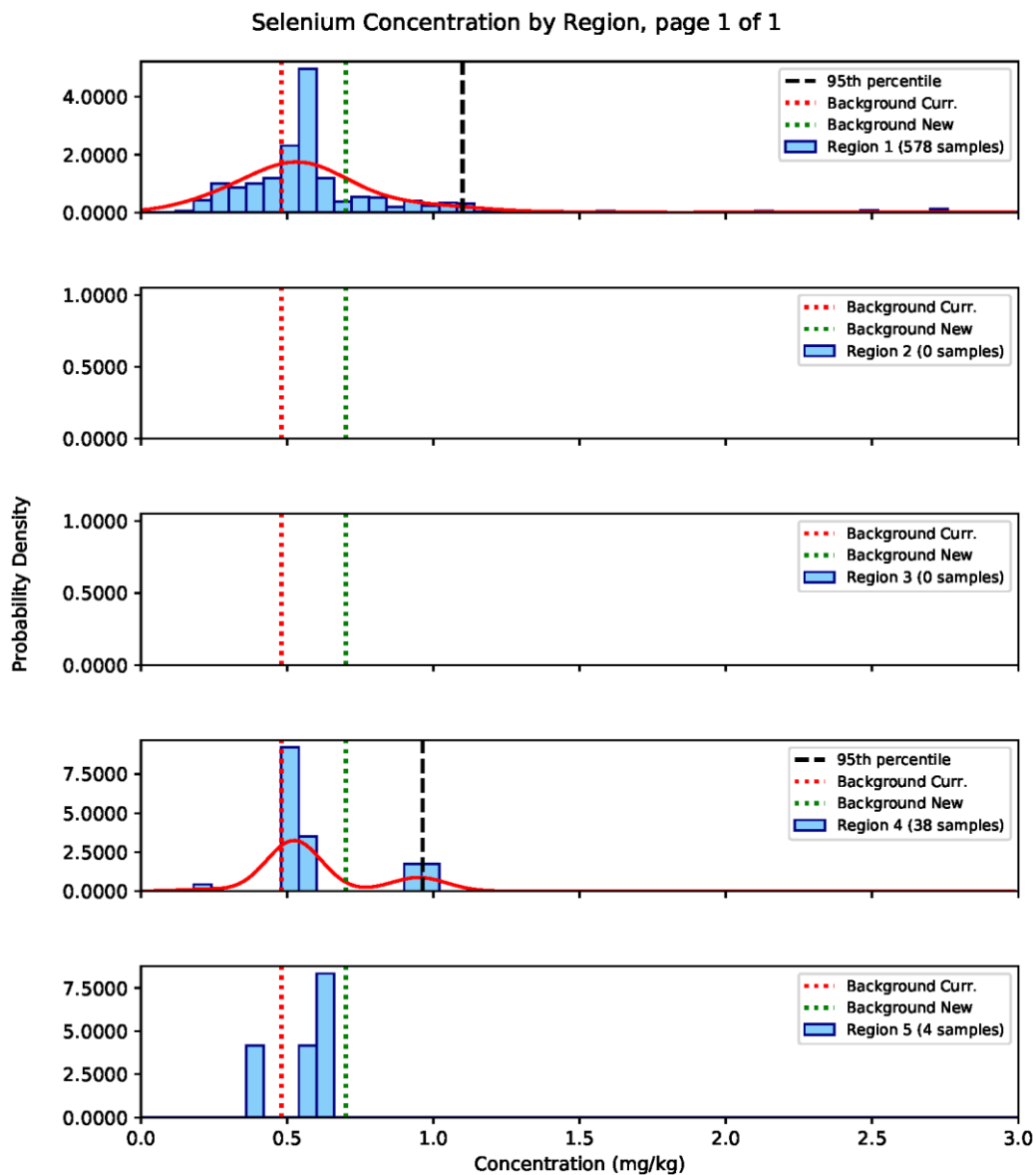


Figure 654. Histogram of RSL selenium concentrations by IDOT Region, Non-REC (mg/kg)

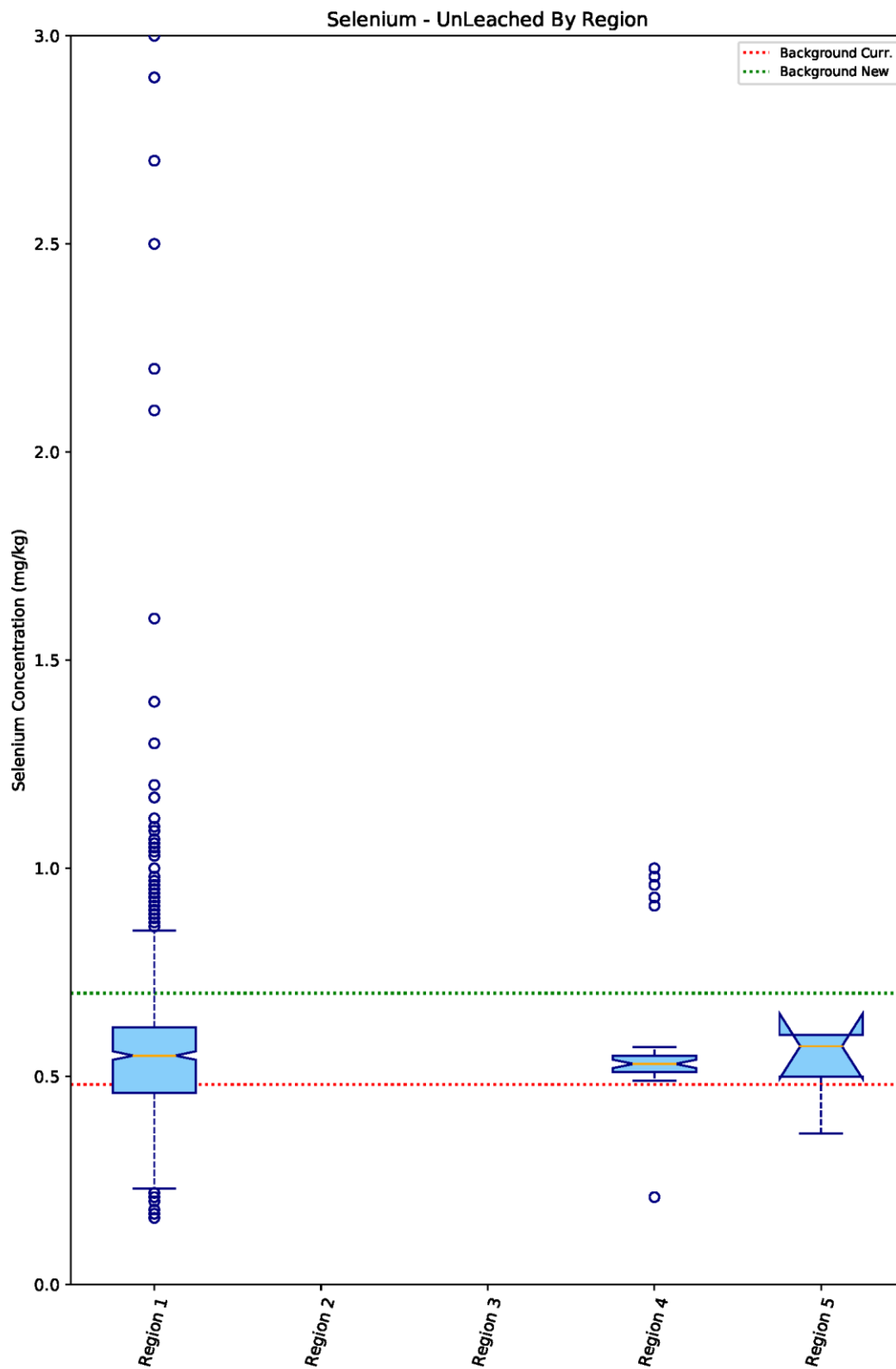


Figure 655. Boxplot of RSL selenium concentrations by IDOT Region, Non-REC (mg/kg)

# Selenium Concentration by District, page 1 of 2

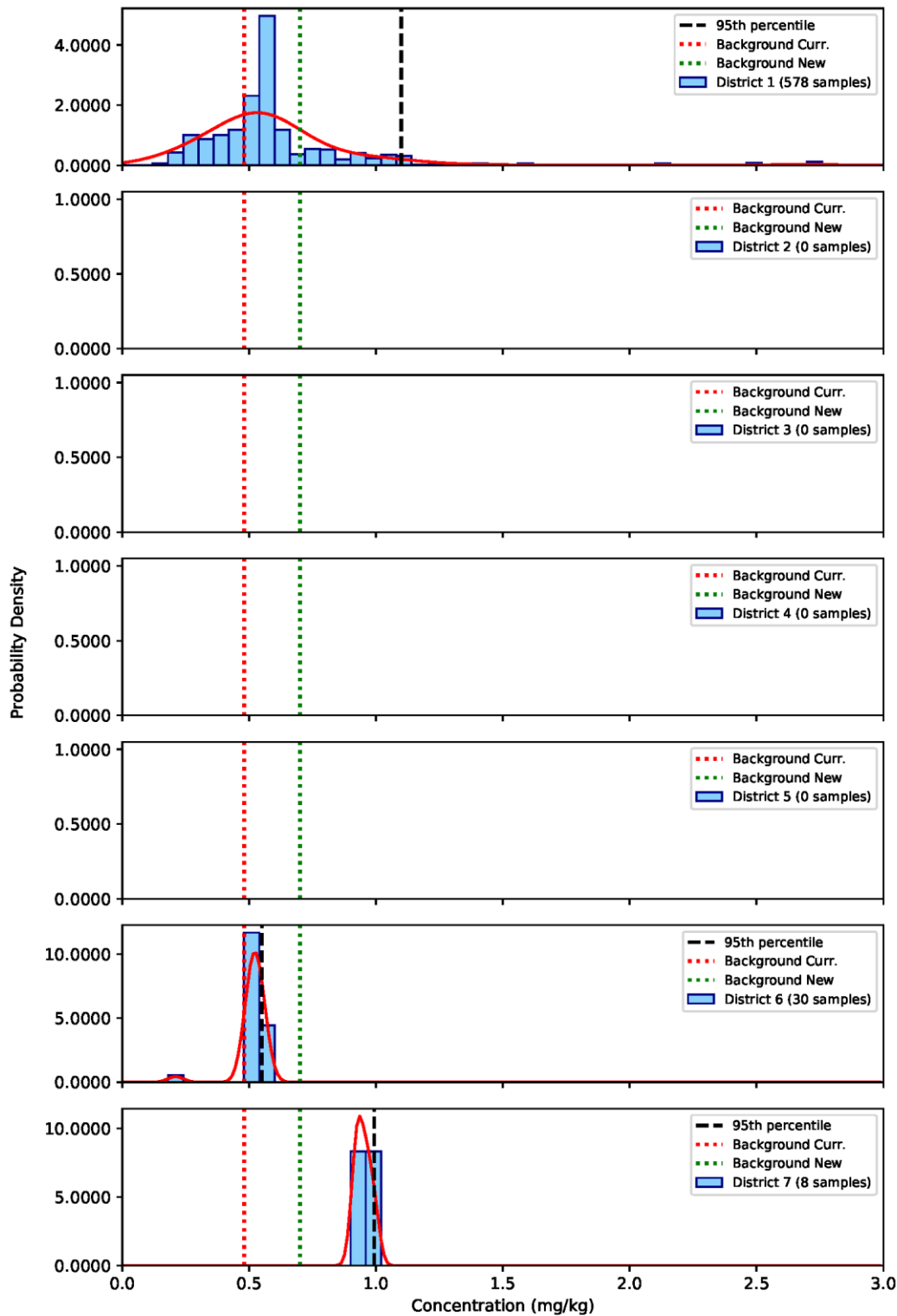


Figure 656. Histogram of RSL selenium concentrations by IDOT District, Non-REC (mg/kg), part 1

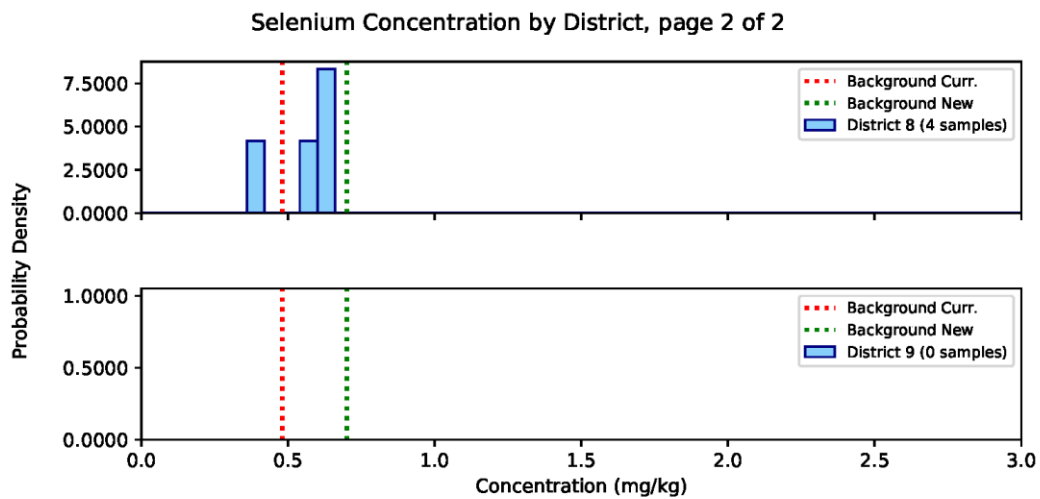


Figure 657. Histogram of RSL selenium concentrations by IDOT District, Non-REC (mg/kg), part 2



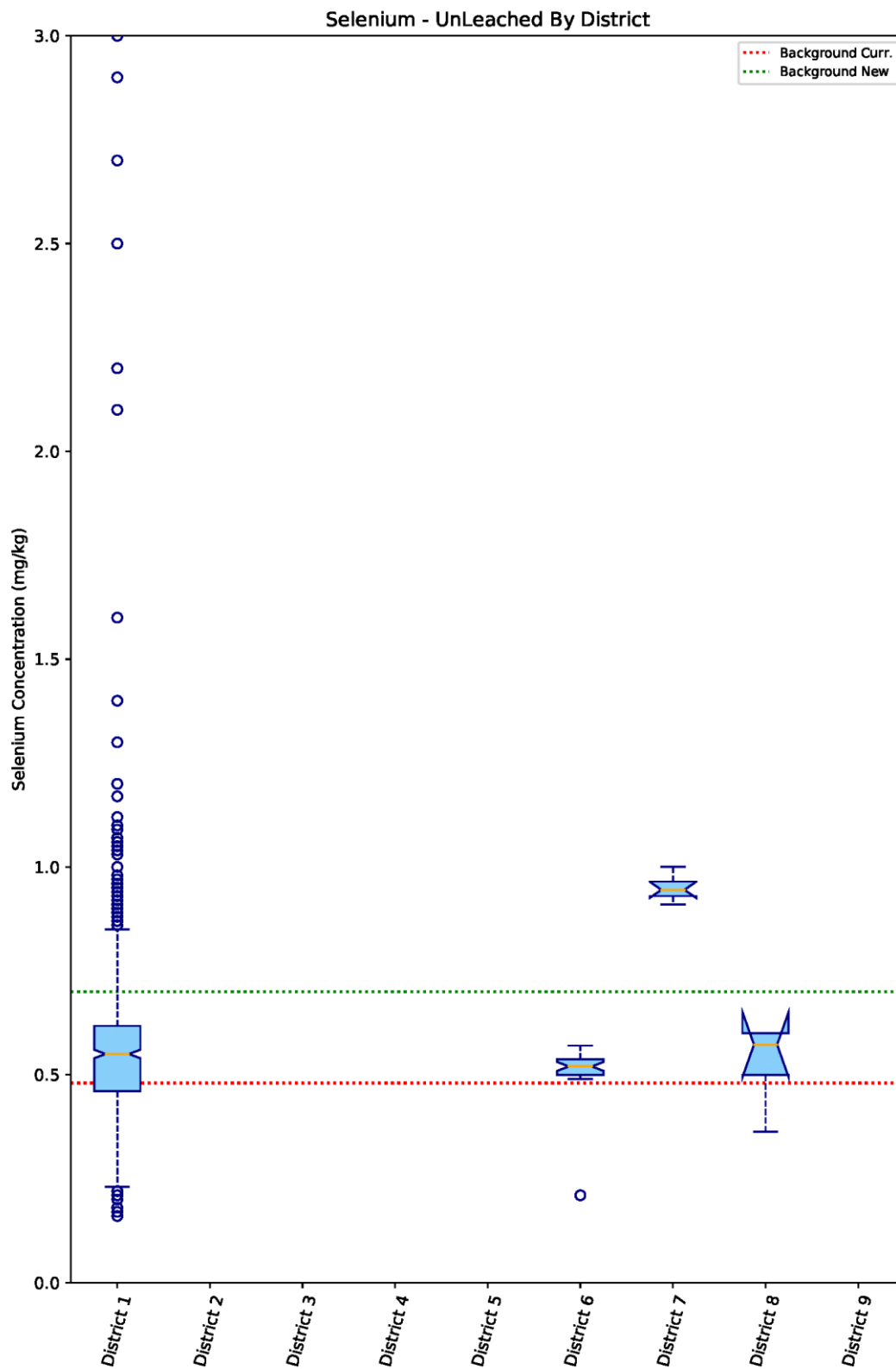


Figure 658. Boxplot of RSL selenium concentrations by IDOT District, Non-REC (mg/kg)

# Selenium Concentration by County, page 1 of 2

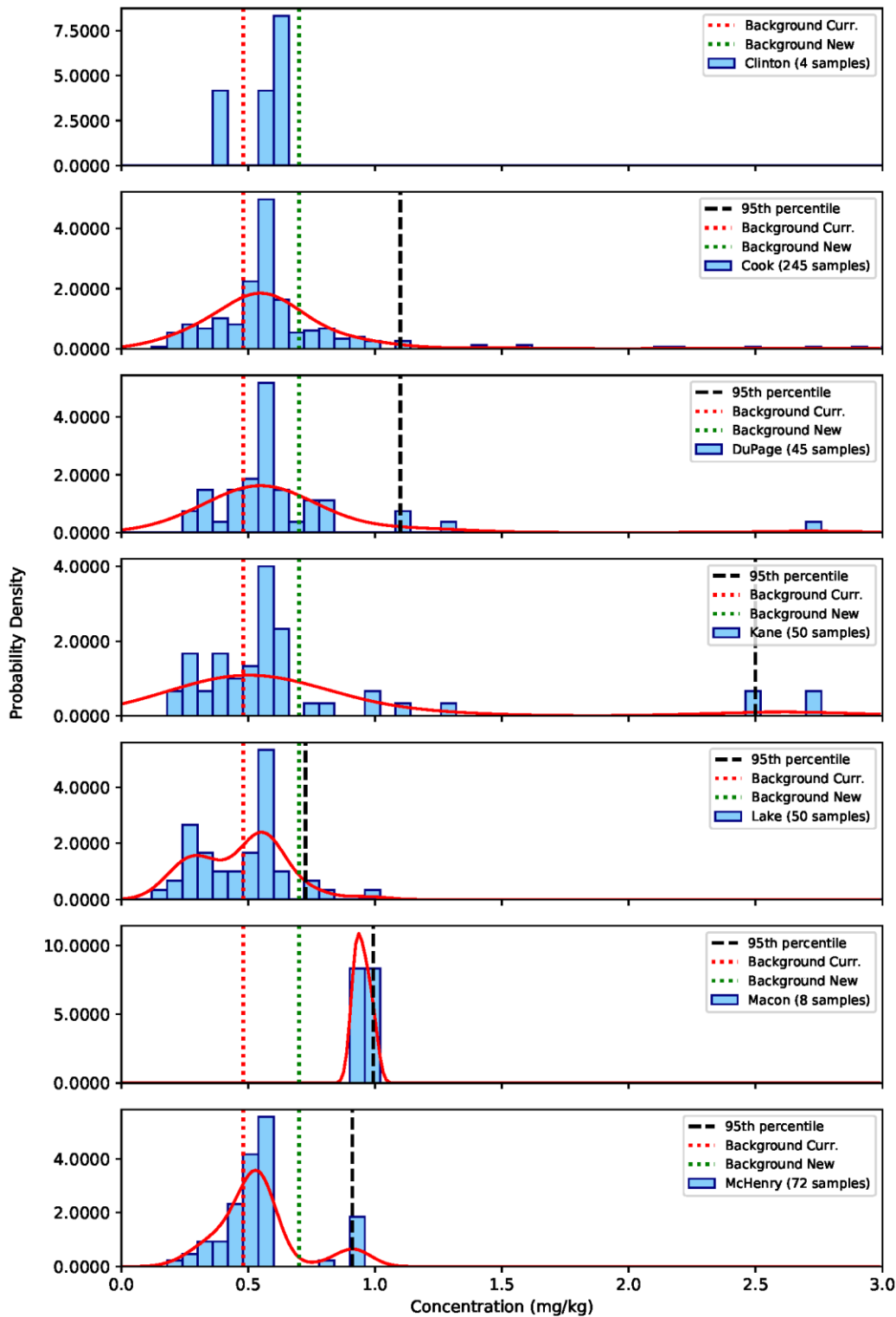


Figure 659. Histogram of RSL selenium concentrations by Illinois county, Non-REC (mg/kg), part 1

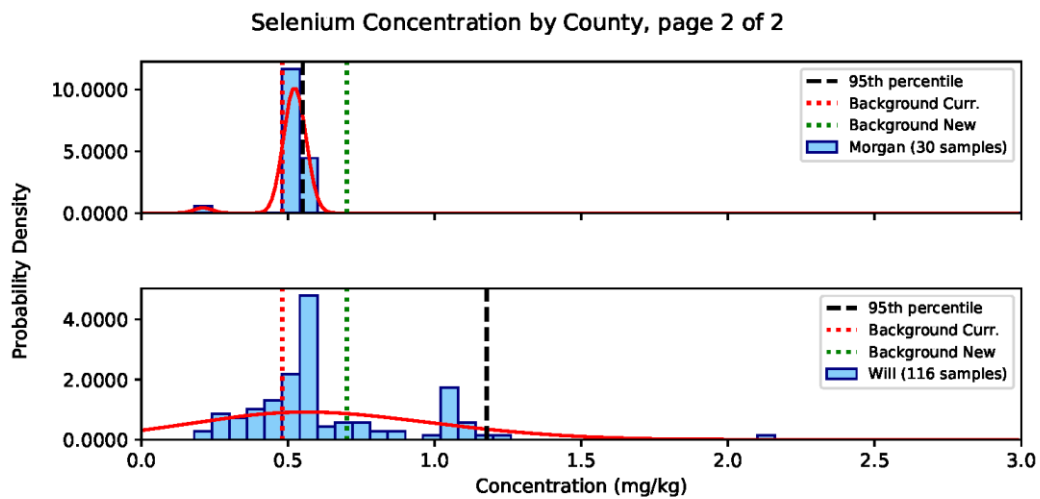


Figure 660. Histogram of RSL selenium concentrations by Illinois county, Non-REC (mg/kg), part 2

Selenium Concentration for 95th Percentile by County: Non-REC Sites

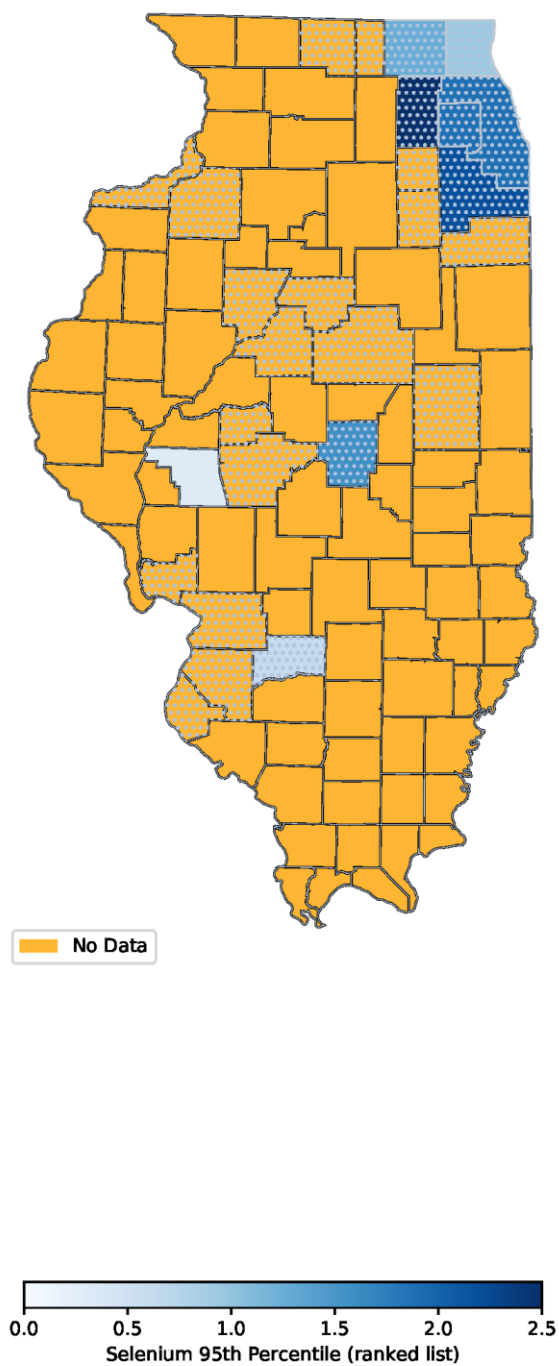


Figure 661. Map of RSL selenium 95th percentile concentration by Illinois county, Non-REC (mg/kg)

Number of Selenium Samples by County: Non-REC Sites

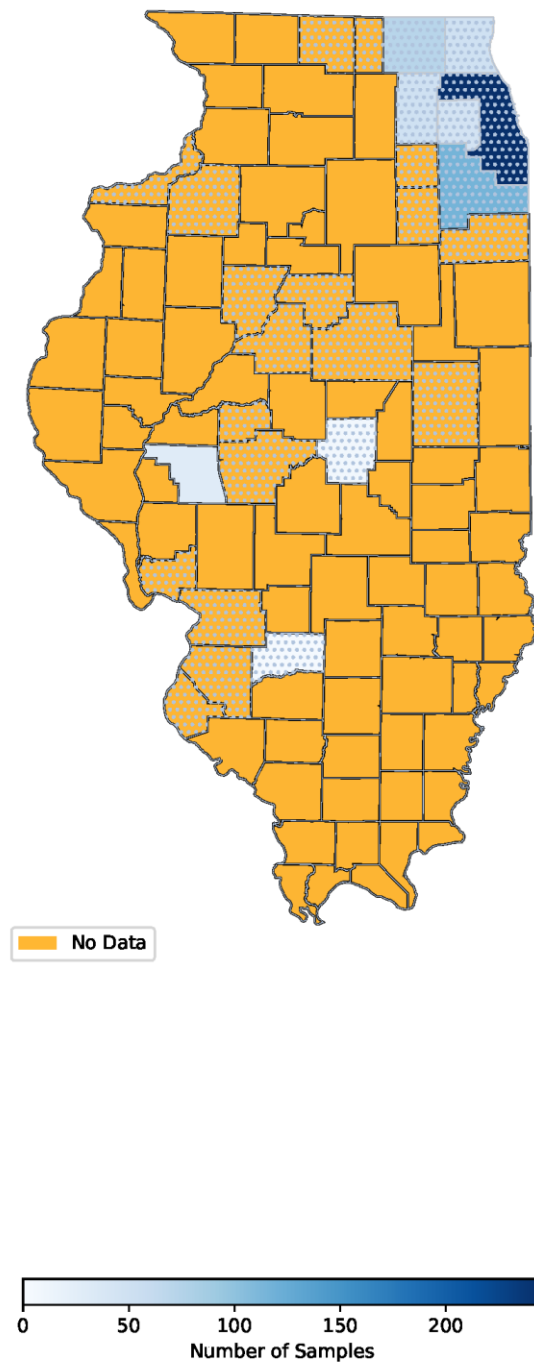


Figure 662. Map of RSL selenium sample quantity by Illinois county, Non-REC (mg/kg)

### **R.3 SELENIUM DE MINIMIS**

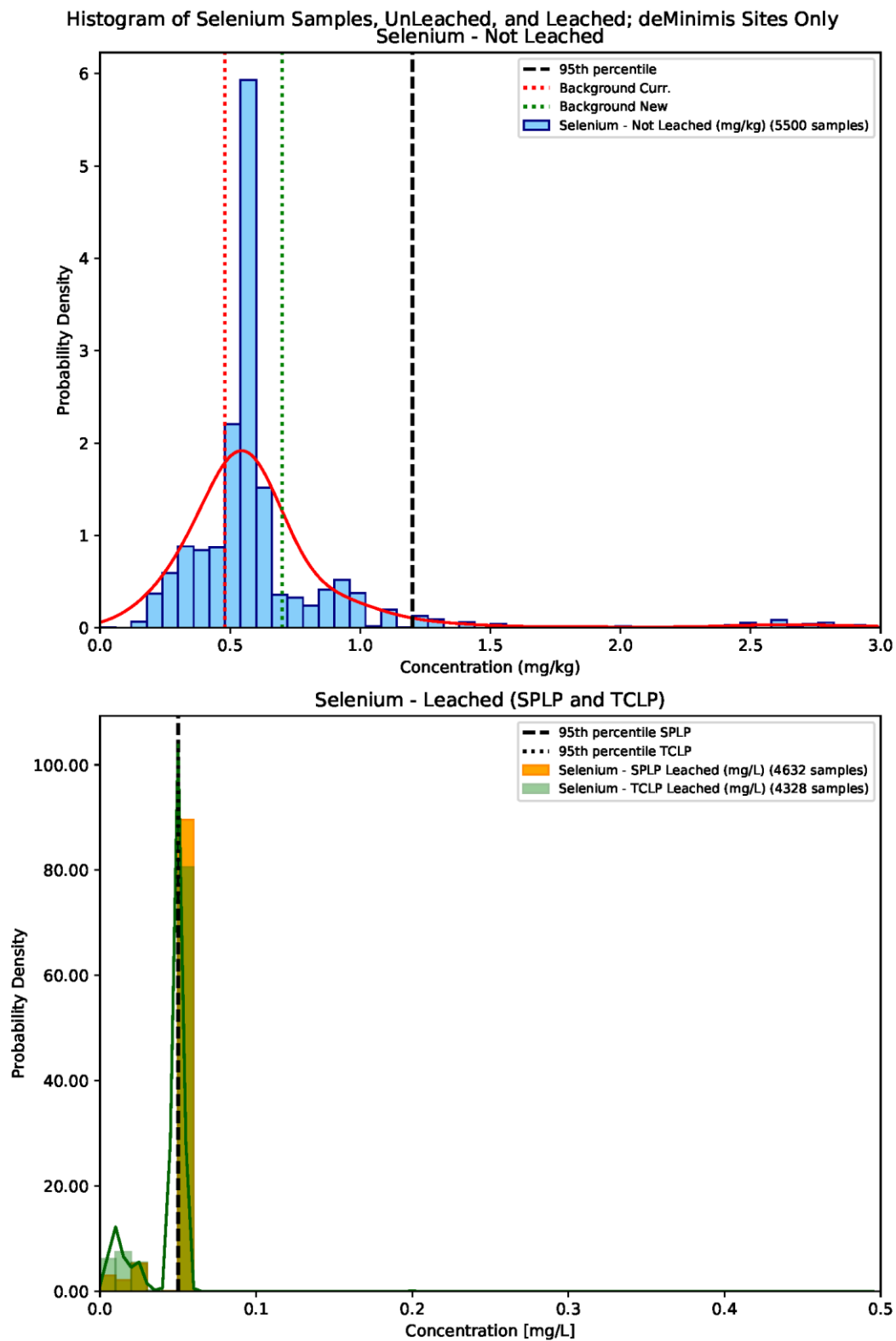


Figure 663. Histogram of RSL selenium concentrations, de minimis (mg/kg)

**Selenium Unleached Concentration (mg/kg)**

1) Region

2) District

3) County



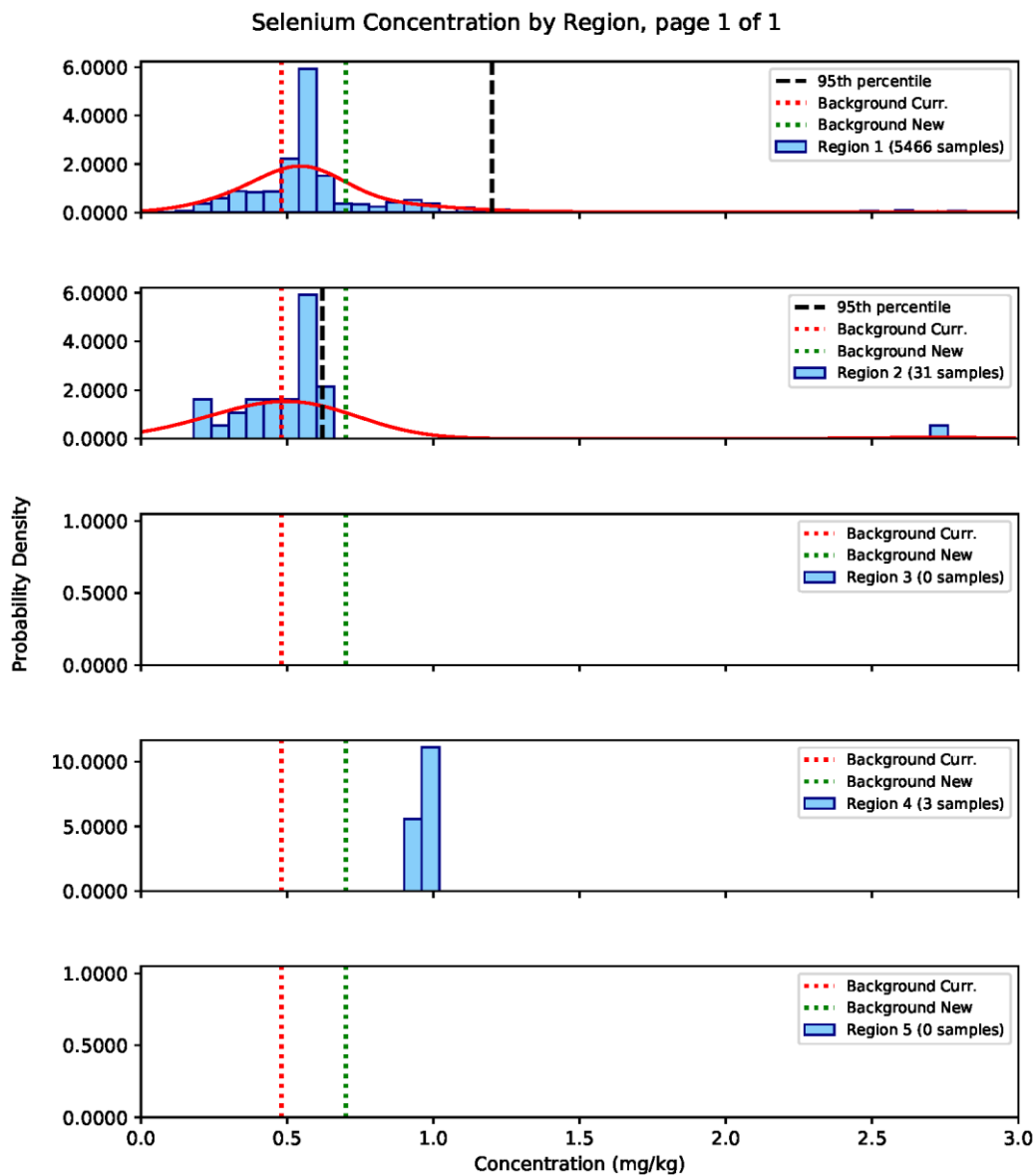


Figure 664. Histogram of RSL selenium concentrations by IDOT Region, de minimis (mg/kg)

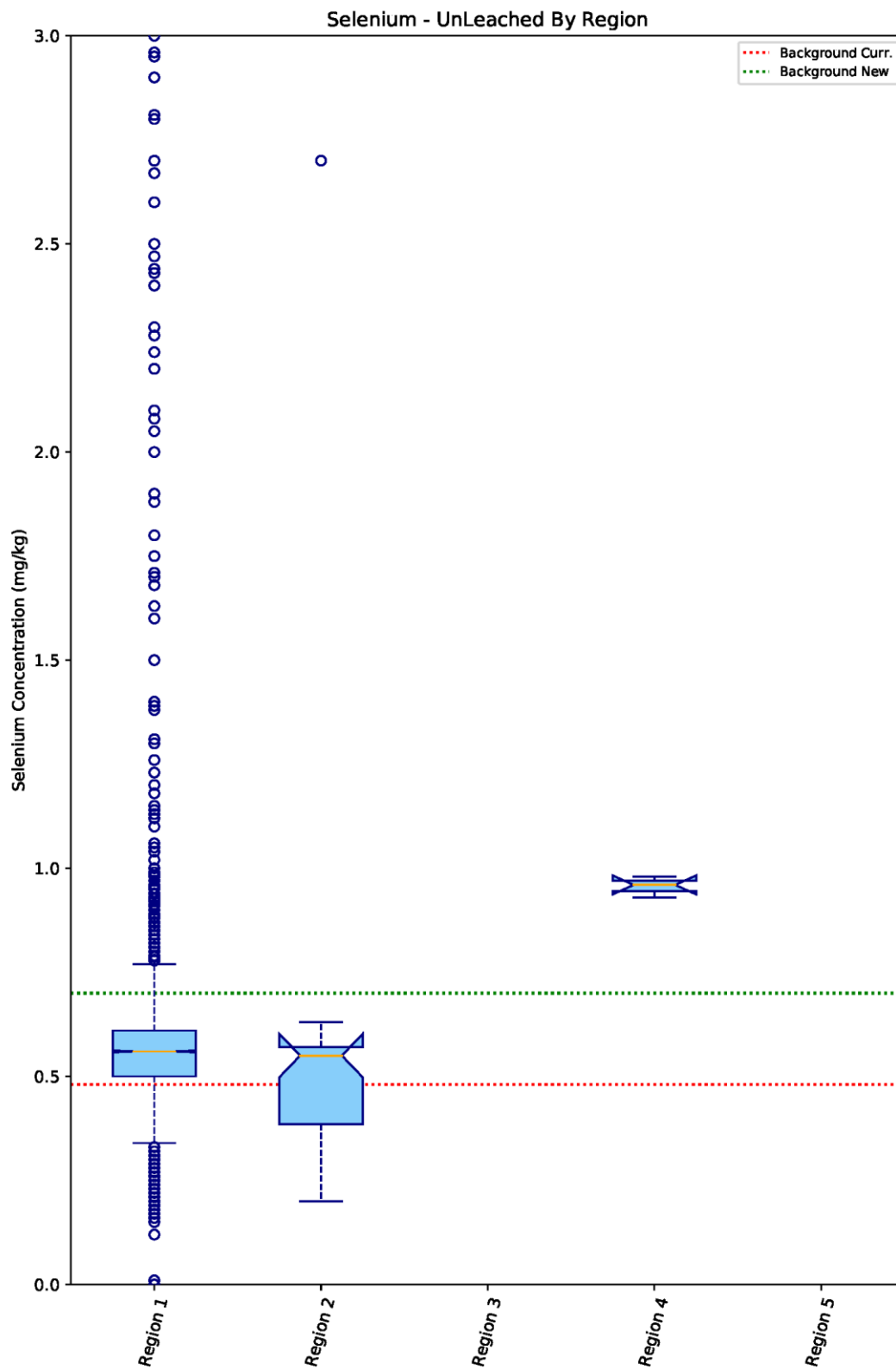


Figure 665. Boxplot of RSL selenium concentrations by IDOT Region, de minimis (mg/kg)

# Selenium Concentration by District, page 1 of 2

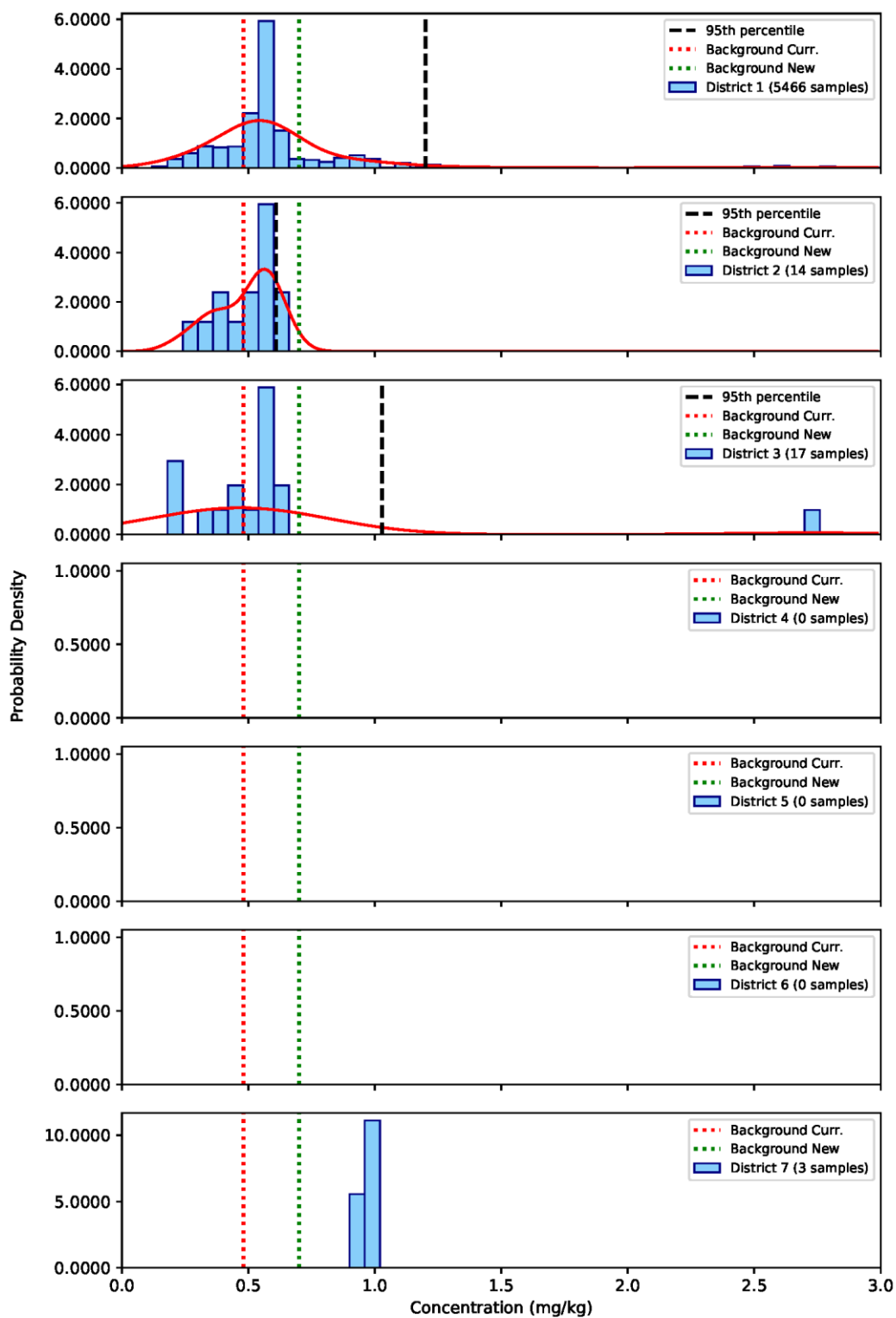


Figure 666. Histogram of RSL selenium concentrations by IDOT District, de minimis (mg/kg), part 1

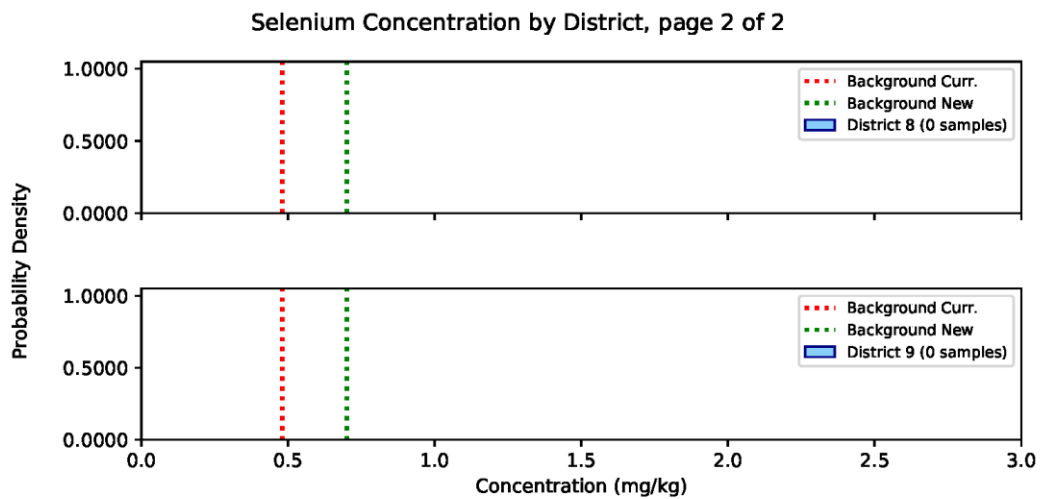


Figure 667. Histogram of RSL selenium concentrations by IDOT District, de minimis (mg/kg), part 2

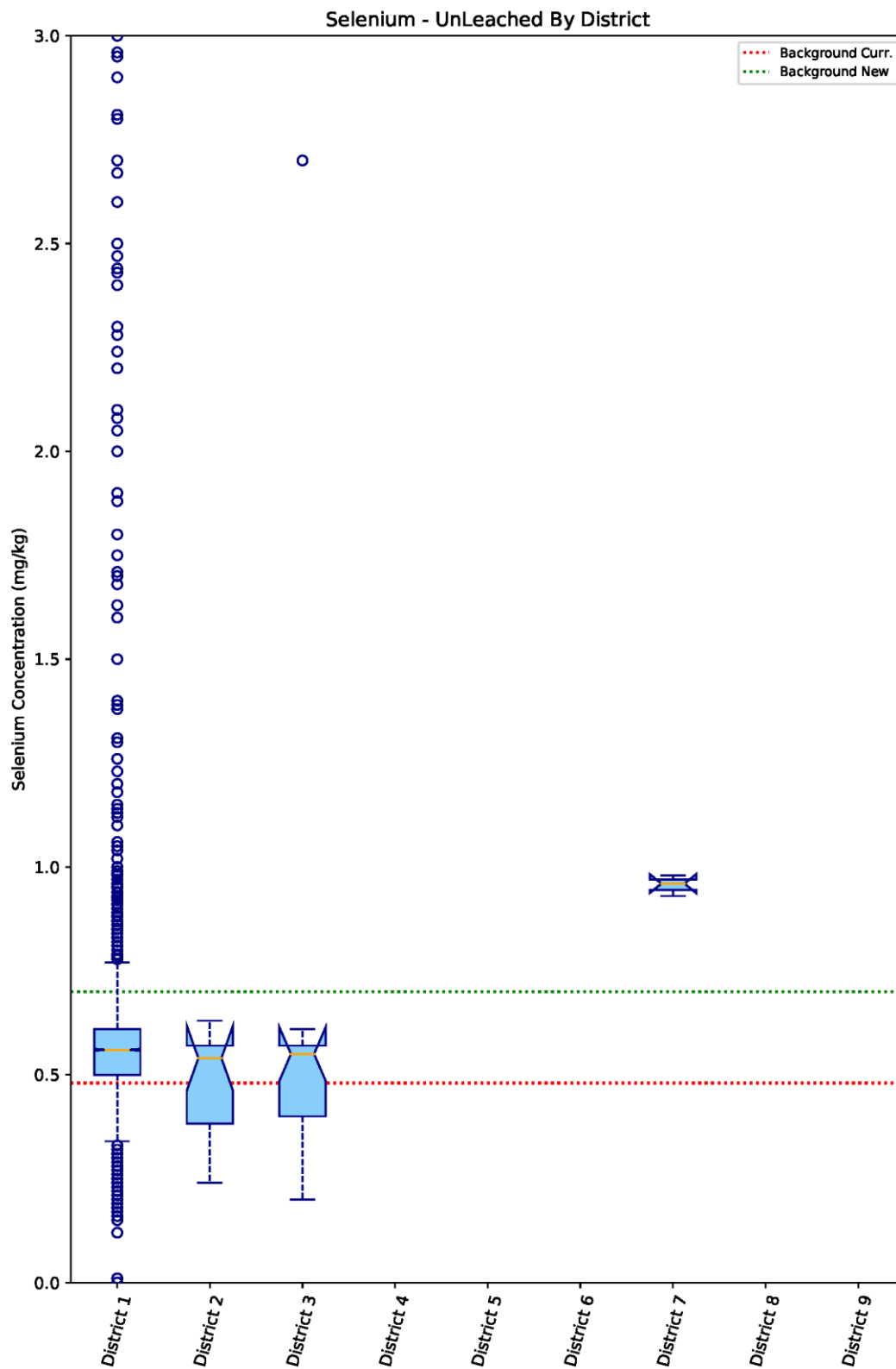


Figure 668. Boxplot of RSL selenium concentrations by IDOT District, de minimis (mg/kg)

# Selenium Concentration by County, page 1 of 2

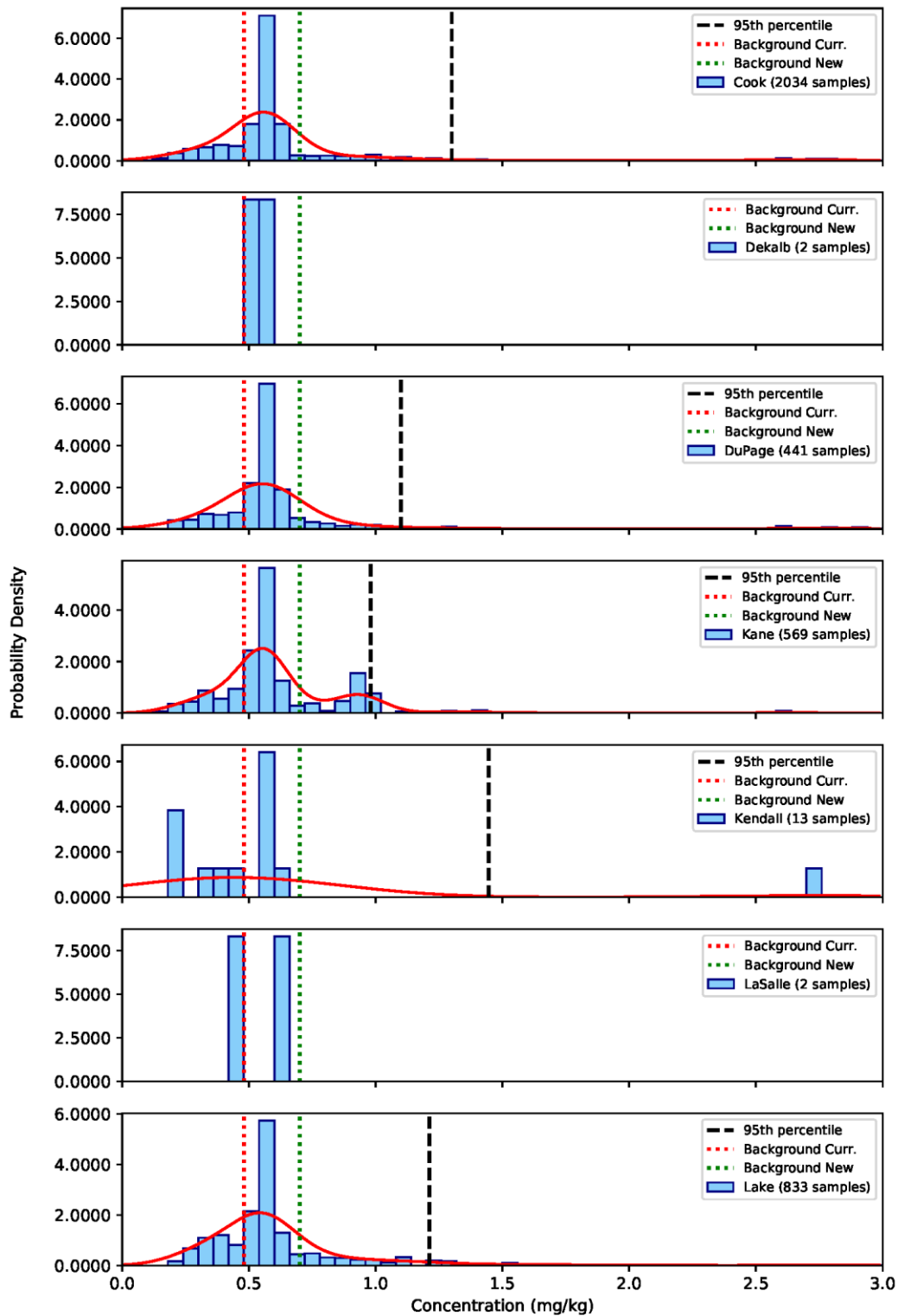


Figure 669. Histogram of RSL selenium concentrations by Illinois county, de minimis (mg/kg), part 1

# Selenium Concentration by County, page 2 of 2

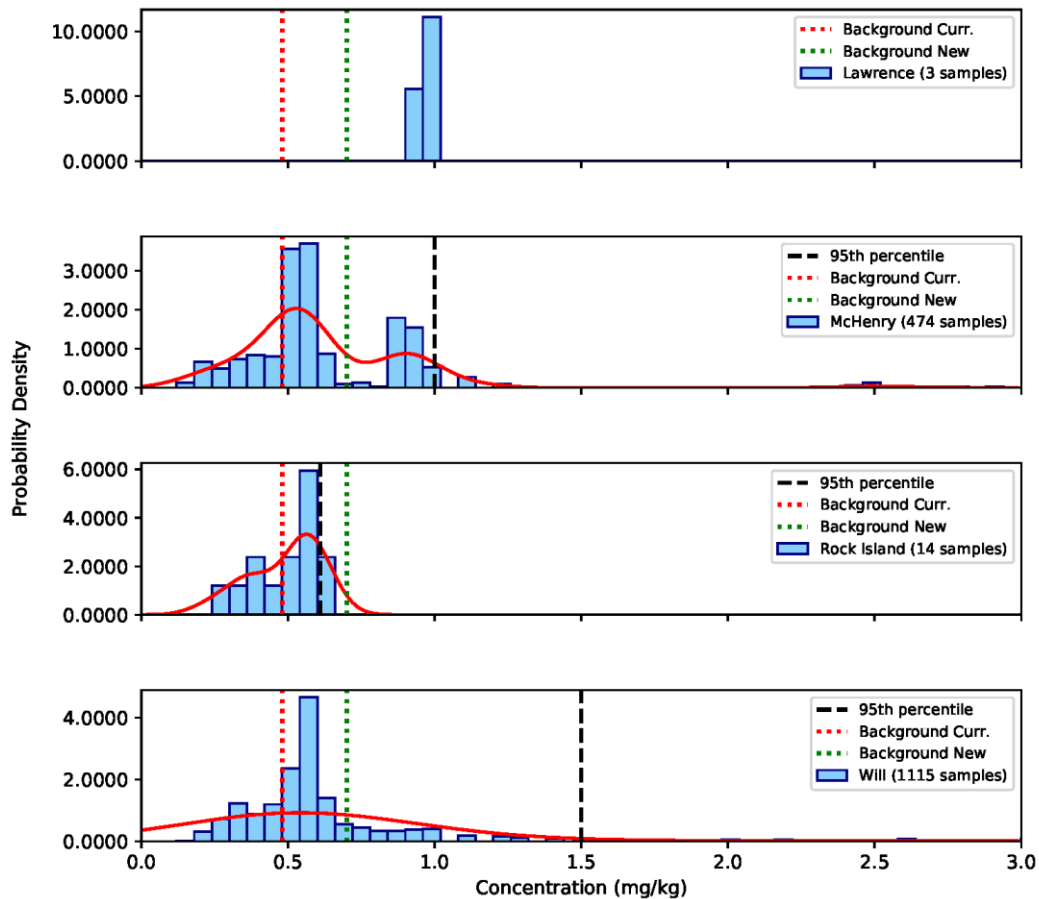


Figure 670. Histogram of RSL selenium concentrations by Illinois county, de minimis (mg/kg), part 2

Selenium Concentration for 95th Percentile by County: deMinimis Sites

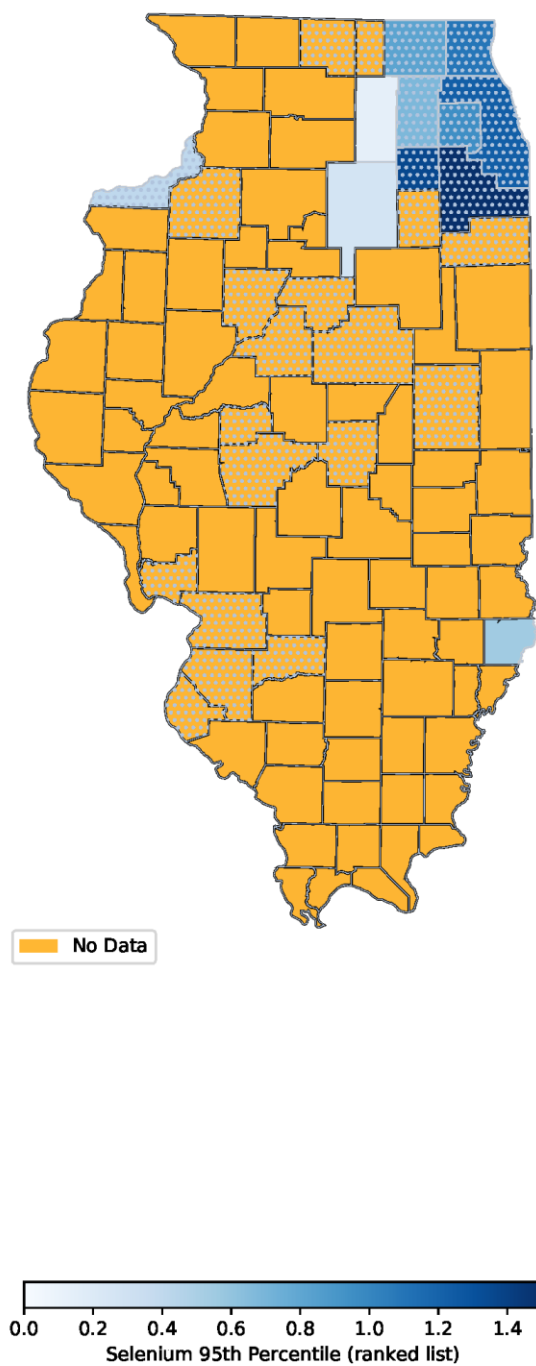


Figure 671. Map of RSL selenium 95th percentile concentration by Illinois county, de minimis (mg/kg)



Number of Selenium Samples by County: deMinimis Sites

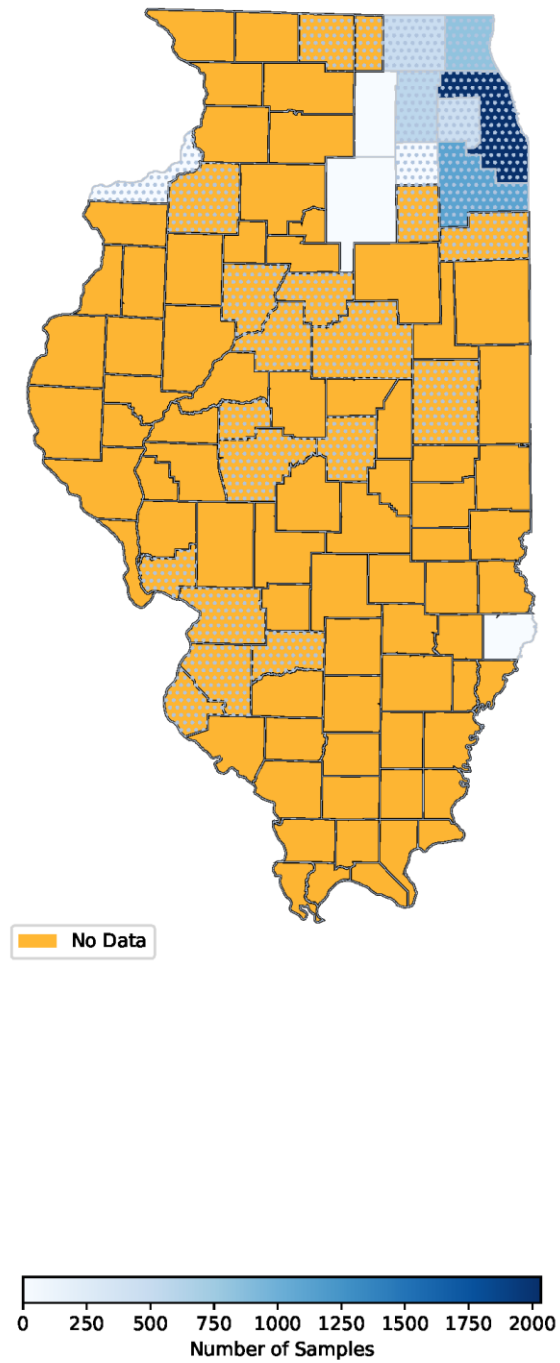


Figure 672. Map of RSL selenium sample quantity by Illinois county, de minimis (mg/kg)

## **APPENDIX S. ANALYTE ANALYSIS: SODIUM**

### **S.1 SODIUM REC**

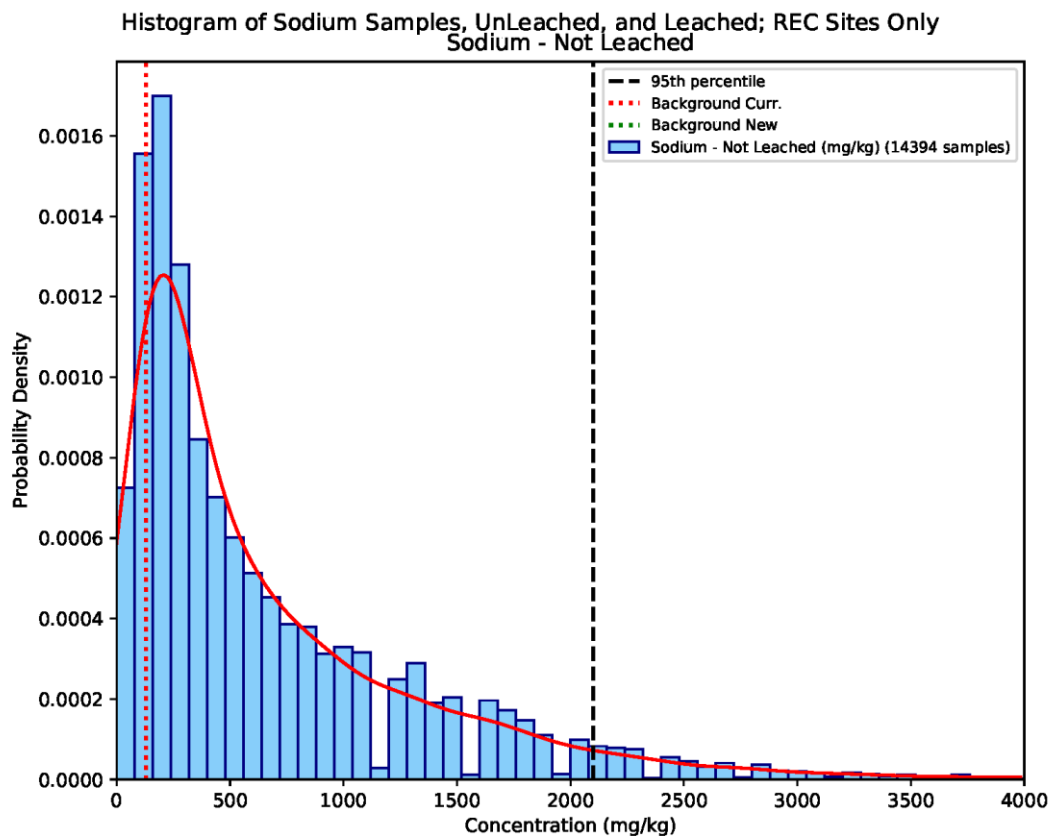


Figure 673. Histogram of RSL sodium concentrations, REC (mg/kg)

Sodium Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

# Sodium Concentration by Region, page 1 of 1

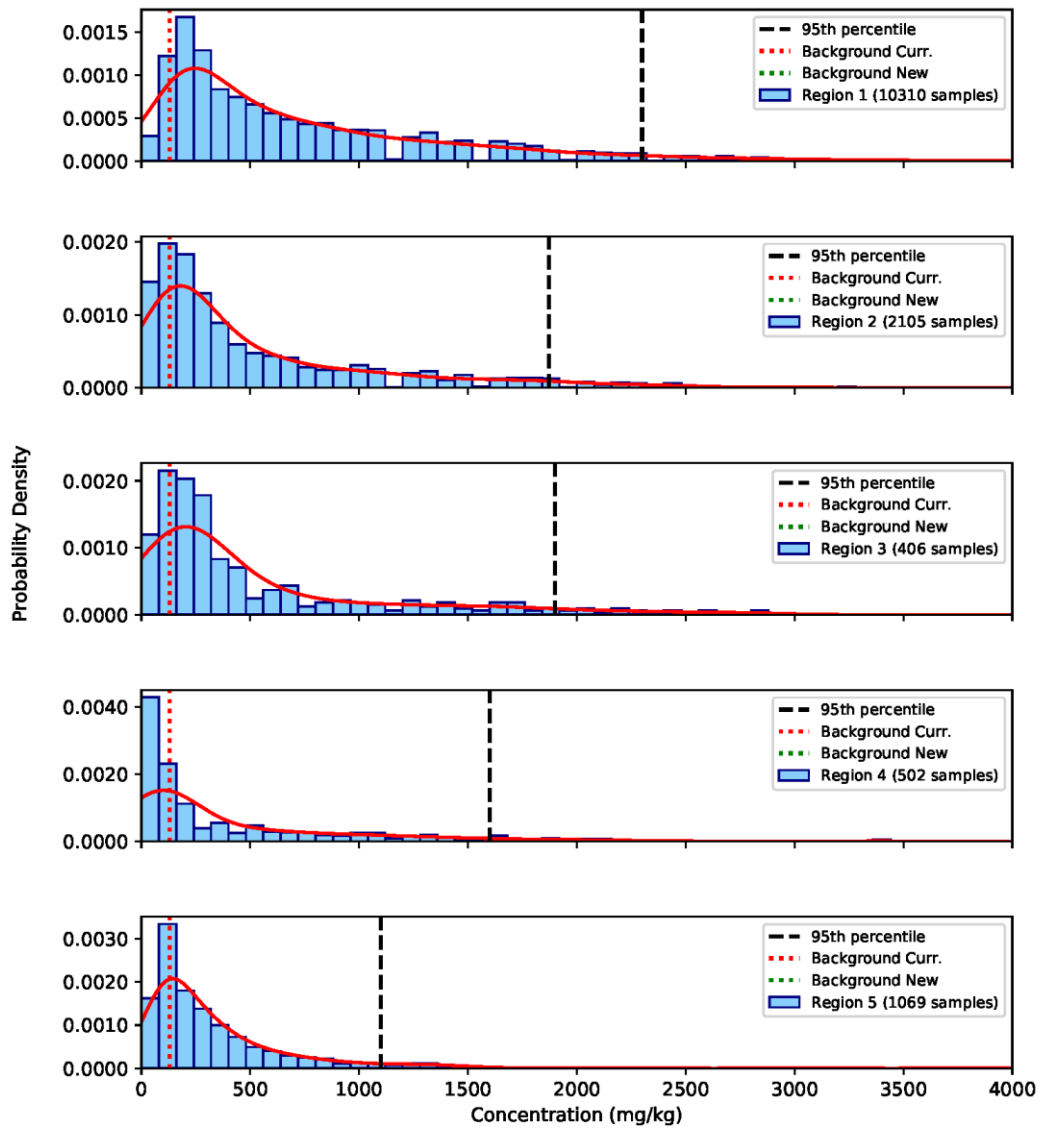


Figure 674. Histogram of RSL sodium concentrations by IDOT Region, REC (mg/kg)

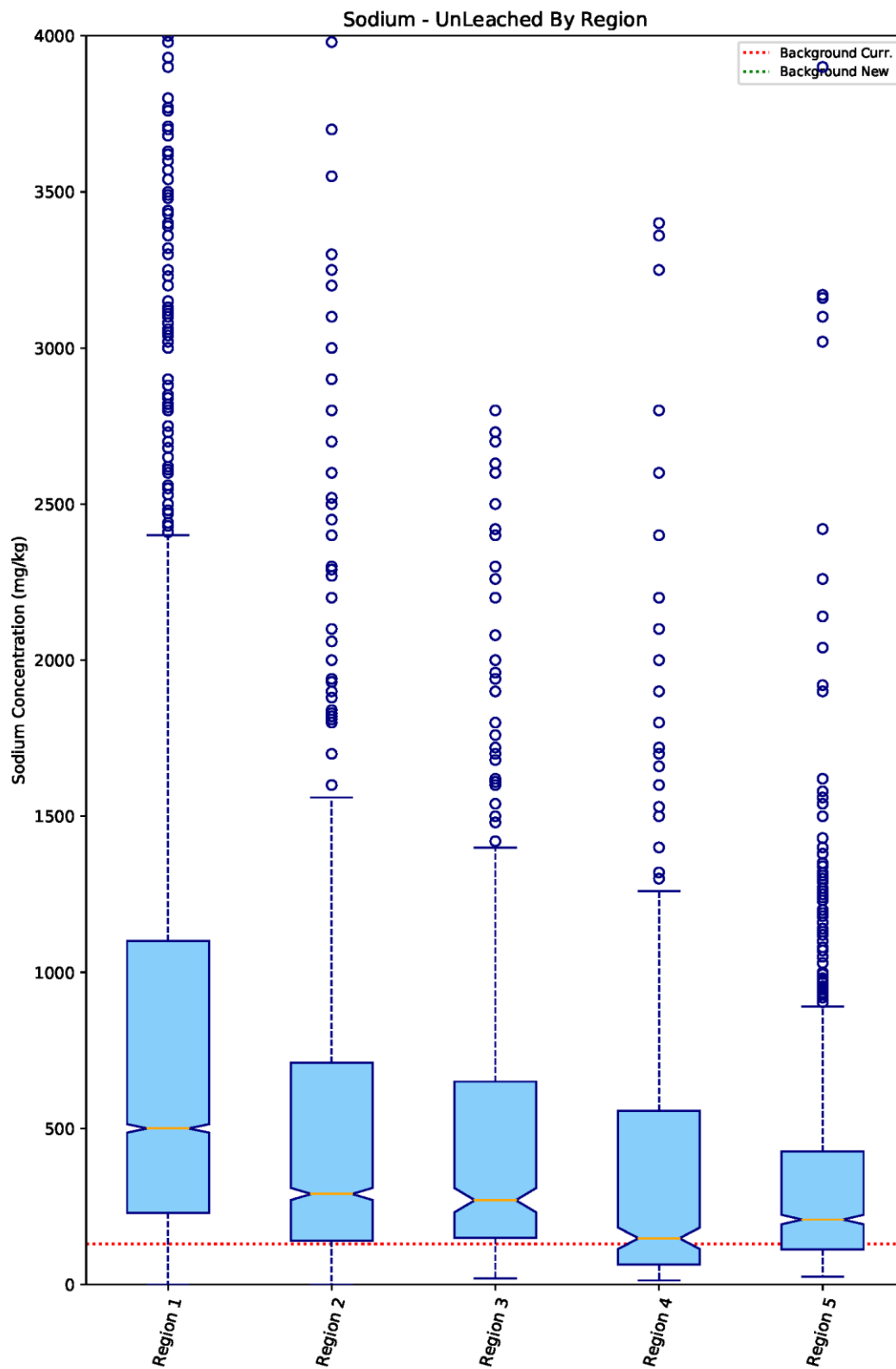


Figure 675. Boxplot of RSL sodium concentrations by IDOT Region, REC (mg/kg)

Sodium Concentration by District, page 1 of 2

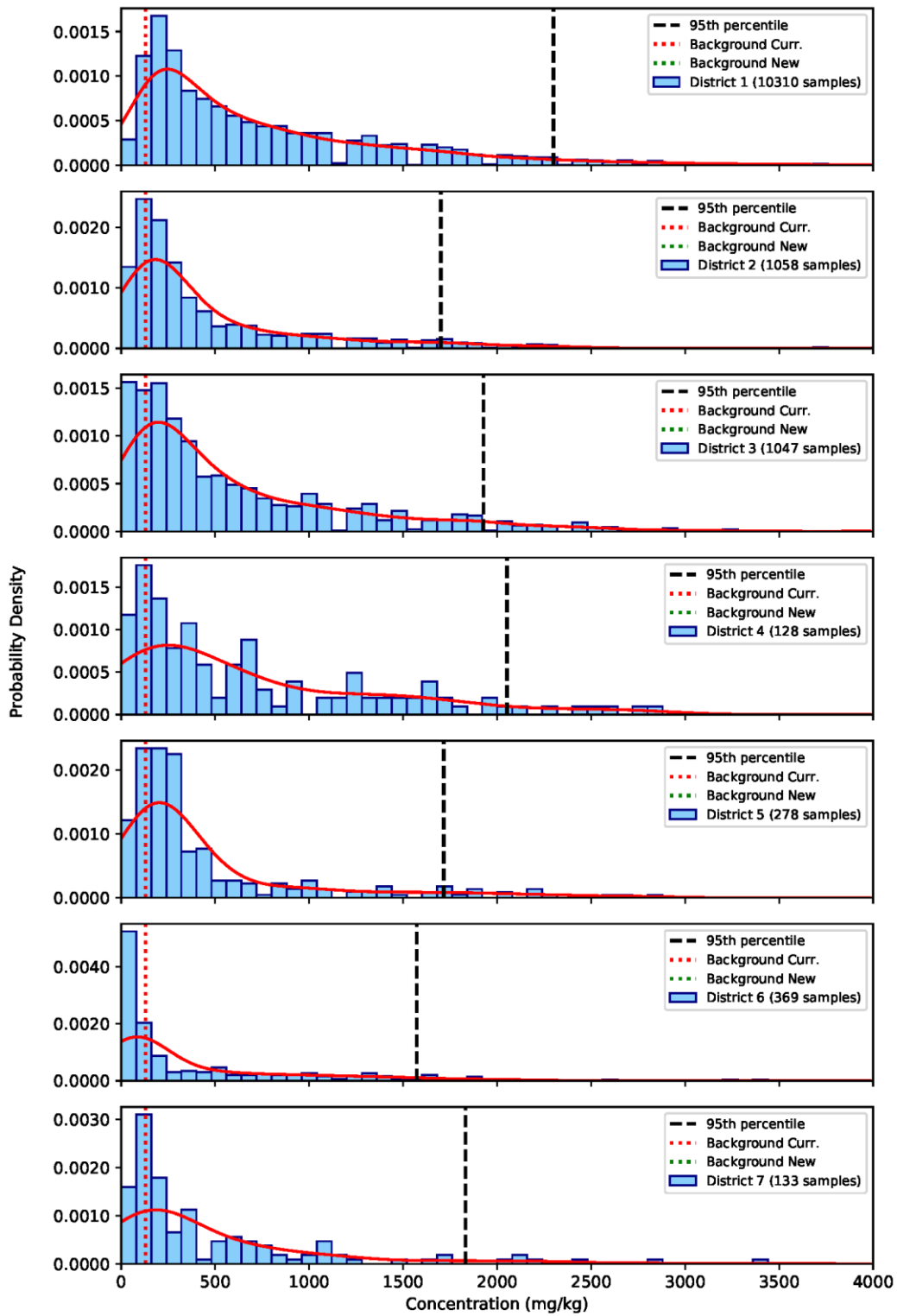


Figure 676. Histogram of RSL sodium concentrations by IDOT District, REC (mg/kg), part 1

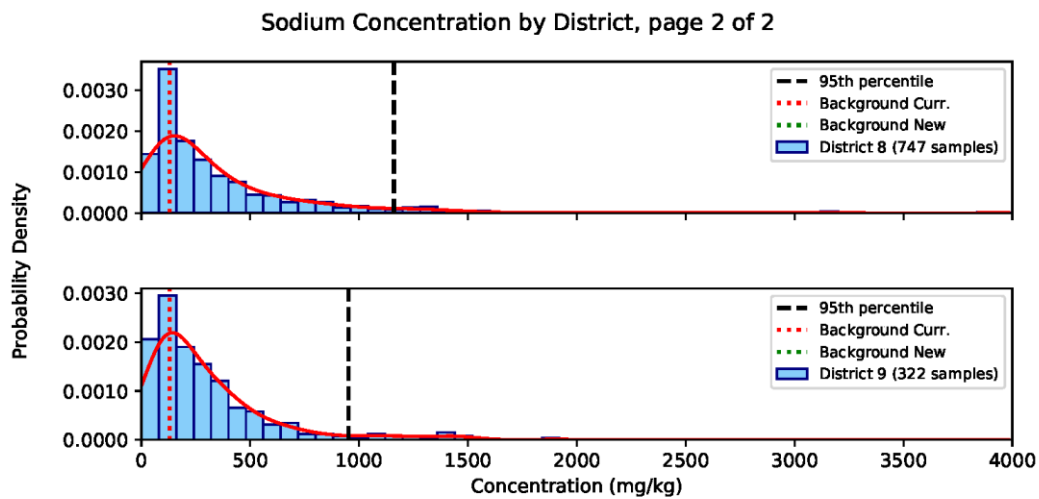


Figure 677. Histogram of RSL sodium concentrations by IDOT District, REC (mg/kg), part 2



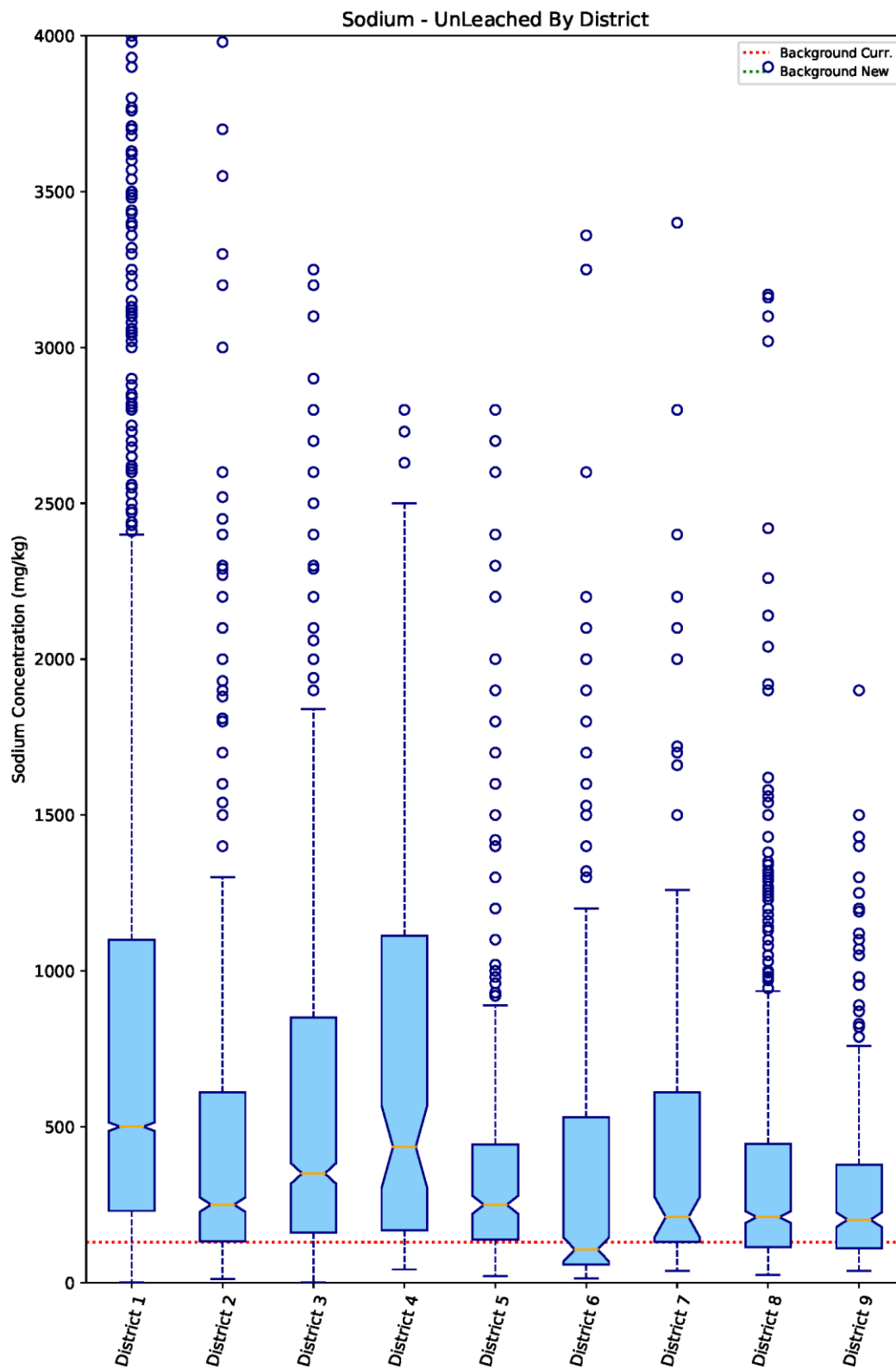


Figure 678. Boxplot of RSL sodium concentrations by IDOT District, REC (mg/kg)

Sodium Concentration by County, page 1 of 8

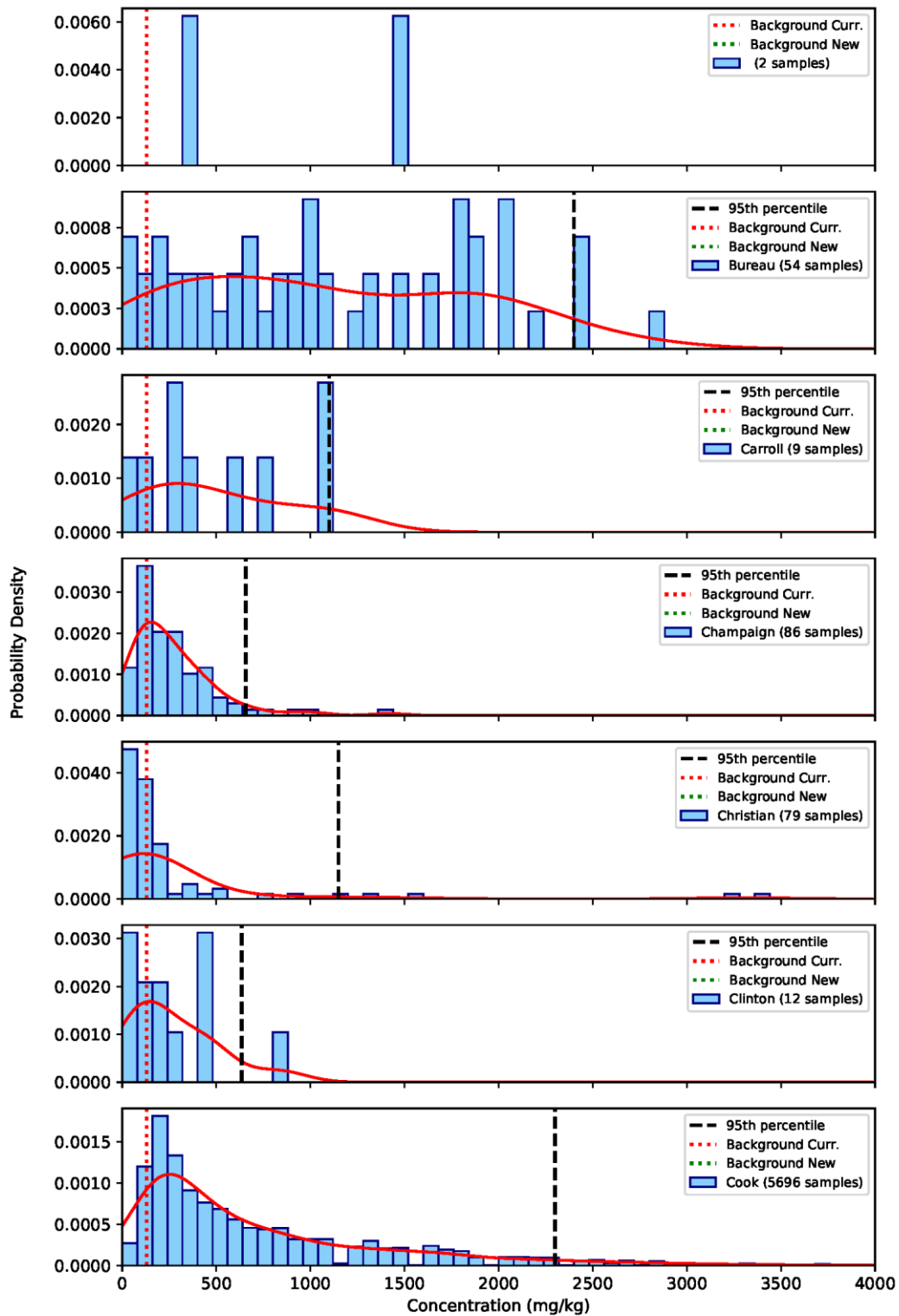


Figure 679. Histogram of RSL sodium concentrations by Illinois county, REC (mg/kg), part 1

# Sodium Concentration by County, page 2 of 8

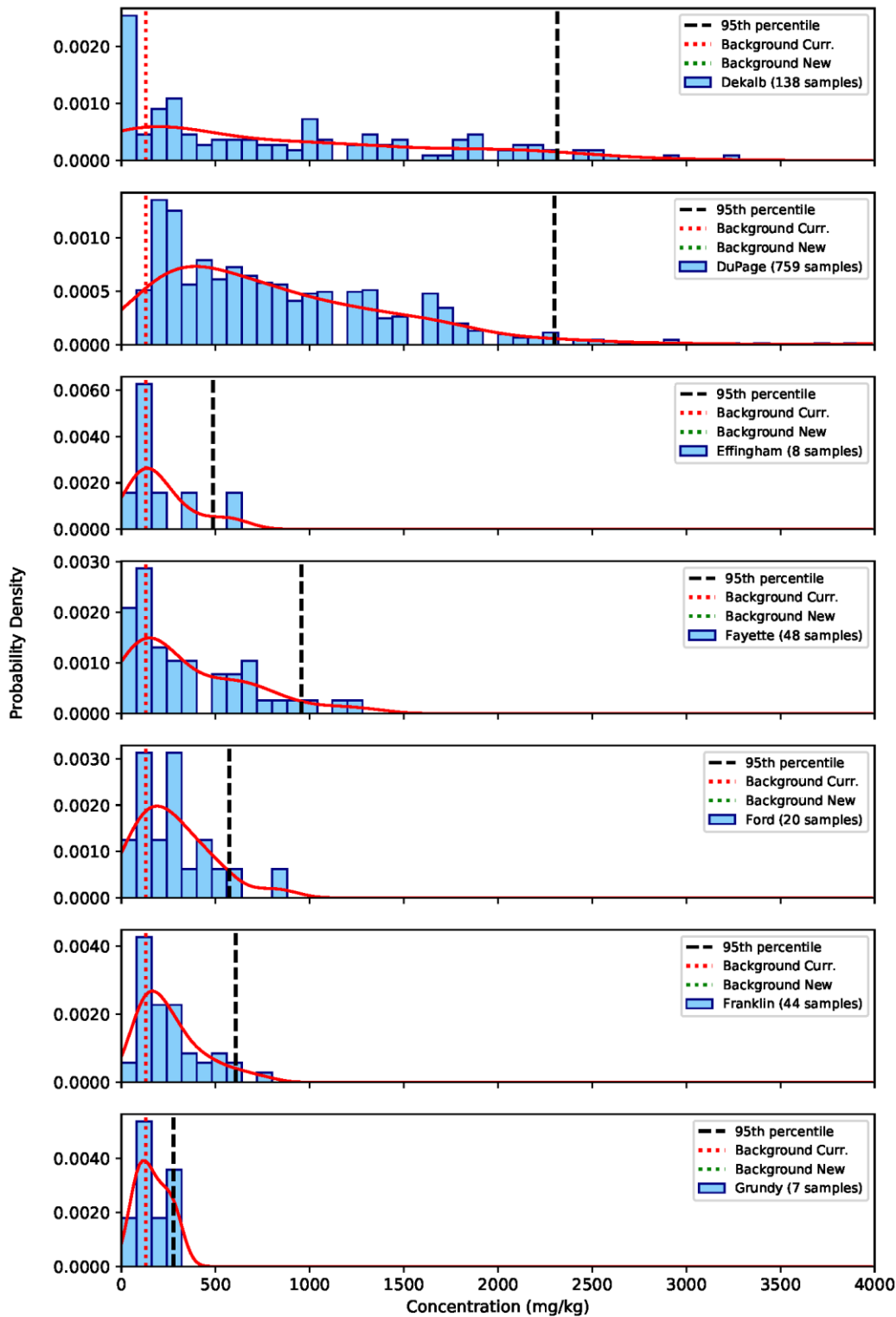


Figure 680. Histogram of RSL sodium concentrations by Illinois county, REC (mg/kg), part 2

Sodium Concentration by County, page 3 of 8

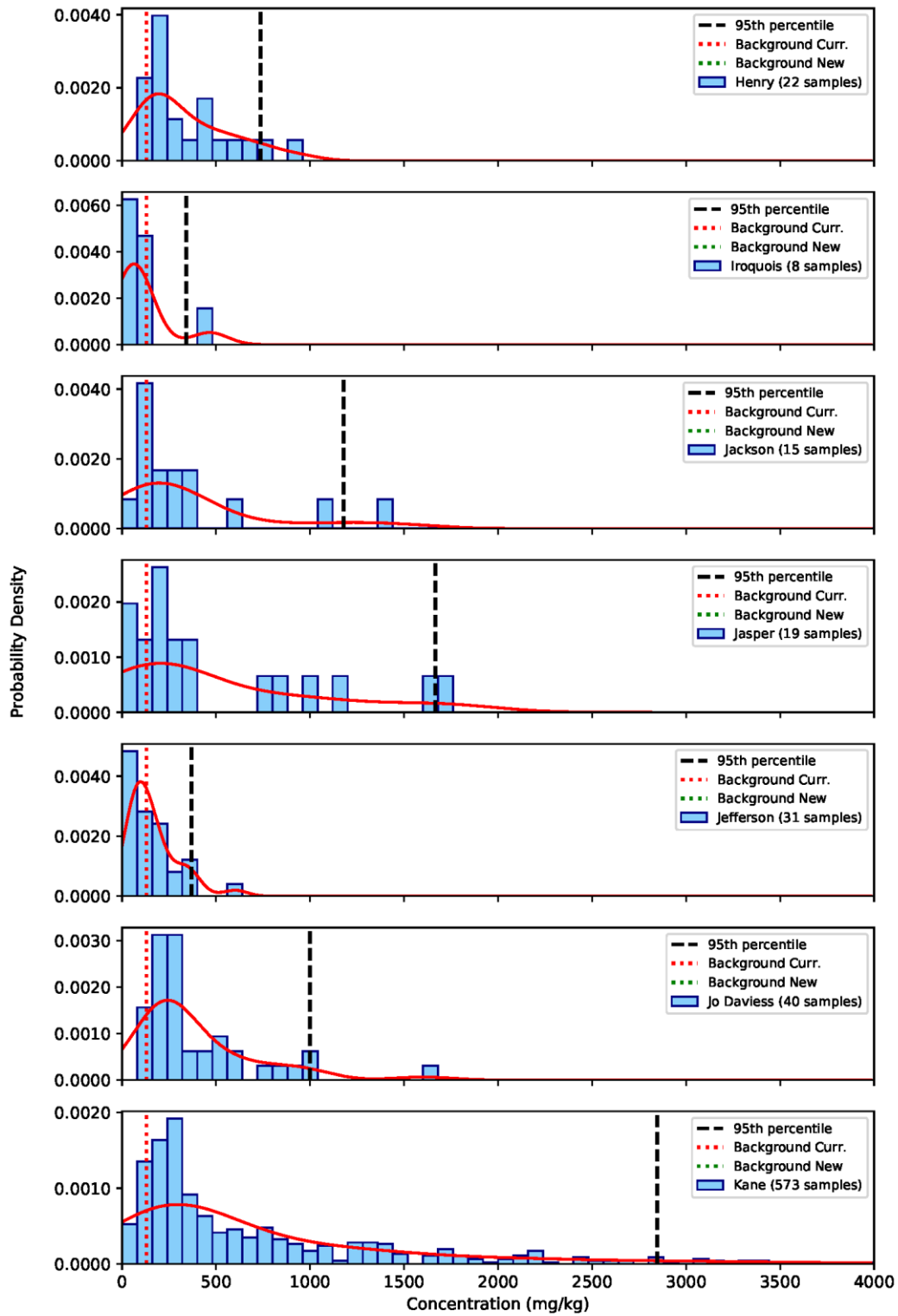


Figure 681. Histogram of RSL sodium concentrations by Illinois county, REC (mg/kg), part 3

Sodium Concentration by County, page 4 of 8

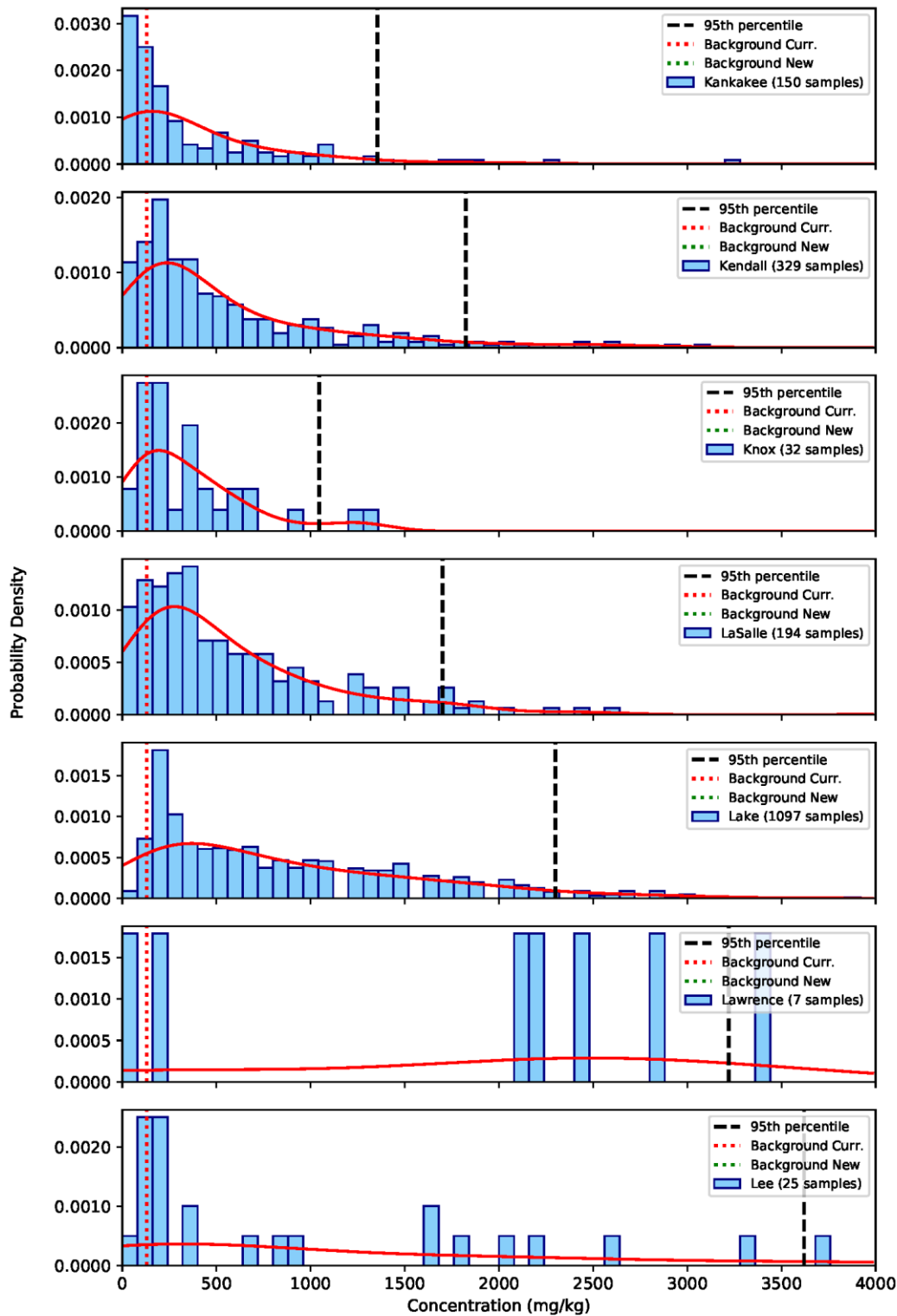


Figure 682. Histogram of RSL sodium concentrations by Illinois county, REC (mg/kg), part 4

Sodium Concentration by County, page 5 of 8

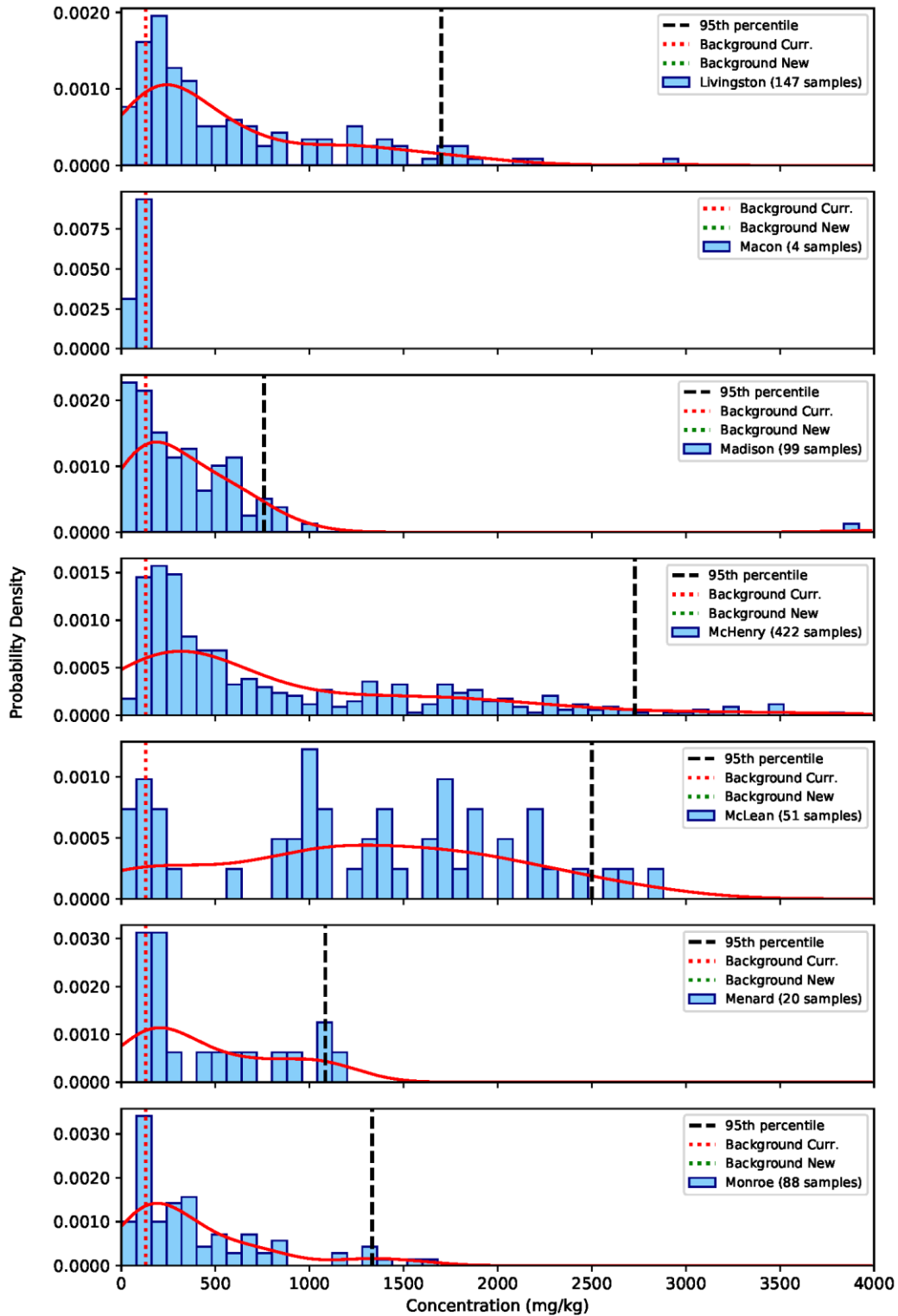


Figure 683. Histogram of RSL sodium concentrations by Illinois county, REC (mg/kg), part 5

Sodium Concentration by County, page 6 of 8

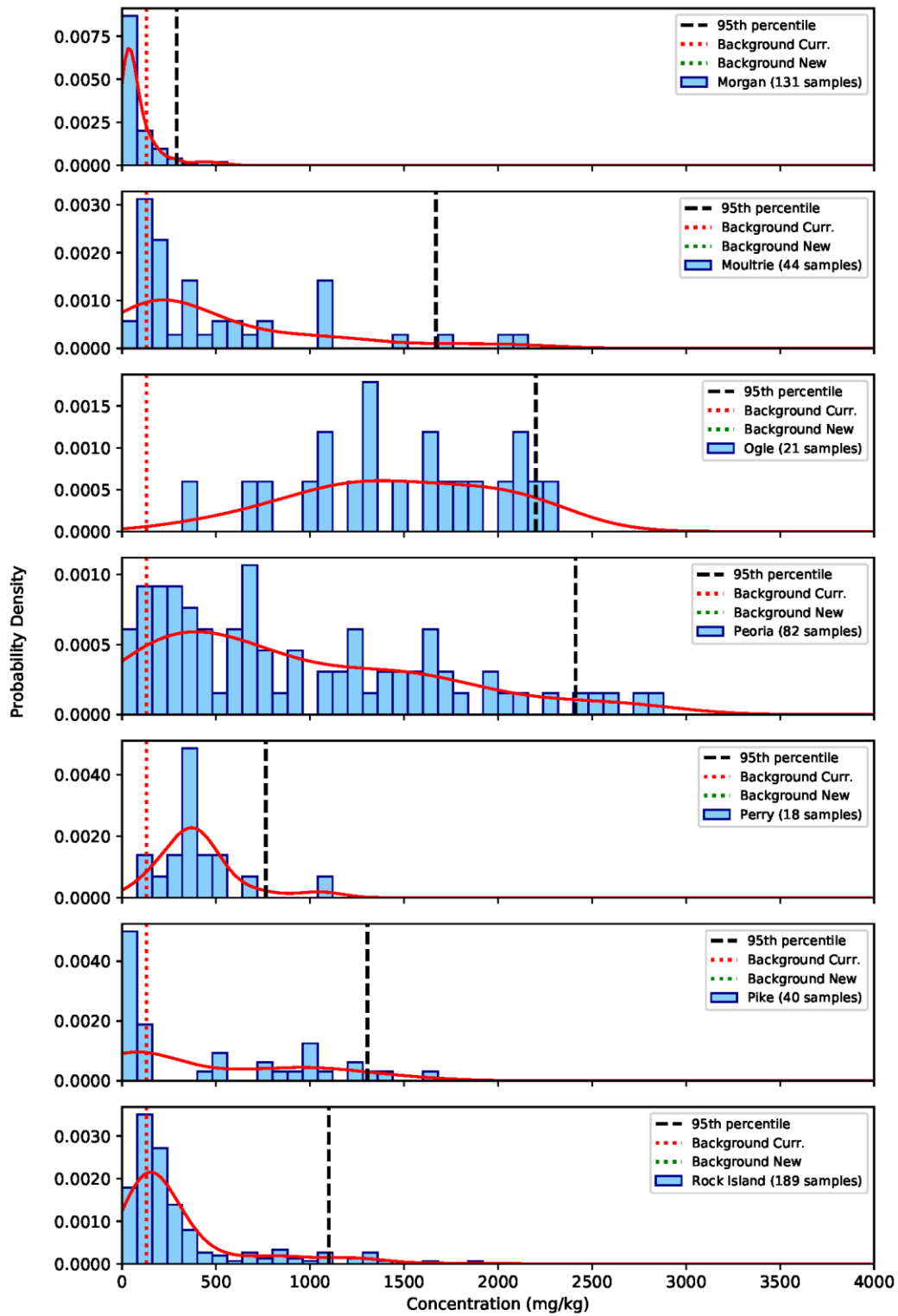


Figure 684. Histogram of RSL sodium concentrations by Illinois county, REC (mg/kg), part 6

Sodium Concentration by County, page 7 of 8

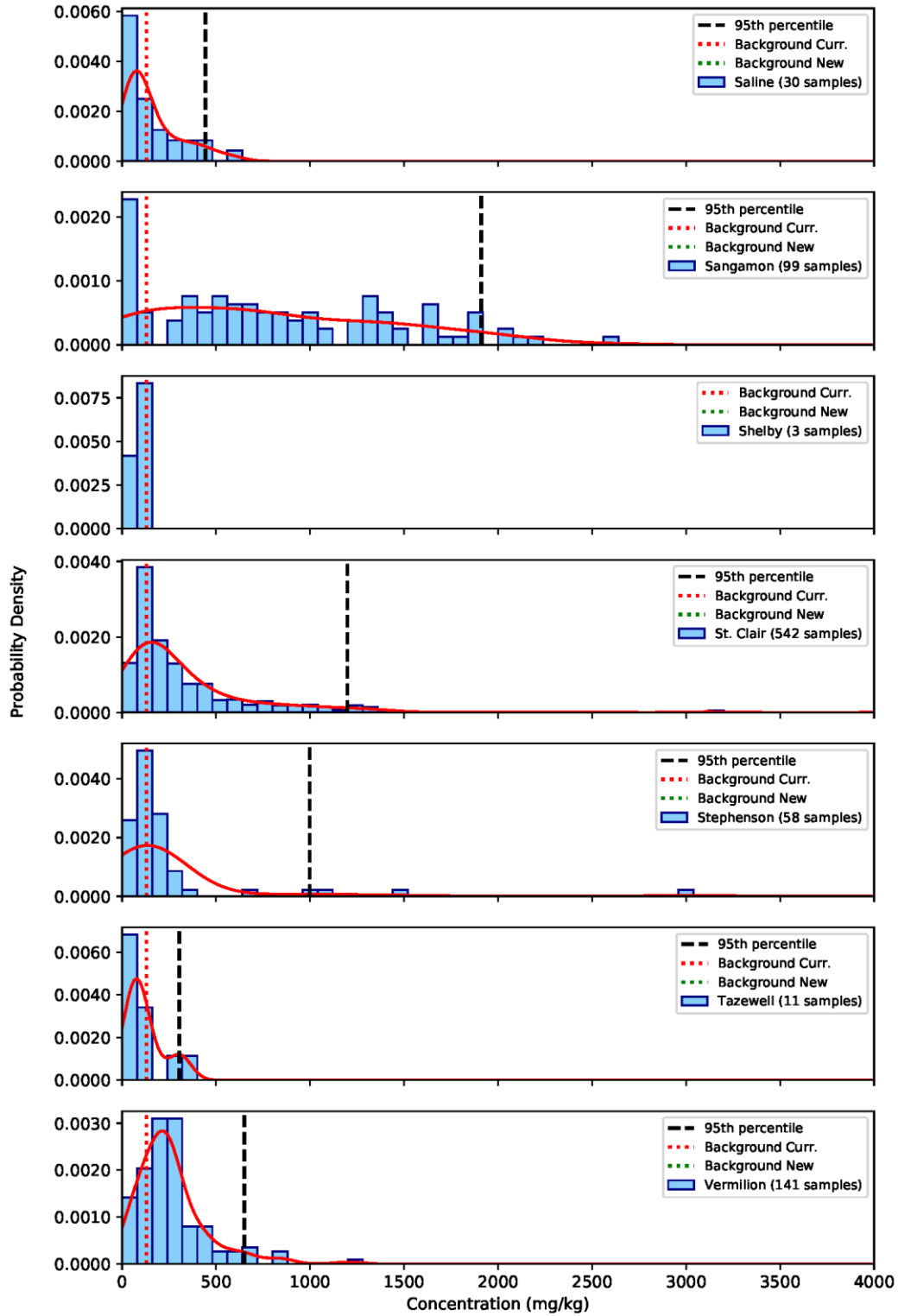


Figure 685. Histogram of RSL sodium concentrations by Illinois county, REC (mg/kg), part 7



Sodium Concentration by County, page 8 of 8

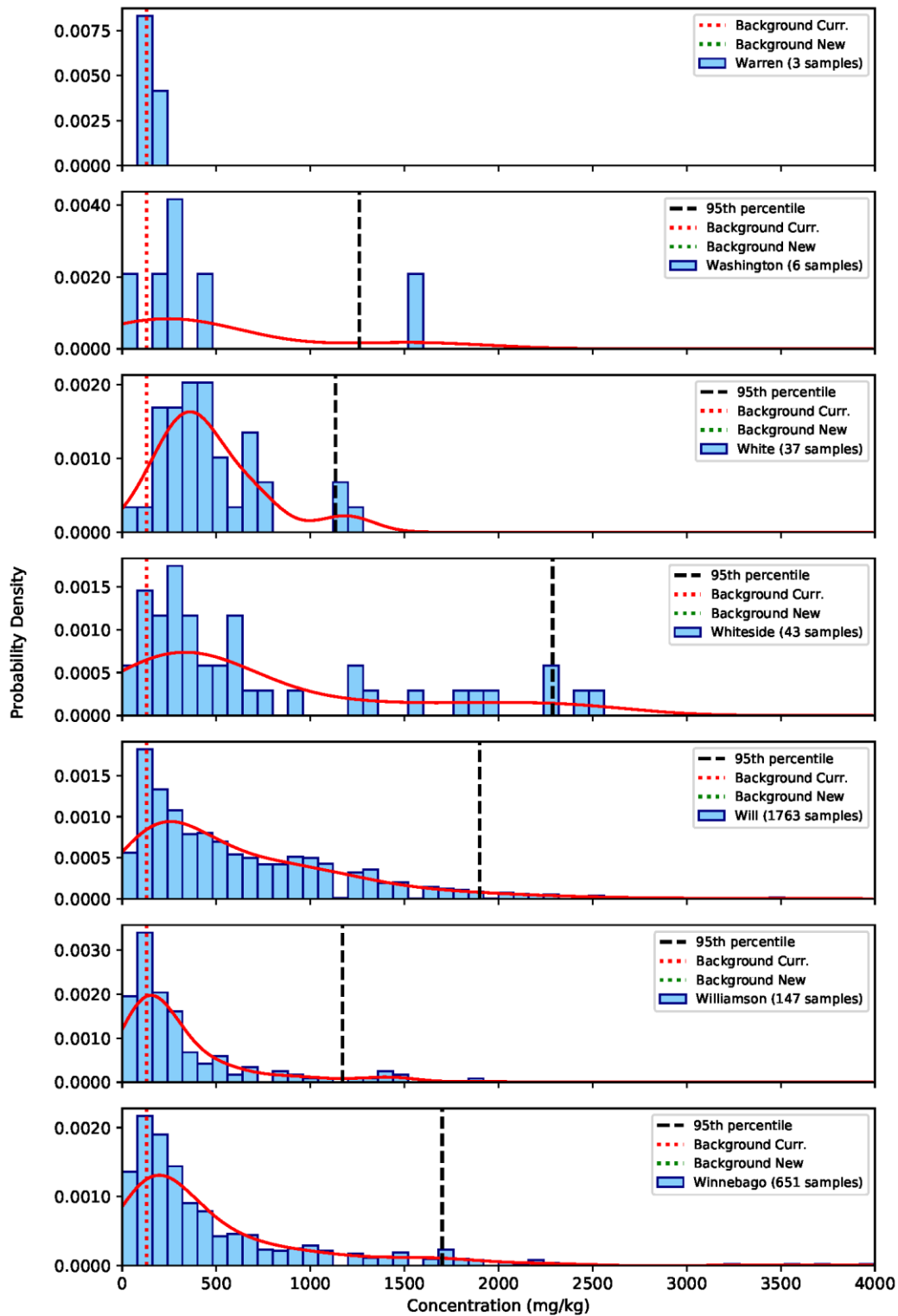


Figure 686. Histogram of RSL sodium concentrations by Illinois county, REC (mg/kg), part 8

Sodium Concentration for 95th Percentile by County: REC Sites

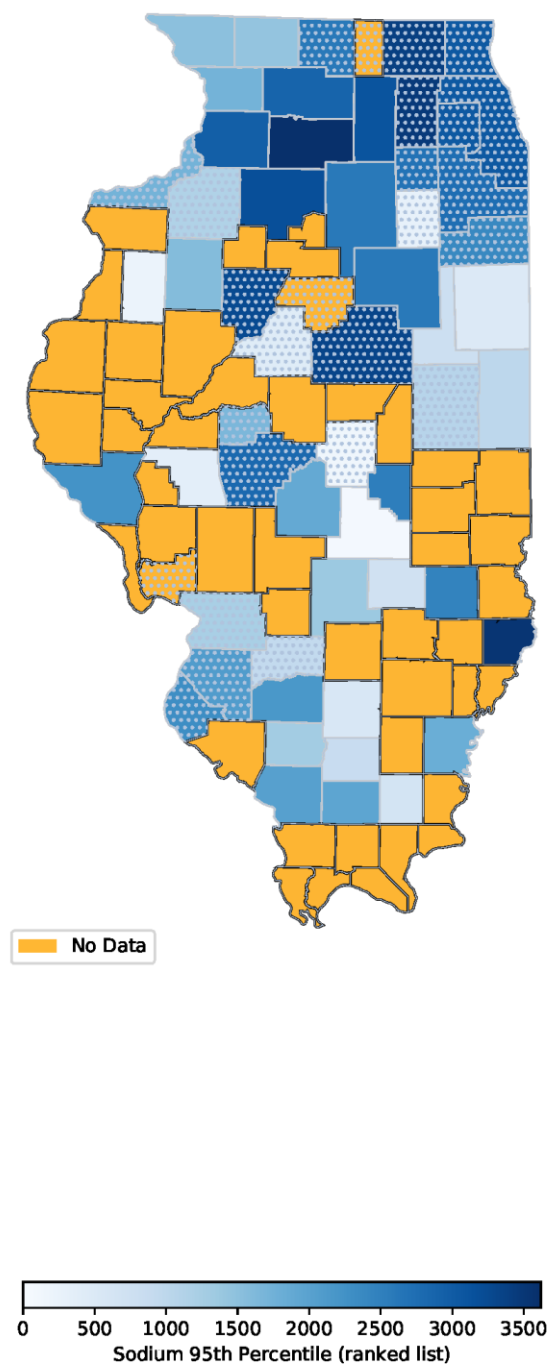


Figure 687. Map of RSL sodium 95th percentile concentration by Illinois county, REC (mg/kg)

Number of Sodium Samples by County: REC Sites

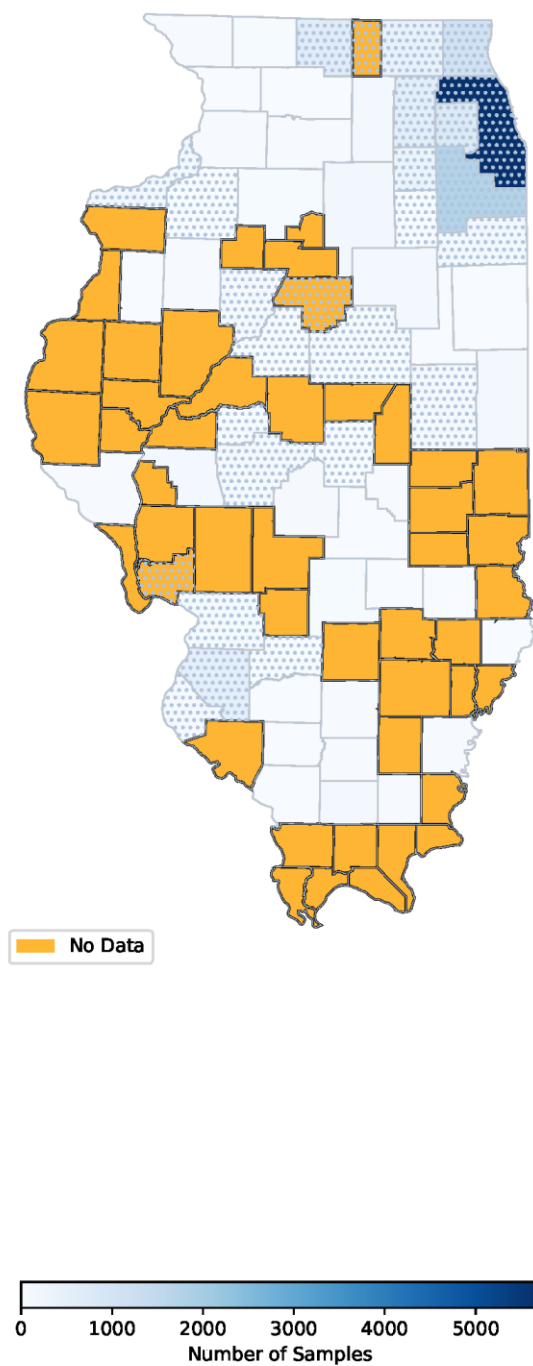


Figure 688. Map of RSL sodium sample quantity by Illinois county, REC (mg/kg)

## S.2 SODIUM NON-REC

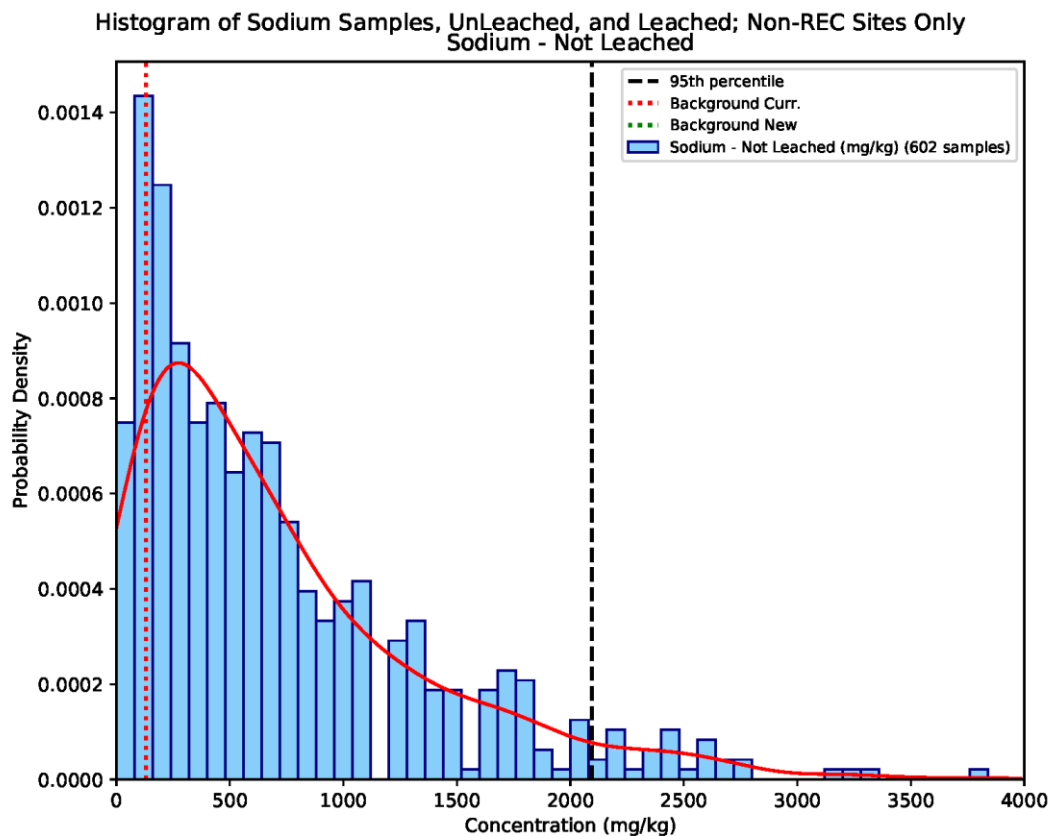


Figure 689. Histogram of RSL sodium concentrations, Non-REC (mg/kg)

Sodium Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

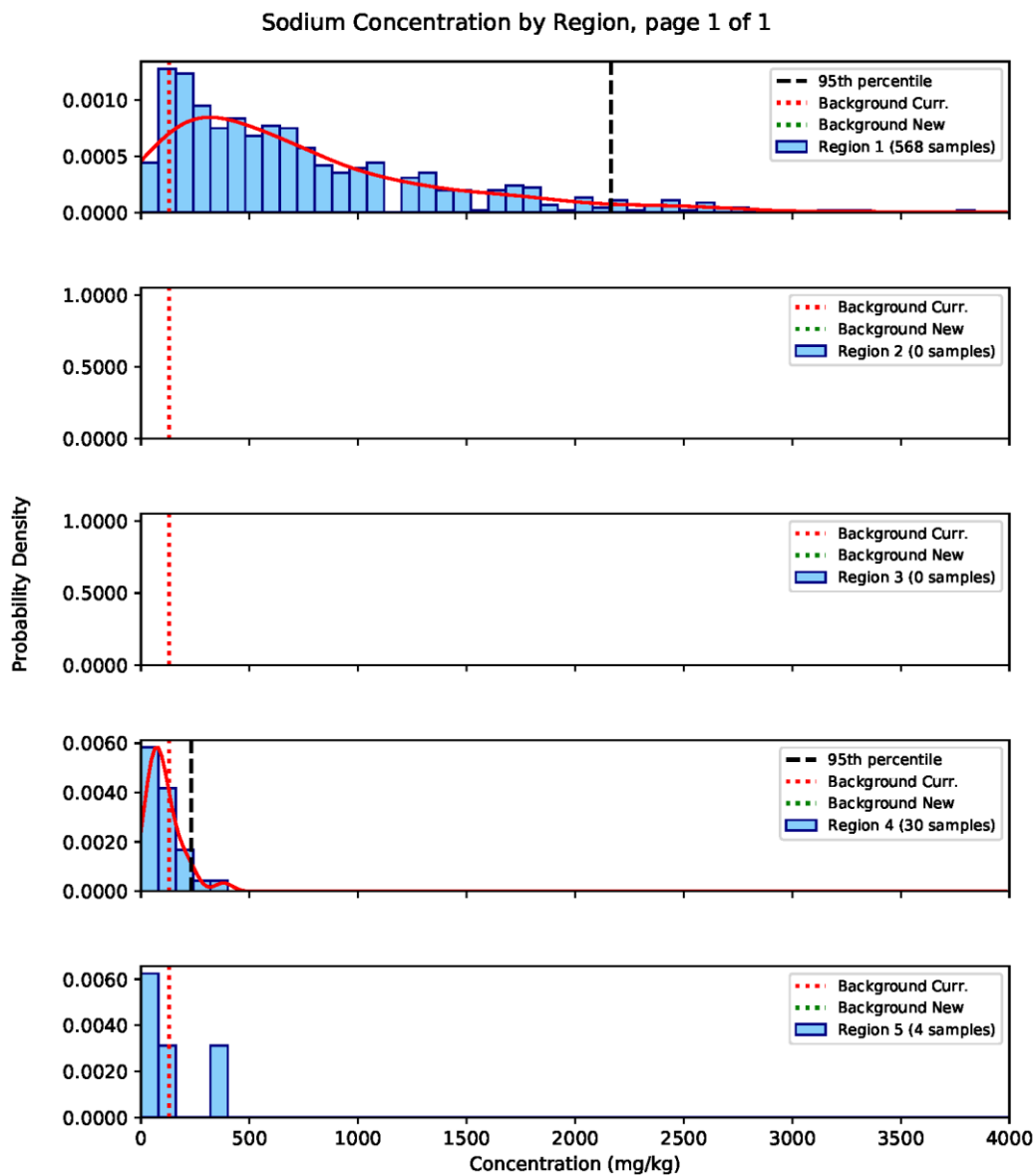
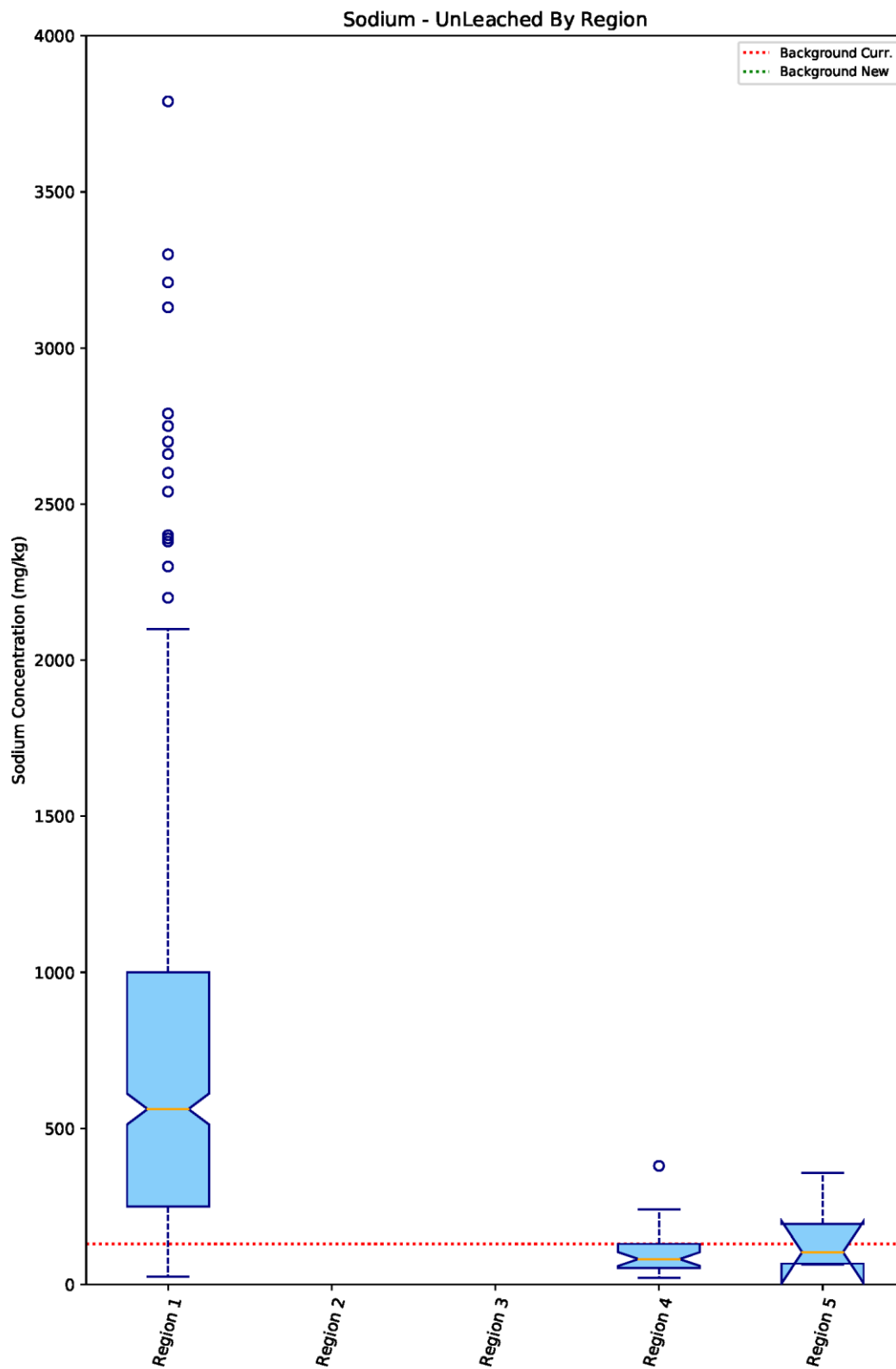


Figure 690. Histogram of RSL sodium concentrations by IDOT Region, Non-REC (mg/kg)



**Figure 691. Boxplot of RSL sodium concentrations by IDOT Region, Non-REC (mg/kg)**



Sodium Concentration by District, page 1 of 2

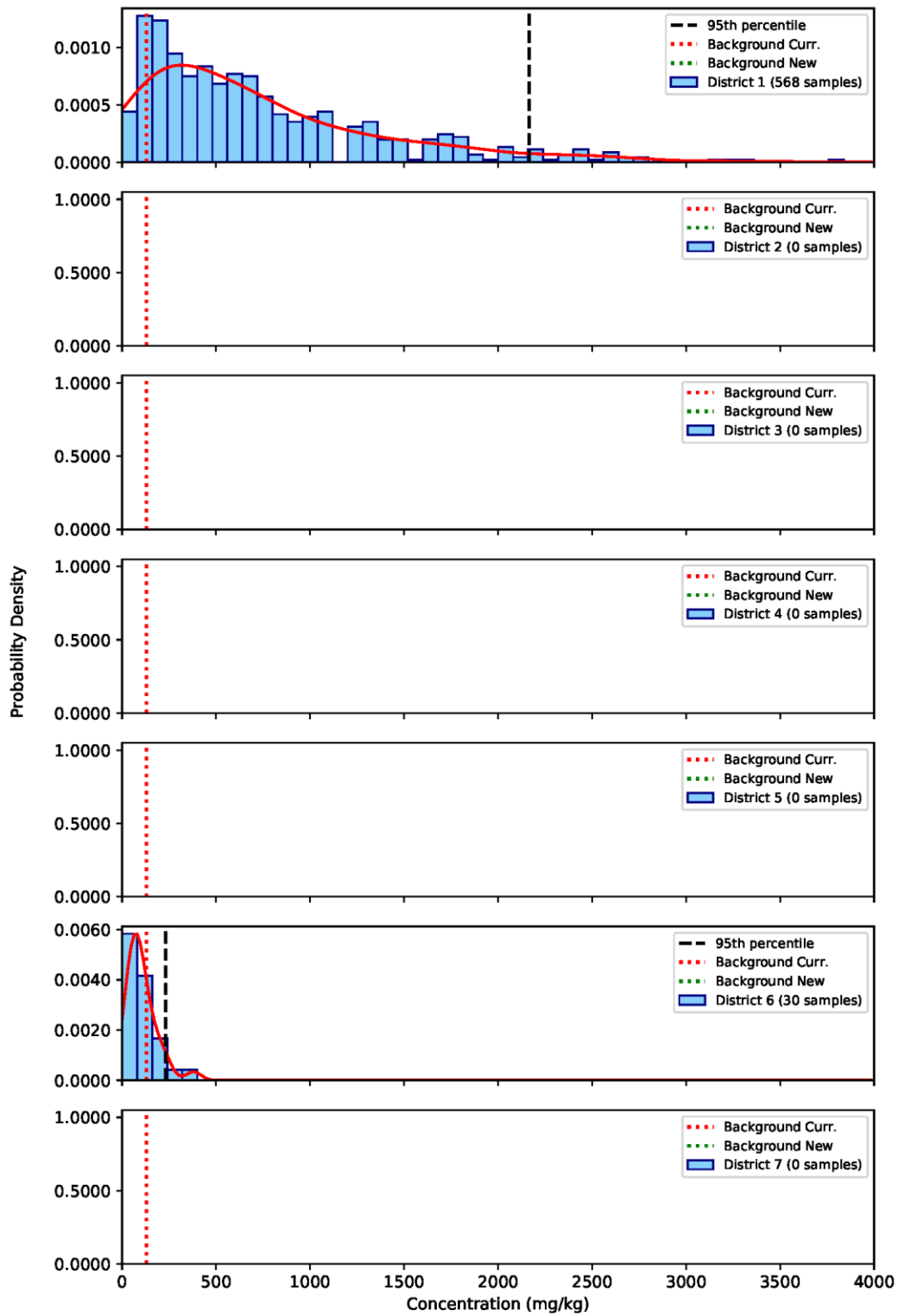


Figure 692. Histogram of RSL sodium concentrations by IDOT District, Non-REC (mg/kg), part 1

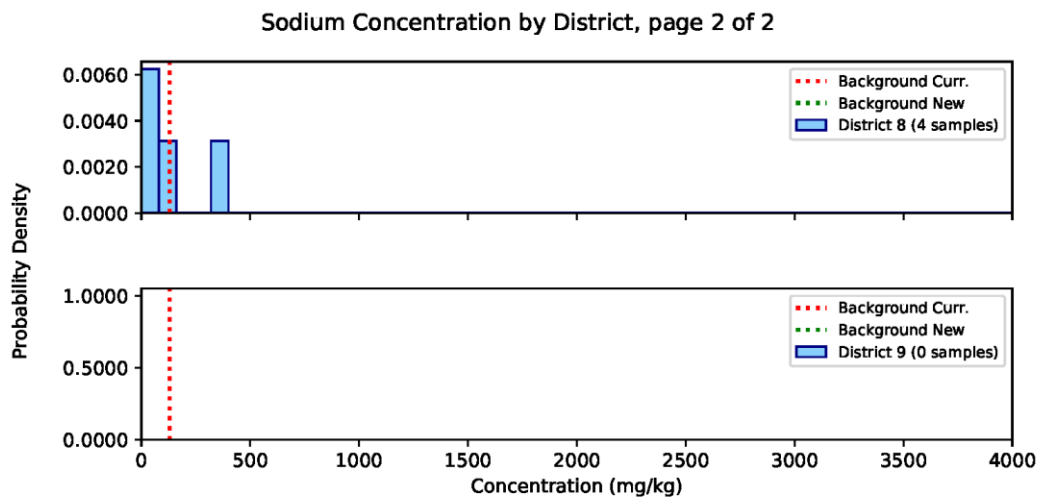


Figure 693. Histogram of RSL sodium concentrations by IDOT District, Non-REC (mg/kg), part 2

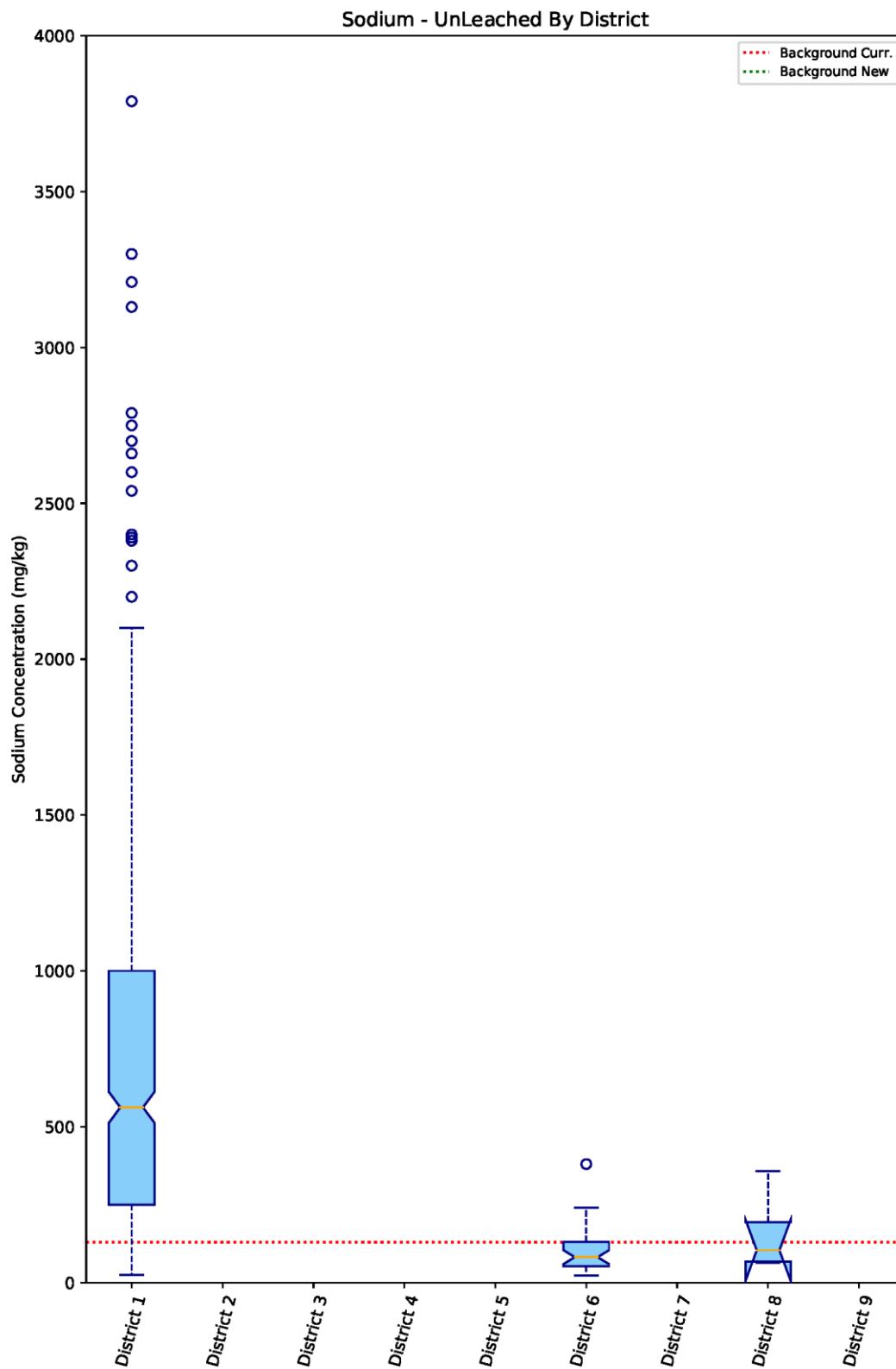


Figure 694. Boxplot of RSL sodium concentrations by IDOT District, Non-REC (mg/kg)

Sodium Concentration by County, page 1 of 2

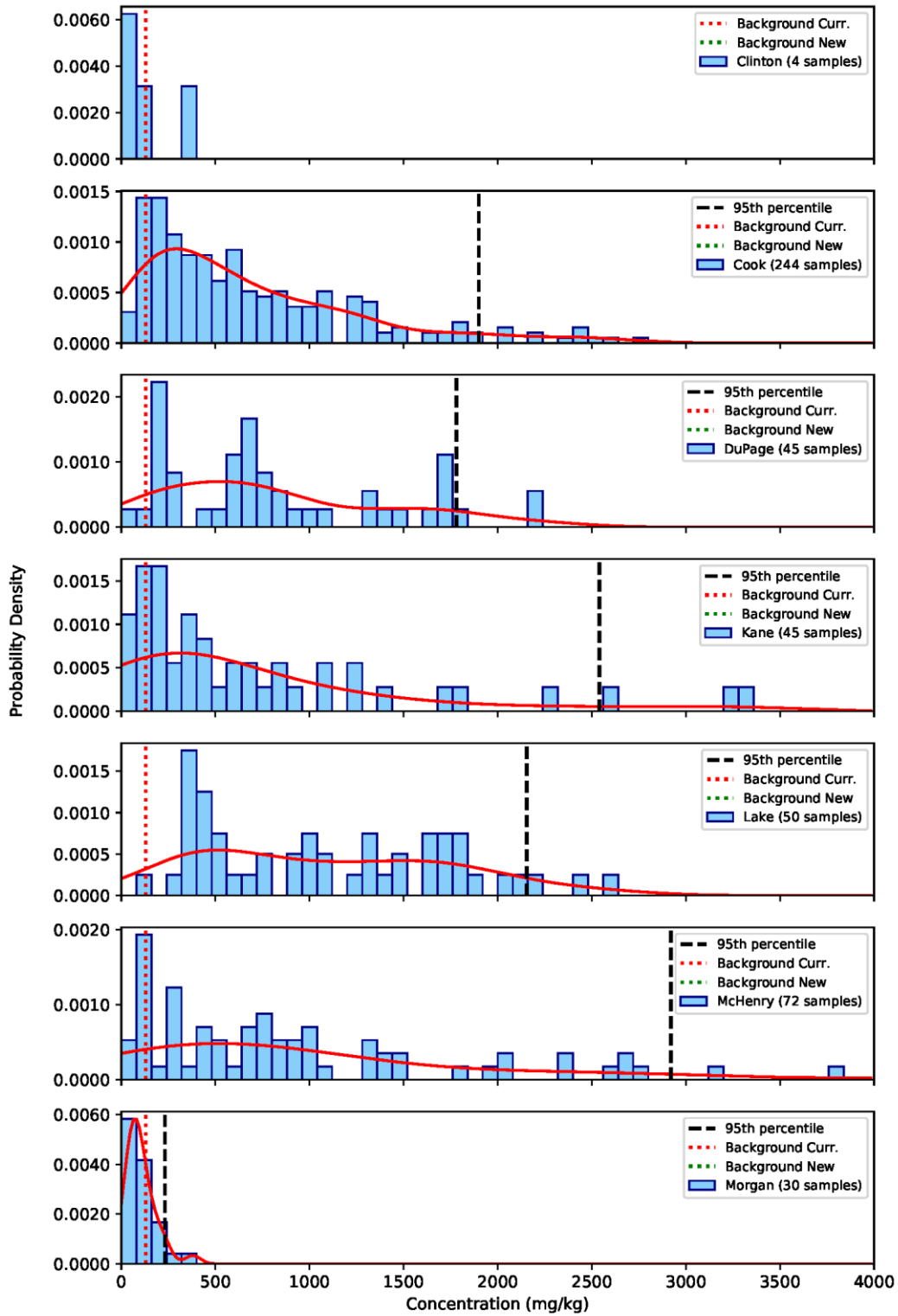


Figure 695. Histogram of RSL sodium concentrations by Illinois county, Non-REC (mg/kg), part 1

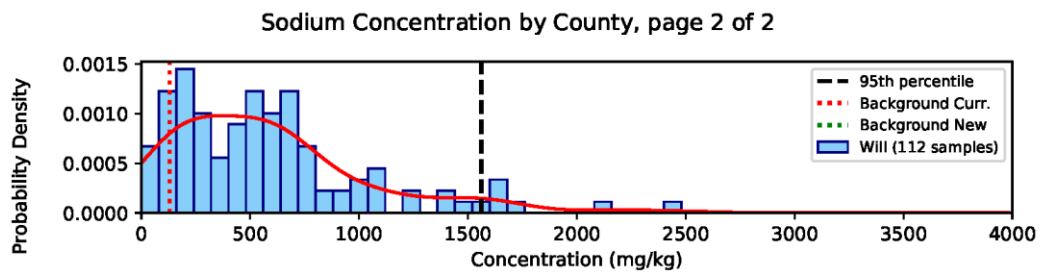


Figure 696. Histogram of RSL sodium concentrations by Illinois county, Non-REC (mg/kg), part 2

Sodium Concentration for 95th Percentile by County: Non-REC Sites

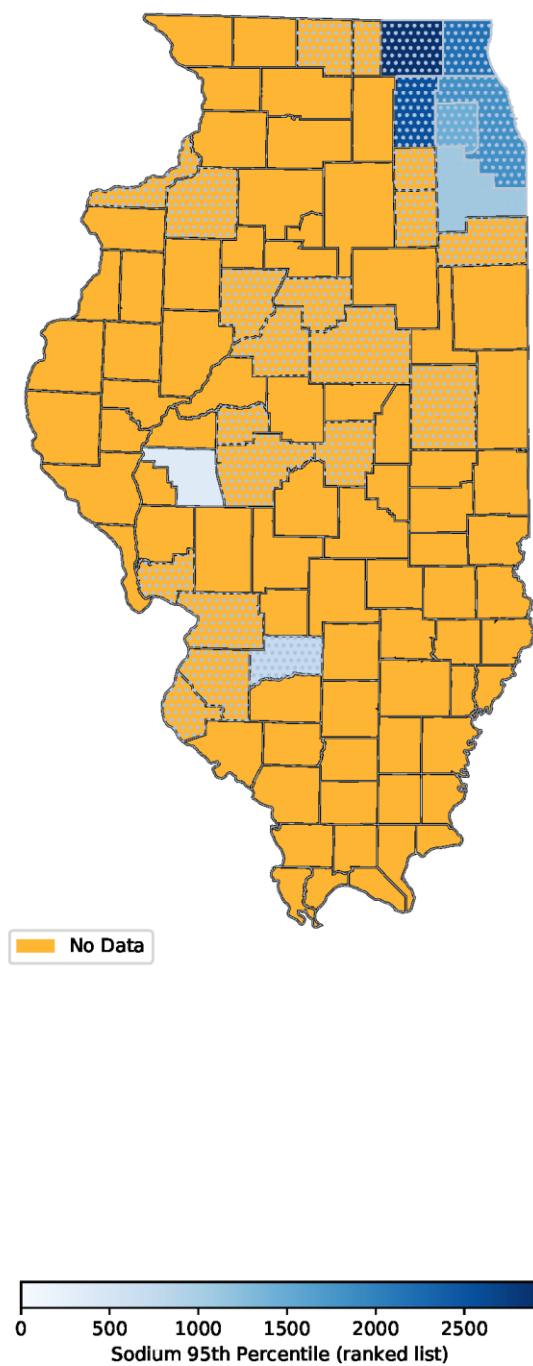


Figure 697. Map of RSL sodium 95th percentile concentration by Illinois county, Non-REC (mg/kg)

Model	Number of Samples
Model 1	~220

817

### S.3 SODIUM DE MINIMIS



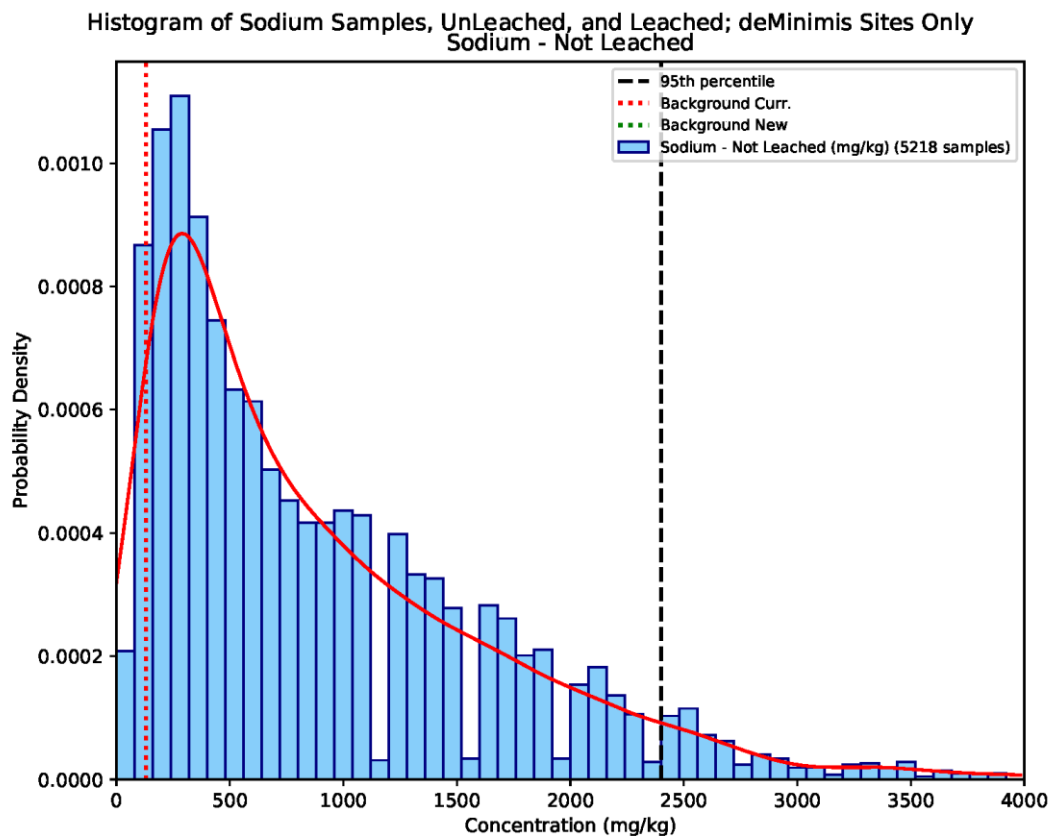


Figure 699. Histogram of RSL sodium concentrations, de minimis (mg/kg)

**Sodium Unleached Concentration (mg/kg)**

1) Region

2) District

3) County

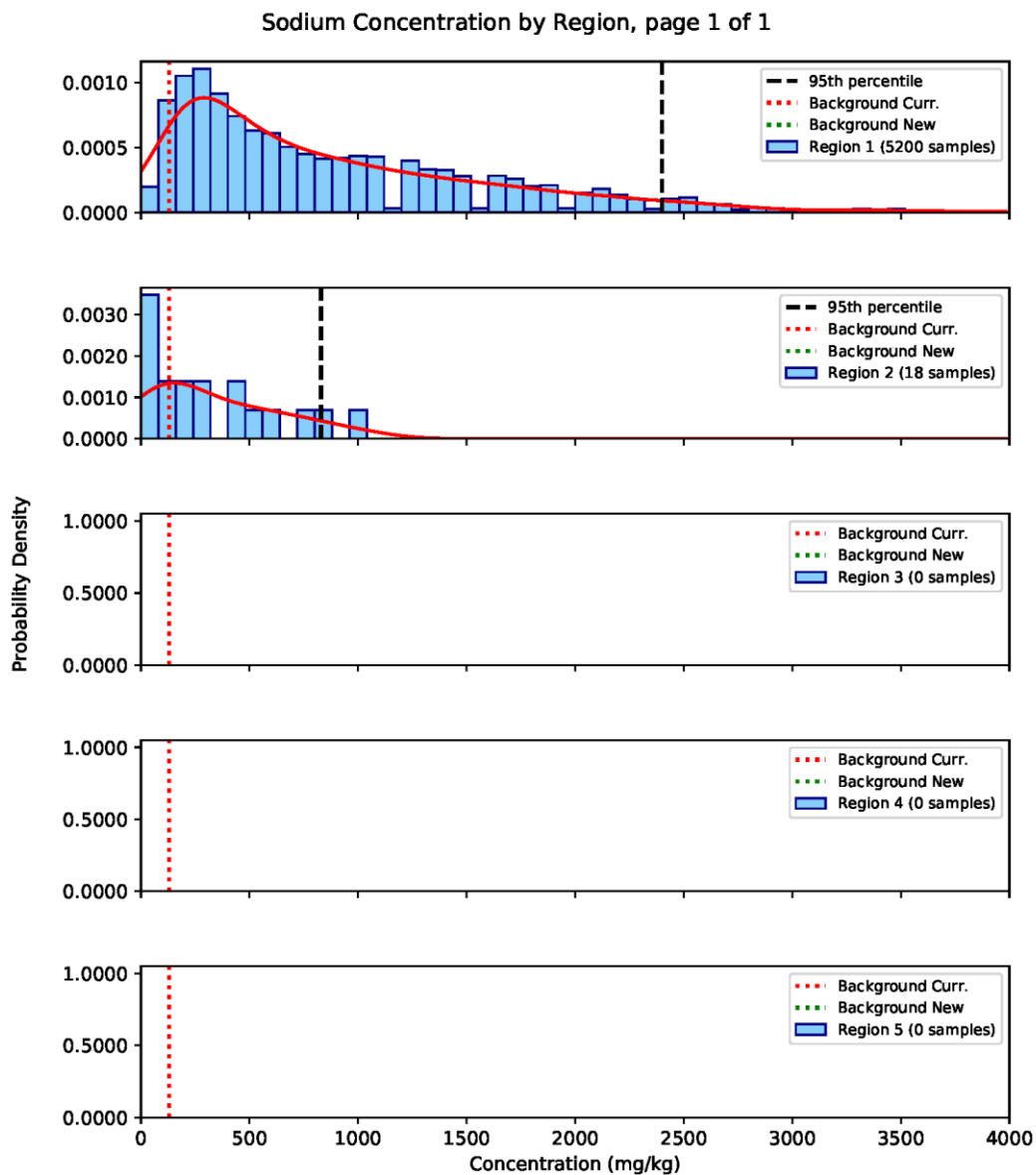
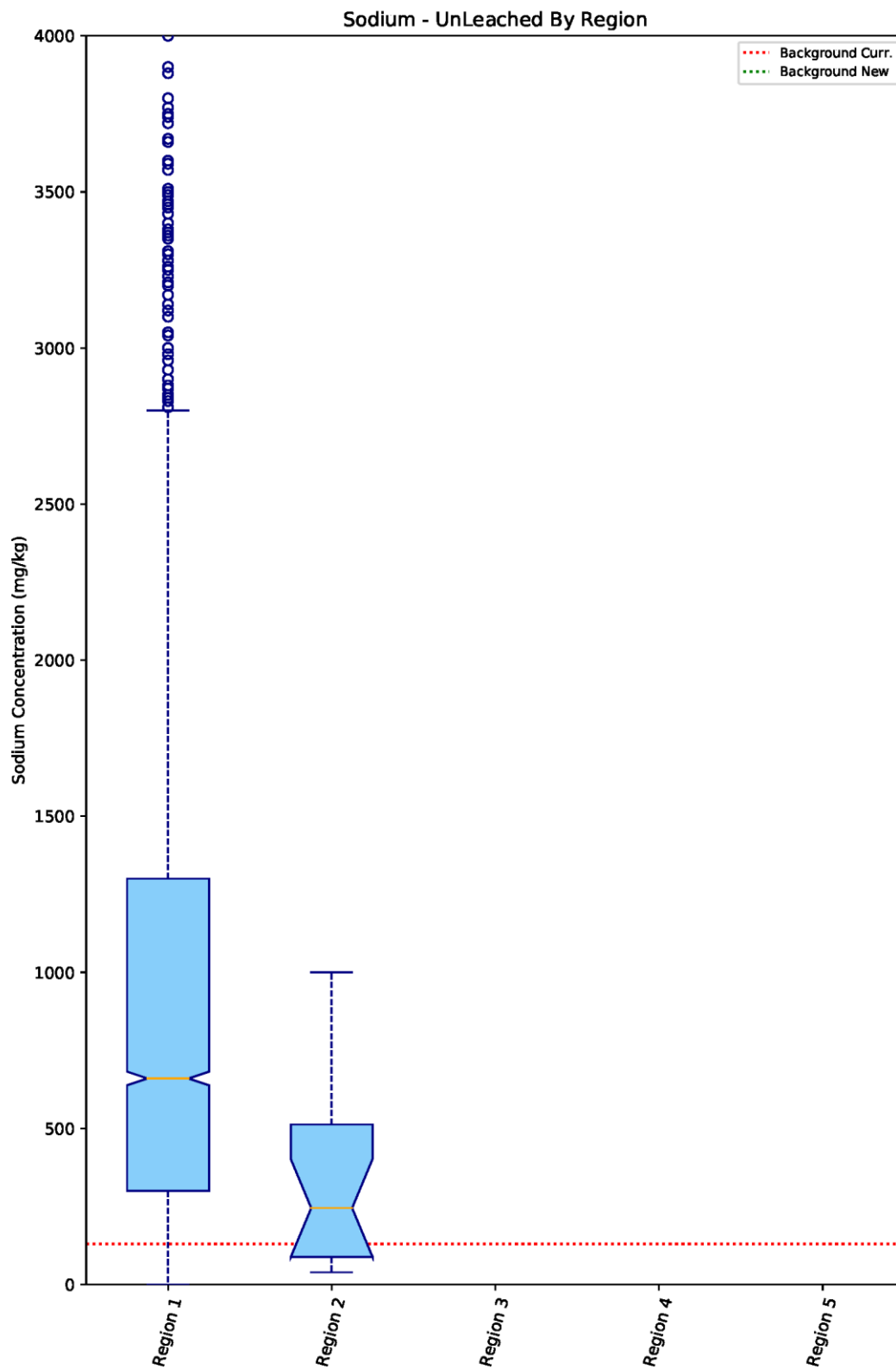


Figure 700. Histogram of RSL sodium concentrations by IDOT Region, de minimis (mg/kg)



**Figure 701. Boxplot of RSL sodium concentrations by IDOT Region, de minimis (mg/kg)**

Sodium Concentration by District, page 1 of 2

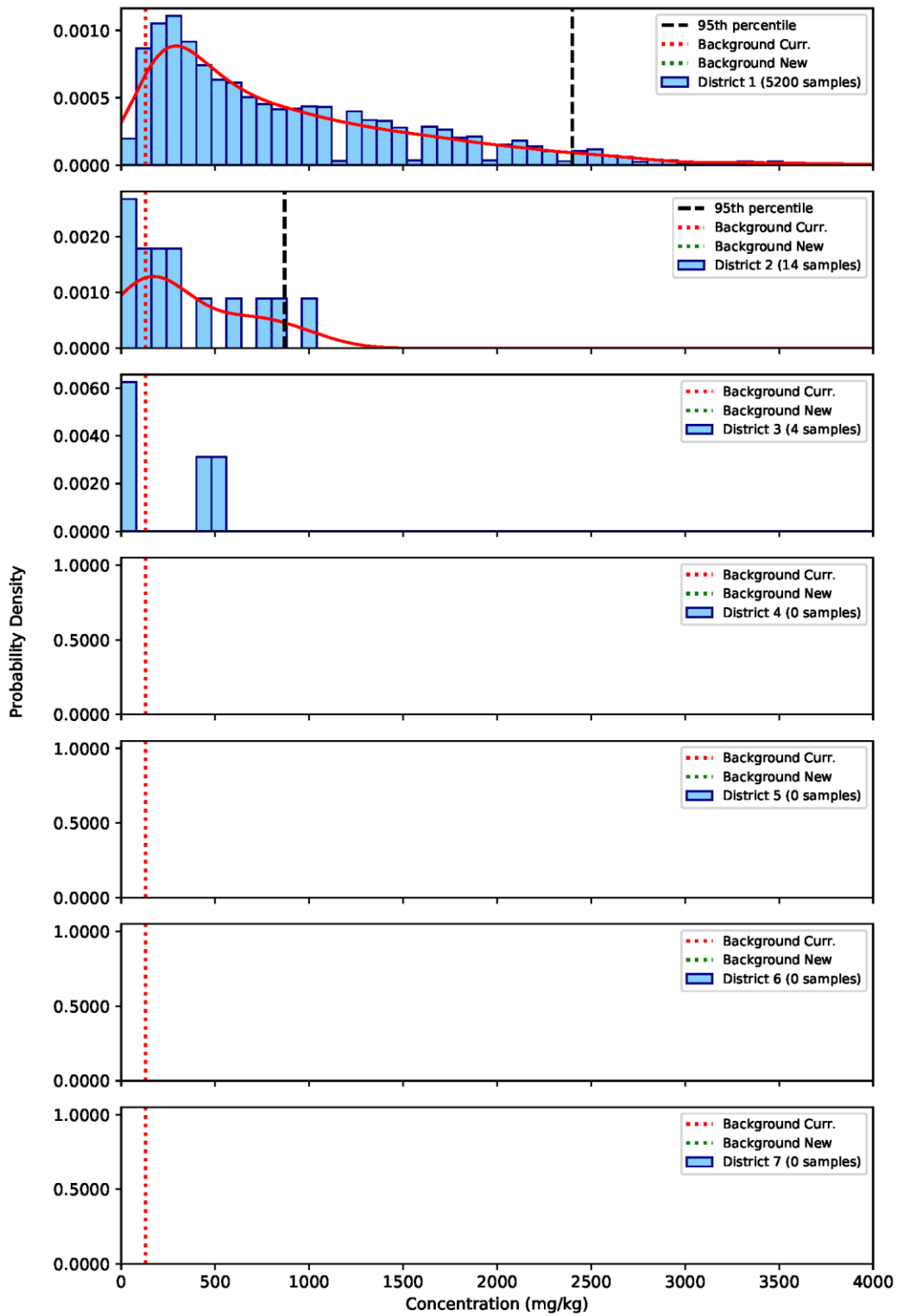


Figure 702. Histogram of RSL sodium concentrations by IDOT District, de minimis (mg/kg), part 1

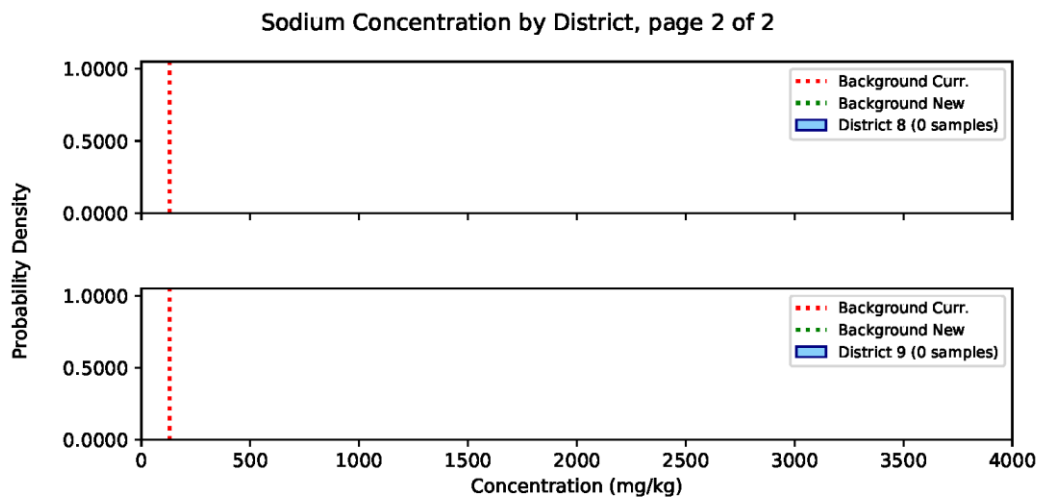


Figure 703. Histogram of RSL sodium concentrations by IDOT District, de minimis (mg/kg), part 2

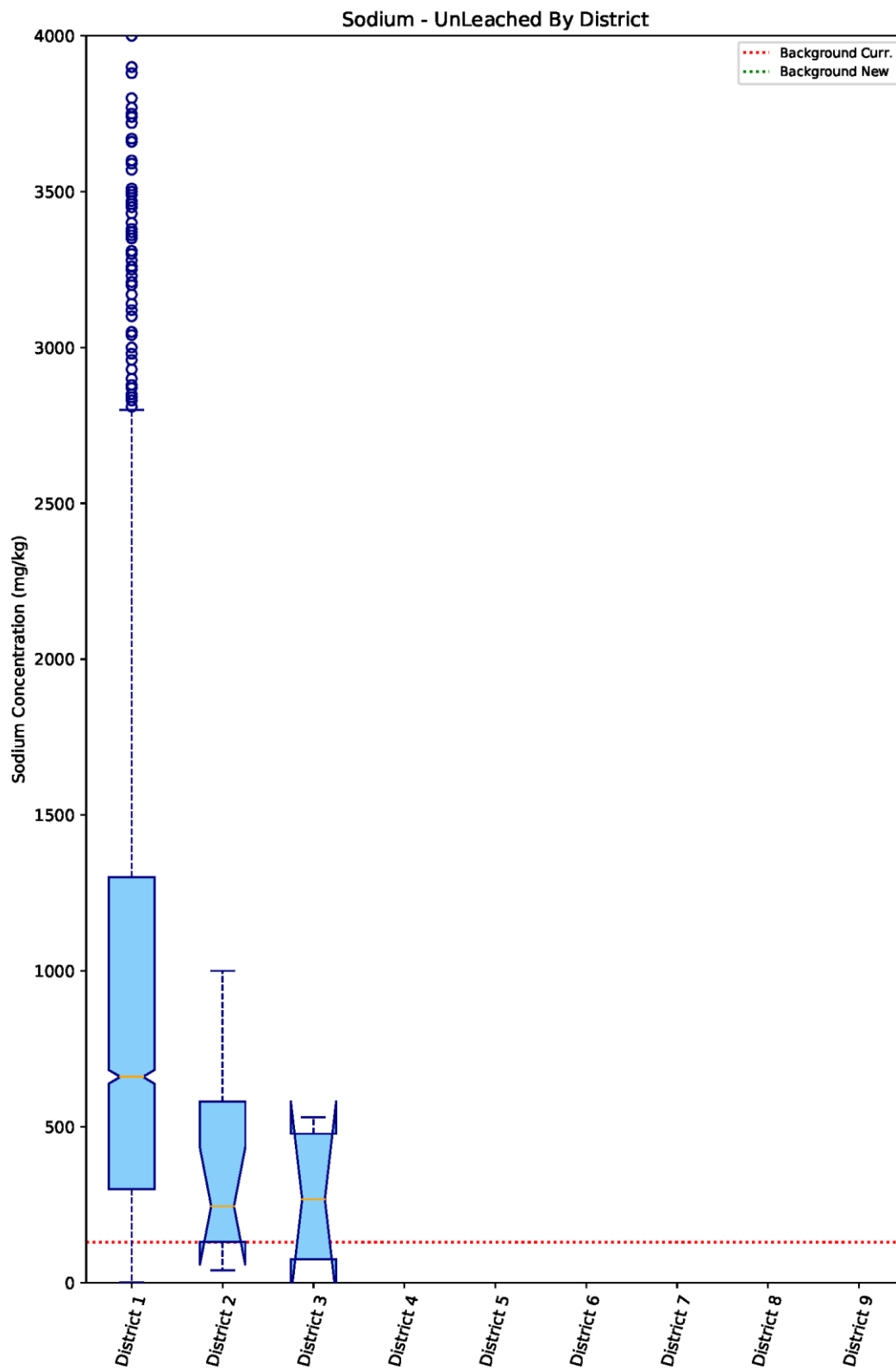


Figure 704. Boxplot of RSL sodium concentrations by IDOT District, de minimis (mg/kg)

Sodium Concentration by County, page 1 of 2

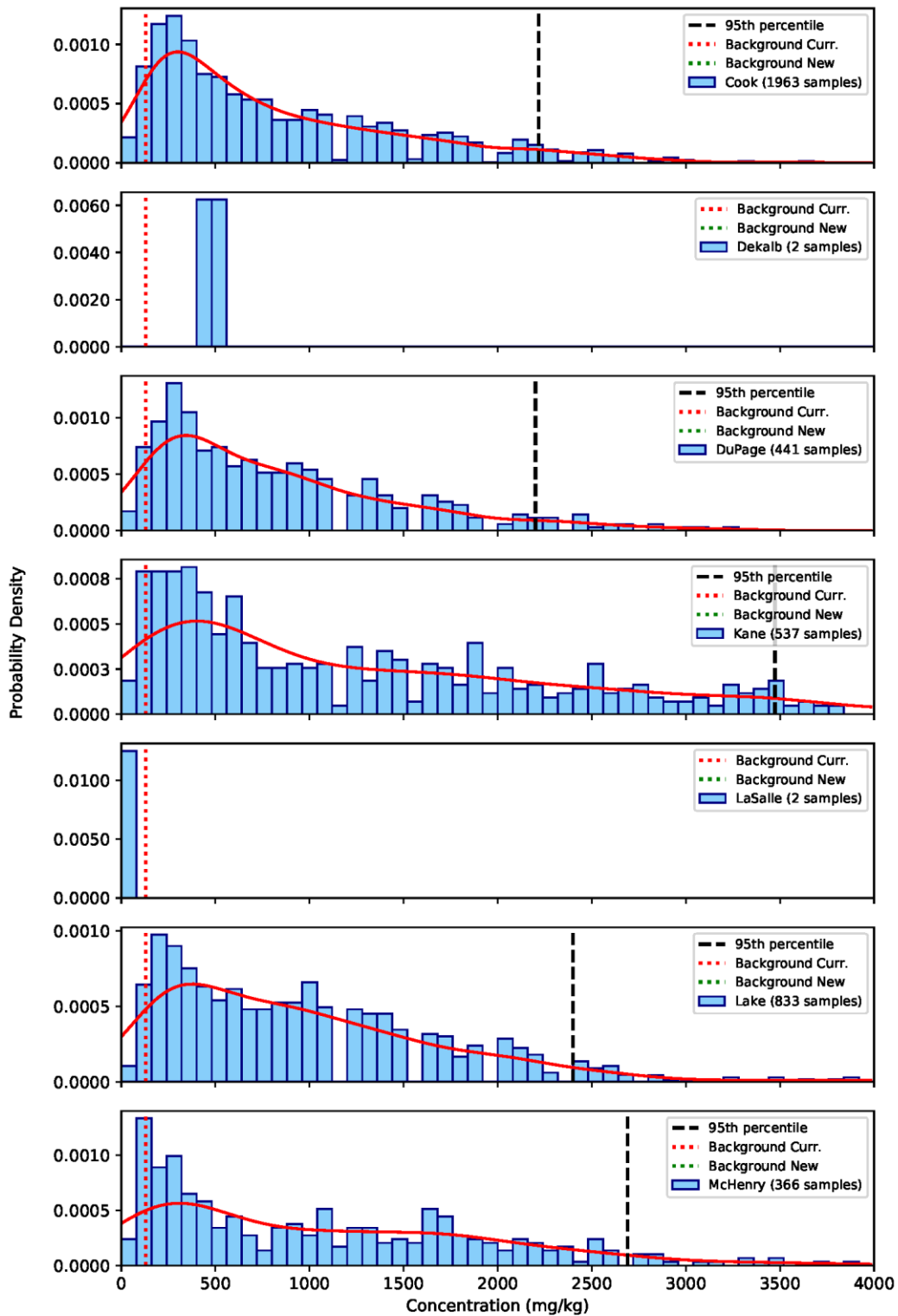


Figure 705. Histogram of RSL sodium concentrations by Illinois county, de minimis (mg/kg), part 1



Sodium Concentration by County, page 2 of 2

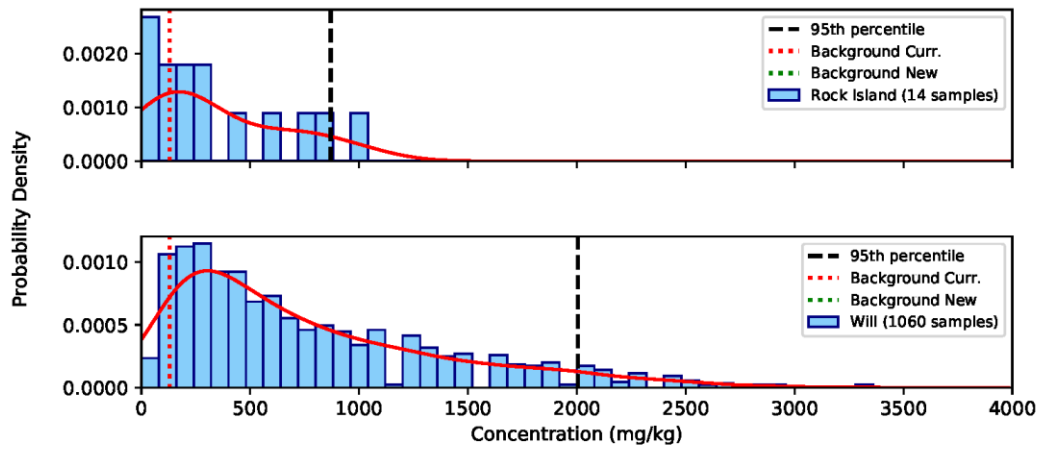


Figure 706. Histogram of RSL sodium concentrations by Illinois county, de minimis (mg/kg), part 2

Sodium Concentration for 95th Percentile by County: deMinimis Sites

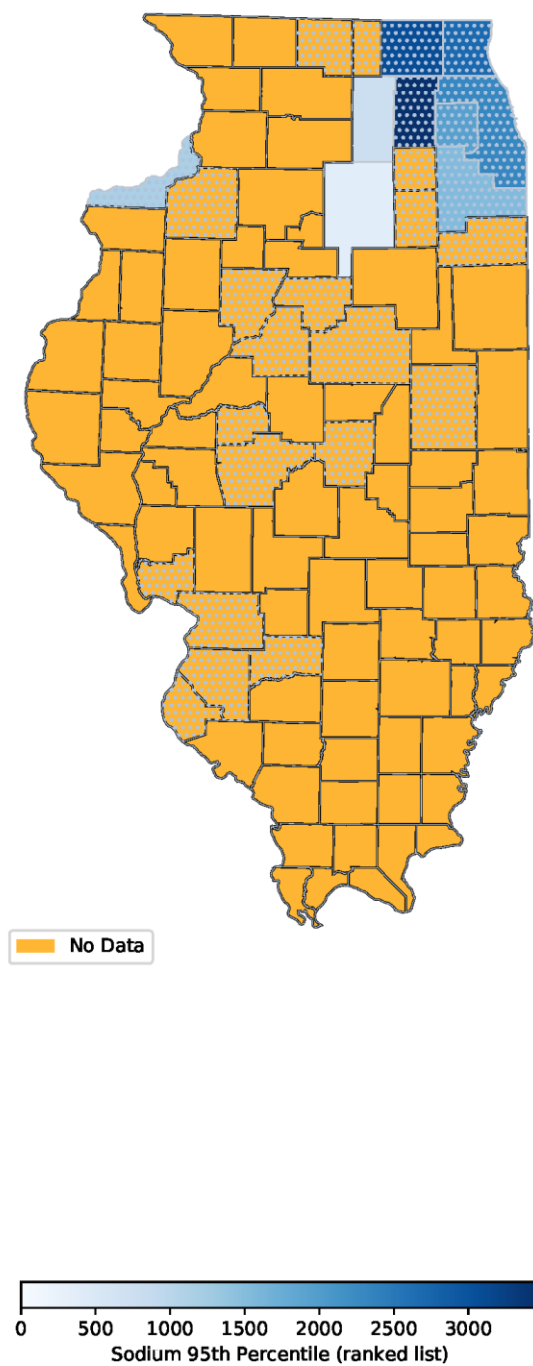


Figure 707. Map of RSL sodium 95th percentile concentration by Illinois county, de minimis (mg/kg)

Number of Sodium Samples by County: deMinimis Sites

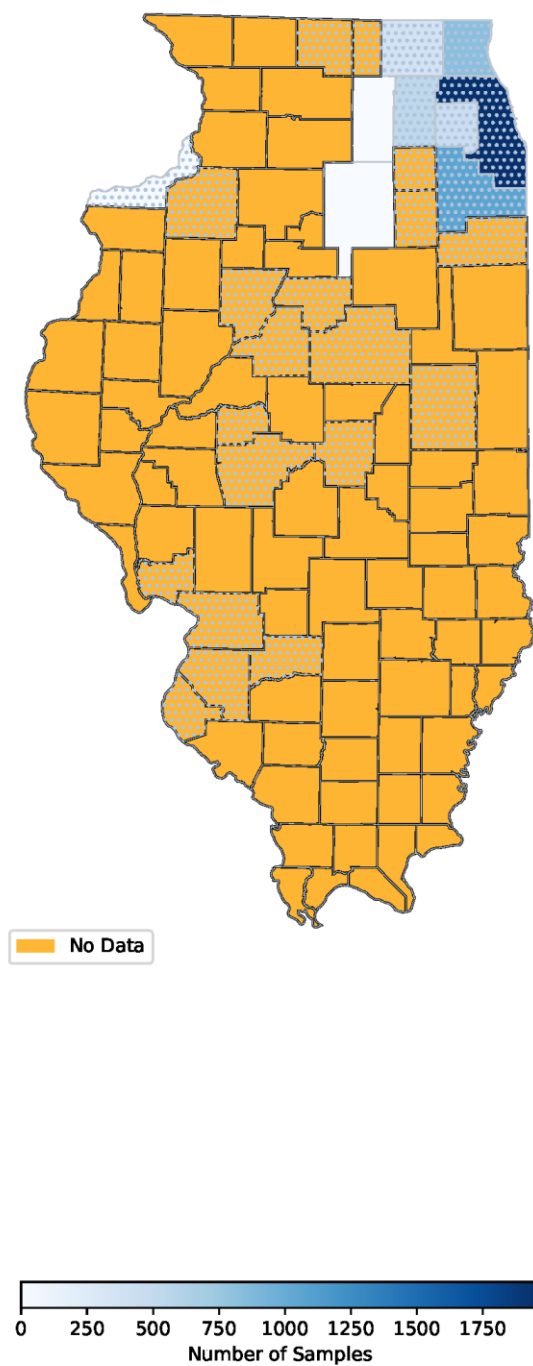
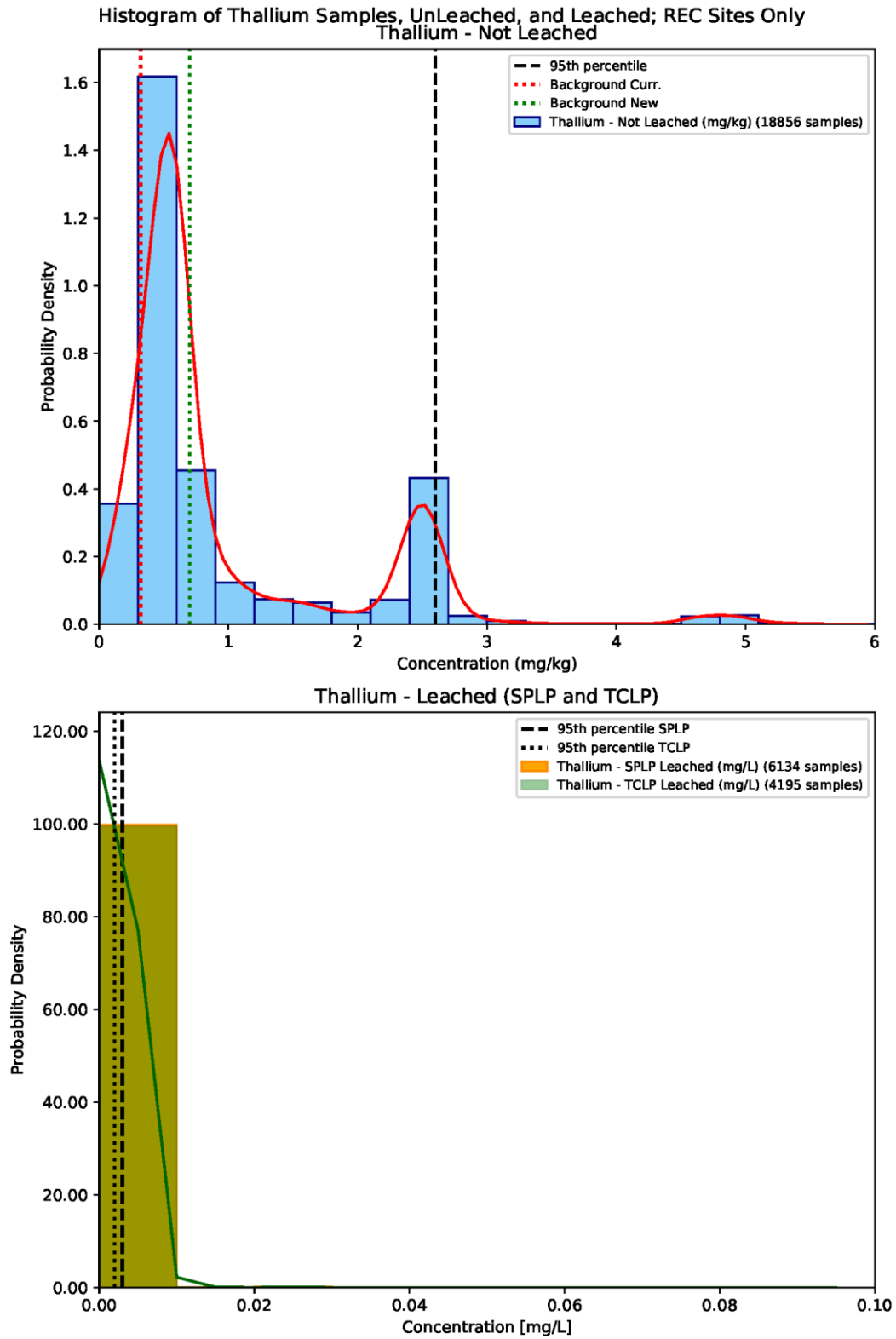


Figure 708. Map of RSL sodium sample quantity by Illinois county, de minimis (mg/kg)

## **APPENDIX T. ANALYTE ANALYSIS: THALLIUM**

### **T.1 THALLIUM REC**



**Figure 709. Histogram of RSL thallium concentrations, REC (mg/kg)**

Thallium Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

# Thallium Concentration by Region, page 1 of 1

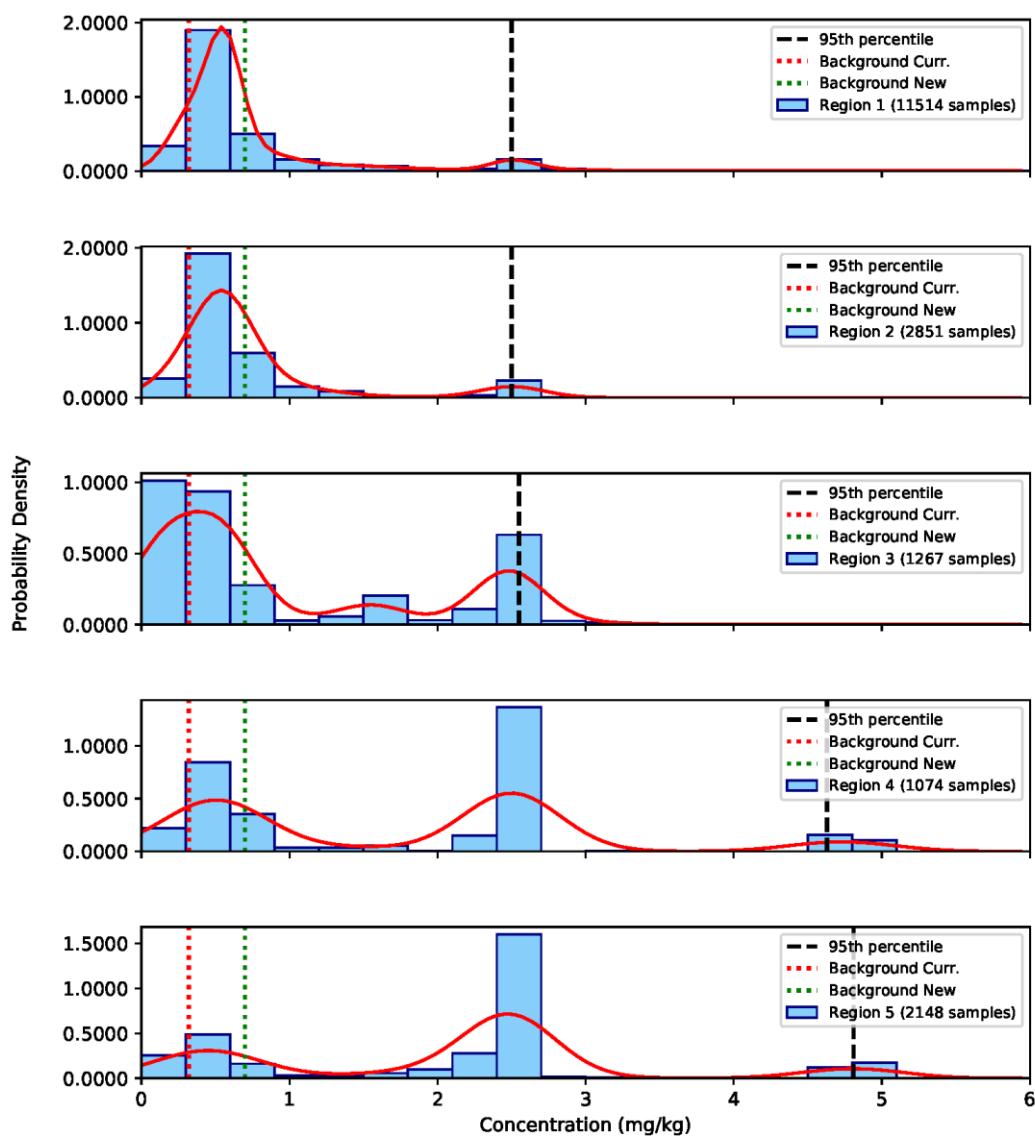


Figure 710. Histogram of RSL thallium concentrations by IDOT Region, REC (mg/kg)

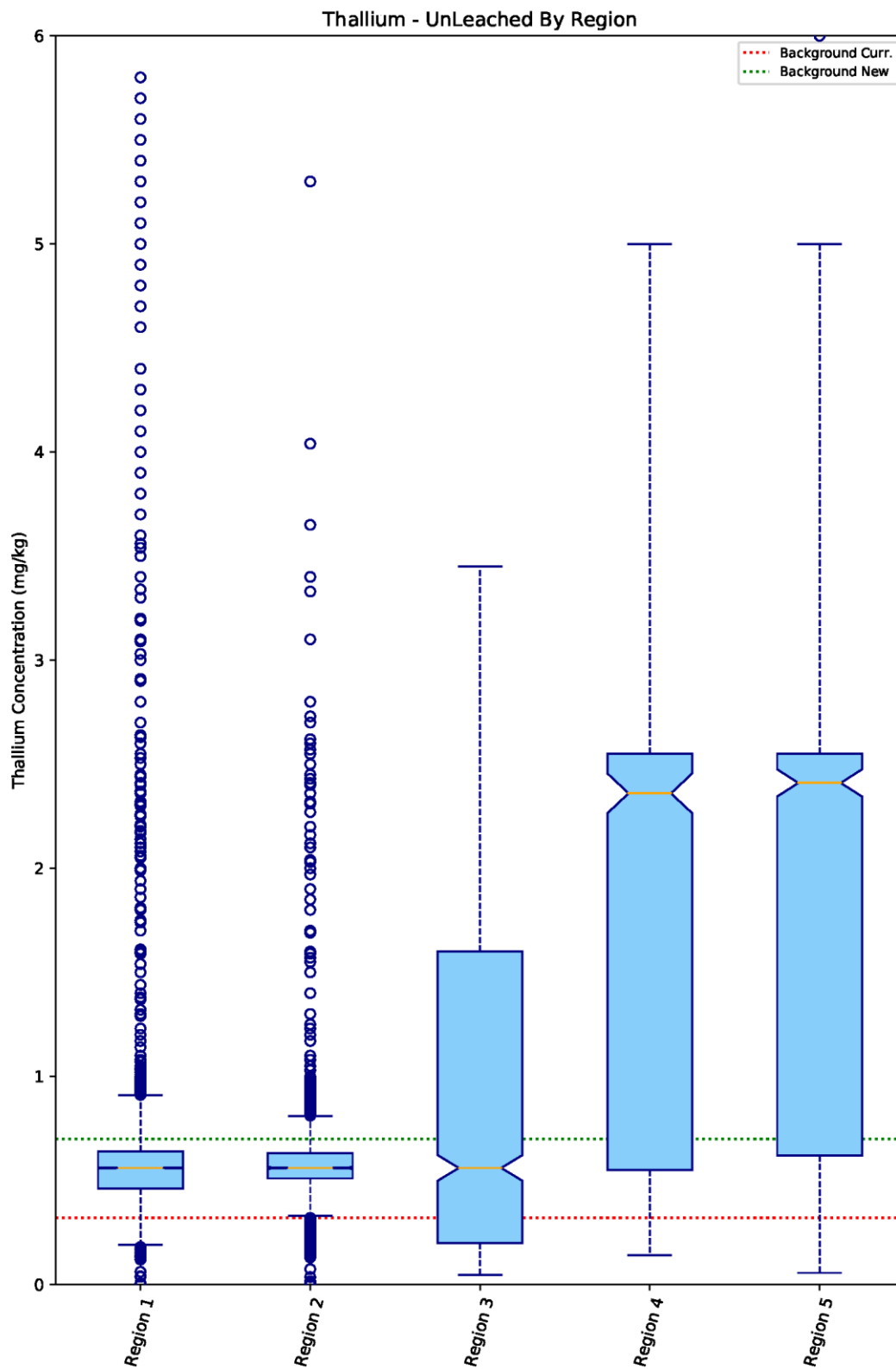


Figure 711. Boxplot of RSL thallium concentrations by IDOT Region, REC (mg/kg)



# Thallium Concentration by District, page 1 of 2

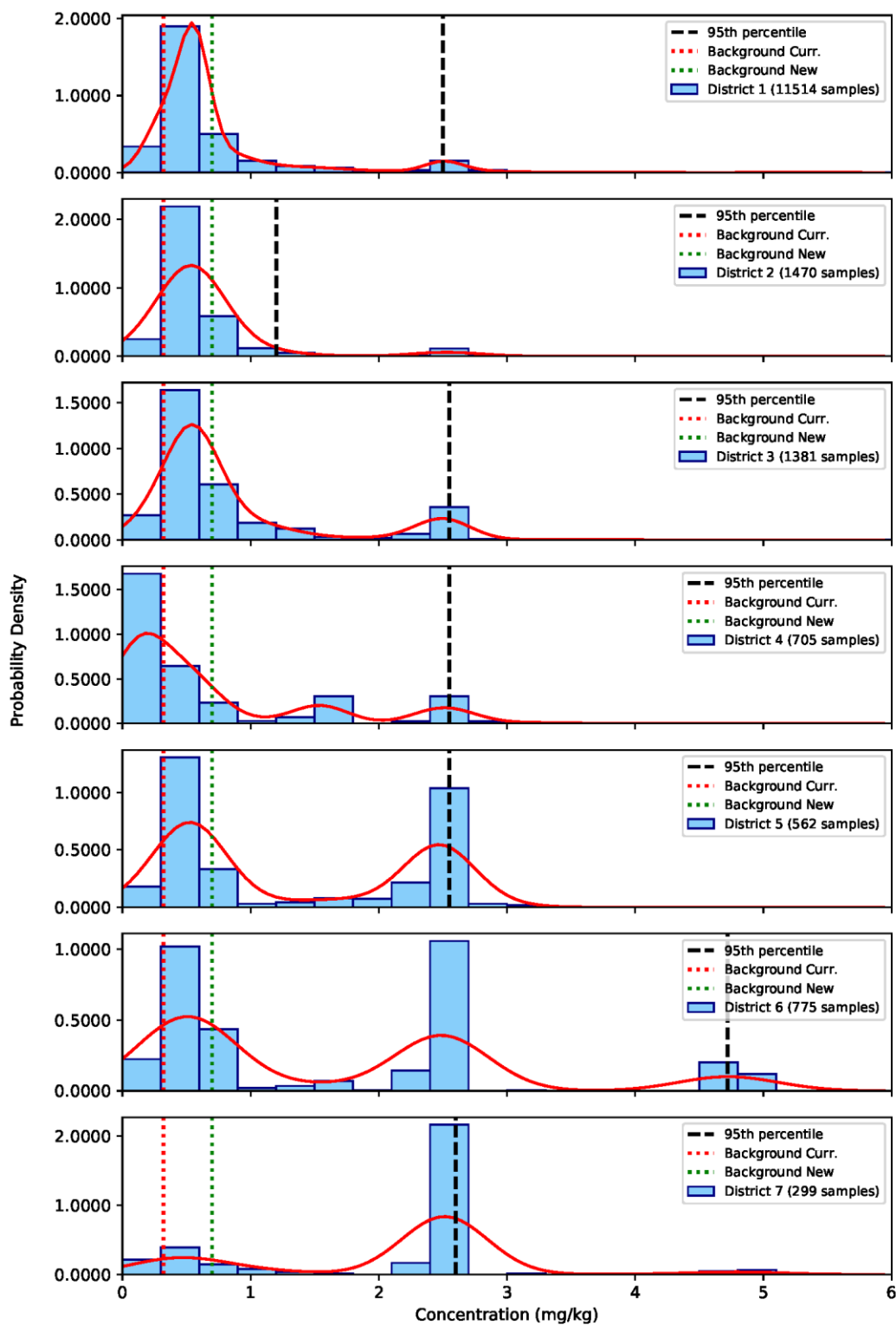


Figure 712. Histogram of RSL thallium concentrations by IDOT District, REC (mg/kg), part 1

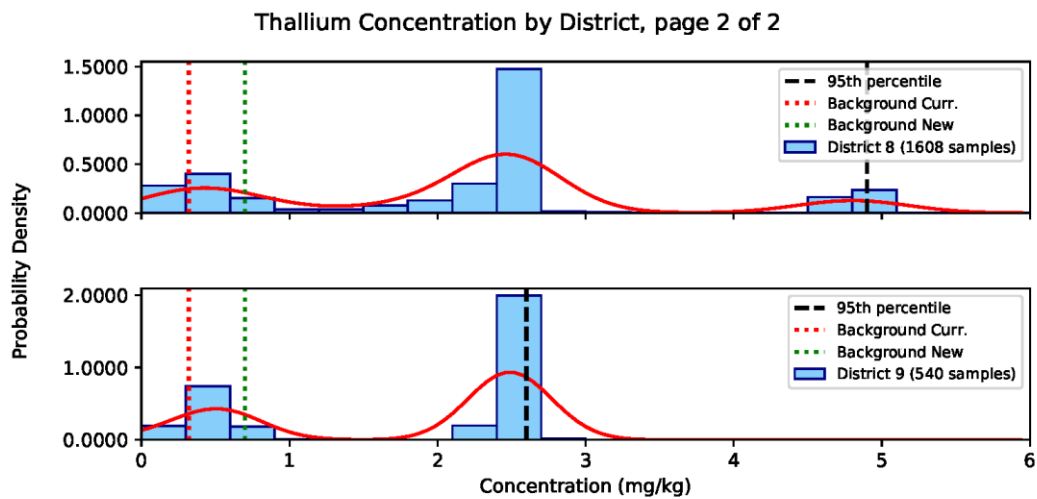


Figure 713. Histogram of RSL thallium concentrations by IDOT District, REC (mg/kg), part 2

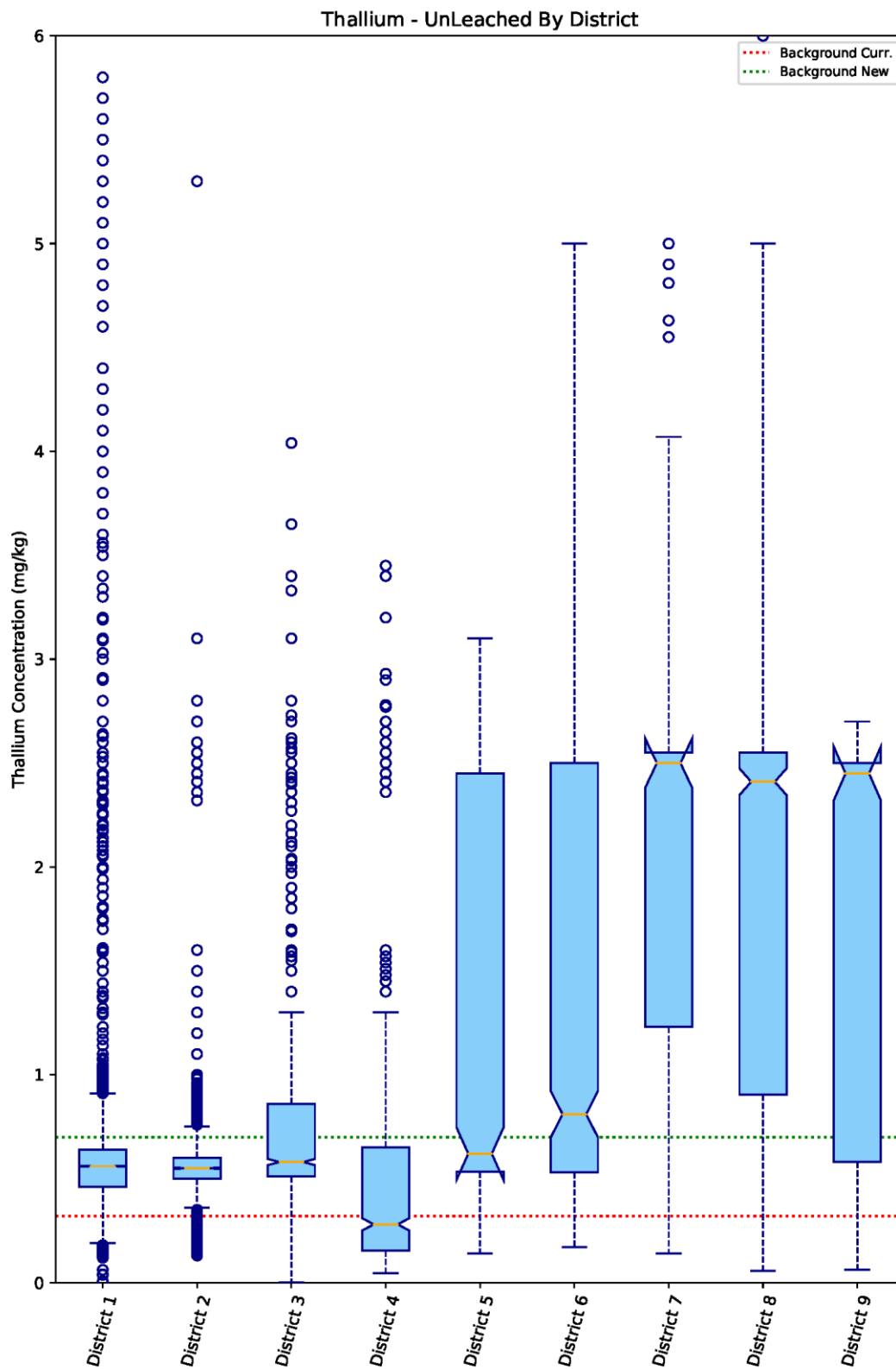


Figure 714. Boxplot of RSL thallium concentrations by IDOT District, REC (mg/kg)

# Thallium Concentration by County, page 1 of 10

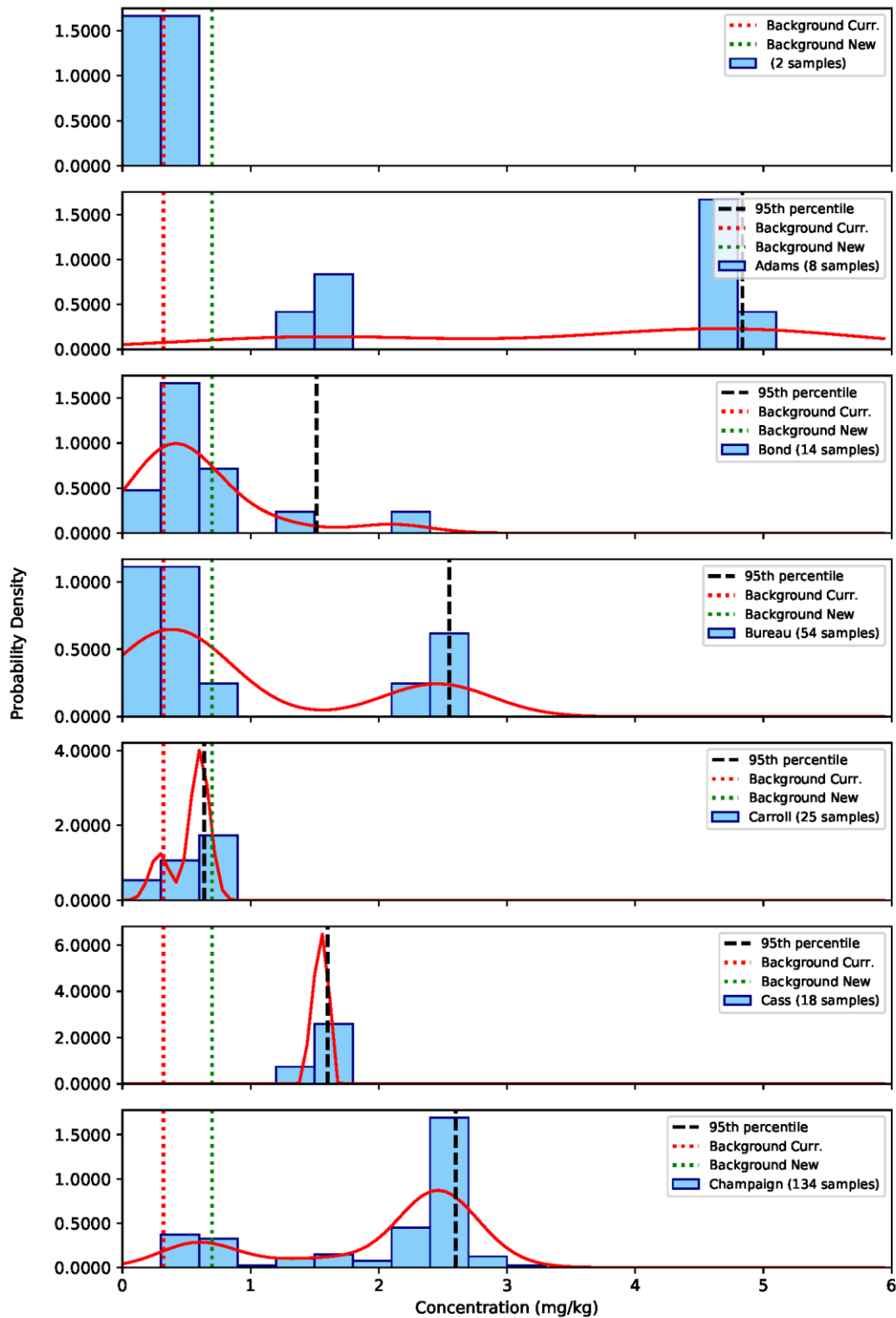


Figure 715. Histogram of RSL thallium concentrations by Illinois county, REC (mg/kg), part 1

# Thallium Concentration by County, page 2 of 10

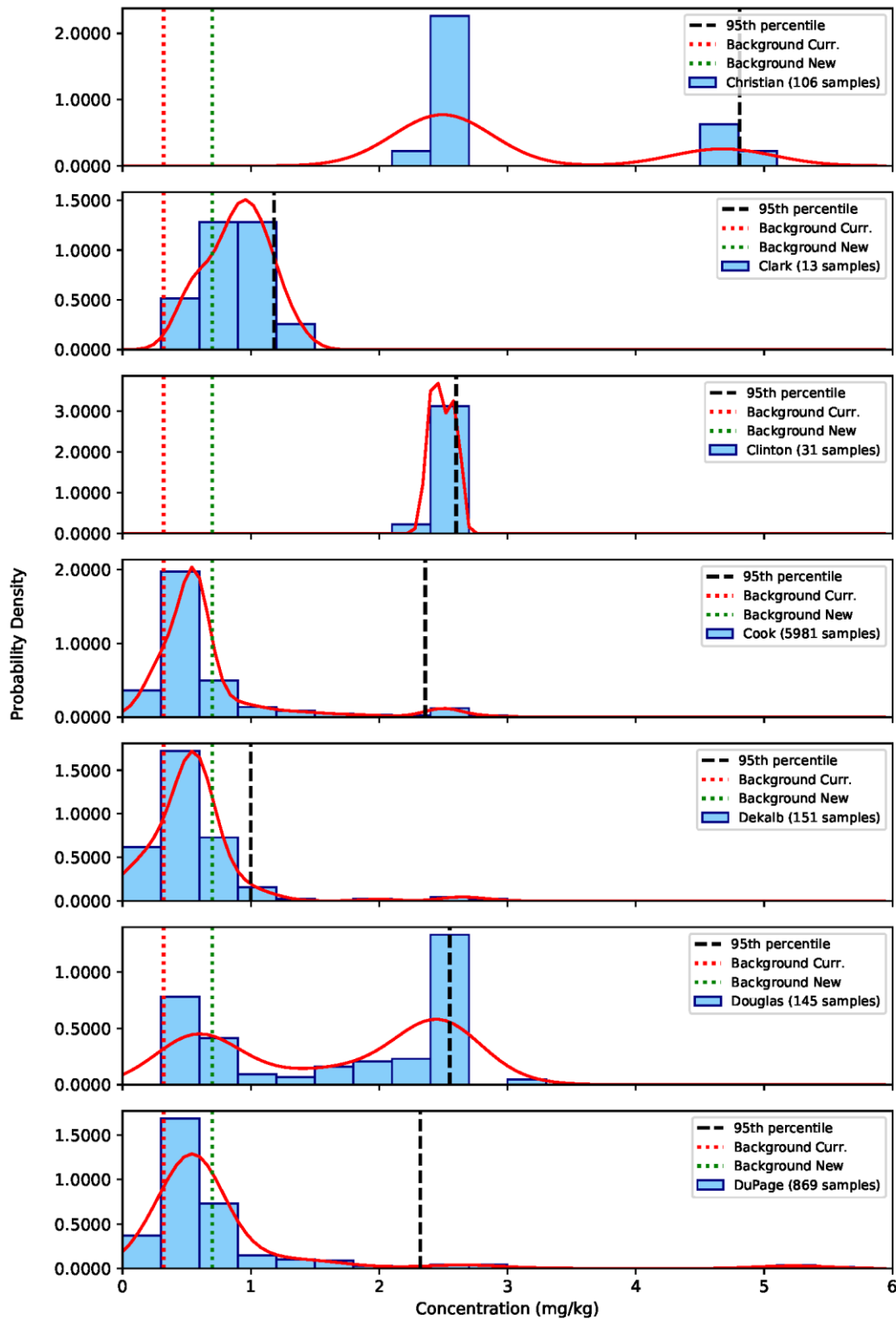


Figure 716. Histogram of RSL thallium concentrations by Illinois county, REC (mg/kg), part 2

# Thallium Concentration by County, page 3 of 10

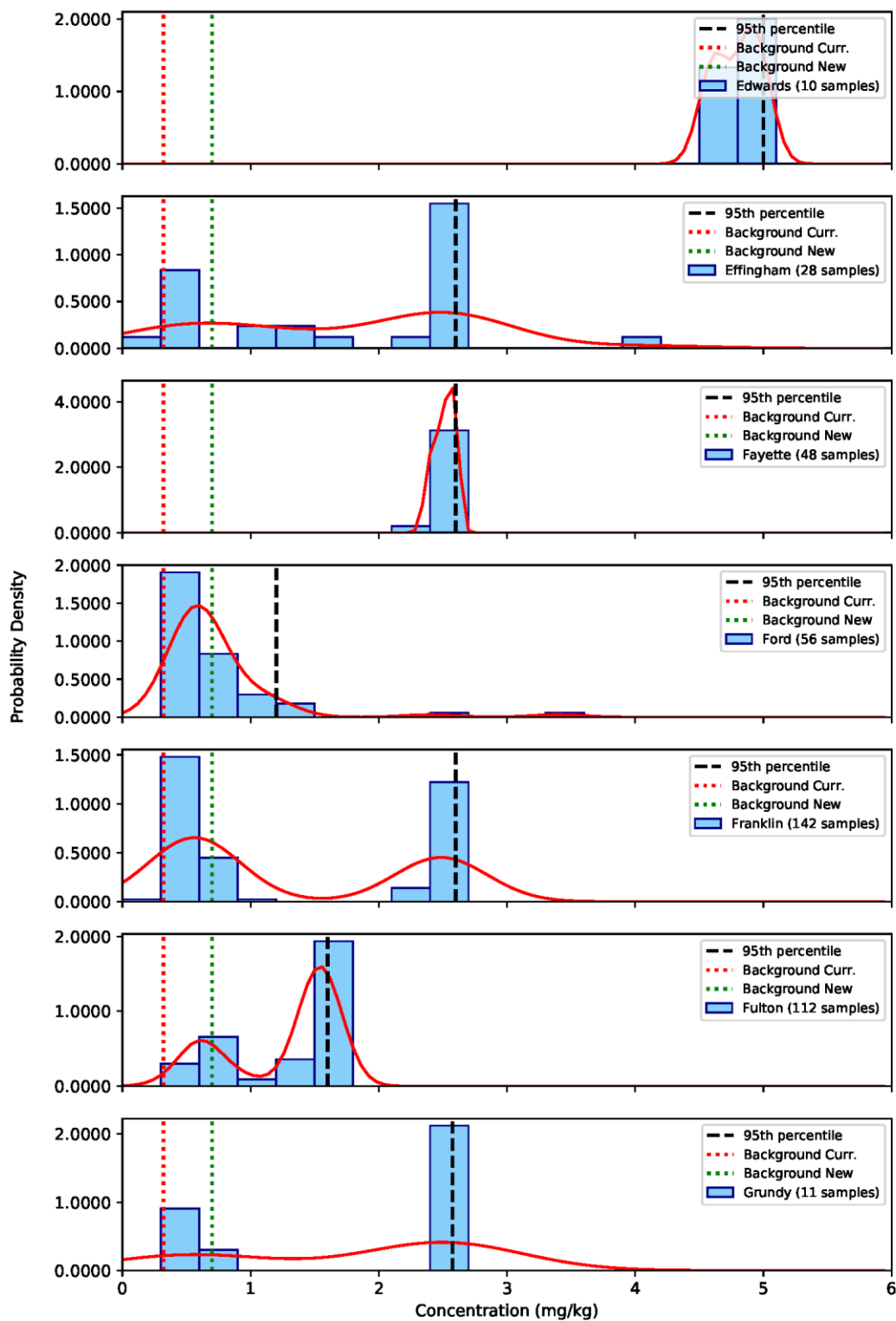


Figure 717. Histogram of RSL thallium concentrations by Illinois county, REC (mg/kg), part 3

# Thallium Concentration by County, page 4 of 10

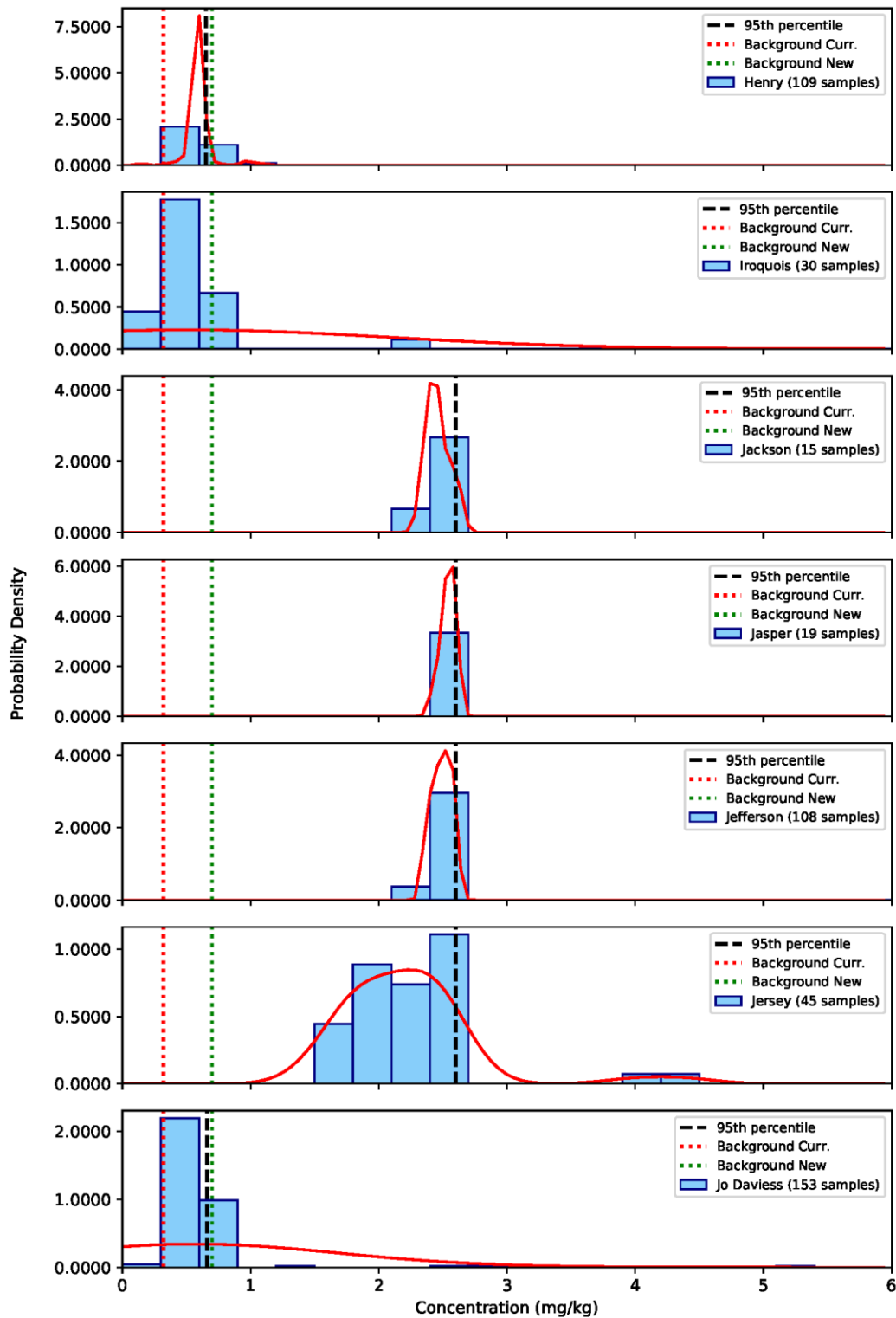


Figure 718. Histogram of RSL thallium concentrations by Illinois county, REC (mg/kg), part 4

# Thallium Concentration by County, page 5 of 10

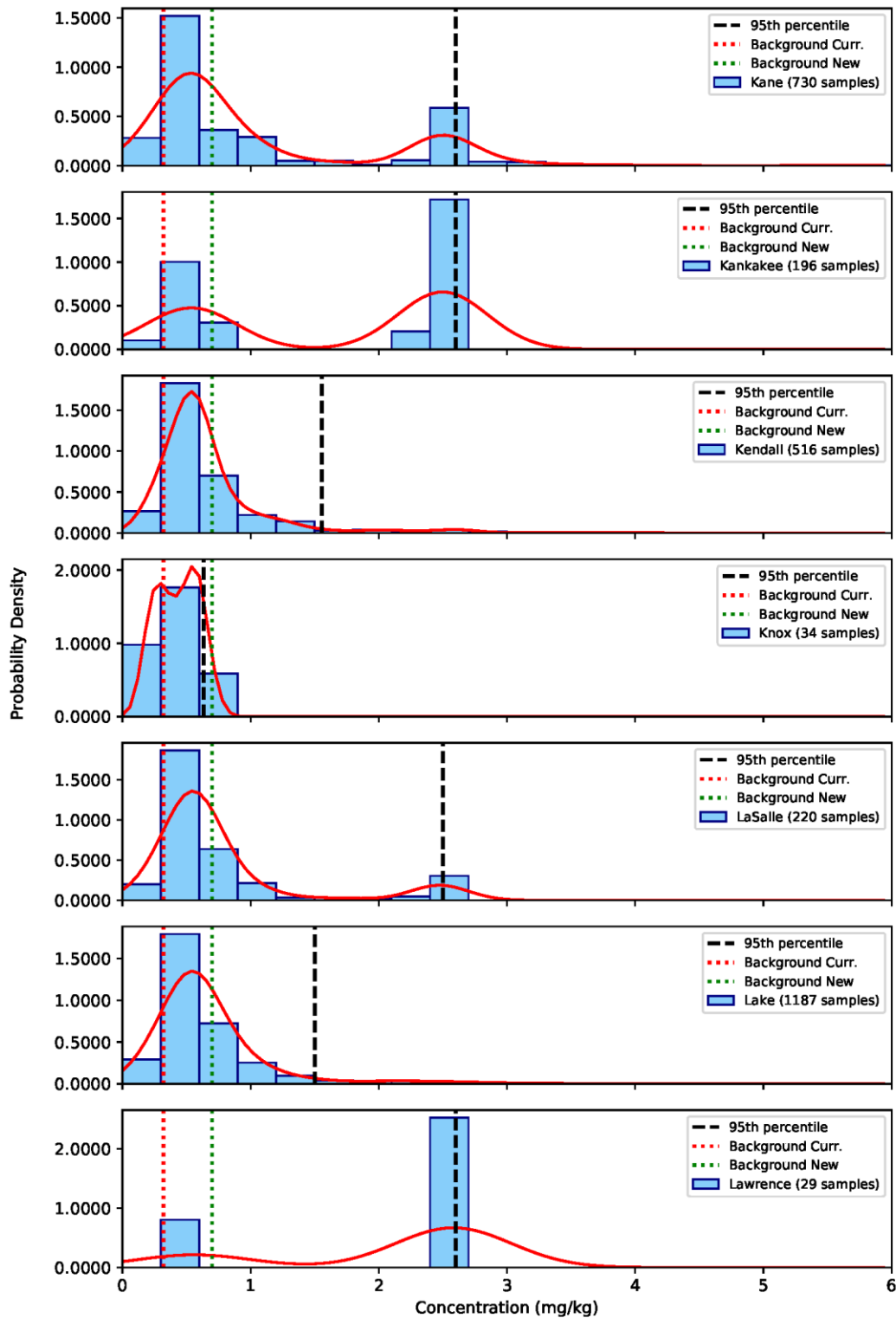


Figure 719. Histogram of RSL thallium concentrations by Illinois county, REC (mg/kg), part 5



# Thallium Concentration by County, page 6 of 10

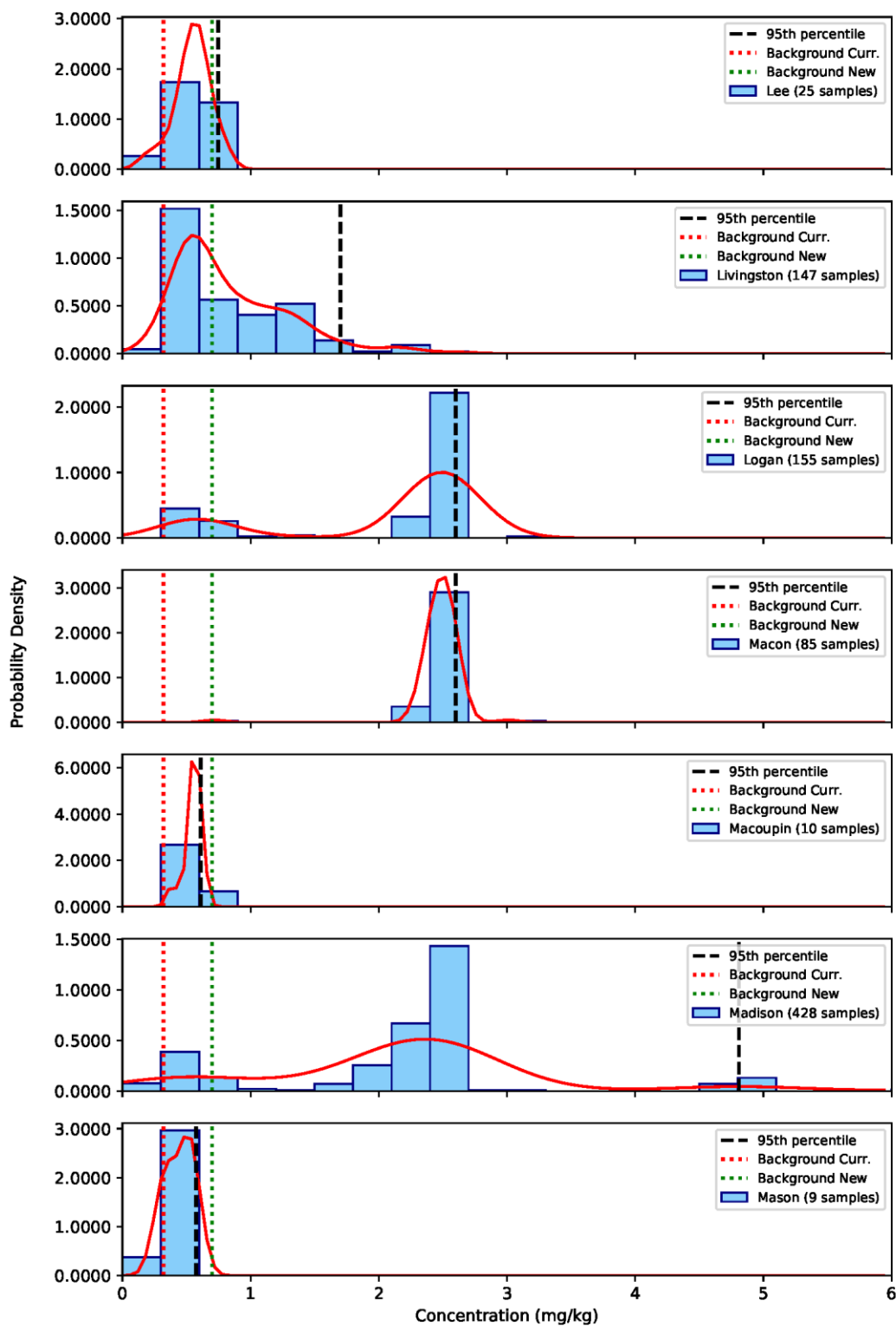


Figure 720. Histogram of RSL thallium concentrations by Illinois county, REC (mg/kg), part 6

# Thallium Concentration by County, page 7 of 10

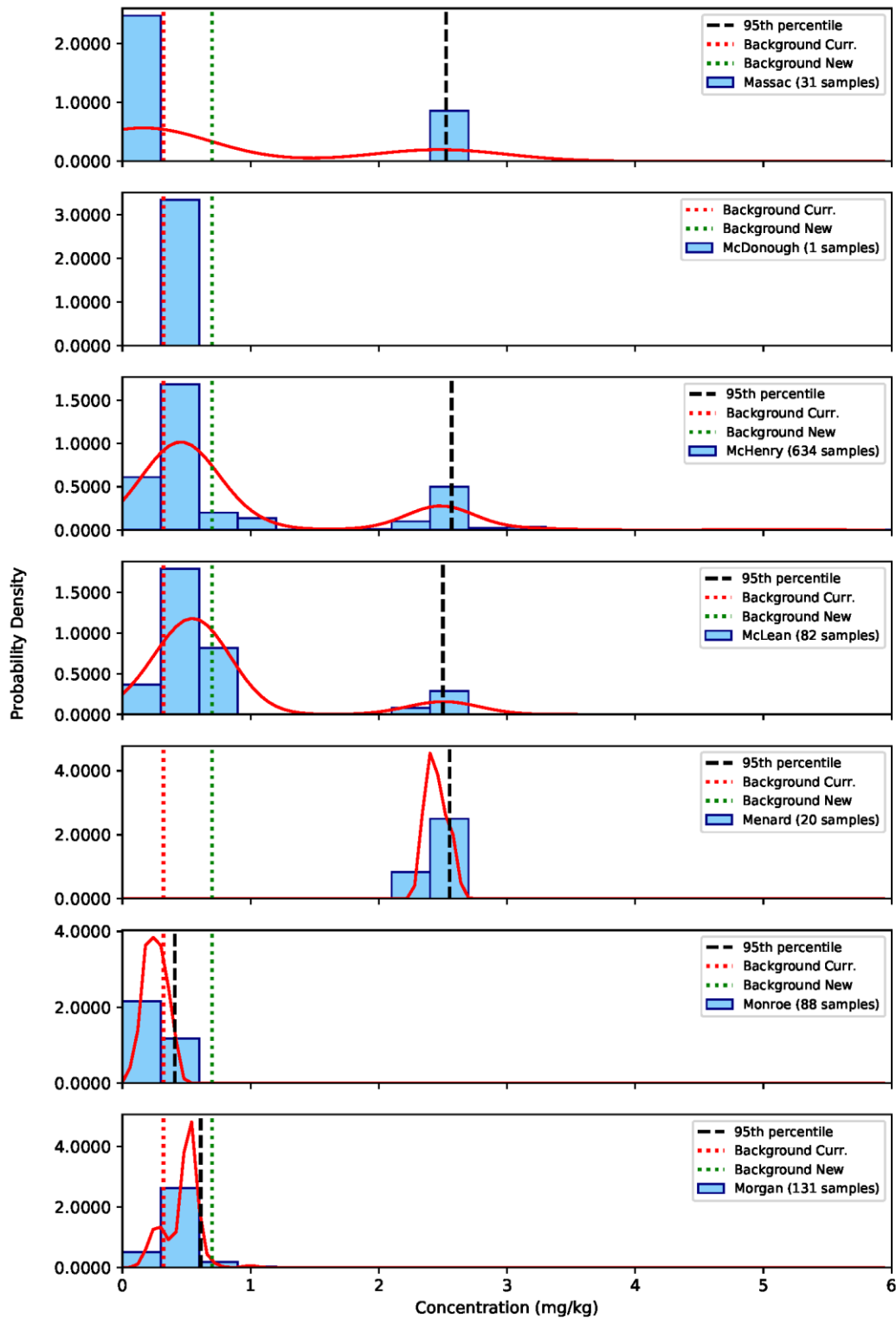


Figure 721. Histogram of RSL thallium concentrations by Illinois county, REC (mg/kg), part 7

# Thallium Concentration by County, page 8 of 10

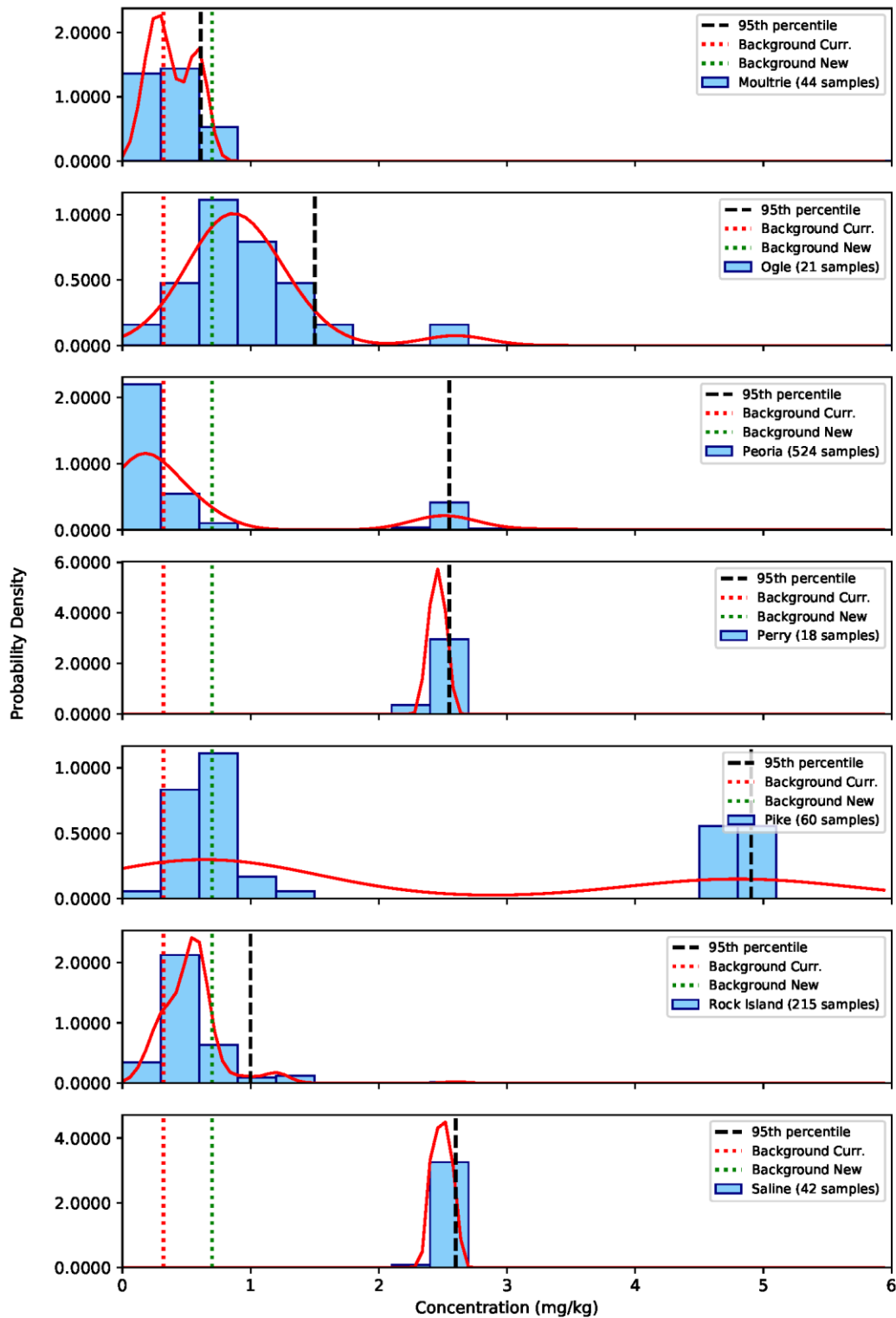


Figure 722. Histogram of RSL thallium concentrations by Illinois county, REC (mg/kg), part 8

# Thallium Concentration by County, page 9 of 10

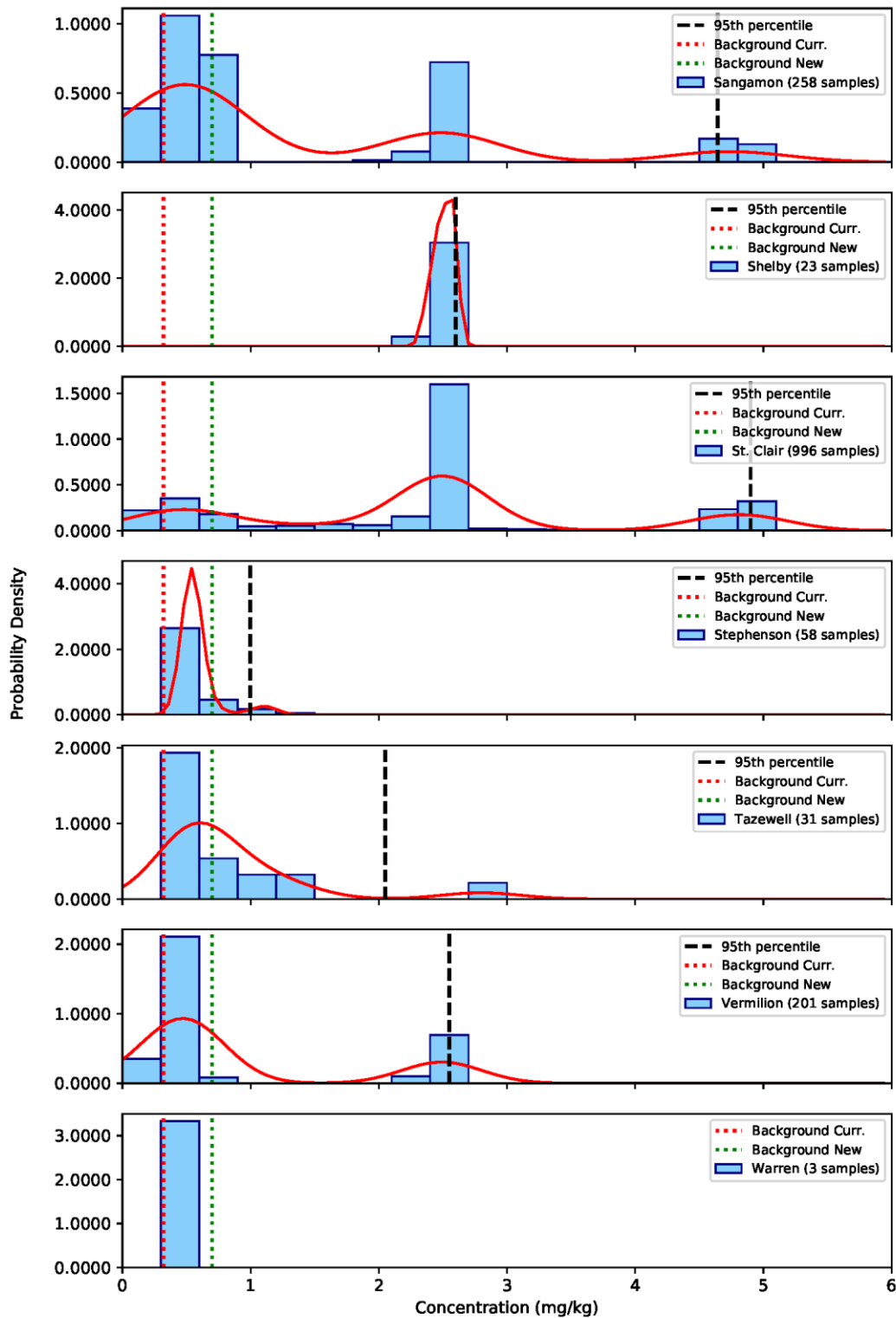


Figure 723. Histogram of RSL thallium concentrations by Illinois county, REC (mg/kg), part 9

# Thallium Concentration by County, page 10 of 10

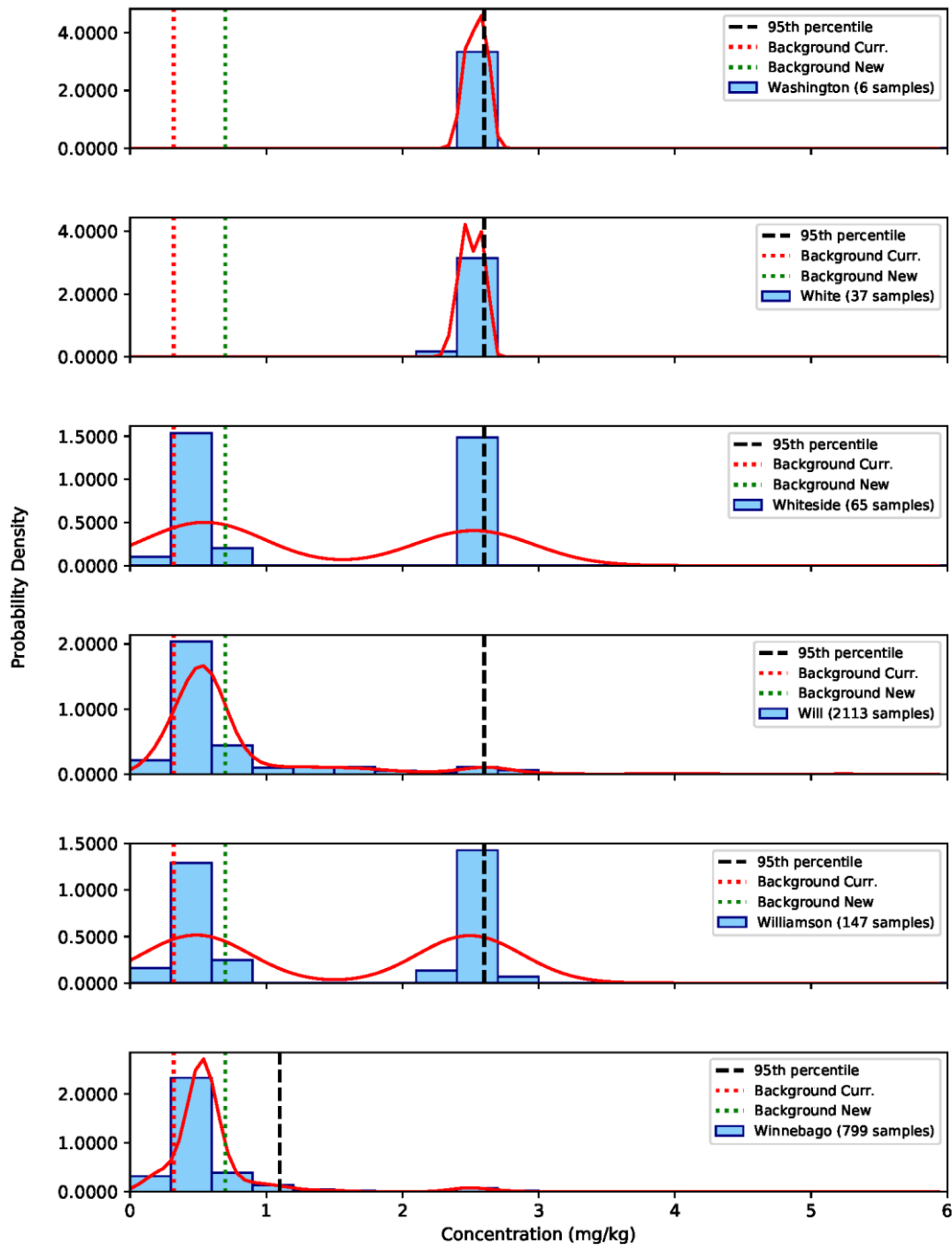


Figure 724. Histogram of RSL thallium concentrations by Illinois county, REC (mg/kg), part 10

Thallium Concentration for 95th Percentile by County: REC Sites

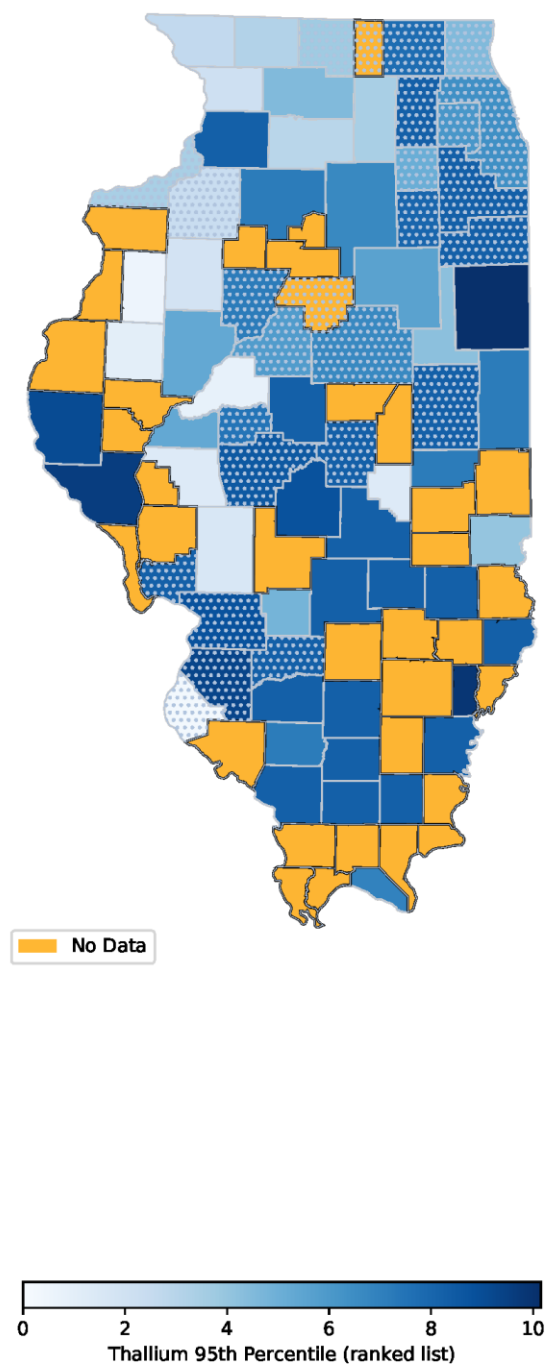


Figure 725. Map of RSL thallium 95th percentile concentration by Illinois county, REC (mg/kg)

Number of Thallium Samples by County: REC Sites

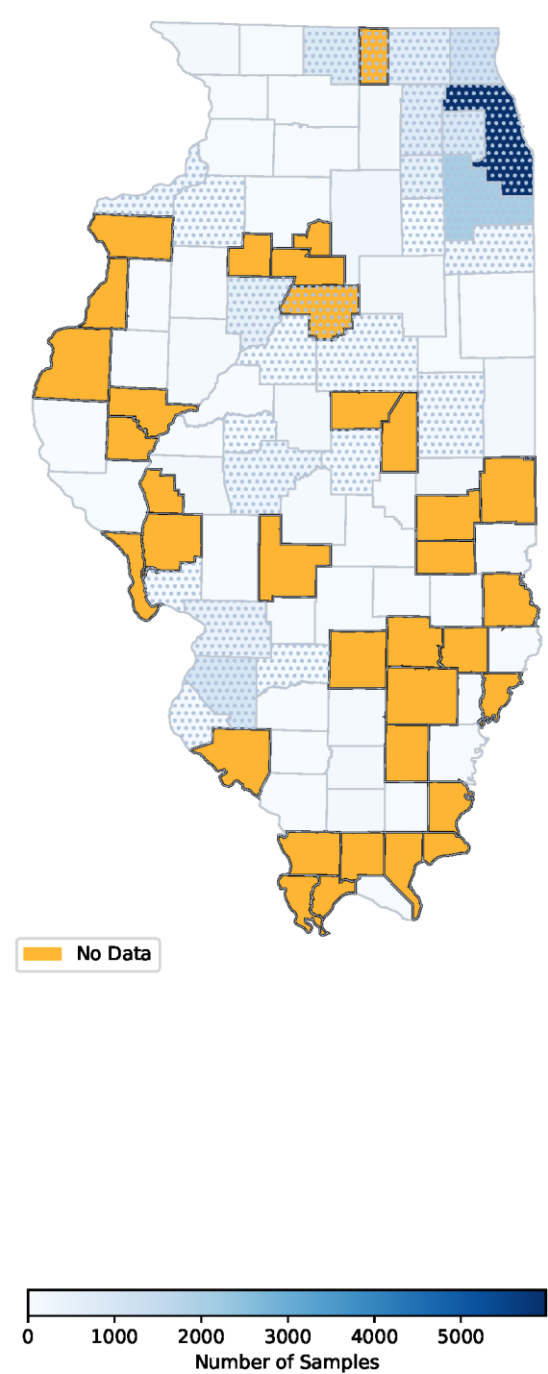


Figure 726. Map of RSL thallium sample quantity by Illinois county, REC (mg/kg)

## T.2 THALLIUM NON-REC



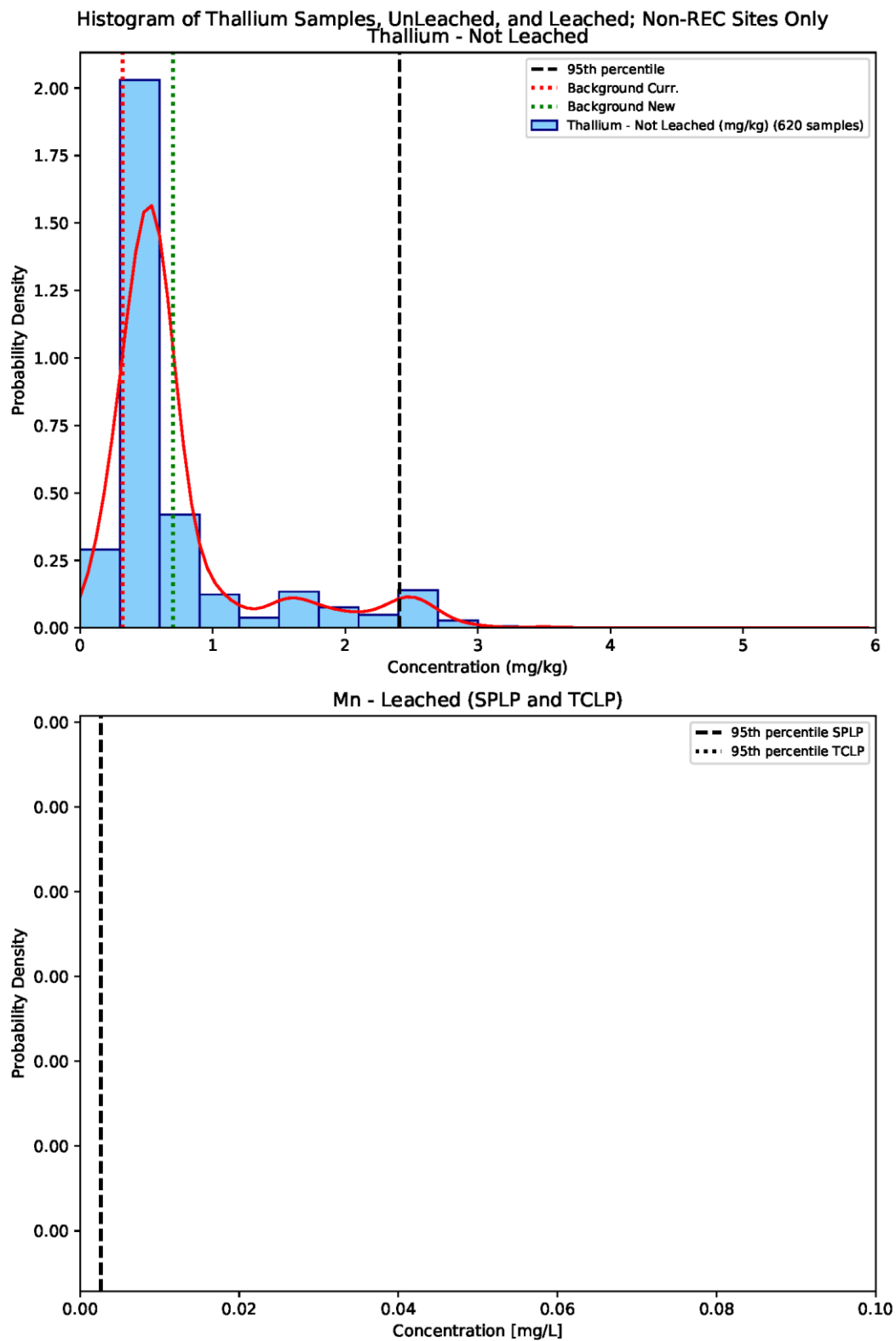


Figure 727. Histogram of RSL thallium concentrations, Non-REC (mg/kg)

Thallium Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

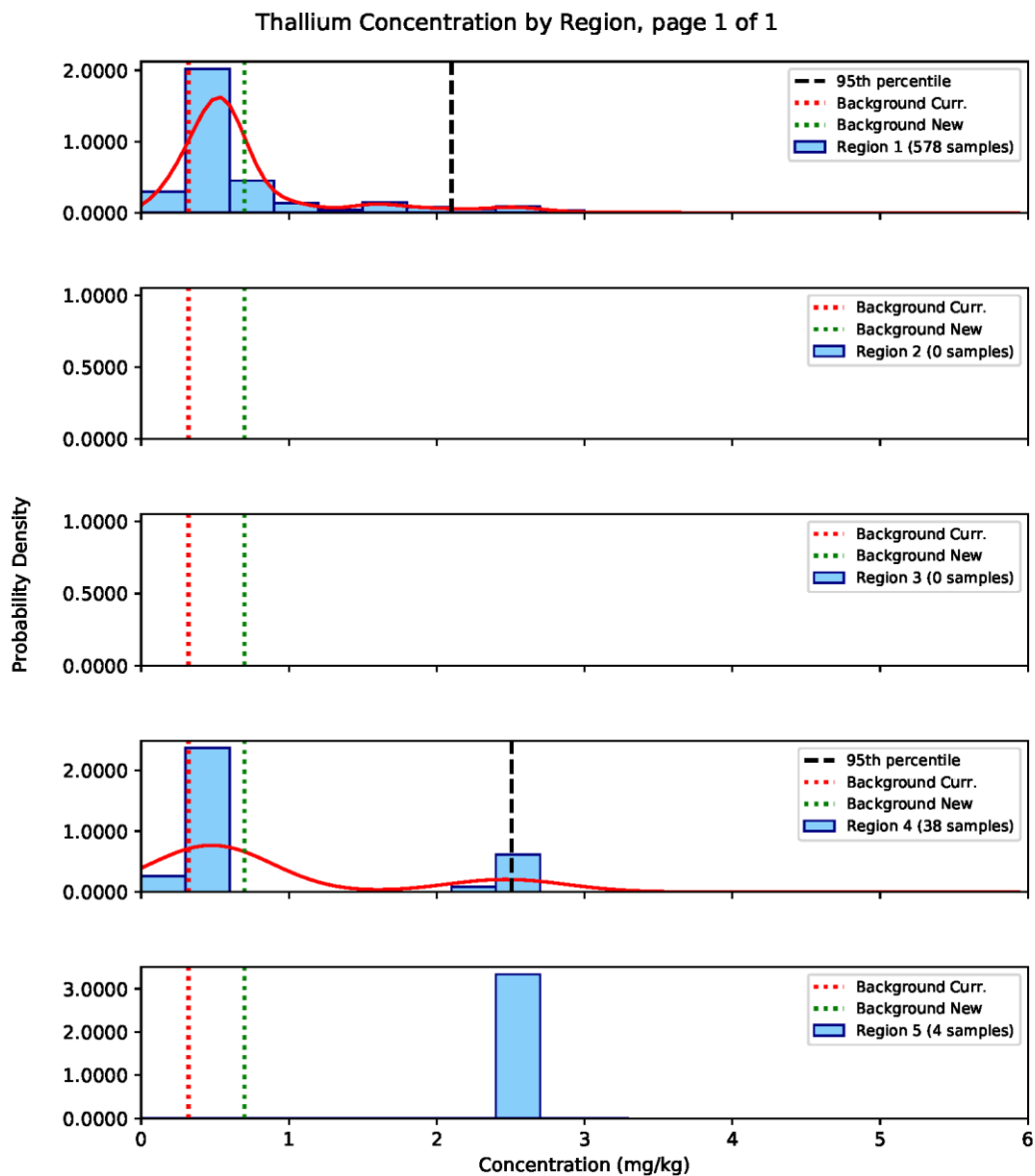
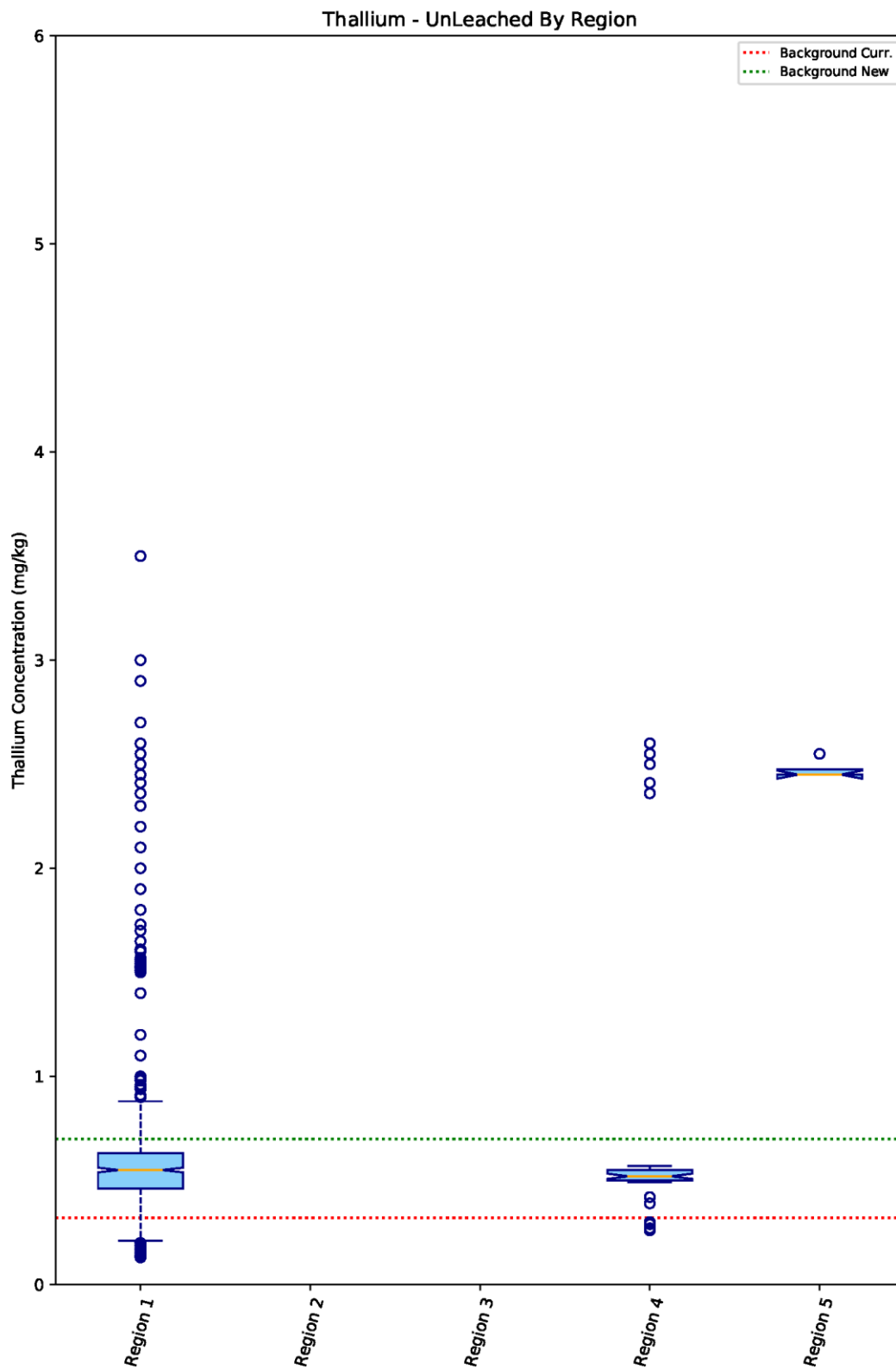


Figure 728. Histogram of RSL thallium concentrations by IDOT Region, Non-REC (mg/kg)



**Figure 729. Boxplot of RSL thallium concentrations by IDOT Region, Non-REC (mg/kg)**

# Thallium Concentration by District, page 1 of 2

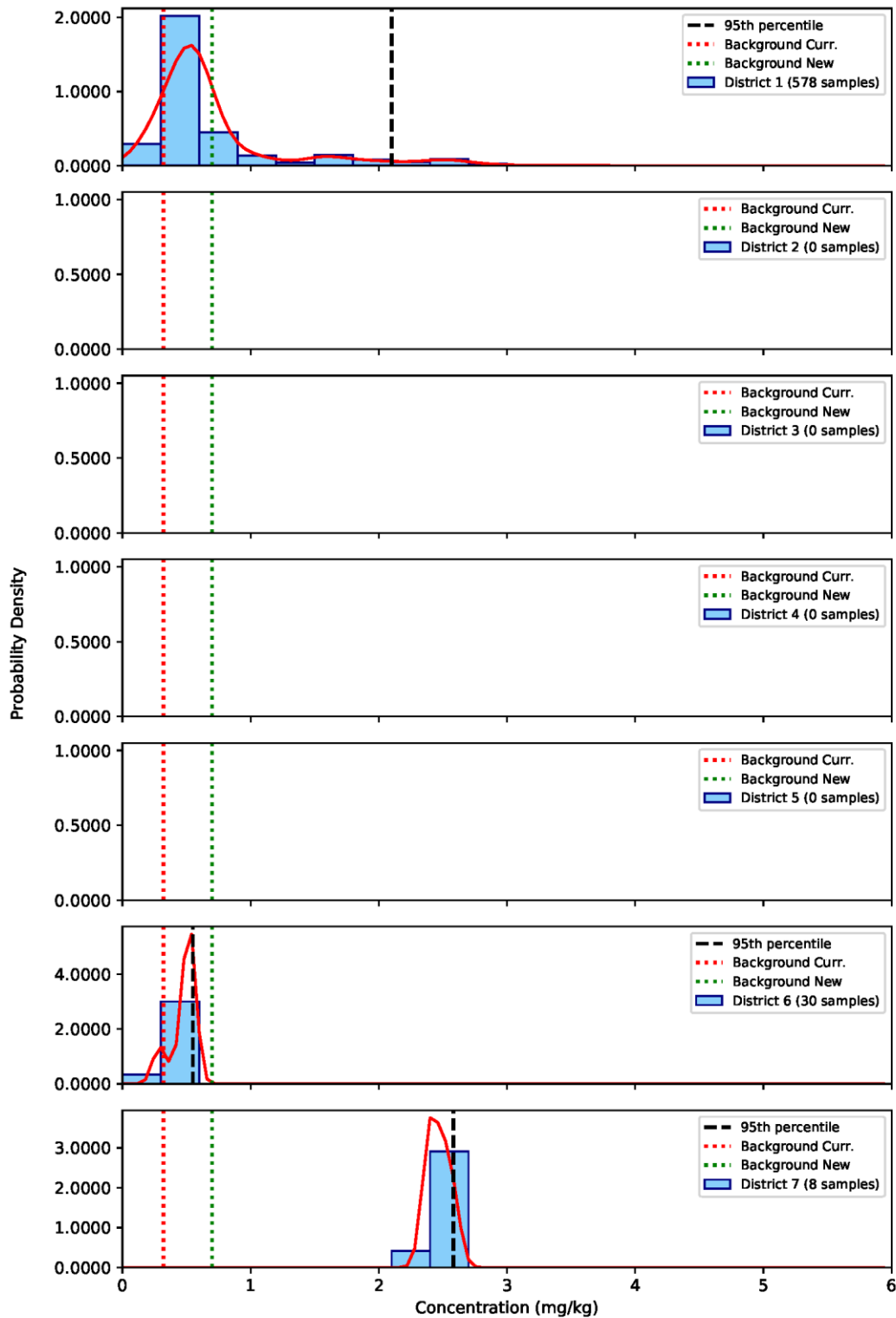


Figure 730. Histogram of RSL thallium concentrations by IDOT District, Non-REC (mg/kg), part 1

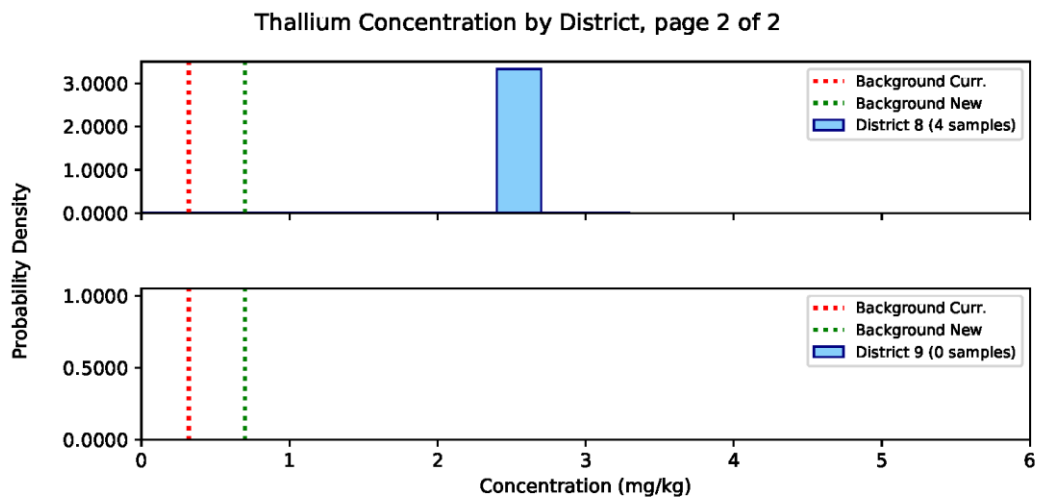


Figure 731. Histogram of RSL thallium concentrations by IDOT District, Non-REC (mg/kg), part 2

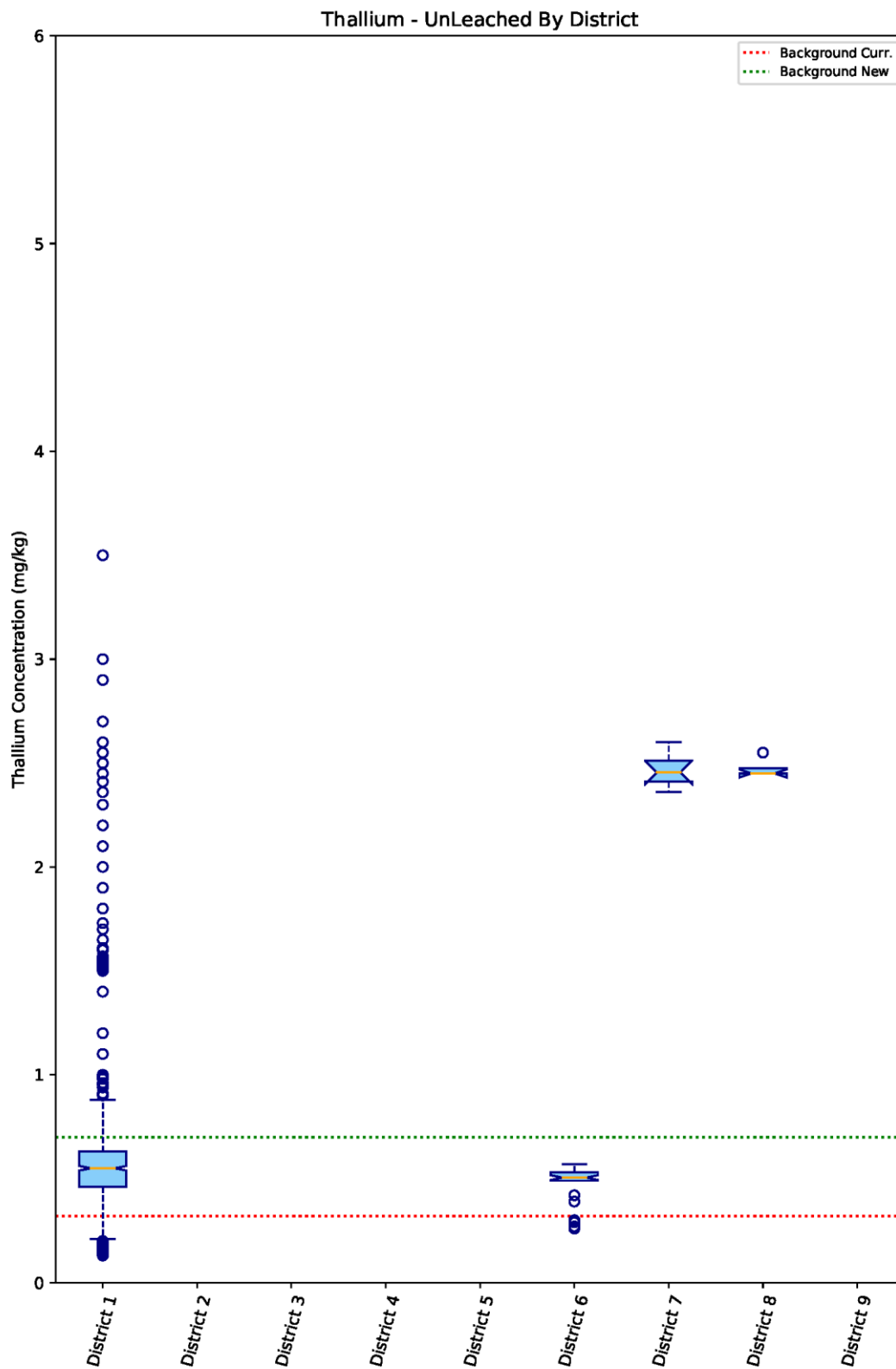


Figure 732. Boxplot of RSL thallium concentrations by IDOT District, Non-REC (mg/kg)

# Thallium Concentration by County, page 1 of 2

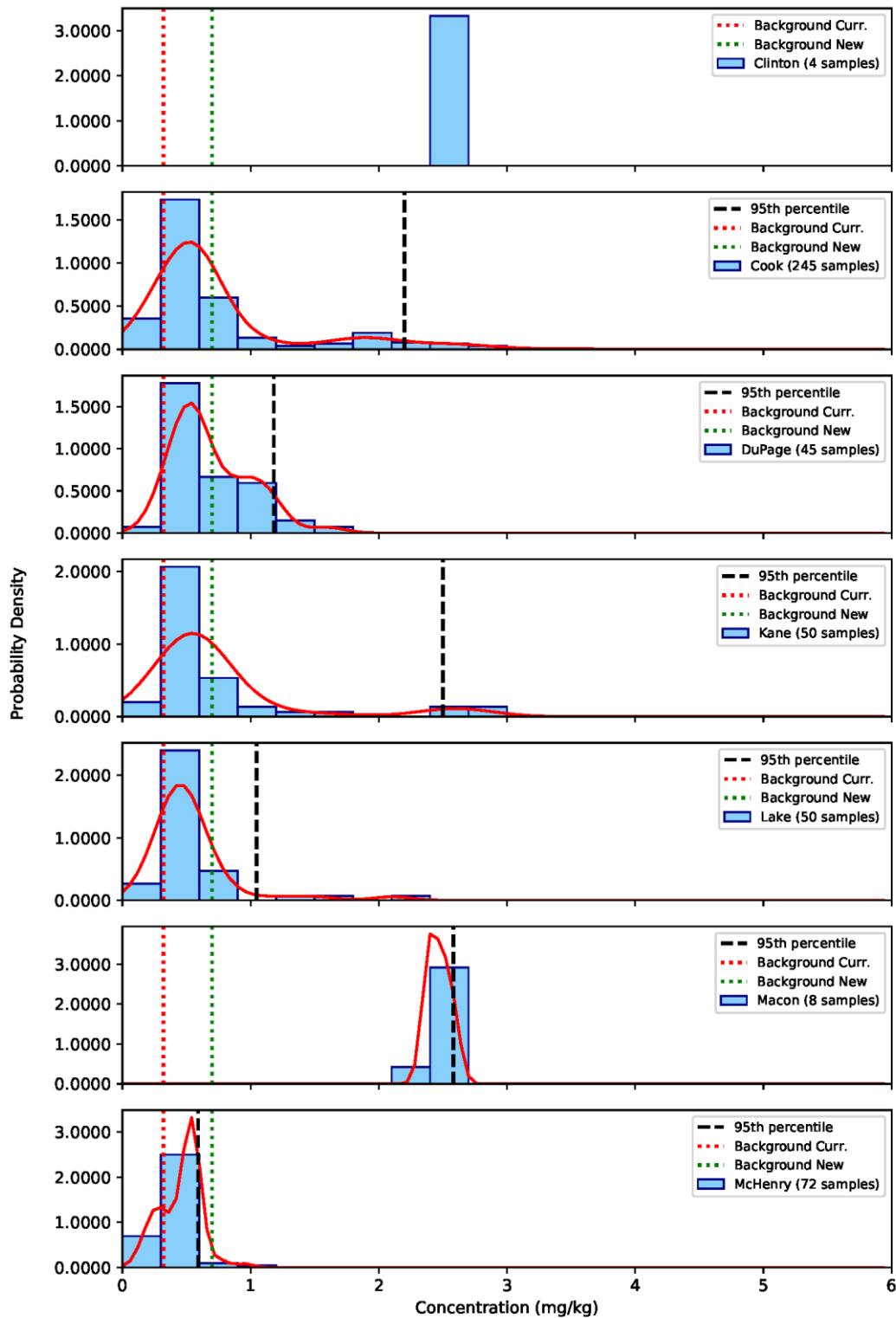


Figure 733. Histogram of RSL thallium concentrations by Illinois county, Non-REC (mg/kg), part 1



Thallium Concentration by County, page 2 of 2

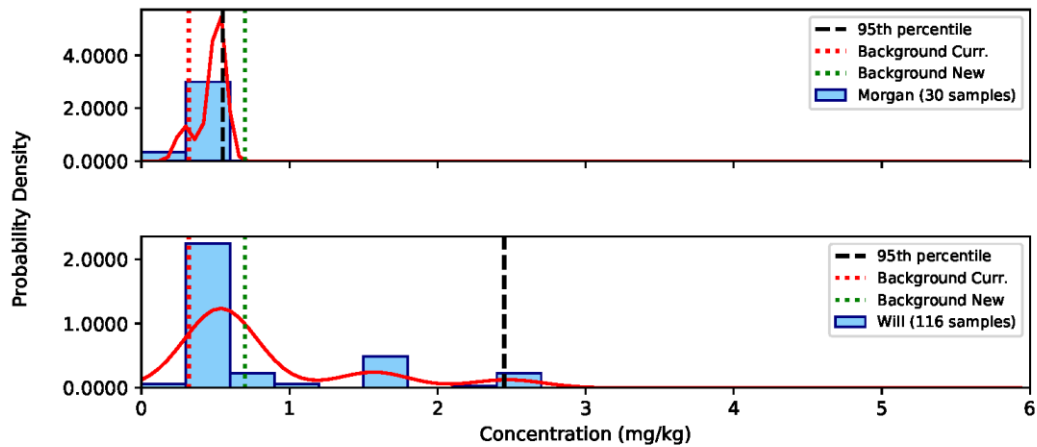


Figure 734. Histogram of RSL thallium concentrations by Illinois county, Non-REC (mg/kg), part 2

Thallium Concentration for 95th Percentile by County: Non-REC Sites

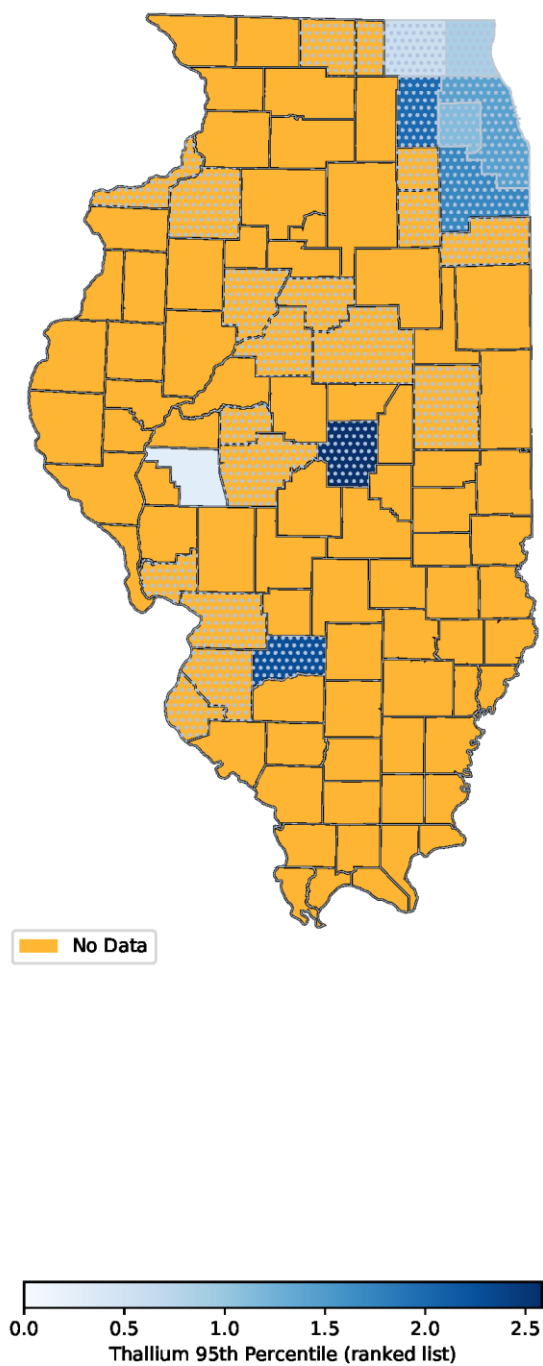


Figure 735. Map of RSL thallium 95th percentile concentration by Illinois county, Non-REC (mg/kg)

Number of Thallium Samples by County: Non-REC Sites

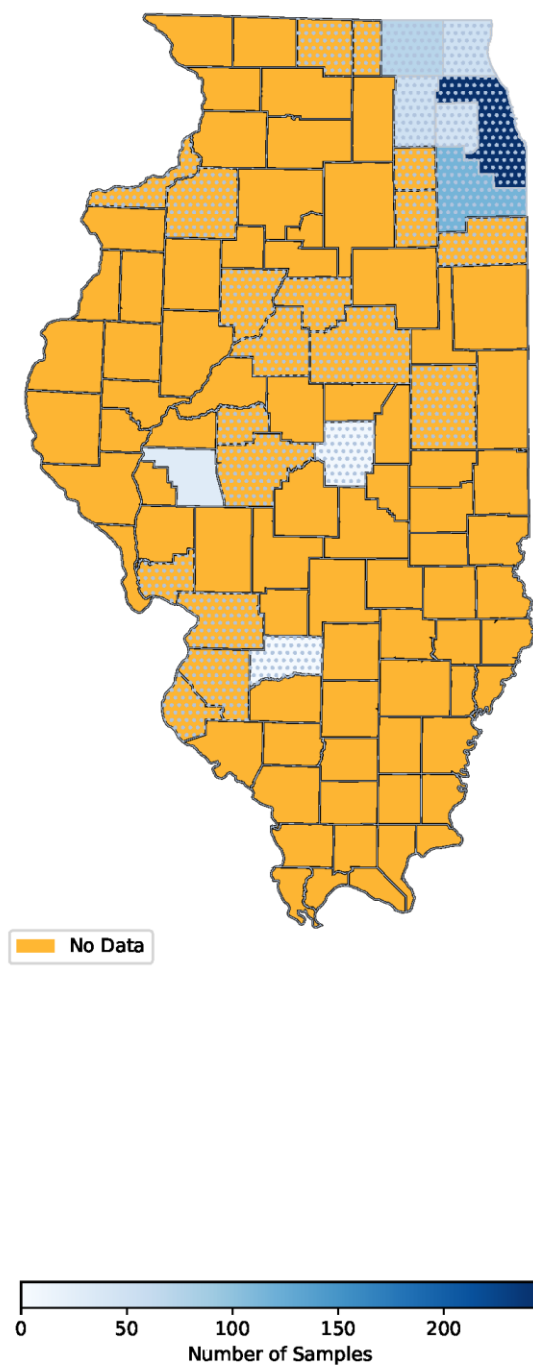


Figure 736. Map of RSL thallium sample quantity by Illinois county, Non-REC (mg/kg)

### T.3 THALLIUM DE MINIMIS

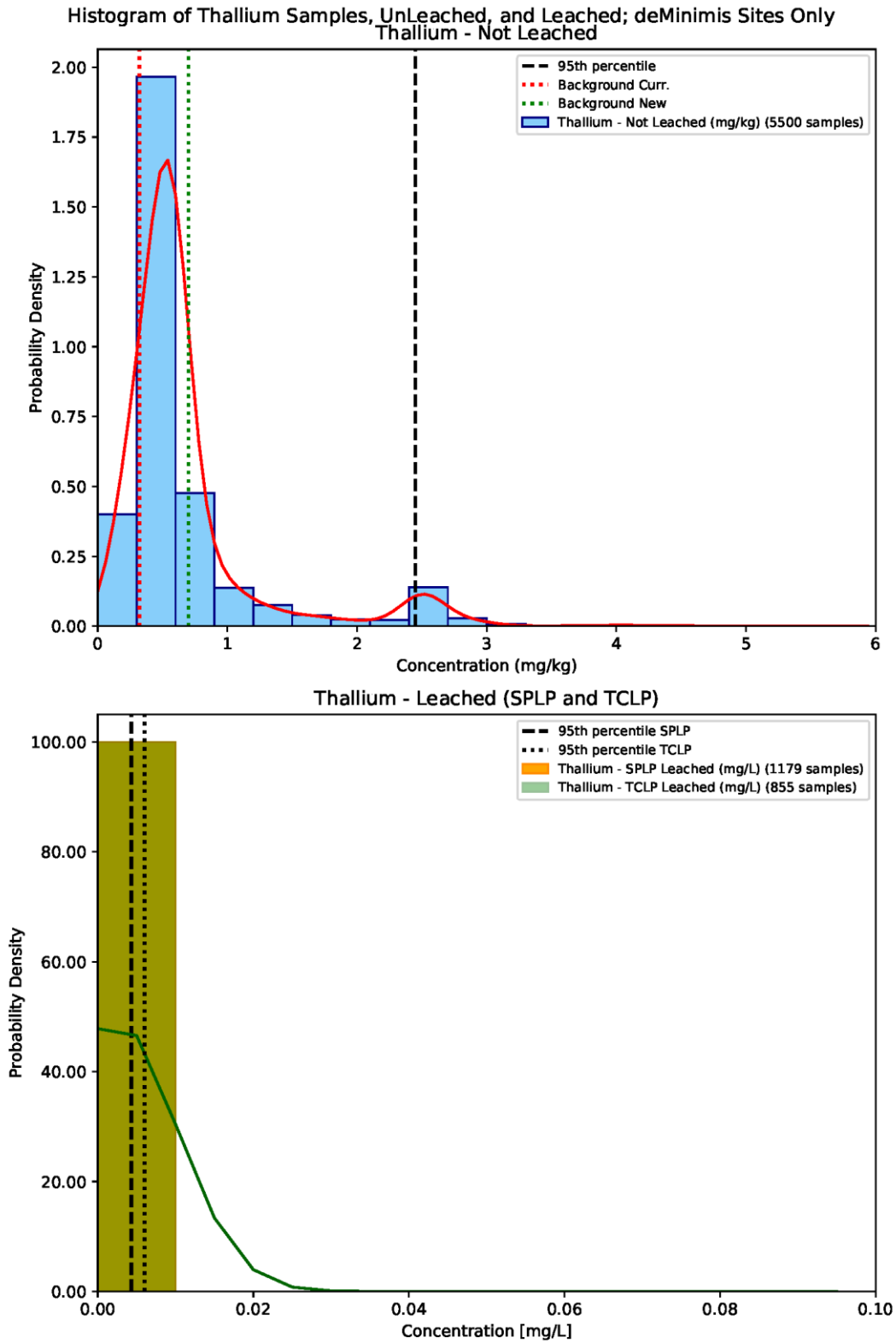


Figure 737. Histogram of RSL thallium concentrations, de minimis (mg/kg)

Thallium Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

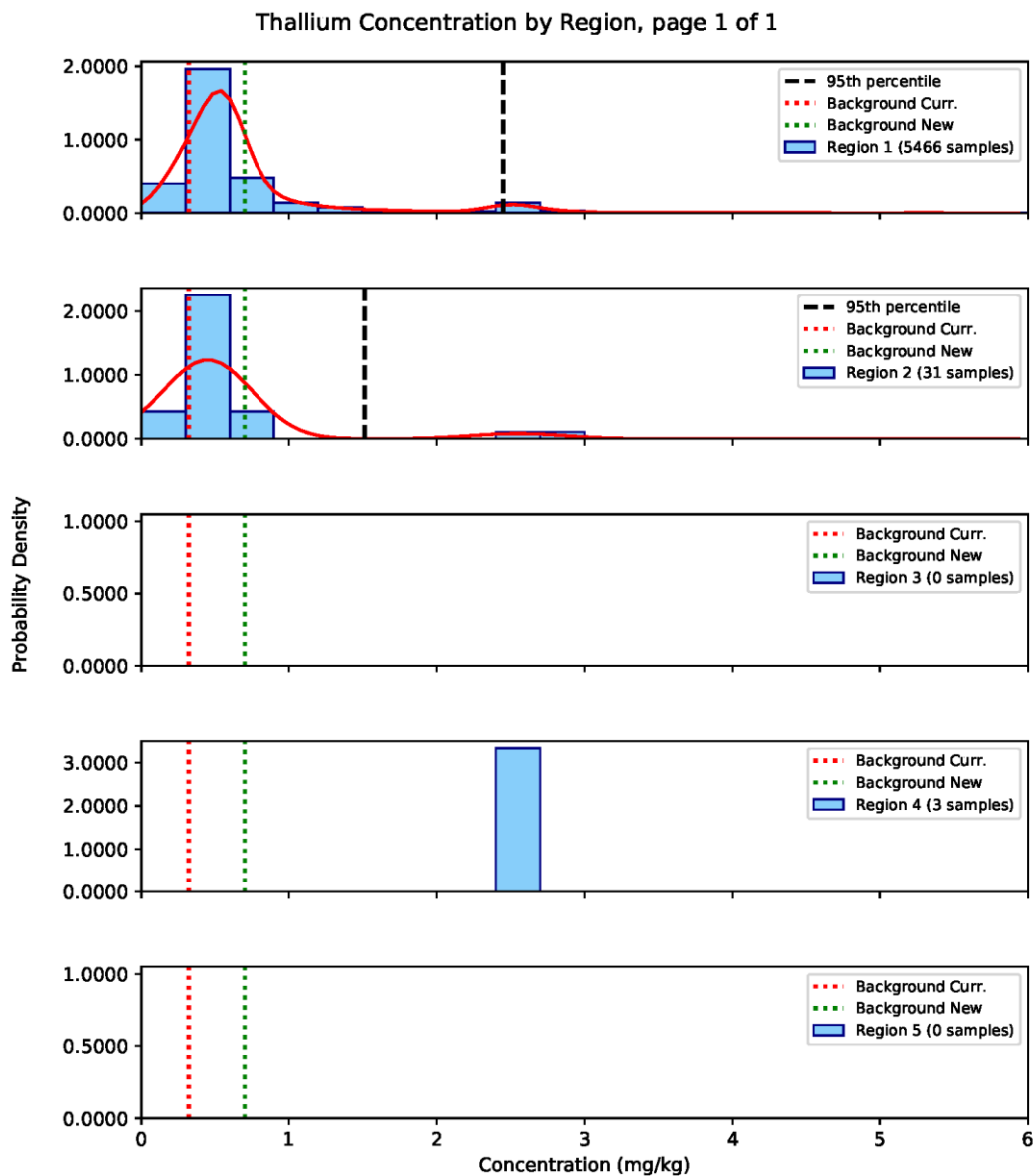


Figure 738. Histogram of RSL thallium concentrations by IDOT Region, de minimis (mg/kg)

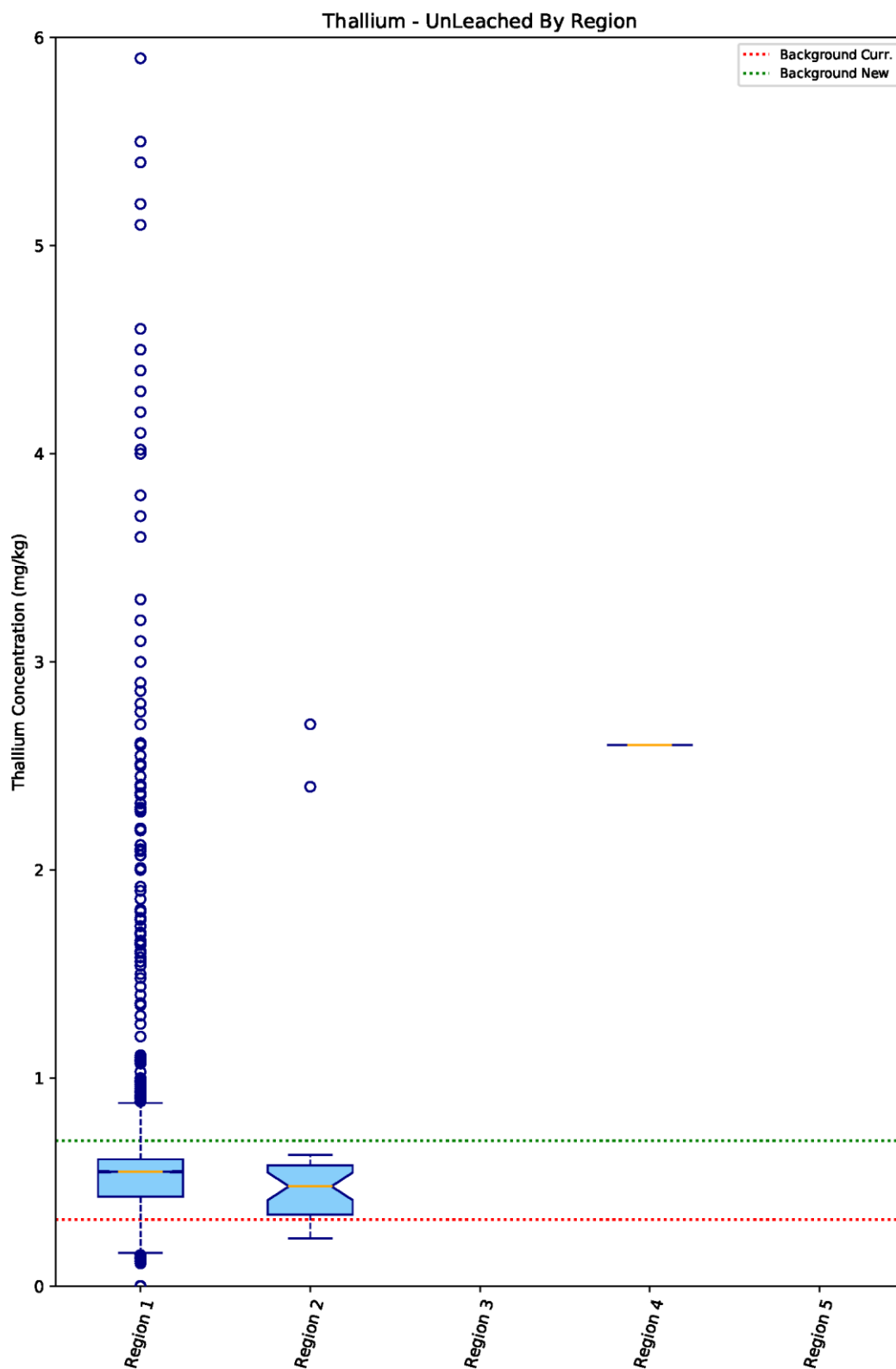


Figure 739. Boxplot of RSL thallium concentrations by IDOT Region, de minimis (mg/kg)



# Thallium Concentration by District, page 1 of 2

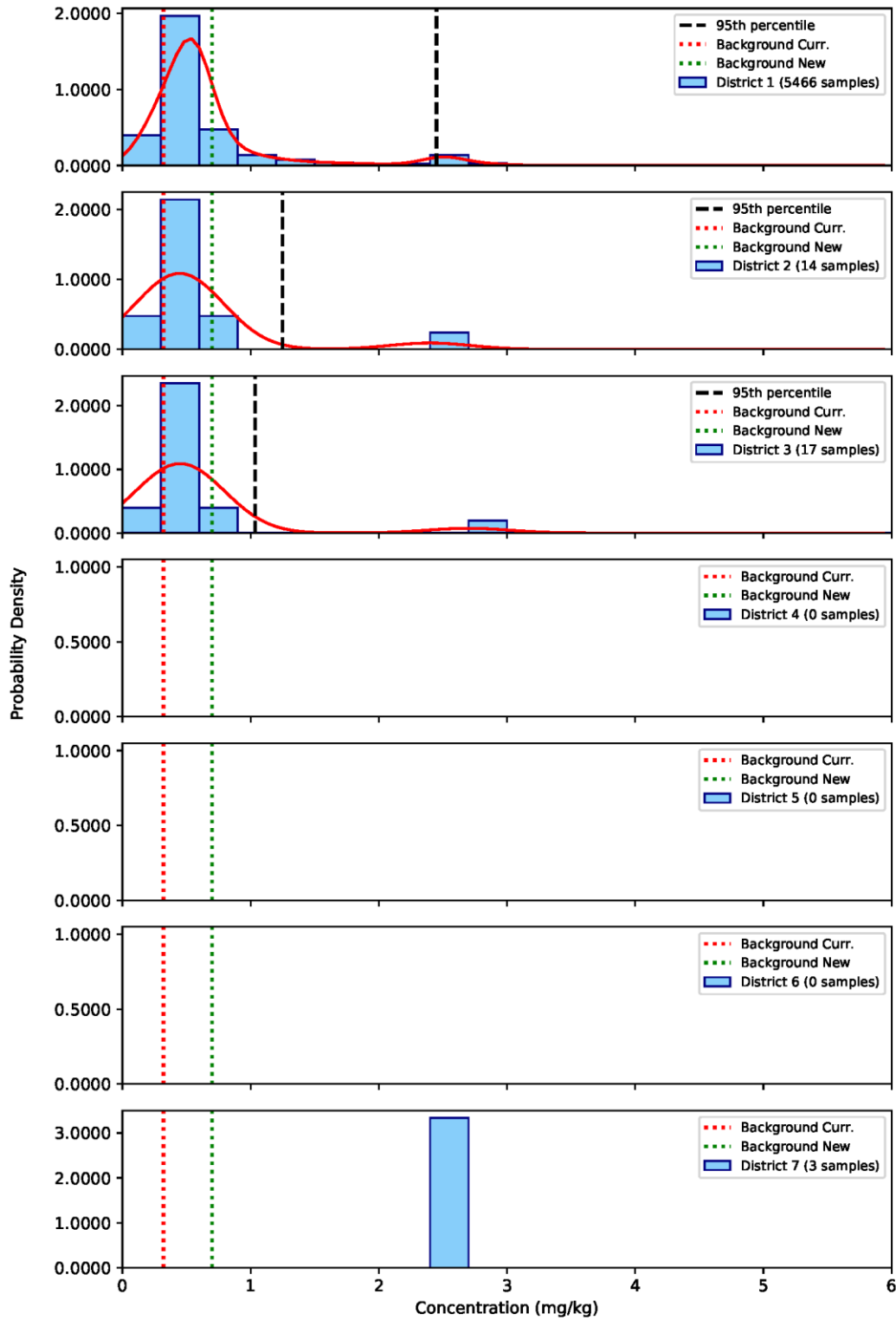


Figure 740. Histogram of RSL thallium concentrations by IDOT District, de minimis (mg/kg), part 1

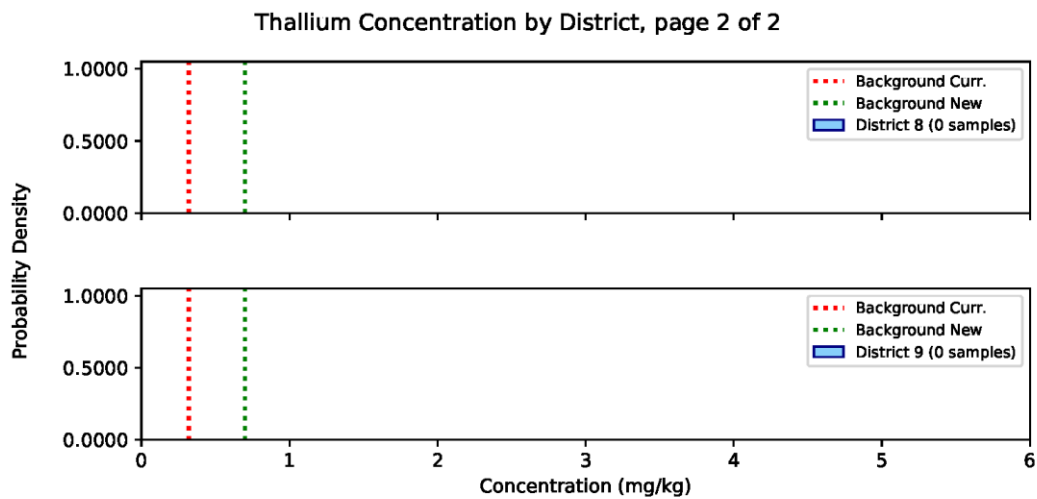


Figure 741. Histogram of RSL thallium concentrations by IDOT District, de minimis (mg/kg), part 2

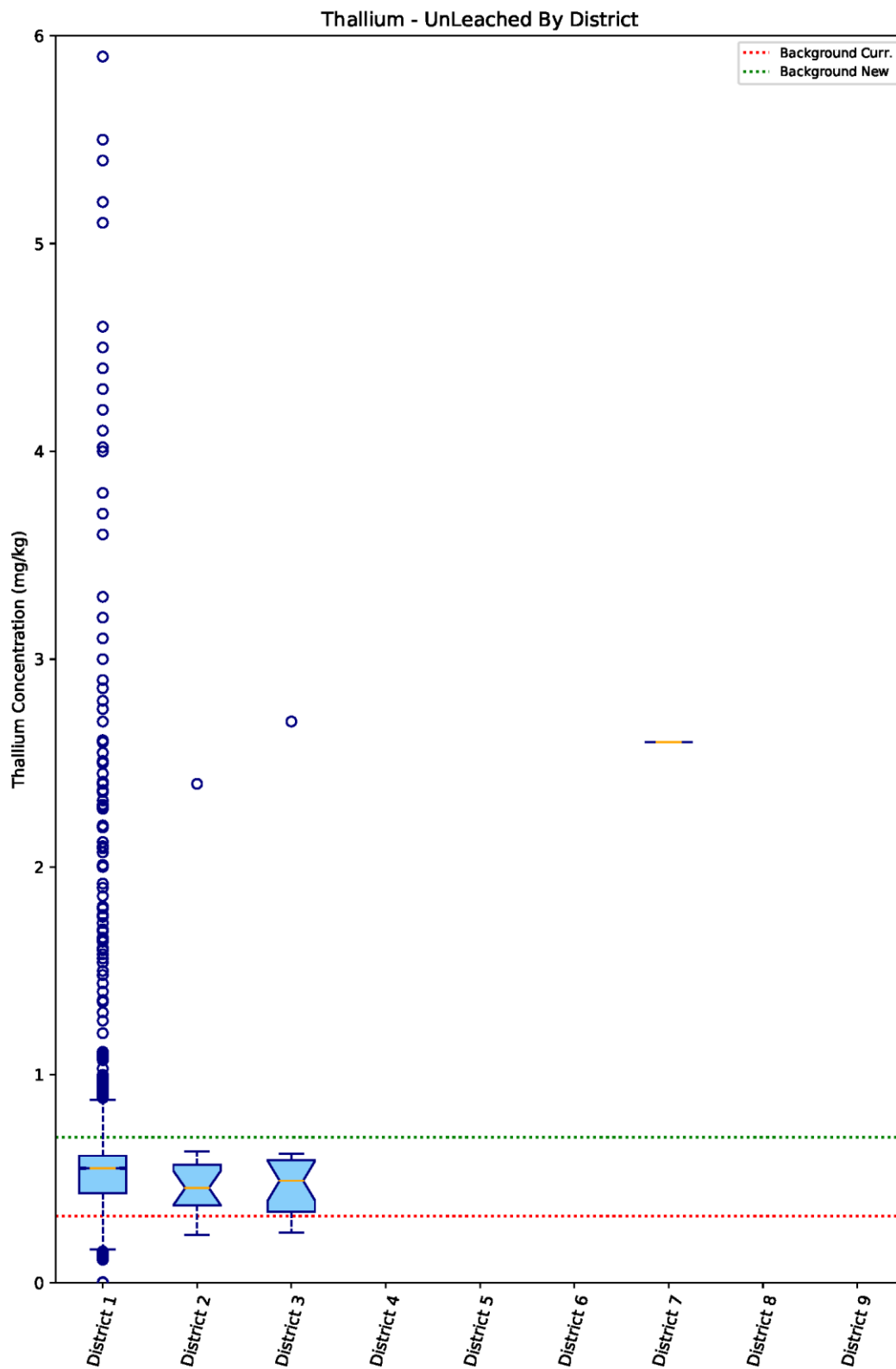


Figure 742. Boxplot of RSL thallium concentrations by IDOT District, de minimis (mg/kg)

Thallium Concentration by County, page 1 of 2

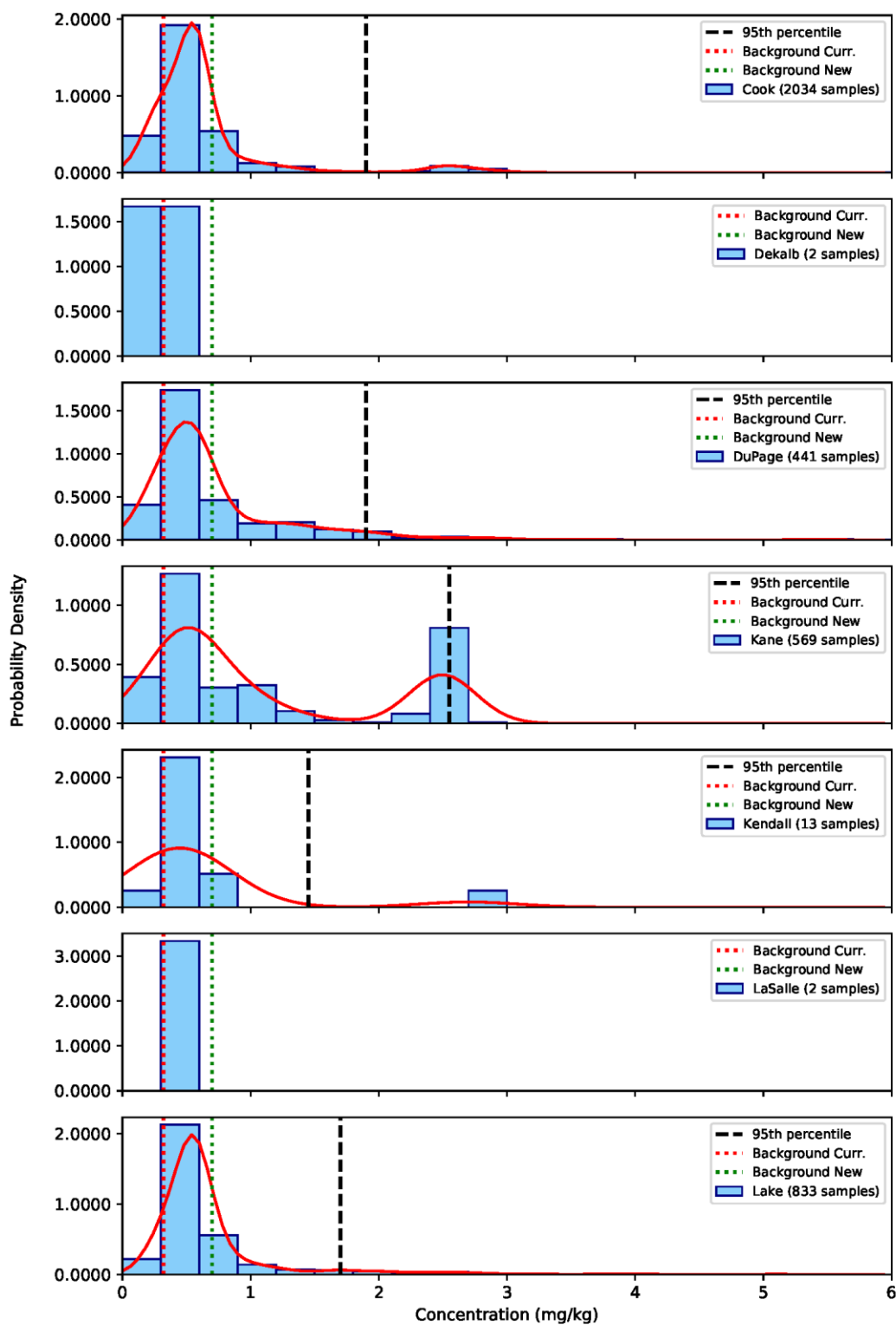


Figure 743. Histogram of RSL thallium concentrations by Illinois county, de minimis (mg/kg), part 1

# Thallium Concentration by County, page 2 of 2

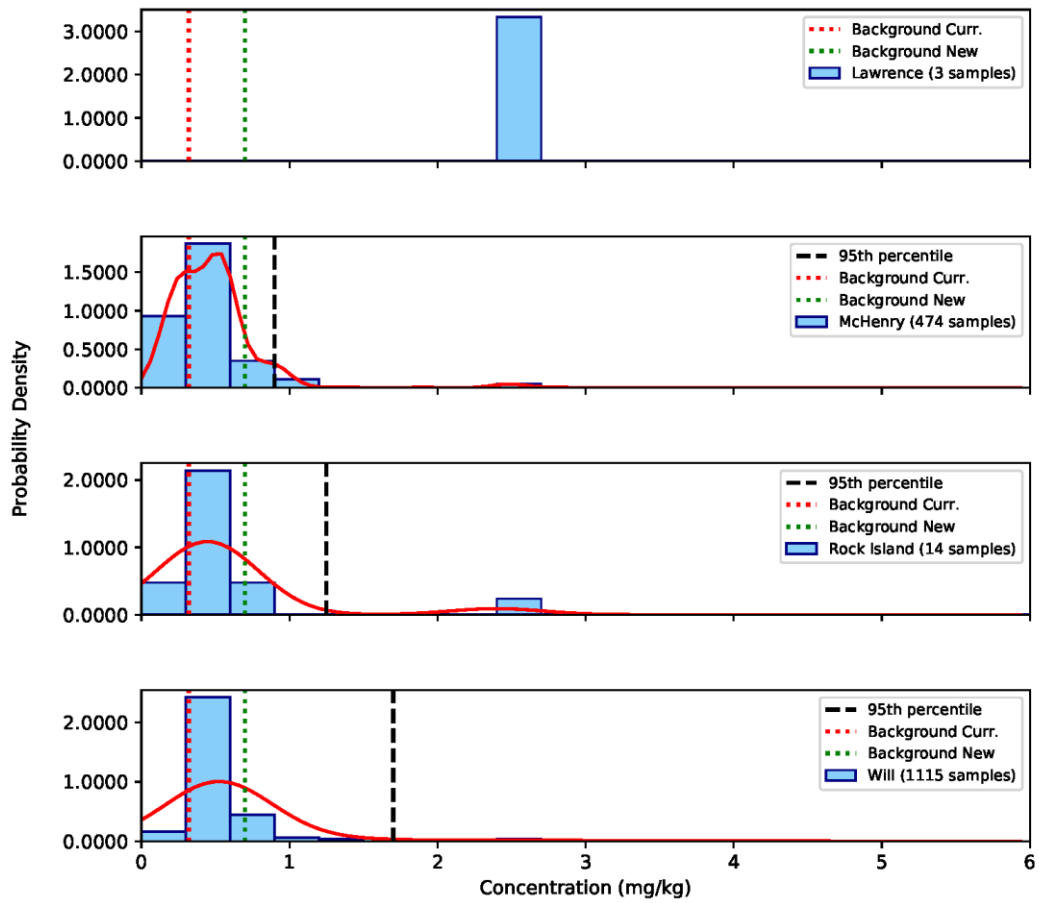


Figure 744. Histogram of RSL thallium concentrations by Illinois county, de minimis (mg/kg), part 2

Thallium Concentration for 95th Percentile by County: deMinimis Sites

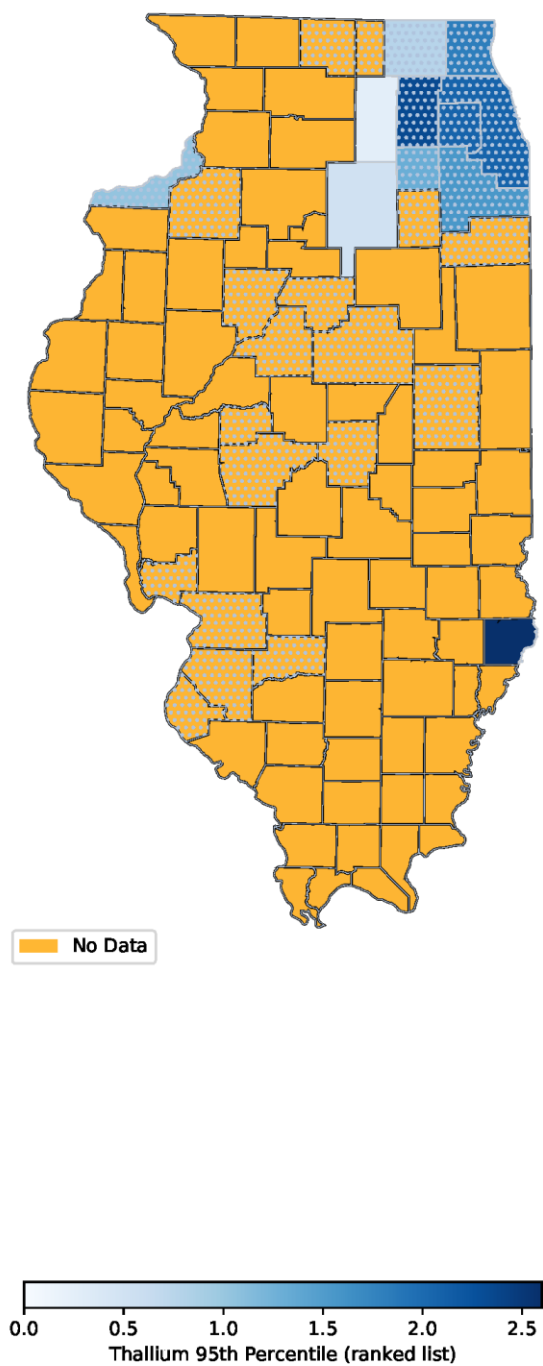


Figure 745. Map of RSL thallium 95th percentile concentration by Illinois county, de minimis (mg/kg)

Number of Thallium Samples by County: deMinimis Sites

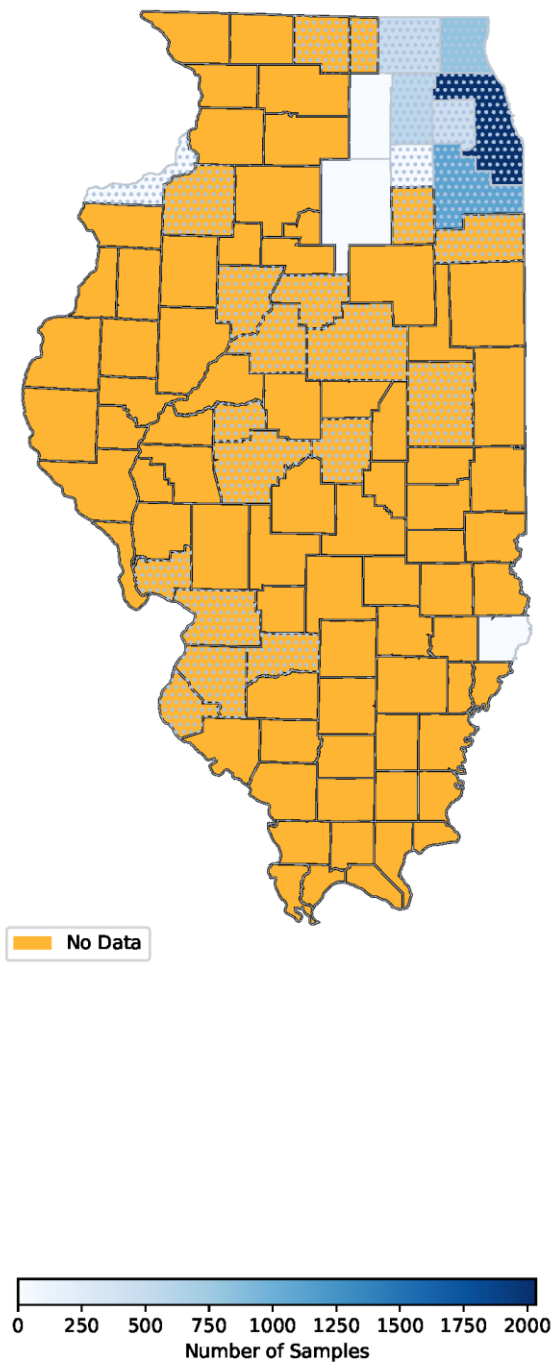
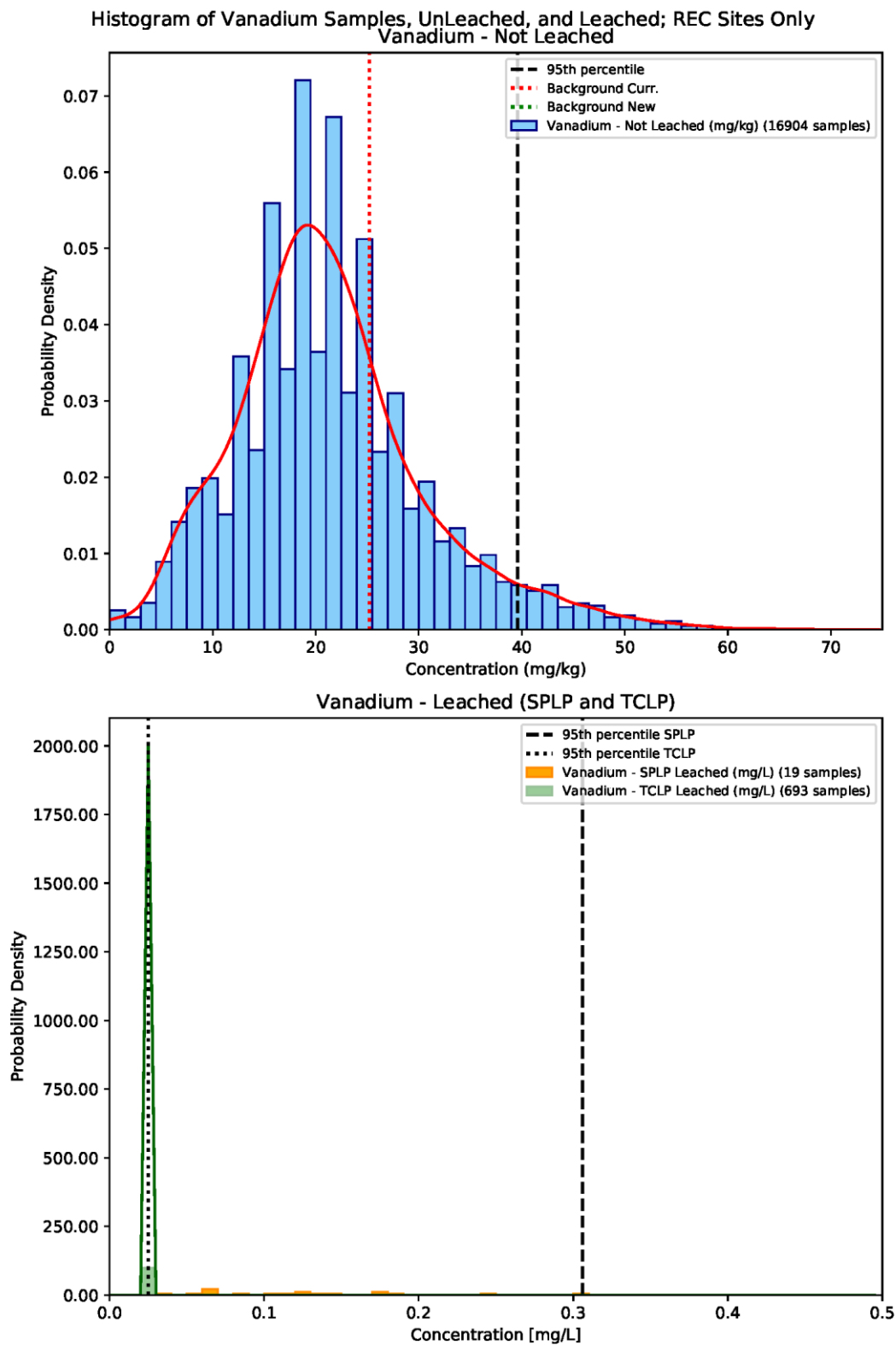


Figure 746. Map of RSL thallium sample quantity by Illinois county, de minimis (mg/kg)

## **APPENDIX U. ANALYTE ANALYSIS: VANADIUM**

### **U.1 VANADIUM REC**





**Figure 747. Histogram of RSL vanadium concentrations, REC (mg/kg)**

Vanadium Unleached Concentration (mg/kg)

1) Region

2) District

3) County

# Vanadium Concentration by Region, page 1 of 1

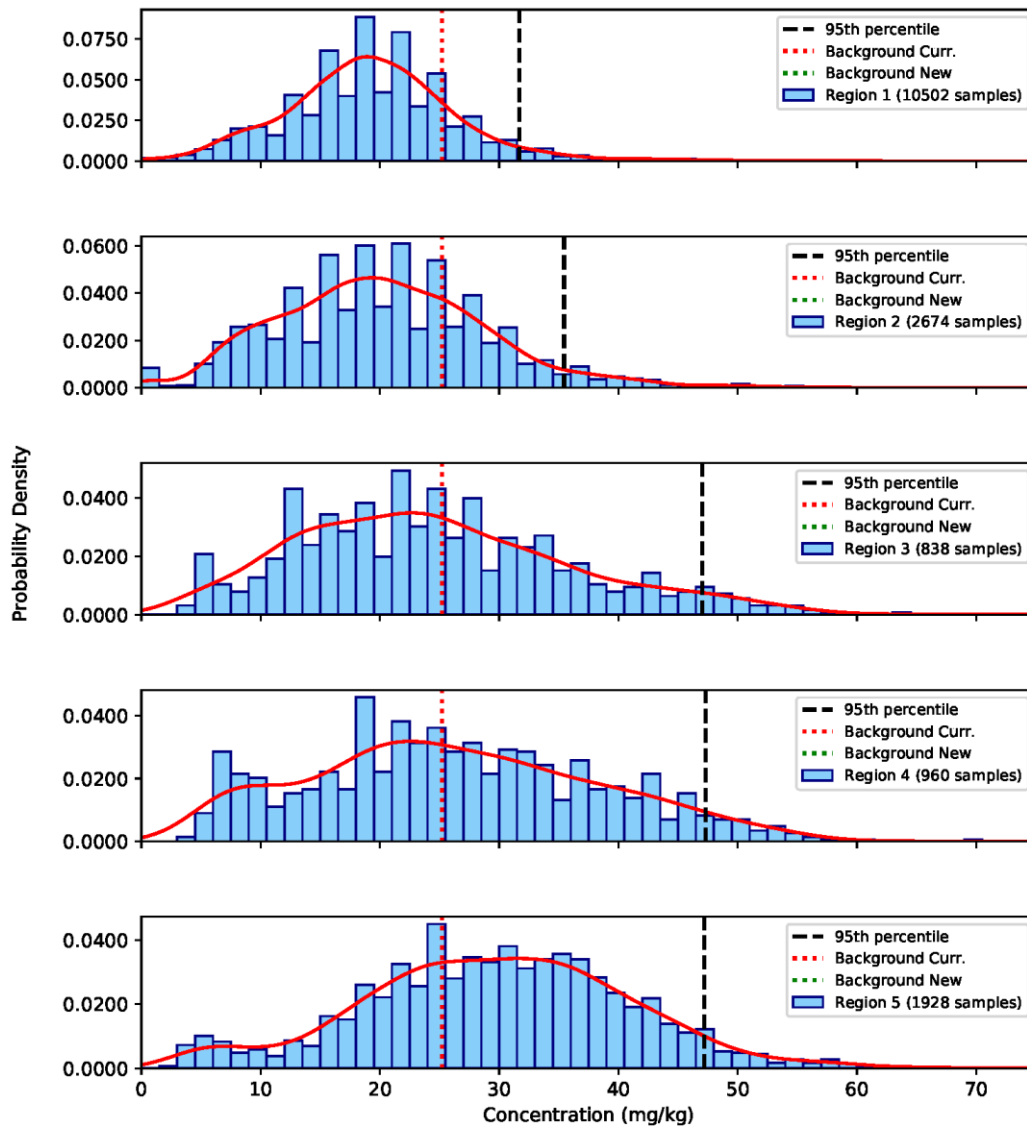


Figure 748. Histogram of RSL vanadium concentrations by IDOT Region, REC (mg/kg)

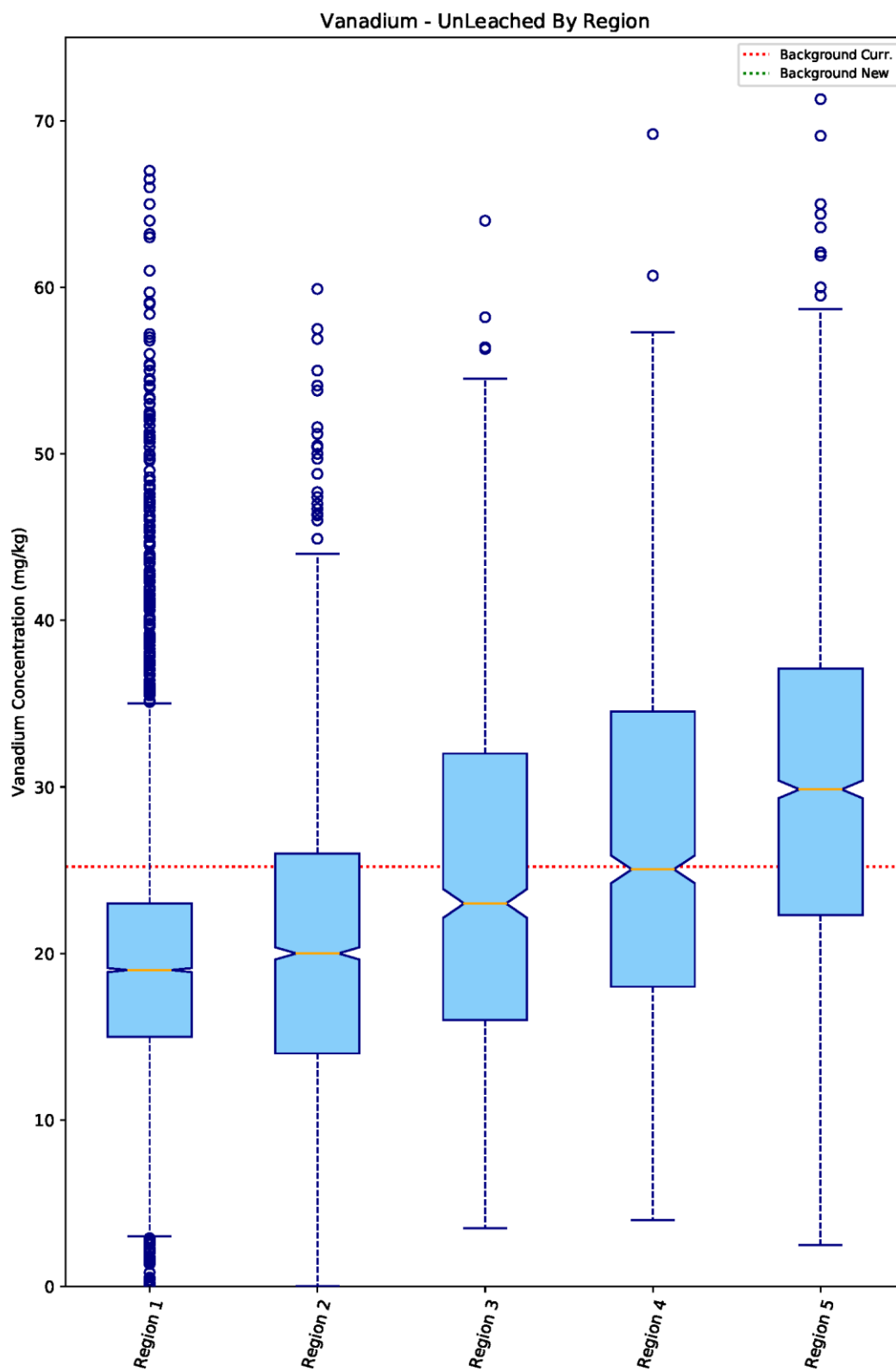


Figure 749. Boxplot of RSL vanadium concentrations by IDOT Region, REC (mg/kg)

Vanadium Concentration by District, page 1 of 2

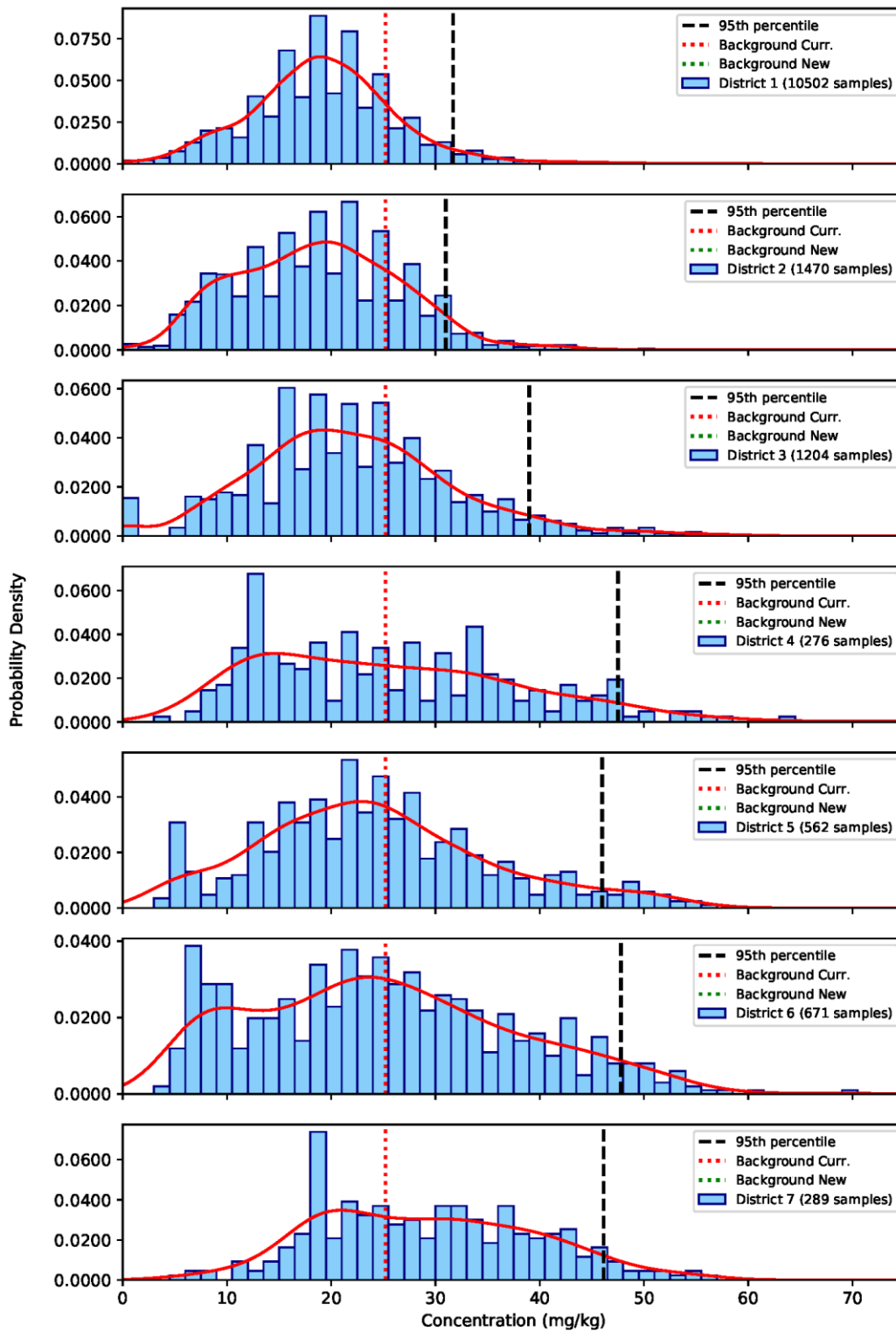


Figure 750. Histogram of RSL vanadium concentrations by IDOT District, REC (mg/kg), part 1

# Vanadium Concentration by District, page 2 of 2

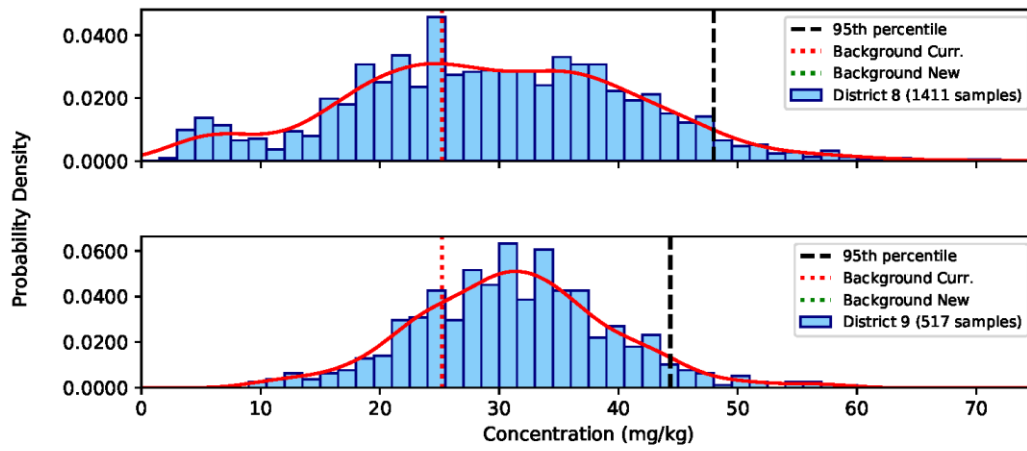


Figure 751. Histogram of RSL vanadium concentrations by IDOT District, REC (mg/kg), part 2

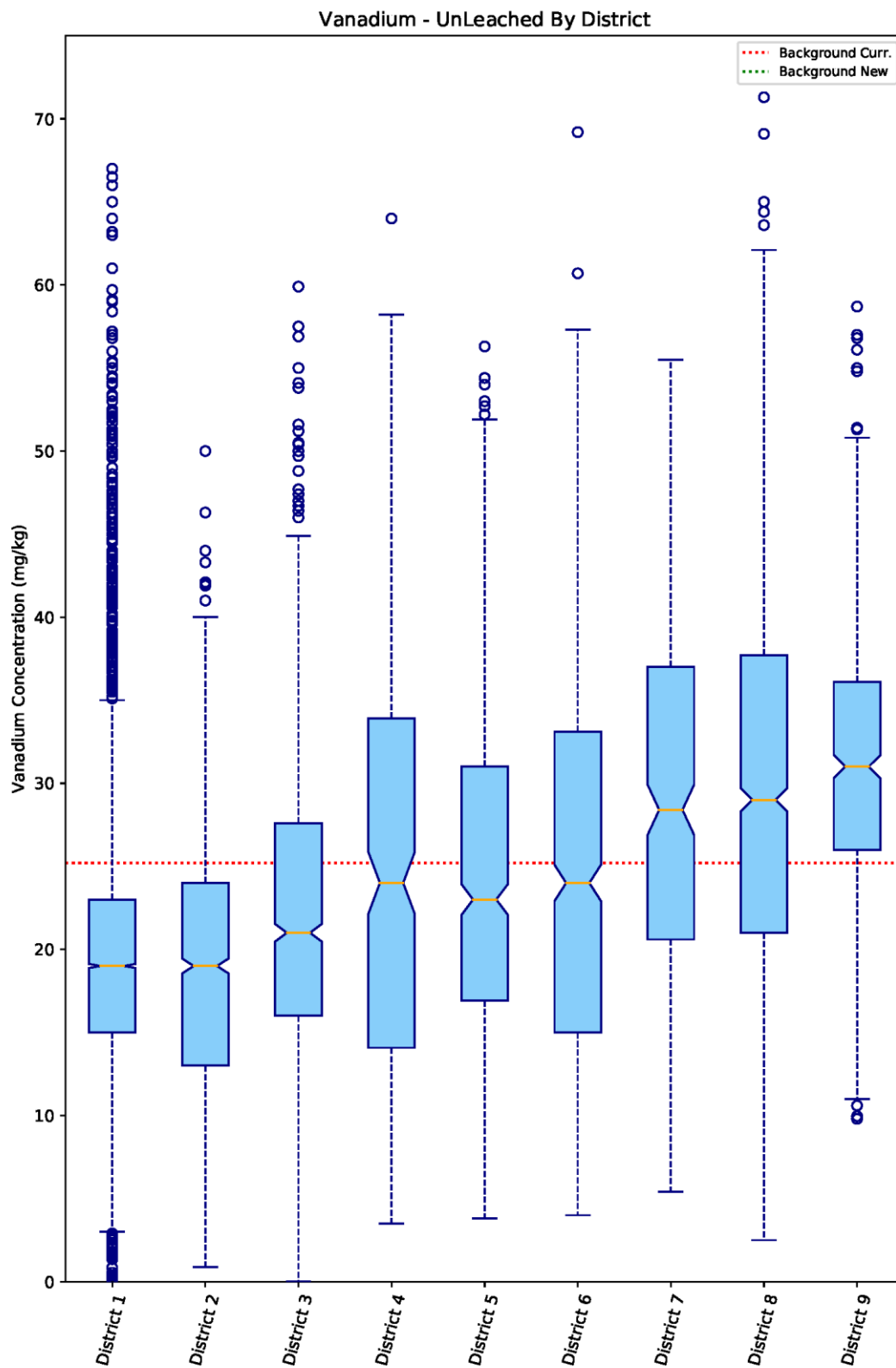


Figure 752. Boxplot of RSL vanadium concentrations by IDOT District, REC (mg/kg)

# Vanadium Concentration by County, page 1 of 10

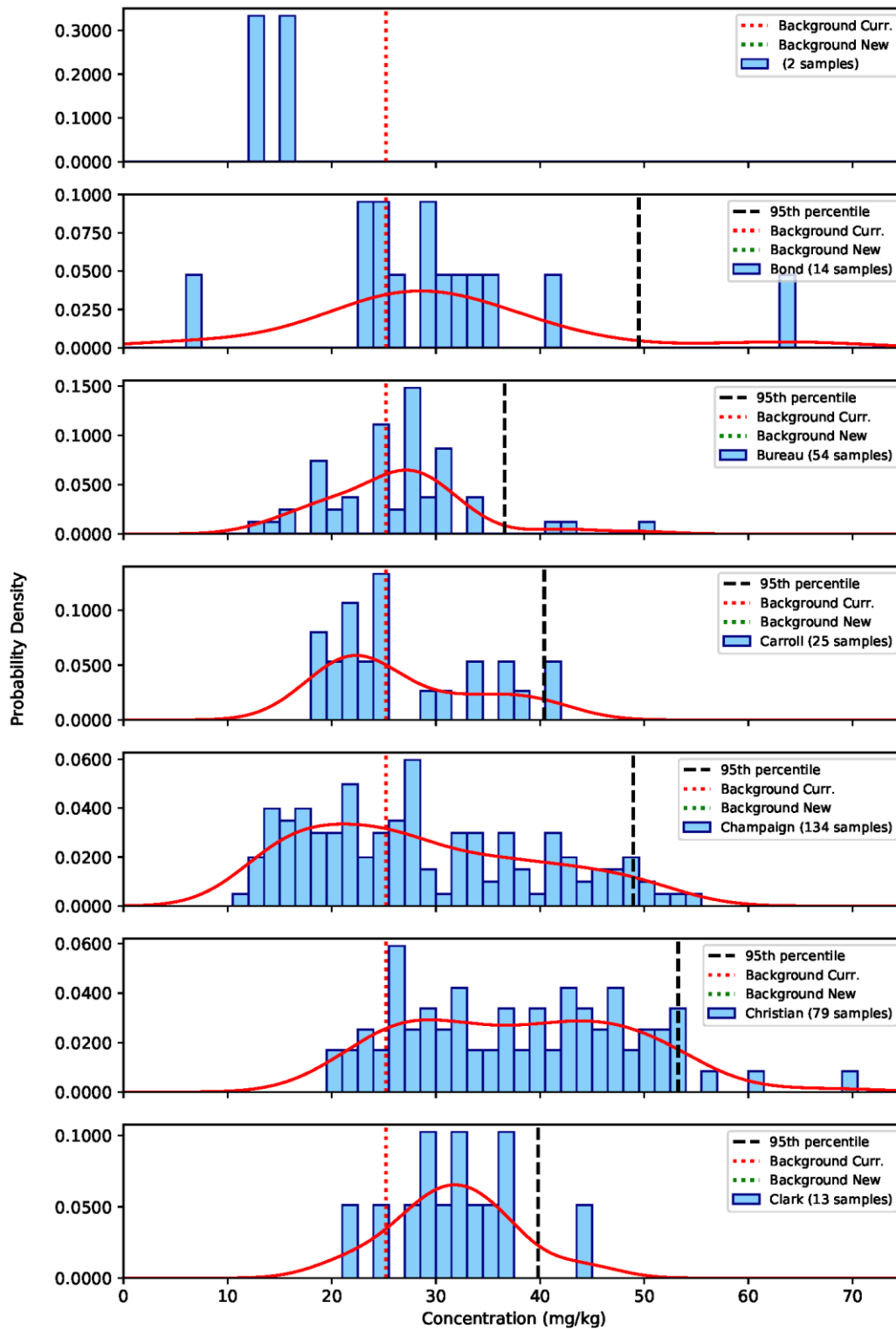


Figure 753. Histogram of RSL vanadium concentrations by Illinois county, REC (mg/kg), part 1



Vanadium Concentration by County, page 2 of 10

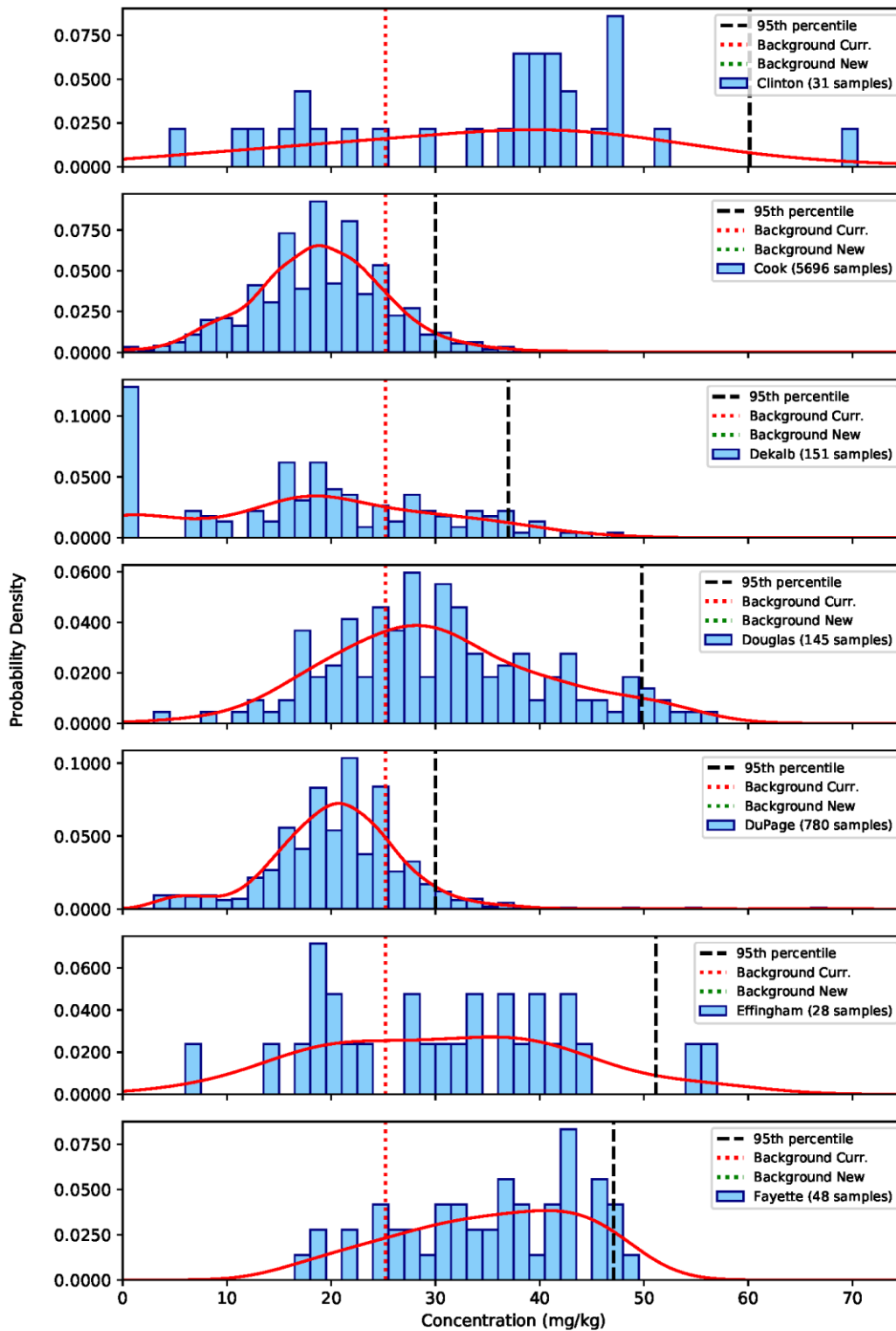


Figure 754. Histogram of RSL vanadium concentrations by Illinois county, REC (mg/kg), part 2

# Vanadium Concentration by County, page 3 of 10

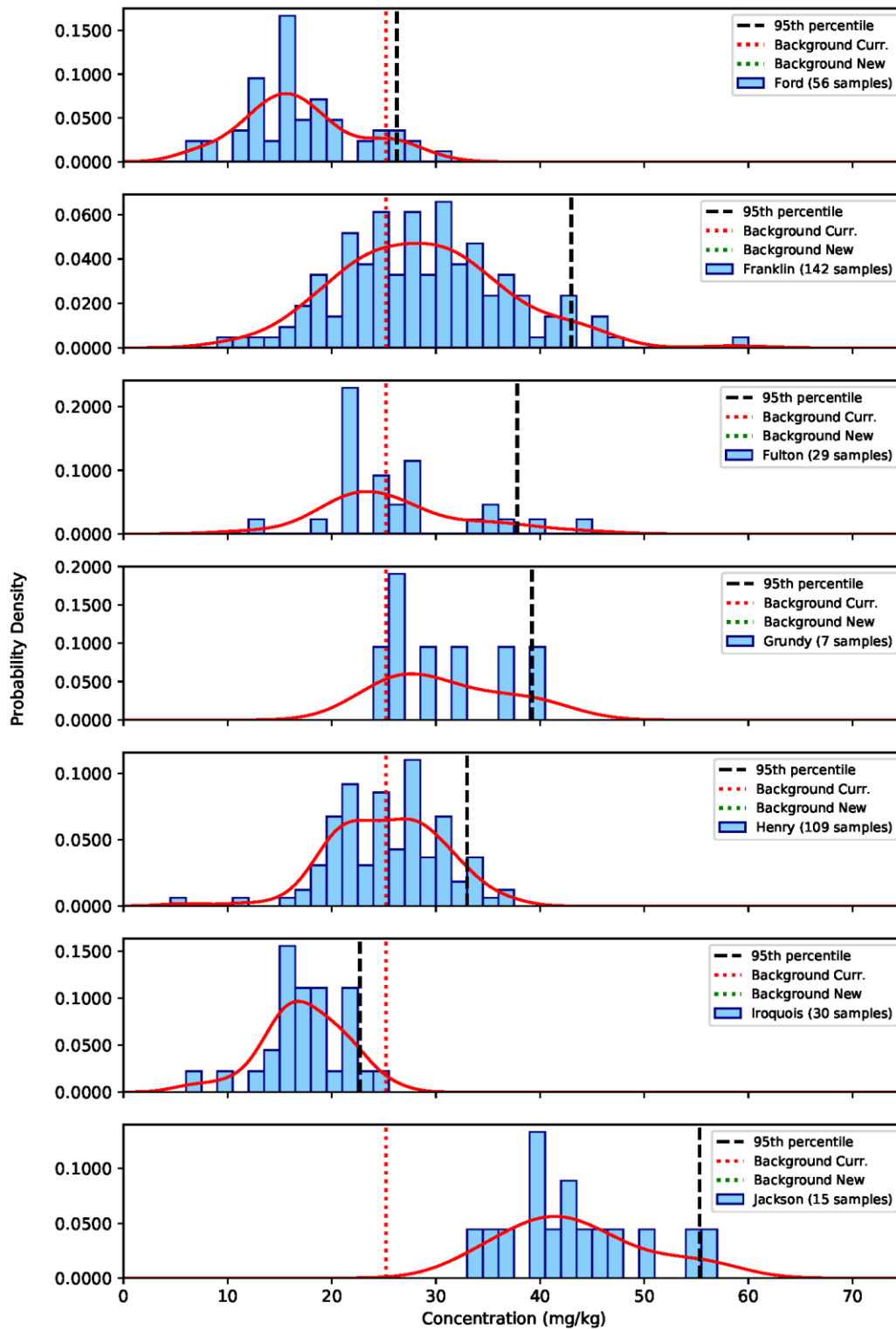


Figure 755. Histogram of RSL vanadium concentrations by Illinois county, REC (mg/kg), part 3

Vanadium Concentration by County, page 4 of 10

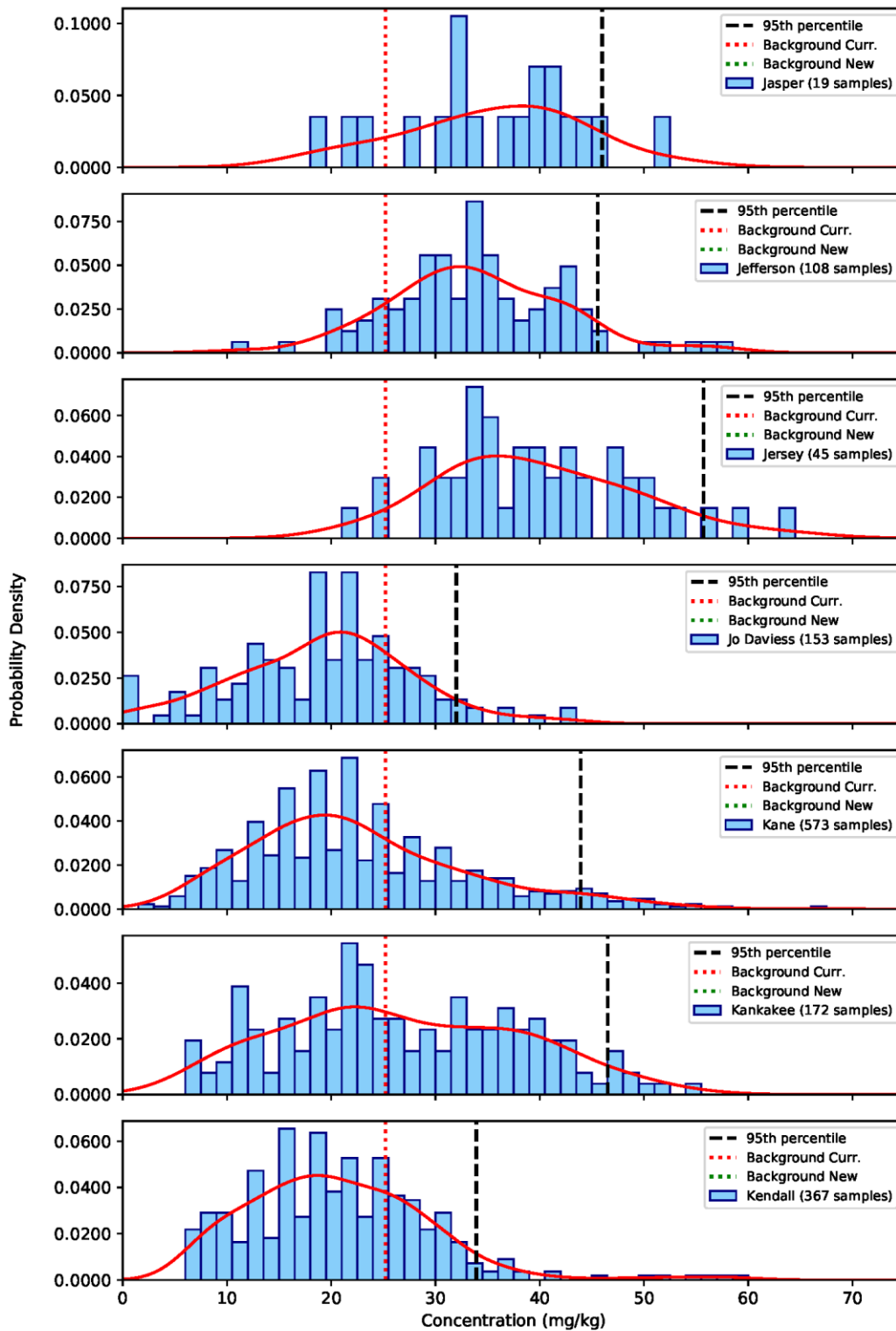


Figure 756. Histogram of RSL vanadium concentrations by Illinois county, REC (mg/kg), part 4

Vanadium Concentration by County, page 5 of 10

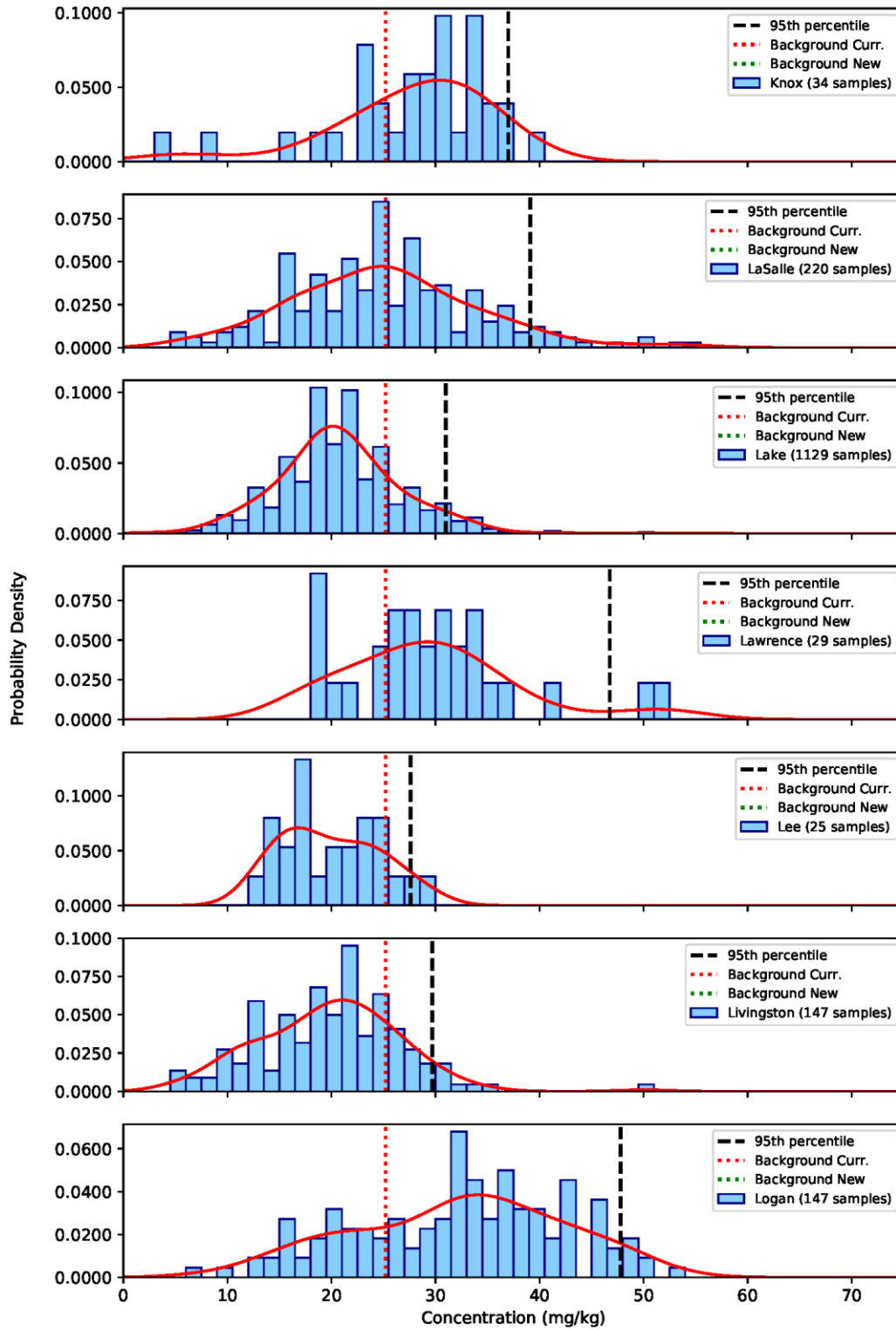


Figure 757. Histogram of RSL vanadium concentrations by Illinois county, REC (mg/kg), part 5

Vanadium Concentration by County, page 6 of 10

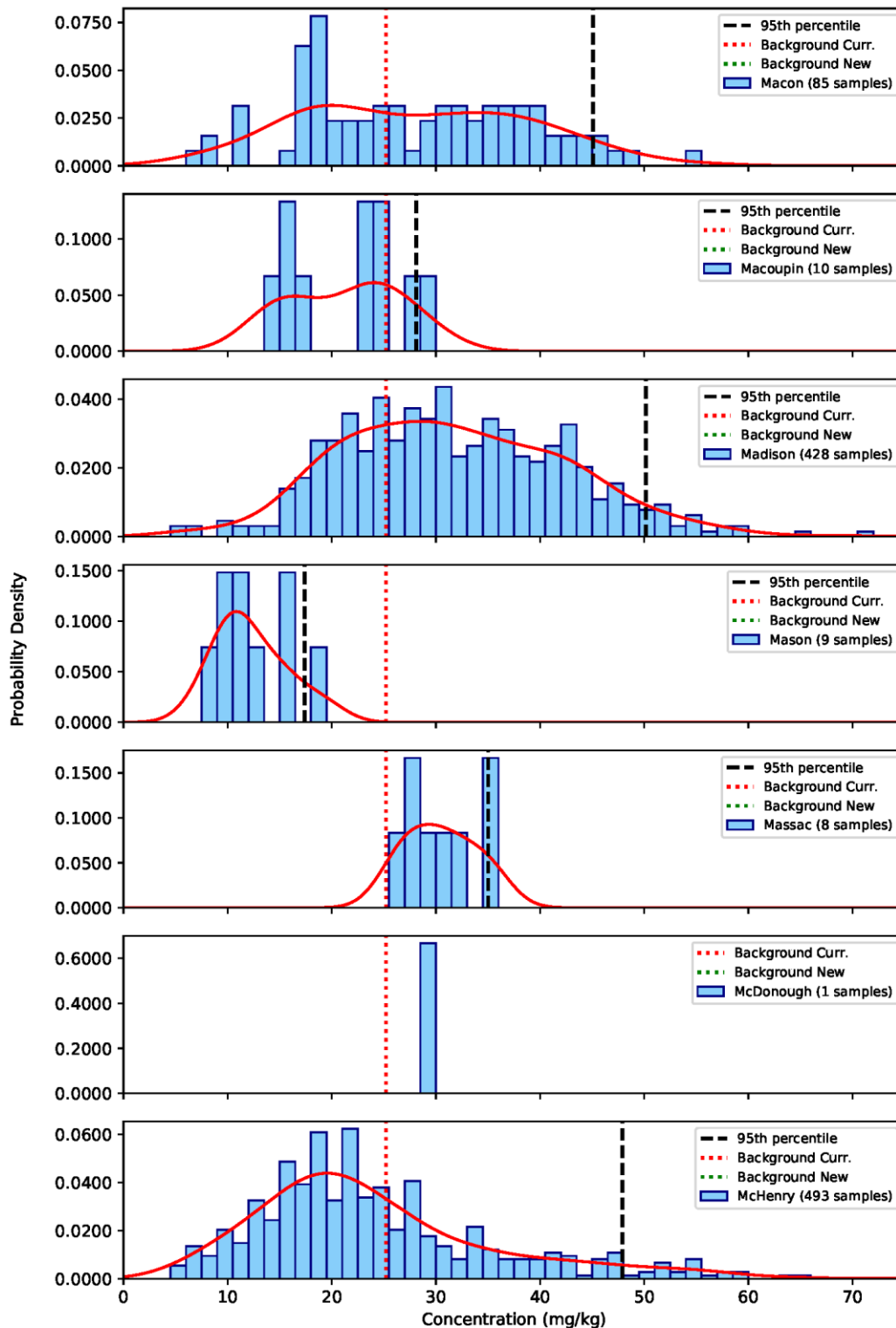


Figure 758. Histogram of RSL vanadium concentrations by Illinois county, REC (mg/kg), part 6

Vanadium Concentration by County, page 7 of 10

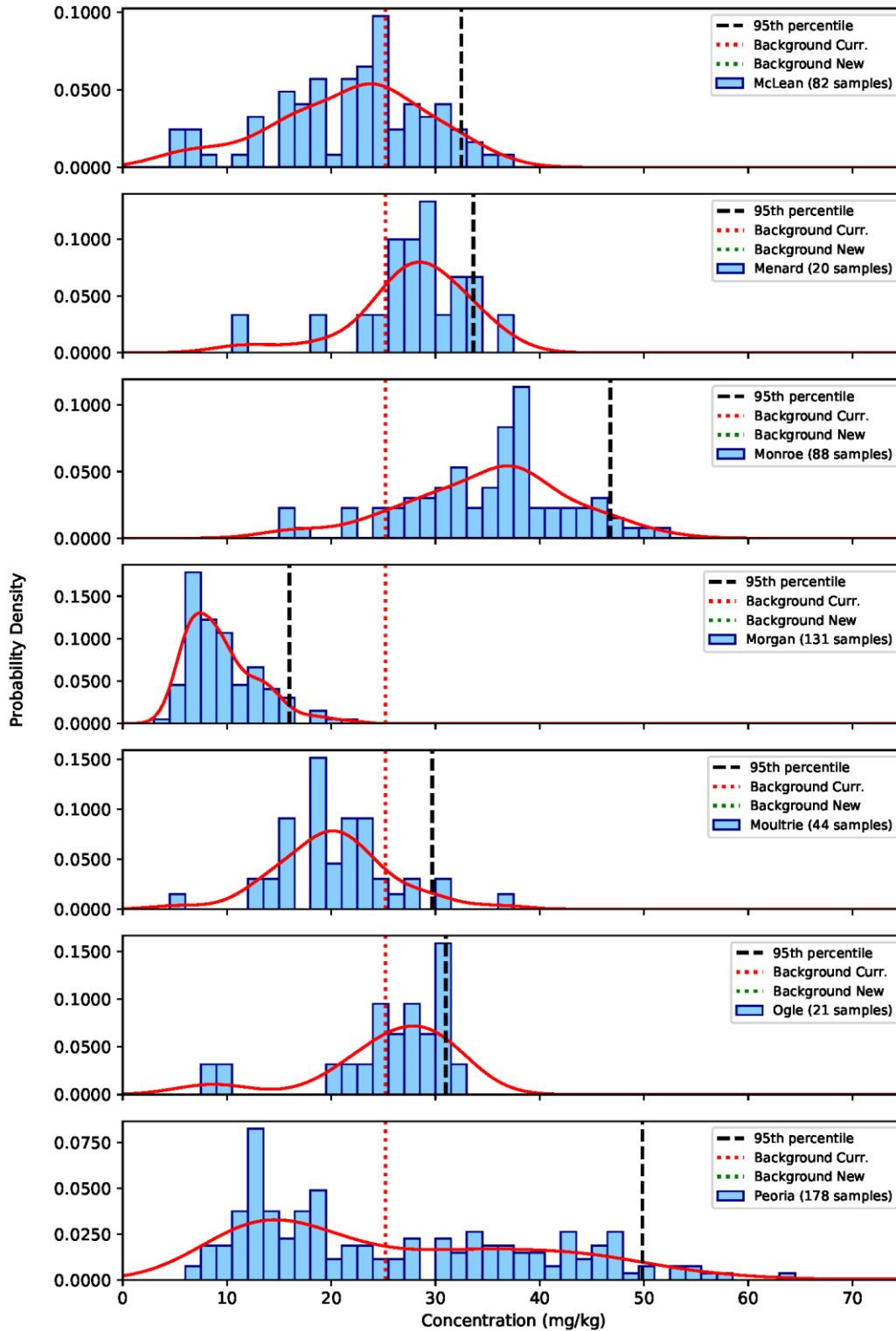


Figure 759. Histogram of RSL vanadium concentrations by Illinois county, REC (mg/kg), part 7

# Vanadium Concentration by County, page 8 of 10

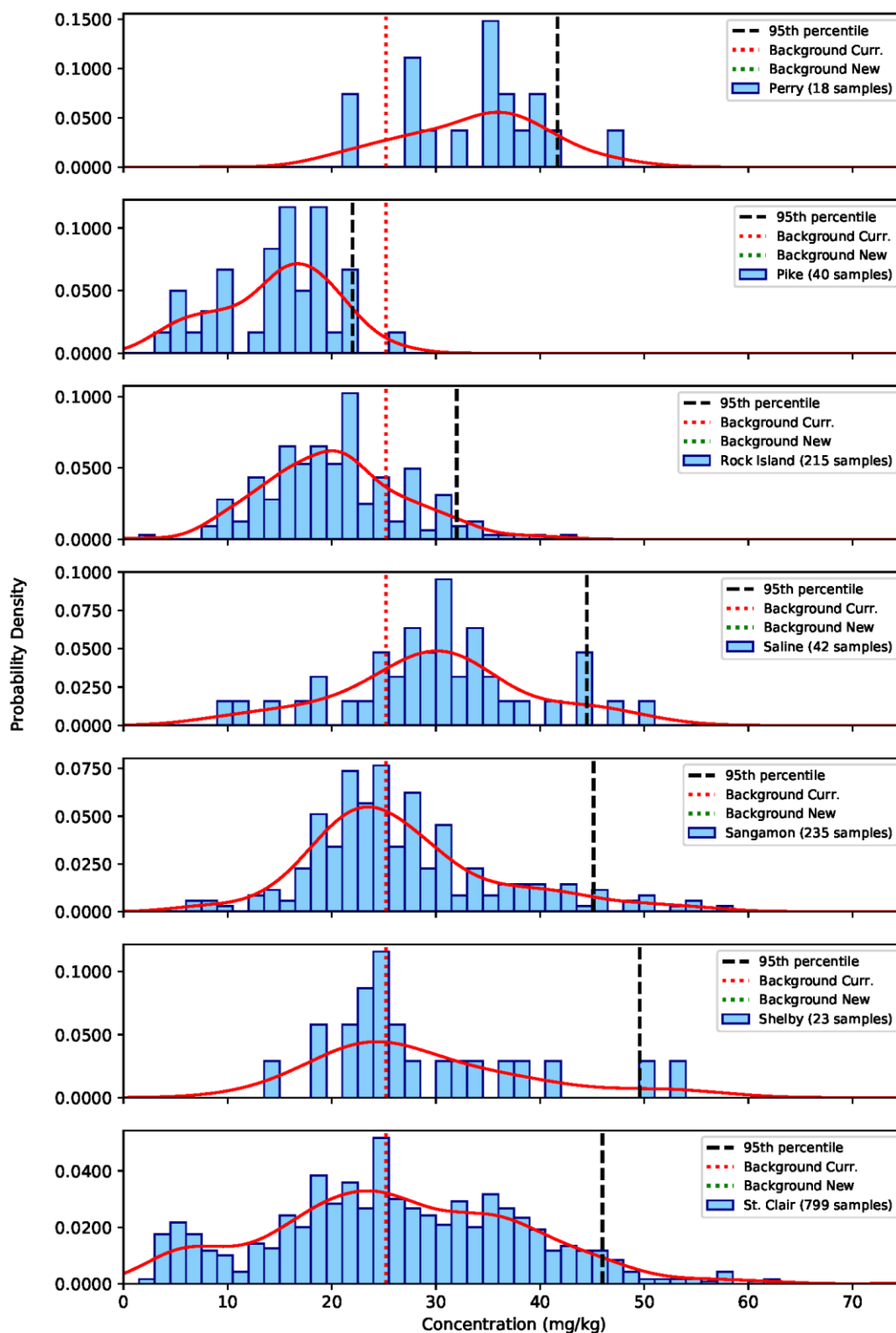


Figure 760. Histogram of RSL vanadium concentrations by Illinois county, REC (mg/kg), part 8

Vanadium Concentration by County, page 9 of 10

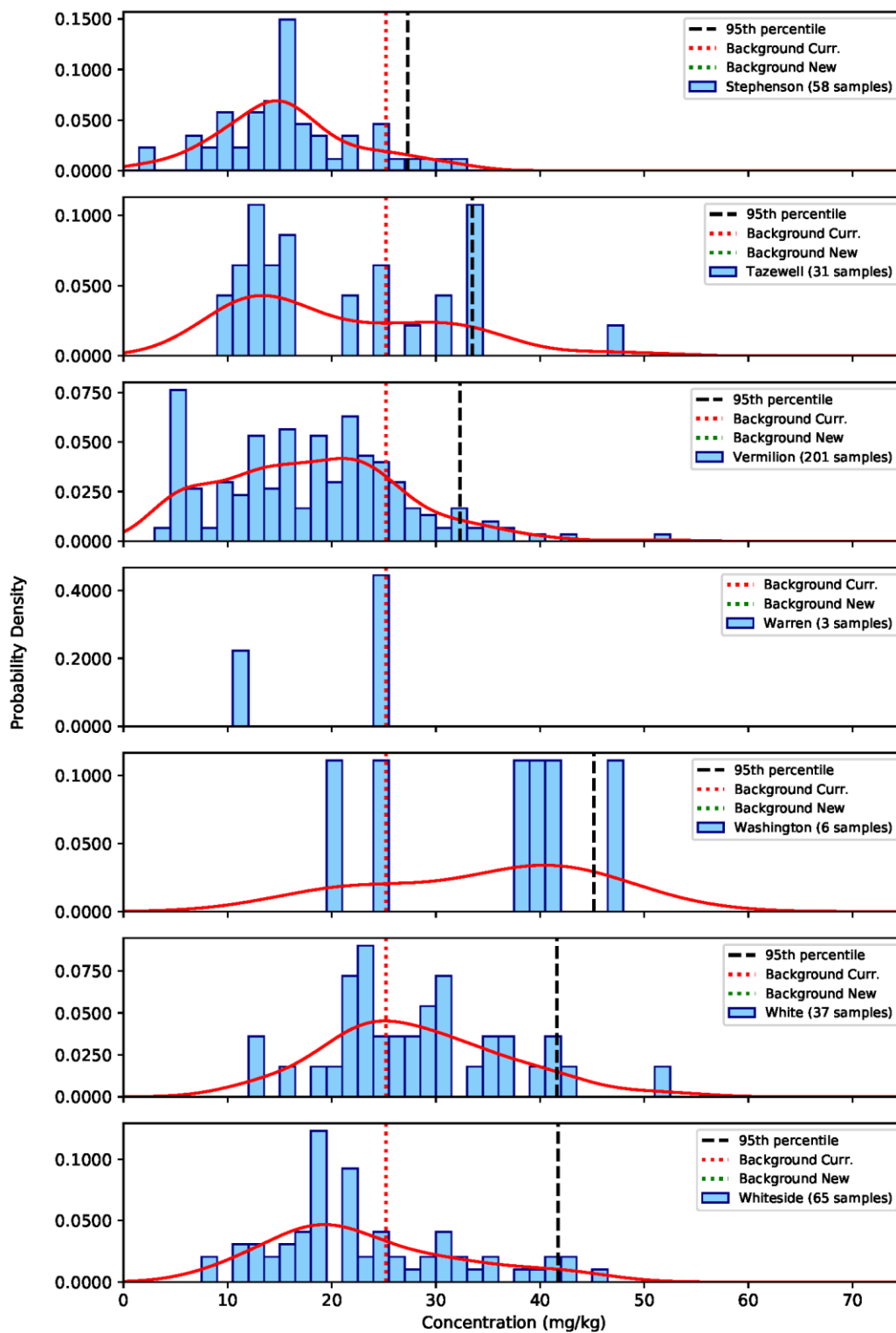


Figure 761. Histogram of RSL vanadium concentrations by Illinois county, REC (mg/kg), part 9



Vanadium Concentration by County, page 10 of 10

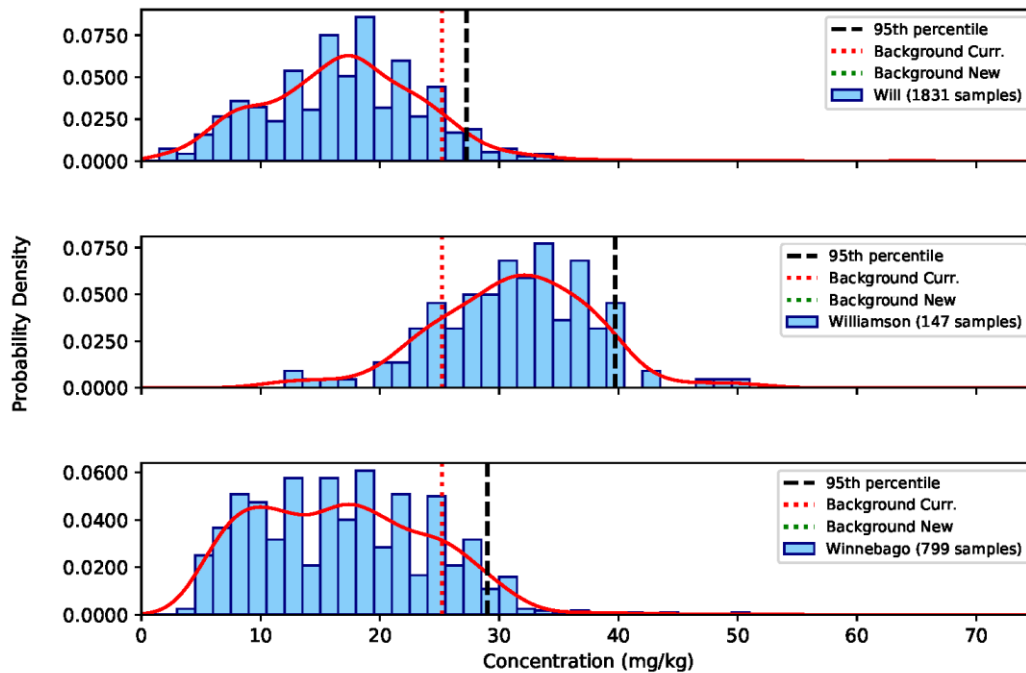


Figure 762. Histogram of RSL vanadium concentrations by Illinois county, REC (mg/kg), part 10

Vanadium Concentration for 95th Percentile by County: REC Sites

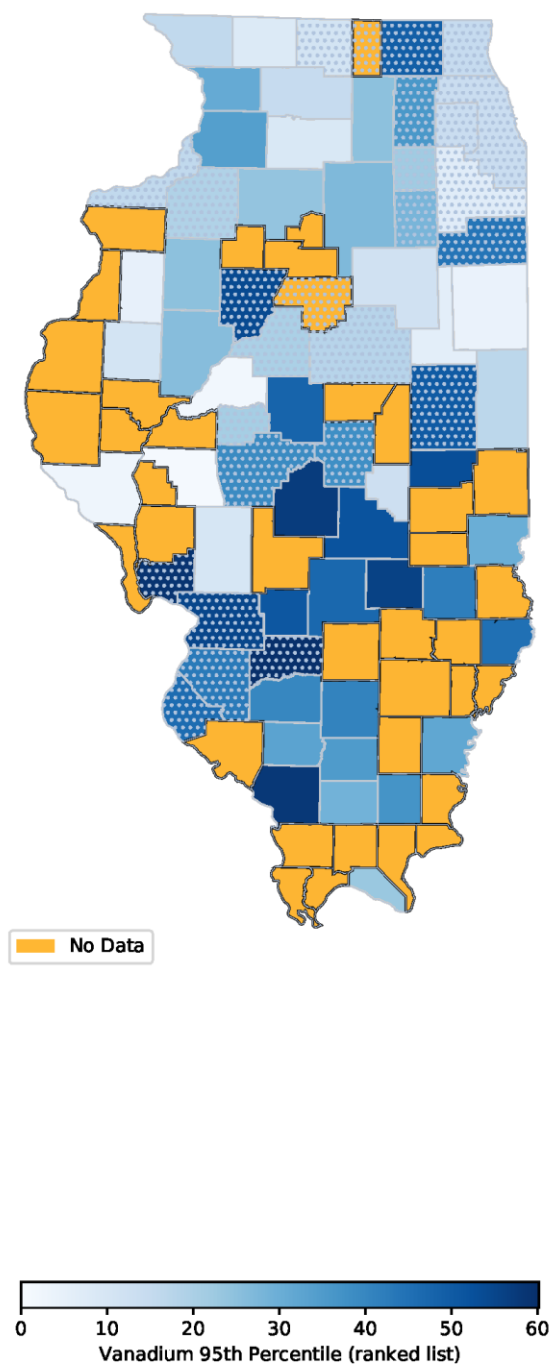


Figure 763. Map of RSL vanadium 95th percentile concentration by Illinois county, REC (mg/kg)

Number of Vanadium Samples by County: REC Sites

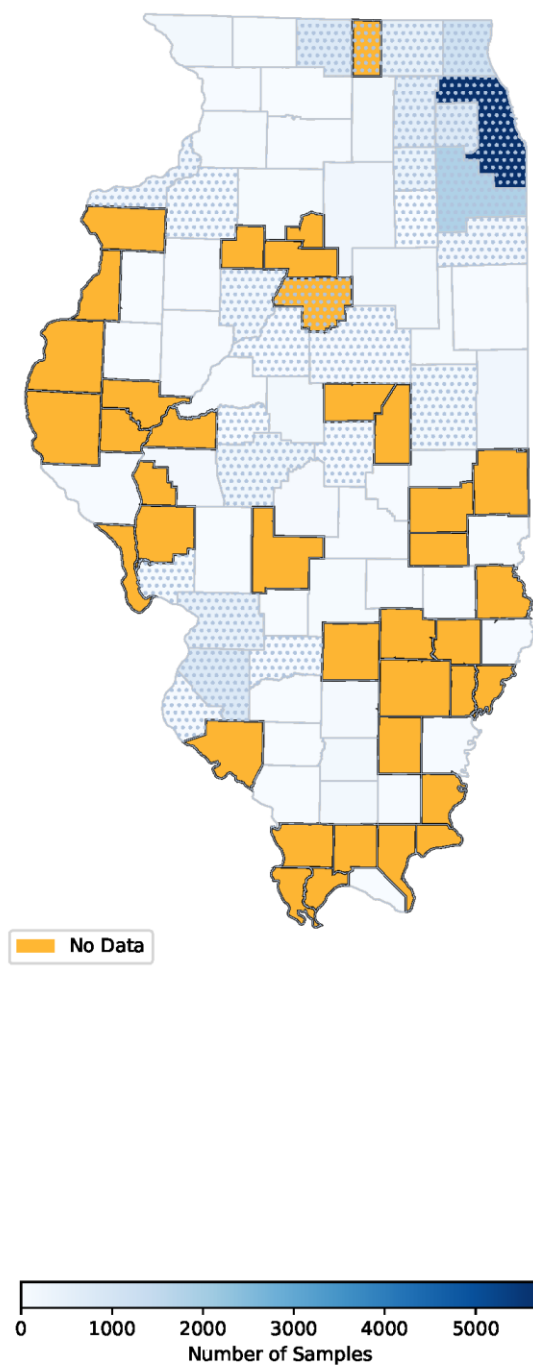


Figure 764. Map of RSL vanadium sample quantity by Illinois county, REC (mg/kg)

## U.2 VANADIUM NON-REC

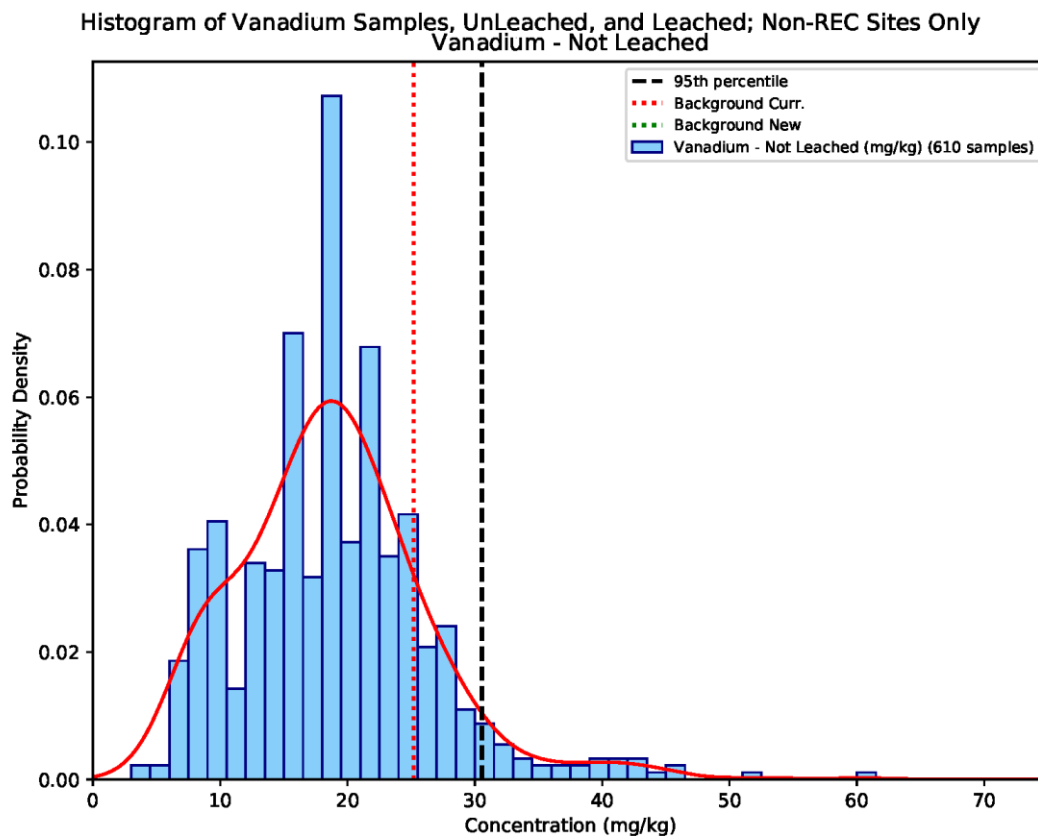


Figure 765. Histogram of RSL vanadium concentrations, Non-REC (mg/kg)

Vanadium Unleached Concentration (mg/kg)

1) Region

2) District

3) County

Vanadium Concentration by Region, page 1 of 1

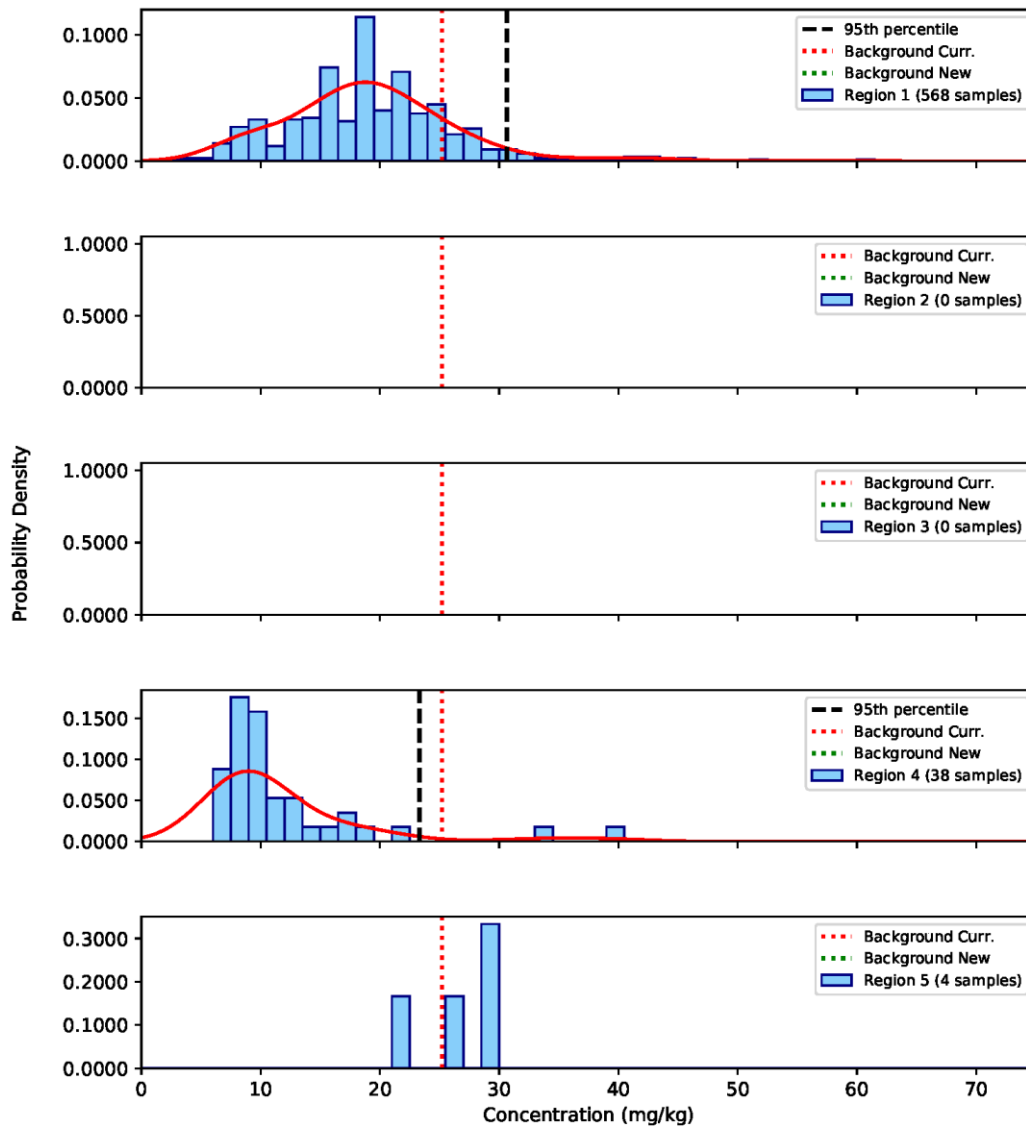
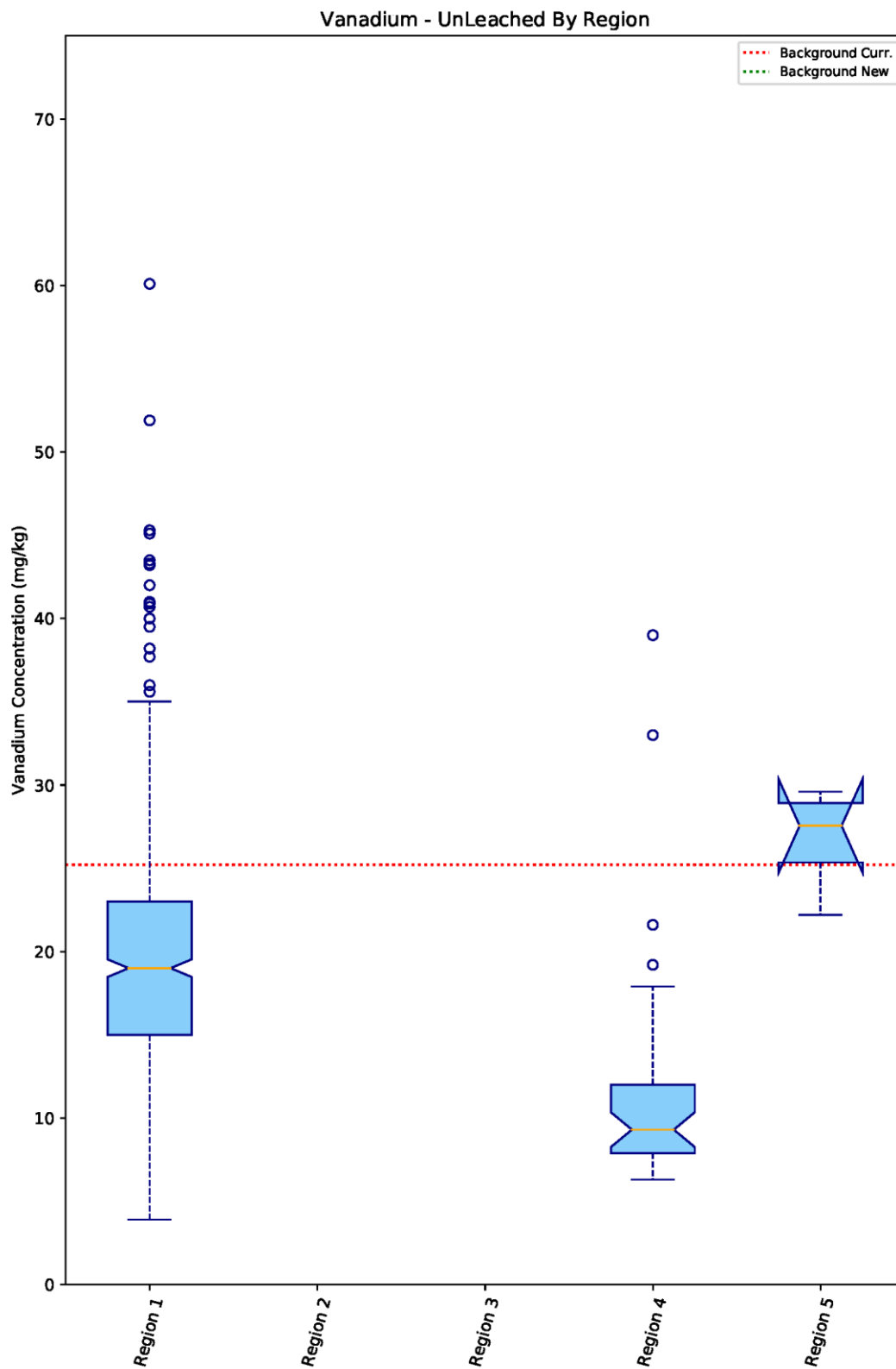


Figure 766. Histogram of RSL vanadium concentrations by IDOT Region, Non-REC (mg/kg)



**Figure 767. Boxplot of RSL vanadium concentrations by IDOT Region, Non-REC (mg/kg)**



Vanadium Concentration by District, page 1 of 2

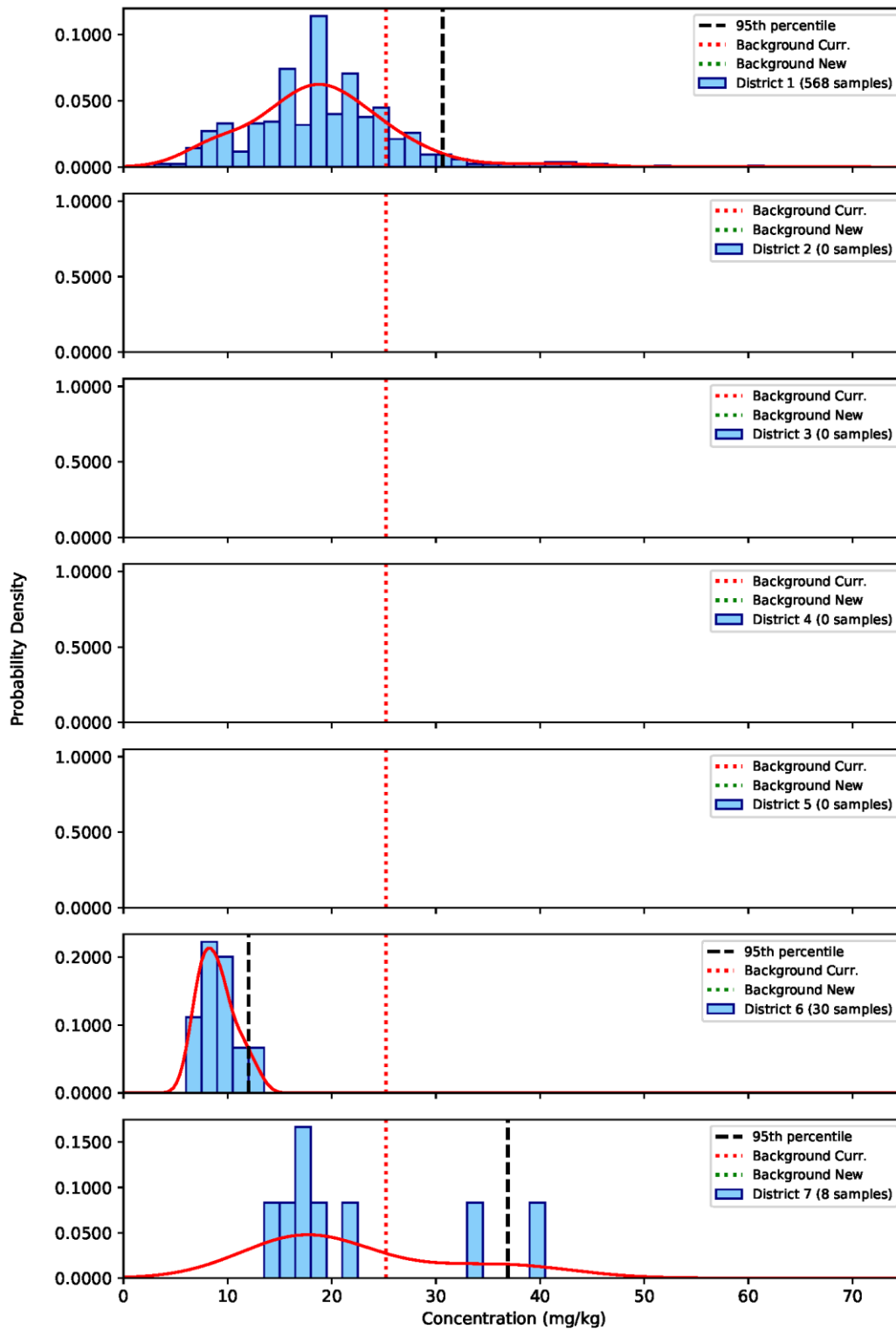


Figure 768. Histogram of RSL vanadium concentrations by IDOT District, Non-REC (mg/kg), part 1

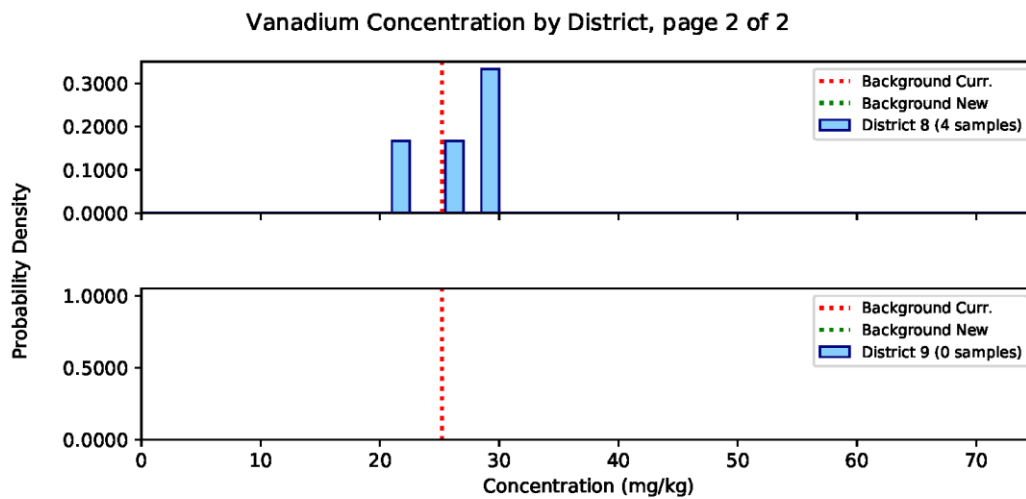
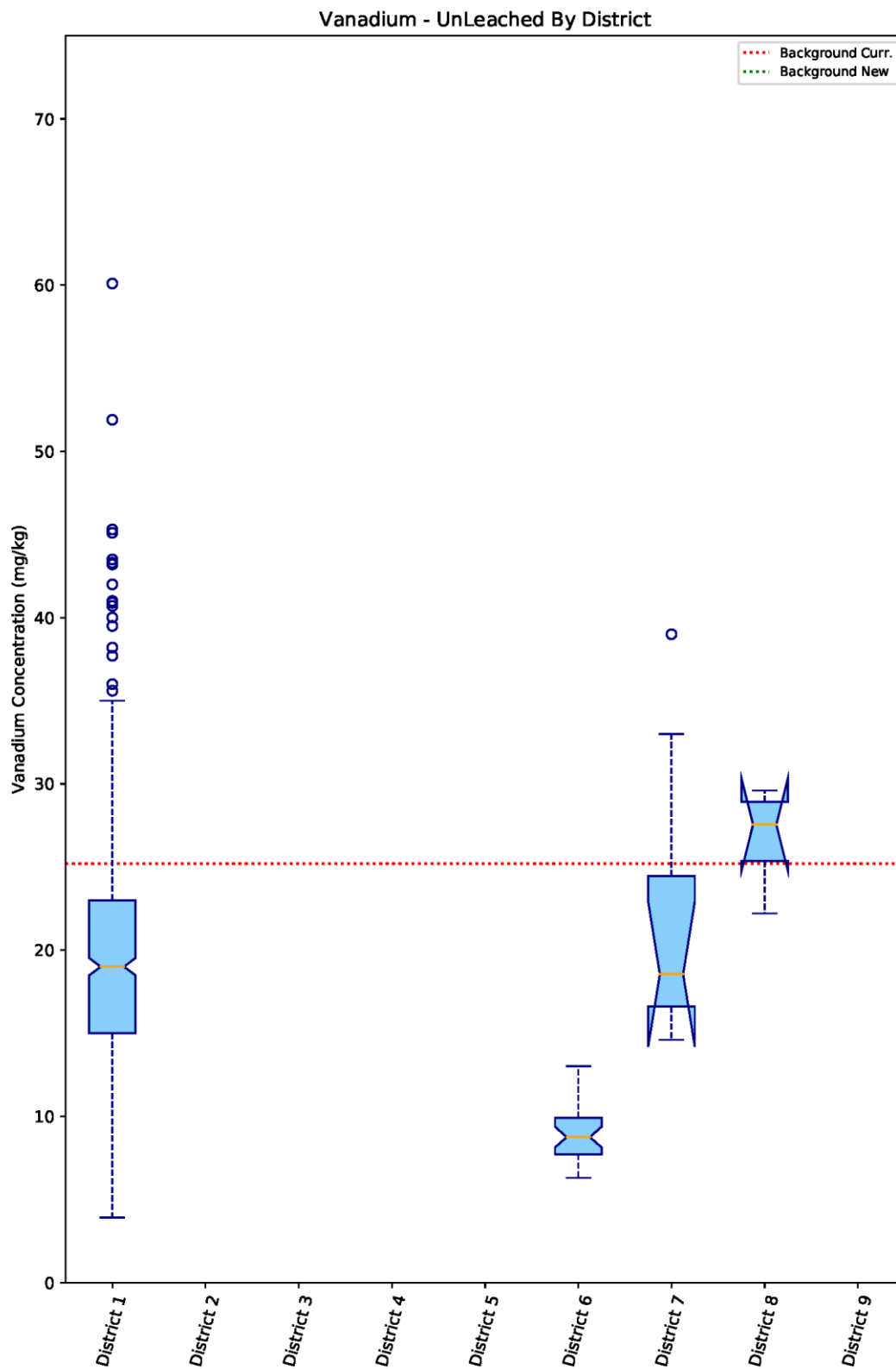


Figure 769. Histogram of RSL vanadium concentrations by IDOT District, Non-REC (mg/kg), part 2



**Figure 770. Boxplot of RSL vanadium concentrations by IDOT District, Non-REC (mg/kg)**

Vanadium Concentration by County, page 1 of 2

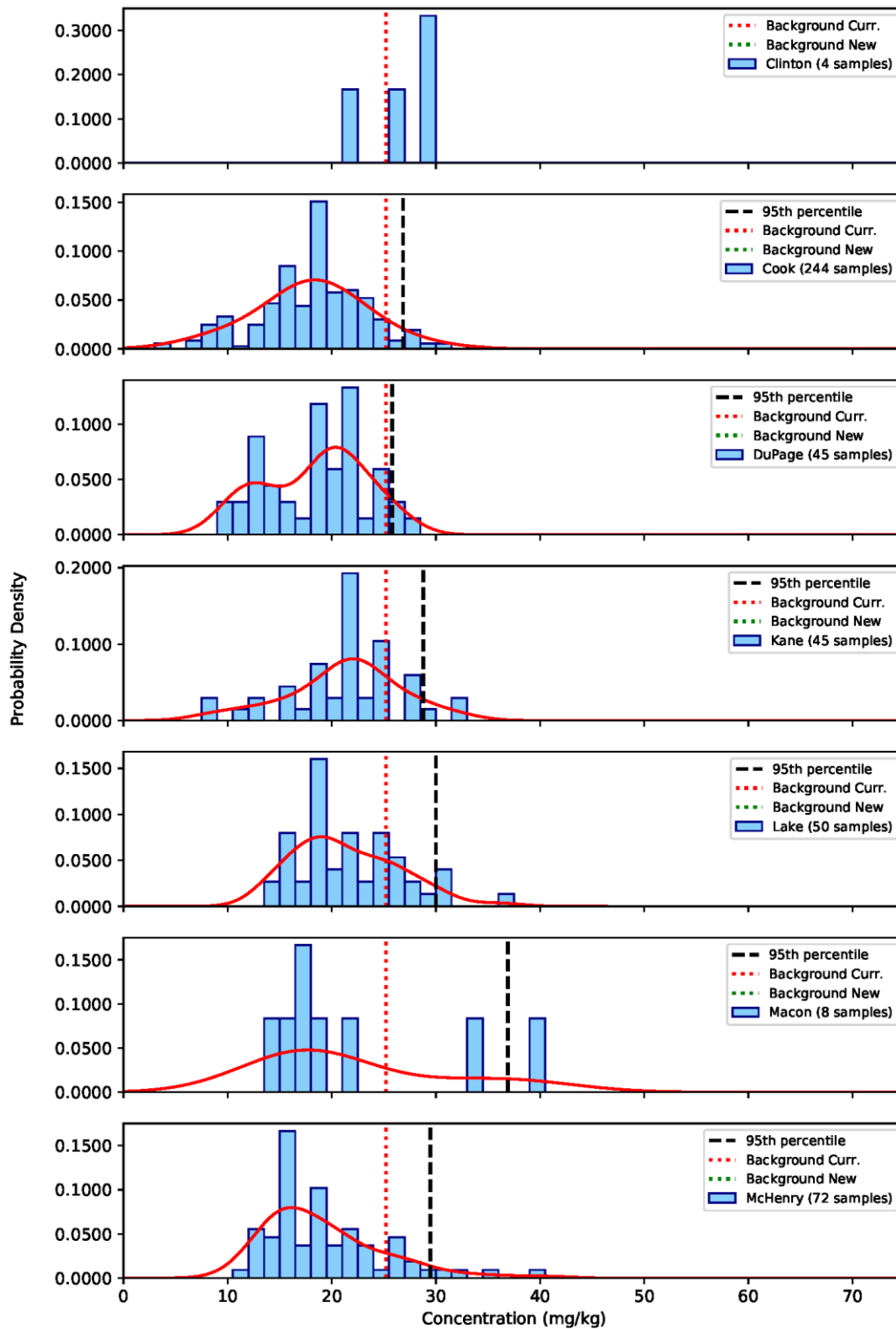


Figure 771. Histogram of RSL vanadium concentrations by Illinois county, Non-REC (mg/kg), part 1

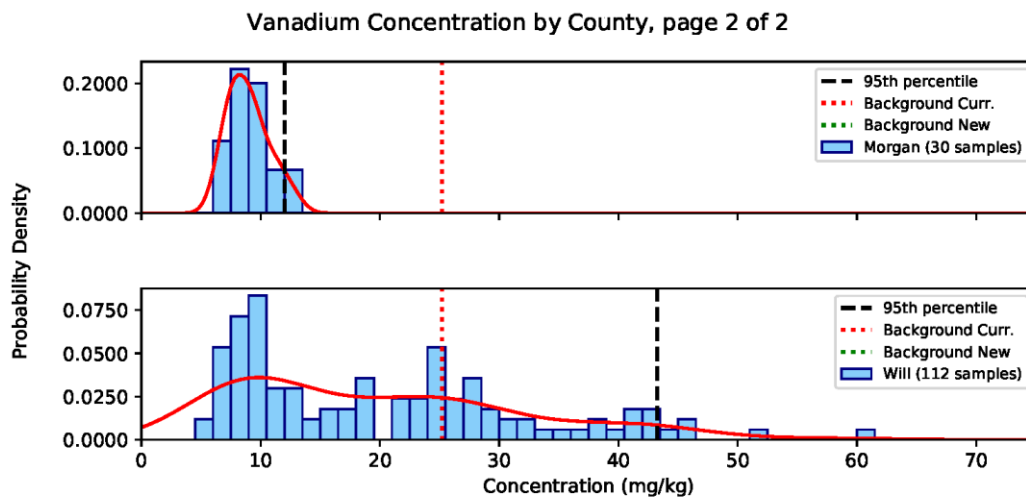


Figure 772. Histogram of RSL vanadium concentrations by Illinois county, Non-REC (mg/kg), part 2

Vanadium Concentration for 95th Percentile by County: Non-REC Sites

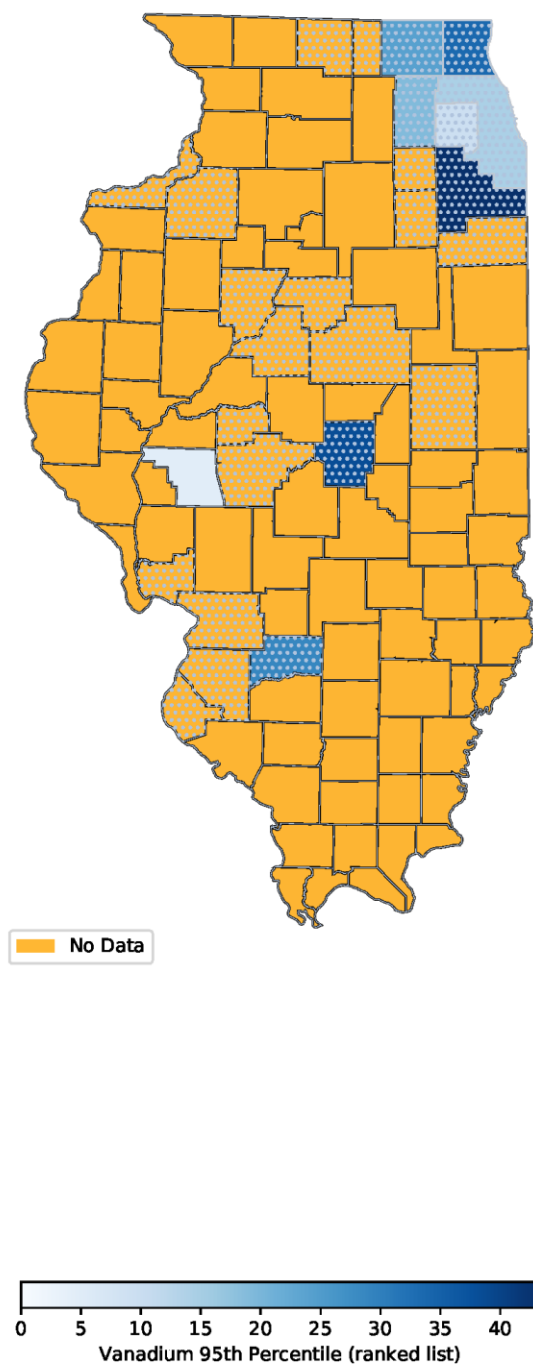


Figure 773. Map of RSL vanadium 95th percentile concentration by Illinois county, Non-REC (mg/kg)

905

## U.3 VANADIUM DE MINIMIS



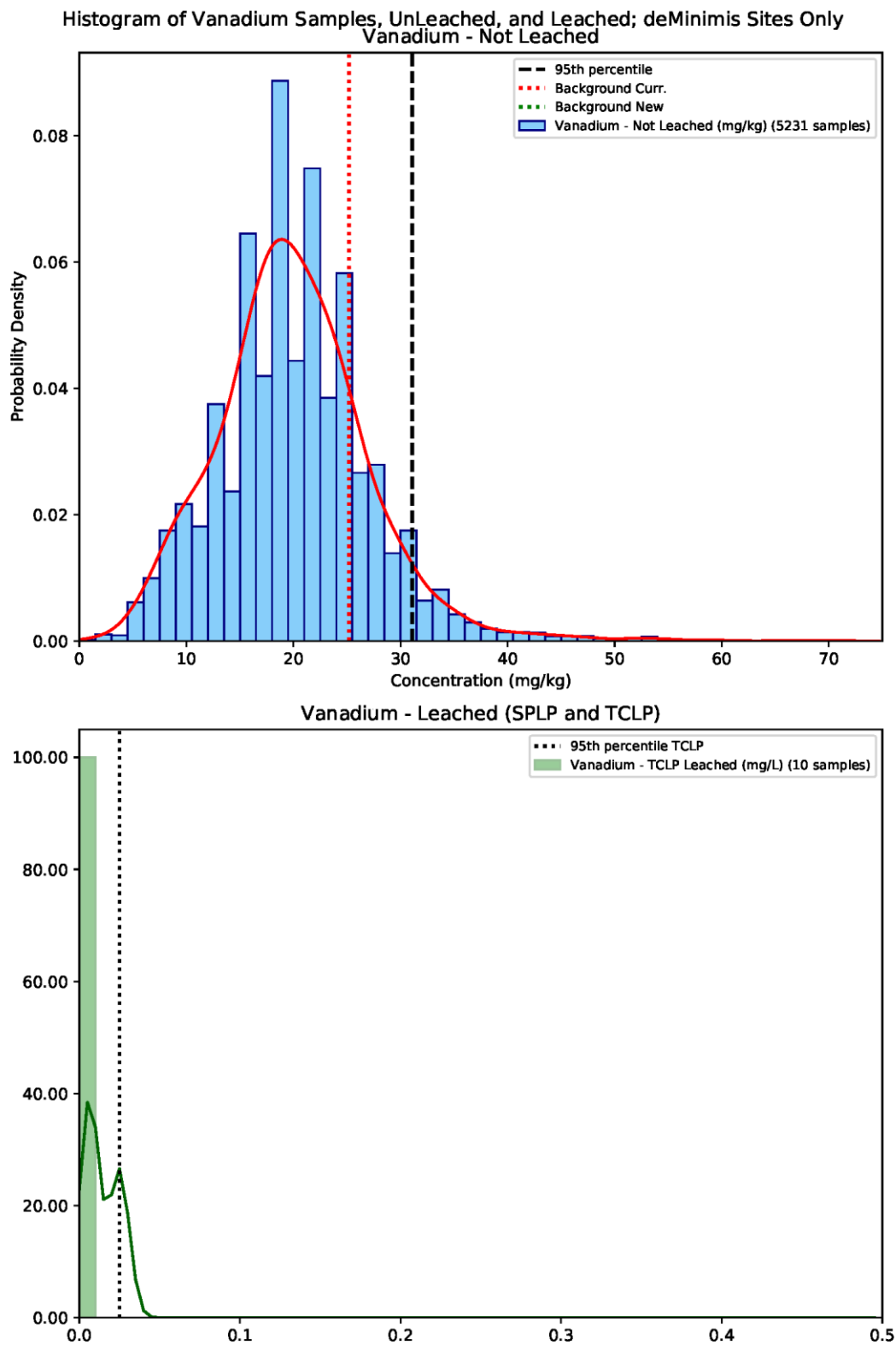


Figure 775. Histogram of RSL vanadium concentrations, de minimis (mg/kg)

Vanadium Unleached Concentration (mg/kg)

1) Region

2) District

3) County

Vanadium Concentration by Region, page 1 of 1

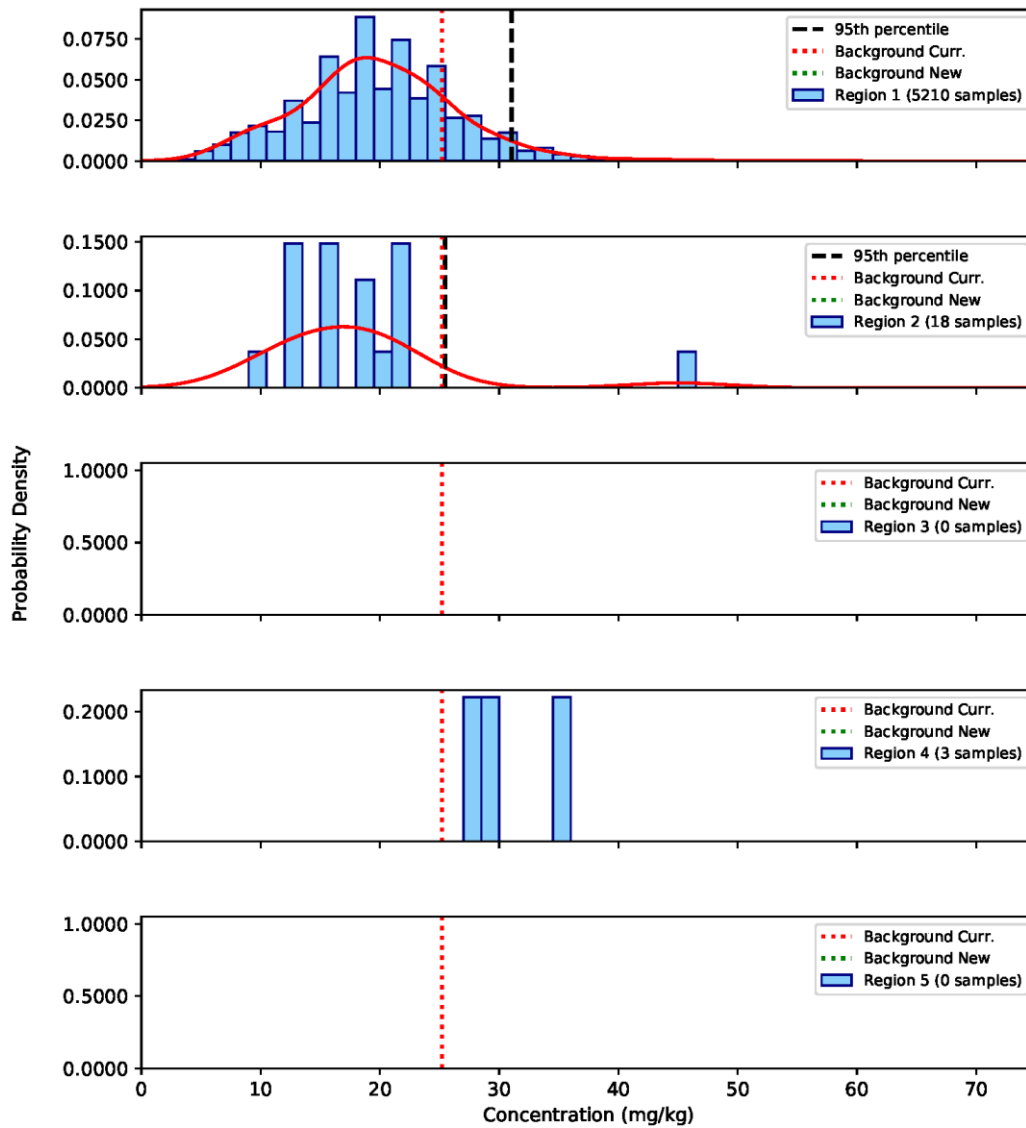


Figure 776. Histogram of RSL vanadium concentrations by IDOT Region, de minimis (mg/kg)

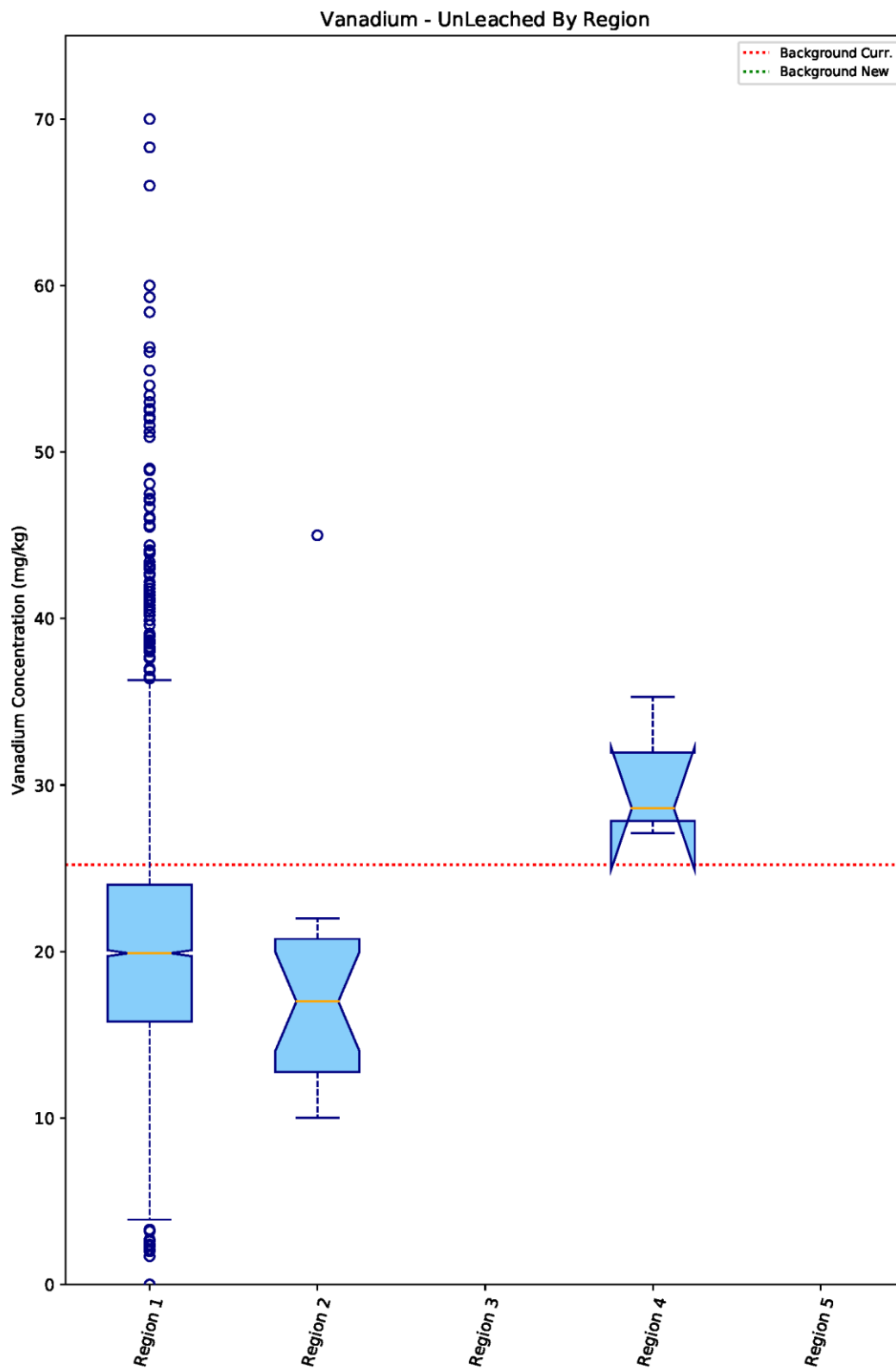


Figure 777. Boxplot of RSL vanadium concentrations by IDOT Region, de minimis (mg/kg)

# Vanadium Concentration by District, page 1 of 2

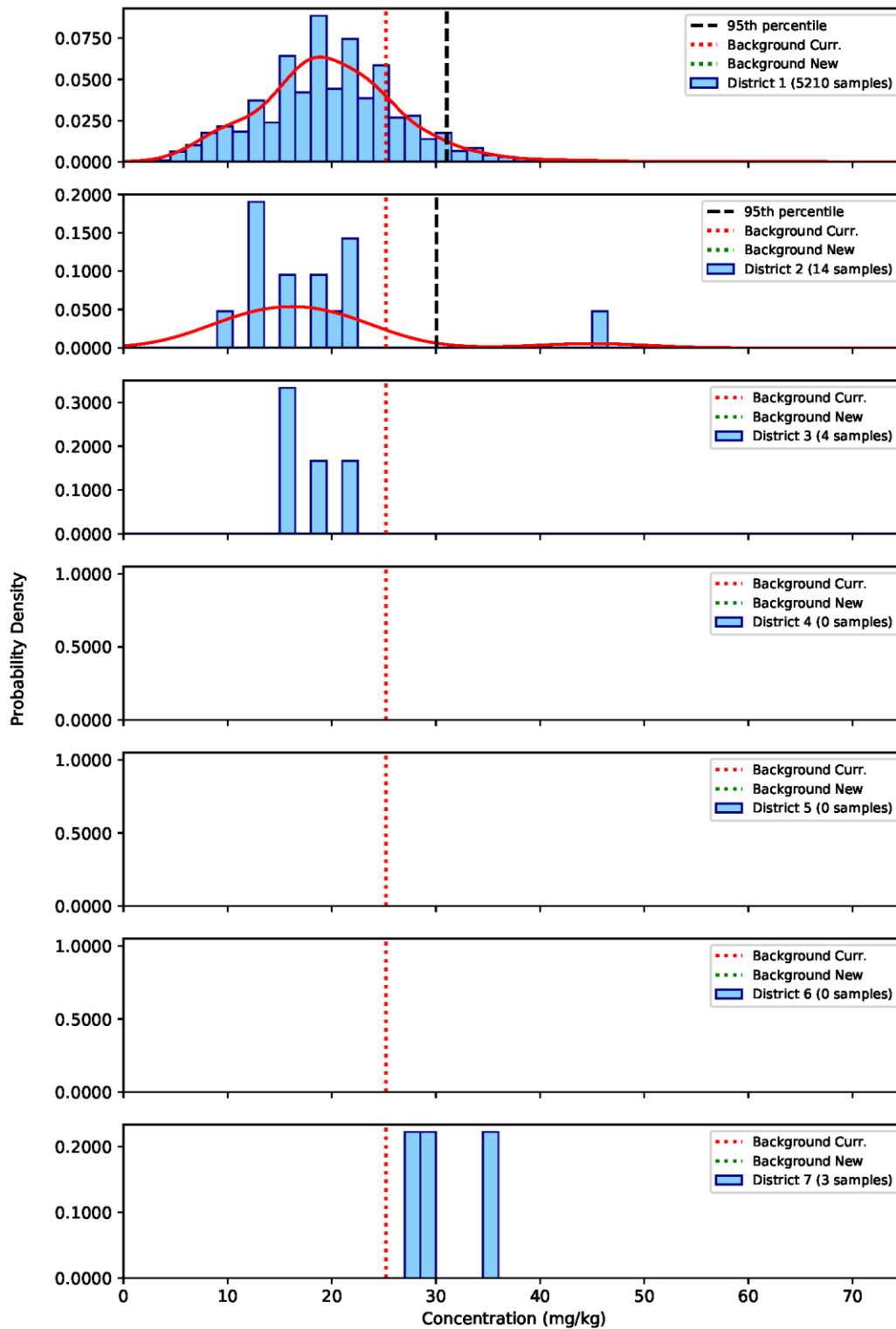


Figure 778. Histogram of RSL vanadium concentrations by IDOT District, de minimis (mg/kg), part 1

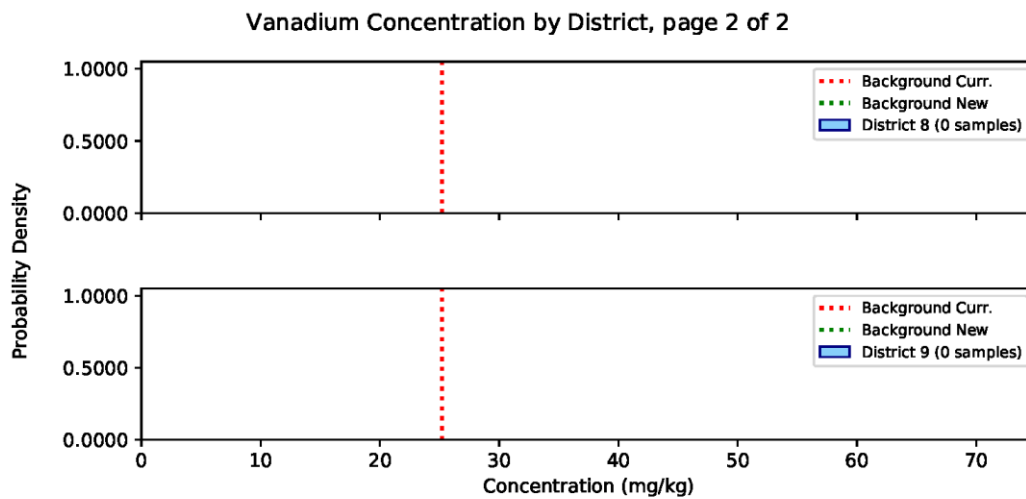
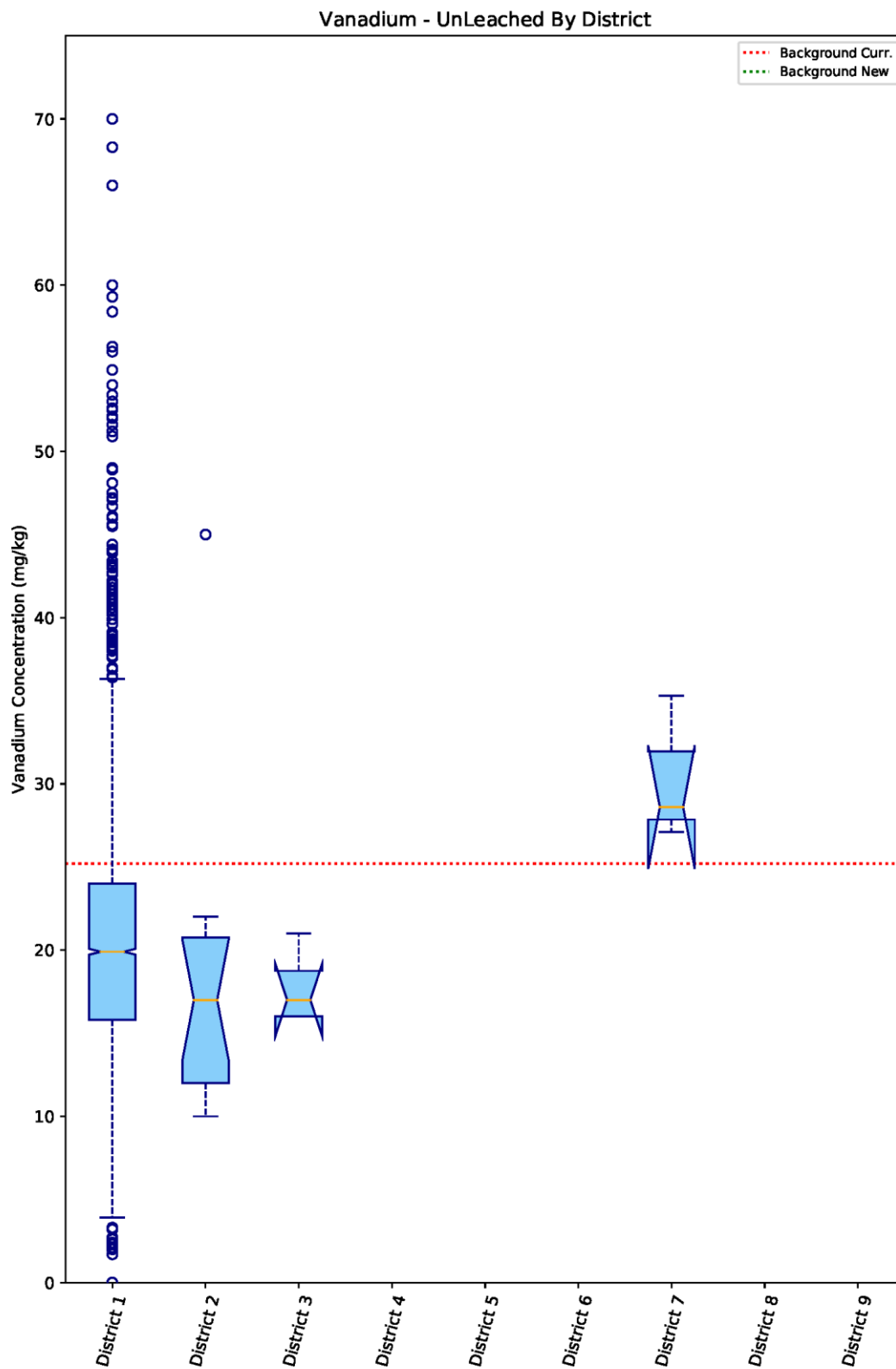


Figure 779. Histogram of RSL vanadium concentrations by IDOT District, de minimis (mg/kg), part 2



**Figure 780. Boxplot of RSL vanadium concentrations by IDOT District, de minimis (mg/kg)**

# Vanadium Concentration by County, page 1 of 2

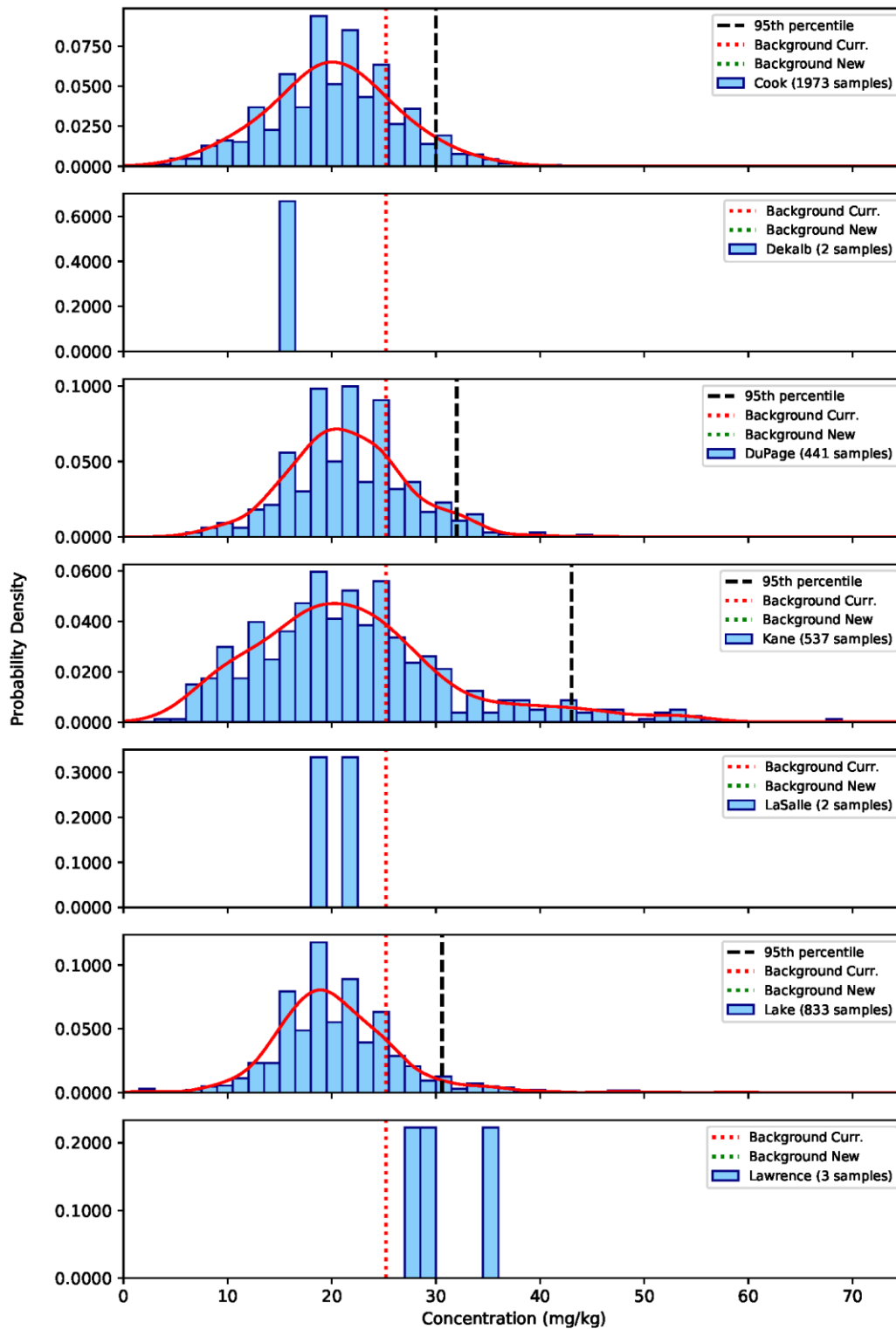


Figure 781. Histogram of RSL vanadium concentrations by Illinois county, de minimis (mg/kg), part



Vanadium Concentration by County, page 2 of 2

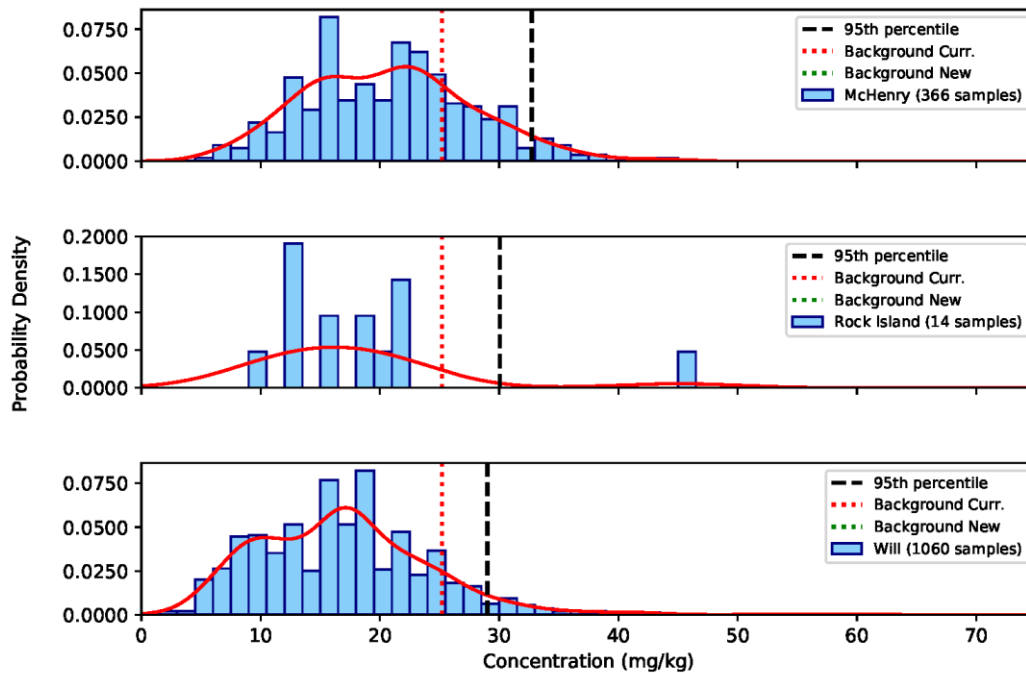


Figure 782. Histogram of RSL vanadium concentrations by Illinois county, de minimis (mg/kg), part 2

Vanadium 95th Percentile (ranked list)

Value
40

916

Number of Vanadium Samples by County: deMinimis Sites

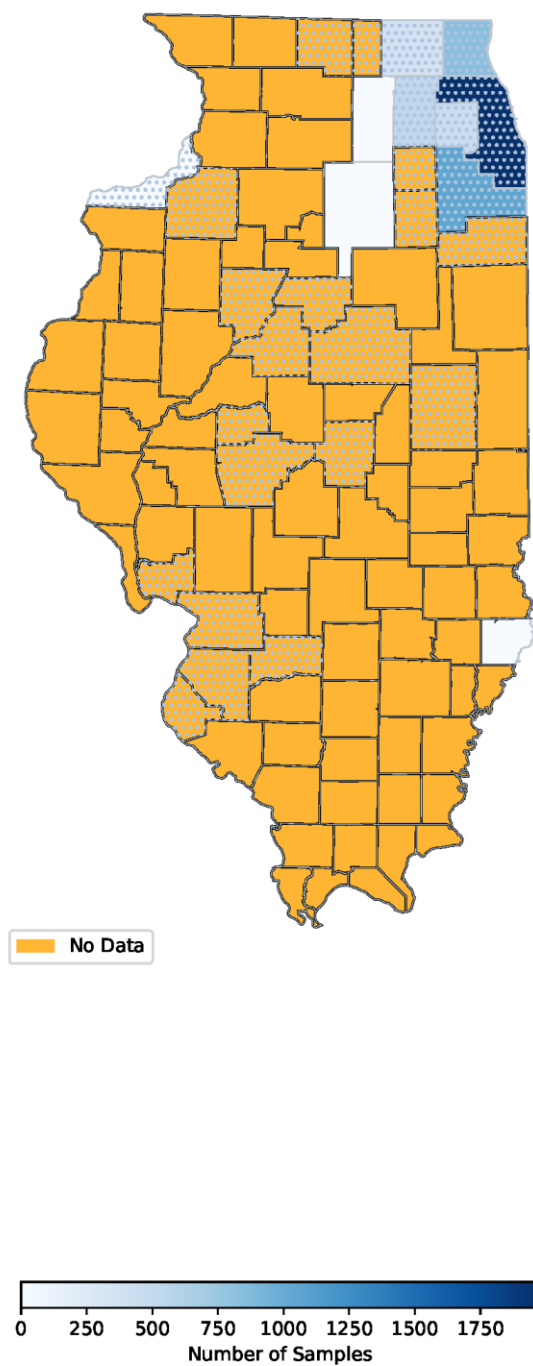


Figure 784. Map of RSL vanadium sample quantity by Illinois county, de minimis (mg/kg)

## **APPENDIX V. ANALYTE ANALYSIS: ZINC**

### **V.1 ZINC REC**

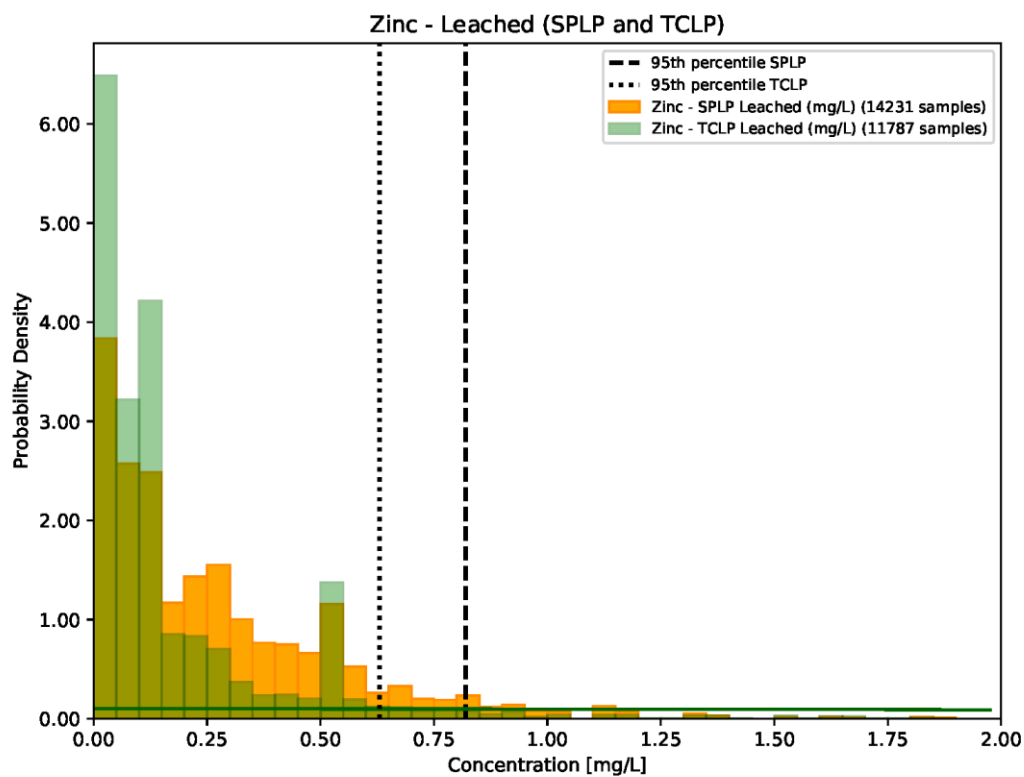
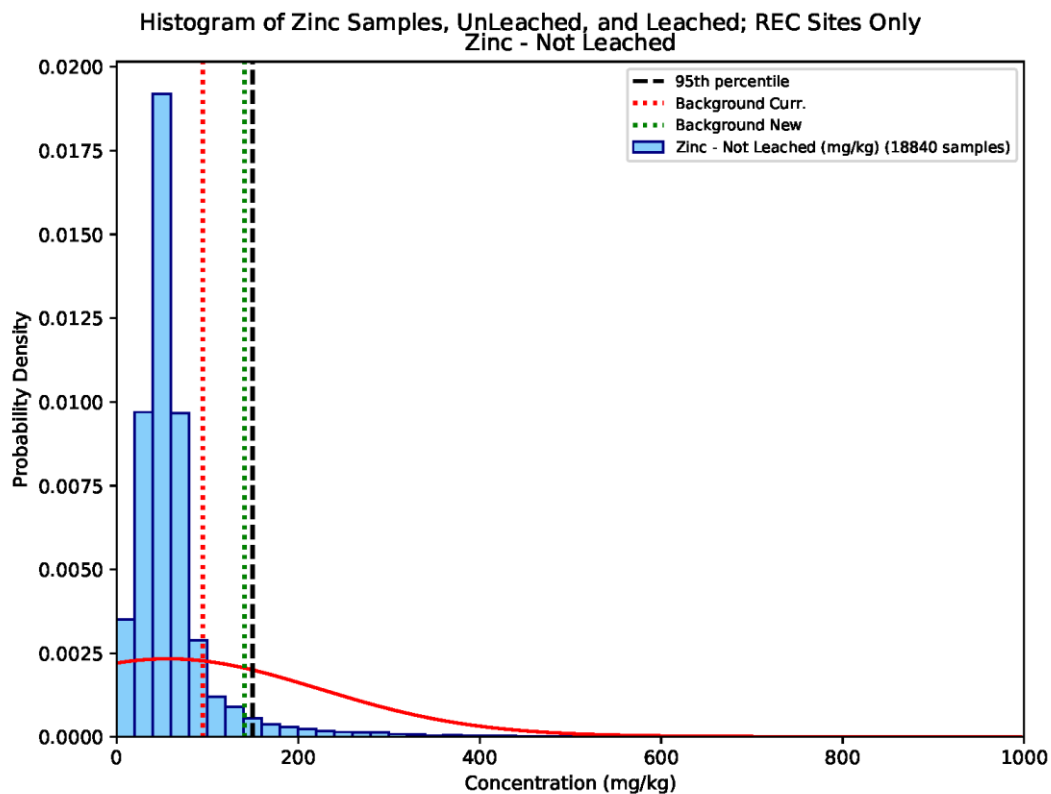


Figure 785. Histogram of RSL zinc concentrations, REC (mg/kg)

Zinc Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

# Zinc Concentration by Region, page 1 of 1

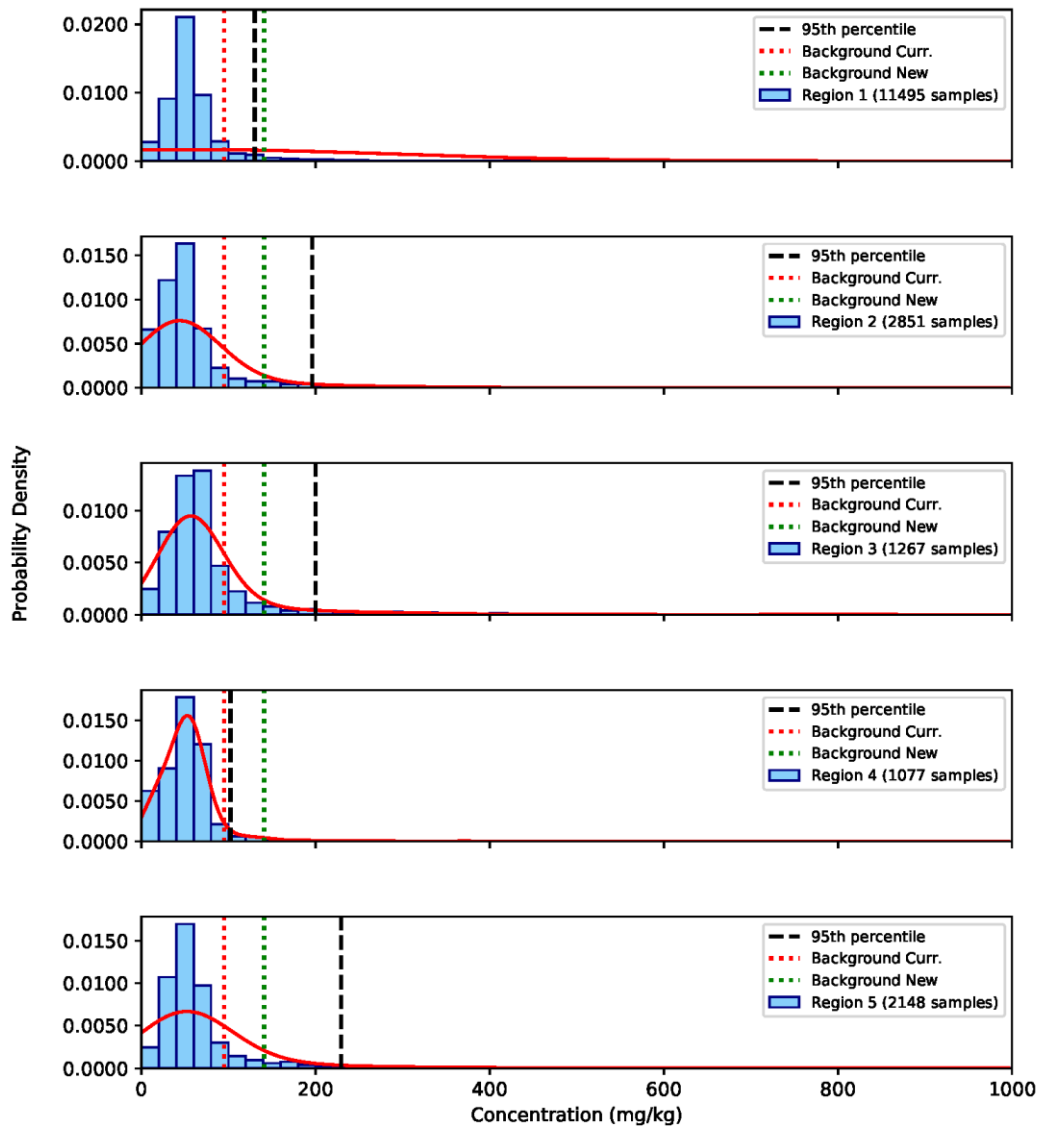
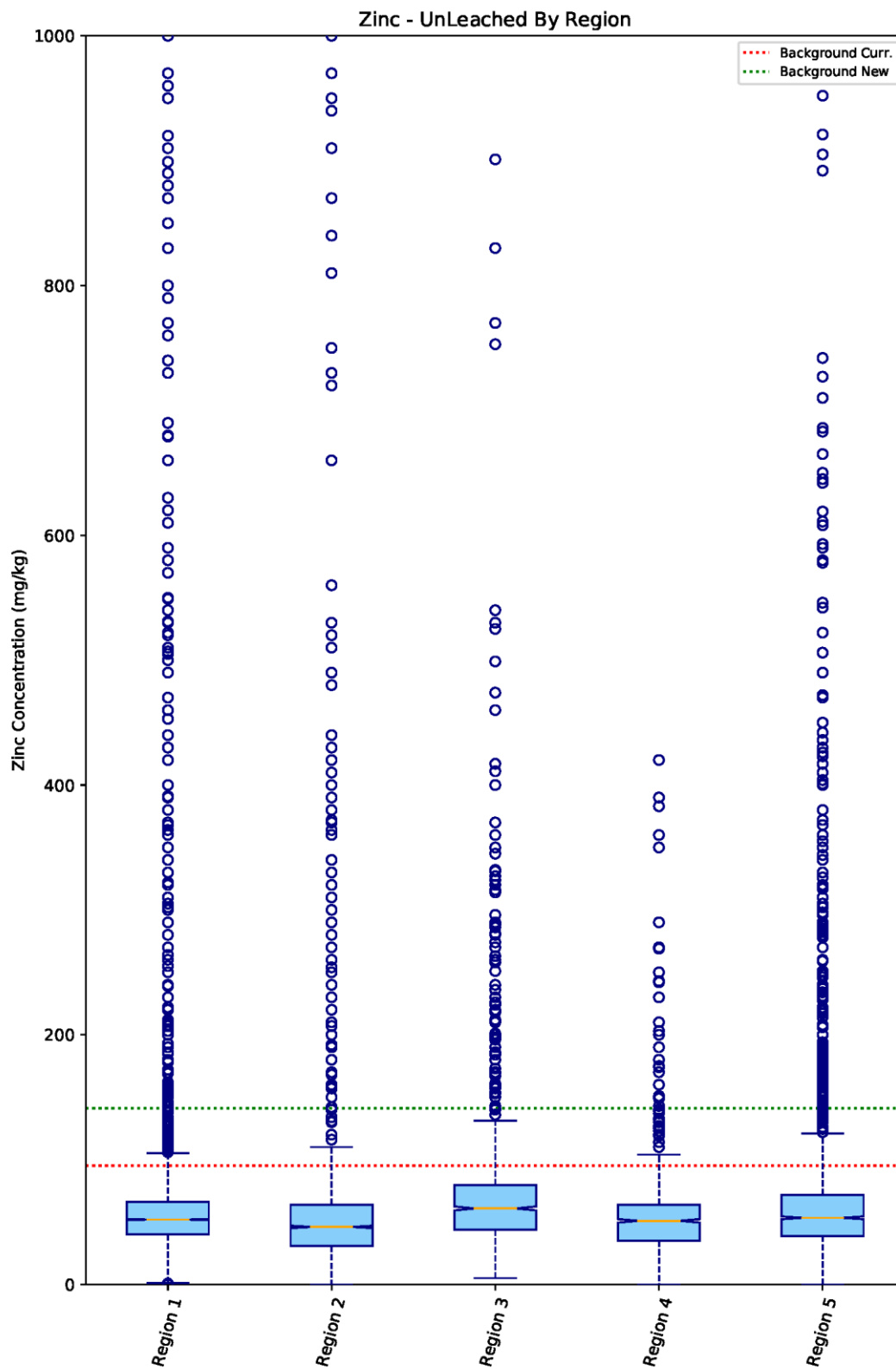


Figure 786. Histogram of RSL zinc concentrations by IDOT Region, REC (mg/kg)



**Figure 787. Boxplot of RSL zinc concentrations by IDOT Region, REC (mg/kg)**



# Zinc Concentration by District, page 1 of 2

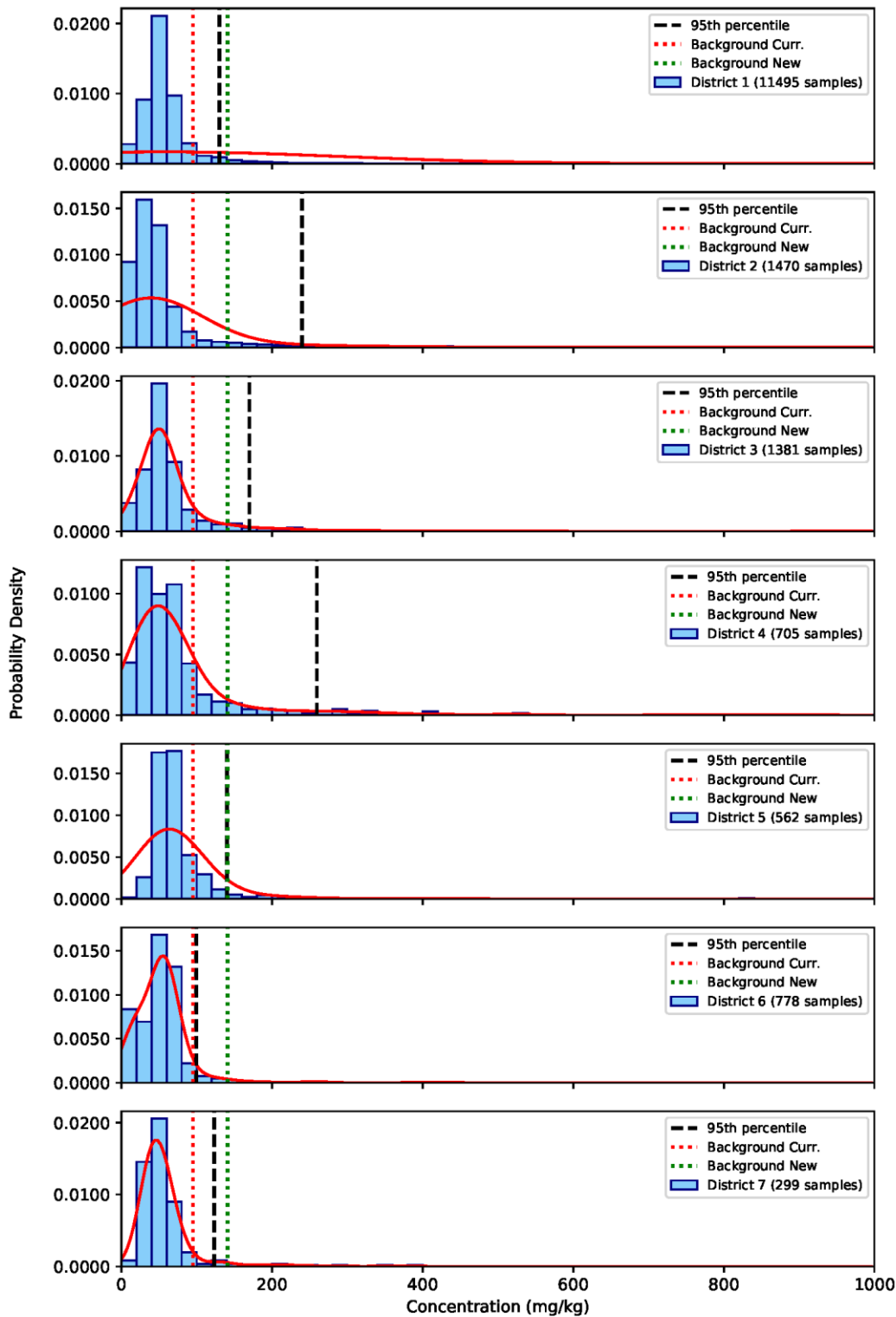


Figure 788. Histogram of RSL zinc concentrations by IDOT District, REC (mg/kg), part 1

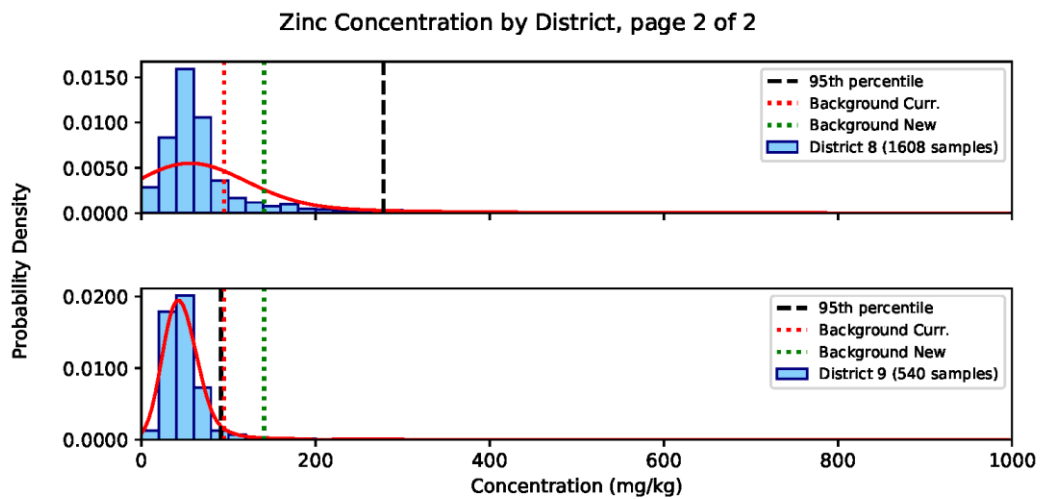


Figure 789. Histogram of RSL zinc concentrations by IDOT District, REC (mg/kg), part 2

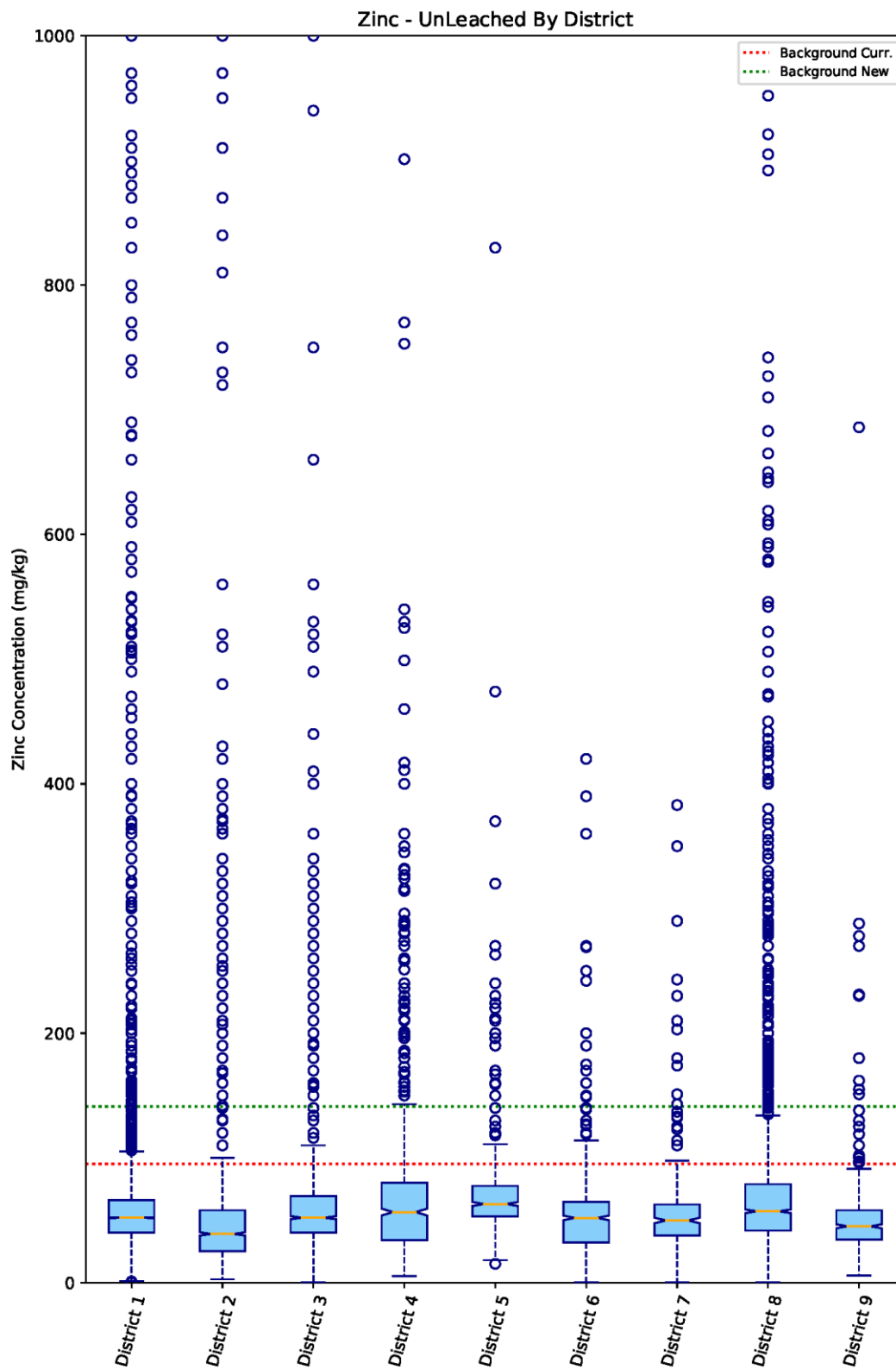


Figure 790. Boxplot of RSL zinc concentrations by IDOT District, REC (mg/kg)

# Zinc Concentration by County, page 1 of 10

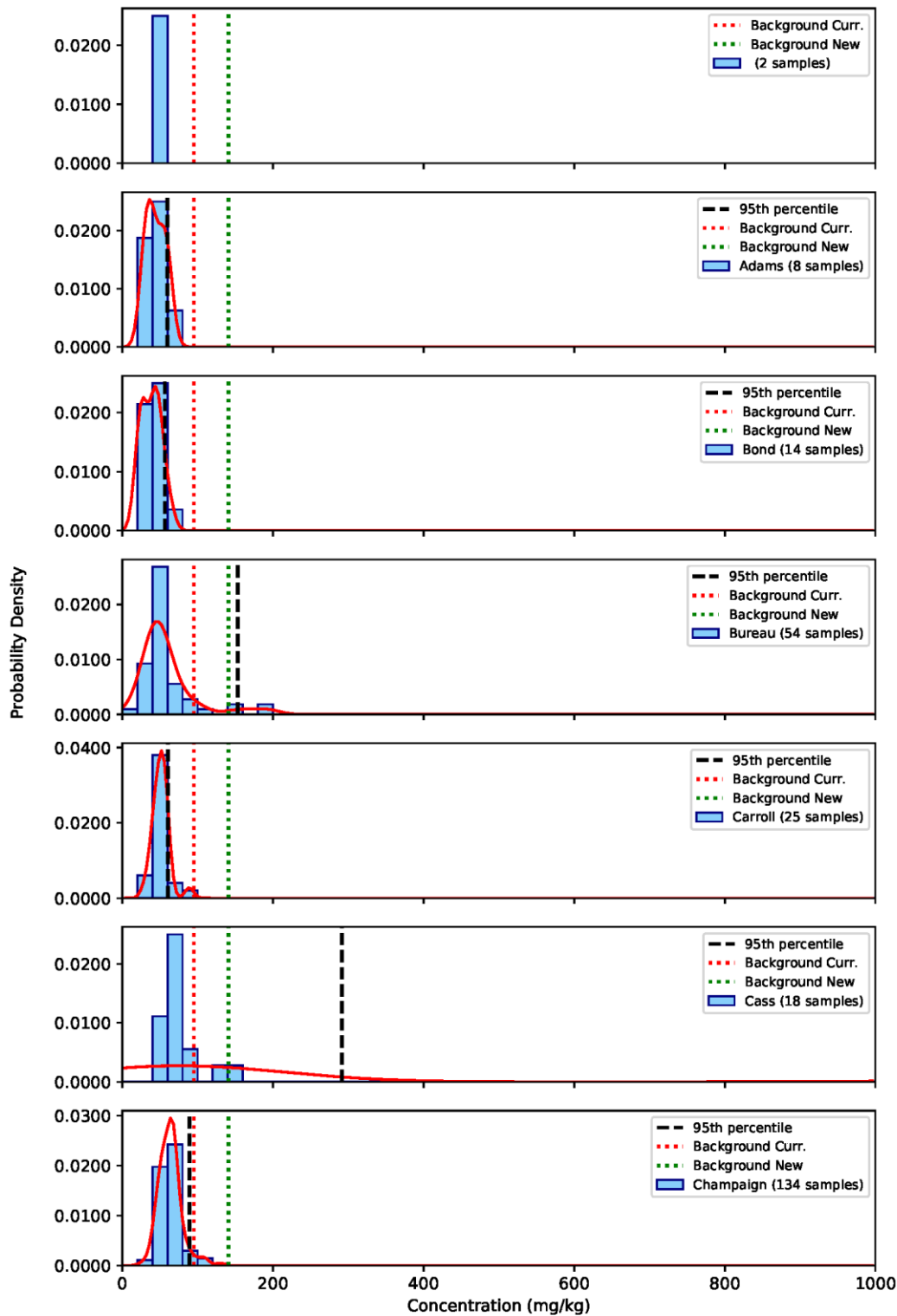


Figure 791. Histogram of RSL zinc concentrations by Illinois county, REC (mg/kg), part 1

# Zinc Concentration by County, page 2 of 10

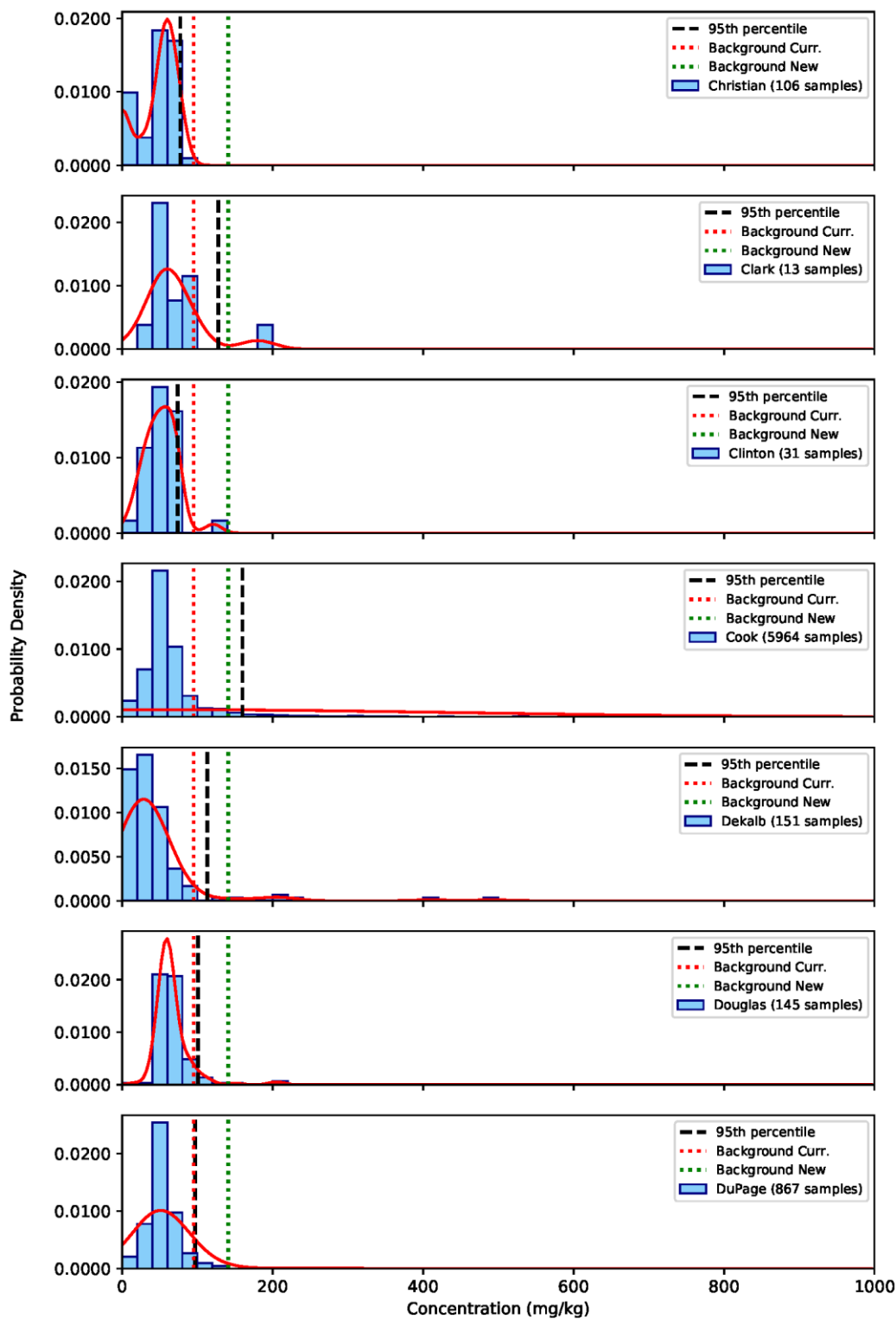


Figure 792. Histogram of RSL zinc concentrations by Illinois county, REC (mg/kg), part 2

# Zinc Concentration by County, page 3 of 10

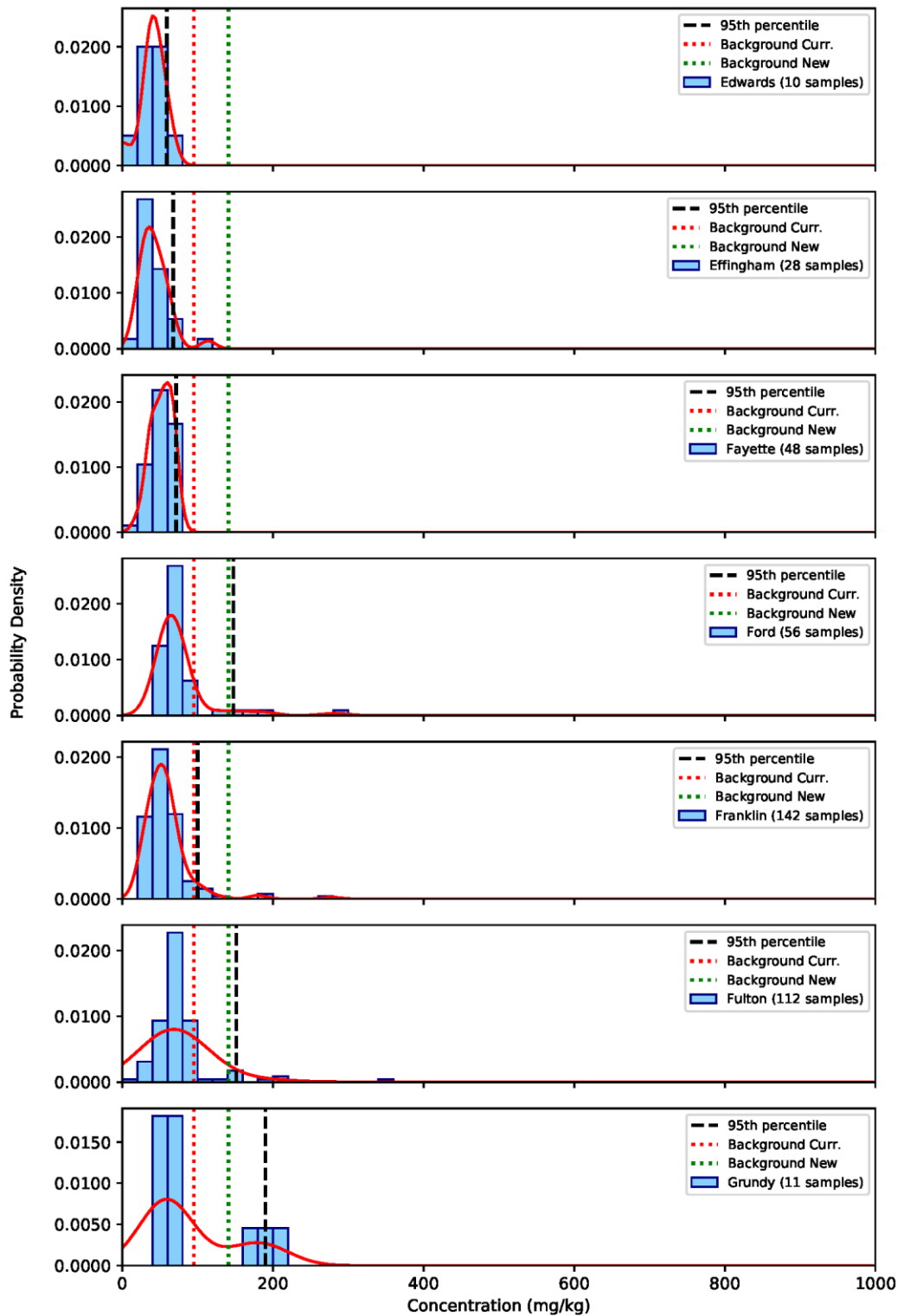


Figure 793. Histogram of RSL zinc concentrations by Illinois county, REC (mg/kg), part 3

# Zinc Concentration by County, page 4 of 10

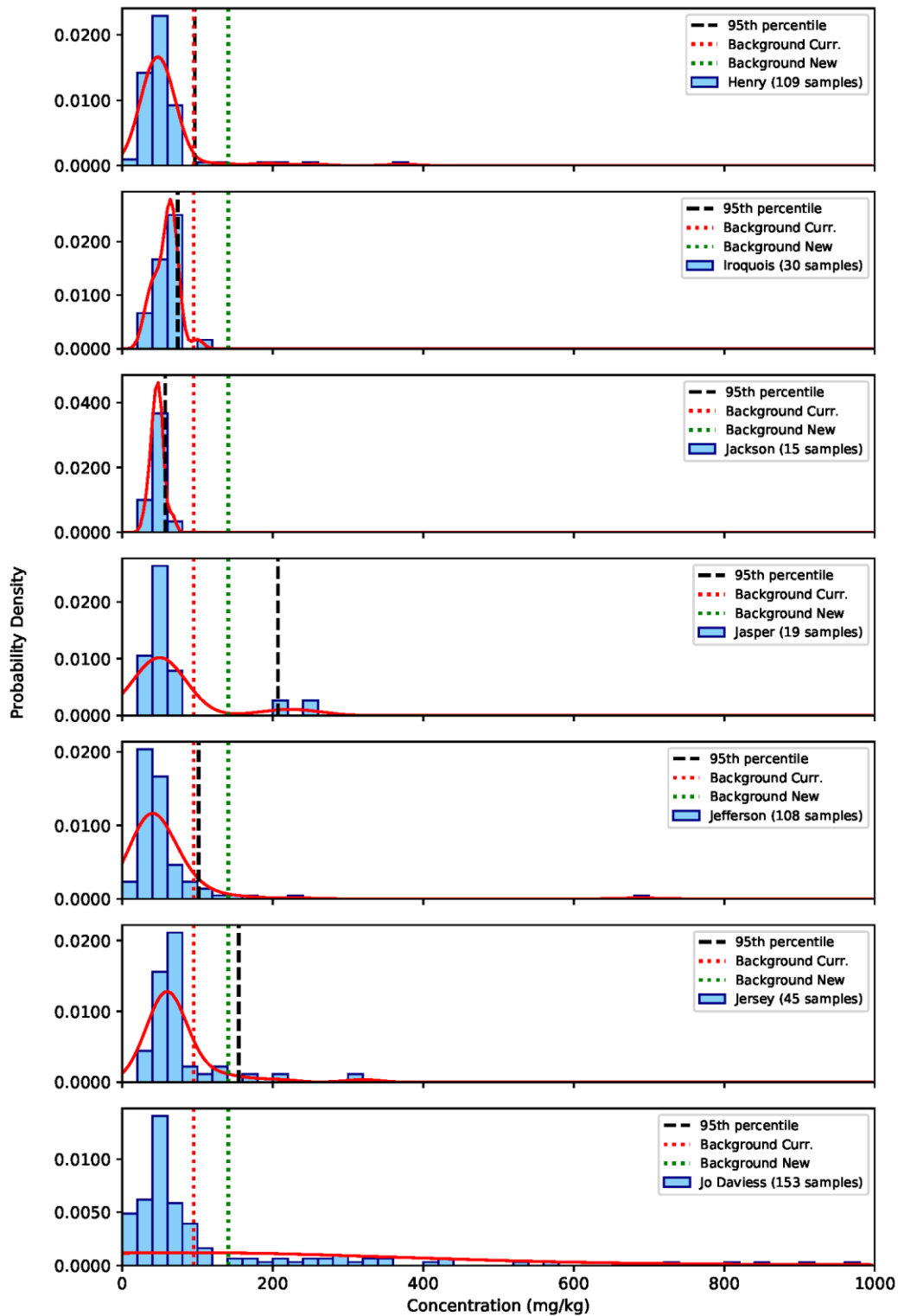


Figure 794. Histogram of RSL zinc concentrations by Illinois county, REC (mg/kg), part 4

# Zinc Concentration by County, page 5 of 10

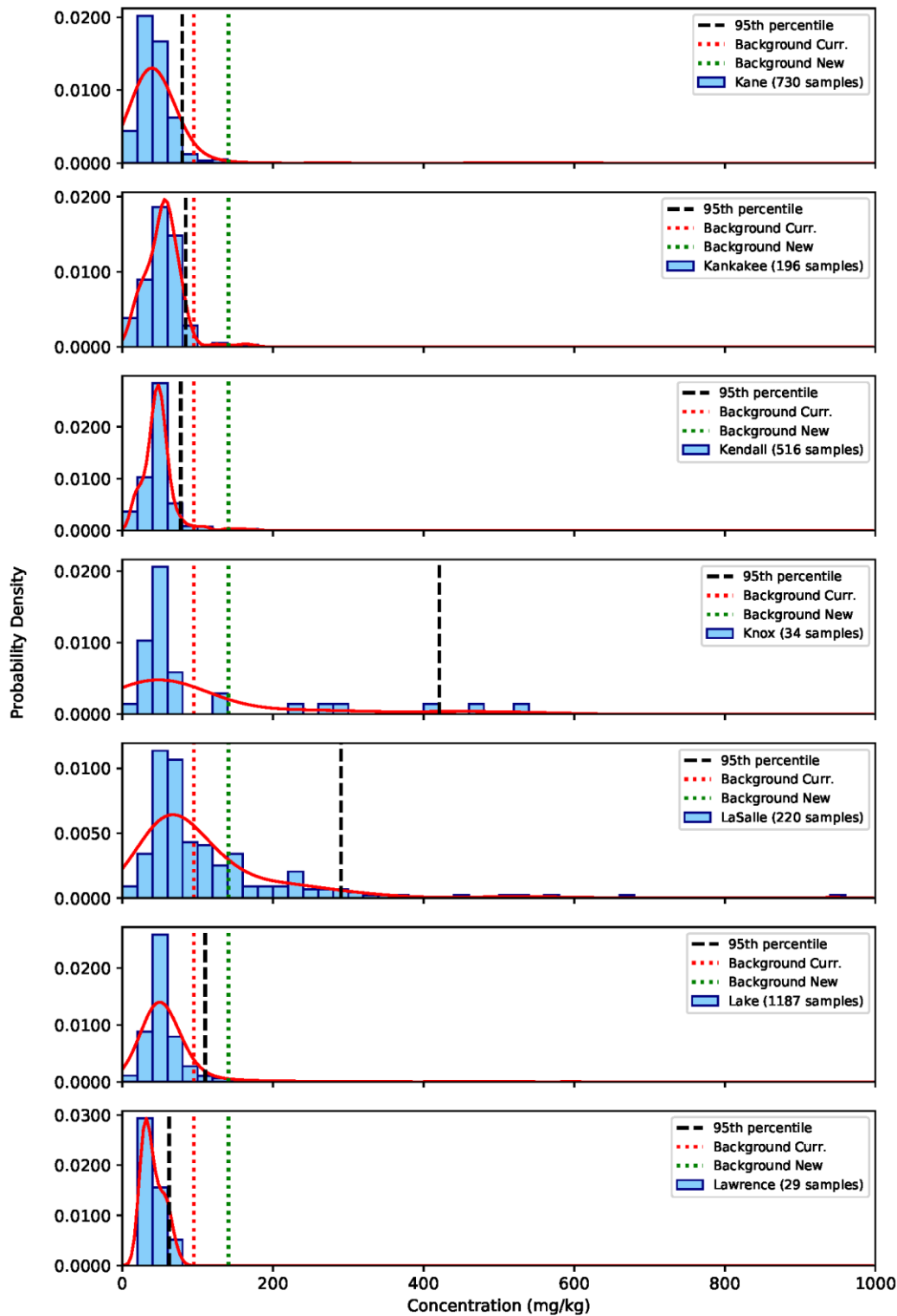


Figure 795. Histogram of RSL zinc concentrations by Illinois county, REC (mg/kg), part 5



# Zinc Concentration by County, page 6 of 10

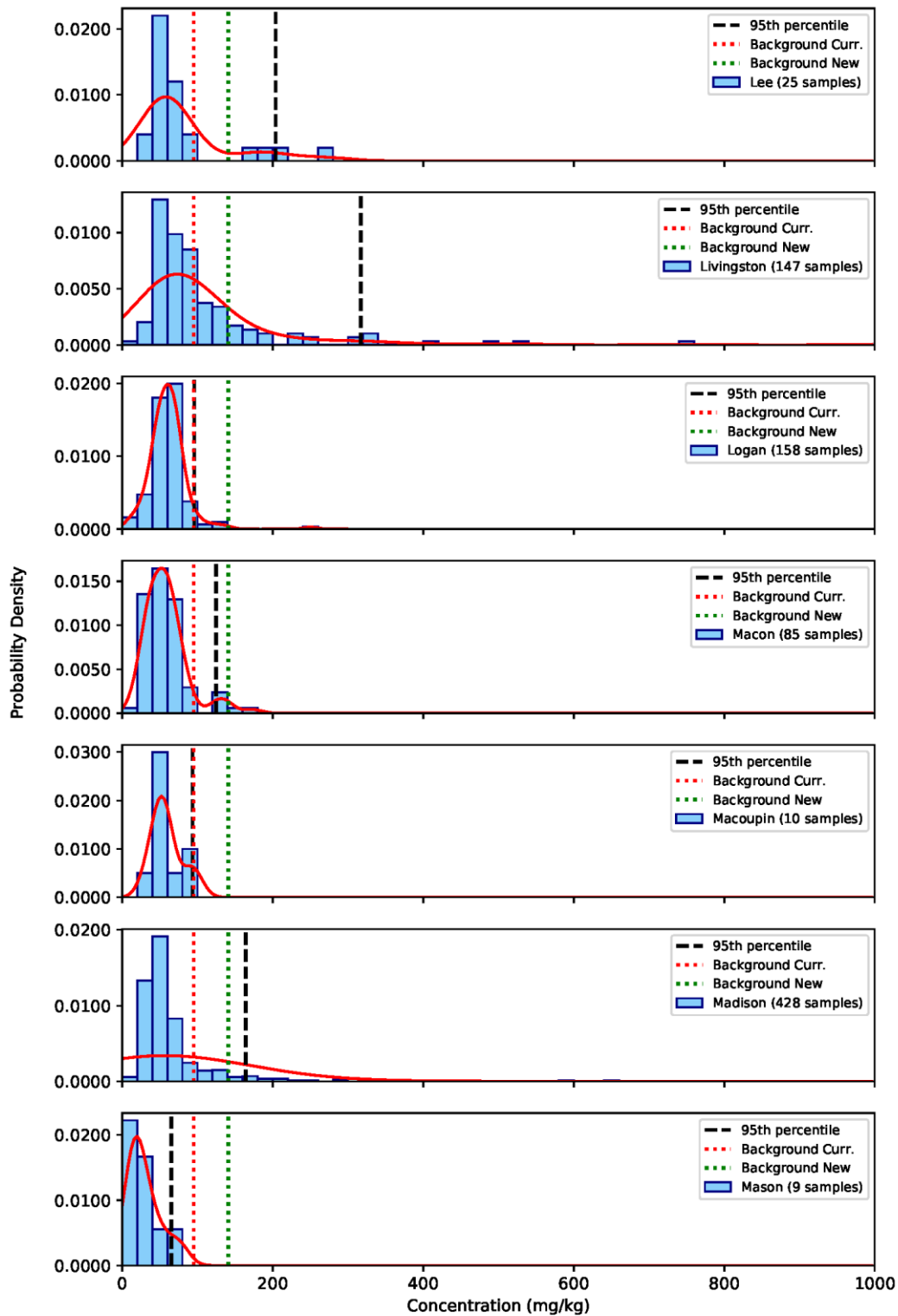


Figure 796. Histogram of RSL zinc concentrations by Illinois county, REC (mg/kg), part 6

# Zinc Concentration by County, page 7 of 10

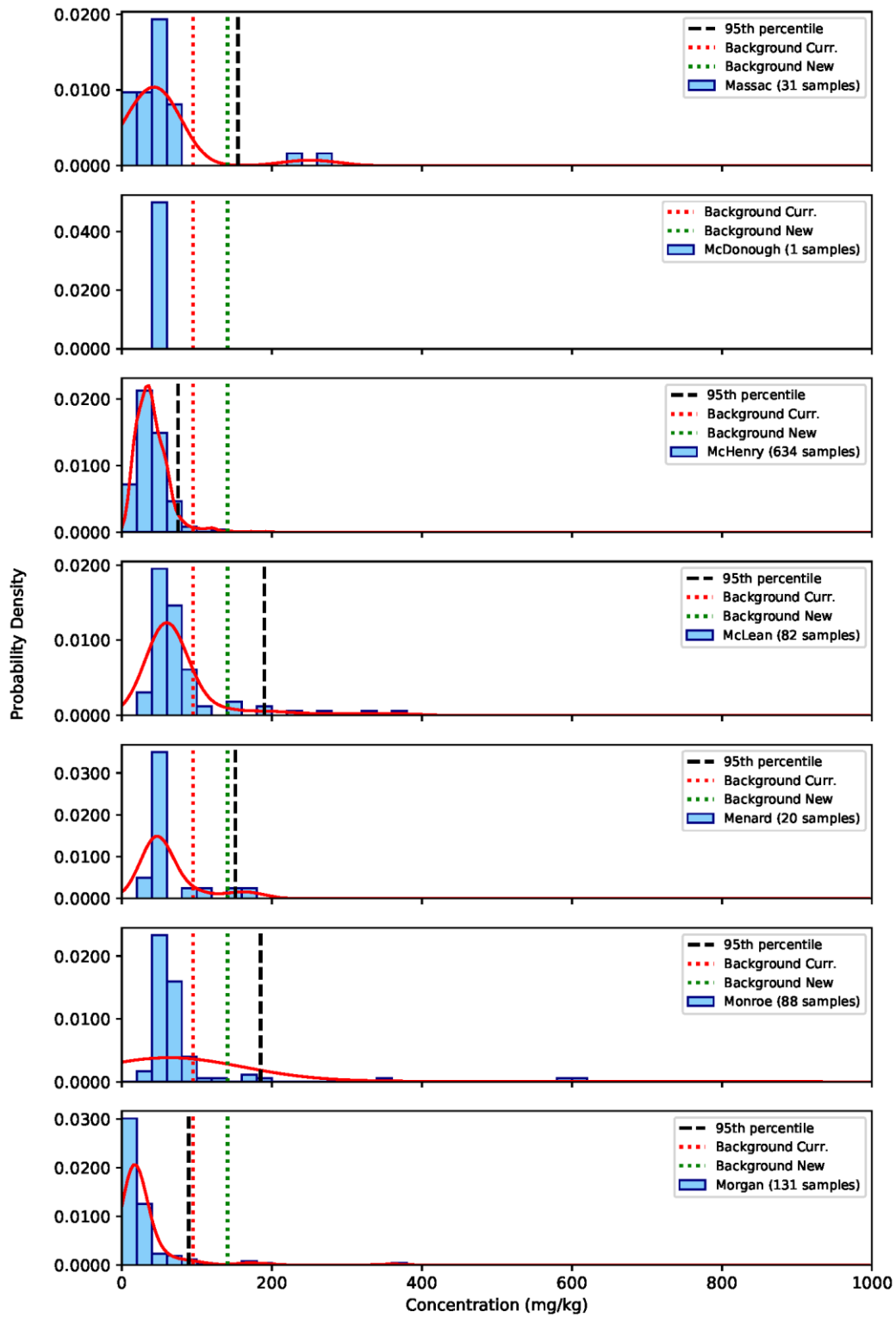


Figure 797. Histogram of RSL zinc concentrations by Illinois county, REC (mg/kg), part 7

# Zinc Concentration by County, page 8 of 10

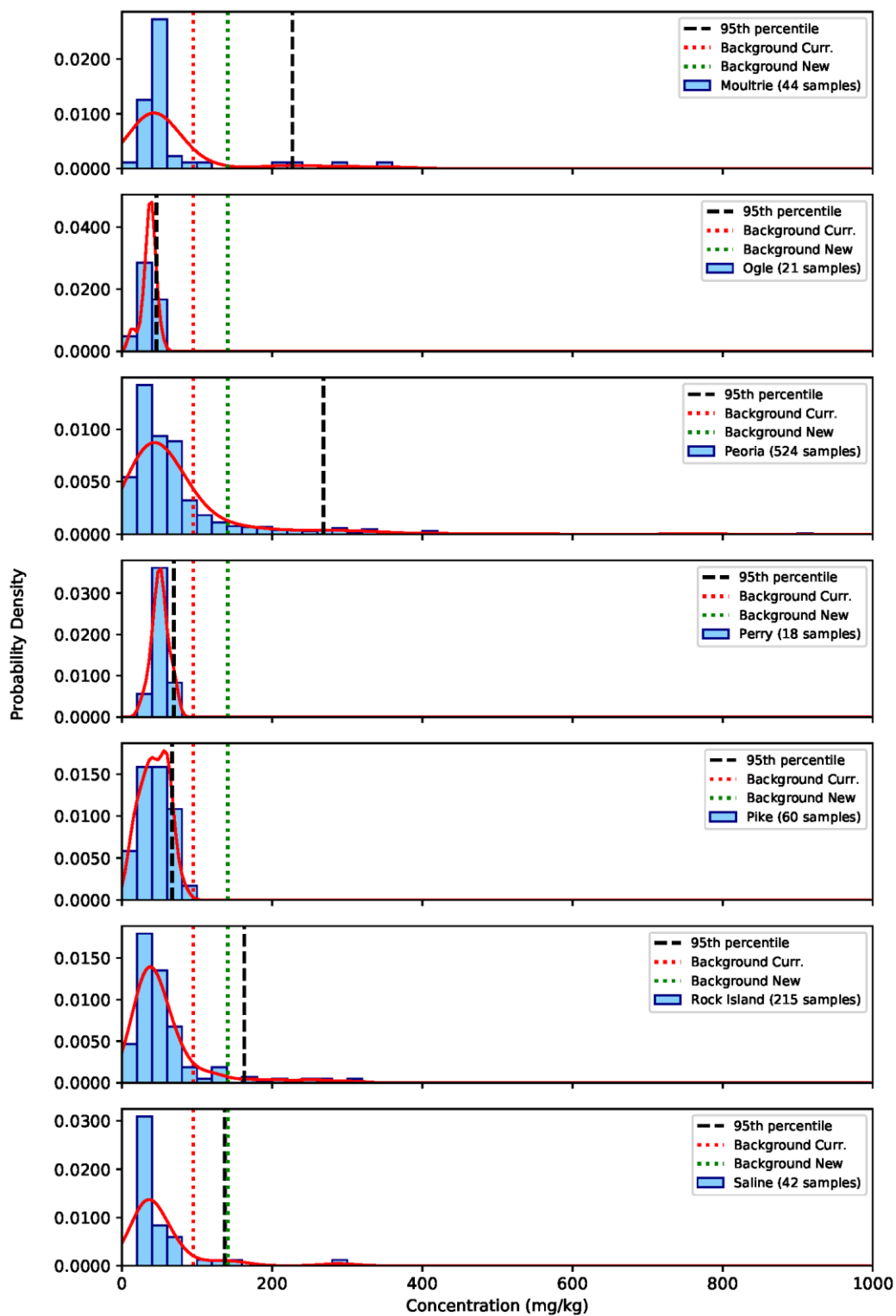


Figure 798. Histogram of RSL zinc concentrations by Illinois county, REC (mg/kg), part 8

# Zinc Concentration by County, page 9 of 10

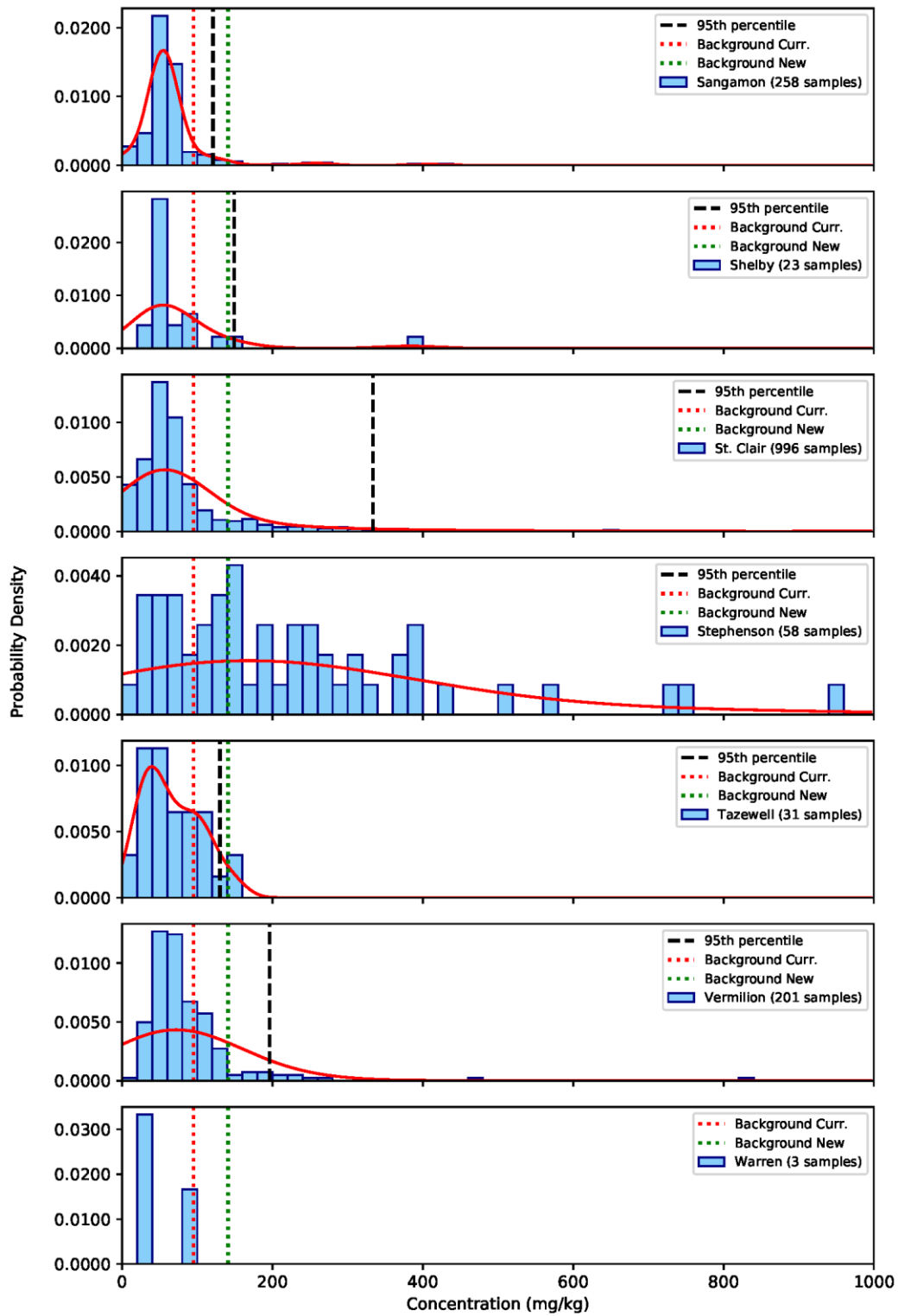


Figure 799. Histogram of RSL zinc concentrations by Illinois county, REC (mg/kg), part 9

# Zinc Concentration by County, page 10 of 10

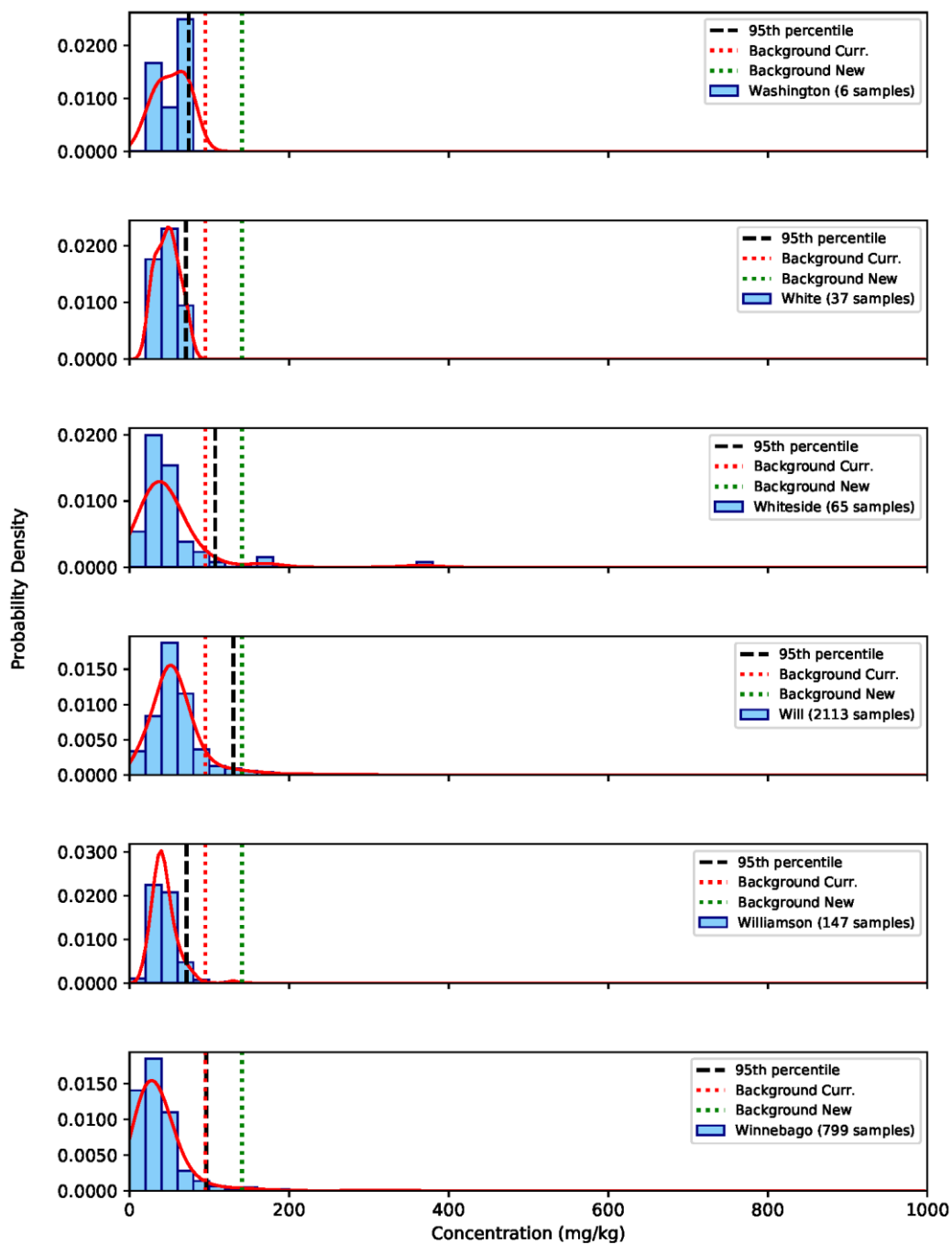


Figure 800. Histogram of RSL zinc concentrations by Illinois county, REC (mg/kg), part 10

Zinc Concentration for 95th Percentile by County: REC Sites

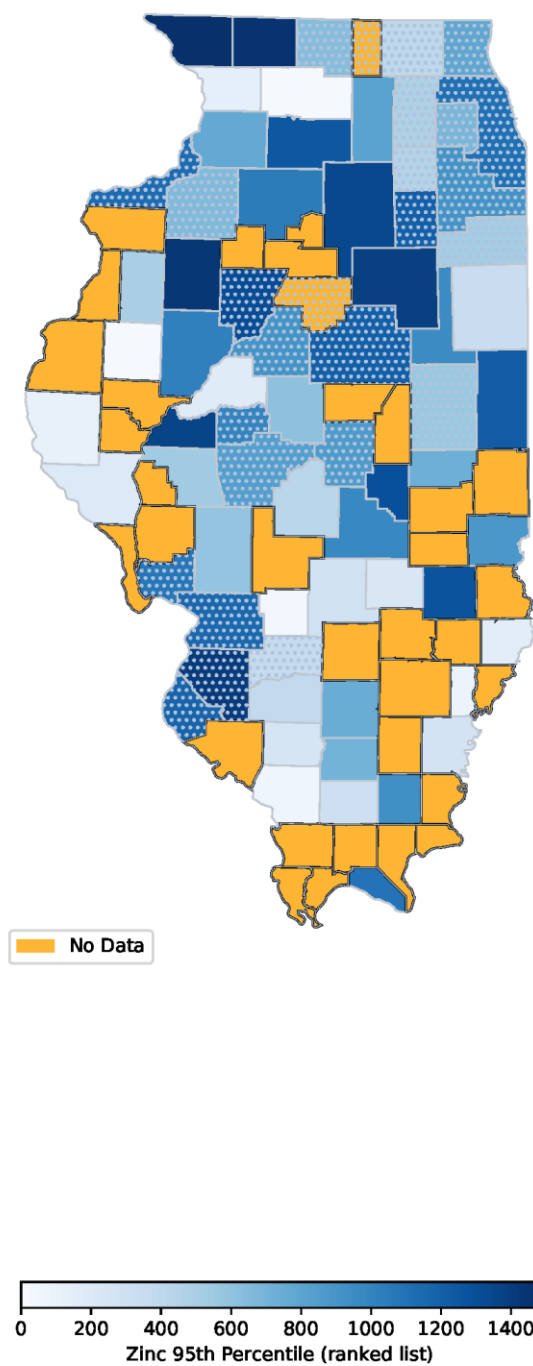


Figure 801. Map of RSL zinc 95th percentile concentration by Illinois county, REC (mg/kg)

Number of Zinc Samples by County: REC Sites

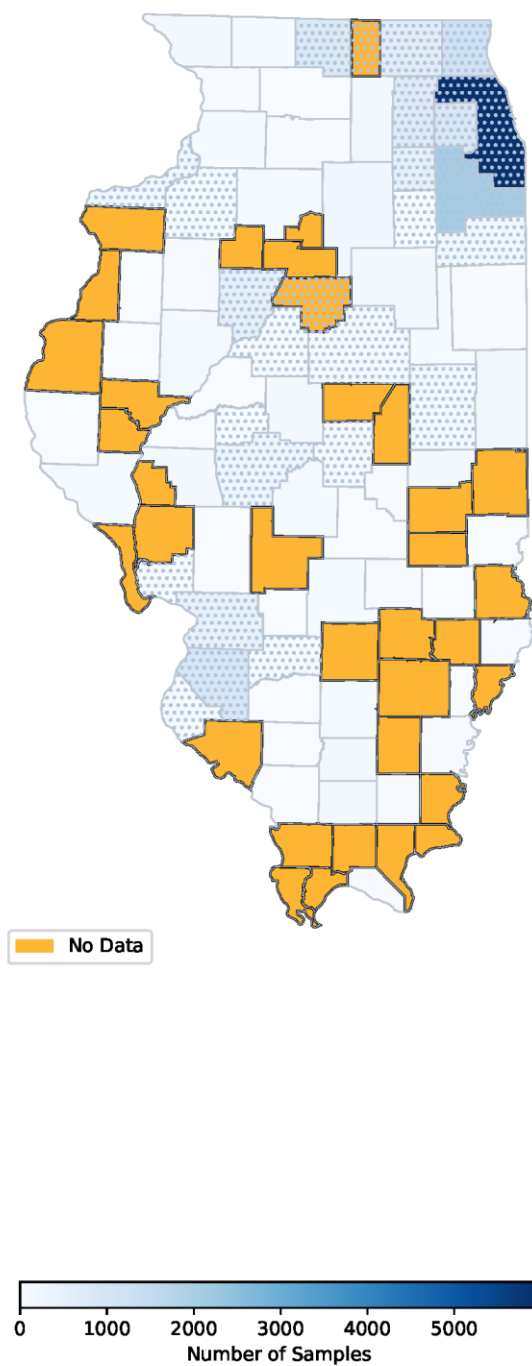
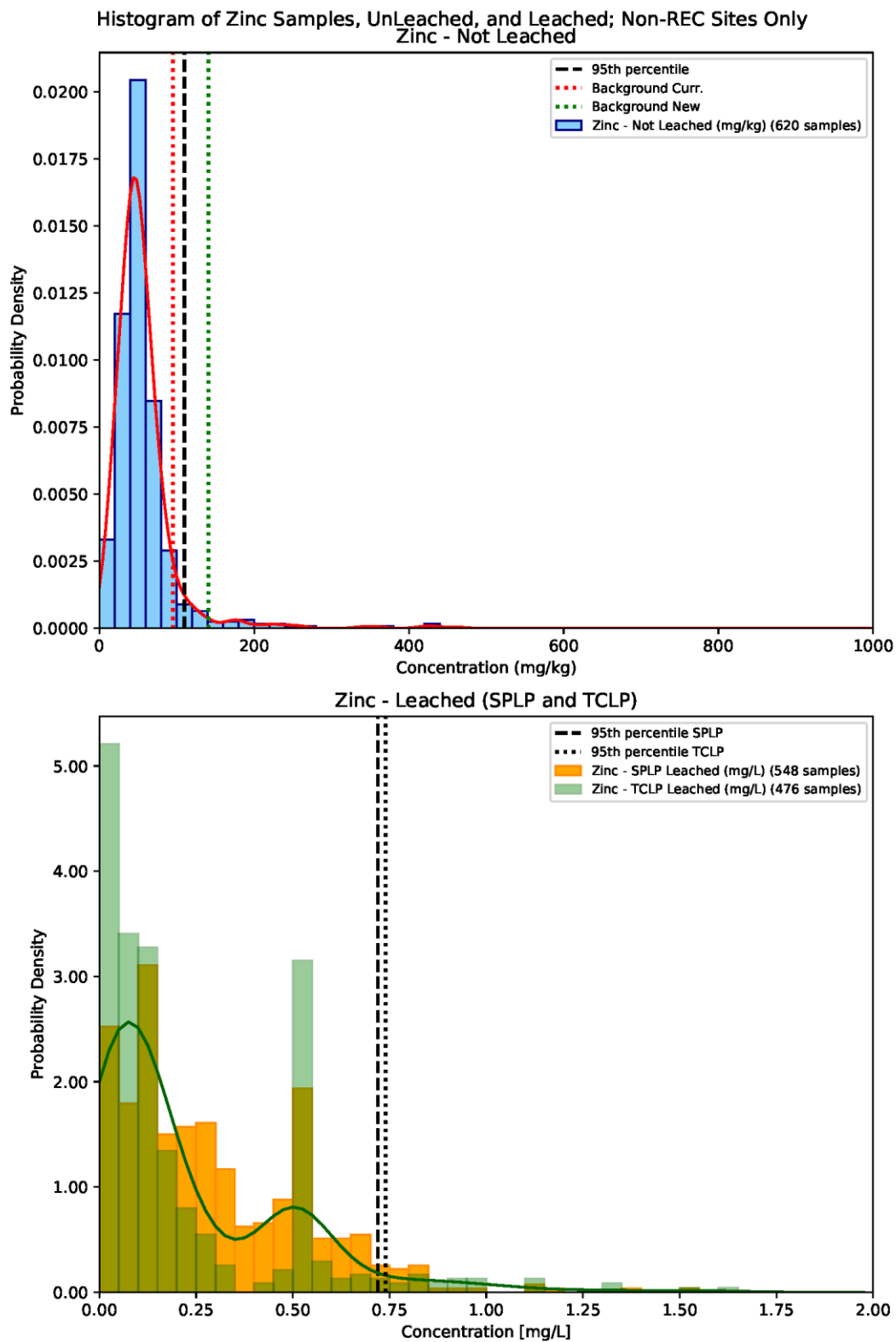


Figure 802. Map of RSL zinc sample quantity by Illinois county, REC (mg/kg)

## V.2 ZINC NON-REC





**Figure 803. Histogram of RSL zinc concentrations, Non-REC (mg/kg)**

Zinc Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

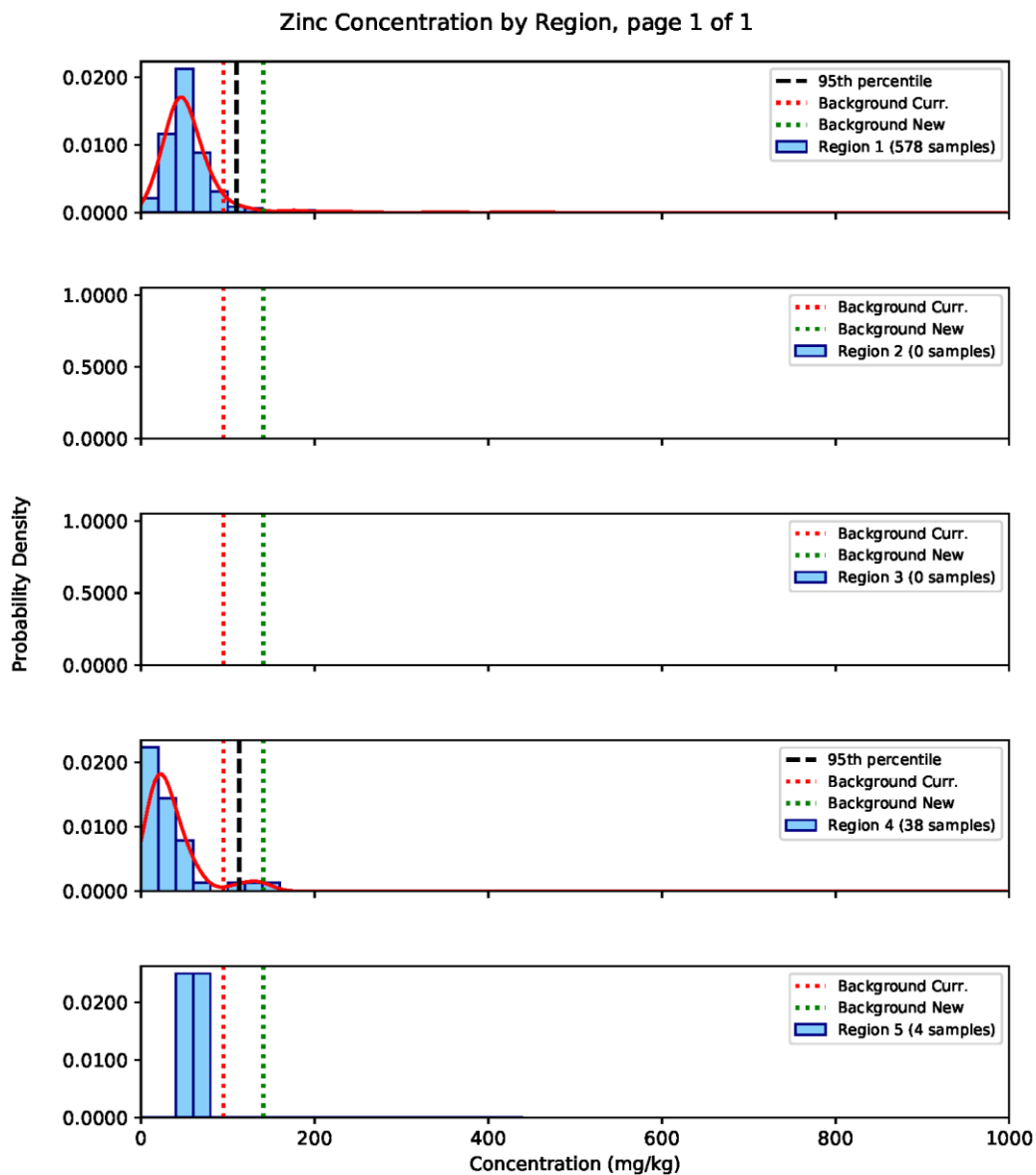
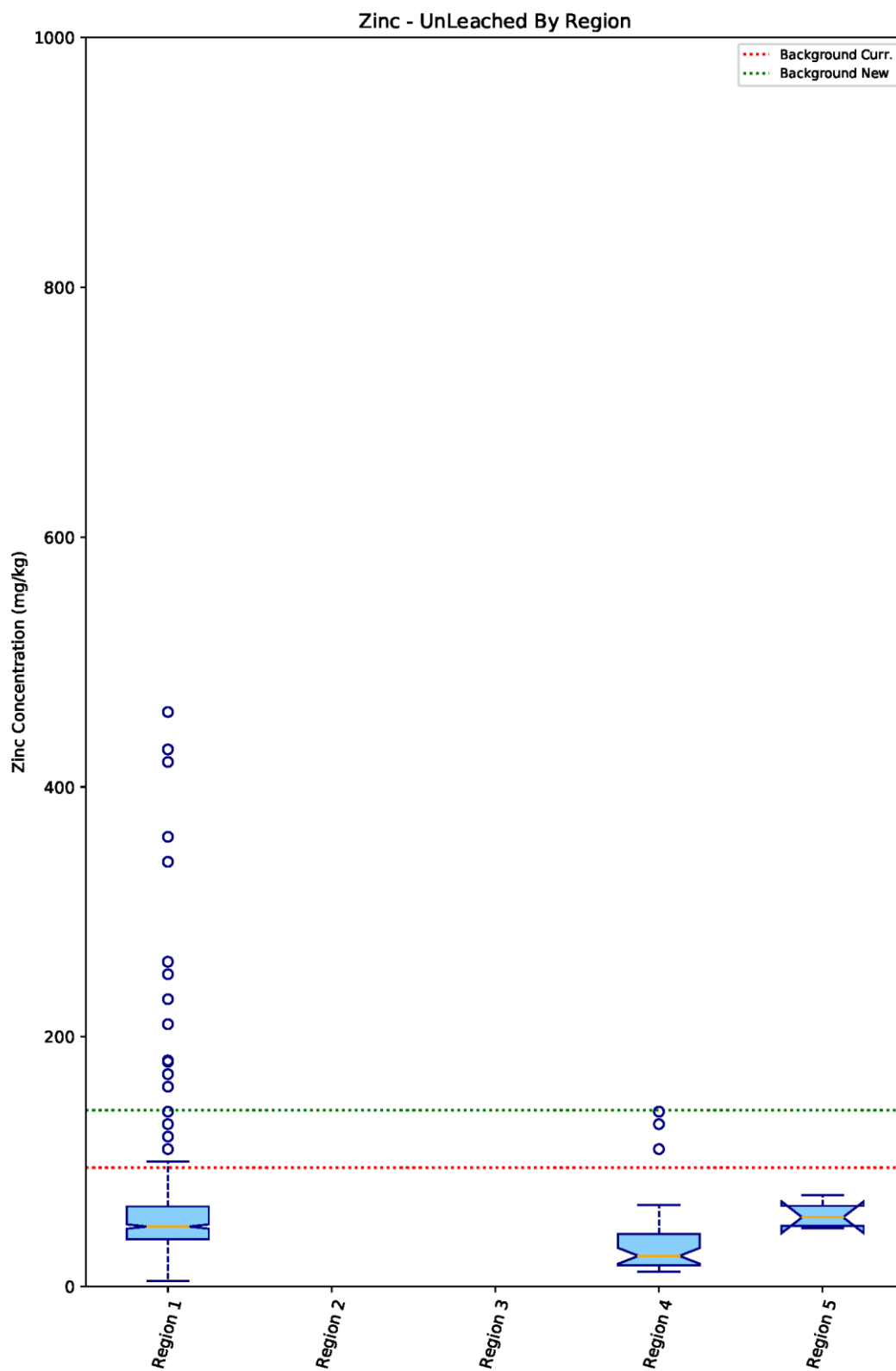


Figure 804. Histogram of RSL zinc concentrations by IDOT Region, Non-REC (mg/kg)



**Figure 805. Boxplot of RSL zinc concentrations by IDOT Region, Non-REC (mg/kg)**

# Zinc Concentration by District, page 1 of 2

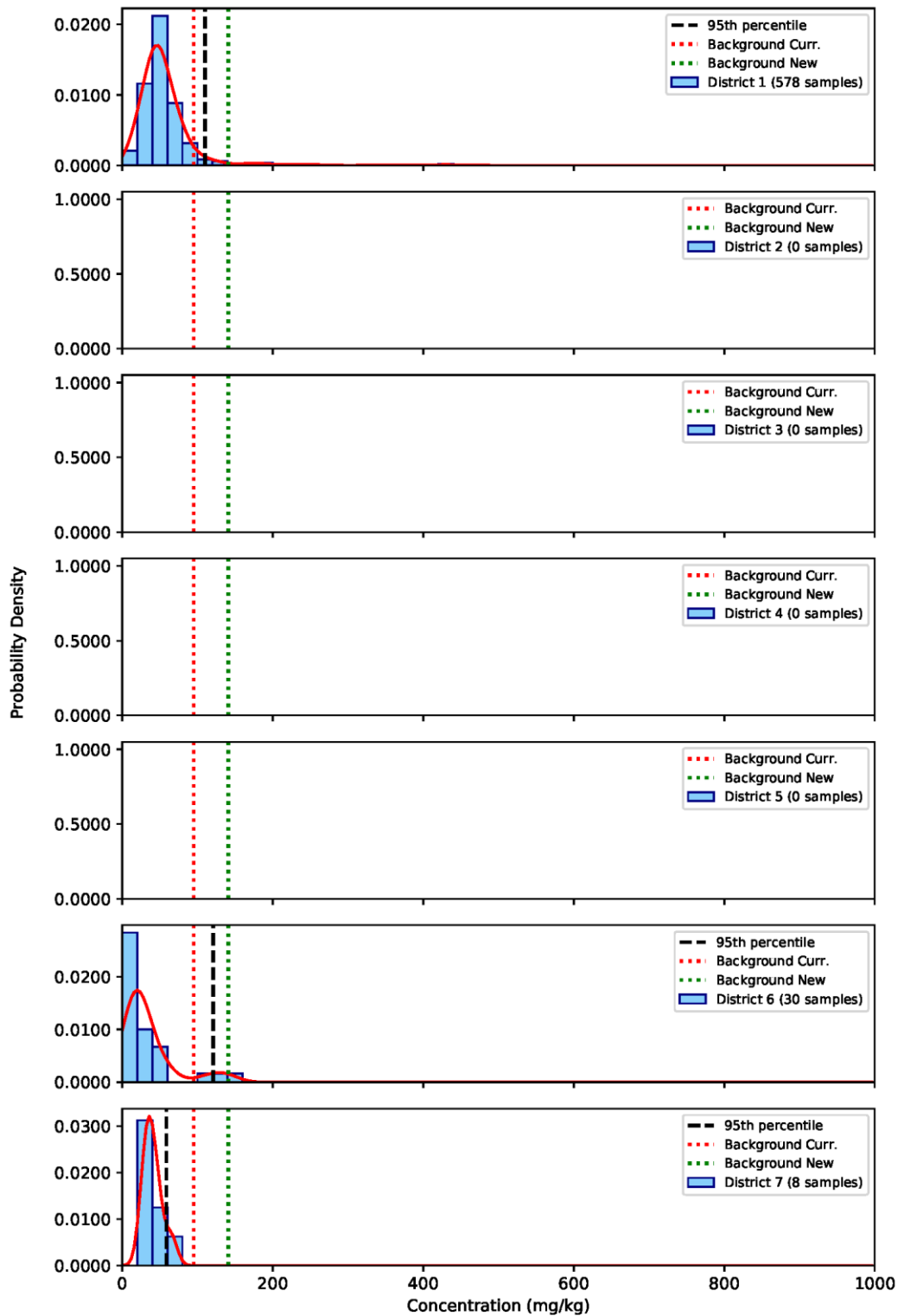


Figure 806. Histogram of RSL zinc concentrations by IDOT District, Non-REC (mg/kg), part 1

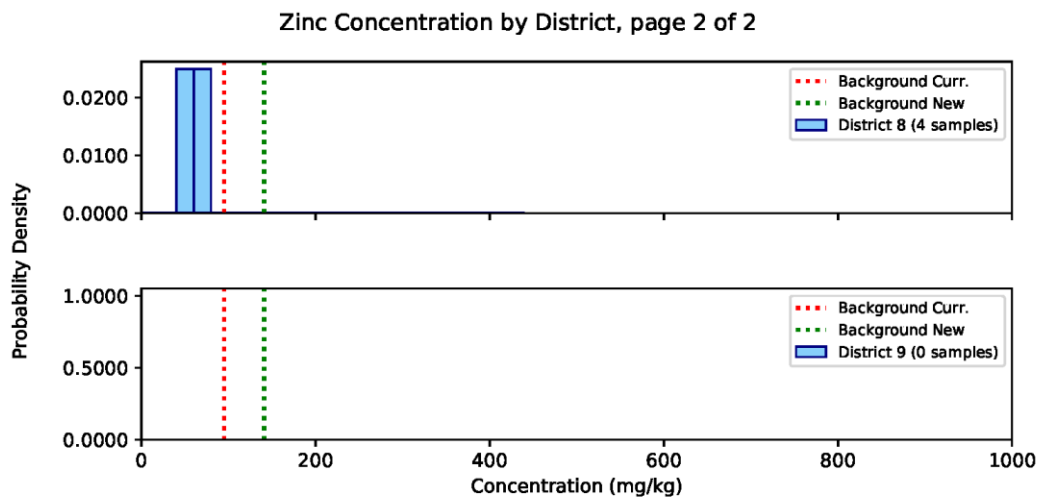
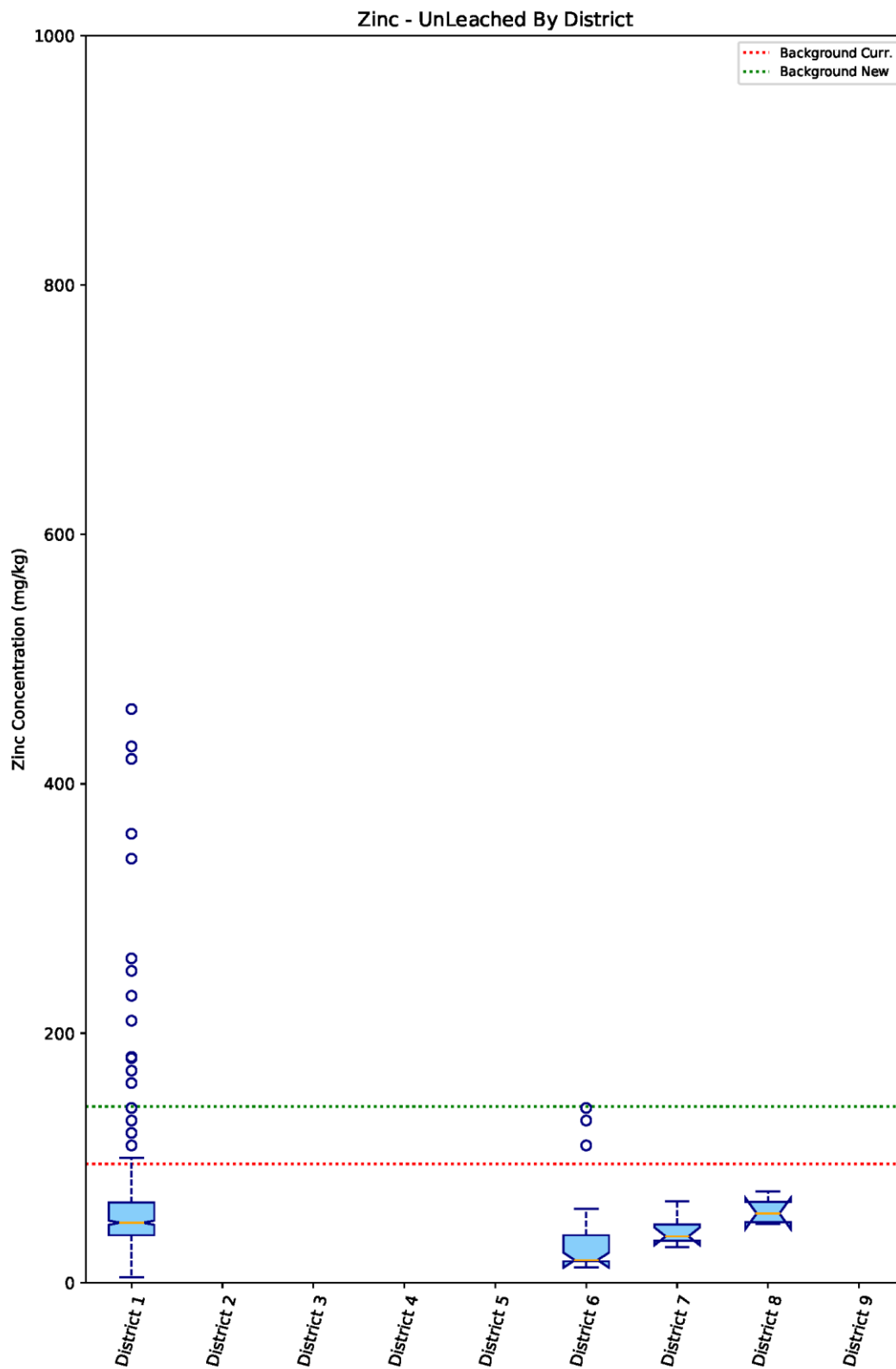


Figure 807. Histogram of RSL zinc concentrations by IDOT District, Non-REC (mg/kg), part 2



**Figure 808. Boxplot of RSL zinc concentrations by IDOT District, Non-REC (mg/kg)**

# Zinc Concentration by County, page 1 of 2

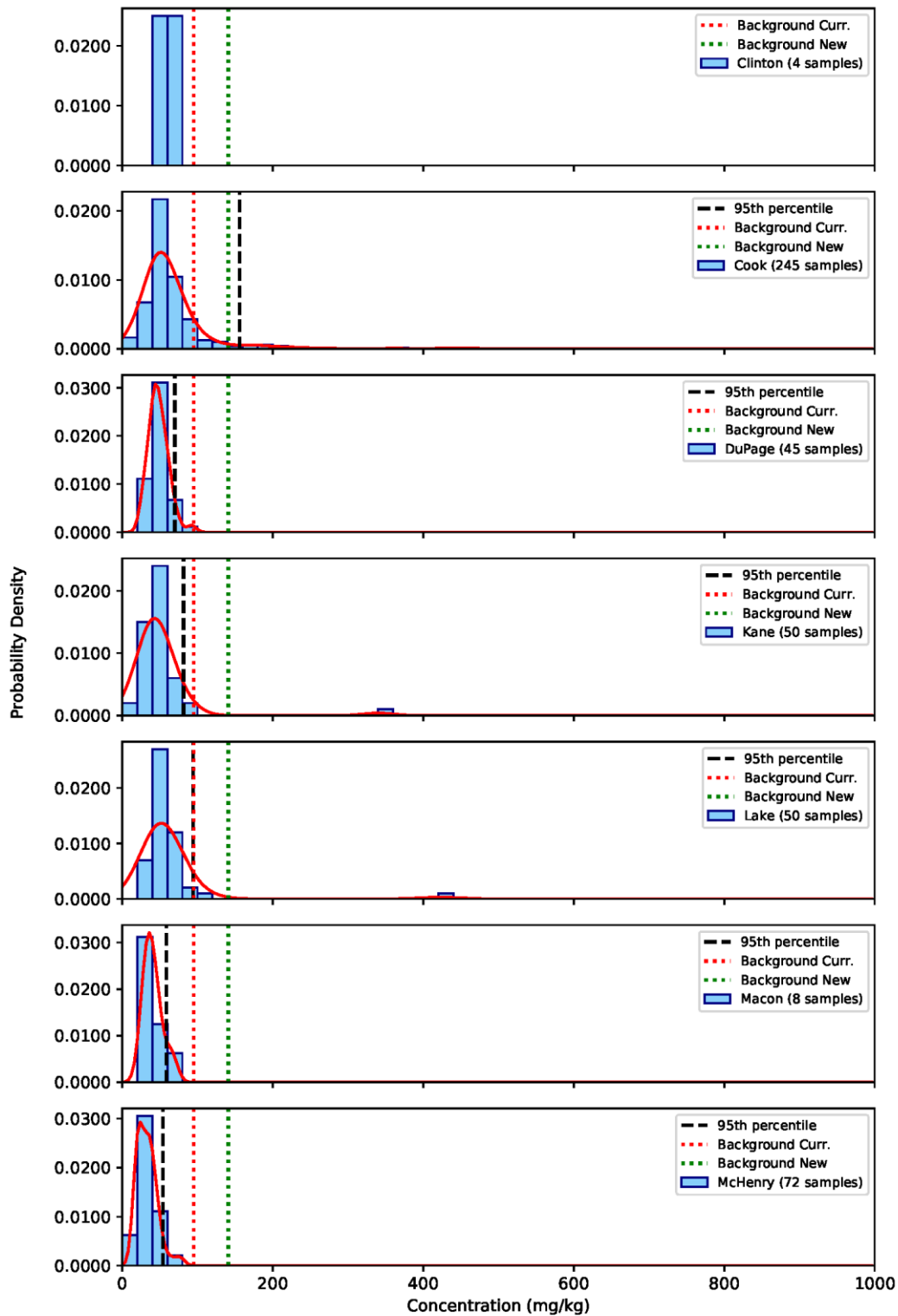


Figure 809. Histogram of RSL zinc concentrations by Illinois county, Non-REC (mg/kg), part 1



Zinc Concentration by County, page 2 of 2

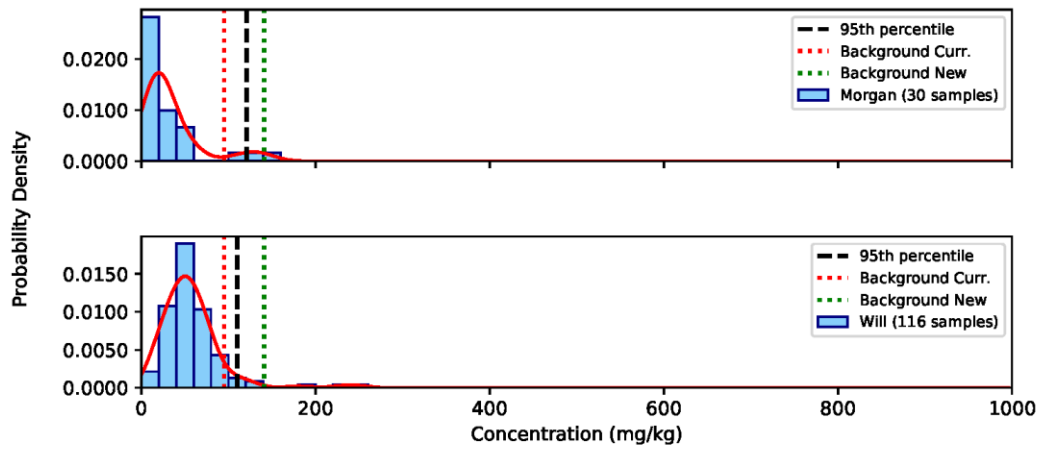


Figure 810. Histogram of RSL zinc concentrations by Illinois county, Non-REC (mg/kg), part 2

Zinc Concentration for 95th Percentile by County: Non-REC Sites

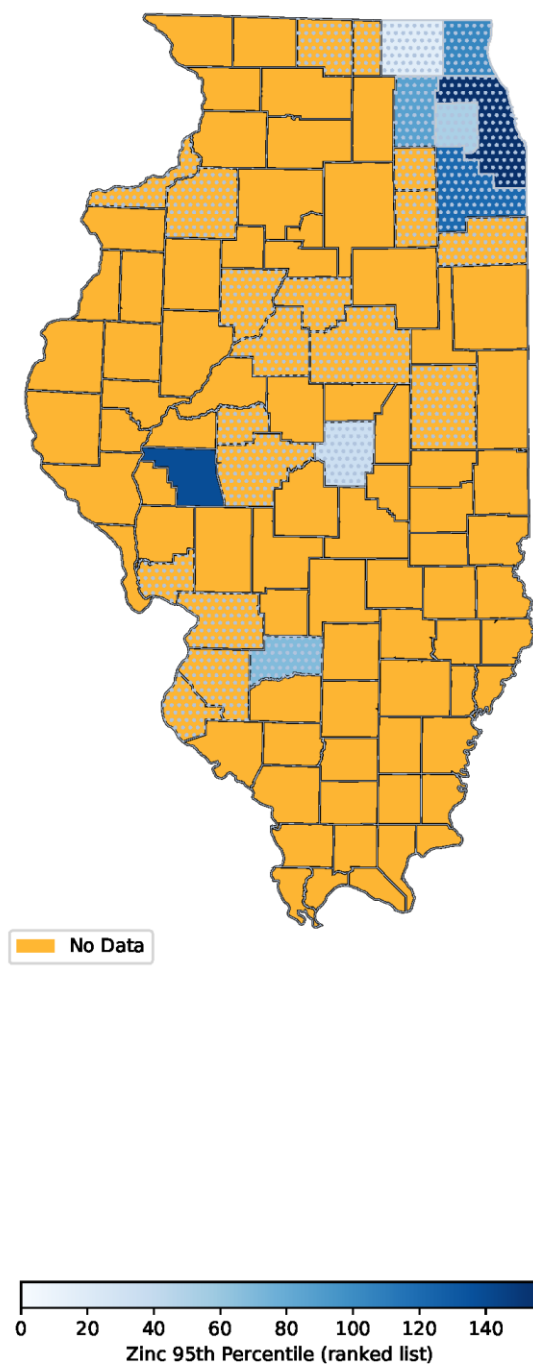
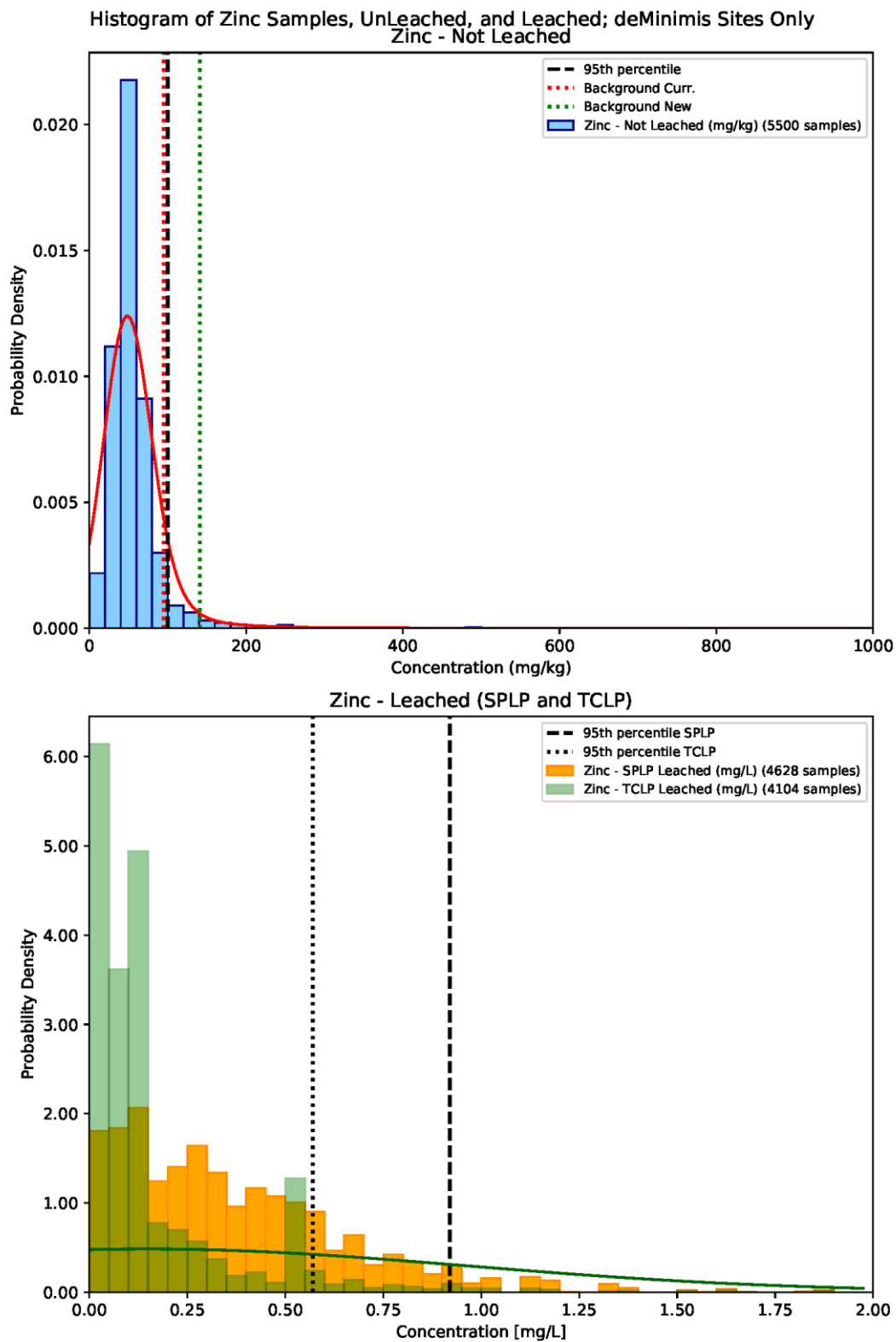


Figure 811. Map of RSL zinc 95th percentile concentration by Illinois county, Non-REC (mg/kg)

949

### V.3 ZINC DE MINIMIS



**Figure 813. Histogram of RSL zinc concentrations, de minimis (mg/kg)**

Zinc Unleached Concentration (mg/kg)

- 1) Region
- 2) District
- 3) County

# Zinc Concentration by Region, page 1 of 1

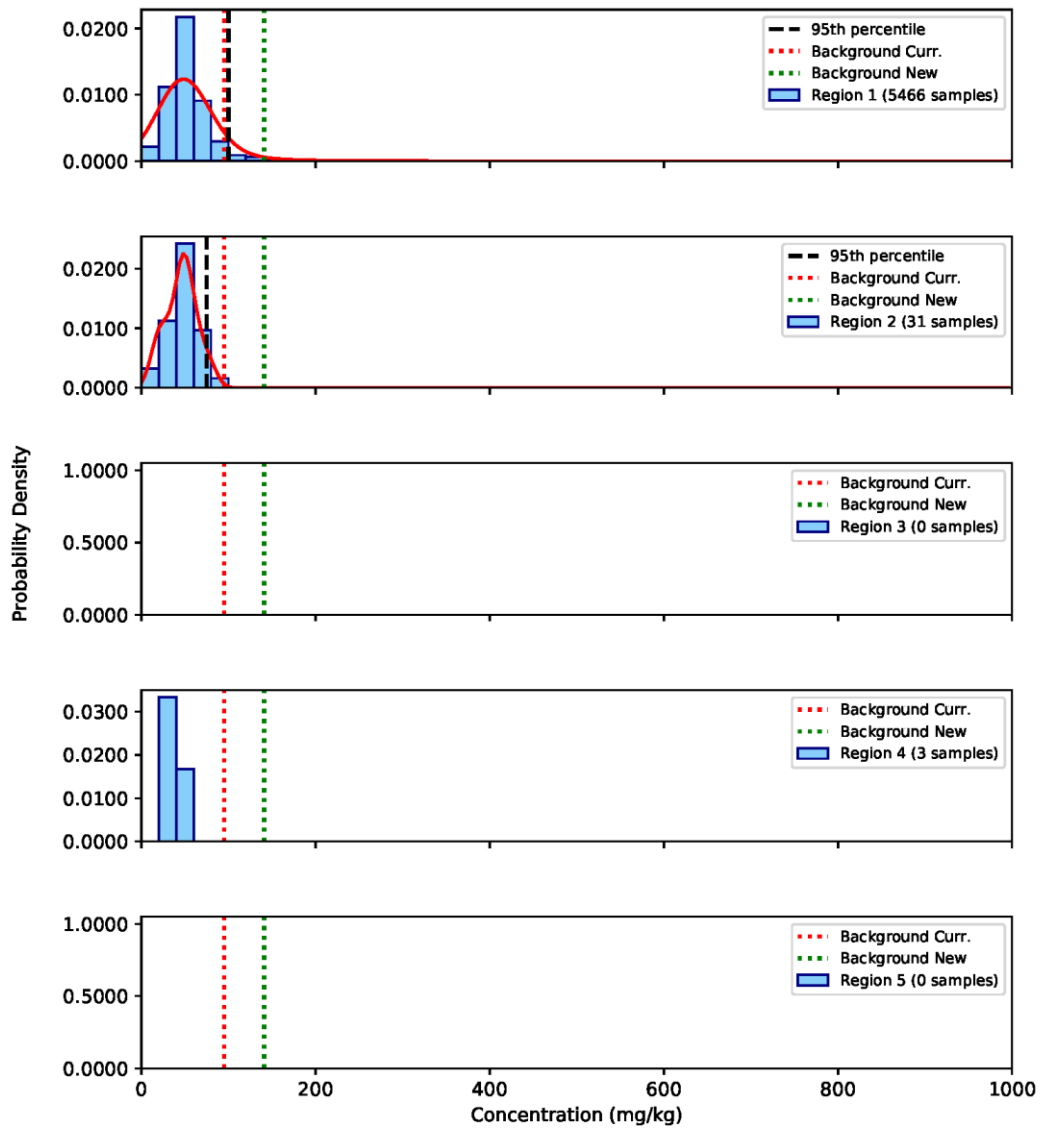
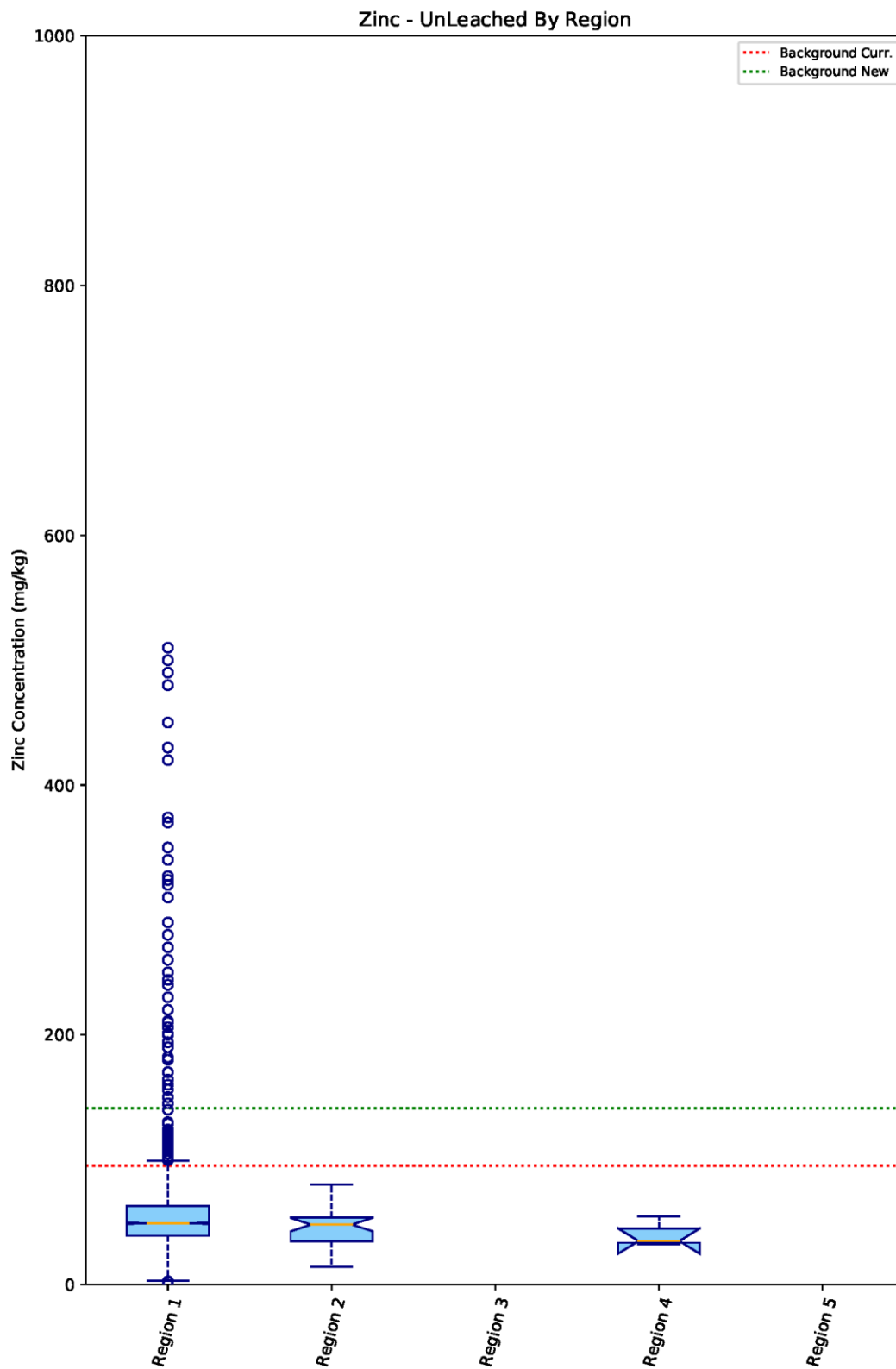


Figure 814. Histogram of RSL zinc concentrations by IDOT Region, de minimis (mg/kg)



**Figure 815. Boxplot of RSL zinc concentrations by IDOT Region, de minimis (mg/kg)**



# Zinc Concentration by District, page 1 of 2

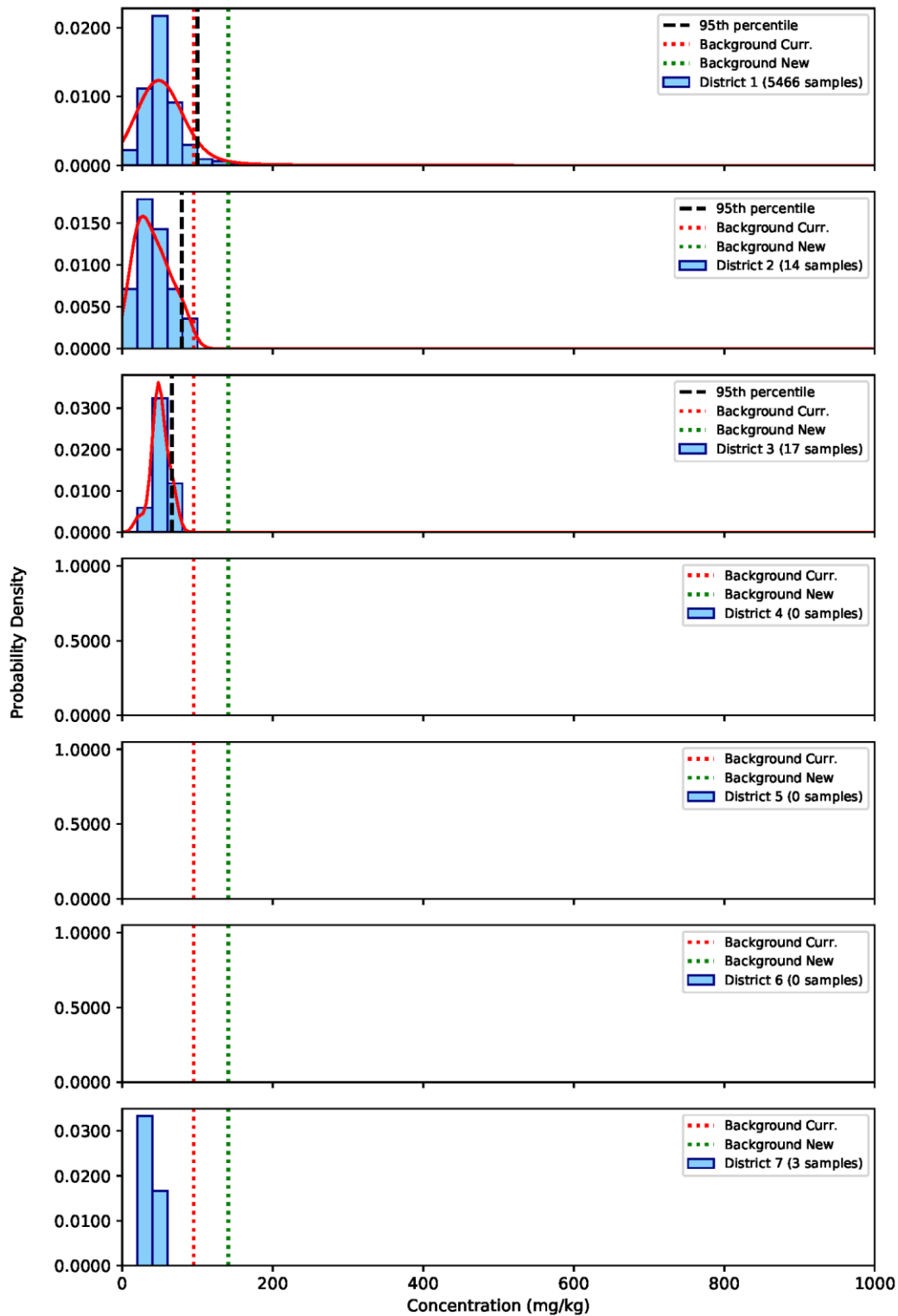


Figure 816. Histogram of RSL zinc concentrations by IDOT District, de minimis (mg/kg), part 1

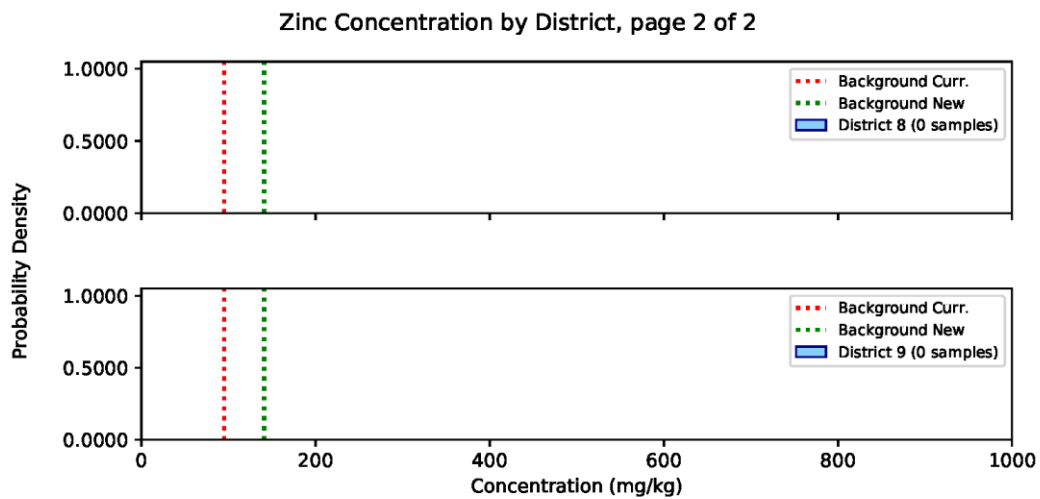


Figure 817. Histogram of RSL zinc concentrations by IDOT District, de minimis (mg/kg), part 2

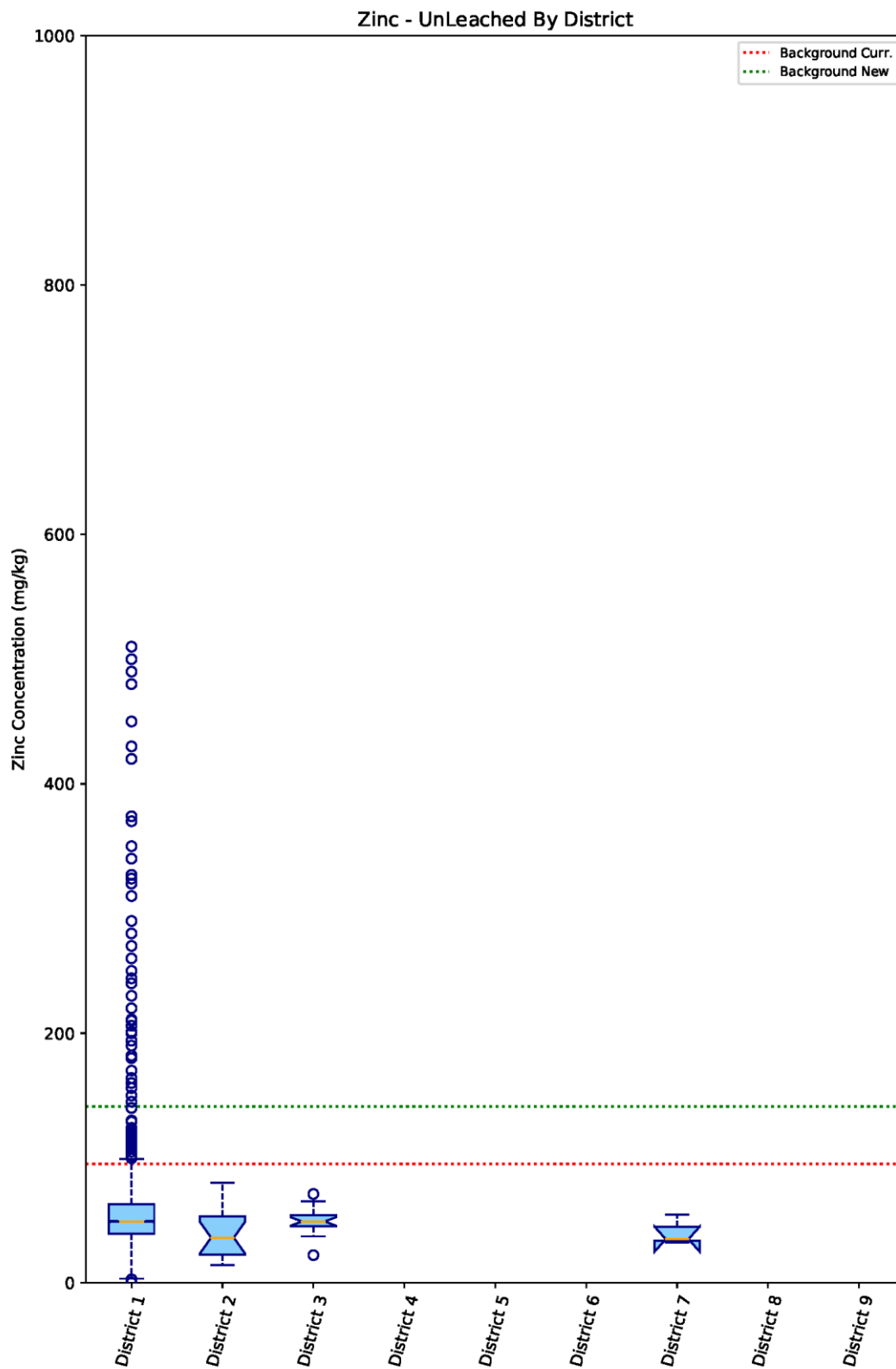


Figure 818. Boxplot of RSL zinc concentrations by IDOT District, de minimis (mg/kg)

# Zinc Concentration by County, page 1 of 2

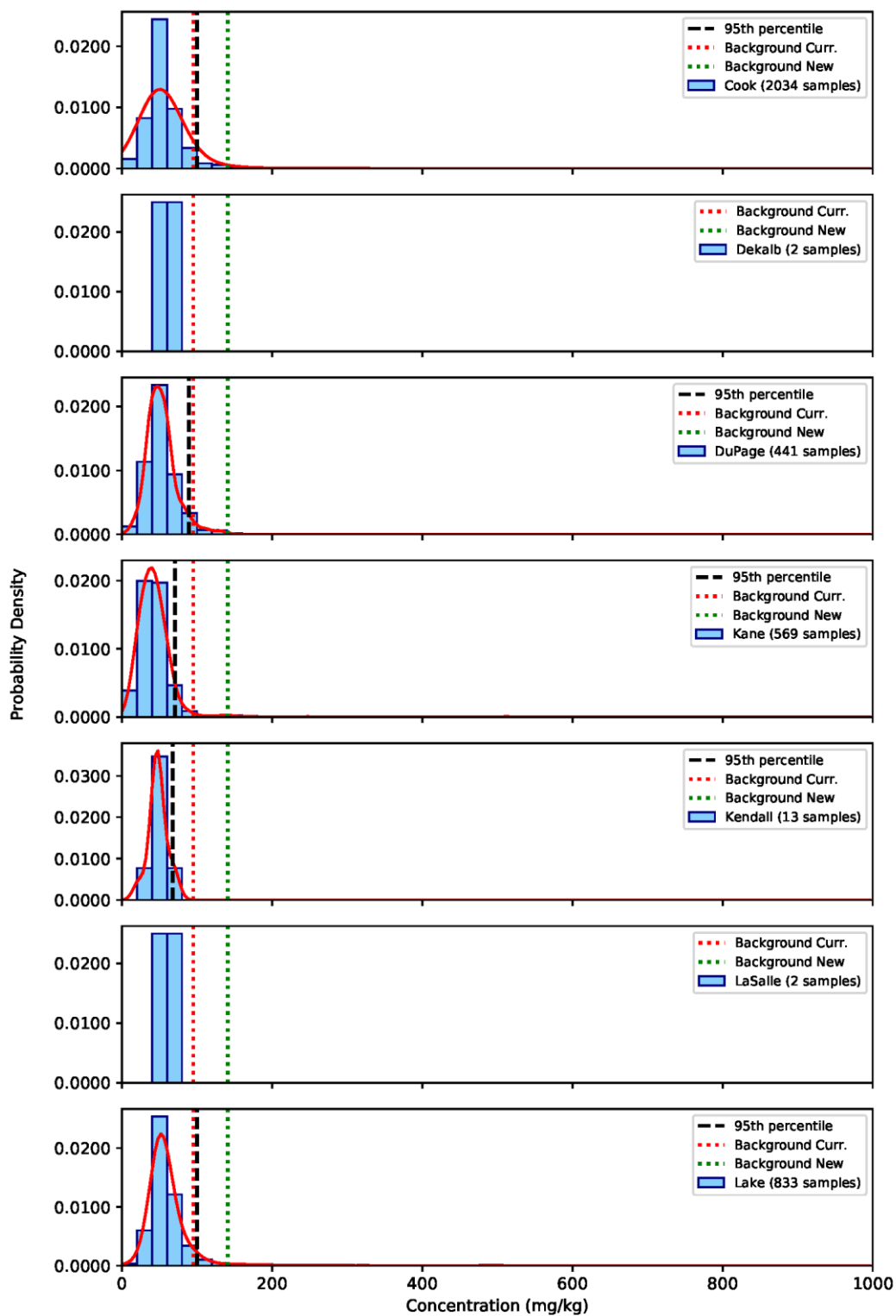


Figure 819. Histogram of RSL zinc concentrations by Illinois county, de minimis (mg/kg), part 1

# Zinc Concentration by County, page 2 of 2

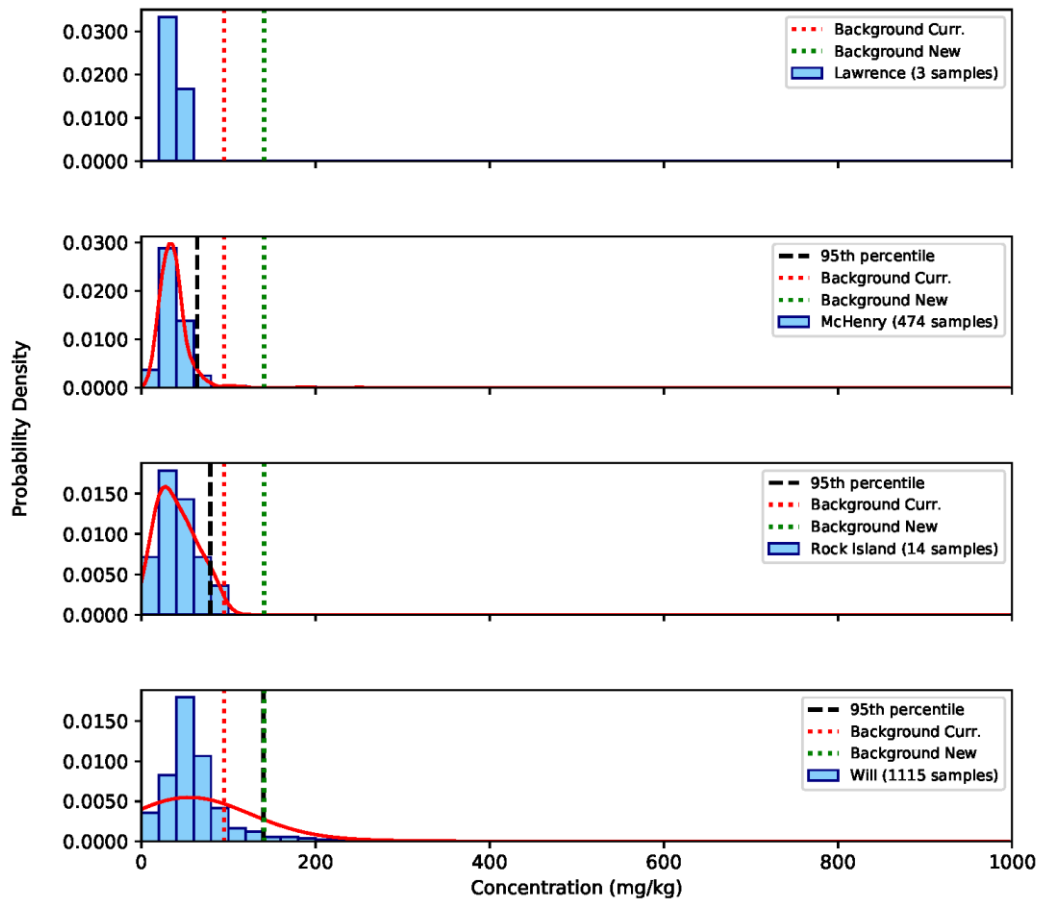


Figure 820. Histogram of RSL zinc concentrations by Illinois county, de minimis (mg/kg), part 2

Zinc Concentration for 95th Percentile by County: deMinimis Sites

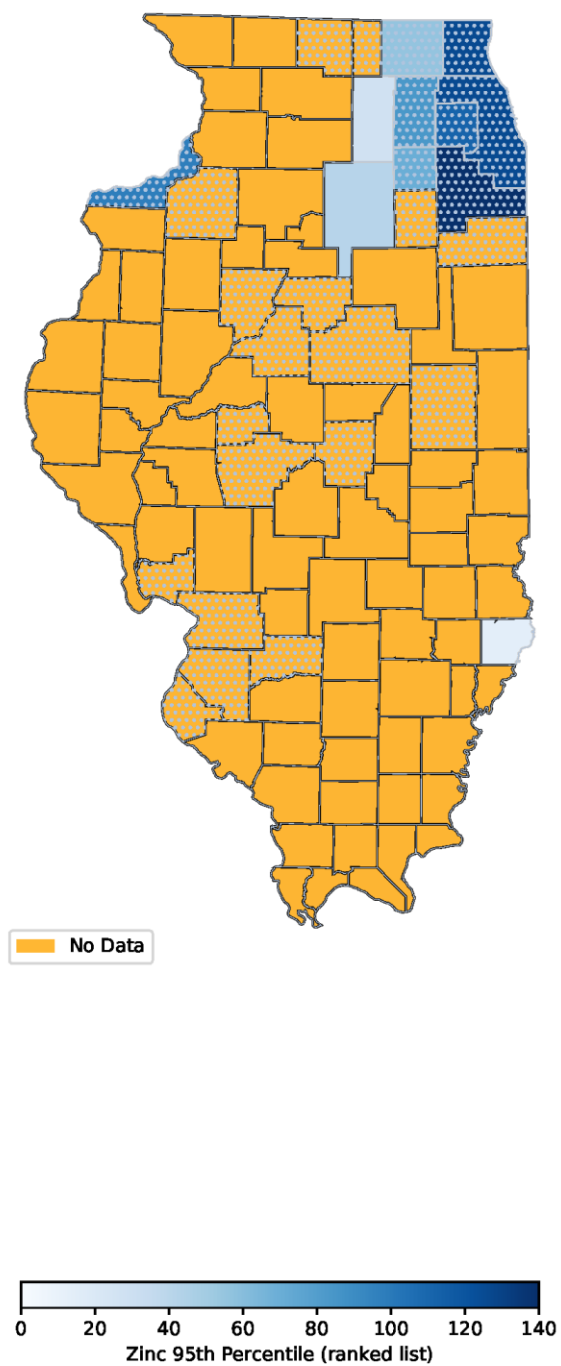


Figure 821. Map of RSL zinc 95th percentile concentration by Illinois county, de minimis (mg/kg)

Number of Zinc Samples by County: deMinimis Sites

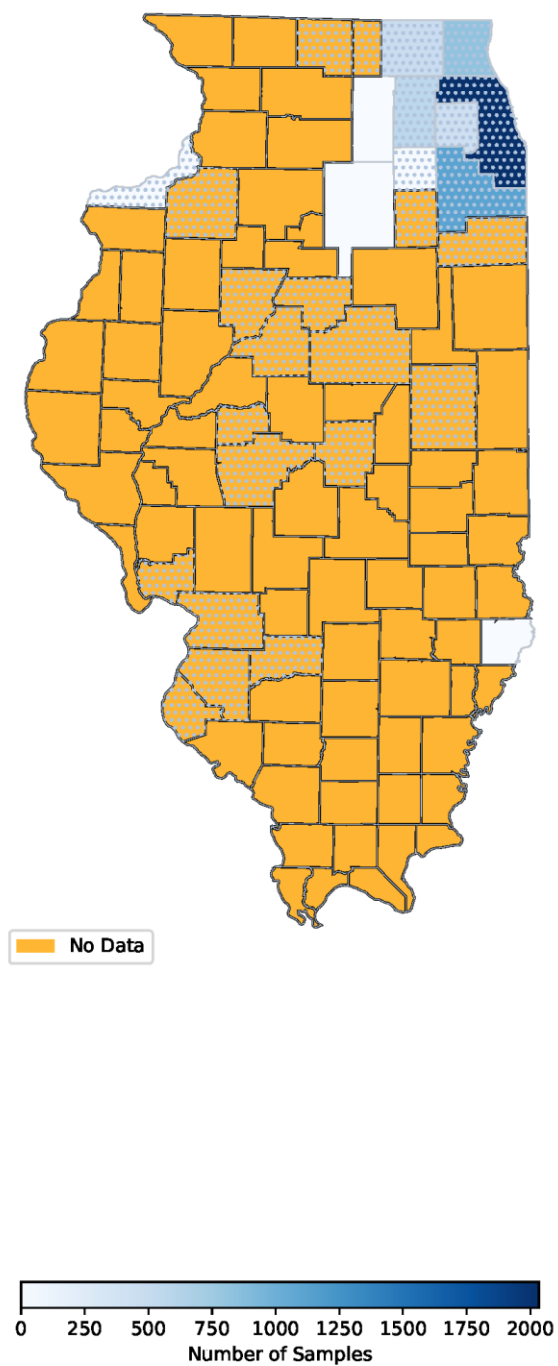


Figure 822. Map of RSL zinc sample quantity by Illinois county, de minimis (mg/kg)



**I** ILLINOIS