

APPENDIX E

Percentage of In-Control Duplicate Pairs for Field Collocated Samples

Monitoring Program	Media	Analyte	Percent of Pairs within Control Limit ^(a)
Livermore Site and Site 300 Ambient Air	Air Filters	Beryllium	88%
Livermore Site and Site 300 Ambient Air	Air Filters	Uranium-235	100%
Livermore Site and Site 300 Ambient Air	Air Filters	Uranium-235/238	100%
Livermore Site and Site 300 Ambient Air	Air Filters	Uranium-238	100%
Livermore Site and Site 300 Ambient Air	Air Filters	Gross alpha	75%
Livermore Site and Site 300 Ambient Air	Air Filters	Gross beta	79%
Air Tritium	Silica Gel	Tritium	61%
Livermore Site, Livermore Valley and Site 300 Ambient Radiation	Dosimeters	Radiation dose, average	100%
Livermore Site, Livermore Valley and Site 300 Ambient Radiation	Dosimeters	Radiation dose, 90-days	100%
Groundwater from Off-site Wells and Springs	Groundwater	Arsenic	85%
Groundwater from Off-site Wells and Springs	Groundwater	Barium	94%
Groundwater from Off-site Wells and Springs	Groundwater	Bicarbonate Alk (as CaCO ₃)	100%
Groundwater from Off-site Wells and Springs	Groundwater	Boron	100%
Groundwater from Off-site Wells and Springs	Groundwater	Bromide	100%
Groundwater from Off-site Wells and Springs	Groundwater	Bromodichloro methane	100%
Groundwater from Off-site Wells and Springs	Groundwater	Bromoform	100%
Groundwater from Off-site Wells and Springs	Groundwater	Calcium	100%
Groundwater from Off-site Wells and Springs	Groundwater	Chloride	100%
Groundwater from Off-site Wells and Springs	Groundwater	Chloroform	0%
Groundwater from Off-site Wells and Springs	Groundwater	Copper	100%
Groundwater from Off-site Wells and Springs	Groundwater	Dibromochloro methane	100%
Groundwater from Off-site Wells and Springs	Groundwater	Fluoride	100%
Groundwater from Off-site Wells and Springs	Groundwater	Gross alpha	75%
Groundwater from Off-site Wells and Springs	Groundwater	Gross beta	73%
Groundwater from Off-site Wells and Springs	Groundwater	Magnesium	100%
Groundwater from Off-site Wells and Springs	Groundwater	Manganese	0%
Groundwater from Off-site Wells and Springs	Groundwater	Nickel	100%
Groundwater from Off-site Wells and Springs	Groundwater	Nitrate (as N)	100%
Groundwater from Off-site Wells and Springs	Groundwater	Nitrate (as NO ₃)	92%

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Groundwater from Off-site Wells and Springs	Groundwater	Ortho-Phosphate	100%
Groundwater from Off-site Wells and Springs	Groundwater	Perchlorate	100%
Groundwater from Off-site Wells and Springs	Groundwater	pH	100%
Groundwater from Off-site Wells and Springs	Groundwater	Potassium	100%
Groundwater from Off-site Wells and Springs	Groundwater	Selenium	80%
Groundwater from Off-site Wells and Springs	Groundwater	Sodium	89%
Groundwater from Off-site Wells and Springs	Groundwater	Specific Conductance	100%
Groundwater from Off-site Wells and Springs	Groundwater	Sulfate	100%
Groundwater from Off-site Wells and Springs	Groundwater	Total Alkalinity (as CaCO ₃)	100%
Groundwater from Off-site Wells and Springs	Groundwater	Total coliform	0%
Groundwater from Off-site Wells and Springs	Groundwater	Total Hardness (as CaCO ₃)	100%
Groundwater from Off-site Wells and Springs	Groundwater	Total Phosphorus (as PO ₄)	100%
Groundwater from Off-site Wells and Springs	Groundwater	Total dissolved solids (TDS)	100%
Groundwater from Off-site Wells and Springs	Groundwater	Trichlorotrifluoroethane	100%
Groundwater from Off-site Wells and Springs	Groundwater	Tritium	100%
Groundwater from Off-site Wells and Springs	Groundwater	Turbidity	0%
Groundwater from Off-site Wells and Springs	Groundwater	Uranium-233/234	100%
Groundwater from Off-site Wells and Springs	Groundwater	Uranium 235 and 236	100%
Groundwater from Off-site Wells and Springs	Groundwater	Uranium-238	75%
Groundwater from Off-site Wells and Springs	Groundwater	Vanadium	100%
Groundwater from Off-site Wells and Springs	Groundwater	Zinc	100%
Pre-construction Soil	Soil	Acetone	33%
Pre-construction Soil	Soil	Actinium-228	45%
Pre-construction Soil	Soil	Antimony	100%
Pre-construction Soil	Soil	Arsenic	100%
Pre-construction Soil	Soil	Barium	83%
Pre-construction Soil	Soil	Beryllium	79%
Pre-construction Soil	Soil	Chromium	43%
Pre-construction Soil	Soil	Cobalt	90%
Pre-construction Soil	Soil	Copper	100%
Pre-construction Soil	Soil	Diesel Fuel	100%

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Pre-construction Soil	Soil	Gross beta	0%
Pre-construction Soil	Soil	Lead	61%
Pre-construction Soil	Soil	Mercury	46%
Pre-construction Soil	Soil	Molybdenum	78%
Pre-construction Soil	Soil	Nickel	83%
Pre-construction Soil	Soil	Nitrate (as N)	62%
Pre-construction Soil	Soil	Octachlorinated dibenzo-p-dioxin	75%
Pre-construction Soil	Soil	Oil	60%
Pre-construction Soil	Soil	Potassium-40	91
Pre-construction Soil	Soil	Radium-226	68
Pre-construction Soil	Soil	Selenium	100%
Pre-construction Soil	Soil	Solids, percent	100%
Pre-construction Soil	Soil	Thorium-228	57%
Pre-construction Soil	Soil	Uranium-234 (in activity)	68%
Pre-construction Soil	Soil	Uranium-234 and 233 (in activity)	83%
Pre-construction Soil	Soil	Vanadium	49%
Pre-construction Soil	Soil	Zinc	90%
Livermore Site, Livermore Valley and Site 300 Soil	Soil	Beryllium	100%
Livermore Site, Livermore Valley and Site 300 Soil	Soil	Cesium-137	50%
Livermore Site, Livermore Valley and Site 300 Soil	Soil	Plutonium-238	0%
Livermore Site, Livermore Valley and Site 300 Soil	Soil	Plutonium-239/240	100%
Livermore Site, Livermore Valley and Site 300 Soil	Soil	Potassium-40	100%
Livermore Site, Livermore Valley and Site 300 Soil	Soil	Radium-226	100%
Livermore Site, Livermore Valley and Site 300 Soil	Soil	Radium-228	100%
Livermore Site, Livermore Valley and Site 300 Soil	Soil	Thorium-228	100%
Livermore Site, Livermore Valley and Site 300 Soil	Soil	Uranium-235 (in activity)	50%
Livermore Site, Livermore Valley and Site 300 Soil	Soil	Uranium-238 (in activity)	100%

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Monitoring Program	Media	Analyte	Percent of Pairs within Control Limit ^(a)
Livermore Site, Livermore Valley and Site 300 Vegetation	Vegetation	Moisture by weight	100%
Livermore Site, Livermore Valley and Site 300 Vegetation	Vegetation	Tritium	67%
Livermore Site Storm Water Runoff	Storm Water	Ammonia nitrogen (as N)	100%
Livermore Site Storm Water Runoff	Storm Water	Gross beta	100%
Livermore Site Storm Water Runoff	Storm Water	Magnesium	100%
Livermore Site Storm Water Runoff	Storm Water	Total suspended solids	100%
Livermore Site Storm Water Runoff	Storm Water	Chemical oxygen demand	100%
Sanitary Sewer Discharge to Livermore WRD	Sewer Effluent	Aluminum	0%
Sanitary Sewer Discharge to Livermore WRD	Sewer Effluent	Gross beta	92%
Sanitary Sewer Discharge to Livermore WRD	Sewer Effluent	Tritium	75%
Sanitary Sewer Discharge to Livermore WRD	Sewer Effluent	Biochemical oxygen demand	100%
Sanitary Sewer Discharge to Livermore WRD	Sewer Effluent	Boron	100%
Sanitary Sewer Discharge to Livermore WRD	Sewer Effluent	Calcium	100%
Sanitary Sewer Discharge to Livermore WRD	Sewer Effluent	Chromium	0%
Sanitary Sewer Discharge to Livermore WRD	Sewer Effluent	Copper	100%
Sanitary Sewer Discharge to Livermore WRD	Sewer Effluent	Iron	100%
Sanitary Sewer Discharge to Livermore WRD	Sewer Effluent	Potassium	100%
Sanitary Sewer Discharge to Livermore WRD	Sewer Effluent	Settleable solids	0%
Sanitary Sewer Discharge to Livermore WRD	Sewer Effluent	Sodium	100%
Sanitary Sewer Discharge to Livermore WRD	Sewer Effluent	Total dissolved solids (TDS)	100%
Sanitary Sewer Discharge to Livermore WRD	Sewer Effluent	Volatile solids	100%
Sanitary Sewer Discharge to Livermore WRD	Sewer Effluent	Zinc	0%
Sanitary Sewer Discharge to Livermore WRD	Sewer Effluent	pH	100%
Sanitary Sewer Discharge to Livermore WRD	Sewer Effluent	Tritium	75%

(a) Control limit is set at 30-percent; an RPD (relative percent difference) > 30-percent is out of control. See Chapter 8, Section 8.2.3, for more information about RPDs. Data date June 29, 2022.