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2018 Storm Water Monitoring Year and Results for the Individual Permit

December 19, 2018

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Manager, Surface Water Monitoring
N3B Los Alamos



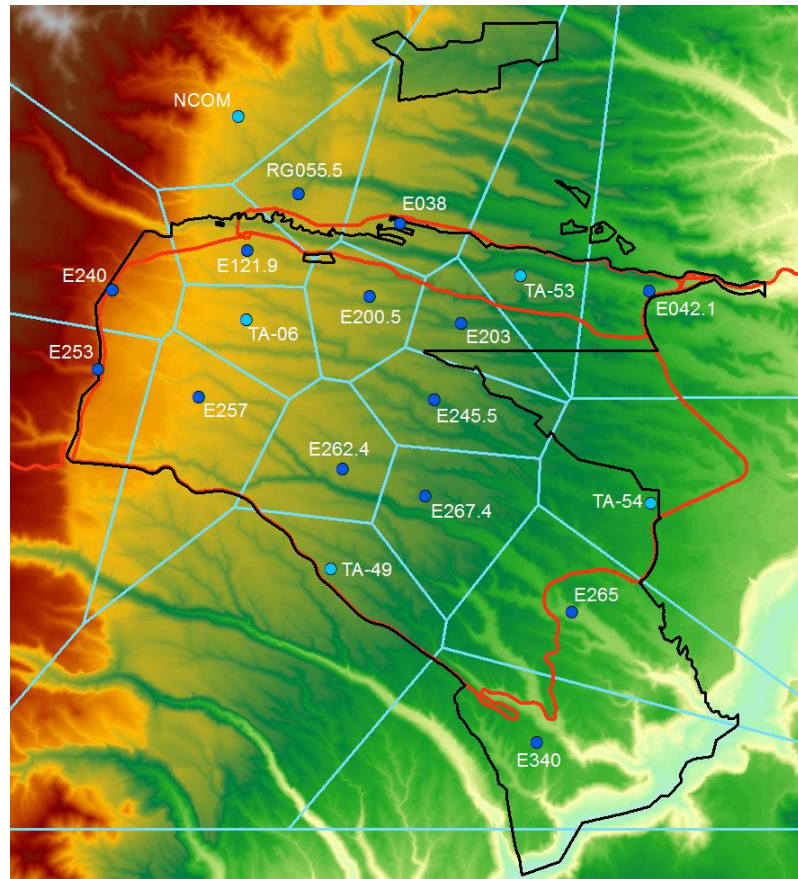
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Summer Precipitation Network

Legend

-  Met Towers
-  Extended Network
-  LANL Boundary
-  Major Roads
-  Summer Theissen Polygons
-  Elevation

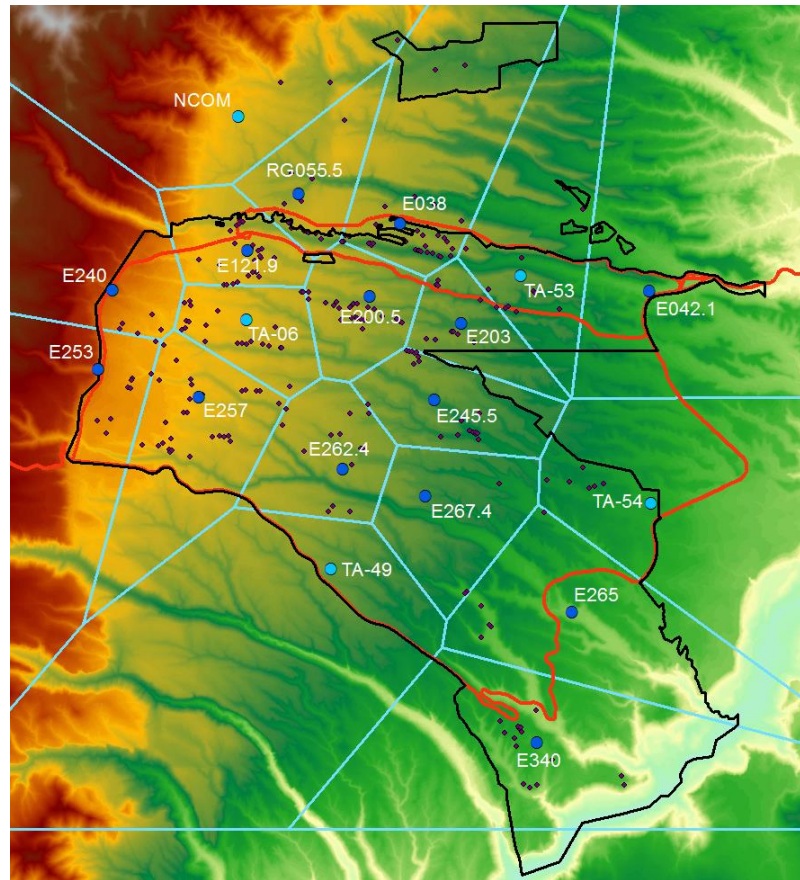




Summer Precipitation Network

Legend

-  Met Towers
-  Extended Network
-  LANL Boundary
-  Major Roads
-  Summer Theissen Polygons
-  Elevation
-  SMA Samplers





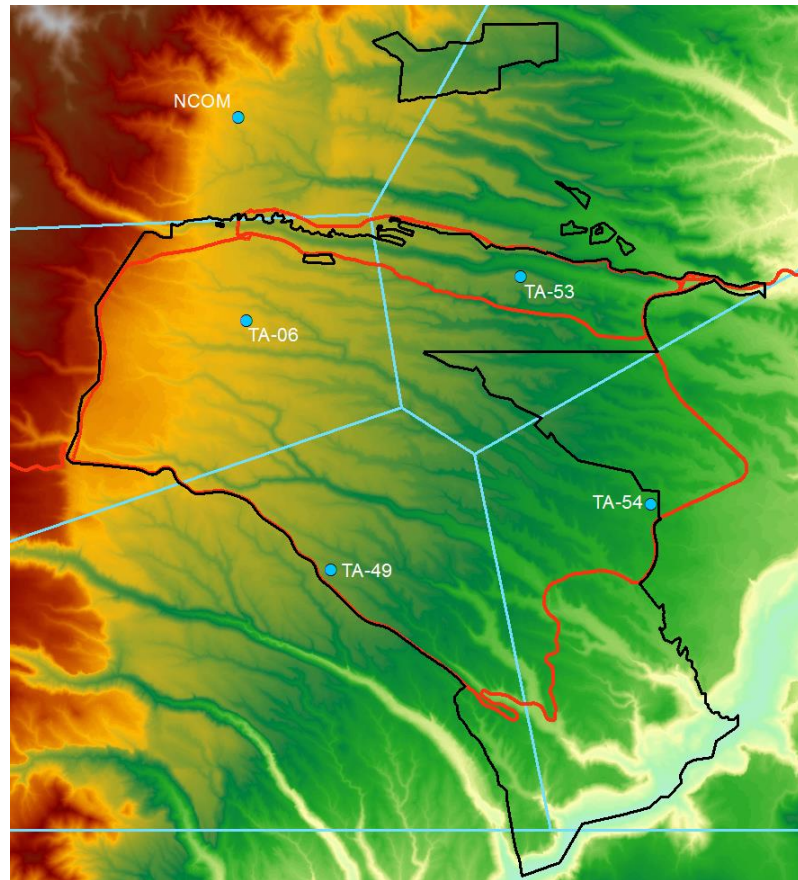
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Winter Precipitation Network

Legend

-  Met Towers
-  LANL Boundary
-  Major Roads
-  Winter Theissen Polygons
-  Elevation



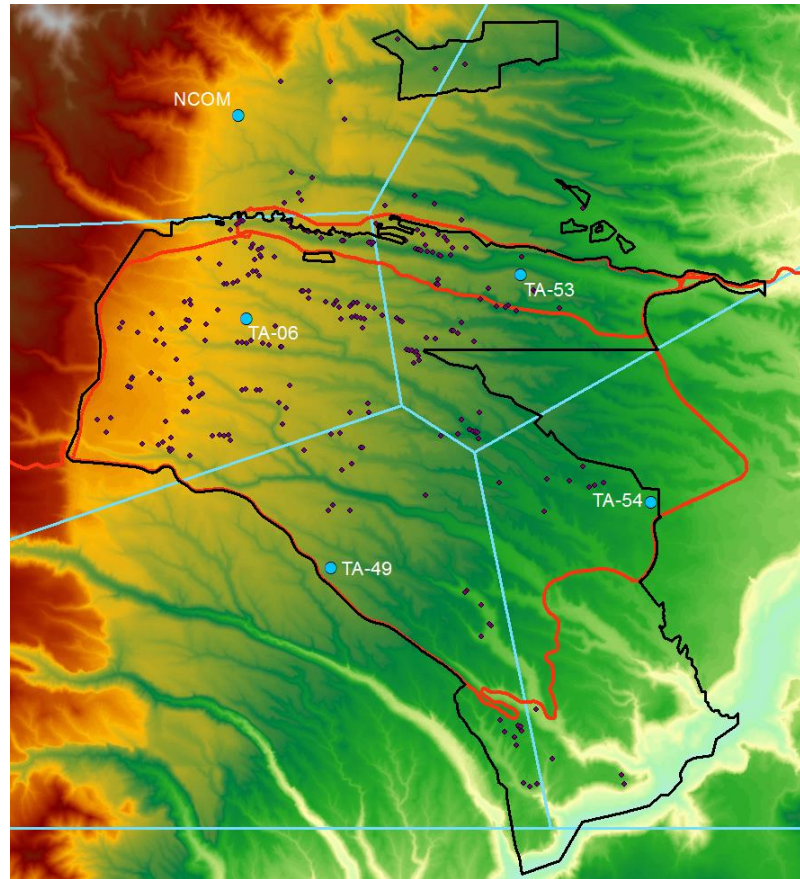
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Winter Precipitation Network

Legend

-  Met Towers
-  LANL
Boundary
-  Major Roads
-  Winter
Theissen
Polygons
-  Elevation
-  SMA
Samplers





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Remote Telemetry Units (RTUs)



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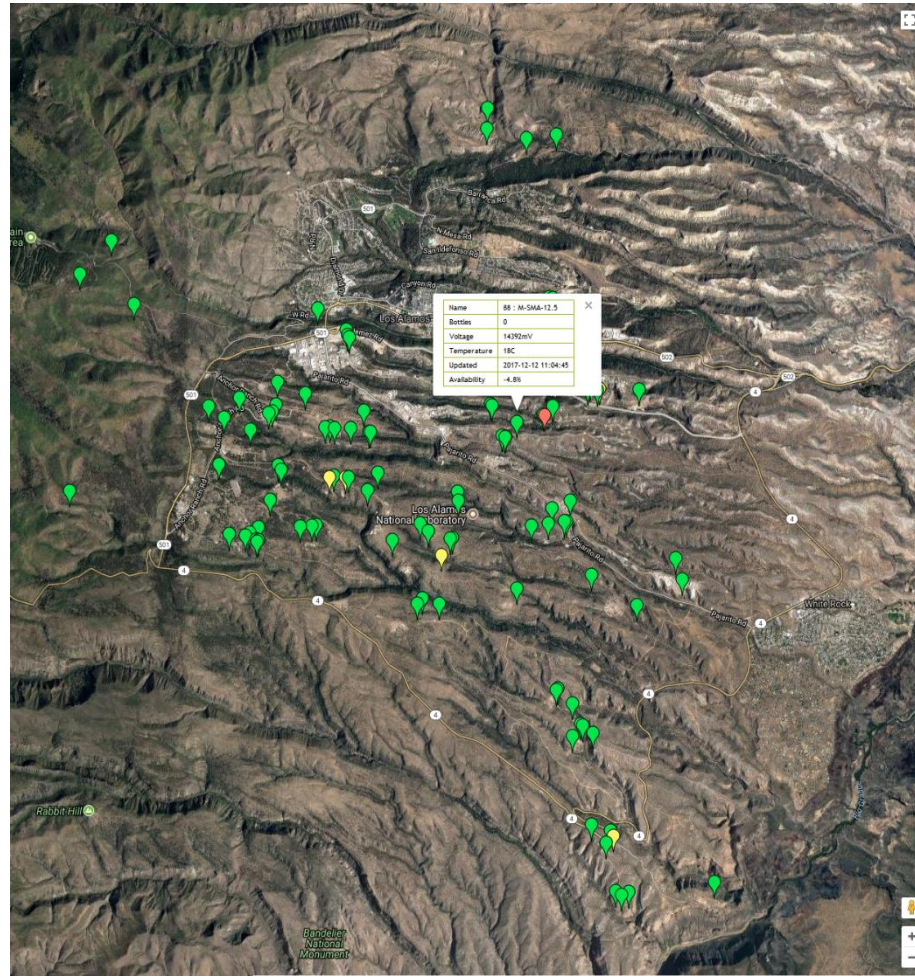


Currently

- 125 locations with monitoring alarms
- Mesh self healing network

Future

- 150 locations in 2018
- Rely on monitoring alarms for sample collection

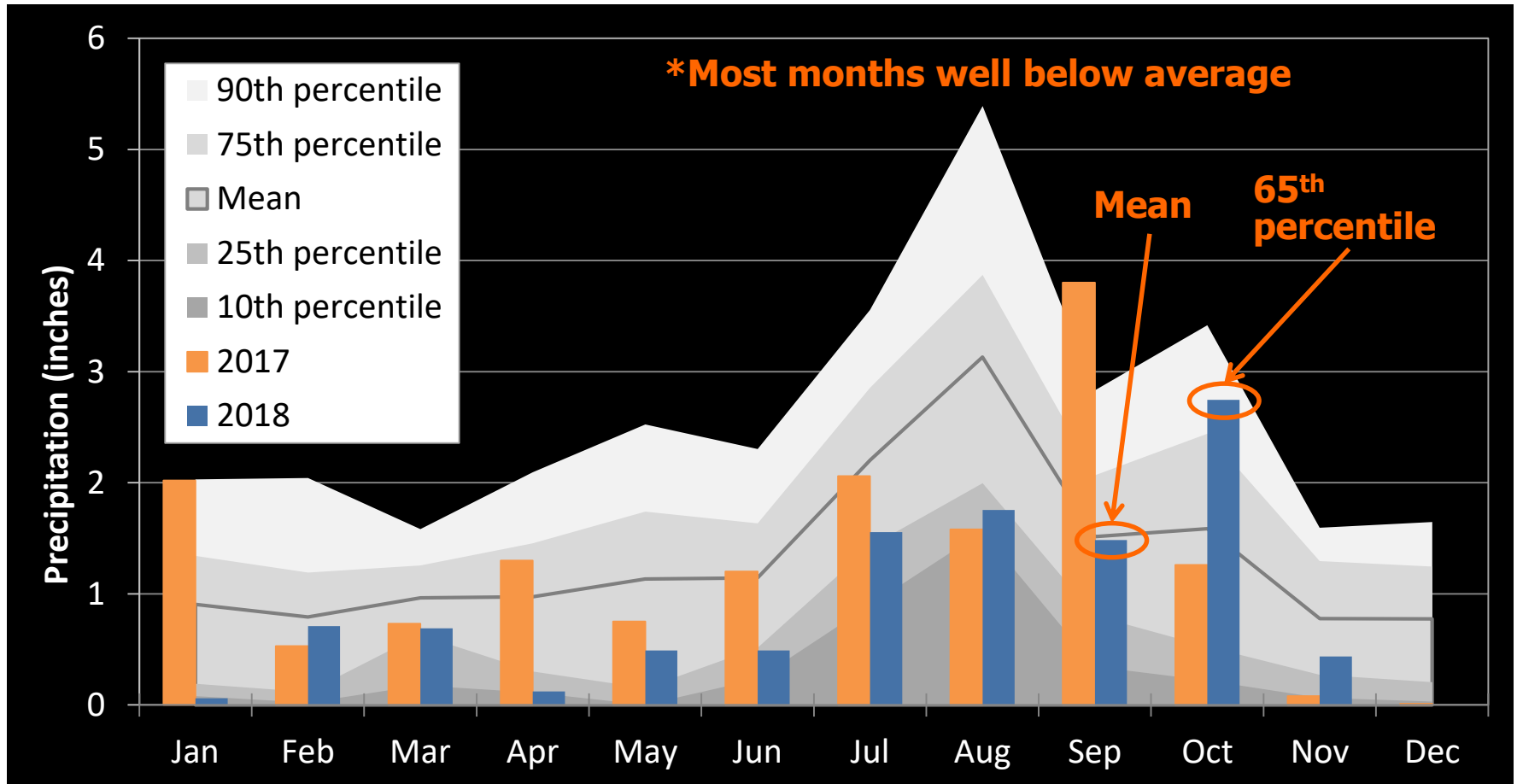


		State of Health	Cumulative Events
ID	Name	Bottles	Location
4		0	Latitude 0 Longitude 0
6		0	Latitude 0 Longitude 0
12		0	Latitude 0 Longitude 0
30		0	Latitude 0 Longitude 0
31		0	Latitude 0 Longitude 0
32	CDV-SMA-3	0	Latitude 35.847766 Longitude -106.320665
33	PJ-SMA-14.4	0	Latitude 35.83970826 Longitude -106.265013
34	CDV-SMA-4	0	Latitude 35.847971 Longitude -106.319726
35		0	Latitude 0 Longitude 0
36	LA-SMA-6.31	0	Latitude 35.847771 Longitude -106.277958
37		0	Latitude 0 Longitude 0
38		0	Latitude 0 Longitude 0
39		0	Latitude 0 Longitude 0
40		0	Latitude 0 Longitude 0
41		0	Latitude 0 Longitude 0
42	PJ-SMA-14	0	Latitude 35.843467 Longitude -106.264164
43		0	Latitude 0 Longitude 0
44		0	Latitude 0 Longitude 0



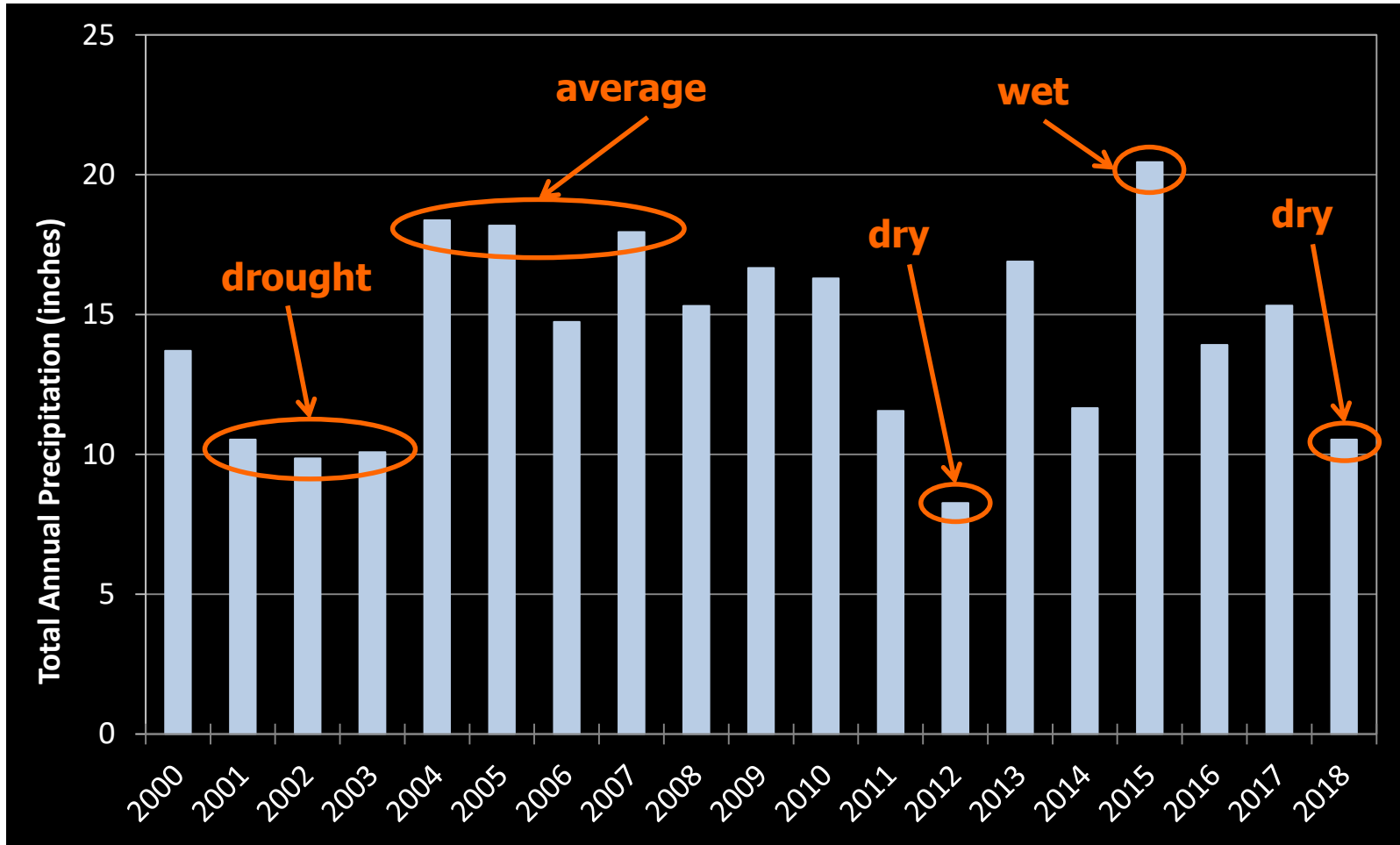


2018 Monitoring Year





2018 Compared to Past Years

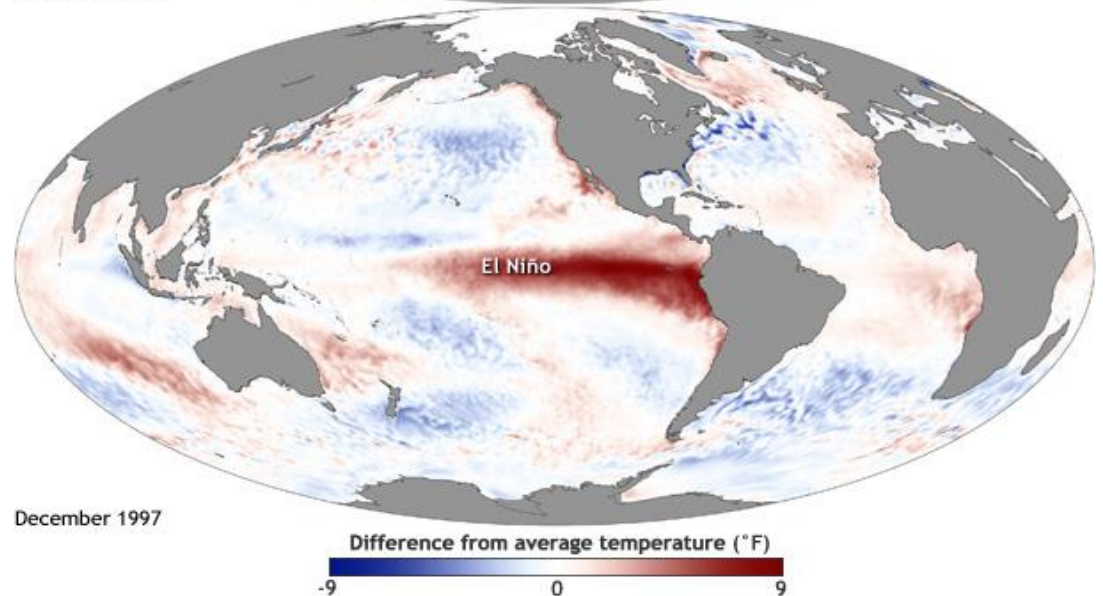
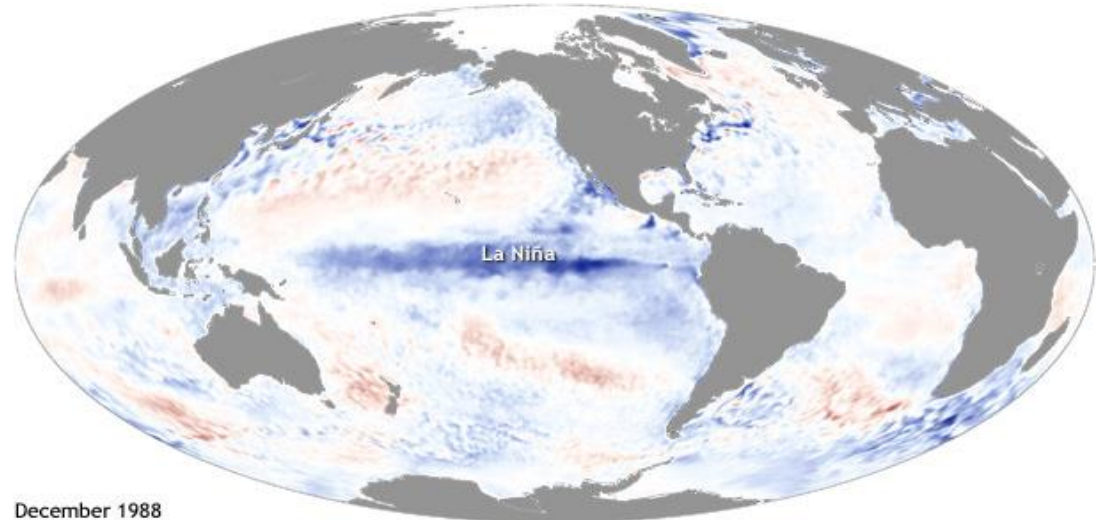




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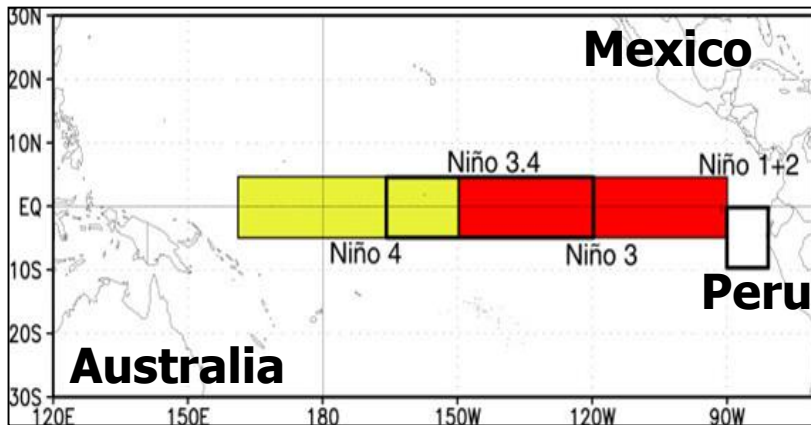
El Niño Southern Oscillation (ENSO)



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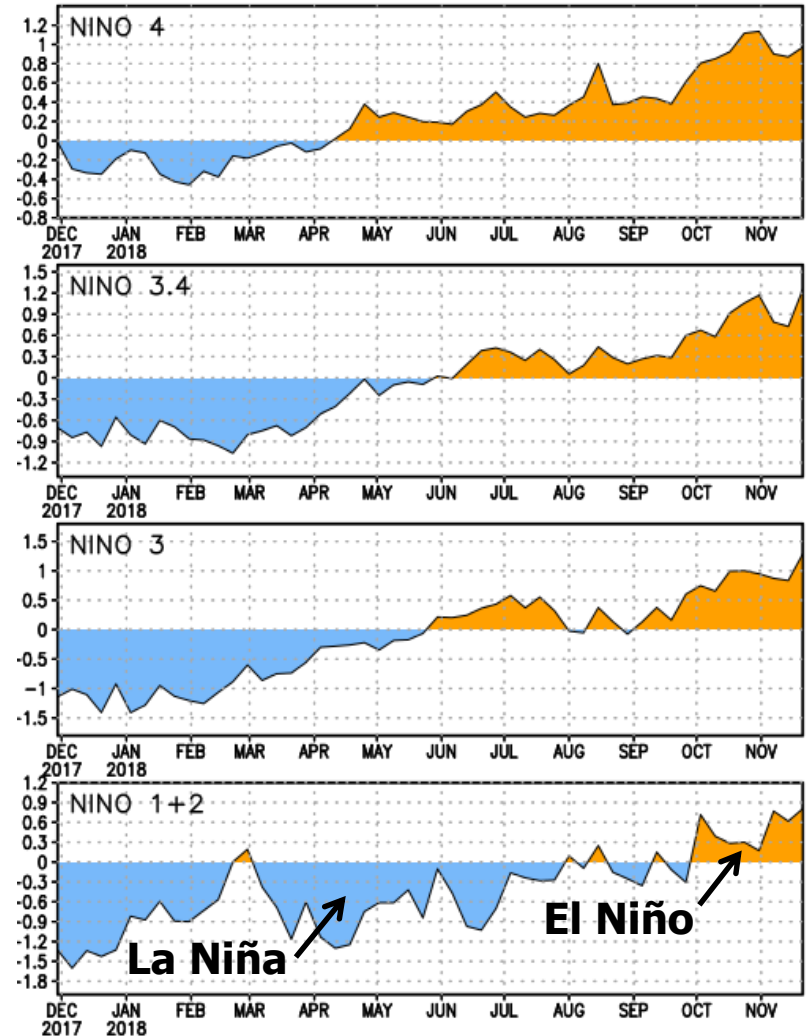


2018 ENSO Conditions



*Anomalies are computed with respect to the 1981-2010 averages by NOAA Climate Prediction Center

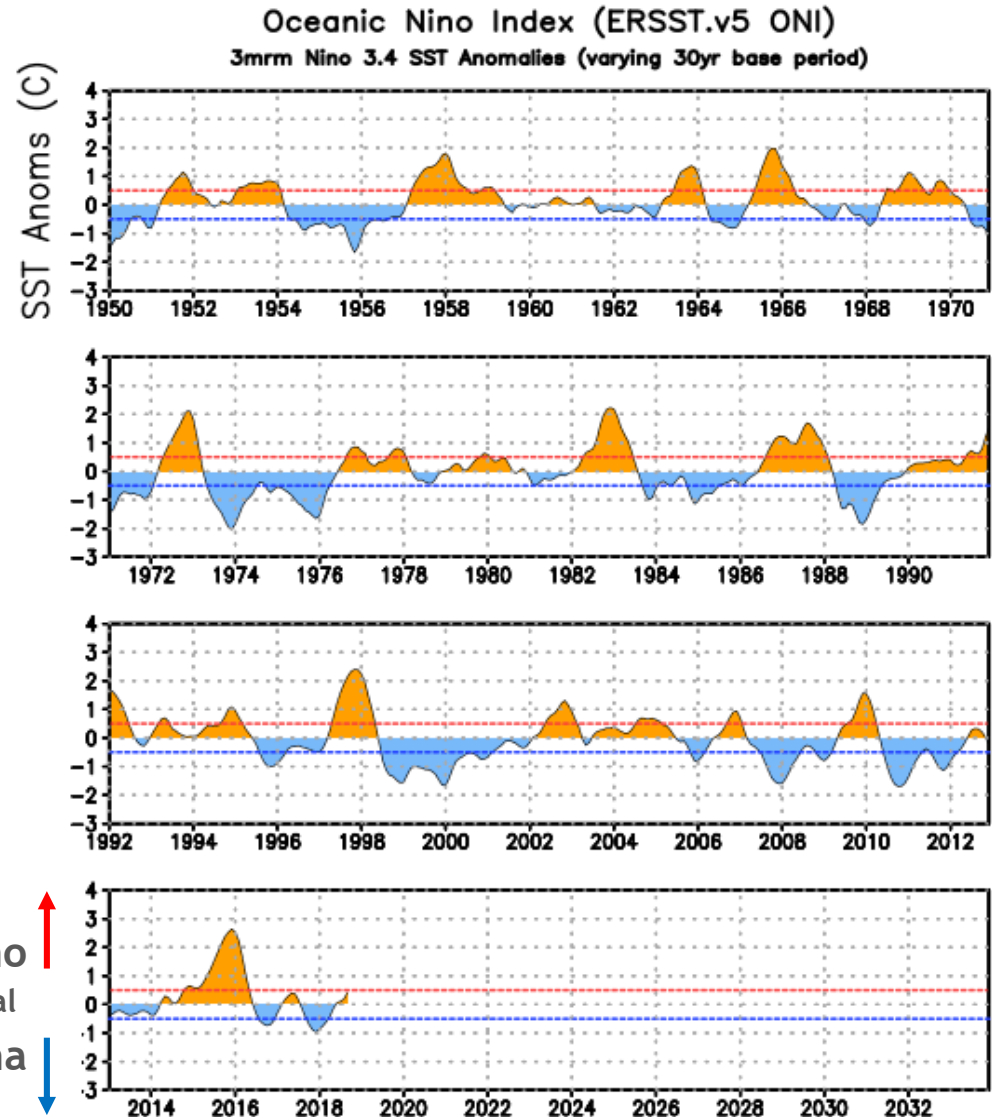
SST Anomalies





Historic ENSO Conditions

*Anomalies are computed with respect to the 1981-2010 averages by NOAA Climate Prediction Center



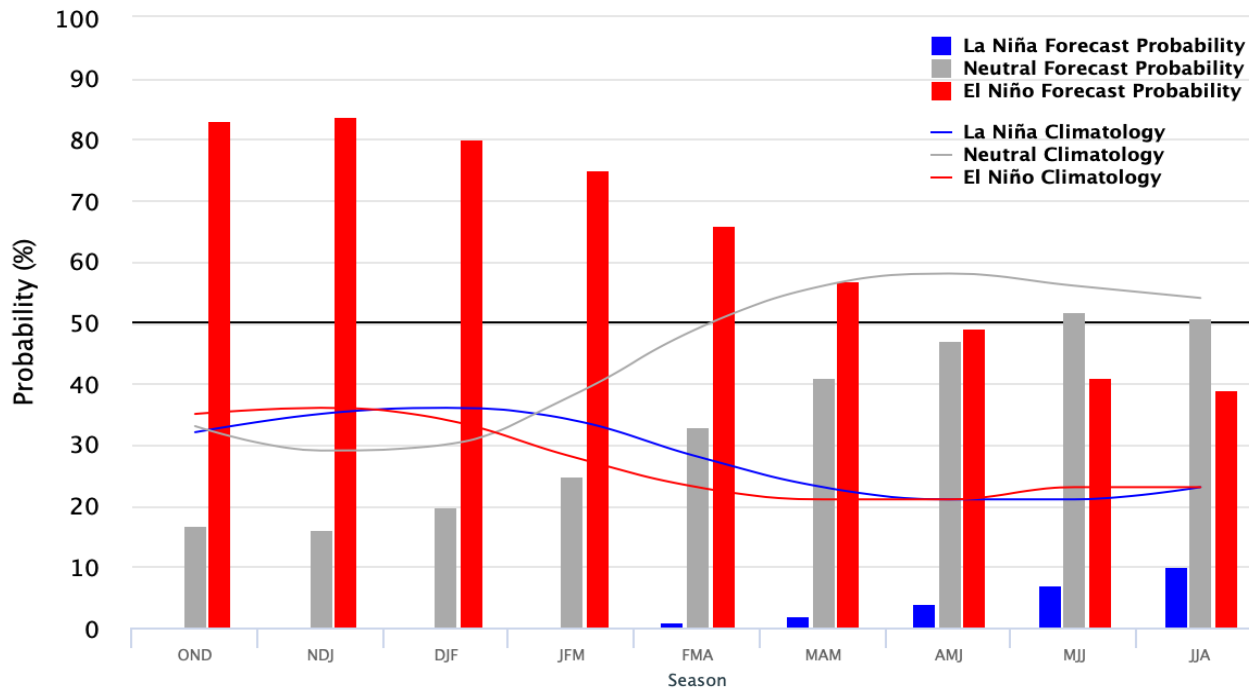


Current ENSO Conditions

El Niño is expected to form and continue through the Northern Hemisphere winter 2018-19 (~80% chance) and into spring (55-60% chance).

Early-November 2018 CPC/IRI Official Probabilistic ENSO Forecasts

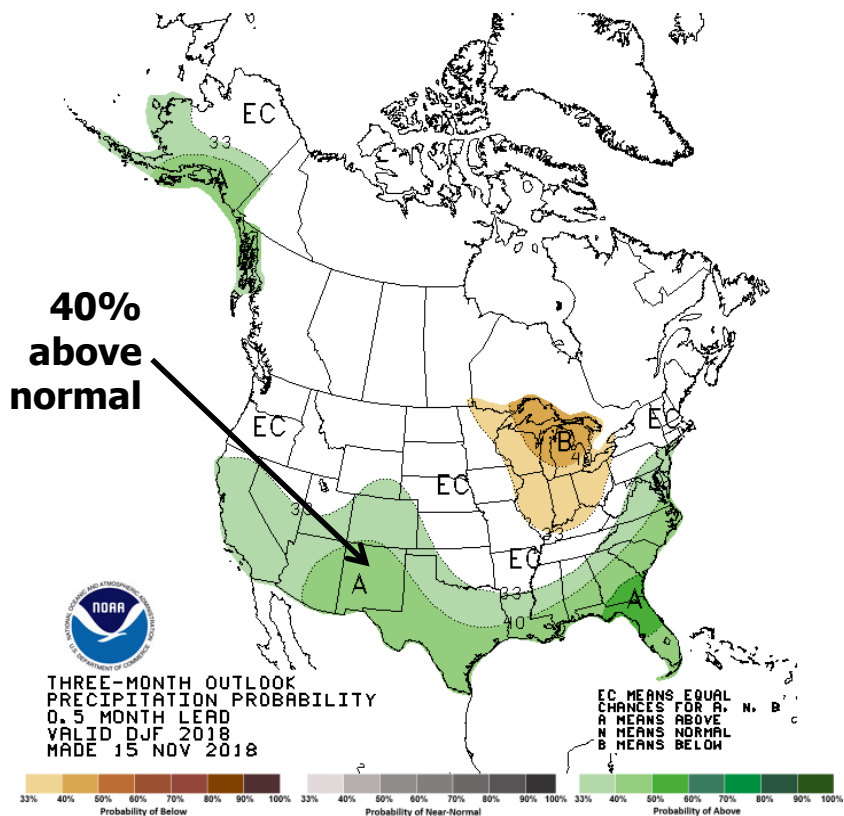
ENSO state based on NINO3.4 SST Anomaly
Neutral ENSO: -0.5°C to 0.5°C



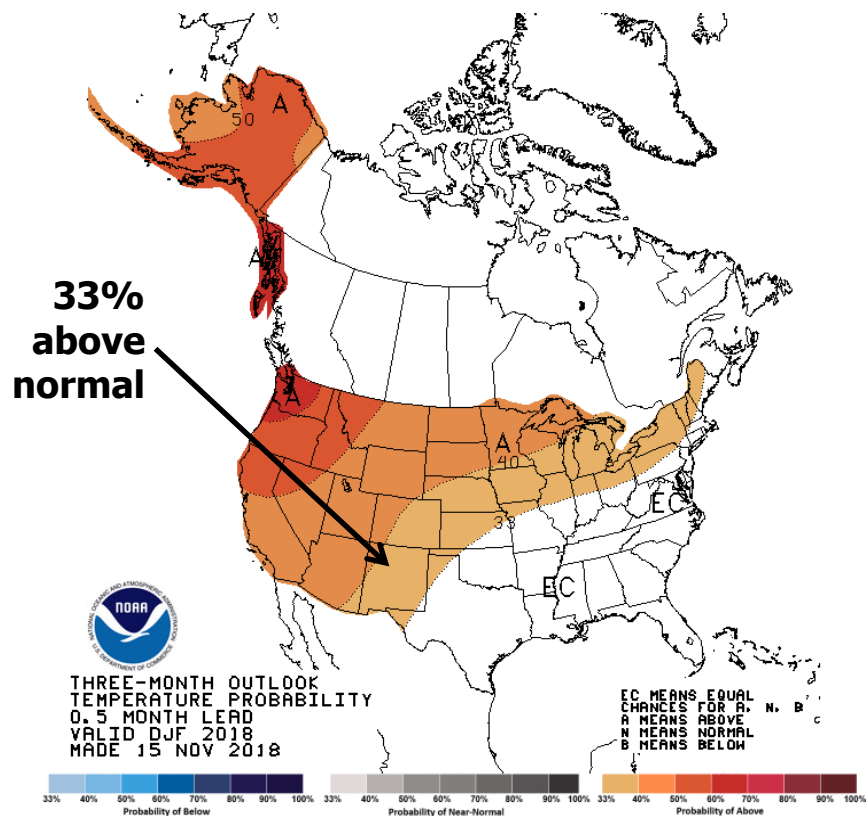


U.S. Seasonal Outlooks

Precipitation

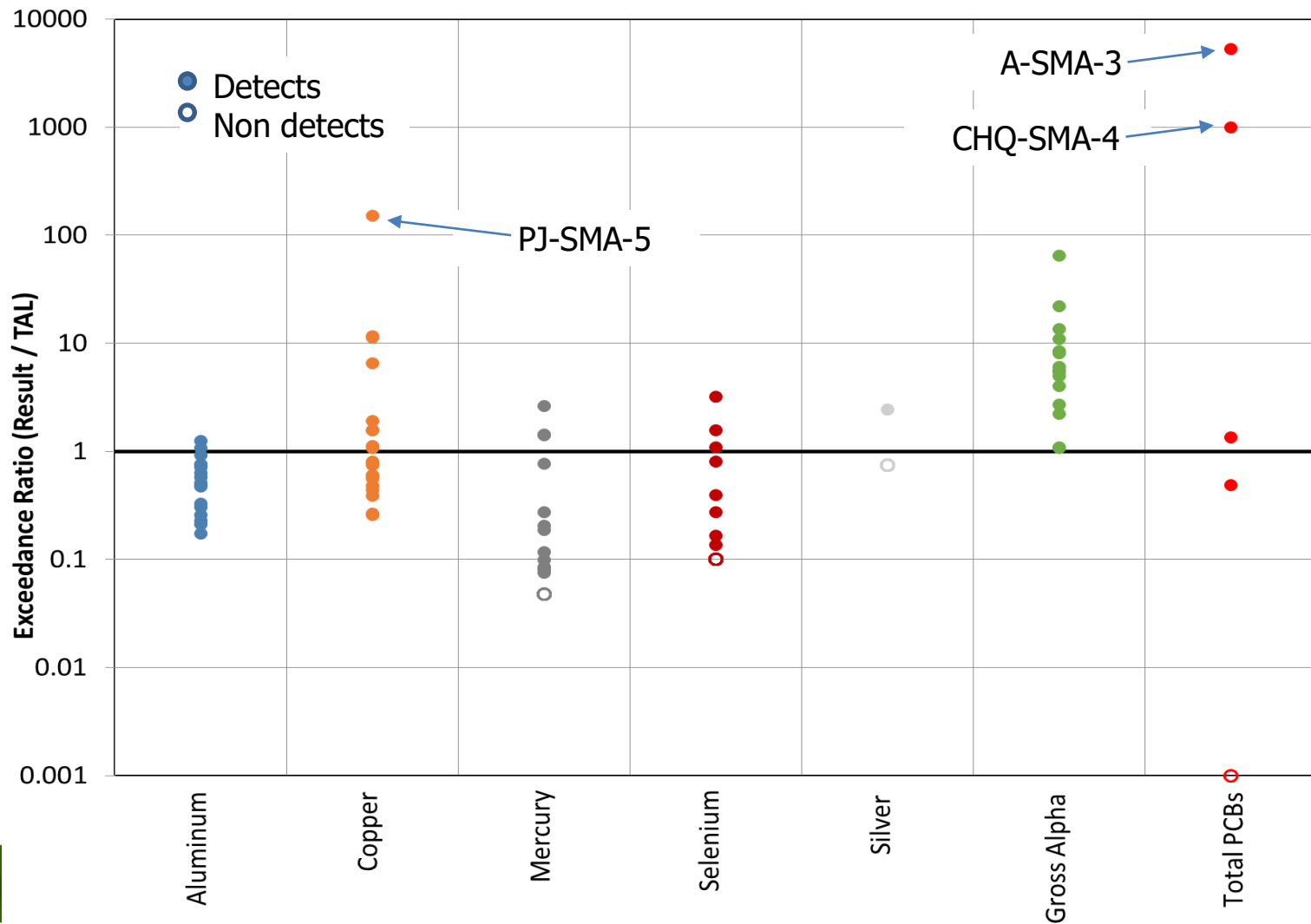


Temperature





IP Results from 2018





IP Results from 2018

2018 IP Sampling Locations	TAL Exceedances						
	Aluminum	Copper	Mercury	Selenium	Silver	Gross alpha	Total PCB
3M-SMA-0.2	X	X	X	X		X	
A-SMA-1.1	X	X	X	X		X	
A-SMA-3	X	X				X	X
A-SMA-4	X	X	X	X		X	
CDV-SMA-7	X	X	X			X	
CDV-SMA-9.05	X	X				X	
CHQ-SMA-1.02		X					
CHQ-SMA-1.03	X	X				X	X
CHQ-SMA-2	X	X	X			X	
CHQ-SMA-4	X	X	X	X		X	X
CHQ-SMA-7.1	X	X	X			X	
PJ-SMA-3.05	X	X				X	
PJ-SMA-5		X					
PT-SMA-4.2						X	
PJ-SMA-11	X	X	X	X		X	
PJ-SMA-18	X	X				X	X
STRM-SMA-1.5	X	X	X		X	X	





IP Results from 2018

Blue = not Site-related
Pink = potentially
Site-related

2018 IP Sampling Locations	TAL Exceedances						
	Aluminum	Copper	Mercury	Selenium	Silver	Gross alpha	Total PCB
3M-SMA-0.2	X	X	X	X		X	
A-SMA-1.1	X	X	X	X		X	
A-SMA-3	X	X				X	X
A-SMA-4	X	X	X	X		X	
CDV-SMA-7	X	X	X			X	
CDV-SMA-9.05	X	X				X	
CHQ-SMA-1.02		X					
CHQ-SMA-1.03	X	X				X	X
CHQ-SMA-2	X	X	X			X	
CHQ-SMA-4	X	X	X	X		X	X
CHQ-SMA-7.1	X	X	X			X	
PJ-SMA-3.05	X	X				X	
PJ-SMA-5		X					
PT-SMA-4.2						X	
PJ-SMA-11	X	X	X	X		X	
PJ-SMA-18	X	X				X	X
STRM-SMA-1.5	X	X	X		X	X	





Summary of IP Results from 2018

- Aluminum and selenium – geology
- Gross alpha – geology & Site-related
- Copper – urban areas & Site-related
- Mercury and silver – Site-related
- Total PCBs – associated with humans (in atmosphere, precipitation, and storm water runoff) & Site-related





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Questions?



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Produced by Los Alamos Legacy Cleanup Contractor, N3B Los Alamos
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