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Site Specific Demonstration Screening Process as outlined in the 2022 Storm Water Individual Permit (NM0030759)

November 9, 2022

Karly Rodriguez



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N&B Los
Alamos

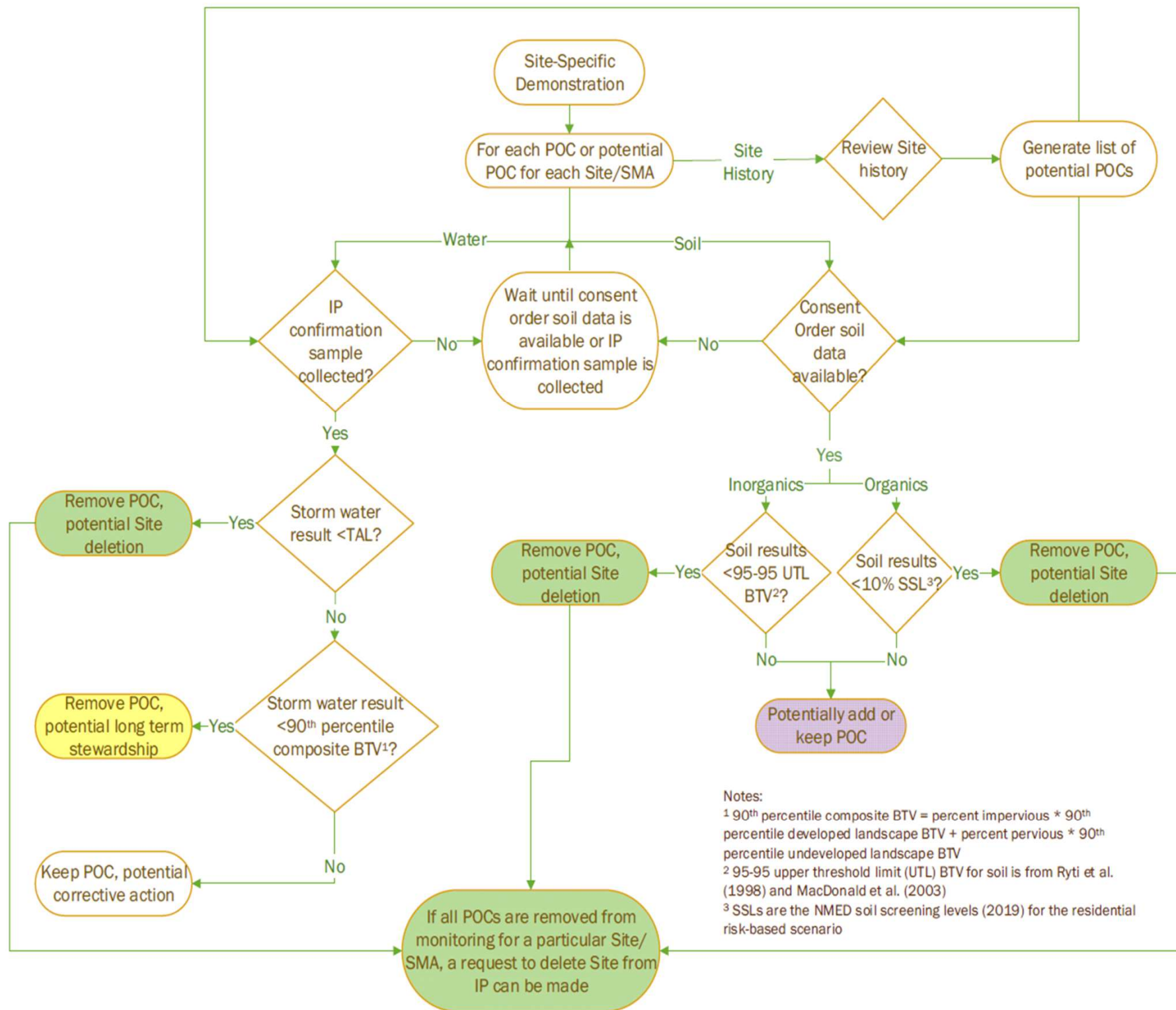


- Site-Specific Demonstration (SSD) Process
- New Tiers
 - Site Deletion
 - Long-Term Stewardship
 - Corrective Action
- SSD Example
- Questions





- Site History for known Pollutants of Concern (POCs)
 - Past reports
 - Historic documents
 - Engineering drawings
- Soil Data
 - Collected from 0-3 feet below ground surface
 - Within 100 feet of the Site Monitoring Area (SMA) boundary
 - Screening level is 10% of the soil Background Value (BV) or 10% of the Soil Screening Level (SSL) when a background value is not available
- Storm Water Data
 - Storm water samples from current permit stage are screened against Target action Levels (TALs) and Background Threshold Values (BTVs)





Site Deletion Pathways:

- a) No industrial activities took place at the Site;
- b) Site-related POCs have never been exposed, or will no longer be exposed, to storm water;
- c) Sites have no significant industrial materials remaining that are exposed to storm water after installation of permanent control measures;
- d) The Permittees certified corrective actions have been completed by removing contaminated soil that was exposed to storm water and demonstrating that no significant materials from previous industrial activity remain in the Site;
- e) SSD shows that the storm water and soil data are below screening levels for all POCs; For Long-Term Stewardship Sites, no evidence of discharge at a Site after a 25-year, 24-hour storm event; or
- f) If the following conditions are met at a site being monitored: i) sampler is in a representative location; ii) no sample collected after a 25-year, 24-hour storm; and iii) sampler is operable during storms





Types of Long-Term Stewardship:

- a) Storm water sample results are greater than target action limits (TALs) because of background contribution;
- b) Storm water sample results are greater than human health - organism only (HH-OO) based TALs, but below wildlife habitat TALs for discharges to non-perennial streams (e.g., PCBs);
- c) Storm water sample results exceed the Adjusted Gross Alpha (AGA) TAL before monitoring requirement of AGA was removed from the 2010 permit; or
- d) Sites have no evidence of storm water discharges for the past five years.

Inspection Requirements: Annually and after a 3-year 24-hour (or greater) storm event.





- a) Once a TAL and/or composite background threshold value (BTV) has been exceeded for a Site-related POC, an appropriate corrective action is identified.
- b) Types of corrective actions include:
 - a) Installation of enhanced control measures,
 - b) Elimination of Exposure of Site-Related POCs to Stormwater (cap or engineered cover or soil removal)
 - c) Retention of a 3-year, 24-hour storm event





Active Monitoring SSD: LA- SMA-0.85

Associated Sites	03-055(c)
Receiving Water	Los Alamos Canyon
Drainage Area	4.34 acres
Landscape Characteristics	45% impervious, 55% pervious
Consent Order Site Status	Solid Waste Management Unit (SWMU) 03-055(c): Pending Inclusion in Permit Mod Request. Certificate of Completion Received With Controls
2010 AC Permit Final Status	Corrective Action Complete
2016-2018 SIP Actions	Based on the February 2018 field visit, all parties agreed that the current sampler location and boundary are the best representation of stormwater discharge from the Site.
2022 Permit Status	Active Monitoring

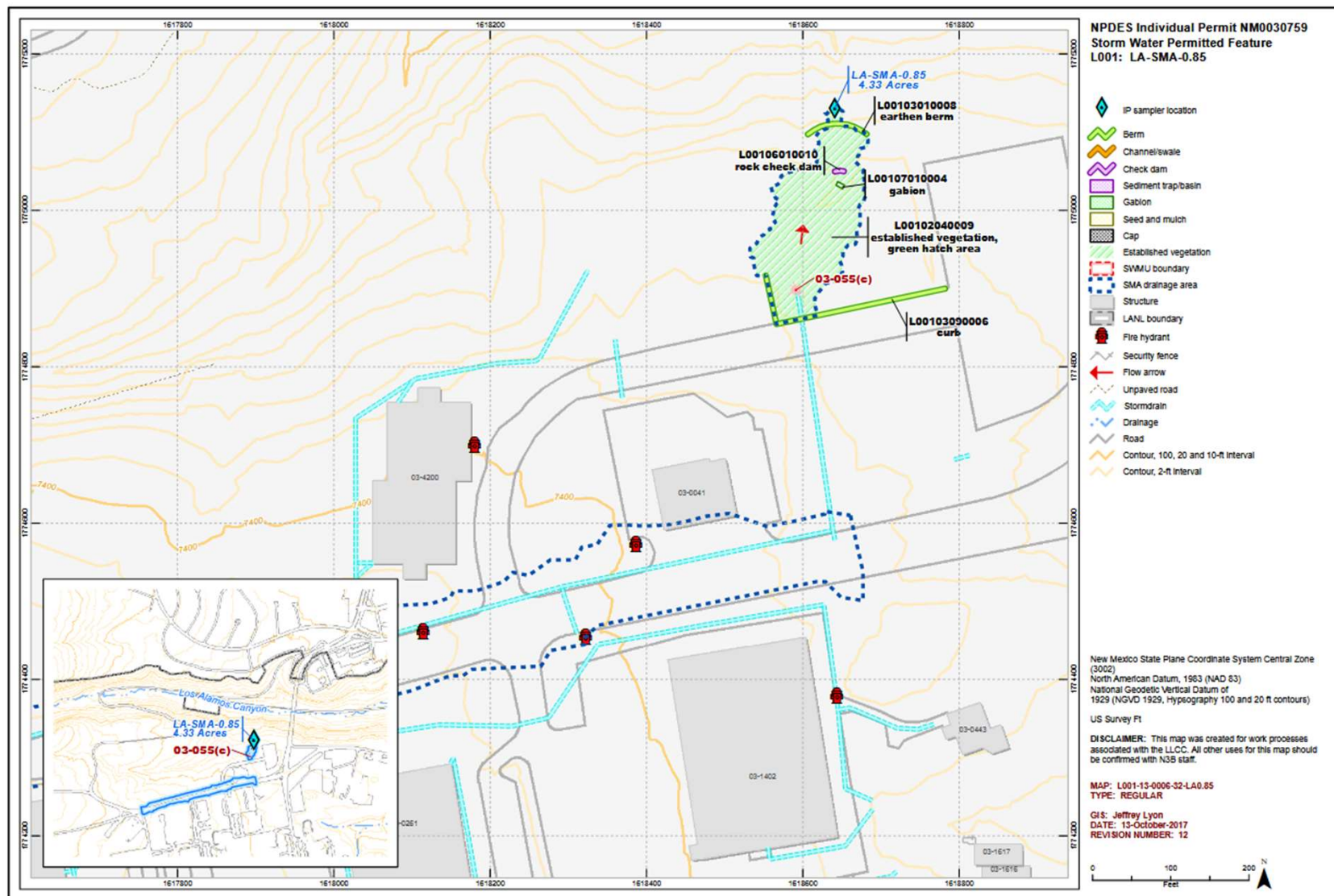
Table 17.2-1 POCs Known or Suspected to be Used Historically at the Site

Site	Potential POC Source	Potential POCs
03-055(c)	Outfall	Inorganics and organic chemicals





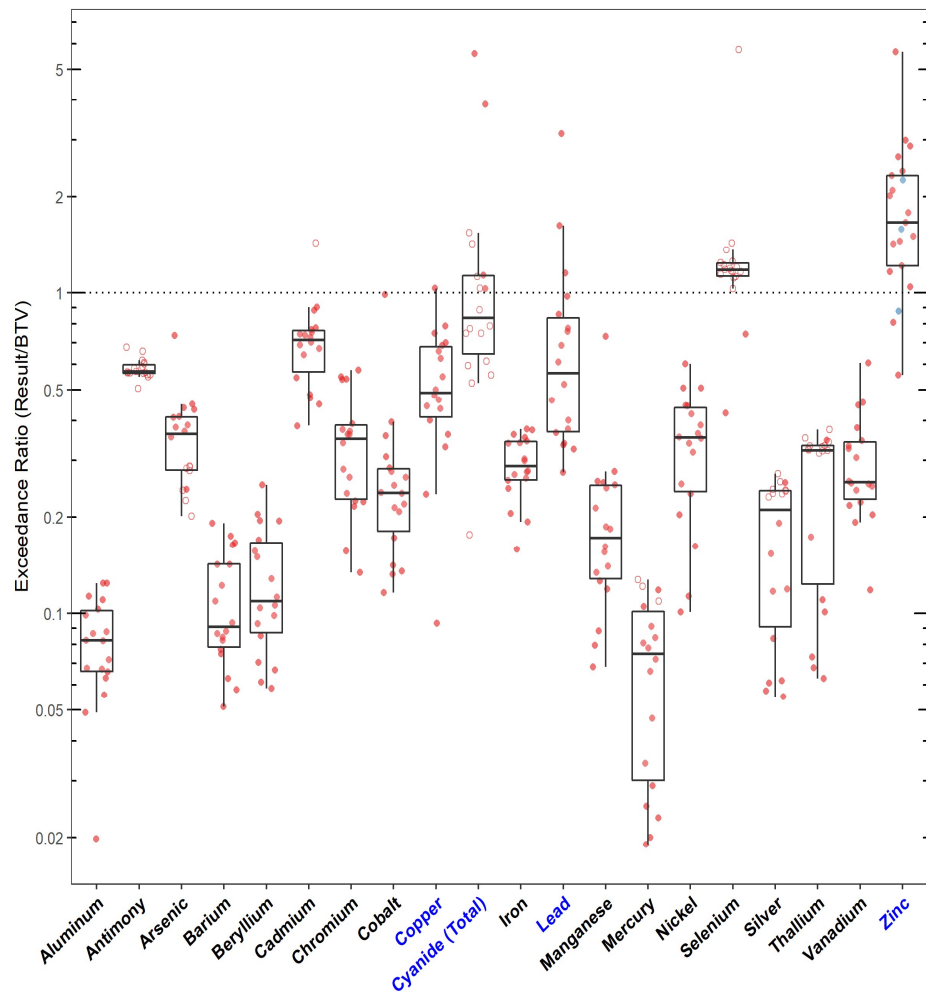
LA-SMA-0.85 Map



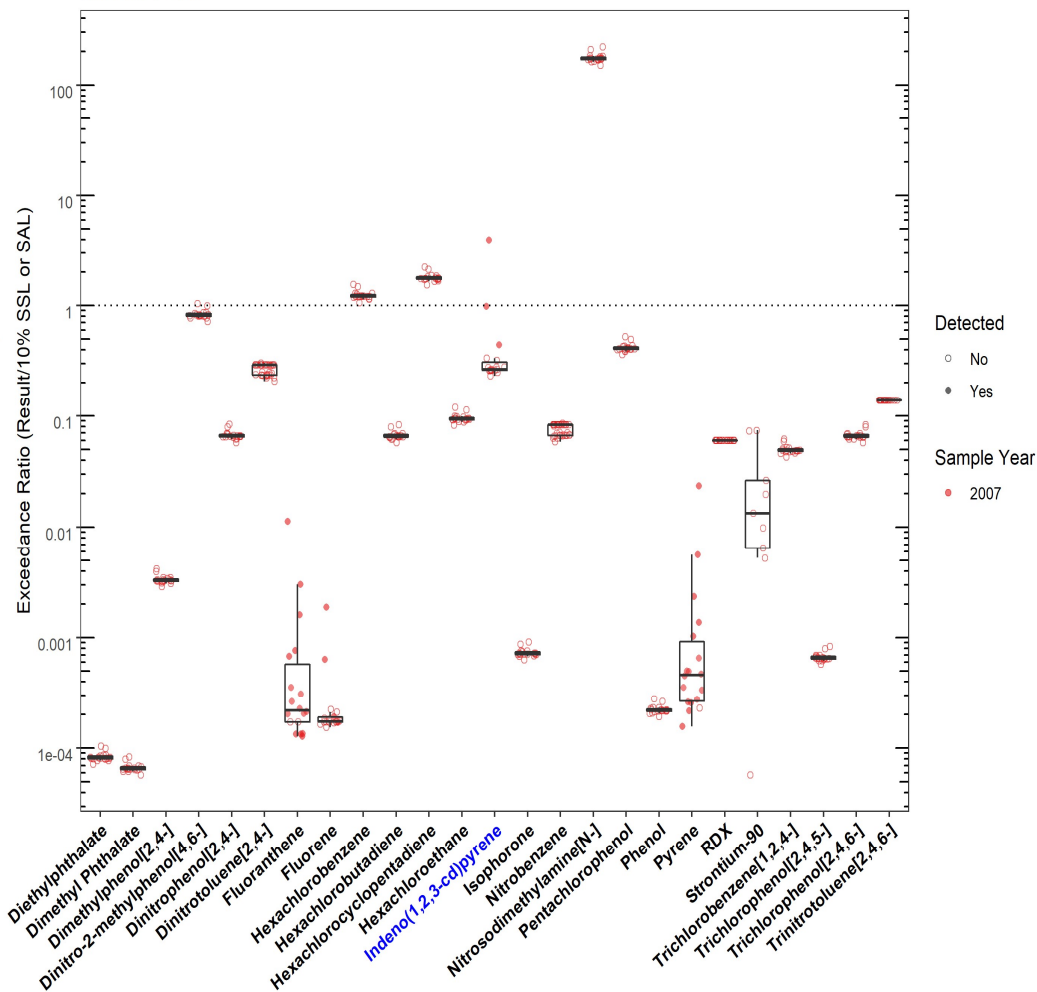


LA-SMA-0.85 Soil Data (pt. 1)

LA-SMA-0.85

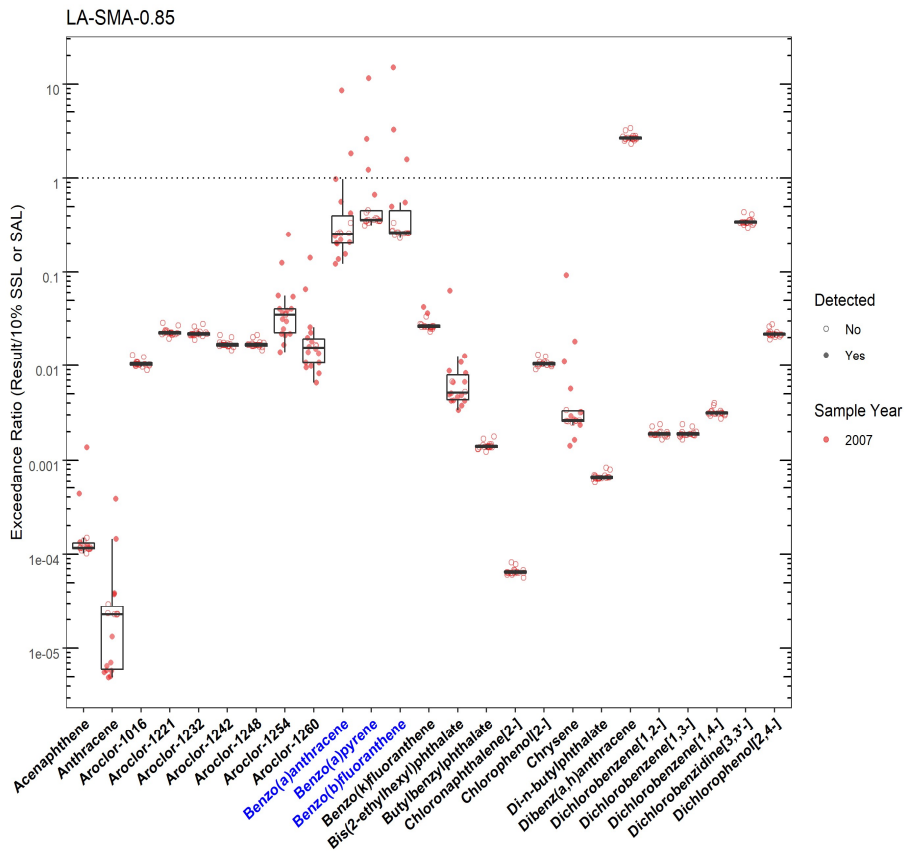


LA-SMA-0.85





LA-SMA-0.85 Soil Data (pt. 2)



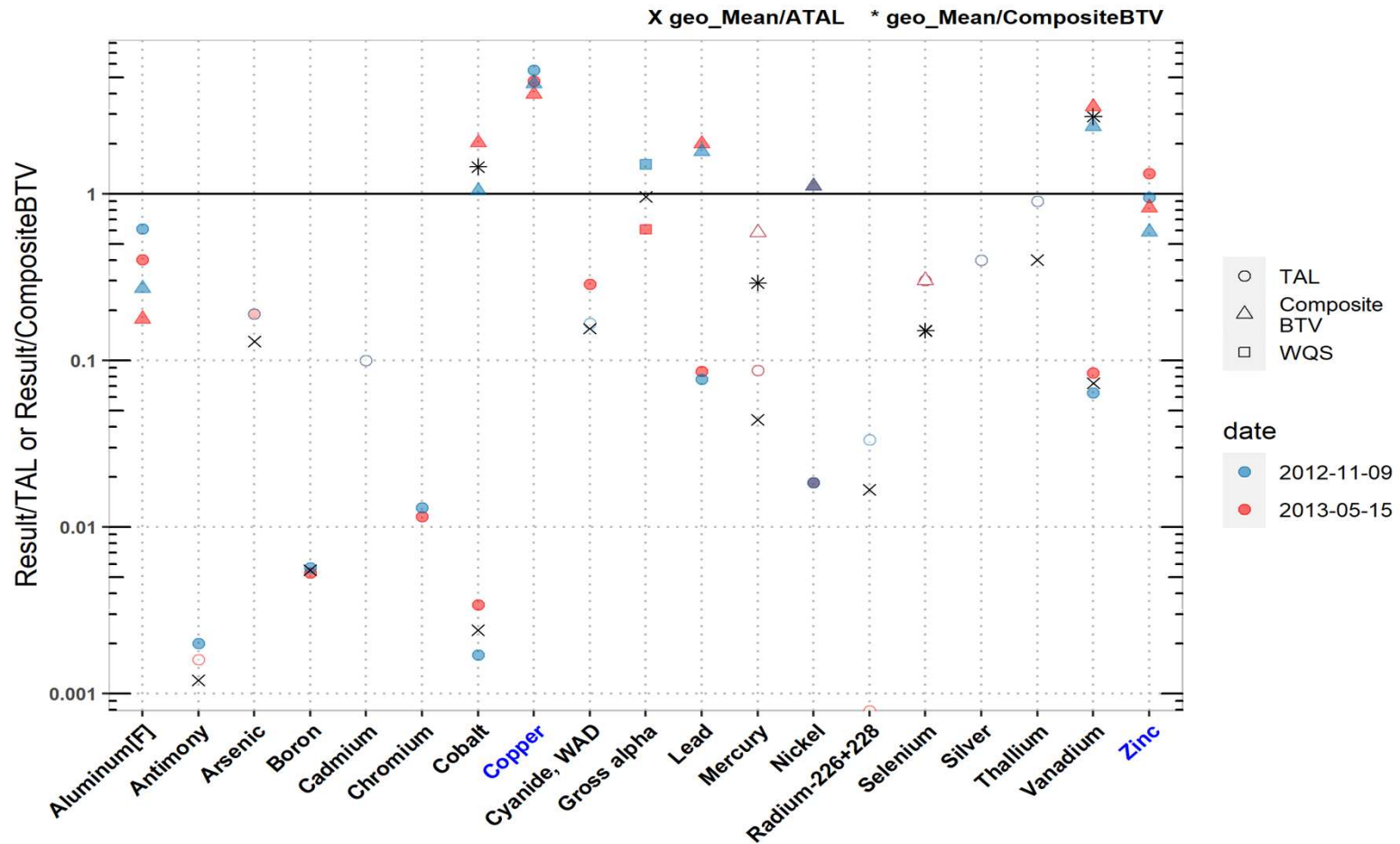
LA-SMA-0.85

	SMA	Parameter Code	Detected	Screening Type	Screening Level (mg/kg)	Max Result (mg/kg)	Date of Max Result
Benzo(a)anthracene	LA-SMA-0.85	56-55-3	Y	SSL_0.1	0.153	1.31	2007-12-05
Benzo(a)pyrene	LA-SMA-0.85	50-32-8	Y	SSL_0.1	0.112	1.30	2007-12-05
Benzo(b)fluoranthene	LA-SMA-0.85	205-99-2	Y	SSL_0.1	0.153	2.29	2007-12-05
Copper	LA-SMA-0.85	Cu	Y	BTV	14.7	15.1	2007-12-05
Cyanide (Total)	LA-SMA-0.85	CN(TOTAL)	Y	BTV	0.500	2.79	2007-12-05
Indeno(1,2,3-cd)pyrene	LA-SMA-0.85	193-39-5	Y	SSL_0.1	0.153	0.606	2007-12-05
Lead	LA-SMA-0.85	Pb	Y	BTV	22.3	70.0	2007-12-05
Zinc	LA-SMA-0.85	Zn	Y	BTV	48.8	276	2007-12-05





LA-SMA-0.85



SSC data is not available for this location. Solid shapes: Detected Hollow shapes: Non-detected

Copper and Zinc exceeded the TAL and BTV in the storm water samples from 2012 and 2013





SSD Summary:

- The following Site-related POCs exceeded the applicable screening value in soil data and have not yet been measured in storm water: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene. They will be added for monitoring.
- PCBs were measured in soil data and did not exceed the screening values, but the stream reach is impaired for PCBs and they are Site-related so they will be added for monitoring.
- Copper, lead and zinc also exceeded in soil data but they were previously monitored and will not be added for additional monitoring.

Monitoring Constituent	Background for Monitoring
PCBs	Impairment and Site History (organic chemicals)
Semi-Volatile Organic Compounds (SVOCs)	Site History (organic chemicals) and Soil Data
Dissolved Organic Carbon (DOC)	Permit Requirement
Suspended Sediment Concentration (SSC)	Permit Requirement





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Questions?



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Additional Slides



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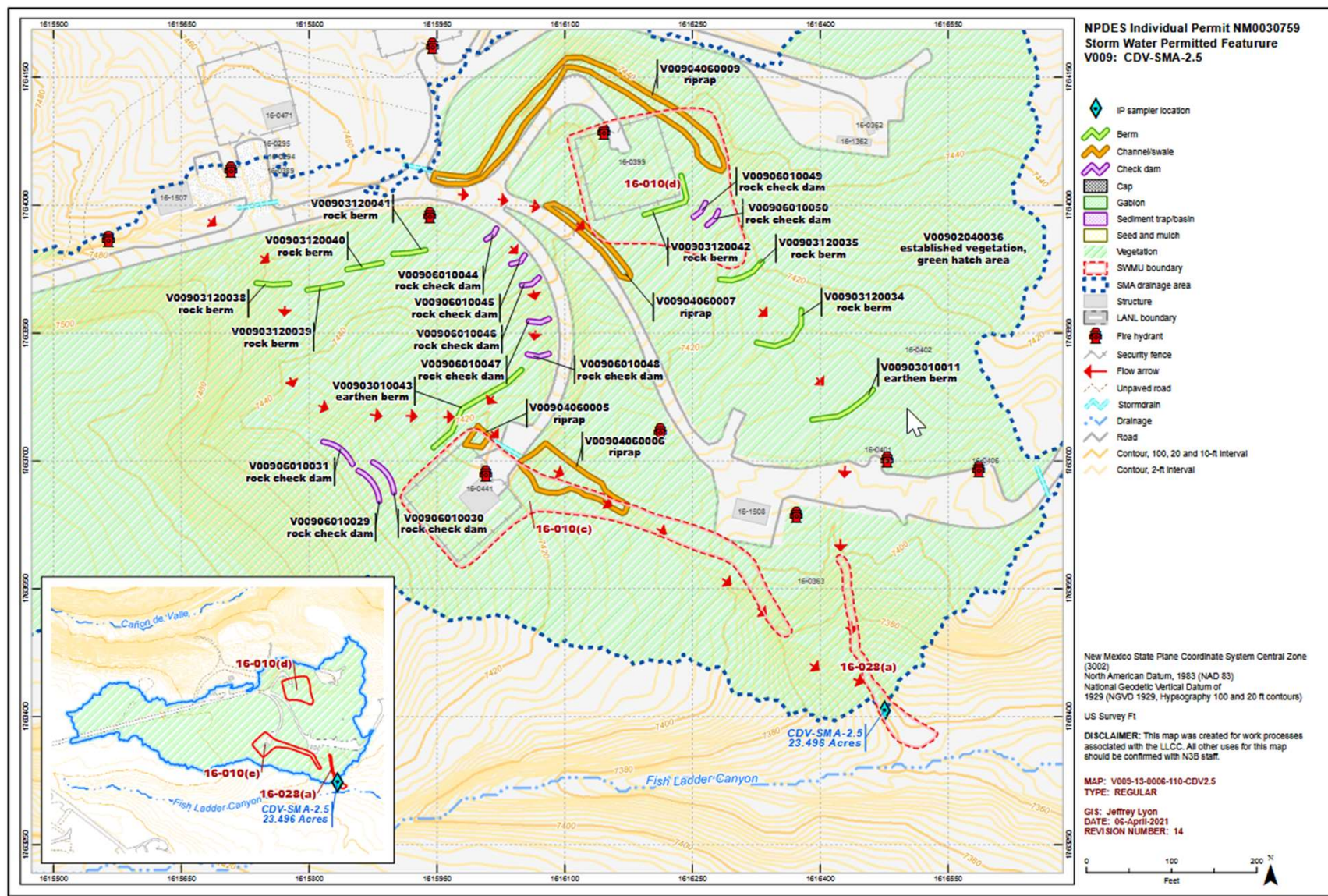
Long-Term Stewardship Example: CDV-SMA-2.5

Associated Sites	16-010(c), 16-010(d), 16-028(a)
Receiving Water	Cañon de Valle
Drainage Area	23.50-acres
Landscape Characteristics	10% impervious, 90% pervious
Consent Order Site Status	SWMU 16-010(c): No Further Action Approved SWMU 16-010(d): No Further Action Approved SWMU 16-028(a): In Progress
2010 Administratively Continued Permit Final Status	Baseline Confirmation Complete/Site Deletion Request
2016–2018 SIP Actions	Based on the November 2016 field visit, the current sampling location and boundary was agreed upon by all parties to be the best representation of stormwater discharge from 16-028(a). SWMUs 16-010(c) and 16-010(d) were not reviewed in the 2016-2018 SIP process as they have been removed from the LANL Hazardous Waste Facility Permit and are therefore no longer subject to the Consent Order.
2022 Permit Status	Long-Term Stewardship

Table 178.2-1 POCs Known or Suspected to Have Been Used Historically at the Site

Site	Potential POC Source	Potential POCs
16-010(c)	Flash pad/burn tray	Metals, dioxins/furans, HE
16-010(d)	Burn tray	Metals, HE
16-028(a)	Drainage channel	Metals, barium, HE

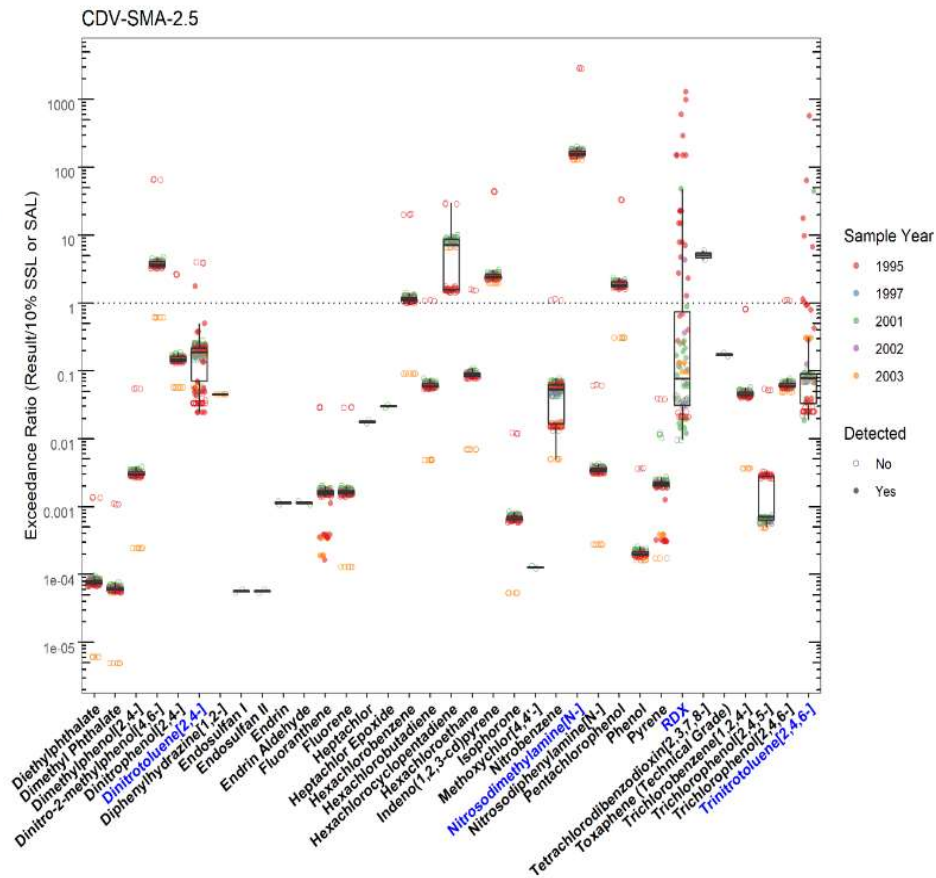




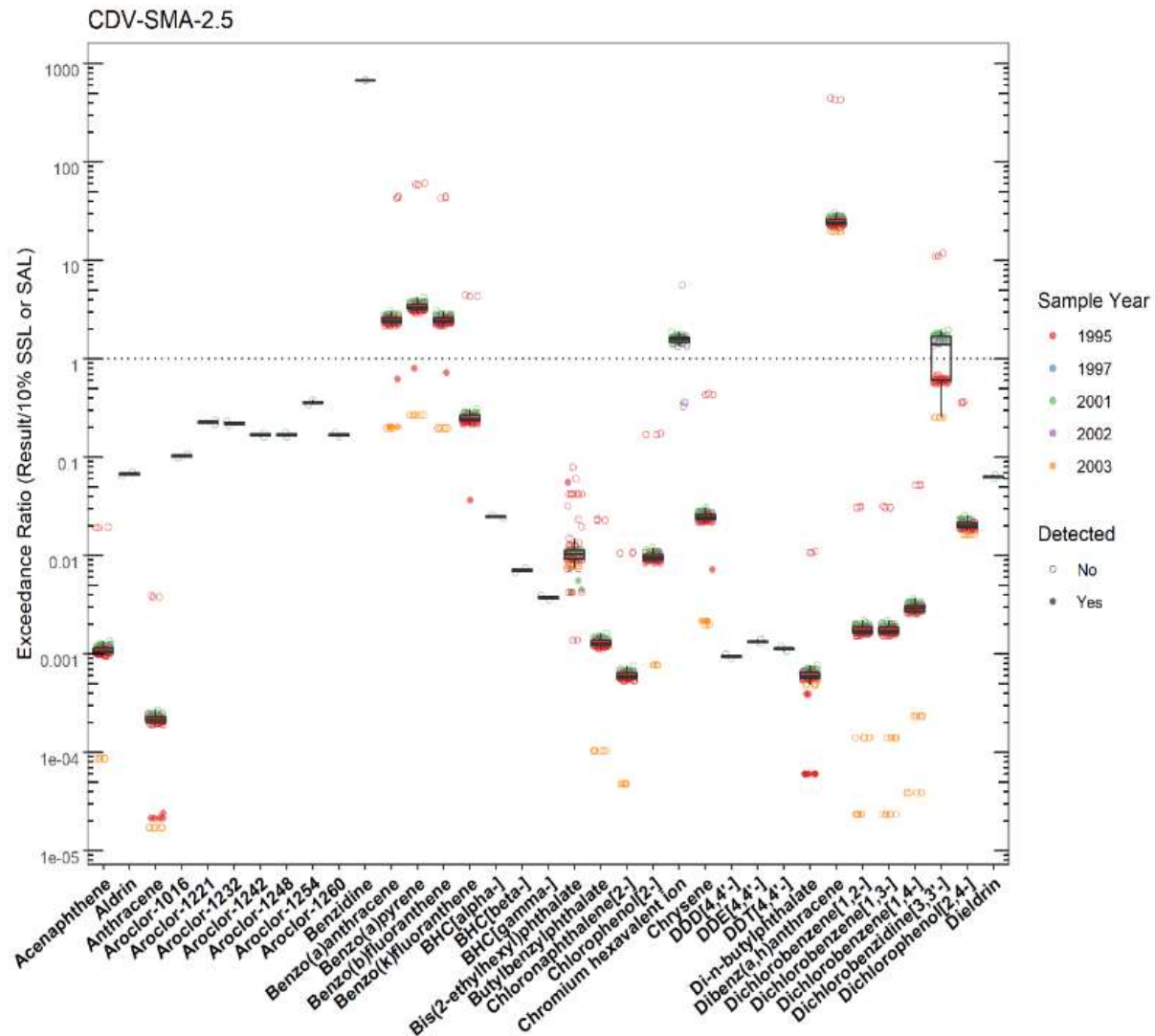


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CDV-SMA-2.5 Soil Data (pt. 1)



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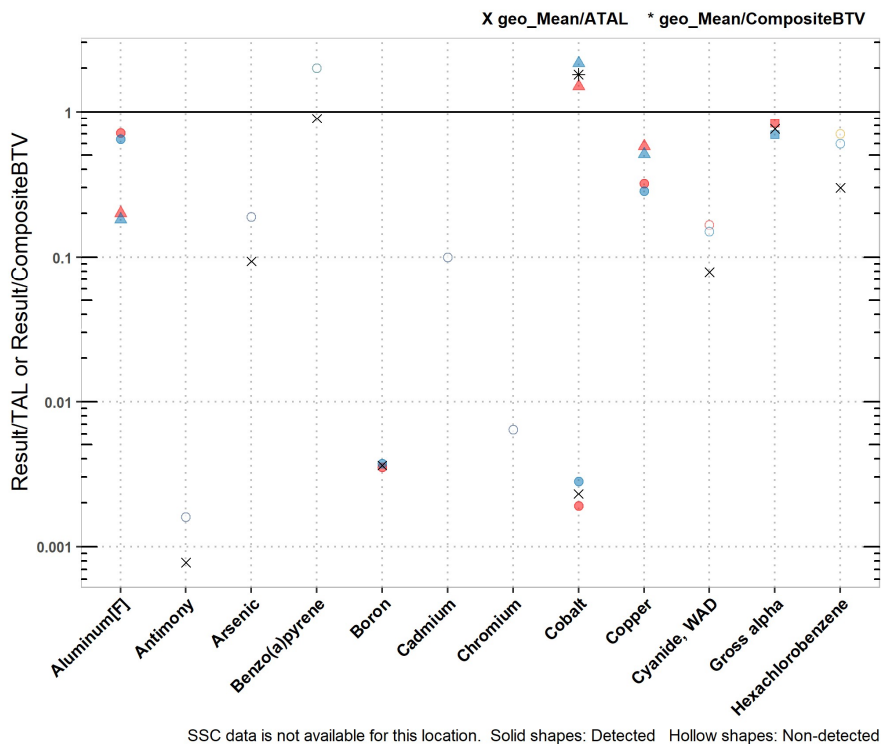
CDV-SMA-2.5

	SMA	Parameter Code	Detected	Screening Type	Screening Level (mg/kg)	Max Result (mg/kg)	Date of Max Result
<i>Barium</i>	CDV-SMA-2.5	Ba	Y	BTV	295	24600	2001-11-13
<i>Cadmium</i>	CDV-SMA-2.5	Cd	Y	BTV	0.400	2.80	1995-10-20
<i>Chromium</i>	CDV-SMA-2.5	Cr	Y	BTV	19.3	39.4	2001-06-25
<i>Cobalt</i>	CDV-SMA-2.5	Co	Y	BTV	8.64	41.3	2002-03-05
<i>Copper</i>	CDV-SMA-2.5	Cu	Y	BTV	14.7	68.5	1997-08-22
<i>Dinitrotoluene[2,4-]</i>	CDV-SMA-2.5	121-14-2	Y	SSL_0.1	1.71	3.02	1995-10-04
<i>Lead</i>	CDV-SMA-2.5	Pb	Y	BTV	22.3	800	1995-10-10
<i>Mercury</i>	CDV-SMA-2.5	Hg	Y	BTV	0.100	0.890	1995-11-10
<i>Nickel</i>	CDV-SMA-2.5	Ni	Y	BTV	15.4	16.5	1997-08-22
<i>Nitrosodimethylamine[N-]</i>	CDV-SMA-2.5	62-75-9	Y	SSL_0.1	0.00234	0.330	1995-10-04
<i>RDX</i>	CDV-SMA-2.5	121-82-4	Y	SSL_0.1	8.31	10700	1995-10-04
<i>Silver</i>	CDV-SMA-2.5	Ag	Y	BTV	1.00	4.60	2002-03-05
<i>Thallium</i>	CDV-SMA-2.5	Tl	Y	BTV	0.730	1.20	2001-06-19
<i>Trinitrotoluene[2,4,6-]</i>	CDV-SMA-2.5	118-96-7	Y	SSL_0.1	3.60	2060	1995-10-04
<i>Uranium</i>	CDV-SMA-2.5	U	Y	BTV	1.82	11.3	1995-10-02
<i>Zinc</i>	CDV-SMA-2.5	Zn	Y	BTV	48.8	1070	1995-10-10



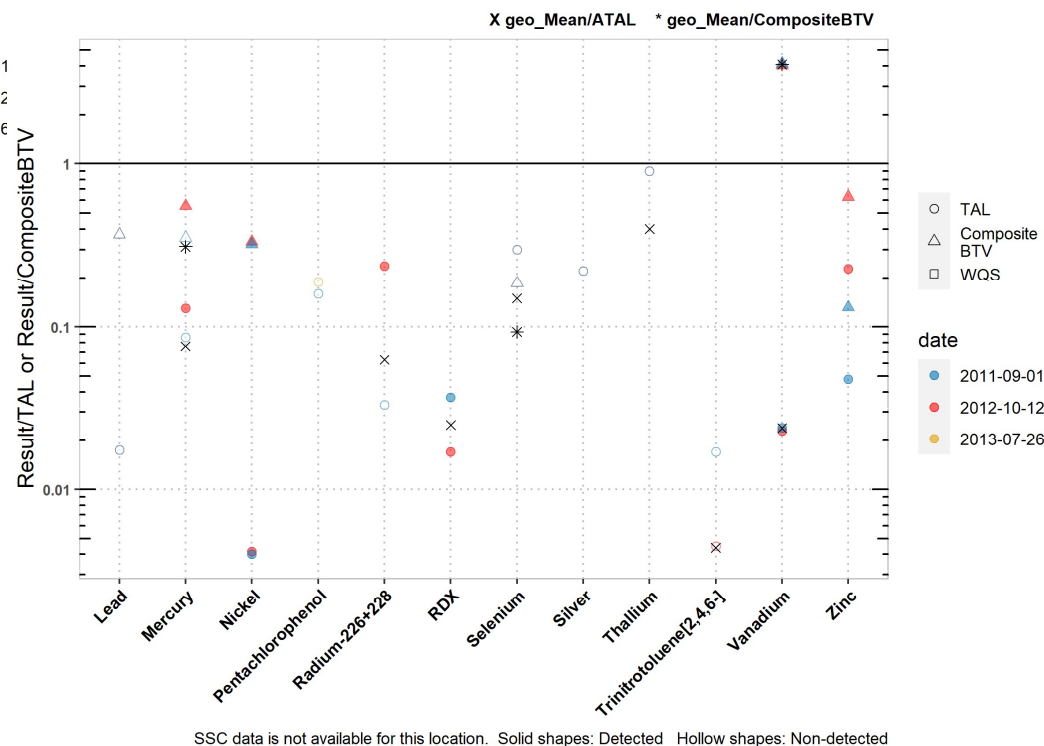


CDV-SMA-2.5



No TAL Exceedances

CDV-SMA-2.5





Long-Term Stewardship:

- All Site-related POCs that exceeded the applicable screening values in soil data were previously monitored in stormwater data and did not exceed TALs.
- No TAL exceedances in confirmation monitoring data.
- Soil sampling for the Sites within the SMA is not complete, the Site will be re-screened when soil data is available.





Corrective Action Example: M-SMA-12.9

Associated Sites	05-001(b), 05-002
Receiving Water	Mortandad Canyon
Drainage Area	0.17 acres
Landscape Characteristics	100% pervious
Consent Order Site Status	SWMU 05-001(b): Pending Inclusion in Permit Mod Request. Certificate of Completion Received Without Controls SWMU 05-002: Pending Inclusion in Permit Mod Request. Certificate of Completion Received Without Controls
2010 Administratively Continued Permit Final Status	Corrective Action Complete
2016-2018 SIP Actions	Based on the May 2017 field visit and follow-up field review of the site topography, soil sample locations, and results, the SIP team determined that the current SMA sampler does encompass stormwater from soil sample locations of concern at this Site, and the current location is representative.
2022 Permit Status	Corrective Action

Table 106.2-1 POCs Known or Suspected to be Used Historically at the Site

Site	Potential POC Source	Potential POCs
05-001(b)	Firing pit	Aluminum, beryllium, cadmium, copper, lead, HE, uranium, DU
05-002	Surface disposal area	Aluminum, beryllium, cadmium, copper, lead, HE, uranium, DU

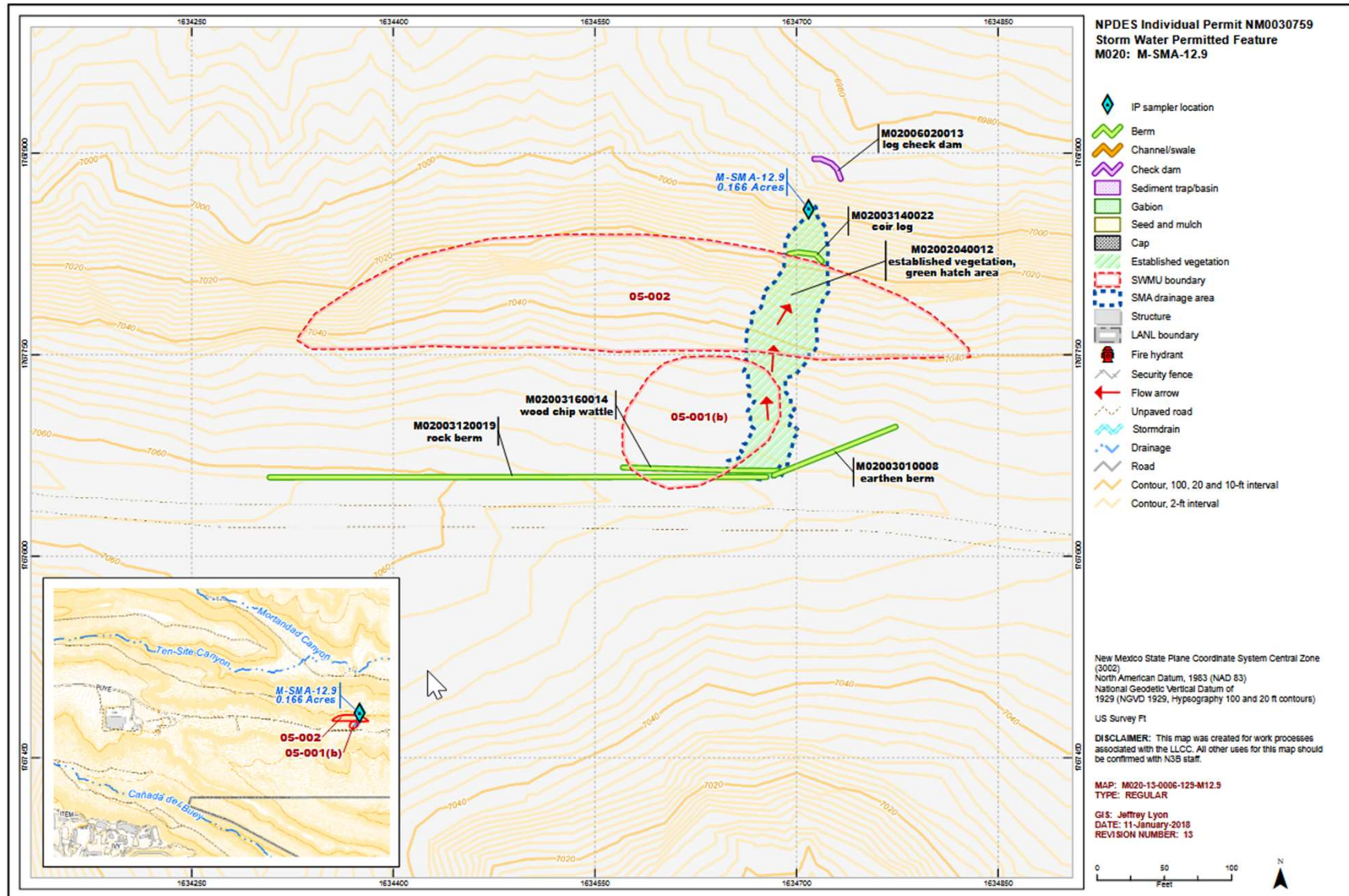




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Corrective Action Example: M-SMA-12.9

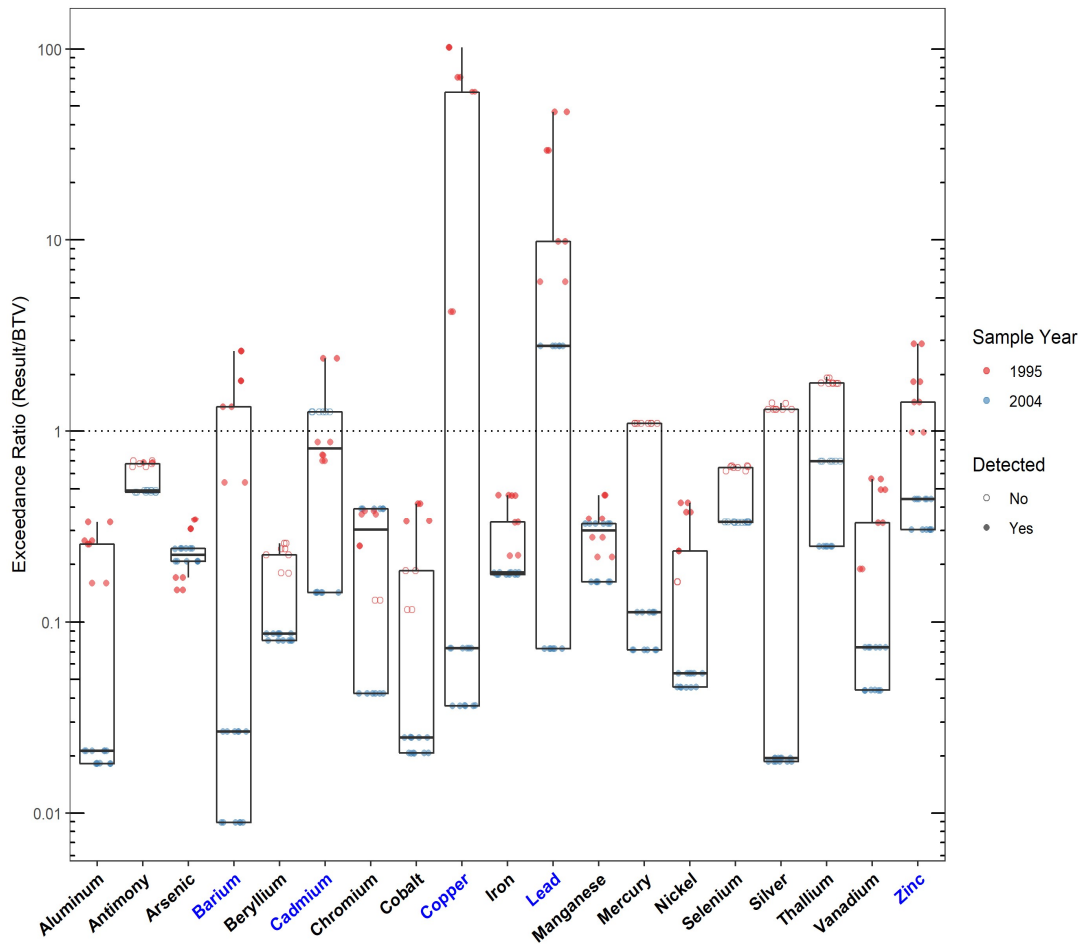


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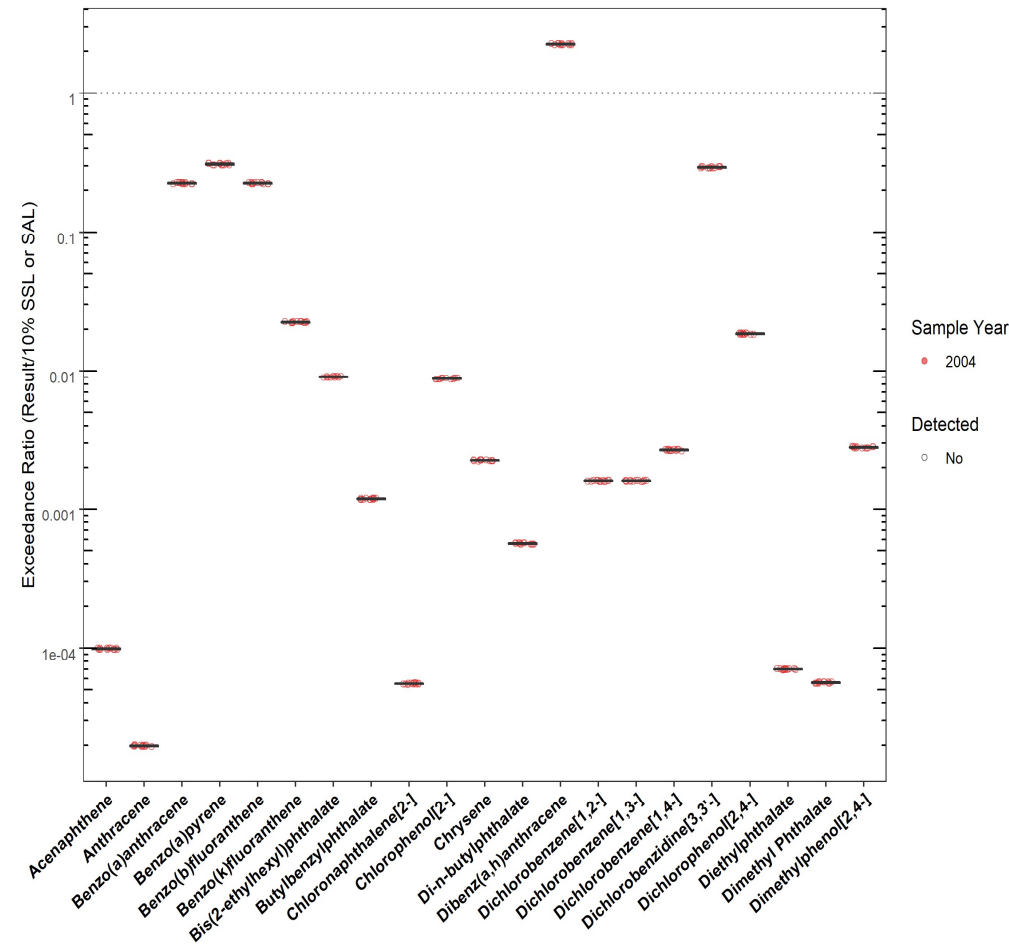


M-SMA-12.9 Soil Data (pt. 1)

M-SMA-12.9

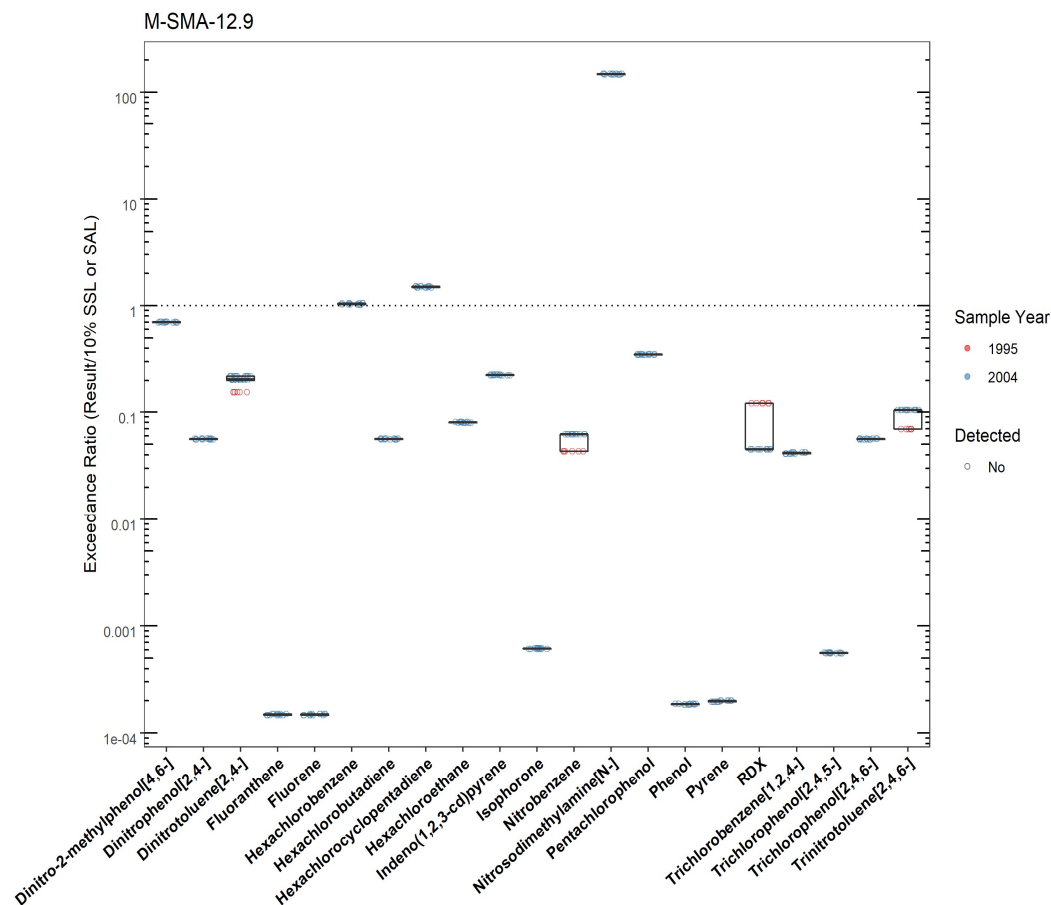


M-SMA-12.9





M-SMA-12.9 Soil Data (pt. 2)



M-SMA-12.9

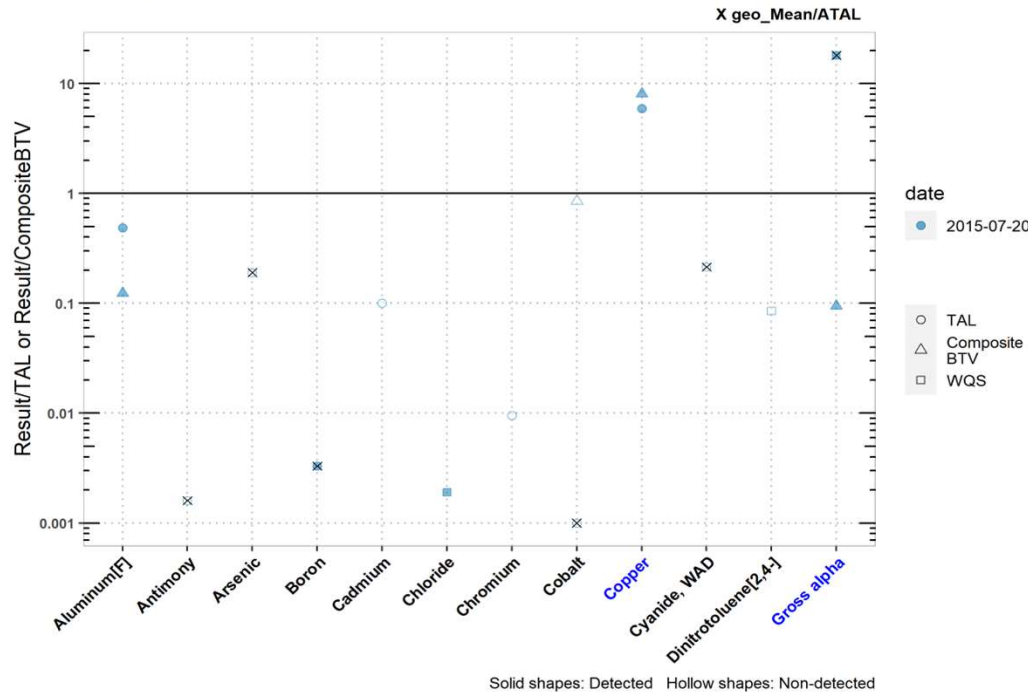
	SMA	Parameter Code	Detected	Screening Type	Screening Level (mg/kg)	Max Result (mg/kg)	Date of Max Result
Barium	M-SMA-12.9	Ba	Y	BTV	295	781	1995-06-20
Cadmium	M-SMA-12.9	Cd	Y	BTV	0.400	0.970	1995-06-20
Copper	M-SMA-12.9	Cu	Y	BTV	14.7	1500	1995-06-20
Lead	M-SMA-12.9	Pb	Y	BTV	22.3	1040	1995-06-20
Zinc	M-SMA-12.9	Zn	Y	BTV	48.8	141	1995-06-20





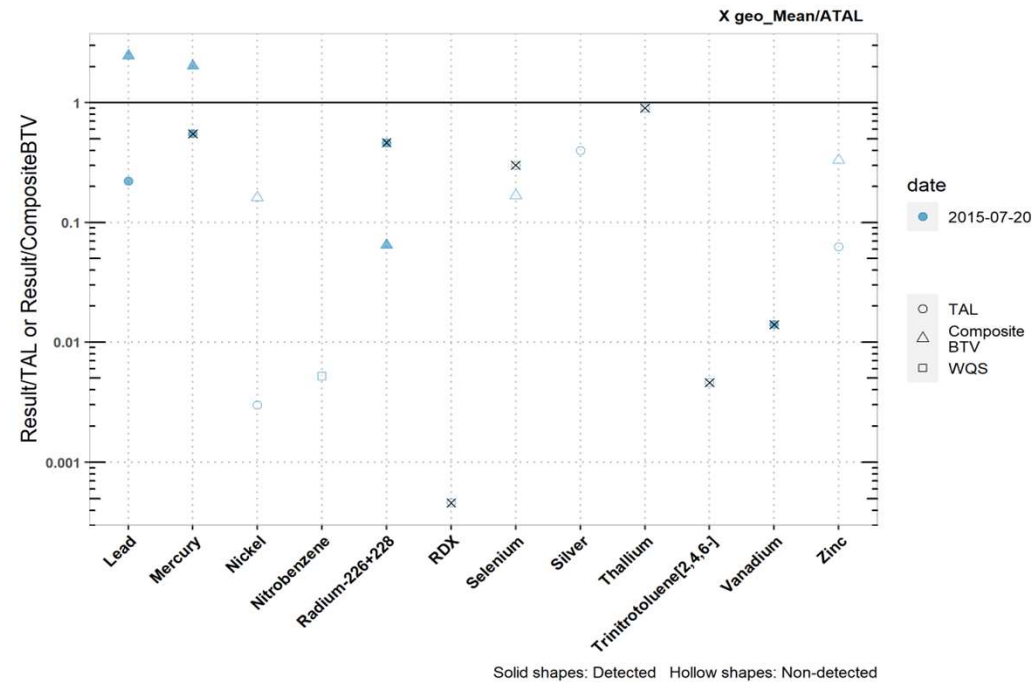
M-SMA-12.9 Stormwater Data

M-SMA-12.9



- Copper exceeded the TAL and BTV
- Gross alpha exceeded the TAL but not the BTV

M-SMA-12.9





Corrective Action:

- Due to receipt of COCs from NMED under the Consent Order this SMA was in Corrective Action Complete status under the 2010 Permit. However, that is no longer a compliance pathway under the 2022 Permit and the SMA was reevaluated.
- Barium exceeded the applicable screening value in soil data but is not a Site-related POC. Therefore, it will not be added for monitoring. Copper exceeded the applicable screening value in soil and exceeded the TAL in stormwater. The remaining metals that exceeded the applicable screening value in soil data were previously measured in stormwater data and did not exceed TALs.
- Gross alpha exceeded the TAL but not the BTV. **Copper exceeded the TAL and BTV, initiating corrective action.**

