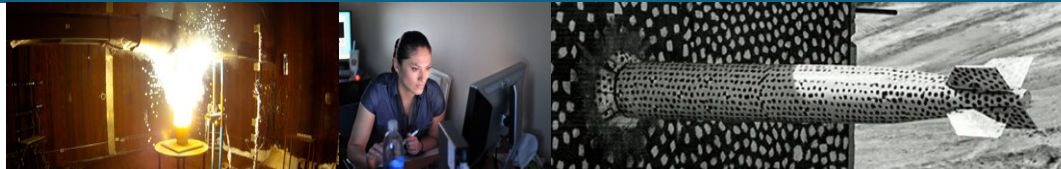




Sandia
National
Laboratories

Middle Rio Grande (MRG) Municipal Separate Storm Sewer System (MS4) Permit



*Stormwater Quality Program
Environmental Compliance and Monitoring
October 27, 2023*



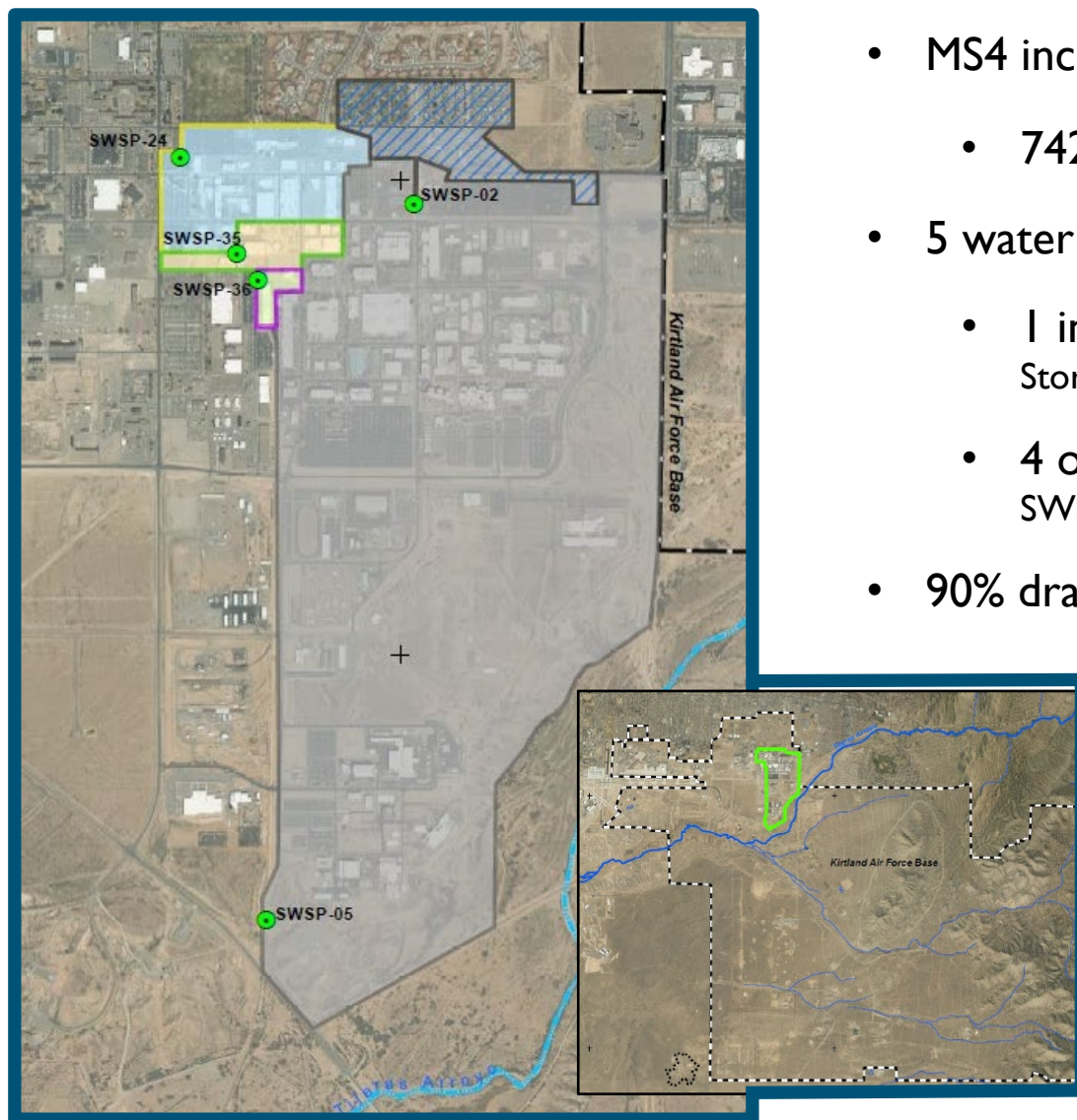
Sandia National Laboratories is a multission laboratory managed and operated by National Technology & Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International Inc., for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525.

SAND2023-10333PE



- Issued by the Environmental Protection Agency (EPA) in 2014
- Applies to all centralized storm drainage systems within the Albuquerque Urbanized Area
- Approximately 13 Permittees, including:
 - City of Albuquerque
 - Bernalillo County
 - Albuquerque Metropolitan Area Flood Control Authority (AMAFCA)
 - Kirtland Air Force Base
 - Sandia National Labs
- Permit requires development of Stormwater Management Program (SWMP), implementation of 7 control measure programs, water quality monitoring, and annual reporting
- All SNL submittals to EPA available to the public:
http://digitalrepository.unm.edu/snl_ms4/

SNL/NM MS4 Location and Water Quality Monitoring Stations



- MS4 includes all of TA-I, TA-II, and TA-IV
 - 742 acres (1.2 square miles)
- 5 water quality monitoring locations:
 - 1 inflow location
Stormwater Sampling Point (SWSP)-02
 - 4 outflow locations
SWSP-05, SWSP-24, SWSP-35, SWSP-36
- 90% drains south to Tijeras Arroyo
 - 10% drains west to KAFB



MS4 Stormwater Quality Monitoring to Date (2016-2022)

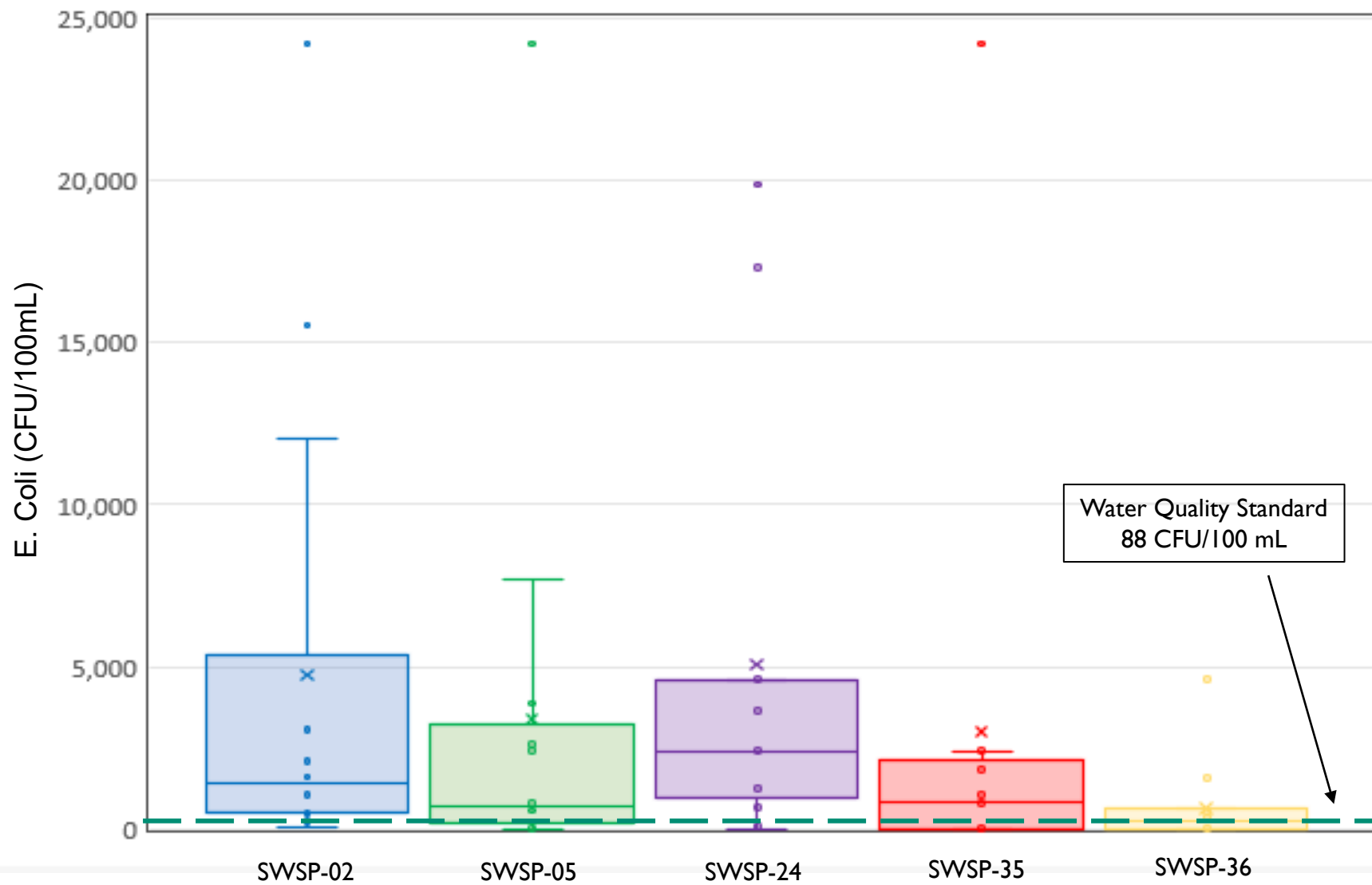


Constituent	# Samples	# Exceedances
pH	66	4
Temperature	66	0
Dissolved Oxygen	66	4
Specific Conductance	66	0
Gross Alpha	61	4
Biological Oxygen Demand	56	--
Chemical Oxygen Demand	58	--
Phosphorous (dissolved)	59	0
Phosphorous (total)	59	0
Oil and Grease	53	0
Total Kjeldahl Nitrogen	59	0
Nitrate plus Nitrite	55	0
Total Dissolved Solids	56	0
Total Suspended Solids	59	--
E. coli	68	46
PCBs	60	60

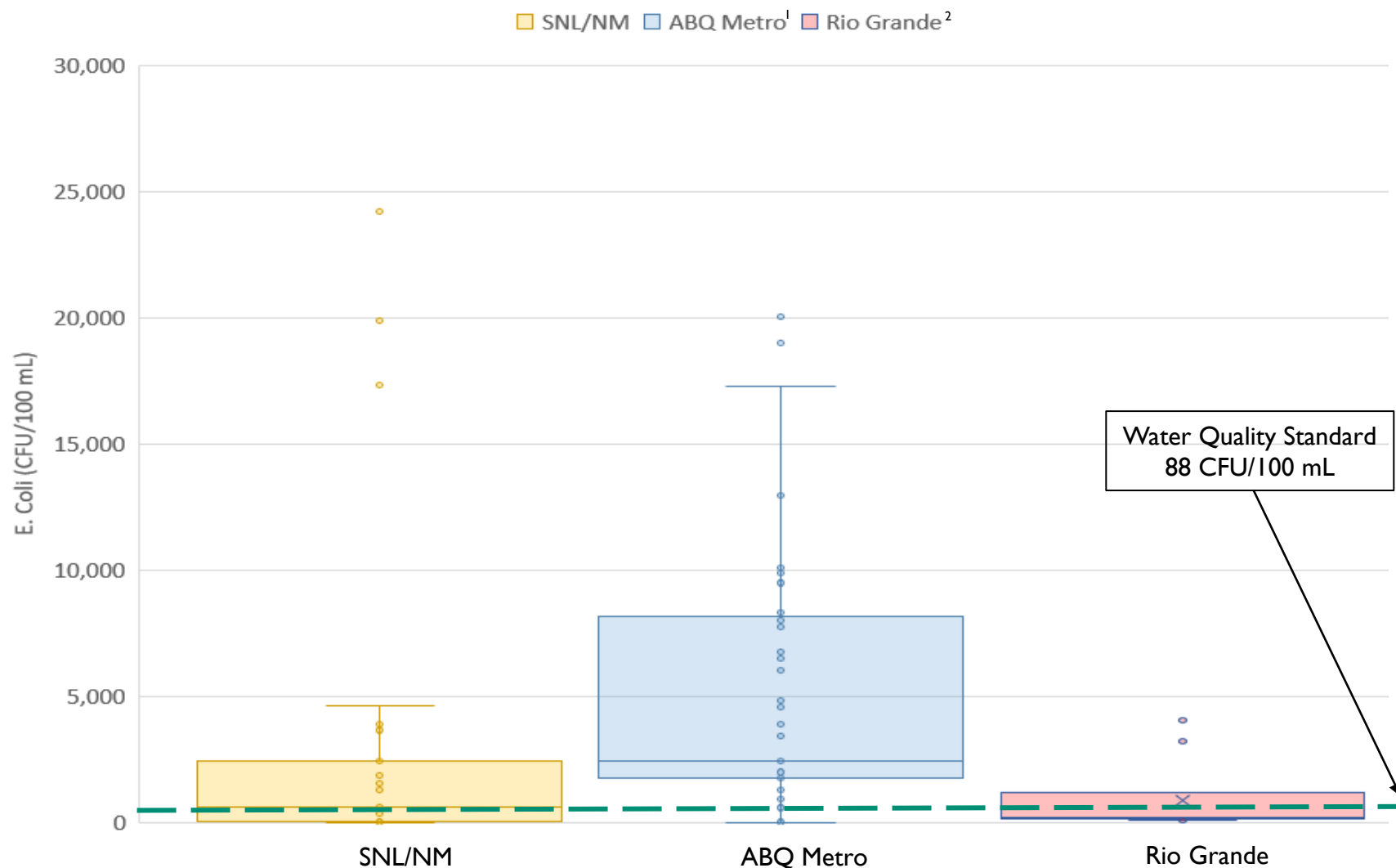
-- No Water Quality Standard established for this constituent.

MS4 E. Coli Samples by Location (2016-2023)

SWSP-02 SWSP-05 SWSP-24 SWSP-35 SWSP-36



E. Coli in the Albuquerque Metropolitan Area

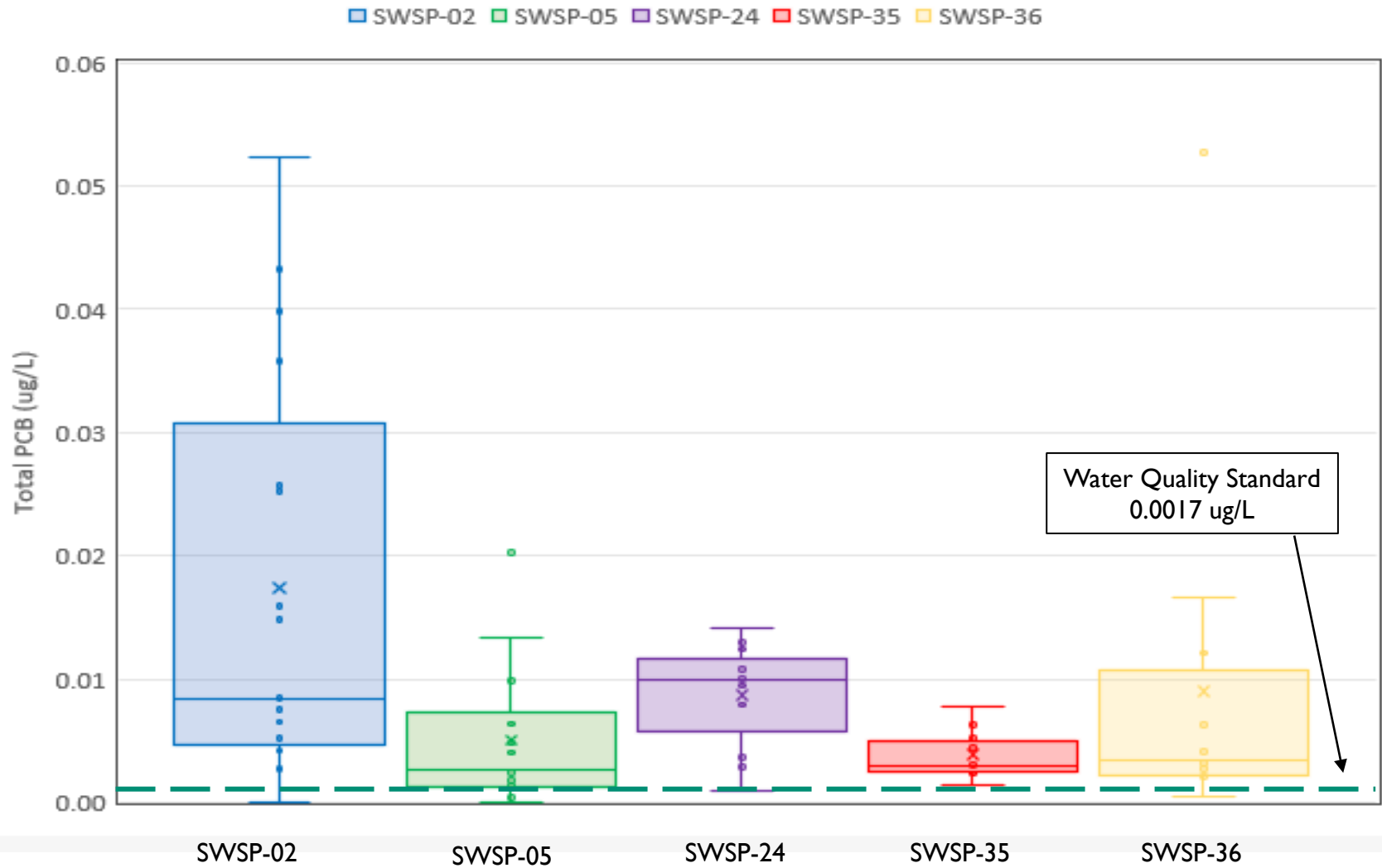


- 1 U.S. Geological Survey, Scientific Investigations Report 2015-5006. Summary of Urban Stormwater Quality in Albuquerque, NM 2003-2012. 2015.
- 2 https://www.usgs.gov/centers/nm-water/science/microbial-source-tracking-and-escherichia-coli-monitoring-rio-grande-south?qt-science_center_objects=0#qt-science_center_objects.



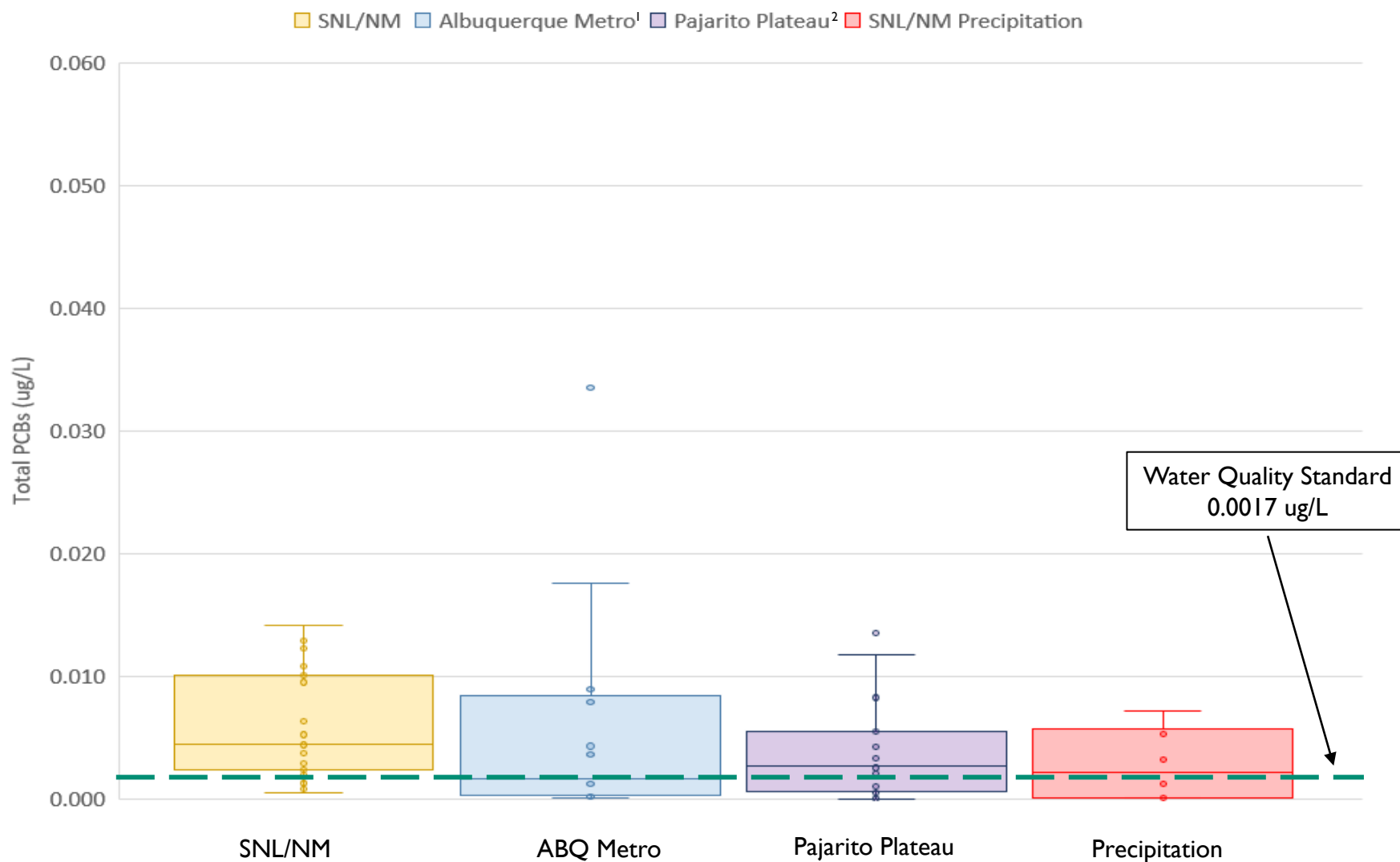
- Microbial Source Tracking Study (2020)
 - No E. coli from human sources
 - No E. coli from canine sources, low avian contribution
 - Suspect primary source is skunks, racoons, rodents
- Coordination with the Ecology Program reducing wildlife attractants and access to stormdrains
 - Wildlife proof trash cans
 - Barriers to stormdrains
- Coordination with Facilities group to reduce sediment load and standing water in stormdrains
 - Have seen significant improvements in the area of SWSP-02

PCB Samples by Location (2016-2023)





PCBs at Various NM Locations



1 U.S. Geological Survey, Scientific Investigations Report 2015-5006. Summary of Urban Stormwater Quality in Albuquerque, NM 2003-2012. 2015

2 Los Alamos National Laboratory. LA-UR-12-1081. PCBs in Precipitation and Stormwater Within the Upper Rio Grande Watershed. 2012

Activities to Improve Water Quality



- PCB source tracking and characterization (2017-ongoing)
 - Majority of PCBs entering MS4 at SWSP-02
 - PCBs strongly correlated to sediment load
 - Conducting further monitoring to identify potential source areas
 - Potential hot spot upgradient of SWSP-02
- Sediment Reduction Plan (2015-2020, ongoing)
 - Reduced sediment contribution to stormdrains by ~25%
 - New detention basins and conveyance channel configuration at SWSP-02
- More Information: http://digitalrepository.unm.edu/snl_ms4/

II EPA Audit and Site Inspection



- Audit of SWMP and Records, June 2022
 - EPA requested specific information from all 7 control programs + monitoring program
 - SNL provided 550+ pages of records and proof of compliance to EPA
 - No deficiencies identified
- Site Visit and Inspections of MS4 Facilities, May 2023
 - Inspectors from Region 6 Compliance Assurance and Enforcement Division and NMED Surface Water Quality Bureau
 - Inspected all outfalls and numerous facilities
 - No violations identified, several recommendations were made:
 - Cover waste and recycling bins at reapplication yard, fix silt fence around a stormdrain inlet at fleet services, provide better containment of landscaping materials stored on ground surface

EPA Inspection Report issued August 2023: “...EPA inspectors found no deficiencies in staff understanding and application of permit requirements, or in the condition of the facilities. SNL has a comprehensive stormwater program and appears to do an excellent job of implementing their stormwater permit...”

Questions?



More Information at the UNM Digital Repository

http://digitalrepository.unm.edu/snl_ms4/

