

List of Tables

Table 2-1.	EO 13514 Goals: Status Summary for Fiscal Year (FY) 2017.....	2-5
Table 2-2.	BNL Pollution Prevention, Waste Reduction, and Recycling Programs, 2017.....	2-13
Table 2-3.	BNL Recycled Program Summary, 2002 – 2017.....	2-15
Table 2-4.	Summary of BNL 2017 Environmental Restoration Activities.....	2-20
Table 2-5.	Summary of BNL 2017 Sampling Program Sorted by Media.....	2-25
Table 3-1.	Federal, State, and Local Environmental Statutes and Regulations Applicable to BNL.....	3-2
Table 3-2.	BNL Environmental Permits.....	3-6
Table 3-3.	Analytical Results for Wastewater Discharges to Sewage Treatment Plant Outfall 001.....	3-12
Table 3-4.	Analytical Results for Wastewater Discharges to Outfalls 002, 005 - 008, and 010.....	3-16
Table 3-5.	Potable Water Wells and Potable Distribution System: Analytical Results (Maximum Concentration, Minimum pH Value).....	3-18
Table 3-6.	Potable Water Wells: Analytical Results for Principal Organic Compounds, Synthetic Organic Chemicals, Pesticides, and Micro-Extractables.....	3-20
Table 3-7.	Applicability of EPCRA to BNL.....	3-22
Table 3-8.	Summary of Chemical and Oil Spill Reports.....	3-24
Table 3-9.	Existing Agreements and Enforcement Actions Issued to BNL, with Status.....	3-26
Table 3-10.	Summary of Other Environmental Occurrence Reports, 2017.....	
Table 4-1.	Airborne Radionuclide Releases from Monitored Facilities.....	4-3
Table 4-2.	Gross Activity in Facility Air Particulate Filters.....	4-4
Table 4-3.	Gross Activity Detected in Ambient Air Monitoring Particulate Filters.....	4-4
Table 4-4.	Ambient Airborne Tritium Measurements in 2017.....	4-8
Table 4-5.	Central Steam Facility Fuel Use and Emissions (2006 – 2017).....	4-9
Table 5-1.	Tritium and Gross Activity in Water at the BNL Sewage Treatment Plant (STP).....	5-4
Table 5-2.	Radiological Analysis of Samples from BNL On-Site Recharge Basins.....	5-8
Table 5-3.	Water Quality Data for BNL On-Site Recharge Basin Samples.....	5-9
Table 5-4.	Metals Analysis of Water Samples from BNL On-Site Recharge Basins.....	5-10
Table 5-5.	Radiological Results for Surface Water Samples from the Peconic and Carmans Rivers.....	5-13
Table 5-6.	Water Quality Data for Surface Water Samples Collected along the Peconic and Carmans Rivers.....	5-14
Table 5-7.	Metals Analysis in Surface Water Samples Collected along the Peconic and Carmans Rivers.....	5-15
Table 6-1.	New York State Threatened, Endangered, Exploitably Vulnerable, and Species of Special Concern at BNL.....	6-2
Table 6-2.	Radiological Analyses of Deer Tissue (2017).....	6-11
Table 6-3.	Radiological Analysis of Batch Samples From Deer Cull Released for Donation (2017).....	6-14
Table 6-4.	Radiological Analysis of Grassy Vegetation and Associated Soils.....	6-16
Table 6-5.	Metals Analysis of Basin Sediments (2017).....	6-18
Table 6-6.	Precipitation Monitoring (Mercury).....	6-20
Table 7-1.	BNL Groundwater Remediation Systems Treatment Summary for 1997 through 2017.....	7-8
Table 8-1.	On-Site Direct Ambient Radiation Measurements for 2017.....	8-5
Table 8-2.	Off-Site Direct Radiation Measurements for 2017.....	8-7
Table 8-3.	Facility Area Monitoring, 2017.....	8-7
Table 8-4.	Neutron Dose Report for 2017.....	8-10
Table 8-5.	Maximally Exposed Off-site Individual Effective Dose Equivalent From Facilities or Routine Processes, 2017.....	8-11
Table 8-6.	BNL Site Dose Summary, 2017.....	8-14
Table 9.1.	Summary of Detections in Trip and Field Blank Samples.....	9-7
Table 9.2.	Summary Results of 2017 DOCAP Audits.....	9-10

List of Figures

Figure 1-1.	Major Scientific Facilities at BNL.....	1-6
Figure 1-2.	Major Support and Service Facilities at BNL.....	1-7
Figure 1-3.	BNL Groundwater Flow Map.	1-9
Figure 1-4.	BNL Wind Rose (2017).	1-11
Figure 1-5.	BNL 2017 Monthly Mean Temperature versus 68-Year Monthly Average.	1-12
Figure 1-6.	BNL 2017 Annual Mean Temperature Trend (68 Years).	1-12
Figure 1-7.	BNL 2017 Monthly Precipitation versus 68-Year Monthly Average.	1-12
Figure 1-8.	BNL 2017 Annual Precipitation Trend (68 Years).	1-12
Figure 2-1a.	Hazardous Waste Generation from Routine Operations, 1998 – 2017.	2-10
Figure 2-1b.	Mixed Waste Generation from Routine Operations, 1997 – 2017.	2-10
Figure 2-1c.	Radioactive Waste Generation from Routine Operations, 1998 – 2017.	2-10
Figure 2-1d.	Hazardous Waste Generation from ER and Nonroutine Operations, 1998 – 2017.	2-11
Figure 2-1e.	Mixed Waste Generation from ER and Nonroutine Operations, 1998 – 2017.	2-11
Figure 2-1f.	Radioactive Waste Generation from ER and Nonroutine Operations, 1998 – 2017.	2-11
Figure 2-2.	Annual Potable Water Use, 1999 – 2017.	2-16
Figure 2-3.	BNL Building Energy Performance for 2017.	2-19
Figure 3-1.	Maximum Concentrations of Copper Discharged from the BNL Sewage Treatment Plant, 2012 – 2017.	3-13
Figure 3-2.	Maximum Concentrations of Iron Discharged from the BNL Sewage Treatment Plant, 2012 – 2017.	3-13
Figure 3-3.	Maximum Concentrations of Lead Discharged from the BNL Sewage Treatment Plant, 2012 – 2017.	3-14
Figure 3-4.	Maximum Concentrations of Mercury Discharged from the BNL Sewage Treatment Plant, 2012 – 2017.	3-14
Figure 3-5.	Maximum Concentrations of Nickel Discharged from the BNL Sewage Treatment Plant, 2012 – 2017.	3-15
Figure 3-6.	Maximum Concentrations of Silver Discharged from the BNL Sewage Treatment Plant, 2012 – 2017.	3-15
Figure 3-7.	Maximum Concentrations of Zinc Discharged from the BNL Sewage Treatment Plant, 2012 – 2017.	3-15
Figure 4-1.	Air Emission Release Points Subject to Monitoring.....	4-2
Figure 4-2.	BNL On-Site Ambient Air Monitoring Stations.....	4-5
Figure 4-3.	Airborne Gross Beta Concentration Trend Recorded at Station P7.	4-7
Figure 5-1.	Sampling Stations for Surface Water and Fish	5-3
Figure 5-2.	Schematic of BNL's Sewage Treatment Plant (Recharge Basin Discharge).....	5-6
Figure 5-3.	BNL Recharge Basin/Outfall Locations.	5-7
Figure 5-4.	Schematic of Potable Water Use and Flow at BNL.....	5-12
Figure 6-1.	Deer Sample Locations, 2012 – 2017.	6-8
Figure 6-2.	Comparison of Cs-137 Average Concentrations in Deer Meat, 2017.	6-10
Figure 6-3.	Ten-Year Trend of Cs-137 Concentrations in Deer Meat, 2017.	6-10
Figure 6-4.	Vegetation and Soil Sampling Locations.....	6-15

Figure 7-1. Groundwater Flow and Water Table Elevation (December 2017) with Supply and Remediation Wells Shown.	7-4
Figure 7-2. Extent of VOC Plumes.	7-5
Figure 7-3. Extent of Radionuclide Plumes.	7-6
Figure 7-4. Locations of BNL Groundwater Remediation Systems.	7-9
Figure 8-1. On-Site TLD Locations.	8-3
Figure 8-2. Off-Site TLD Locations.	8-4
Figure 8-3. On-Site Neutron TLD Locations.	8-8
Figure 9-1. Flow of Environmental Monitoring QA/QC Program Elements.	9-2
Figure 9-2. Summary of Scores in the Radiological Proficiency Evaluation Programs.	9-8
Figure 9-3. Summary of Scores in the Nonradiological Proficiency Evaluation Programs.	9-8