NOAA COASTAL MAPPING PROGRAM
PROJECT COMPLETION REPORT

PROJECT NY1604-CM-T

Erie Canal, Cross Lake to Montezuma Marsh, New York

Introduction

Coastal Mapping Program (CMP) Project NY1604-CM-T provides highly accurate digital shoreline data for the Erie Canal extending from Cross Lake to Montezuma Marsh, New York, including portions of the Cayuga and Seneca Canal and Seneca River. The Geographic Cell (GC) may be used in support of the NOAA Nautical Charting Program (NCP) as well as geographic information systems (GIS) for coastal zone management applications.

Project Design

Project NY1604-CM-T was designed in response to a request from the Marine Chart Division (MCD) of NOAA's Office of Coast Survey for GIS data to support an initiative to develop new charts for the New York State Canal System. Imagery for a portion of CMP Project NY1406-CM-T, previously planned to meet the MCD request, was found to be unsuitable for mapping due to extremely high water levels, and therefore additional imagery was obtained. Available source data deemed adequate for successful completion of this project included color orthomosaic image tiles from the New York State Digital Ortho-imagery Program (NYSDOP). Orthoimages were collected and processed from April to May 2015 and have a spatial resolution of 0.3 meters.

Field Operations

Routine CMP field operations did not apply for this project based on the origin of the project imagery, which was obtained from external sources.

Georeferencing

Refining the georeferencing of the orthoimage tiles used for compilation of this project was not necessary since image positioning compared favorably spatially with sources used to verify its accuracy, and since an acceptable accuracy assessment was provided for the imagery. The source photography was aerotriangulated and the orthoimage accuracy analysis resulted in a reported circular error of 1.2 meters based on a 95% confidence level (CE95). For further information on the collection and processing of the orthoimagery, including horizontal accuracy, refer to the NYSDOP metadata on file within the RSD Electronic Data Library. All positional data for this project is referenced to the North American Datum of 1983 (NAD 83).

Compilation

The compilation of cartographic feature data for this project was accomplished by a member of the Applications Branch (AB) of the Remote Sensing Division (RSD) in January 2017. Using Esri's ArcGIS desktop GIS software (ver. 10.3.1), digital feature data was compiled in shapefile format from the orthoimagery. Feature attribution was assigned in compliance with the Coastal

Cartographic Object Attribute Source Table (C-COAST), which provides the definition and attribution scheme for the full range of cartographic features pertinent to the CMP. Selected features were further modified with additional descriptive information to refine general classification.

Spatial data accuracies for Project NY1604-CM-T were determined according to standard Federal Geographic Data Committee (FGDC) practices. Cartographic features were compiled to meet a horizontal accuracy of 2.4 meters at the 95% confidence level. This predicted accuracy of compiled, well-defined points was derived by doubling the CE95 reported by the image provider. See the Image Sources Table (Appendix 1) for further information on images used. Due to seasonal meteorological conditions and manipulation of water control structures, the water levels of canals, lakes and rivers in the project area may vary, but the waterways are considered to be non-tidal.

Quality Control / Final Review

Quality control tasks were conducted during all phases of project completion by a senior member of AB. The final QC review was completed in January 2017. The review process consisted of an assessment of the identification and attribution of cartographic features according to image analysis and criteria defined in C-COAST. The quality control process concluded with an inspection of topological connectivity within the GC using ArcGIS (ver. 10.3.1). All project data was evaluated for compliance to CMP requirements.

Comparisons of the largest scale NOAA nautical chart with source imagery and compiled project data resulted in creation of the Chart Evaluation File (CEF). The following nautical chart was used in the comparison process:

- 14786 New York State Canal System Book Chart, 1:20,000 scale, 14th Ed., Oct. 2008

End Products and Deliverables

The following specifies the location and identification of end products generated during the completion of this project:

Remote Sensing Division Electronic Data Library

- NYSDOP orthoimage metadata
- Project Completion Report (PCR)
- GC11286 in shapefile format
- Chart Evaluation File in shapefile format

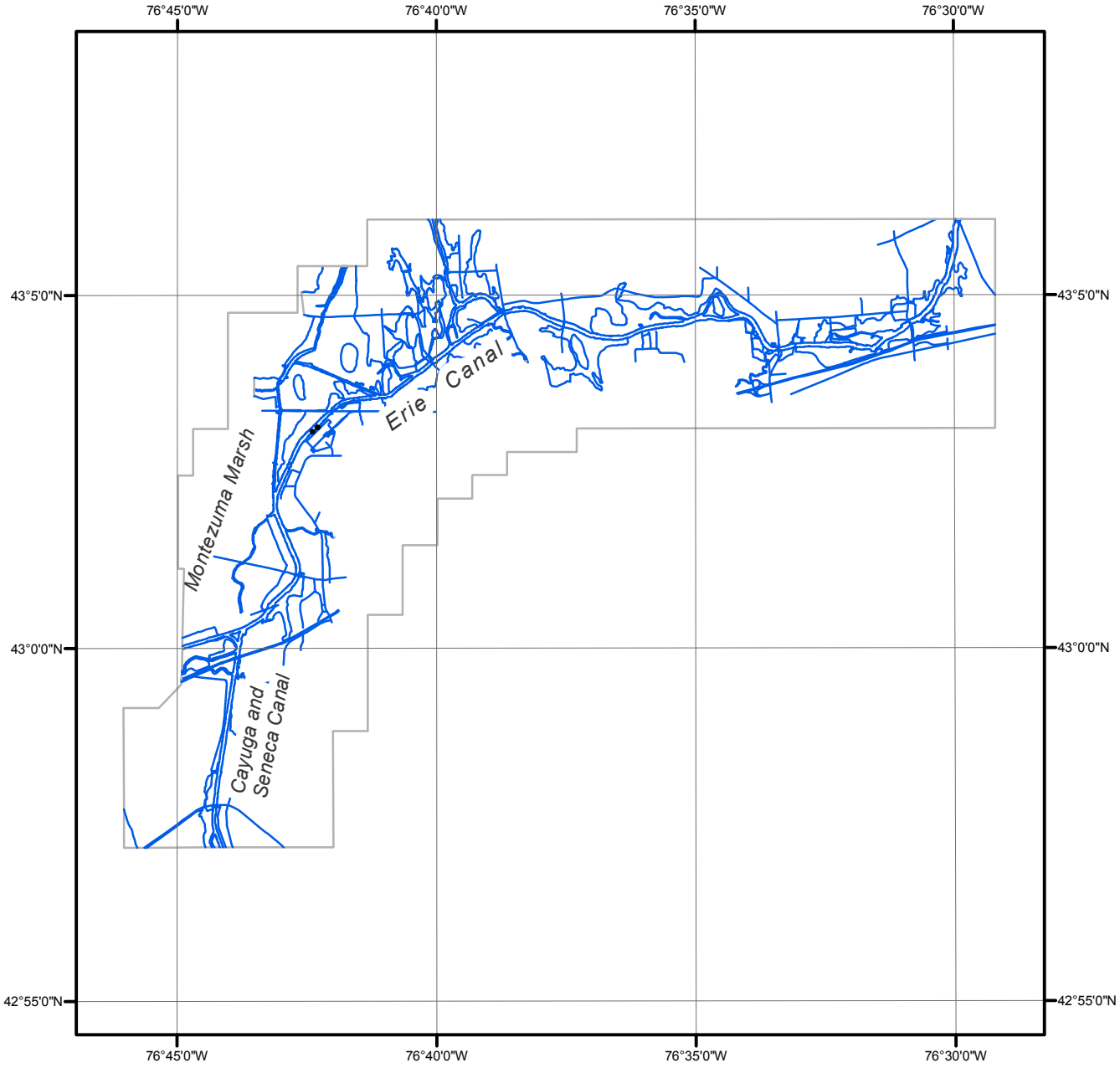
NOAA Shoreline Data Explorer

- GC11286 in shapefile format
- Metadata file for GC11286
- Digital copy of the PCR

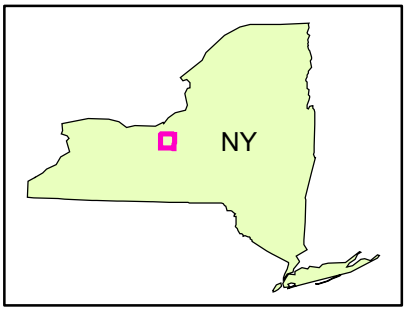
End of Report

ERIE CANAL, CROSS LAKE TO MONTEZUMA MARSH

NEW YORK



Overview



NY1604-CM-T

GC11286

Appendix 1
Image Sources Table

Image#	Source (Tile) ID	GSD	Date	Accuracy
1	c_07921128_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
2	c_07951128_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
3	c_07981128_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
4	c_08011128_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
5	c_08041128_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
6	c_08071128_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
7	c_08101128_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
8	c_08131128_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
9	c_08161128_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
10	c_08191128_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
11	c_08221128_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
12	c_08251128_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
13	c_08281128_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
14	c_08311128_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
15	c_08341128_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
16	c_08371128_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
17	c_08401128_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
18	c_08431128_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
19	c_07921126_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
20	c_07951126_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
21	c_07981126_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
22	c_08011126_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
23	c_08041126_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
24	c_08071126_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
25	c_08101126_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
26	c_08131126_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
27	c_08161126_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
28	c_08191126_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
29	c_08221126_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
30	c_08251126_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
31	c_08281126_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
32	c_08311126_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
33	c_08341126_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
34	c_08371126_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
35	c_08401126_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
36	c_08431126_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
37	c_07861124_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
38	c_07891124_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
39	c_07921124_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m

40	c_07951124_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
41	c_07981124_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
42	c_08011124_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
43	c_08041124_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
44	c_08071124_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
45	c_08101124_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
46	c_08131124_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
47	c_08161124_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
48	c_08191124_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
49	c_08221124_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
50	c_08251124_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
51	c_08281124_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
52	c_08311124_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
53	c_08341124_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
54	c_08371124_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
55	c_08401124_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
56	c_08431124_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
57	c_07861122_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
58	c_07891122_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
59	c_07921122_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
60	c_07951122_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
61	c_07981122_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
62	c_08011122_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
63	c_08041122_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
64	c_08071122_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
65	c_08101122_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
66	c_08131122_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
67	c_08161122_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
68	c_08191122_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
69	c_08221122_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
70	c_08251122_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
71	c_08281122_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
72	c_08311122_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
73	c_08341122_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
74	c_08371122_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
75	c_08401122_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
76	c_08431122_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
77	c_07891120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
78	c_07921120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
79	c_07951120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
80	c_07981120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
81	c_08011120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
82	c_08041120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m

83	c_08071120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
84	c_08101120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
85	c_08131120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
86	c_08161120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
87	c_08191120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
88	c_08221120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
89	c_08251120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
90	c_08281120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
91	c_08311120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
92	c_08341120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
93	c_08371120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
94	c_08401120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
95	c_08431120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
96	c_07891118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
97	c_07921118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
98	c_07951118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
99	c_07981118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
100	c_08011118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
101	c_08041118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
102	c_08071118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
103	c_08101118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
104	c_08131118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
105	c_08161118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
106	c_08191118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
107	c_08221118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
108	c_08251118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
109	c_08281118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
110	c_08311118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
111	c_08341118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
112	c_08371118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
113	c_08401118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
114	c_08431118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
115	c_07891116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
116	c_07921116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
117	c_07951116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
118	c_07981116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
119	c_08011116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
120	c_08041116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
121	c_08071116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
122	c_08101116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
123	c_08131116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
124	c_08161116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
125	c_08191116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m

126	c_08221116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
127	c_08251116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
128	c_08281116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
129	c_08311116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
130	c_08341116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
131	c_08371116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
132	c_08401116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
133	c_08431116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
134	c_07861114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
135	c_07891114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
136	c_07921114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
137	c_07951114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
138	c_07981114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
139	c_08011114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
140	c_08041114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
141	c_08071114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
142	c_08101114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
143	c_08131114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
144	c_08161114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
145	c_08191114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
146	c_08221114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
147	c_08251114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
148	c_08281114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
149	c_08311114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
150	c_08341114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
151	c_08371114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
152	c_08401114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
153	c_08431114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
154	c_07861112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
155	c_07891112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
156	c_07921112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
157	c_07951112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
158	c_07981112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
159	c_08011112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
160	c_08041112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
161	c_08071112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
162	c_08101112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
163	c_08131112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
164	c_08161112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
165	c_08191112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
166	c_08221112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
167	c_08251112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
168	c_08281112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m

169	c_08311112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
170	c_08341112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
171	c_08371112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
172	c_08401112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
173	c_08431112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
174	c_07861110_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
175	c_07891110_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
176	c_07921110_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
177	c_07951110_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
178	c_07981110_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
179	c_08011110_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
180	c_08041110_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
181	c_08071110_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
182	c_07861108_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
183	c_07891108_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
184	c_07921108_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
185	c_07951108_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
186	c_07981108_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
187	c_08011108_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
188	c_07861106_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
189	c_07891106_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
190	c_07921106_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
191	c_07951106_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
192	c_07981106_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
193	c_07861104_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
194	c_07891104_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
195	c_07921104_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
196	c_07951104_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
197	c_07861102_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
198	c_07891102_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
199	c_07921102_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
200	c_07951102_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
201	c_07891100_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
202	c_07921100_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
203	c_07891098_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
204	c_07921098_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
205	c_07861096_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
206	c_07891096_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
207	c_07921096_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
208	c_07861094_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
209	c_07891094_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
210	c_07861092_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
211	c_07891092_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m

212	c_07861090_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
213	c_07891090_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
214	c_07831088_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
215	c_07861088_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
216	c_07891088_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
217	c_07831086_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
218	c_07861086_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
219	c_07891086_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
220	c_07831084_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
221	c_07861084_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
222	c_07831082_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
223	c_07861082_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
224	c_07801080_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
225	c_07831080_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
226	c_07861080_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
227	c_07801078_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
228	c_07831078_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
229	c_07861078_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
230	c_07771076_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
231	c_07801076_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
232	c_07831076_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
233	c_07861076_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
234	c_07861100_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
235	c_07561098_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
236	c_07591098_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
237	c_07621098_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
238	c_07651098_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
239	c_07681098_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
240	c_07711098_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
241	c_07741098_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
242	c_07771098_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
243	c_07801098_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
244	c_07831098_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
245	c_07861098_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
246	c_07561096_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
247	c_07591096_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
248	c_07621096_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
249	c_07651096_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
250	c_07681096_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
251	c_07711096_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
252	c_07741096_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
253	c_07771096_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
254	c_07801096_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m

255	c_07831096_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
256	c_07561094_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
257	c_07591094_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
258	c_07621094_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
259	c_07651094_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
260	c_07681094_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
261	c_07711094_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
262	c_07741094_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
263	c_07771094_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
264	c_07801094_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
265	c_07831094_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
266	c_07561092_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
267	c_07591092_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
268	c_07621092_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
269	c_07651092_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
270	c_07681092_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
271	c_07711092_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
272	c_07741092_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
273	c_07771092_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
274	c_07801092_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
275	c_07831092_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
276	c_07591090_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
277	c_07621090_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
278	c_07651090_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
279	c_07681090_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
280	c_07711090_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
281	c_07741090_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
282	c_07771090_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
283	c_07801090_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
284	c_07831090_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
285	c_07591088_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
286	c_07621088_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
287	c_07651088_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
288	c_07681088_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
289	c_07711088_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
290	c_07741088_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
291	c_07771088_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
292	c_07801088_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
293	c_07621086_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
294	c_07651086_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
295	c_07681086_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
296	c_07711086_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
297	c_07741086_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m

298	c_07771086_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
299	c_07801086_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
300	c_07651084_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
301	c_07681084_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
302	c_07711084_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
303	c_07741084_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
304	c_07771084_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
305	c_07801084_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
306	c_07681082_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
307	c_07711082_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
308	c_07741082_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
309	c_07771082_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
310	c_07801082_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
311	c_07681080_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
312	c_07711080_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
313	c_07741080_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
314	c_07771080_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
315	c_07711078_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
316	c_07741078_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
317	c_07771078_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
318	c_07711076_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
319	c_07741076_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
320	c_07531098_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
321	c_07531096_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
322	c_07531094_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
323	c_07801120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
324	c_07831120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
325	c_07861120_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
326	c_07801118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
327	c_07831118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
328	c_07861118_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
329	c_07801116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
330	c_07831116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
331	c_07861116_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
332	c_07801114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
333	c_07831114_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
334	c_07801112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
335	c_07831112_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
336	c_07771110_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
337	c_07801110_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
338	c_07831110_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
339	c_07771108_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
340	c_07801108_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m

341	c_07831108_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
342	c_07591106_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
343	c_07621106_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
344	c_07651106_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
345	c_07681106_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
346	c_07711106_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
347	c_07741106_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
348	c_07771106_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
349	c_07801106_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
350	c_07831106_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
351	c_07531104_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
352	c_07561104_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
353	c_07591104_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
354	c_07621104_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
355	c_07651104_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
356	c_07681104_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
357	c_07711104_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
358	c_07741104_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
359	c_07771104_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
360	c_07801104_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
361	c_07831104_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
362	c_07531102_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
363	c_07561102_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
364	c_07591102_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
365	c_07621102_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
366	c_07651102_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
367	c_07681102_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
368	c_07711102_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
369	c_07741102_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
370	c_07771102_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
371	c_07801102_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
372	c_07831102_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
373	c_07531100_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
374	c_07561100_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
375	c_07591100_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
376	c_07621100_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
377	c_07651100_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
378	c_07681100_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
379	c_07711100_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
380	c_07741100_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
381	c_07771100_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m
382	c_07801100_12_15100_4bd_2015	0.3 m	4/15/2015 – 5/9/2015	1.2 m