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Title:	Site Discharge Pollution Prevention Plan Los Alamos National Laboratory NPDES Permit No. NM0030759, May 1, 2013 Revision 2 Ancho/Chaquehui Watershed Receiving Waters: Ancho Canyon and Chaquehui Canyon Volume 5
Author(s):	Veenis, Steven J.
Intended for:	Individual Permit Pollution Prevention Team, Public, EPA, NMED Report Environmental Programs
Issued:	2015-04-15 (rev.4)

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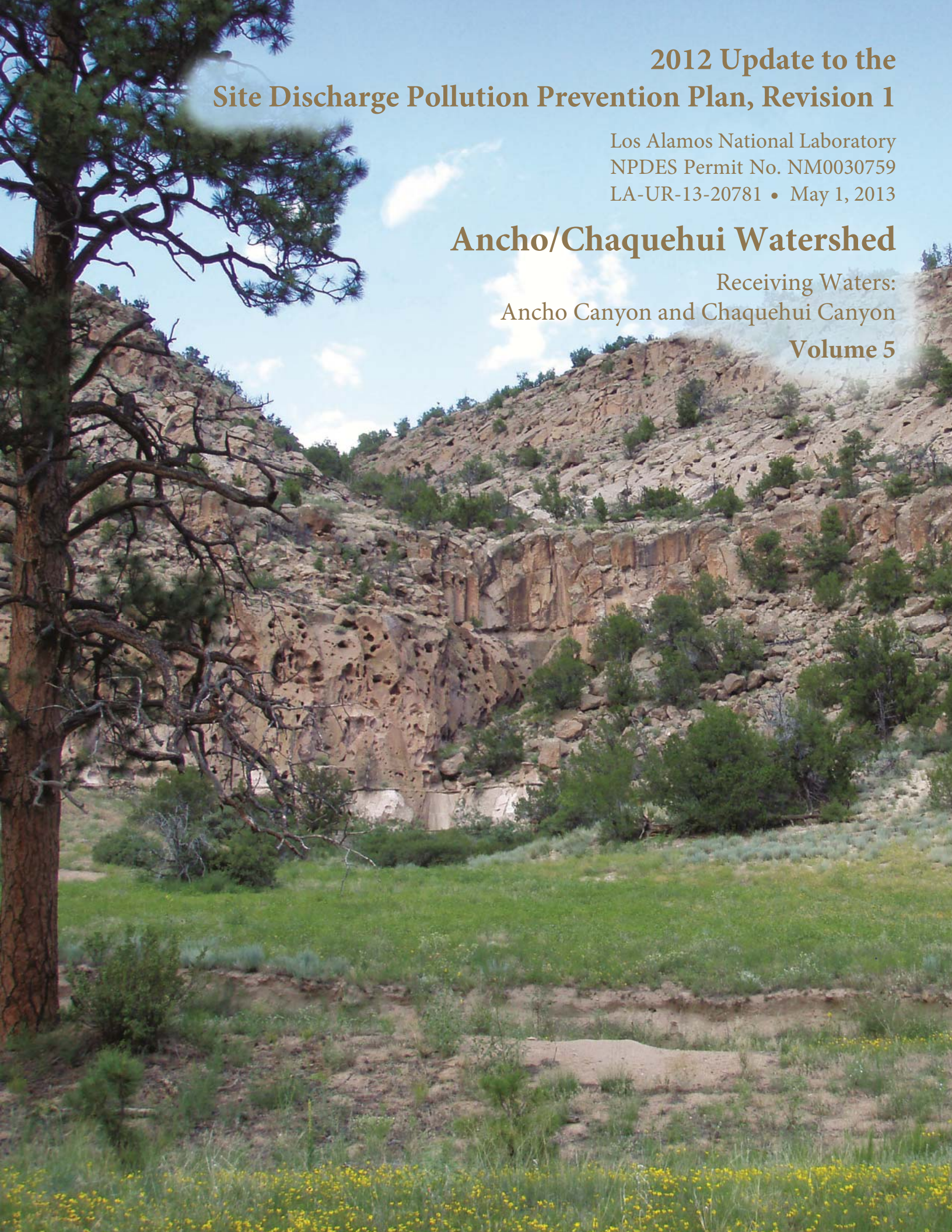


2012 Update to the Site Discharge Pollution Prevention Plan, Revision 1

Los Alamos National Laboratory
NPDES Permit No. NM0030759
LA-UR-13-20781 • May 1, 2013

Ancho/Chaquehui Watershed

Receiving Waters:
Ancho Canyon and Chaquehui Canyon

Volume 5

CONTENTS

Attachments

230.0 A-SMA-1.1: SWMUs 39-004(a) and 39-004(d)

230.1 Site Descriptions

Two historical industrial activity areas are associated with A001, A-SMA-1.1: Sites 39-004(a) and 39-004(d).

Solid Waste Management Unit (SWMU) 39-004(a) is a firing site at Technical Area 39 (TA-39) (structure 39-7). This site was constructed in 1953 as a remote test firing facility to test materials. The experiments conducted at this firing site are designed to expend all the high explosives (HE) contained in the device. If a shot fails so that not all the HE are spent, an effort is made to pick up and destroy the unexploded HE. A typical shot carries 10 lb to 100 lb of explosives, but on occasion, up to 1000 lb may be used. Signs of impact are generally noticeable only within a 200-ft radius around the firing pad. This firing site is within the fall zone of a high cliff that erodes when explosives experiments are conducted at the site. The site is currently on standby status. SWMU 39-004(d), another remote test firing facility, is near SWMU 39-004(a) and is currently active. Both 39-004(a) and 39-004(d) are located along the northern tributary of the upper reach of Ancho Canyon. The firing pads are located in the canyon bottom between a diverted ephemeral stream and the canyon wall. For the purposes of evaluating the area, SWMUs 39-004(a) and 39-004(d) were sampled as one site.

SWMU 39-004(d) is a firing site (structure 39-0057) located along the northern tributary of the upper reach of Ancho Canyon and situated in the bottom of the canyon between a diverted ephemeral stream and the canyon wall. The firing site was constructed in 1953 and is used for explosives experiments.

The project map (Figure 230-1) is located at the end of this site monitoring area (SMA) update. Any future map updates will be posted on the National Pollutant Discharge Elimination System (NPDES) Permit No. NM0030759 (hereafter, the IP) website: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-monitoring-area-maps.php.

230.2 Control Measures

Most of run-on to this SMA originates in the natural areas around the Sites. The channel east of the Sites is confined by a berm located parallel to the access road. All Site runoff is captured in the ponding area to the southeast of the Sites, between the intersection of the two access roads and North Ancho Canyon Road. All active control measures are listed in the following table and their locations are shown on the project map (Figure 230-1).

Table 230-1 Active Control Measures

Control ID	Control Name	Purpose of Control				Control Status
		Run-On	Runoff	Erosion	Sediment	
A00102030001	Established Vegetation - Vegetative Buffer Strip		X	X		CB
A00103010005	Berms - Earthen	X			X	CB

CB: Certified baseline control measure.

B: Additional baseline control measure.

EC: Enhanced control measure.

230.3 Storm Water Monitoring

For calendar year 2012, storm water flow has not been sufficient for full-volume sample collection at A-SMA-1.1. Initial confirmation sampling will continue until one confirmation sample is collected from this SMA.

230.4 Inspections and Maintenance

RG267.4 recorded three storm events at A-SMA-1.1 during the 2012 season. These rain events triggered three post-storm inspections. Post-storm inspections and all other inspection activity conducted at the SMA are summarized below.

Table 230-2 Control Measure Inspections during 2012

Inspection Type	Inspection Reference	Inspection Date
Annual Erosion Evaluation	COMP-22861	04-27-2012
Storm Rain Event	BMP-25012	07-17-2012
Storm Rain Event	BMP-27098	08-28-2012
Storm Rain Event	BMP-27518	09-17-2012

There were no maintenance activities conducted at A-SMA-1.1 in 2012.

230.5 Compliance Status

The Sites associated with A-SMA-1.1 are moderate priority Sites. Corrective action is to be certified complete within 5 yr of the effective date of the IP (i.e., November 2015).

Table 230-4 Compliance Status during 2012

Site	Compliance Status on Jan 1, 2012	Compliance Status on Dec 31, 2012	Comments
SWMU 39-004(a)	Baseline Monitoring Extended	Baseline Monitoring Extended	No Comment
SWMU 39-004(d)	Baseline Monitoring Extended	Baseline Monitoring Extended	No Comment

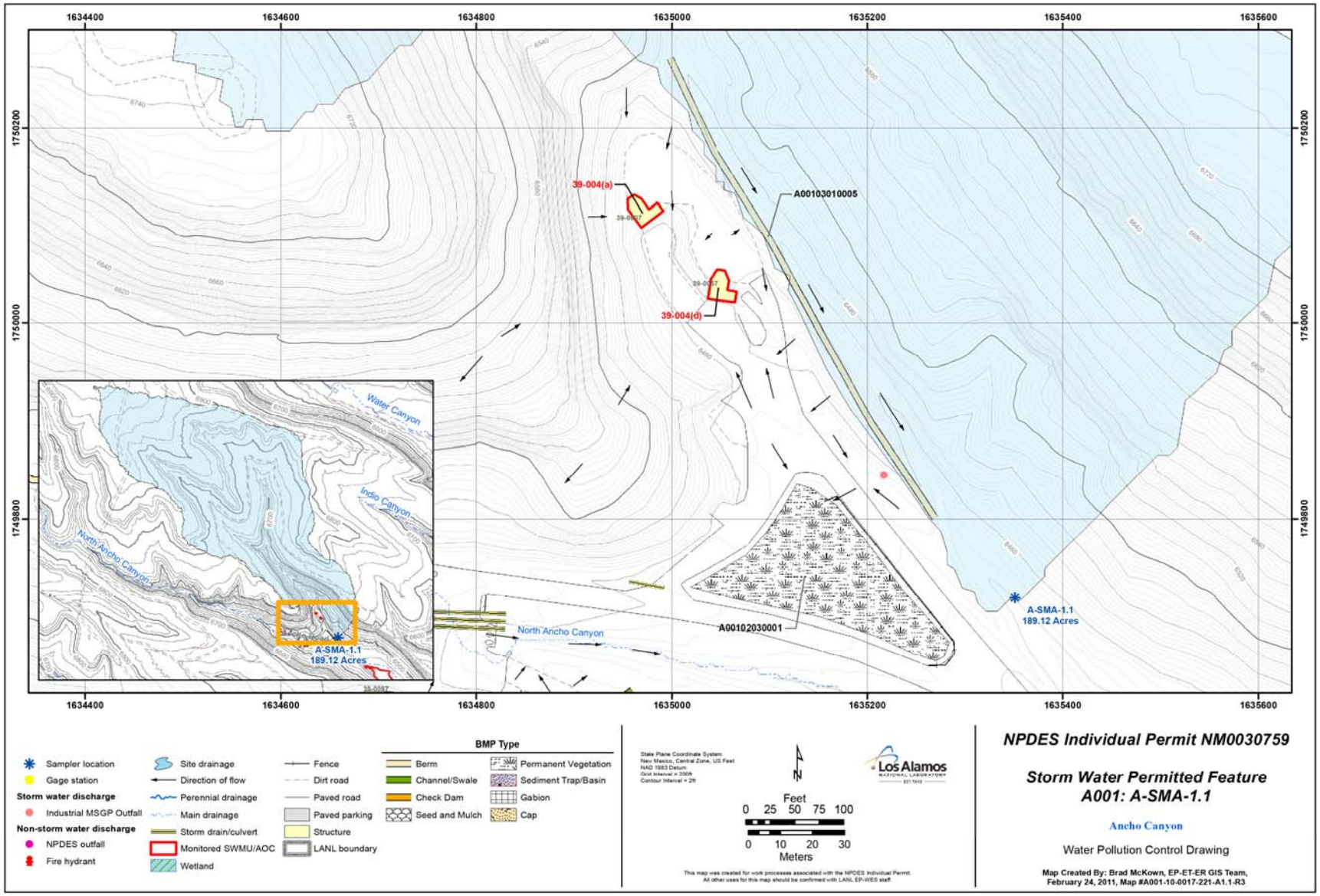


Figure 230-1 A-SMA-1.1 location map

231.0 A-SMA-2: SWMUs 39-004(b) and 39-004(e)

231.1 Site Descriptions

Two historical industrial activity areas are associated with A002, A-SMA-2: Sites 39-004(b) and 39-004(e).

SWMU 39-004(b) is a firing site, structure 39-0008, located in the western tributary of the upper reach of Ancho Canyon and is situated in the canyon bottom between an ephemeral stream and the northern canyon wall. Firing site activities began in 1953 and were discontinued in 1980 because of the constant hazard of falling debris from the nearby cliff. Investigation of SWMU 39-004(b) is deferred per Table IV-2 of the Compliance Order on Consent (the Consent Order).

SWMU 39-004(e) is a firing site (structure 39-0088) located in the western tributary of the upper reach of Ancho Canyon. This firing site was constructed in 1978 and is used for explosives experiments.

The project map (Figure 231-1) is located at the end of this SMA update. Any future map updates will be posted on the IP website: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-monitoring-area-maps.php.

231.2 Control Measures

The primary run-on source for this SMA is North Ancho Canyon. Flow passes through the area via a natural drainage channel and a system of culverts that diverts this flow away from the SMA. All active control measures are listed in the following table, and their locations are shown on the project map (Figure 231-1).

Table 231-1 Active Control Measures

Control ID	Control Name	Purpose of Control				Control Status
		Run-On	Runoff	Erosion	Sediment	
A00202010003	Established Vegetation - Grasses and Shrubs			X		CB
A00203010007	Berms - Earthen	X			X	CB
A00203010008	Berms - Earthen	X			X	CB
A00203060010	Berms - Straw Wattles		X		X	CB
A00203060016	Berms - Straw Wattles	X			X	B
A00204010013	Channel/Swale - Earthen	X		X		CB
A00204060004	Channel/Swale - Riprap	X		X		CB
A00206010011	Check Dam - Rock	X			X	CB
A00206010012	Check Dam - Rock	X			X	CB

CB: Certified baseline control measure.

B: Additional baseline control measure.

EC: Enhanced control measure.

231.3 Storm Water Monitoring

For calendar year 2012, storm water flow has not been sufficient for full-volume sample collection at A-SMA-2. Initial confirmation sampling will continue until one confirmation sample is collected from this SMA.

231.4 Inspections and Maintenance

RG267.4 recorded three storm events at A-SMA-2 during the 2012 season. These rain events triggered three post-storm inspections. Post-storm inspections and all other inspection activity conducted at the SMA are summarized below.

Table 231-2 Control Measure Inspections during 2012

Inspection Type	Inspection Reference	Inspection Date
Annual Erosion Evaluation	COMP-22862	04-27-2012
Storm Rain Event	BMP-25013	07-17-2012
Storm Rain Event	BMP-27099	08-28-2012
Storm Rain Event	BMP-27519	09-17-2012

There were no maintenance activities conducted at A-SMA-2 in 2012.

231.5 Compliance Status

The Sites associated with A-SMA-2 are moderate priority Sites. Corrective action is to be certified complete within 5 yr of the effective date of the IP (i.e., November 2015).

Table 231-4 Compliance Status during 2012

Site	Compliance Status on Jan 1, 2012	Compliance Status on Dec 31, 2012	Comments
SWMU 39-004(b)	Baseline Monitoring	Baseline Monitoring Extended	No Comment
SWMU 39-004(e)	Baseline Monitoring	Baseline Monitoring Extended	No Comment

A-SMA-2, Rip Rap, A00204060004 (photo ID 7344-1)

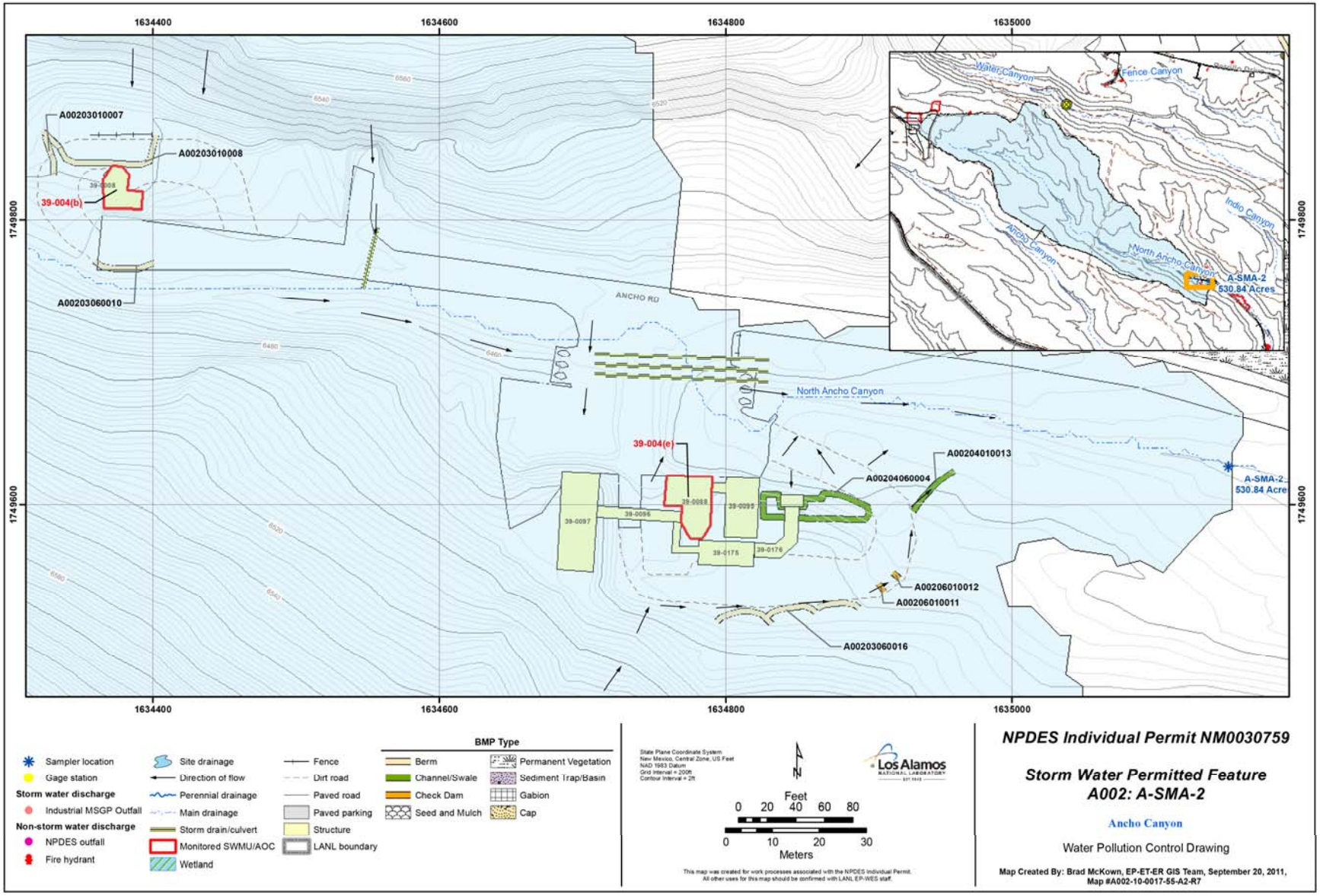


Figure 231-1 A-SMA-2 location map

232.0 A-SMA-2.5: SWMU 39-010

232.1 Site Descriptions

One historical industrial activity area is associated with A003, A-SMA-2.5: Site 39-010.

SWMU 39-010 is an area used for staging soil excavated during the 1978 construction of a firing site [SWMU 39-004(e)] at TA-39. During construction of the firing site, large quantities of soil were removed and deposited in the canyon east of the firing site, forming SWMU 39-010. The site has been inactive since 1978. This soil dump, covering approximately 76,200 ft^2, was not identified in the 1990 SWMU Report. However, it was noted in both the RFI work plan and described in a letter notification to the New Mexico Environment Department (NMED) designating a new SWMU.

The project map (Figure 232-1) is located at the end of this SMA update. Any future map updates will be posted on the IP website: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-monitoring-area-maps.php.

The Site boundary for SWMU 39-010 has been modified to match the boundary depicted in the administrative record for the Consent Order, which is the controlling authority for SWMU and AOC boundary definitions used in the IP. The Site boundary change was minor and did not affect the SMA boundary or sampler location. The updated boundary is shown on the project map (Figure 232.1), and the Site physical characteristic information listed in Attachment 4 has been updated.

232.2 Control Measures

This Permitted Feature is elevated and flat, resulting in a low potential for run-on or runoff. A natural drainage channel east of the SMA diverts run-on from North Ancho Canyon away from the SMA. All active control measures are listed in the following table, and their locations are shown on the project map (Figure 232-1).

Table 232-1 Active Control Measures

Control ID	Control Name	Purpose of Control				Control Status
		Run-On	Runoff	Erosion	Sediment	
A00302010002	Established Vegetation - Grasses and Shrubs			X		CB
A00303010003	Berms - Earthen		X		X	CB
A00303060005	Berms - Straw Wattles	X			X	CB
A00303060006	Berms - Straw Wattles	X			X	CB

CB: Certified baseline control measure.

B: Additional baseline control measure.

EC: Enhanced control measure.

232.3 Storm Water Monitoring

For calendar year 2012, storm water flow has not been sufficient for full-volume sample collection at A-SMA-2.5. Initial confirmation sampling will continue until one confirmation sample is collected from this SMA.

232.4 Inspections and Maintenance

RG265 recorded four storm events at A-SMA-2.5 during the 2012 season. These rain events triggered four post-storm inspections. Post-storm inspections and all other inspection activity conducted at the SMA are summarized below.

Table 232-2 Control Measure Inspections during 2012

Inspection Type	Inspection Reference	Inspection Date
Annual Erosion Evaluation	COMP-22865	04-27-2012
Storm Rain Event	BMP-23259	05-15-2012
Storm Rain Event	BMP-24947	07-17-2012
Storm Rain Event	BMP-26241	08-06-2012
Storm Rain Event	BMP-27094	08-28-2012

There were no maintenance activities conducted at A-SMA-2.5 in 2012.

232.5 Compliance Status

The Site associated with A-SMA-2.5 is a moderate priority Site. Corrective action is to be certified complete within 5 yr of the effective date of the IP (i.e., November 2015).

Table 232-4 Compliance Status during 2012

Site	Compliance Status on Jan 1, 2012	Compliance Status on Dec 31, 2012	Comments
SWMU 39-010	Baseline Monitoring	Baseline Monitoring Extended	No Comment

A-SMA-2.5, (photo ID P72260013_5761)

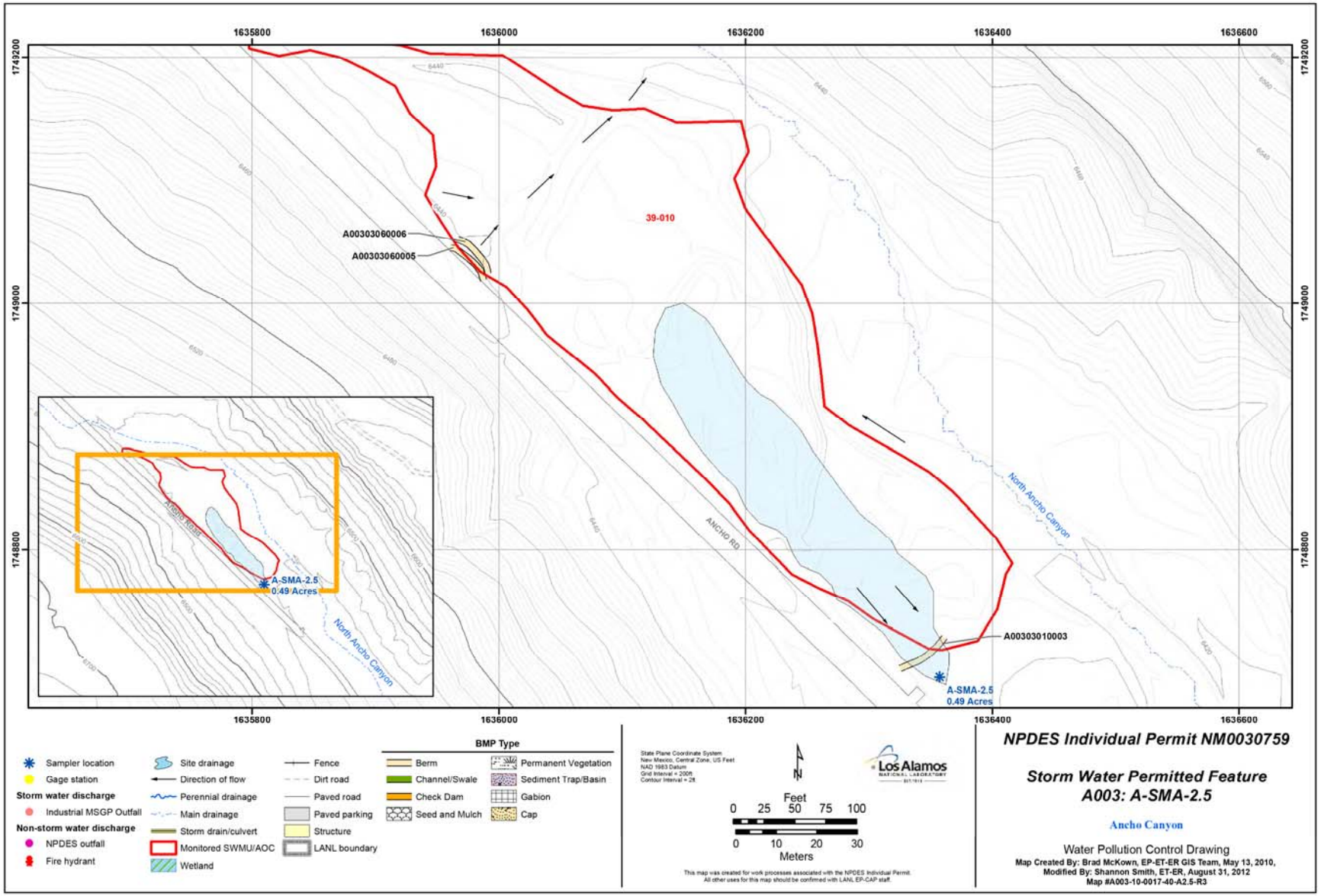


Figure 232-1 A-SMA-2.5 location map

233.0 A-SMA-2.7: AOC 39-002(c) and SWMU 39-008

233.1 Site Descriptions

Two historical industrial activity areas are associated with PF A004, A-SMA-2.7: Sites 39-002(c) and 39-008.

Area of Concern (AOC) 39-002(c) is the location of a former outdoor satellite accumulation area (SAA) on an asphalt-paved area next to the southwest corner of the gas gun support structure (39-0056). Waste paper; solvent-contaminated rags (ethanol, acetone, and trichloroethane); and vacuum grease were stored at this SAA. It is not known if this area was used for storage before being placed in service as an SAA. This SAA was removed from service in February 1994. Potential contaminants associated with industrial materials historically managed at this site are organic solvents and petroleum products.

SWMU 39-008 is an area of potential soil contamination from a gas gun firing site. Building 39-0137 houses a single-stage gas gun that is used to fire depleted uranium projectiles at targets on a cliff face. Testing at this site was conducted from 1960 to 1975, suspended for 13 yr, and then resumed in 1988. Most of the debris from the site activities is scattered over the area just west of building 39-0137, but occasionally projectiles and target fragments hit the cliff face, which is situated approximately 200 ft west of another building associated with this experimental gun (building 39-0056). Photographic evidence shows that the area between the buildings and the cliff has been leveled, and the removed surface materials were pushed into a mound on the south side of the test area. The gas gun is currently used for experimental purposes. Potential contaminants associated with industrial materials historically managed at this site are beryllium, lead, and uranium.

The project map (Figure 233-1) is located at the end of this SMA update. Any future map updates will be posted on the IP website: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-monitoring-area-maps.php.

233.2 Control Measures

There are no significant run-on sources at this SMA. All active control measures are listed in Table 233-1, and their locations are shown on the project map (Figure 233-1). Enhanced controls were installed and certified on August 23, 2012, and submitted to the U.S. Environmental Protection Agency (EPA) on September 20, 2012, as part of corrective action. Photographs of the enhanced controls are available at http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/construction-certifications.php.

Table 233-1 Active Control Measures

Control ID	Control Name	Purpose of Control				Control Status
		Run-On	Runoff	Erosion	Sediment	
A00402010002	Established Vegetation - Grasses and Shrubs			X		CB
A00403010013	Berms - Earthen		X		X	EC
A00403010014	Berms - Earthen		X		X	EC
A00403010015	Berms - Earthen		X		X	EC
A00403010016	Berms - Earthen		X		X	EC

CB: Certified baseline control measure.
B: Additional baseline control measure.
EC: Enhanced control measure.

233.3 Storm Water Monitoring

AOC 39-002(c) and SWMU 39-008 are monitored within A-SMA-2.7. Following the installation of baseline control measures, baseline confirmation samples were collected on July 24, 2011, and September 4, 2011 (Figures 233-2 and 233-3). Inorganic analytical results from the two samples yielded the same two target action level (TAL) exceedances:

- Copper concentrations of 5.4 and 6.2 µg/L (MTAL is 4.3 µg/L) and
- Gross-alpha activities of 25.4 and 31.8 pCi/L (ATAL is 15 pCi/L)

These exceedances were evaluated by comparing the results from soil samples collected at the Sites during Consent Order investigations with the storm water TAL exceedances to determine whether the exceedance may be related to historical industrial activities. The discussion is organized by Site and analyte.

AOC 39-002(c): Potential contaminants associated with industrial materials historically managed at this Site are organic solvents and petroleum products.

- Copper—Copper was detected 1.4 times above background value (BV) in one soil sample during the Consent Order investigation conducted in 2009. Risk-assessment results based on 2009 soil sampling data showed no unacceptable risk under the residential scenario. A Certification of Completion (COC) without controls was issued for the Site by NMED in April 2010.
- Gross alpha—Soil samples were not analyzed for radionuclides because there was no history of radionuclide use at this Site.


A-SMA-2.7 (photo ID P7260016_5763)

In summary, copper was detected only slightly above BV and is not known to be associated with industrial materials historically managed at the Site. Based on site history and soil sampling results, it was determined that historical activity at the Site is not the source of copper in storm water results that were above TALs. Radionuclides are not known to be associated with industrial materials historically managed at the Site. Based on site history it was determined that historical activity at the Site is not the source of adjusted gross alpha in storm water results that were above TALs. Because this Site was issued a COC without controls, corrective action has been completed under the IP, and no further storm water sampling is required.

SWMU 39-008: Potential contaminants associated with industrial materials historically managed at this Site are beryllium, lead, and uranium.

- Copper—Copper was detected above BV in soil samples collected during the 2009 Consent Order investigation. Maximum concentrations were 1.5 times BV. SWMU 39-008 is an active gun site impacted by continuing operations, and further Consent Order sampling is delayed until operations at the Site cease.
- Gross alpha—Uranium-235/236 and uranium-238 were detected above BV in soil samples collected during the 2009 Consent Order investigation. Maximum activities were 1.3 times BV and 2.9 times BV, respectively.

In summary, copper was detected only slightly above BV and is not known to be associated with industrial materials historically used at the Site. Based on site history and previous sampling results, it was determined that historical activities at the Site are not the source of copper in storm water results above TALs. Uranium, which has alpha-emitting isotopes, is known to be associated with industrial materials historically used at the Site but was detected only slightly above BV. In addition, uranium isotopes are excluded from the definition of adjusted gross-alpha radioactivity. No other alpha-emitting radionuclides are known to be associated with industrial materials historically managed at this Site. Based on site history and previous sampling results, it was determined that the Site is not a source of adjusted gross alpha in storm water results greater than TALs.

TAL exceedances were also evaluated against the appropriate storm water BV, that is, "Bandelier Tuff background" for undisturbed SMAs or "developed background" for urban settings. BVs are expressed as upper tolerance limits (UTLs) using the approved EPA method for calculating BVs. UTLs for undisturbed SMAs were derived from storm water runoff containing entrained sediments derived from Bandelier Tuff and are labeled "Bandelier Tuff Background" in Figure 233-2. UTLs developed for urban settings were derived from runoff from developed landscapes on the Pajarito Plateau, including buildings, parking lots, roads, and associated features, and are labeled "Developed Background" in Figure 233-2.

A-SMA-2.7, Earthen Berm, A00403010015, 16 (photo ID 23588-3)

Most of the A-SMA-2.7 drainage area is located on Bandelier Tuff, and there is minimal run-on from developed facilities (e.g., buildings, parking lots, and pavement); therefore, the Bandelier Tuff background UTL was compared with copper and gross-alpha storm water exceedances.

- Copper—Copper is associated with trace minerals in Bandelier Tuff. The copper UTL for storm water containing sediments derived from Bandelier Tuff is 3.43 µg/L; the results from 2011 confirmation samples slightly exceed this value.
- Gross alpha—Gross alpha is associated with naturally occurring radioactive uranium- and thorium-bearing minerals in Bandelier Tuff. The gross-alpha UTL for storm water containing sediments derived from Bandelier Tuff is 1490 pCi/L; the results from 2011 confirmation samples are below this value. The gross-alpha geometric mean of 28.4 pCi/L is approximately 50 times lower than the background storm water UTL.

All the analytical results for these samples are reported in the 2011 Annual Report. Enhanced control corrective action monitoring was initiated after the enhanced controls were certified.

The monitoring station was relocated on July 18, 2012, and is situated approximately 175 ft northwest of original sampler location. This minor adjustment places the sampler directly below the spillway of the new enhanced berm (A00403010015). The minor sampler move will provide samples directly off SWMU 39-008 and is more representative of storm water discharge from the SWMU because corrective action has been completed at AOC 39-002(c). Sampler coordinates and SMA drainage areas have been updated in Attachment 4.

233.4 Inspections and Maintenance

RG265 recorded four storm events at A-SMA-2.7 during the 2012 season. These rain events triggered four post-storm inspections. Post-storm inspections and all other inspection activity conducted at the SMA are summarized in Table 233-2.

Table 233-2 Control Measure Inspections during 2012

Inspection Type	Inspection Reference	Inspection Date
Annual Erosion Evaluation	COMP-22866	04-27-2012
Remediation Construction Activity	COMP-23498	05-14-2012
Storm Rain Event	BMP-23260	05-15-2012
Enhanced Control Measure Verification	BMP-23588	05-31-2012
Storm Rain Event	BMP-24948	07-17-2012
Storm Rain Event	BMP-26242	08-06-2012
Storm Rain Event	BMP-27095	08-28-2012

Maintenance activities conducted at the SMA are summarized in Table 233-3.

Table 233-3 Maintenance during 2012

Maintenance Reference	Maintenance Conducted	Maintenance Date	Response Time	Response Discussion
BMP-23260	Repositioned rock on Rock Check Dams A00406010007, -0008, -0009, and -0010.	05-15-2012	0 day(s)	Maintenance conducted upon inspection.
BMP-24948	Request has been sent to FOD regarding culvert cleaning.	07-17-2012	0 day(s)	Maintenance conducted upon inspection.

233.5 Compliance Status

The Sites associated with A-SMA-2.7 are moderate priority Sites. Corrective action is to be certified complete within 5 yr of the effective date of the IP (i.e., November 2015).

Table 233-4 Compliance Status during 2012

Site	Compliance Status on Jan 1, 2012	Compliance Status on Dec 31, 2012	Comments
AOC 39-002(c)	Corrective Action Initiated	Corrective Action Complete	NMED, April 6, 2010, "Approval, Request for Certificates of Completion for Two Solid Waste Management Units and Five Areas of Concern in the North Ancho Canyon Aggregate Area"
SWMU 39-008	Corrective Action Initiated	Enhanced Control Corrective Action Monitoring	Initiated on August 23, 2012

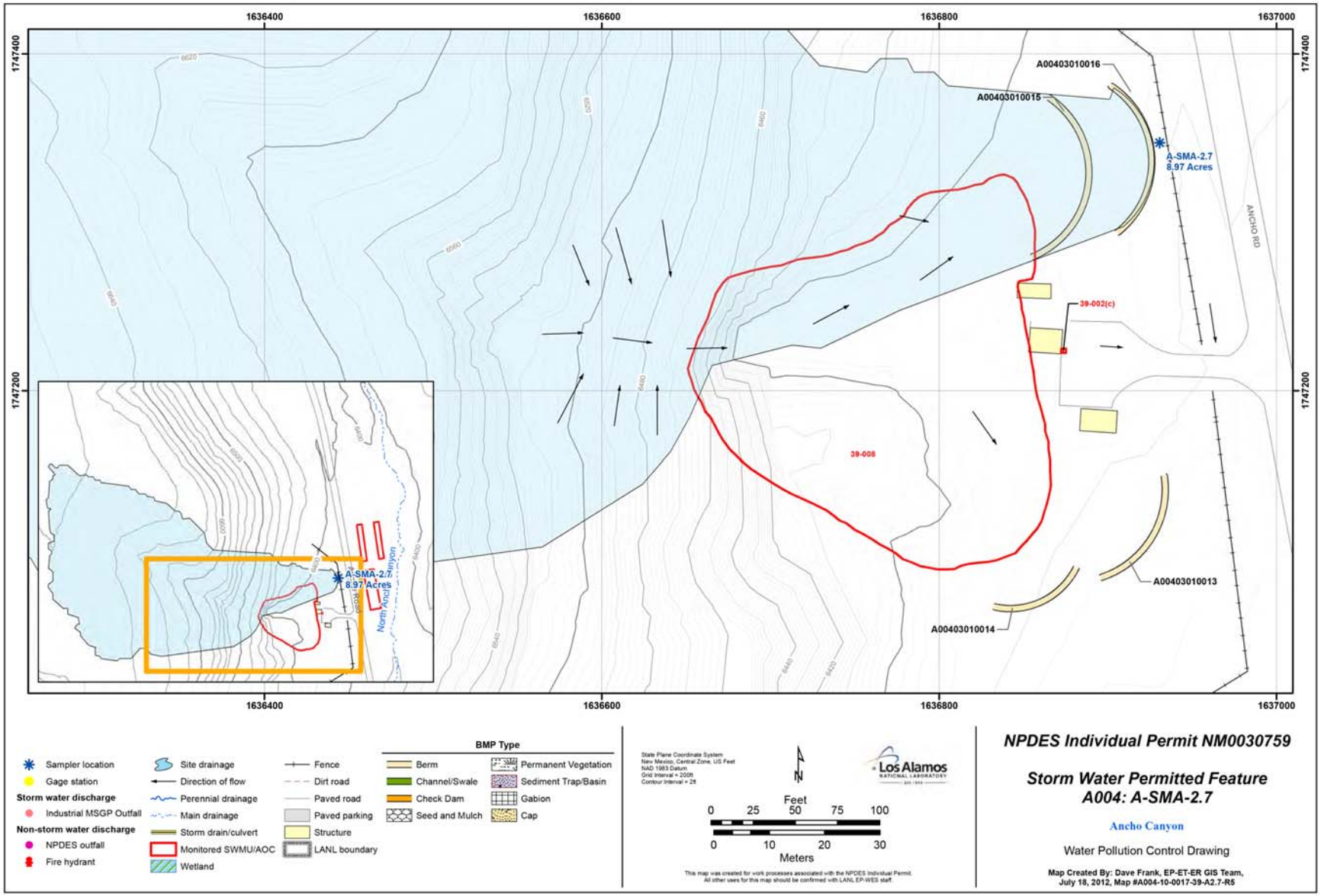
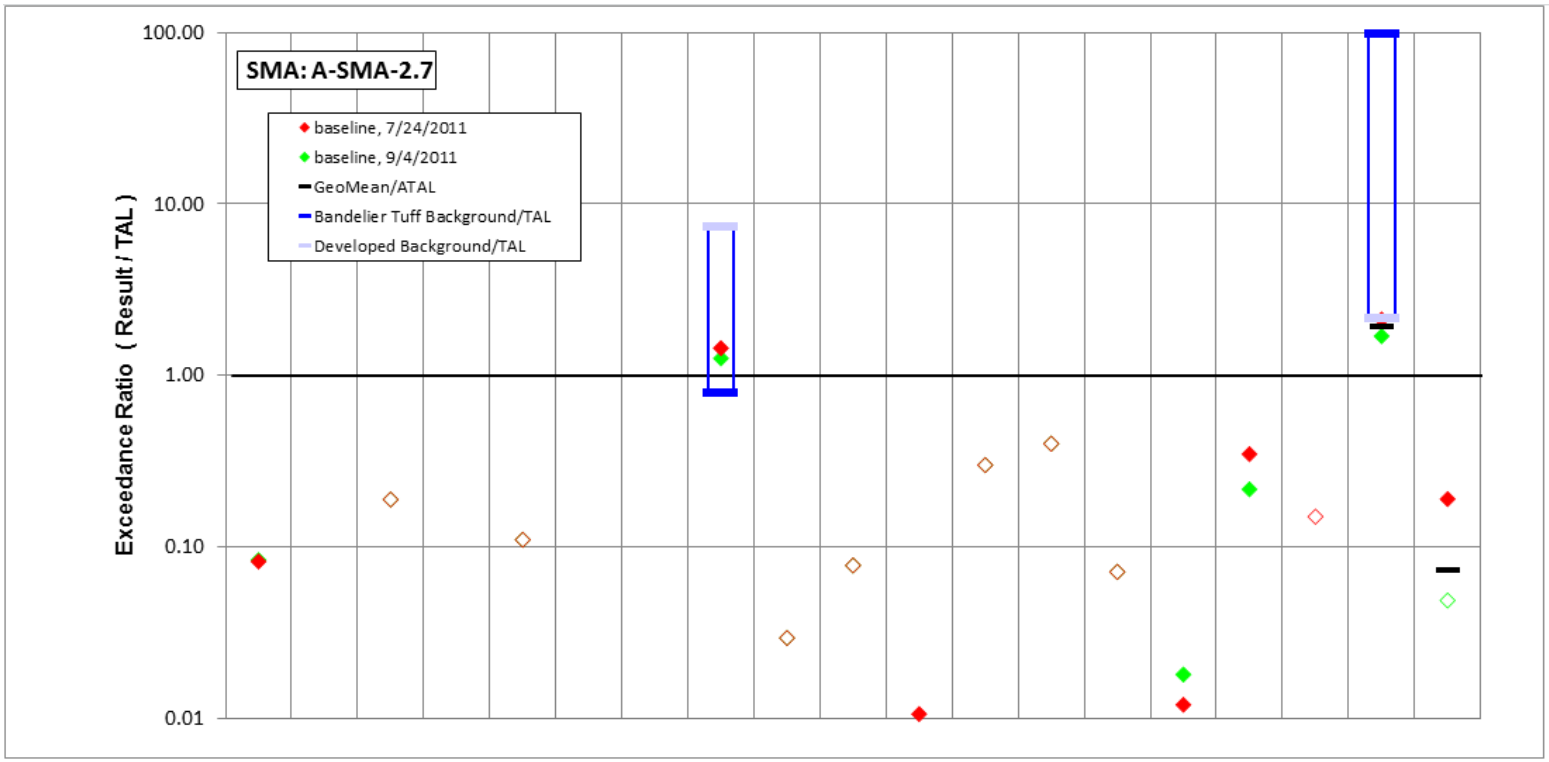


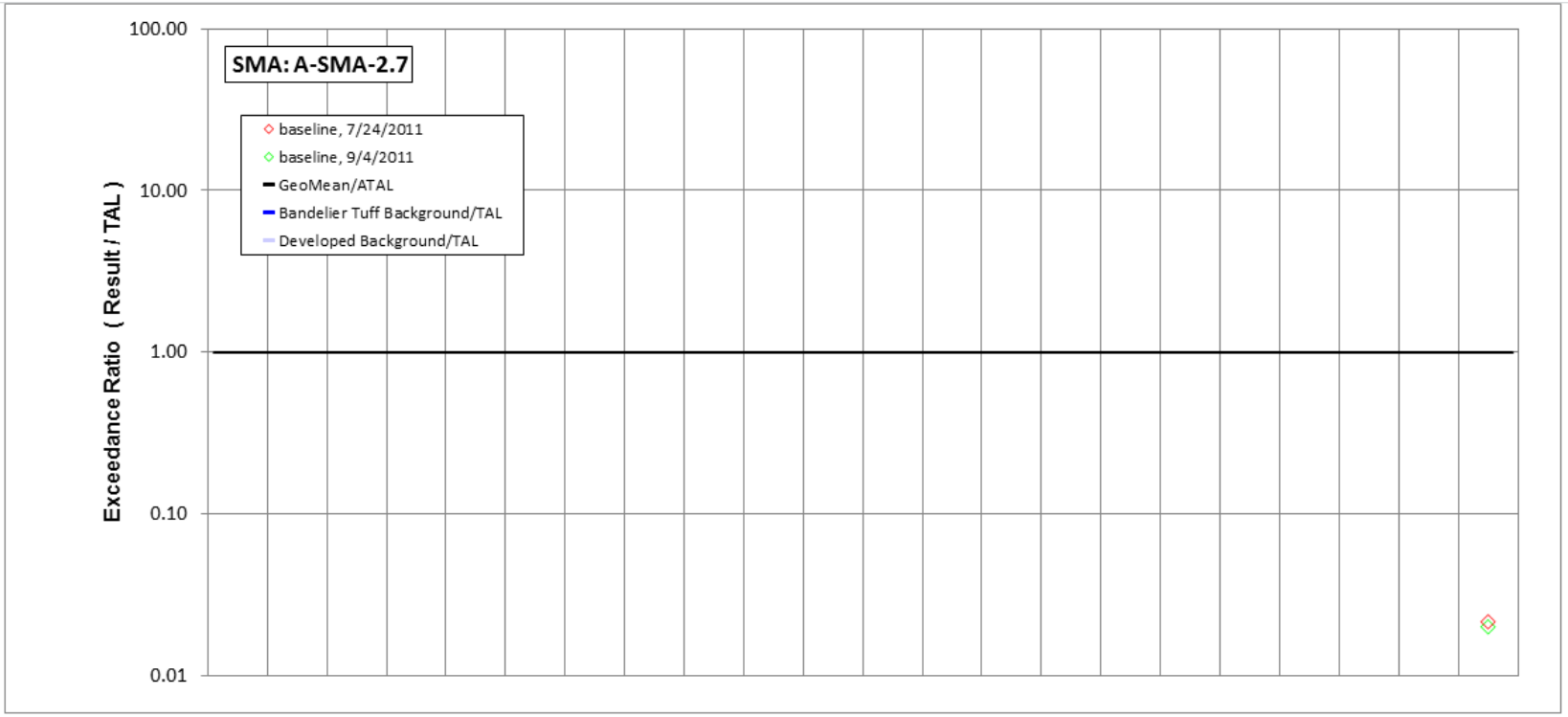
Figure 233-1 A-SMA-2.7 location map



	Aluminum	Antimony	Arsenic	Boron	Cadmium	Chromium	Cobalt	**Copper**	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Cyanide, weak acid dissociable	**Gross alpha**	Radium-226 and Radium-228
std used in ratio calculations	MTAL	ATAL	ATAL	ATAL	MTAL	MTAL	ATAL	MTAL	MTAL	ATAL	MTAL	ATAL	MTAL	ATAL	ATAL	MTAL	ATAL	ATAL	ATAL
std value	750	640	9	5000	1	210	1000	4.3	17	0.77	170	5	0.5	6.3	100	42	0.01	15	30
unit	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	pCi/L	pCi/L
9/4/2011 result	62.8	*1*	*1.7*	*15*	*0.11*	*2*	3.3	**5.4**	*0.5*	*0.06*	1.4	*1.5*	*0.2*	*0.45*	1.8	9.1	-	**25.4**	*1.46*
result / TAL	0.084	*0.002*	*0.19*	*0.003*	*0.11*	*0.01*	0.0033	**1.3**	*0.029*	*0.078*	0.0082	*0.3*	*0.4*	*0.071*	0.018	0.22	-	**1.7**	*0.049*
7/24/2011 result	61.6	*1*	*1.7*	*15*	*0.11*	*2*	2.2	**6.2**	*0.5*	*0.06*	1.8	*1.5*	*0.2*	*0.45*	1.2	14.6	*0.002*	**31.8**	5.7
result / TAL	0.082	*0.002*	*0.19*	*0.003*	*0.11*	*0.01*	0.0022	**1.4**	*0.029*	*0.078*	0.011	*0.3*	*0.4*	*0.071*	0.012	0.35	*0.15*	**2.1**	0.19

Bold font indicates result>TAL; italic font indicates undetected results; "-" is used if no analytical results were available.

Figure 233-2 Inorganic analytical results summary plot for A-SMA-2.7



	Aldrin	Benzo(a)pyrene	BHC[gamma-]	Chlordane (alpha/gamma)	Chlordane[alpha-]	Chlordane[gamma-]	DDD[4,4'-]	DDE[4,4'-]	DDT[4,4'-]	Dieldrin	Endosulfan I	Endosulfan II	Endrin	Heptachlor	Heptachlor Epoxide	Hexachlorobenzene	Pentachlorophenol	RDX	Tetrachlorodibenzo dioxin[2,3,7,8-]	Total PCB	Toxaphene (Technical Grade)	Trinitrotoluene [2,4,6-]
std used in ratio calculations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ATAL	-	-	-	ATAL
std value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200	-	-	-	20
unit	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
9/4/2011 result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*0.4*	-	-	-	*0.4*
result / TAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*0.002*	-	-	-	*0.02*
7/24/2011 result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*0.43*	-	-	-	*0.43*
result / TAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*0.002*	-	-	-	*0.022*

Bold font indicates result>TAL; italic font indicates undetected results; "-" is used if no analytical results were available.

Figure 233-3 Organic analytical results summary plot for A-SMA-2.7

234.0 A-SMA-2.8: SWMU 39-001(b)

234.1 Site Descriptions

One historical industrial activity area is associated with A005, A-SMA-2.8: Site 39-001(b).

SWMU 39-001(b) is a former disposal area that consisted of three trenches used to dispose of debris from firing site SWMU 39-008. Empty chemical containers and office waste were reported as being disposed of at this SWMU. Pit 1, originally known as Material Disposal Area (MDA) Y, was constructed in the late 1960s. Pit 2 was originally constructed parallel and next to Pit 1 and was originally reported to have been used from 1976 to 1981; however, the width of this pit may have been enlarged, and it was kept in service until 1986. Pit 3 was constructed directly south of the other two pits and was used from 1981 to 1989. All three pits were closed by May 1989. SWMU 39-001(b) is a component of Consolidated Unit 39-001(b)-00, along with SWMU 39-008.

The project map (Figure 234-1) is located at the end of this SMA update. Any future map updates will be posted on the IP website: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-monitoring-area-maps.php.

234.2 Control Measures

There are no significant run-on sources to this SMA. Storm water run-on from adjacent paved areas is diverted by engineered controls away from the SMA. All active control measures are listed in the following table, and their locations are shown on the project map (Figure 234-1).

Table 234-1 Active Control Measures

Control ID	Control Name	Purpose of Control				Control Status
		Run-On	Runoff	Erosion	Sediment	
A00501010004	Seed and Mulch - Seed and Wood Mulch			X		B
A00502010001	Established Vegetation -Grasses and Shrubs			X		CB
A00503010002	Berms - Earthen		X		X	CB

CB: Certified baseline control measure.

B: Additional baseline control measure.

EC: Enhanced control measure.

A-SMA-2.8, Earthen Berm, A00501030002 (photo ID 11692-1)

234.3 Storm Water Monitoring

For calendar year 2012, storm water flow has not been sufficient for full-volume sample collection at A-SMA-2.8. Initial confirmation sampling will continue until one confirmation sample is collected from this SMA.

234.4 Inspections and Maintenance

RG265 recorded four storm events at A-SMA-2.8 during the 2012 season. These rain events triggered four post-storm inspections. Post-storm inspections and all other inspection activity conducted at the SMA are summarized below.

Table 234-2 Control Measure Inspections during 2012

Inspection Type	Inspection Reference	Inspection Date
Annual Erosion Evaluation	COMP-22867	04-27-2012
Storm Rain Event	BMP-23261	05-15-2012
Storm Rain Event	BMP-24949	07-17-2012
Storm Rain Event	BMP-26243	08-06-2012
Storm Rain Event	BMP-27096	08-28-2012

Maintenance activities conducted at the SMA are summarized in the following table.

Table 234-3 Maintenance during 2012

Maintenance Reference	Maintenance Conducted	Maintenance Date	Response Time	Response Discussion
BMP-23112	Installed seed and wood mulch A00501010004 over existing hydromulch -0003, which was retired.	05-22-2012	25 day(s)	Maintenance conducted as soon as practicable

234.5 Compliance Status

The Site associated with A-SMA-2.8 is a moderate priority Site. Corrective action is to be certified complete within 5 yr of the effective date of the IP (i.e., November 2015).

Table 234-4 Compliance Status during 2012

Site	Compliance Status on Jan 1, 2012	Compliance Status on Dec 31, 2012	Comments
SWMU 39-001(b)	Baseline Monitoring	Baseline Monitoring Extended	NMED, April 6, 2010, "Approval Request for Certificates of Completion for Two Solid Waste Management Units and Five Areas of Concern in the North Ancho Canyon Aggregate Area"

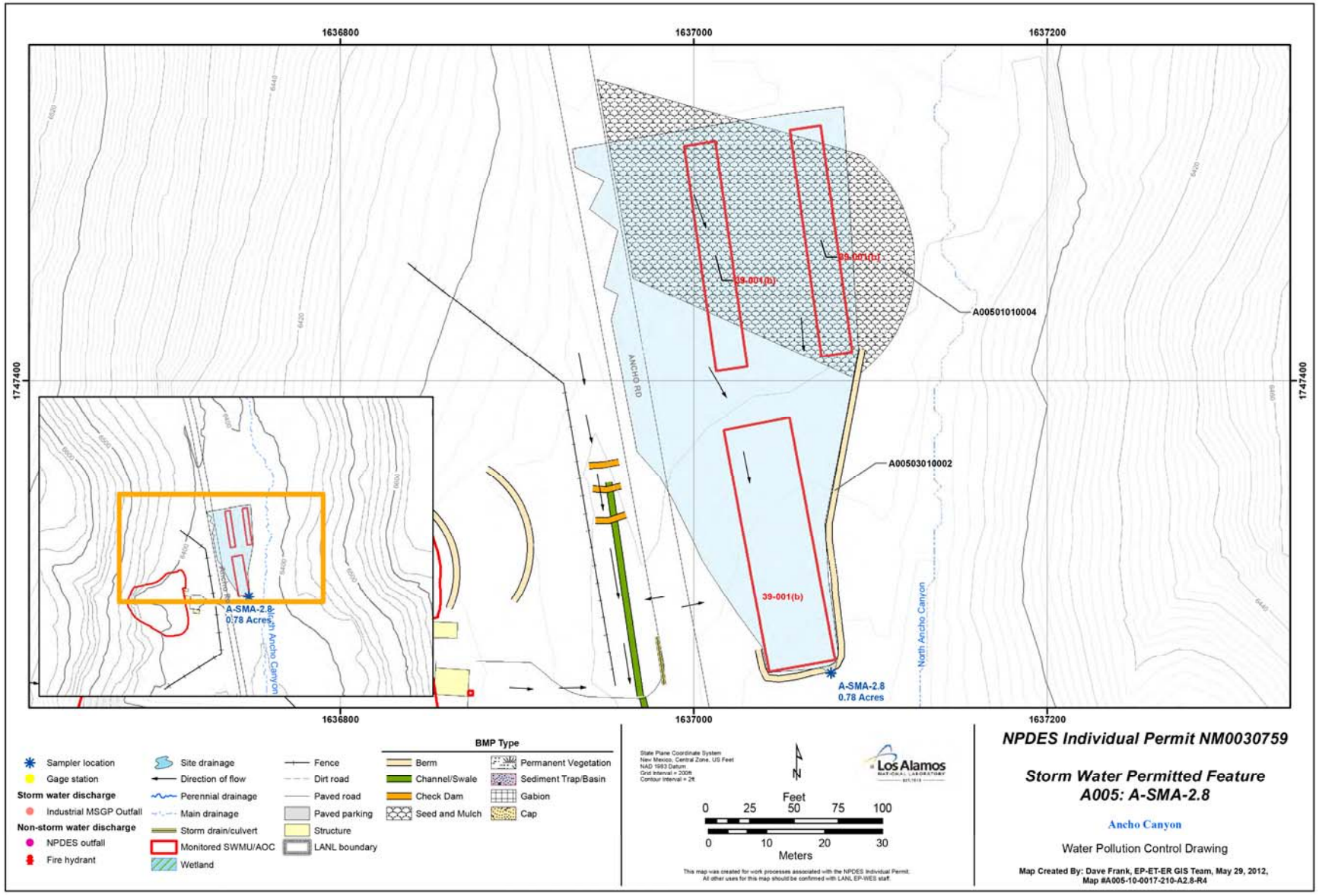


Figure 234-1 A-SMA-2.8 location map

235.0 A-SMA-3: AOC 39-002(b) and SWMU 39-004(c)

235.1 Site Descriptions

Two historical industrial activity areas are associated with A006, A-SMA-3: Sites 39-002(b) and 39-004(c).

AOC 39-002(b) is the location of a former SAA on a 5-ft × 5-ft concrete pad next to a firing site support building (structure 39-0006) at a firing site [SWMU 39 004(c)]. AOC 39-002(b) was used for storage before it became an SAA. The date the storage area began operating as an SAA is not known; however, the SAA was removed from service in 1993.

SWMU 39-004(c) is an active firing site and active operating Resource Conservation and Recovery Act (RCRA) open detonation (OD) site (structure 39-06) subject to RCRA closure requirements. The site is located in the southernmost western tributary of Ancho Canyon in the canyon bottom between an ephemeral stream and steep hill slopes to both the north and south. The site is used for explosives experiments and for treating hazardous waste by OD. The experiments conducted at this firing site are designed to expend all HE in the device. Use of this site as a test firing site began when TA-39 was established in 1953.

The project map (Figure 235-1) is located at the end of this SMA update. Any future map updates will be posted on the IP website: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-monitoring-area-maps.php.

235.2 Control Measures

The primary source of run-on to this SMA is from overland flow originating in the natural areas around it. Any run-on primarily enters the Permitted Feature from the south, flowing generally north until it reaches a natural drainage channel, then flowing east. All active control measures are listed in the following table, and their locations are shown on the project map (Figure 235-1).

Table 235-1 Active Control Measures

Control ID	Control Name	Purpose of Control				Control Status
		Run-On	Runoff	Erosion	Sediment	
A00602010001	Established Vegetation - Grasses and Shrubs			X		CB
A00603120017	Berms - Rock	X			X	B
A00604060002	Channel/Swale - Riprap	X		X		CB
A00606010003	Check Dam - Rock		X		X	CB
A00606010009	Check Dam - Rock		X		X	CB
A00606010010	Check Dam - Rock				X	CB
A00606010011	Check Dam - Rock				X	CB
A00606010012	Check Dam - Rock				X	CB
A00606010013	Check Dam - Rock		X		X	B
A00606010014	Check Dam - Rock		X		X	B
A00606010015	Check Dam - Rock		X		X	B
A00606010016	Check Dam - Rock		X		X	B

CB: Certified baseline control measure.
B: Additional baseline control measure.
EC: Enhanced control measure.

235.3 Storm Water Monitoring

For calendar year 2012, storm water flow has not been sufficient for full-volume sample collection at A-SMA-3. Initial confirmation sampling will continue until one confirmation sample is collected from this SMA.

235.4 Inspections and Maintenance

RG265 recorded four storm events at A-SMA-3 during the 2012 season. These rain events triggered four post-storm inspections. Post-storm inspections and all other inspection activity conducted at the SMA are summarized below.

Table 235-2 Control Measure Inspections during 2012

Inspection Type	Inspection Reference	Inspection Date
Annual Erosion Evaluation	COMP-22868	04-27-2012
Storm Rain Event	BMP-23262	05-15-2012
Storm Rain Event	BMP-24950	07-17-2012
Storm Rain Event	BMP-26244	08-06-2012
Storm Rain Event	BMP-27097	08-28-2012

Maintenance activities conducted at the SMA are summarized in the following table.

Table 235-3 Maintenance during 2012

Maintenance Reference	Maintenance Conducted	Maintenance Date	Response Time	Response Discussion
BMP-23113	Installed rock berm A00603120017 in location of earth berm -0004, which was retired.	05-23-2012	26 day(s)	Maintenance conducted as soon as practicable

235.5 Compliance Status

The Sites associated with A-SMA-3 are moderate priority Sites. Corrective action is to be certified complete within 5 yr of the effective date of the IP (i.e., November 2015).

Table 235-4 Compliance Status during 2012

Site	Compliance Status on Jan 1, 2012	Compliance Status on Dec 31, 2012	Comments
AOC 39-002(b)	Baseline Monitoring Extended	Baseline Monitoring Extended	No Comment
SWMU 39-004(c)	Baseline Monitoring Extended	Baseline Monitoring Extended	No Comment

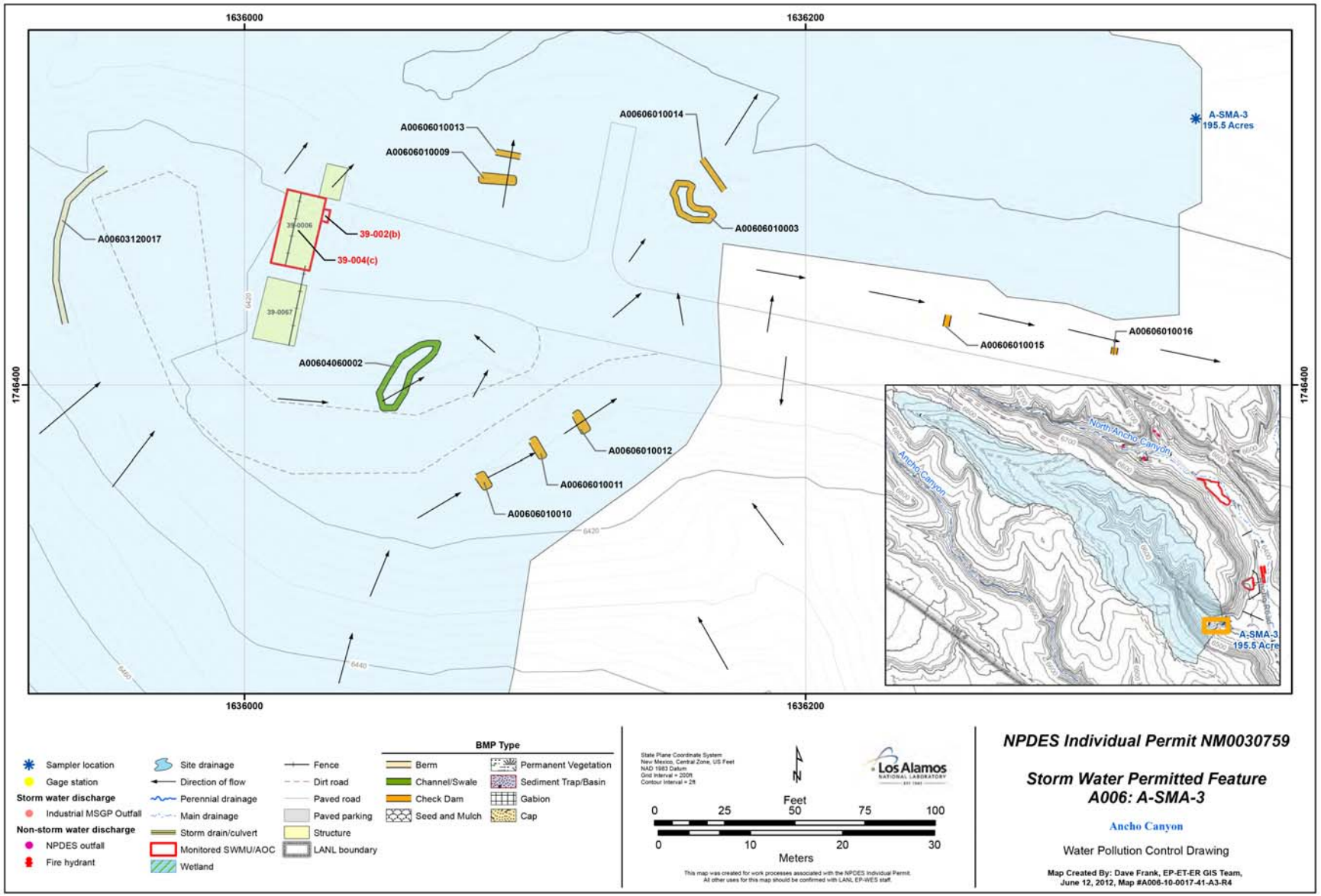


Figure 235-1 A-SMA-3 location map

236.0 A-SMA-3.5: SWMU 39-006(a)

236.1 Site Descriptions

One historical industrial activity area is associated with A007, A-SMA-3.5: Site 39-006(a).

SWMU 39-006(a) consists of a septic system with inactive and active components located east and south of building 39-2 at TA-39. The inactive portion of the septic system was constructed in 1953 and received discharges from building 39-2. The inactive portion of the septic system included an 1800-gal. septic tank (former structure 39-12), sections of drainlines, a subsurface sand filter, a chemical seepage pit, and an outfall. The septic tank was located 100 ft east of building 39-2 and was connected to a sand filter north of NM 4. The sand filter discharged to an outfall south of NM 4 in North Ancho Canyon. In 1973, the septic tank was enlarged, a new subsurface sand filter was installed on the south side of NM 4, and use of the old sand filter was discontinued. Septic tank 39-104, the new sand filter south of NM 4, and the still-active drainlines are part of the SWMU 39-006(a) active components. In 1989, the outlet from the new sand filter was plugged, eliminating the discharge to the outfall. Photographic-processing chemicals from building 39-2 were routinely discharged to former septic tank 39-12, eventually causing the septic tank to malfunction. To correct the problem, a seepage pit was installed directly north of former septic tank 39-12 in 1973 to manage the photographic-processing chemicals. The seepage pit handled approximately 75 gal./yr until 1992. The chemical seepage pit consisted of an open pit approximately 12 ft deep and filled with cobble. A corrugated metal pipe approximately 1 ft in diameter runs vertically through the center of the seepage pit. The inactive septic tank (former structure 39-12), inactive chemical seepage pit, and the original sand filter were removed during 2009 field activities.

The project map (Figure 236-1) is located at the end of this SMA update. Any future map updates will be posted on the IP website: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-monitoring-area-maps.php.

236.2 Control Measures

There are no significant run-on sources to this SMA. The associated Site is an active septic system serving TA-39. The discharge area associated with this system is located in a remote and rugged area. All active control measures are listed in the following table, and their locations are shown on the project map (Figure 236-1).

Table 236-1 Active Control Measures

Control ID	Control Name	Purpose of Control				Control Status
		Run-On	Runoff	Erosion	Sediment	
A00702010001	Established Vegetation - Grasses and Shrubs			X		CB
A00703060002	Berms - Straw Wattles		X		X	CB

CB: Certified baseline control measure.

B: Additional baseline control measure.

EC: Enhanced control measure.

236.3 Storm Water Monitoring

For calendar year 2012, storm water flow has not been sufficient for full-volume sample collection at A-SMA-3.5. Initial confirmation sampling will continue until one confirmation sample is collected from this SMA.

236.4 Inspections and Maintenance

RG340 recorded three storm events at A-SMA-3.5 during the 2012 season. These rain events triggered three post-storm inspections. Post-storm inspections and all other inspection activity conducted at the SMA are summarized below.

Table 236-2 Control Measure Inspections during 2012

Inspection Type	Inspection Reference	Inspection Date
Annual Erosion Evaluation	COMP-22863	04-27-2012
Storm Rain Event	BMP-24926	07-17-2012
Storm Rain Event	BMP-26672	08-20-2012
Storm Rain Event	BMP-27523	09-12-2012

There were no maintenance activities conducted at A-SMA-3.5 in 2012.

236.5 Compliance Status

The Site associated with A-SMA-3.5 is a moderate priority Site. Corrective action is to be certified complete within 5 yr of the effective date of the IP (i.e., November 2015).

Table 236-4 Compliance Status during 2012

Site	Compliance Status on Jan 1, 2012	Compliance Status on Dec 31, 2012	Comments
SWMU 39-006(a)	Baseline Monitoring	Baseline Monitoring Extended	No Comment

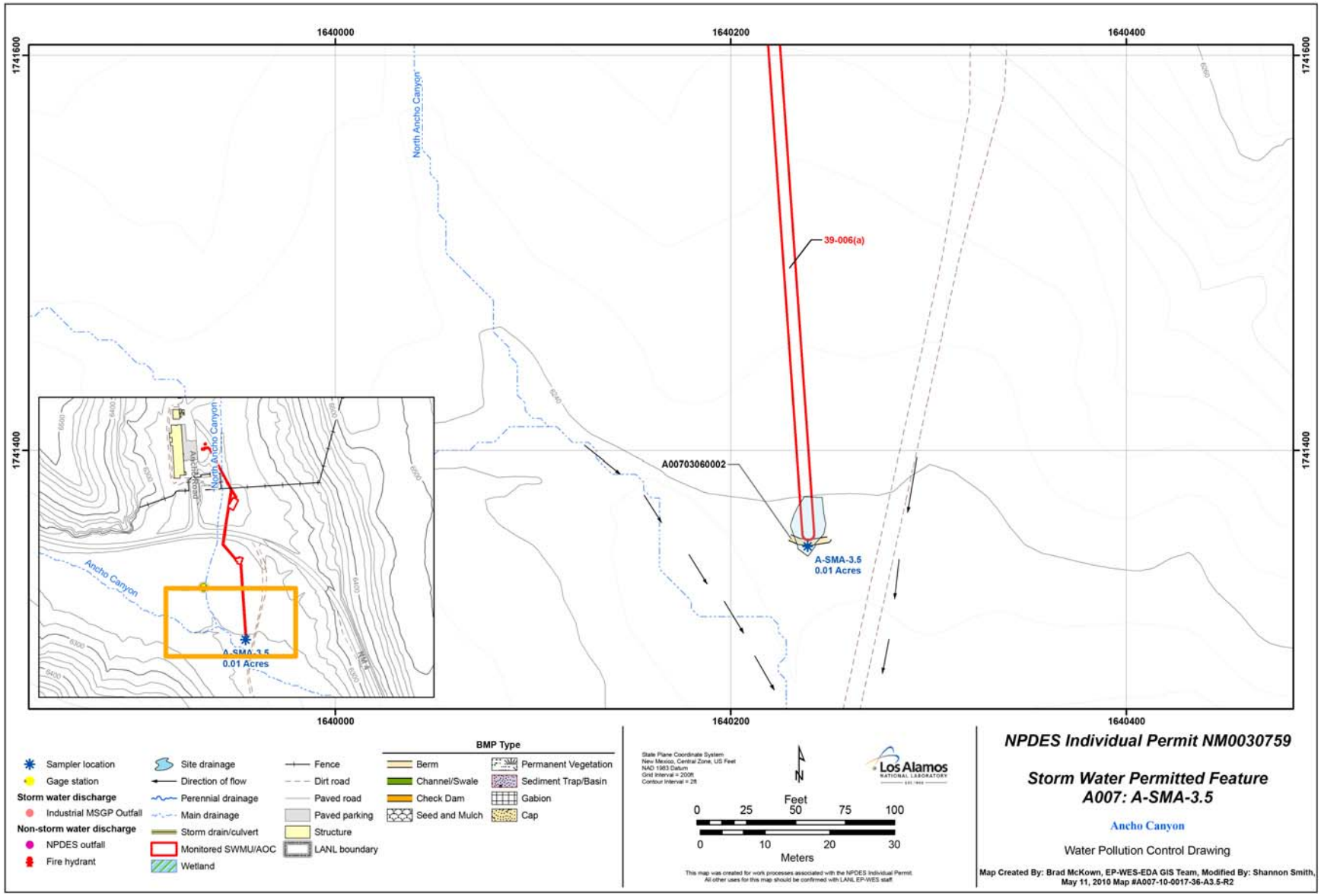


Figure 236-1 A-SMA-3.5 location map

237.0 A-SMA-4: SWMU 33-010(d)

237.1 Site Descriptions

One historical industrial activity area is associated with A008, A-SMA-4: Site 33-010(d).

SWMU 33-010(d) is a canyon-side disposal area situated on the edge of Ancho Canyon on the north side of East Site at TA-33. The disposal site is located just north of the gun firing site soil berms [SWMU 33-006(b)] and northeast of MDA D [SWMUs 33-003(a) and 33-003(b)]. Debris was scattered along the canyon rim and in a small drainage leading into Ancho Canyon and consisted of concrete blocks, empty glass specimen vials, pieces of foam, cable, and metal cans. The date when the debris was deposited at the site is not known, but operations at East Site occurred between 1948 and 1972. During a voluntary corrective action (VCA) performed in 1995, 2 yd^3 of nonhazardous/nonradioactive debris and 0.1 yd^3 of radioactive debris were removed from the site.

The project map (Figure 237-1) is located at the end of this SMA update. Any future map updates will be posted on the IP website: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-monitoring-area-maps.php.

The Site boundary for SWMU 33-010(d) has been modified to match the boundary depicted in the administrative record for the Consent Order, which is the controlling authority for SWMU and AOC boundary definitions used in the IP. The Site boundary change was minor and did not affect the SMA boundary or sampler location. The updated boundary is shown on the project map (Figure 237-1), and the Site physical characteristic information listed in Attachment 4 has been updated.

237.2 Control Measures

Run-on enters this Permitted Feature from the paved access road as well as from the natural areas around the SMA. Existing controls are placed to help mitigate run-on from these areas. All active control measures are listed in the following table, and their locations are shown on the project map (Figure 237-1).

Table 237-1 Active Control Measures

Control ID	Control Name	Purpose of Control				Control Status
		Run-On	Runoff	Erosion	Sediment	
A00801060008	Seed and Mulch - Erosion Control Blankets			X		CB
A00802010001	Established Vegetation - Grasses and Shrubs			X		CB
A00803010007	Berms - Earthen	X				CB
A00803010009	Berms - Earthen		X		X	B
A00803060002	Berms - Straw Wattles	X			X	CB
A00804050005	Channel/Swale - Water Bar	X				CB
A00804050006	Channel/Swale - Water Bar	X				CB
A00806010003	Check Dam - Rock	X			X	CB
A00806010004	Check Dam - Rock		X		X	CB

CB: Certified baseline control measure.

B: Additional baseline control measure.

EC: Enhanced control measure.

237.3 Storm Water Monitoring

For calendar year 2012, storm water flow has not been sufficient for full-volume sample collection at A-SMA-4. Initial confirmation sampling will continue until one confirmation sample is collected from this SMA.

237.4 Inspections and Maintenance

RG340 recorded three storm events at A-SMA-4 during the 2012 season. These rain events triggered three post-storm inspections. Post-storm inspections and all other inspection activity conducted at the SMA are summarized below.

Table 237-2 Control Measure Inspections during 2012

Inspection Type	Inspection Reference	Inspection Date
Annual Erosion Evaluation	COMP-22869	05-29-2012
Storm Rain Event	BMP-24927	07-18-2012
Storm Rain Event	BMP-26673	08-20-2012
Storm Rain Event	BMP-27524	09-18-2012

There were no maintenance activities conducted at A-SMA-4 in 2012.

237.5 Compliance Status

The Site associated with A-SMA-4 is a moderate priority Site. Corrective action is to be certified complete within 5 yr of the effective date of the IP (i.e., November 2015).

Table 237-4 Compliance Status during 2012

Site	Compliance Status on Jan 1, 2012	Compliance Status on Dec 31, 2012	Comments
SWMU 33-010(d)	Baseline Monitoring	Baseline Monitoring Extended	No Comment

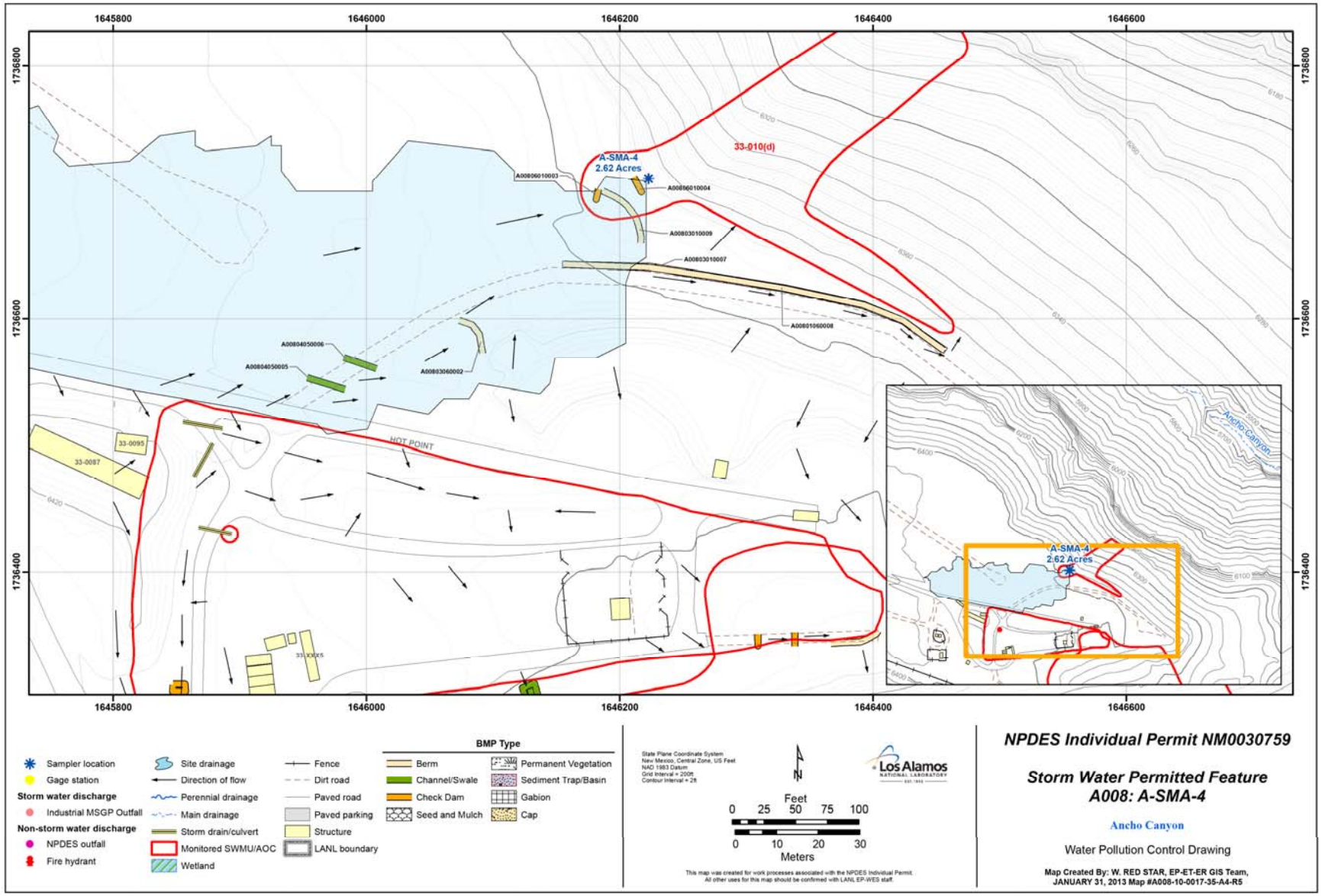


Figure 237-1 A-SMA-4 location map

238.0 A-SMA-6: SWMUs 33-004(k), 33-007(a), and 33-010(a)

238.1 Site Descriptions

Three historical industrial activity areas are associated with A009, A-SMA-6: Sites 33-004(k), 33-007(a), and 33-010(a).

SWMU 33-004(k) consists of a suspected outfall for building 33-87 located at East Site at TA-33. Building 33-87 was constructed in 1955 to support firing site experiments at East Site. The outfall reportedly received discharge from a toilet, sink, floor drains, and an electrical water cooler within the building. Engineering drawing C-3304 shows a cast-iron drainpipe exiting the south wall of the building and extending approximately 125 ft southeast of the building where it terminates at the outfall. The engineering drawing describes the drainline as consisting of 54 ft of 8-in.-diameter cast-iron pipe, and 71 ft of 8-in.-diameter vitrified clay pipe (VCP). Attempts to locate the drainline and outfall in 1994 and 1995 were unsuccessful.

SWMU 33-007(a) is a gun firing site located at East Site at TA-33. The firing site consists of three gun mounts (structures 33-116, 33-117, and 33-135) and two former catcher boxes (structures 33-118 and 33-136). Firing site activities began in the mid-1950s and included firing projectiles from large cannons into the catcher boxes, which were filled with vermiculite and sand. Other activities included experiments using scintillation fluids and x-rays. Cobalt-60 was used in some of the firing site activities. Firing site activities ceased in 1972. In 1984, the catcher boxes and their contents were removed and deposited into a landfill [SWMU 33-008(b)] located at East Site. The concrete gun mounts remain at the site.


A-SMA-6 (photo ID P7260001_5919)

SWMU 33-010(a) is a surface disposal area located on a cliff ledge above Ancho Canyon at East Site at TA-33. Much of the debris was associated with the initial clearing of East Site and included dead tree trunks, rocks, and scraped earth. Other debris, such as metal scrap, timbers, and plastic foam, is associated with firing site operations conducted from 1955 to 1972. Debris was scattered at the rim of the canyon and within 15 ft below the rim. A VCA in 1995 removed 8 yd^3 of nonhazardous and nonradioactive debris and 0.2 yd^3 of radioactive debris.

The project map (Figure 238-1) is located at the end of this SMA update. Any future map updates will be posted on the IP website: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-monitoring-area-maps.php.

The Site boundary for SWMU 33-010(a) has been modified to match the boundary depicted in the administrative record for the Consent Order, which is the controlling authority for SWMU and AOC boundary definitions used in the IP. The Site boundary change was minor and did not affect the SMA boundary or sampler location. The updated boundary is shown on the project map (Figure 238-1), and the Site physical characteristic information listed in Attachment 4 has been updated.

238.2 Control Measures

A system of culverts and riprap outlet protection control run-on to this Permitted Feature. The primary source of run-on is from overland flow from the natural areas around the SMA, with some contribution from the paved access roads in the vicinity. All active control measures are listed in the following table, and their locations are shown on the project map (Figure 238-1).

Table 238-1 Active Control Measures

Control ID	Control Name	Purpose of Control				Control Status
		Run-On	Runoff	Erosion	Sediment	
A00902010006	Established Vegetation - Grasses and Shrubs			X		CB
A00903010021	Berms - Earthen		X		X	CB
A00904020007	Channel/Swale - Concrete/Asphalt		X	X		CB
A00904060005	Channel/Swale - Riprap		X	X		CB
A00906010008	Check Dam - Rock		X		X	CB
A00906010009	Check Dam - Rock		X		X	CB
A00906010010	Check Dam - Rock		X		X	CB
A00906010011	Check Dam - Rock		X		X	CB
A00906010012	Check Dam - Rock		X		X	CB
A00906010013	Check Dam - Rock	X			X	CB
A00906010014	Check Dam - Rock		X		X	CB
A00906010015	Check Dam - Rock		X		X	CB
A00906010016	Check Dam - Rock		X		X	CB
A00906010017	Check Dam - Rock		X		X	CB
A00906010018	Check Dam - Rock		X		X	CB
A00906010019	Check Dam - Rock		X		X	CB
A00906010020	Check Dam - Rock		X		X	CB

CB: Certified baseline control measure.

B: Additional baseline control measure.

EC: Enhanced control measure.

238.3 Storm Water Monitoring

For calendar year 2012, storm water flow has not been sufficient for full-volume sample collection at A-SMA-6. Initial confirmation sampling will continue until one confirmation sample is collected from this SMA.

238.4 Inspections and Maintenance

RG340 recorded three storm events at A-SMA-6 during the 2012 season. These rain events triggered three post-storm inspections. Post-storm inspections and all other inspection activity conducted at the SMA are summarized below.

Table 238-2 Control Measure Inspections during 2012

Inspection Type	Inspection Reference	Inspection Date
Annual Erosion Evaluation	COMP-22870	05-29-2012
Storm Rain Event	BMP-24928	07-18-2012
Storm Rain Event	BMP-26674	08-20-2012
Storm Rain Event	BMP-27525	09-18-2012

Maintenance activities conducted at the SMA are summarized in the following table.

Table 238-3 Maintenance during 2012

Maintenance Reference	Maintenance Conducted	Maintenance Date	Response Time	Response Discussion
BMP-25778	Replaced erosion control blanket on earth berm A00903010021.	08-02-2012	15 day(s)	Maintenance conducted as soon as practicable

238.5 Compliance Status

The Sites associated with A-SMA-6 are moderate priority Sites. Corrective action is to be certified complete within 5 yr of the effective date of the IP (i.e., November 2015).

Table 238-4 Compliance Status during 2012

Site	Compliance Status on Jan 1, 2012	Compliance Status on Dec 31, 2012	Comments
SWMU 33-004(k)	Baseline Monitoring	Baseline Monitoring Extended	No Comment
SWMU 33-007(a)	Baseline Monitoring	Baseline Monitoring Extended	No Comment
SWMU 33-010(a)	Baseline Monitoring	Baseline Monitoring Extended	No Comment

A-SMA-6, Rock Check Dam, A00906010016, 17, 18 (photo ID 8537-6)

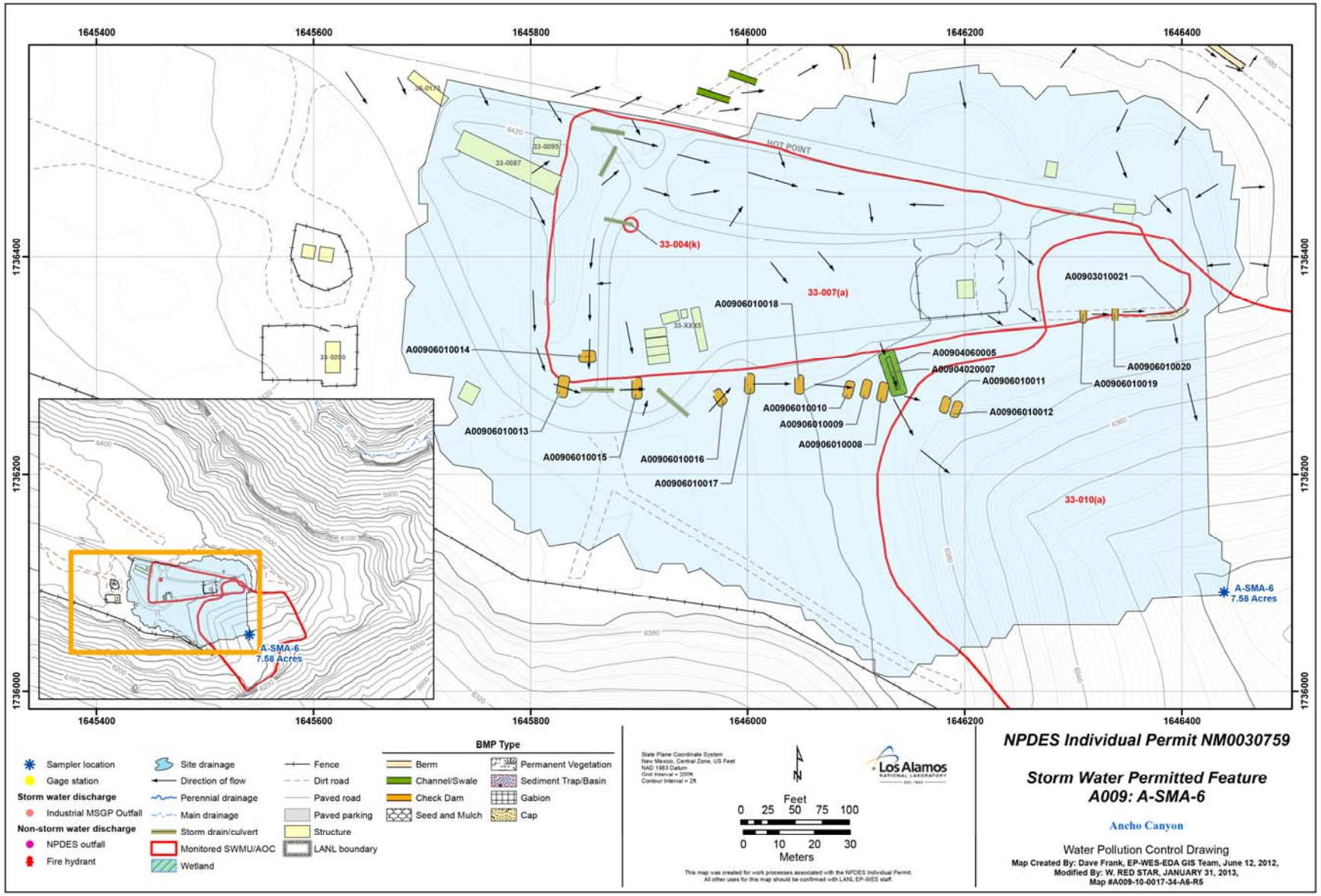


Figure 238-1 A-SMA-6 location map

239.0 CHQ-SMA-0.5: SWMUs 33-004(g), 33-007(c), and 33-009

239.1 Site Descriptions

Three historical industrial activity areas are associated with Q001, CHQ-SMA-0.5: Sites 33-004(g), 33-007(c), and 33-009.

SWMU 33-004(g) is an outfall and associated drainline that discharged wastewater from building 33-0016, located at Area 6 at TA-33. The outfall is located at the end of a VCP that runs west approximately 50 ft from the northwest corner of building 33-0016. The pipe daylights at the edge of a level area above a drainage channel that leads to a tributary of Chaquehui Canyon. The ground surface below the outfall slopes steeply down to the tributary channel, which is approximately 70 ft lower than the outfall. A culvert under a roadway, approximately 60 ft southwest of the outfall, receives runoff from most of the paved portion of Area 6. Building 33-0016 was constructed in 1949 as a gun building for initiator tests.


CHQ-SMA-0.5 (photo ID P7260009_6751)

SWMU 33-007(c) consists of abandoned firing sites associated with the initiator tests conducted at Area 6. The firing sites included firing pads and two catcher boxes. One pad was located immediately west of building 33-0016. The catcher boxes were located approximately 20 ft south of building 33-0016 and were approximately 6 ft × 6 ft, constructed of timber, and filled with soil, wood chips, and vermiculite. Guns (2-in. to 5-in. bore) were placed on the concrete pads and used to fire projectiles containing test assemblies into targets placed in front of the catcher boxes. Materials used in the projectiles included beryllium, polonium-210, uranium, copper, lead, tungsten, and stainless steel. The projectiles frequently cracked open, contaminating the pads and surrounding area with polonium-210.

SWMU 33-009 is a former surface disposal area located in Area 6, west of the TA-33 Main Site. The disposal site includes an area approximately 100 ft long × 75 ft wide that has been leveled into the side of a natural basaltic cinder cone as well as an area that extends approximately 80 ft down the slope of the cinder cone. The slope continues below the disposal site until it reaches a tributary of Chaquehui Canyon. The debris within this surface disposal area is believed to be associated with the activities at a nearby gun firing site [SWMU 33-007(c)]. This gun firing site operated from 1949 until 1955. When the firing area became contaminated as a result of firing activities, contaminated soil and debris were bulldozed over the edge of the canyon. SWMU 33-009 also received various debris from general operations at TA-33, including metal wastes, light bulbs, tires, and drums. In 1960, the site received uranium turnings from the building 33-0113 machine shop. In addition, from 1967 until 1972, the site served as a storage and disposal site for defective electrical capacitors from the Sherwood Project.

The project map (Figure 239-1) is located at the end of this SMA update. Any future map updates will be posted on the IP website: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-monitoring-area-maps.php.

239.2 Control Measures

Potential run-on from the paved access road, conveyed by the channel north of the road impacts the SMA. Channelized overland flow may also impact the northwest corner of the area. Control measures are in place to mitigate run-on sources to this SMA. All active control measures are listed in the following table, and their locations are shown on the project map (Figure 239-1).

Table 239-1 Active Control Measures

Control ID	Control Name	Purpose of Control				Control Status
		Run-On	Runoff	Erosion	Sediment	
Q00102010001	Established Vegetation - Grasses and Shrubs			X		CB
Q00103020002	Berms - Base Course		X		X	CB
Q00104050006	Channel/Swale - Water Bar	X			X	CB
Q00104050007	Channel/Swale - Water Bar	X			X	CB
Q00106010003	Check Dam - Rock	X			X	CB
Q00106010004	Check Dam - Rock	X			X	CB
Q00106010005	Check Dam - Rock	X			X	CB

CB: Certified baseline control measure.

B: Additional baseline control measure.

EC: Enhanced control measure.

239.3 Storm Water Monitoring

For calendar year 2012, storm water flow has not been sufficient for full-volume sample collection at CHQ-SMA-0.5. Initial confirmation sampling will continue until one confirmation sample is collected from this SMA.

239.4 Inspections and Maintenance

RG340 recorded three Storm events at CHQ-SMA-0.5 during the 2012 season. These rain events triggered three post-storm inspections. Post-storm inspections and all other inspection activity conducted at the SMA are summarized below.

Table 239-2 Control Measure Inspections during 2012

Inspection Type	Inspection Reference	Inspection Date
Annual Erosion Evaluation	COMP-23344	05-29-2012
Storm Rain Event	BMP-24929	07-18-2012
Storm Rain Event	BMP-26675	08-20-2012
Storm Rain Event	BMP-27526	09-12-2012

There were no maintenance activities conducted at CHQ-SMA-0.5 in 2012.

239.5 Compliance Status

The Sites associated with CHQ-SMA-0.5 are moderate priority Sites. Corrective action is to be certified complete within 5 yr of the effective date of the IP (i.e., November 2015).

Table 239-4 Compliance Status during 2012

Site	Compliance Status on Jan 1, 2012	Compliance Status on Dec 31, 2012	Comments
SWMU 33-004(g)	Baseline Monitoring	Baseline Monitoring Extended	No Comment
SWMU 33-007(c)	Baseline Monitoring	Baseline Monitoring Extended	No Comment
SWMU 33-009	Baseline Monitoring	Baseline Monitoring Extended	No Comment

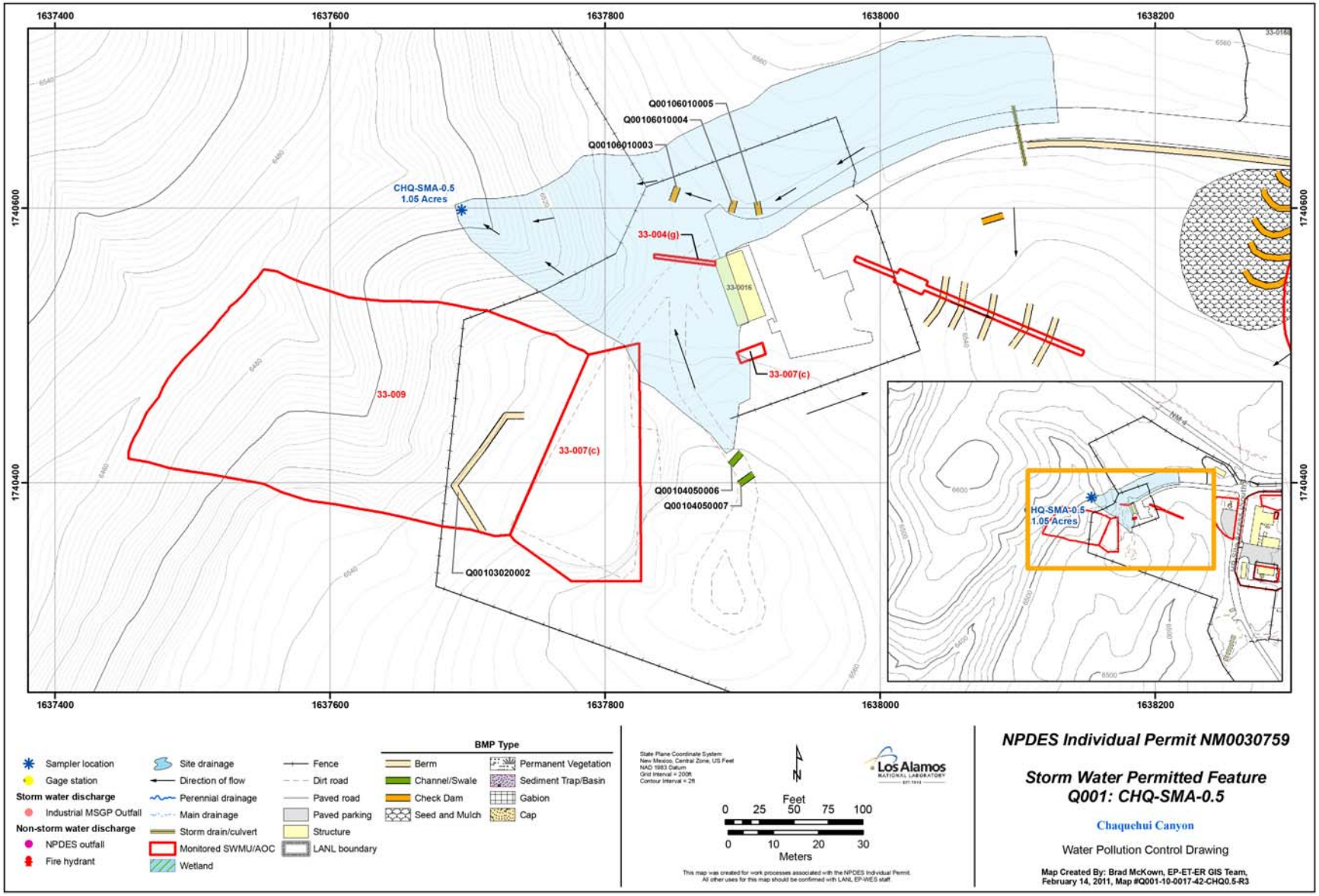


Figure 239-1 CHQ-SMA-0.5 location map

240.0 CHQ-SMA-1.01: SWMU 33-002(d)

240.1 Site Descriptions

One historical industrial activity area is associated with Q002, CHQ-SMA-1.01: Site 33-002(d).

SWMU 33-002(d) is a former outfall that discharged noncontact cooling water from former building 33-0086. This outfall was created when the SWMU 33-002(c) seepage pit was deactivated and disconnected from the building 33-0086 drainline. At that time, the drainline to the seepage pit was extended 90 ft to the east to create an outfall for the discharge of noncontact cooling water. The outfall operated under the Laboratory's NPDES permit until July 11, 1995, when it was removed from the permit. Tritium and metals were the potential contaminants in the noncontact cooling water. The drainline that discharged to this outfall was removed in 2005.

The project map (Figure 240-1) is located at the end of this SMA update. Any future map updates will be posted on the IP website: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-monitoring-area-maps.php.

240.2 Control Measures

Run-on to the SMA may originate from the paved areas in proximity to this SMA. Control measures are installed to divert run-on to the area from these paved areas and to mitigate runoff. All active control measures are listed in the following table, and their locations are shown on the project map (Figure 240-1).

Table 240-1 Active Control Measures

Control ID	Control Name	Purpose of Control				Control Status
		Run-On	Runoff	Erosion	Sediment	
Q00201020001	Seed and Mulch – Seed and Gravel	X		X		CB
Q00202010002	Established Vegetation - Grasses and Shrubs			X		CB
Q00203020007	Berms - Base Course	X			X	CB
Q00203060003	Berms - Straw Wattles		X		X	CB
Q00203060005	Berms - Straw Wattles		X		X	CB

CB: Certified baseline control measure.

B: Additional baseline control measure.

EC: Enhanced control measure.

240.3 Storm Water Monitoring

For calendar year 2012, storm water flow has not been sufficient for full-volume sample collection at CHQ-SMA-1.01. Initial confirmation sampling will continue until one confirmation sample is collected from this SMA.

240.4 Inspections and Maintenance

RG340 recorded three storm events at CHQ-SMA-1.01 during the 2012 season. These rain events triggered three post-storm inspections. Post-storm inspections and all other inspection activity conducted at the SMA are summarized below.

Table 240-2 Control Measure Inspections during 2012

Inspection Type	Inspection Reference	Inspection Date
Annual Erosion Evaluation	COMP-23345	05-29-2012
Storm Rain Event	BMP-24932	07-18-2012
Storm Rain Event	BMP-26678	08-20-2012
Storm Rain Event	BMP-27529	09-18-2012

There were no maintenance activities conducted at CHQ-SMA-1.01 in 2012.

240.5 Compliance Status

The Site associated with CHQ-SMA-1.01 is a moderate priority Site. Corrective action is to be certified complete within 5 yr of the effective date of the IP (i.e., November 2015).

Table 240-4 Compliance Status during 2012

Site	Compliance Status on Jan 1, 2012	Compliance Status on Dec 31, 2012	Comments
SWMU 33-002(d)	Baseline Monitoring	Baseline Monitoring Extended	No Comment

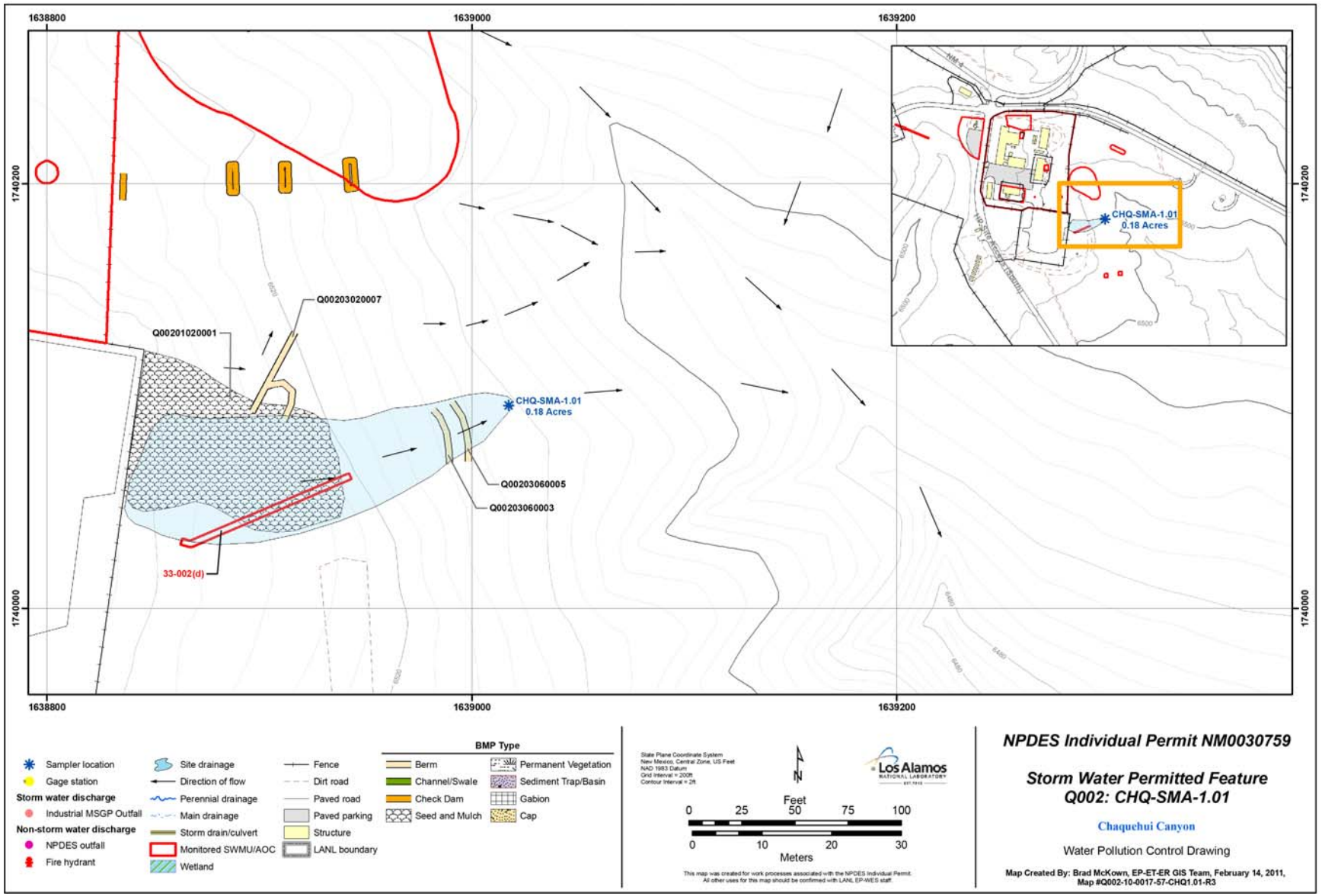


Figure 240-1 CHQ-SMA-1.01 location map

241.0 CHQ-SMA-1.02: SWMUs 33-004(h), 33-011(d), and 33-015 and AOC 33-008(c)

241.1 Site Descriptions

Four historical industrial activity areas are associated with Q002A, CHQ-SMA-1.02: Sites 33-004(h), 33-008(c), 33-011(d), and 33-015.

SWMU 33-004(h) consists of an outfall associated with a warehouse (building 33-0020) located at the south side of Main Site. The warehouse was constructed in 1950 and was used from 1952 to 1972 to store materials associated with initiator tests, including beryllium and uranium. The building subsequently was cleaned and used by other groups as a light laboratory and for general storage. The RCRA facility investigation (RFI) work plan for Operable Unit (OU) 1122 states historical engineering drawings show an 8-in.-diameter VCP drain exiting the southeast corner of the building, which reportedly discharged to an outfall. A study of building drains at TA-33 identified two floor drains in building 33-0020 but could not locate an outfall. The study also noted there was no source of water in the building. Potential contaminants associated with industrial materials historically managed at this site are beryllium and uranium.

SWMU 33-011(d) consists of a storage area located on the asphalt next to a warehouse (building 33-0020) near the south side of Main Site. Beryllium and uranium were stored around building 33-0020 from 1950 until 1972. In addition, recovered scrap from shots containing uranium, beryllium, and tungsten was stored south of building 33-0020. The amount of uranium stored at this site is reported to have been "tons." Much of the material stored here was salvaged for use elsewhere. A 1987 site survey found no materials remaining in storage at this location. Potential contaminants associated with industrial materials historically managed at this site are beryllium, tungsten, and uranium.


CHQ-SMA-1.02 (photo ID P720068_6753)

SWMU 33-015 consists of an incinerator (structure 33-0110) located approximately 50 ft southeast of building 33-0039 on a hillside that slopes to a tributary of Chaquehui Canyon. The incinerator is approximately 4 ft × 4 ft × 6 ft high and mounted on a concrete base. The incinerator was used previously to burn uncontaminated office trash. The incinerator was first used in 1955. The date it ceased to be used is not known. Potential contaminants associated with industrial materials historically managed at this site are metals.

AOC 33-008(c) is a former surface disposal area located east of Main Site buildings 33-0039 and 33-0113 outside of the Main Site security fence. This former disposal site consists of two areas, one near a culvert discharge where glass bottles and other debris were discovered and the other an area of surface debris situated north of the culvert. The culvert receives storm water runoff from Main Site, is directly east of building 33-0039, and is located in a drainage channel that leads to a tributary of Chaquehui Canyon. Debris observed included machined metal turnings, cable, glass bottles, and general trash on the ground surface and in the channel downstream of the culvert. The outlines of a possible trenched area are visible in aerial photographs from 1958. A small asphalt pad is located at the west end of the northern area and a partially full bottle was present on the ground surface. In 1999, a best management practice (BMP) was performed and all visible debris was removed from the watercourse. Potential contaminants associated with industrial materials historically managed at this site are metals, including copper, lead, nickel, and zinc.

The project map (Figure 241-1) is located at the end of this SMA update. Any future map updates will be posted on the IP website: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-monitoring-area-maps.php.

241.2 Control Measures

Run-on contributions to the SMA are a result of the paved roads north and west of the SMA and the unpaved access road that intersects the SMA. Control measures serve to divert impacts of run-on to the area and to mitigate runoff from the SMA. All active control measures are listed in the following table, and their locations are shown on the project map (Figure 241-1).

Enhanced controls were installed and certified on October 24, 2012, and submitted to EPA on October 25, 2012, as part of corrective action. Photographs of the enhanced controls are available at http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/construction-certifications.php.

Table 241-1 Active Control Measures

Control ID	Control Name	Purpose of Control				Control Status
		Run-On	Runoff	Erosion	Sediment	
Q002A03010010	Berms - Earthen		X		X	EC
Q002A03010011	Berms - Earthen		X		X	EC
Q002A03010012	Berms - Earthen		X		X	EC
Q002A03010013	Berms - Earthen	X			X	EC
Q002A06010002	Check Dam - Rock		X		X	CB
Q002A06010003	Check Dam - Rock		X		X	CB
Q002A06010007	Check Dam - Rock	X			X	CB
Q002A06010009	Check Dam - Rock		X		X	CB
Q002A08030004	Cap - Asphalt			X		CB

CB: Certified baseline control measure.

B: Additional baseline control measure.

EC: Enhanced control measure.

241.3 Storm Water Monitoring

SWMUs 33-004(h), 33-011(d), and 33-015 and AOC 33-008(c) are monitored within CHQ-SMA-1.02. Following the installation of baseline control measures, a baseline storm water sample was collected on August 12, 2011 (Figures 241-2 and 241-3). Analytical results from this sample yielded two TAL exceedances:

- Copper concentration of 8 µg/L (MTAL is 4.3 µg/L) and
- PCB concentration of 9.22 ng/L (ATAL is 0.6 ng/L).

These exceedances were evaluated by comparing the results from soil samples collected at the Sites during Consent Order or previous investigations with the storm water TAL exceedances to determine whether the exceedances may be related to historical industrial activities. The discussion is organized by Site and analyte.

SWMU 33-004(h): Potential contaminants associated with industrial materials historically managed at this Site are beryllium and uranium. Consent Order sampling has not yet been conducted at SWMU 33-004(h).

- Copper and PCBs—Soil samples collected during previous investigations at the Site were not analyzed for copper or PCBs because these constituents were not associated with industrial materials historically managed at this Site.

In summary, based on site history, it was determined that historical activity at the Site is an unlikely source of copper and polychlorinated biphenyls (PCBs) in storm water results greater than the TALs.

SWMU 33-011(d): Potential contaminants associated with industrial materials historically managed at this site are beryllium, tungsten, and uranium. Consent Order sampling has not yet been conducted at SWMU 33-011(d).

- Copper and PCBs—Soil samples collected during previous investigations at the Site were not analyzed for copper or PCBs because these constituents were not associated with industrial materials historically managed at this Site.

In summary, based on site history, it was determined that historical activity at the Site is an unlikely source of copper and PCBs in storm water results greater than the TALs.

CHQ-SMA-1.02, Earthen Berm, Q002A03010010, 11, 12 (photo ID 26535-3)

SWMU 33-015: Potential contaminants associated with industrial materials historically managed at this Site are metals. Consent Order sampling has not yet been conducted at SWMU 33-015.

- Copper and PCBs—Soil samples collected during previous investigations at the Site were not analyzed for copper or PCBs because these constituents were not associated with industrial materials historically managed at this Site.

In summary, based on site history, it was determined that historical activity at the Site is an unlikely source of copper and PCBs in storm water results greater than the TALs.

AOC 33-008(c): Potential contaminants associated with industrial materials historically managed at this Site are metals, including copper, lead, nickel, and zinc. Consent Order sampling has not yet been conducted at AOC 33-008(c).

- Copper—Copper was detected above BV in previous RFI soil samples with a maximum concentration over 2200 times BV.
- PCBs—Soil samples previously collected in the RFI were not analyzed for PCBs because these constituents were not associated with industrial materials historically managed at this Site.

In summary, copper was detected substantially above BV in soil samples. PCBs are not associated with industrial materials historically managed at the Site. Based on site history and previous sampling results, it was determined that the Site is a likely source of copper but not of the PCBs in storm water results greater than the TALs.

TAL exceedances were also evaluated against the appropriate storm water BV, that is, "Bandelier Tuff background" for undisturbed SMAs or "developed background" for urban settings. BVs are expressed as UTLs using the approved EPA method for calculating background values. UTLs for undisturbed SMAs were derived from storm water runoff containing entrained sediments derived from Bandelier Tuff and are labeled "Bandelier Tuff Background" in Figures 241-2 and 241-3. UTLs developed for urban settings were derived from runoff from developed landscapes on the Pajarito Plateau, including buildings, parking lots, roads, and associated features, and are labeled "Developed Background" in Figures 241-2 and 241-3.

Monitoring location CHQ-SMA-1.02 receives storm water run-on from developed environments, including paved parking lots, roads, and buildings as well as landscape consisting of sediments derived from Bandelier Tuff.

- Copper—Metals including copper are associated with building materials, parking lots, and automobiles as well as low concentrations in the Bandelier Tuff. The copper UTL from developed urban landscape storm water run-on is 32.3 µg/L; the copper UTL for storm water containing sediments derived from Bandelier Tuff is 3.43 µg/L. The copper result from the storm water confirmation sample in 2011 is between these two values.
- PCBs—PCBs are associated with building materials including paint, caulking, asphalt, solvents, transformers, and cutting oils. The baseline PCB UTL for storm water run-on from a developed urban landscape is 98 ng/L; the PCB UTL for storm water containing sediments derived from Bandelier Tuff is 11.7 ng/L. The average (ATAL) exceedance observed in the storm water confirmation sample in 2011 is less than both storm water baseline UTLs.

All of the analytical results for these samples are reported in the 2011 Annual Report.

241.4 Inspections and Maintenance

RG340 recorded three storm events at CHQ-SMA-1.02 during the 2012 season. These rain events triggered three post-storm inspections. Post-storm inspections and all other inspection activity conducted at the SMA are summarized below.

Table 241-2 Control Measure Inspections during 2012

Inspection Type	Inspection Reference	Inspection Date
Annual Erosion Evaluation	COMP-23346	05-29-2012
Storm Rain Event	BMP-24933	07-18-2012
Remediation Construction Activity	COMP-26100	08-06-2012
Remediation Construction Activity	COMP-26380	08-09-2012
Storm Rain Event	BMP-26679	08-20-2012
Enhanced Control Measure Verification	BMP-26535	08-22-2012
Storm Rain Event	BMP-27530	09-18-2012

There were no maintenance activities conducted at CHQ-SMA-1.02 in 2012.

241.5 Compliance Status

The Sites associated with CHQ-SMA-1.02 are moderate priority Sites. Corrective action is to be certified complete within 5 yr of the effective date of the IP (i.e., November 2015).

Table 241-4 Compliance Status during 2012

Site	Compliance Status on Jan 1, 2012	Compliance Status on Dec 31, 2012	Comments
SWMU 33-004(h)	Baseline Monitoring	Enhanced Control Corrective Action Monitoring	Initiated October 23, 2012
AOC 33-008(c)	Baseline Monitoring	Enhanced Control Corrective Action Monitoring	Initiated October 23, 2012
SWMU 33-011(d)	Baseline Monitoring	Enhanced Control Corrective Action Monitoring	Initiated October 23, 2012
SWMU 33-015	Baseline Monitoring	Enhanced Control Corrective Action Monitoring	Initiated October 23, 2012

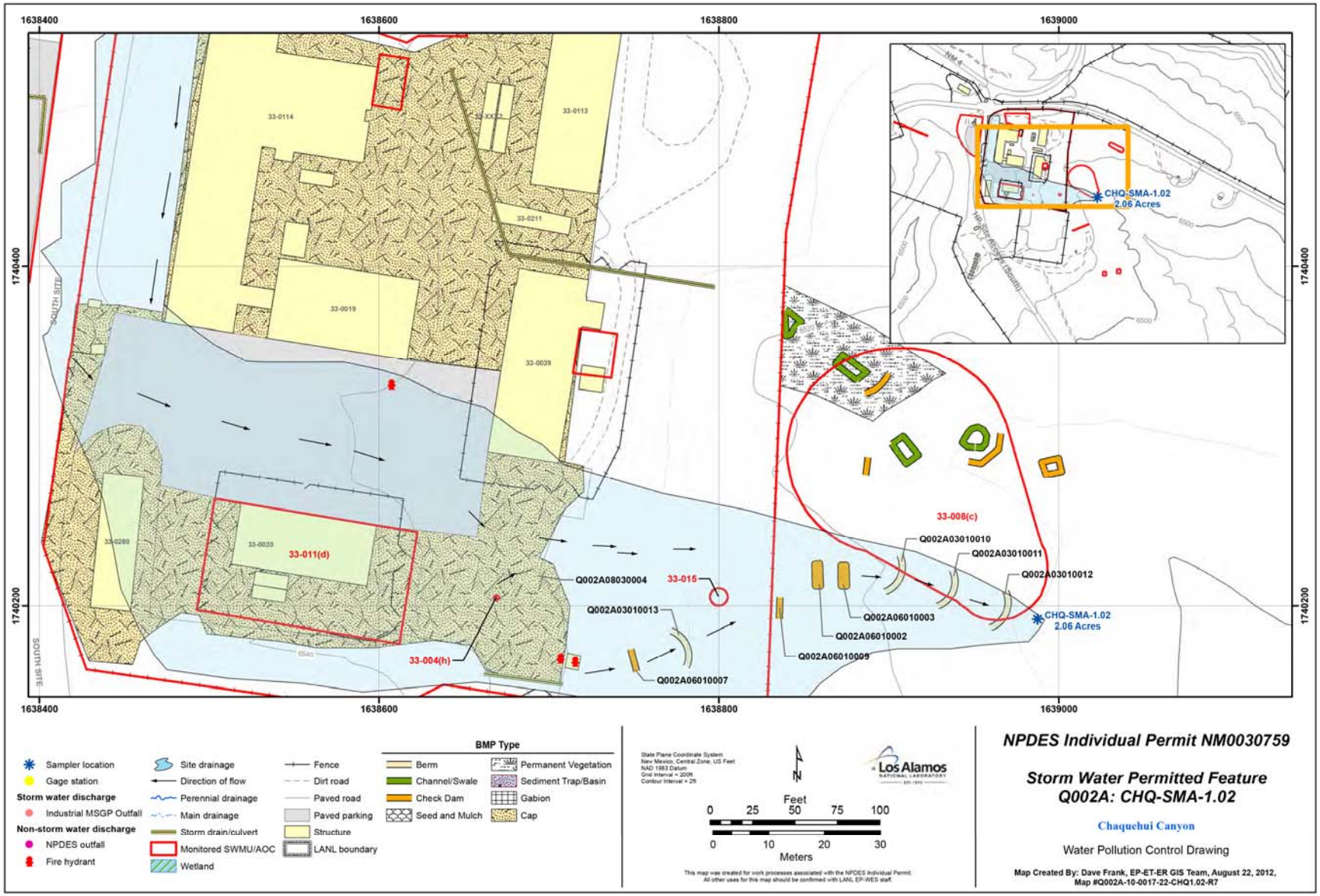
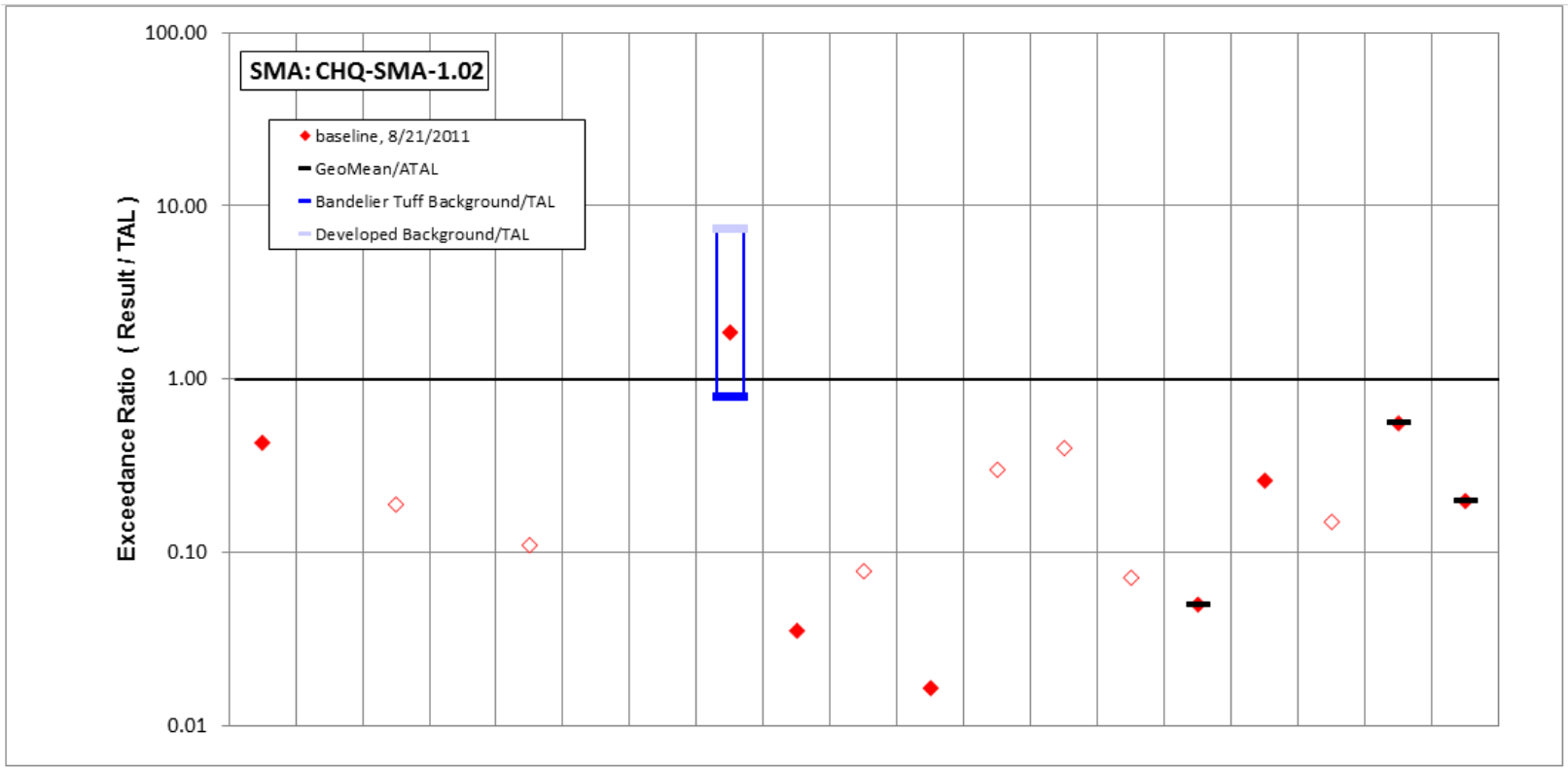


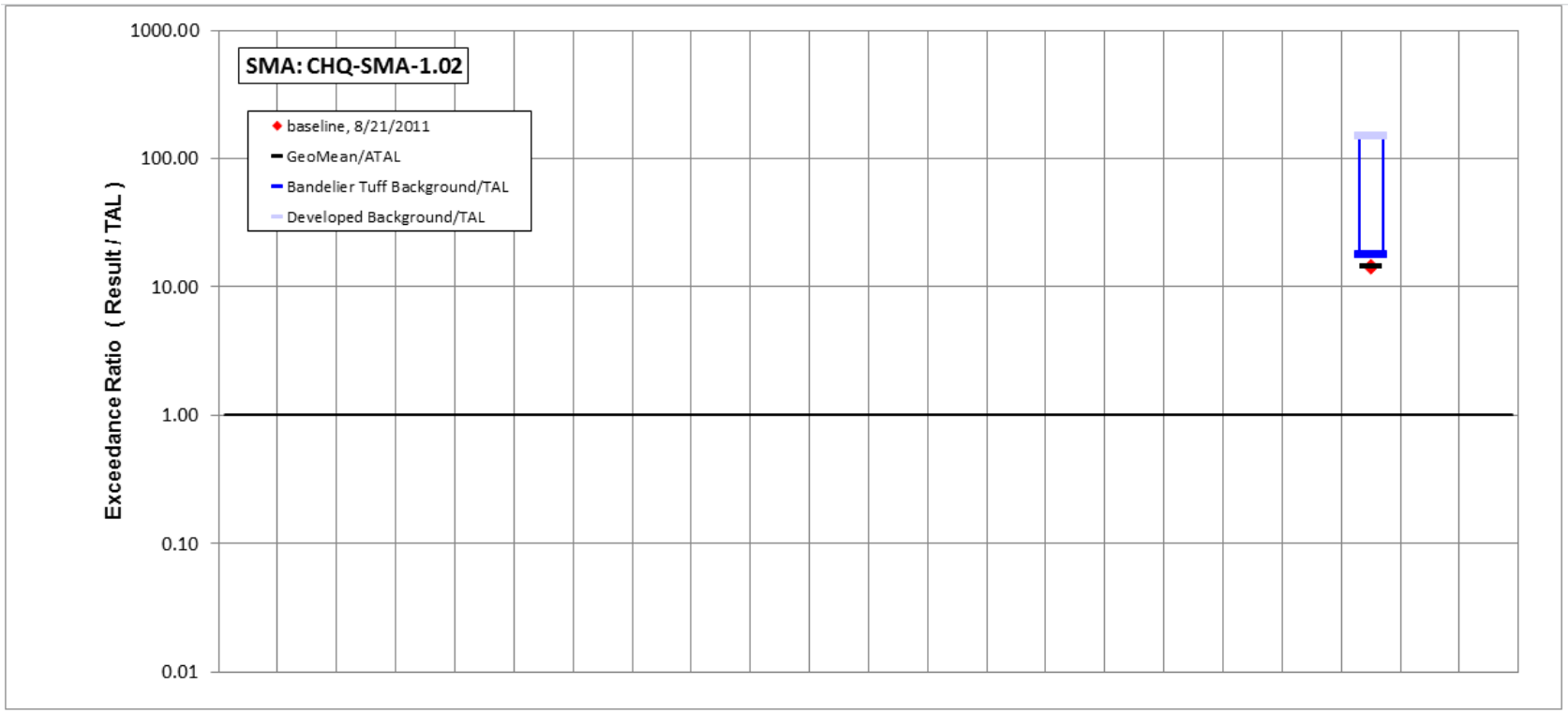
Figure 241-1 CHQ-SMA-1.02 location map



	Aluminum	Antimony	Arsenic	Boron	Cadmium	Chromium	Cobalt	**Copper**	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Cyanide, weak acid dissociable	Gross alpha	Radium-226 and Radium-228
std used in ratio calculations	MTAL	ATAL	ATAL	ATAL	MTAL	MTAL	ATAL	MTAL	MTAL	ATAL	MTAL	ATAL	MTAL	ATAL	ATAL	MTAL	ATAL	ATAL	ATAL
std value	750	640	9	5000	1	210	1000	4.3	17	0.77	170	5	0.5	6.3	100	42	0.01	15	30
unit	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	pCi/L	pCi/L
8/21/2011 result	322	*1*	*1.7*	30	*0.11*	*2*	2.4	**8**	0.6	*0.06*	2.8	*1.5*	*0.2*	*0.45*	5	10.9	*0.002*	8.34	5.94
result / TAL	0.43	*0.002*	*0.19*	0.006	*0.11*	*0.01*	0.0024	**1.9**	0.035	*0.078*	0.016	*0.3*	*0.4*	*0.071*	0.05	0.26	*0.15*	0.56	0.2

Bold font indicates result>TAL; italic font indicates undetected results; "-" is used if no analytical results were available.

Figure 241-2 Inorganic analytical results summary plot for CHQ-SMA-1.02



	Aldrin	Benzo(a)pyrene	BHC[gamma-]	Chlordane (alpha/gamma)	Chlordane[alpha-]	Chlordane[gamma-]	DDD[4,4'-]	DDE[4,4'-]	DDT[4,4'-]	Dieldrin	Endosulfan I	Endosulfan II	Endrin	Heptachlor	Heptachlor Epoxide	Hexachlorobenzene	Pentachlorophenol	RDX	Tetrachlorodibenzo dioxin[2,3,7,8-]	**Total PCB**	Toxaphene (Technical Grade)	Trinitrotoluene [2,4,6-]
std used in ratio calculations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ATAL	-	-
std value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6E-04	-	-
unit	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
8/21/2011 result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.009**	-	-
result / TAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**14**	-	-

Bold font indicates result>TAL; italic font indicates undetected results; "-" is used if no analytical results were available.

Figure 241-3 Organic analytical results summary plot for CHQ-SMA-1.02

242.0 CHQ-SMA-1.03: SWMUs 33-012(a) and 33-017 and AOCs C-33-001, C-33-003, and 33-008(c)

242.1 Site Descriptions

Five historical industrial activity areas are associated with Q002B, CHQ-SMA-1.03: 33-012(a), 33-017, C-33-001, C-33-003, and 33-008(c)

SWMU 33-012(a) is a former drum storage area for a machine shop (building 33-0039). This storage area is an asphalt pad located on the east side of building 33-0039, between the building and a storage shed. The asphalt pad is approximately 20 ft wide × 20 ft long. The area was used to accumulate 55-gal. drums of solvents and solvent-contaminated oil that potentially may have been contaminated with PCBs and metals. The drums were placed on pallets or directly on the asphalt pad. The asphalt pad is level, and the ground surface east of building 33-0039 slopes to the east. The beginning date of operation of the storage area is not known; however, building 33-0039 was constructed in 1951. The storage area was deactivated in 1992 or 1993. Potential contaminants associated with industrial materials historically managed at this site are metals and PCBs.

SWMU 33-017 consists of areas potentially impacted by operational releases from the TA-33 Main Site. SWMU 33-017 is located at the northern and eastern edges of Main Site and is approximately 600 ft long × 100 ft to 600 ft wide. The site generally slopes downward to the east and is at the head of a small drainage tributary of Chaquehui Canyon. SWMU 33-017 is potentially impacted by runoff from the paved areas of the TA-33 Main Site complex, by deposition from airborne releases from TA-33 Main Site facilities, and by operational releases from an area east of building 33-39 used for vehicle maintenance. Operations conducted within Main Site included uranium processing and machining, cadmium and silver welding and soldering, lead melting and casting, cadmium and beryllium machining, and tritium processing and decontamination. These operations began in 1949 and most continued until 1972. Following these operations, some of the facilities were used for offices and electronics laboratories. Potential contaminants associated with industrial materials historically managed at this site are metals, including beryllium, cadmium, lead, and silver, and radionuclides, including uranium and tritium.


CHQ-SMA-1.03 (photo ID P720076-6754)

AOC C-33-001 consists of a former electrical transformer (former structure 33-0124) at the TA-33 Main Site. The transformer was mounted on a 15 ft × 50 ft concrete pad next to the east wall of building 33-0114. The transformer was located next to the northeast wall of building 33-0114 and was bounded by asphalt to the north, east, and south. The pad was enclosed by a fence and accessible only through a locked gate. Because this transformer was placed into service in the 1950s, the oil in the transformer may have contained PCBs. In 1992, the transformer was replaced by a non-PCB transformer. Potential contaminants associated with industrial materials historically managed at the site are PCBs.

AOC C-33-003 consists of two fill areas located at the Main Site area of TA-33. This fill was used to level the sites for two portable trailers. One of the trailers (structure 33-169) was installed next to the Main Site water tower. The filled area to accommodate trailer 33-0169 is approximately 100 ft × 100 ft × 4 ft deep. The other trailer (structure 33-0170) was installed north of building 33-0114. The filled area to accommodate trailer 33-0170 is approximately 70 ft × 90 ft × 7 ft deep. Both trailers were installed in January 1984 and removed in June 1988. After the trailers were removed, no further improvements were made to these sites. Three projectiles, one of which contained uranium, were discovered at the fill area near the water tower during brush-clearing activities conducted during the spring of 1996. The source of these projectiles appears to have been the fill material that had been obtained from the cinder cone located in Area 6, just west of Main Site. Potential contaminants associated with industrial materials historically managed at this site are metals, including copper, lead, and zinc, and radionuclides, including uranium.

AOC 33-008(c) is a former surface disposal area located east of Main Site buildings 33-0039 and 33-0113 outside of the Main Site security fence. This former disposal site consists of two areas, one near a culvert discharge where glass bottles and other debris were discovered and the other an area of surface debris north of the culvert. The culvert receives storm water runoff from Main Site, is directly east of building 33-0039, and is located in a drainage channel that leads to a tributary of Chaquehui Canyon. Debris observed included machined metal turnings, cable, glass bottles, and general trash on the ground surface and in the channel downstream of the culvert. The outlines of a possible trenched area are visible in 1958 aerial photographs. A small asphalt pad is located at the west end of the northern area and a partially full bottle was present on the ground surface. In 1999, a BMP was performed and all visible debris was removed from the watercourse. Potential contaminants associated with industrial materials historically managed at this site are metals, including copper, lead, nickel, and zinc.

The project map (Figure 242-1) is located at the end of this SMA update. Any future map updates will be posted on the IP website: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-monitoring-area-maps.php.

242.2 Control Measures

Run-on to the SMA may originate on the paved areas near this SMA. Control measures serve to mitigate potential impacts from run-on to the area and to moderate runoff from the SMA. All active control measures are listed in the following table, and their locations are shown on the project map (Figure 242-1).

Table 242-1 Active Control Measures

Control ID	Control Name	Purpose of Control				Control Status
		Run-On	Runoff	Erosion	Sediment	
Q002B02010001	Established Vegetation - Grasses and Shrubs			X		CB
Q002B02030002	Established Vegetation - Vegetative Buffer Strip	X	X	X		CB
Q002B04060006	Channel/Swale - Riprap	X		X		CB
Q002B04060007	Channel/Swale - Riprap		X	X		CB
Q002B04060009	Channel/Swale - Riprap		X	X		CB
Q002B04060010	Channel/Swale - Riprap		X	X		CB
Q002B06010004	Check Dam - Rock		X		X	CB
Q002B06010005	Check Dam - Rock		X		X	CB
Q002B06010008	Check Dam - Rock		X		X	CB
Q002B06010011	Check Dam - Rock		X		X	CB
Q002B08030003	Cap - Asphalt		X	X		CB

CB: Certified baseline control measure.

B: Additional baseline control measure.

EC: Enhanced control measure.

Enhanced control measures will be installed in 2013 as part of corrective action.

242.3 Storm Water Monitoring

SWMUs 33-012(a) and 33-017 and AOCs C-33-001, C-33-003, and 33-008(c) are monitored within CHQ-SMA-1.03. Following the installation of baseline control measures, a baseline storm water sample was collected on July 4, 2012 (Figures 242-2 and 242-3). Analytical results from this sample yielded three TAL exceedances:

- Copper concentration of 14.4 µg/L (MTAL is 4.3 µg/L),
- Gross-alpha activity of 63.5 pCi/L (ATAL is 15 pCi/L), and
- PCB concentration of 10 ng/L (ATAL is 0.6 ng/L).

These exceedances were evaluated by comparing the results from soil samples collected at the Sites during Consent Order or previous investigations with the storm water TAL exceedances to determine whether the exceedances may be related to historical industrial activities. The discussion is organized by Site and analyte.

SWMU 33-012(a): Potential contaminants associated with industrial materials historically managed at this Site are metals and PCBs. Consent Order soil sampling has not yet been conducted at SWMU 33-012(a).

- Copper—Samples previously collected at the Site were not analyzed for copper because this constituent was not associated with industrial materials historically managed at this Site.
- Gross alpha—Soil samples previously collected at the Site were not analyzed for alpha-emitting radionuclides because these constituents were not associated with industrial materials historically managed at this Site.
- PCBs—PCBs were detected in previous RFI soil samples with a maximum concentration 2 times the residential SSL.

In summary, based on site history, the Site is an unlikely source of copper and adjusted gross alpha above TAL in storm water. PCBs are associated with industrial material historically managed at this Site and were detected in soil samples. Based on site history and previous sampling results, it was determined that the Site is a likely source of PCBs in storm water results greater than the TALs.

SWMU 33-017: Potential contaminants associated with industrial materials historically managed at this Site are metals, including beryllium, cadmium, lead, and silver, and radionuclides, including uranium and tritium. Consent Order soil sampling has not yet been conducted at SWMU 33-017.

- Copper—Soil samples previously collected at the Site were not analyzed for copper because this constituent is not associated with industrial materials historically managed at this Site.
- Gross alpha—Uranium was detected above BV with a maximum concentration 23 times BV.
- PCBs—PCBs were detected in previous RFI soil samples with a maximum concentration 2.5 times residential SSL. However, detected PCBs were attributed to another Site (AOC C-33-001) rather than to SWMU 33-017.

In summary, based on site history, it was determined that the Site is an unlikely source of copper in storm water results greater than the TALs. Uranium, which has alpha-emitting isotopes, is associated with industrial materials historically managed at the Site and was detected substantially above BV. Uranium isotopes, however, are excluded from the definition of adjusted gross-alpha radioactivity and no other alpha-emitting radionuclides are known to be associated with industrial materials historically managed at this Site. Therefore, because of how adjusted gross alpha is calculated, the Site is an unlikely source of adjusted gross alpha in storm water results greater than the TALs. PCBs are not associated with industrial material historically managed at this Site but were detected in soil samples collected at the Site. Based on site history and previous sampling results, the Site may be a source of PCBs in storm water results greater than the TALs.

AOC C-33-001: Potential contaminants associated with industrial materials historically managed at the Site are PCBs. Consent Order sampling has not yet been conducted at AOC C-33-001.

- Copper—Samples previously collected at the Site were not analyzed for copper because this constituent was not associated with industrial materials historically managed at this Site.
- Gross alpha—Samples previously collected at the Site were not analyzed for alpha-emitting radionuclides because these constituents are not associated with industrial materials historically managed at this Site

- PCBs—PCBs were detected in previous RFI samples with a maximum concentration 5 times residential SSL. Subsequently, a PCB cleanup was conducted in 1999 using a vacuum system on the asphalt area around and downgradient of the transformer site. Confirmation samples were not collected following the 1999 cleanup.

In summary, based on site history, it was determined that the Site is an unlikely source of copper and adjusted gross alpha in storm water results greater than the TALs. PCBs are associated with industrial material historically managed at this Site and were detected in soil samples collected at the Site. Based on site history and previous sampling results, the Site is a likely source of PCBs in storm water results greater than the TALs.

AOC C-33-003: Potential contaminants associated with industrial materials historically managed at this Site are metals, including copper, lead, and zinc, and radionuclides, including uranium. Consent Order sampling has not yet been conducted at AOC C-33-003.

- Copper—Copper was detected above BVs in previous RFI samples with maximum concentrations 2.5 times BV. Although copper was associated with industrial materials historically managed at this Site, the quantities managed are believed to be low.
- Gross alpha—Uranium-234, and uranium-238 were detected above BVs in previous RFI samples with maximum activities 2 times BV, and 2 times BV, respectively.
- PCBs—Samples previously collected at the Site were not analyzed for PCBs because this constituent was not associated with industrial materials historically managed at this Site.

In summary, based on site history, the Site is an unlikely source of copper and PCBs in storm water results greater than the TALs. Uranium, which has alpha-emitting isotopes, is associated with industrial materials historically managed at the Site and uranium isotopes were detected slightly above BV in soil samples. Uranium isotopes, however, are excluded from the definition of adjusted gross-alpha radioactivity. No other alpha-emitting radionuclides are known to be associated with industrial materials historically managed at this Site. Based on site history and previous sampling results, the Site is an unlikely source of adjusted gross alpha in storm water results greater than the TALs.

CHQ-SMA-1.03, Rock Check Dam, Q002B06010011 (photo ID 10548-1)

AOC 33-008(c): Potential contaminants associated with industrial materials historically managed at this Site are metals, including copper, lead, nickel, and zinc. Consent Order soil sampling has not yet been conducted at AOC 33-008(c).

- Copper—Copper was detected above BVs in previous RFI soil samples at a maximum concentration of 2200 times BV.
- Gross alpha—Uranium was detected above BVs in previous RFI soil samples. Maximum activities were 53 times BV.
- PCBs—Soil samples previously collected were not analyzed for PCBs because this constituent is not known to have been associated with industrial materials historically managed at the Site.

In summary, copper is known to be associated with industrial materials historically managed at this Site and was detected substantially above BV. Based on site history and previous soil sampling results, it was determined that the Site is a likely source of copper in the storm water sample greater than the TAL. Uranium, which has alpha-emitting isotopes, may have been associated with industrial materials historically managed at the Site and was detected substantially above BV in sediment samples. Uranium isotopes, however, are excluded from the definition of adjusted gross-alpha radioactivity. No other alpha-emitting radionuclides are known to be associated with industrial materials historically managed at this Site. Based on site history and the calculation of adjusted gross alpha, the Site is an unlikely source of adjusted gross alpha in storm water results greater than the TALs. Based on site history, the Site is an unlikely source of PCBs above ATAL in storm water.

TAL exceedances were also evaluated against the appropriate storm water background value, that is, "Bandelier Tuff background" for undisturbed SMAs or "developed background" for urban settings. Background values are expressed as UTLs using the approved EPA method for calculating background values. UTLs for undisturbed SMAs were derived from storm water runoff containing entrained sediments derived from Bandelier Tuff and are labeled "Bandelier Tuff Background" in Figure 243-2. UTLs developed for urban settings were derived from runoff from developed landscapes on the Pajarito Plateau, including buildings, parking lots, roads, and associated features and are labeled "Developed Background" in Figure 243-2.

Monitoring location CHQ-SMA-1.03 receives storm water run-on from developed environments, including paved parking lots, roads, and buildings, as well as from landscape consisting of sediments derived from Bandelier Tuff. Metals including copper are associated with building materials, parking lots, and automobiles as well as low concentrations in the Bandelier Tuff. Gross alpha in Bandelier Tuff is associated with naturally occurring radioactive uranium- and thorium-bearing minerals. PCBs are associated with building materials including paint, caulking, asphalt, solvents, transformers, and cutting oils.

- Copper—The copper UTL for storm water containing sediments derived from Bandelier Tuff storm water is 3.43 µg/L, and the copper storm water UTL for run-on from a developed urban landscape is 32.3 µg/L. The 2012 copper result is between these two values.
- Gross alpha—The gross-alpha background UTL for storm water containing sediments derived from Bandelier Tuff is 1490 pCi/L and gross-alpha background storm water UTL for storm water run-on from a developed urban landscape is 32.5 pCi/L. The 2012 gross-alpha result is between these two values.
- PCBs—The PCB baseline storm water UTL for storm water containing sediments derived Bandelier Tuff is 11.7 ng/L and baseline PCB UTL for run-on from a developed urban landscape is 98 ng/L. The 2012 PCB result is less then both values.

All of the analytical results for these samples are reported in the 2012 Annual Report.

242.4 Inspections and Maintenance

RG340 recorded three storm events at CHQ-SMA-1.03 during the 2012 season. These rain events triggered three post-storm inspections. Post-storm inspections and all other inspection activity conducted at the SMA are summarized below.

Table 242-2 Control Measure Inspections during 2012

Inspection Type	Inspection Reference	Inspection Date
Annual Erosion Evaluation	COMP-23347	05-29-2012
Storm Rain Event	BMP-24934	07-18-2012
Storm Rain Event	BMP-26680	08-30-2012
Storm Rain Event	BMP-27531	09-18-2012
Visual Inspection	COMP-27869	09-27-2012

There were no maintenance activities conducted at CHQ-SMA-1.03 in 2012.

242.5 Compliance Status

The Sites associated with CHQ-SMA-1.03 are moderate priority Sites. Corrective action is to be certified complete within 5 yr of the effective date of the IP (i.e., November 2015).

Table 242-4 Compliance Status during 2012

Site	Compliance Status on Jan 1, 2012	Compliance Status on Dec 31, 2012	Comments
AOC 33-008(c)	Baseline Monitoring	Corrective Action Initiated	Initiated August 27, 2012
SWMU 33-012(a)	Baseline Monitoring	Corrective Action Initiated	Initiated August 27, 2012
SWMU 33-017	Baseline Monitoring	Corrective Action Initiated	Initiated August 27, 2012
AOC C-33-001	Baseline Monitoring	Corrective Action Initiated	Initiated August 27, 2012
AOC C-33-003	Baseline Monitoring	Corrective Action Initiated	Initiated August 27, 2012

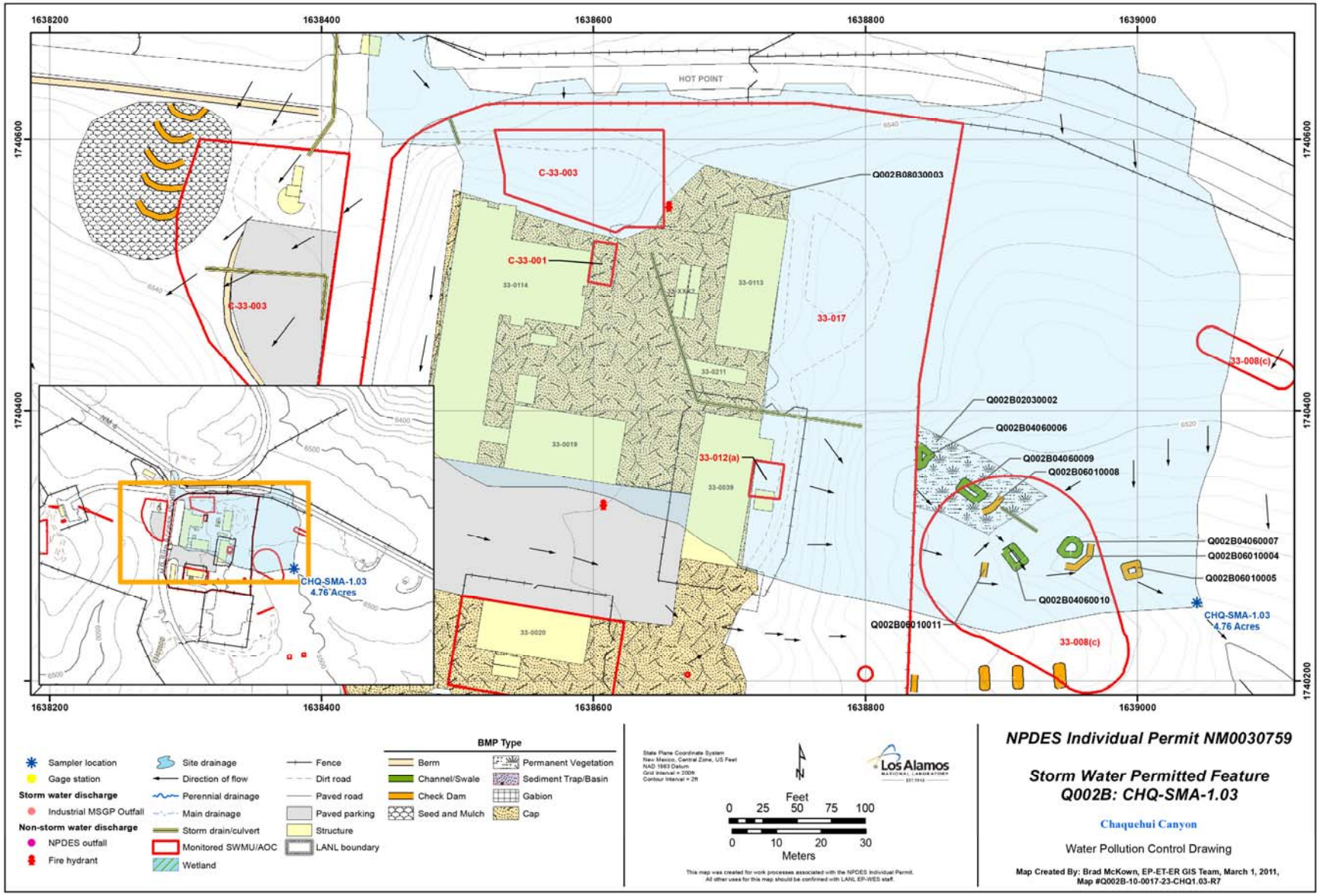
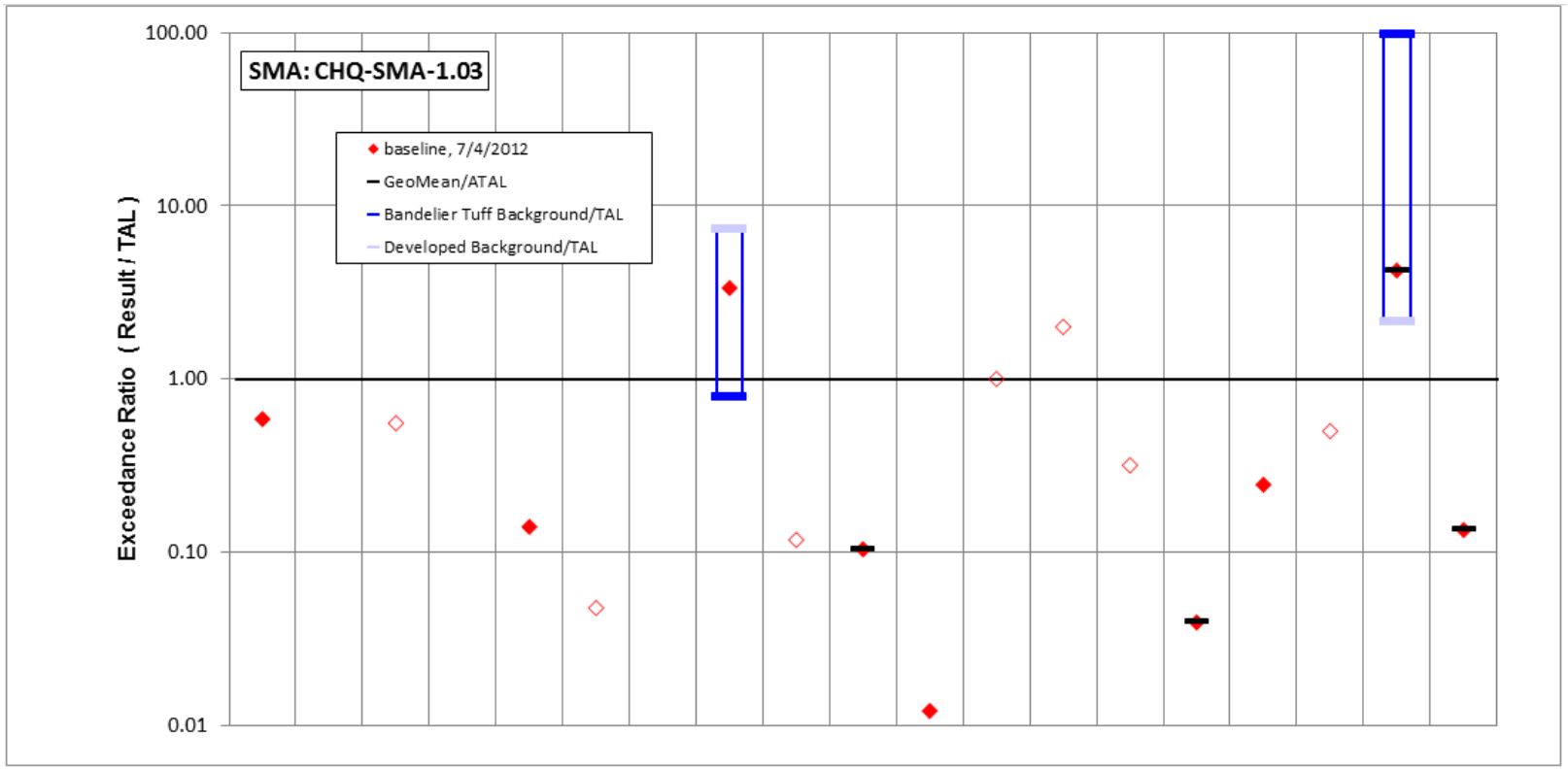


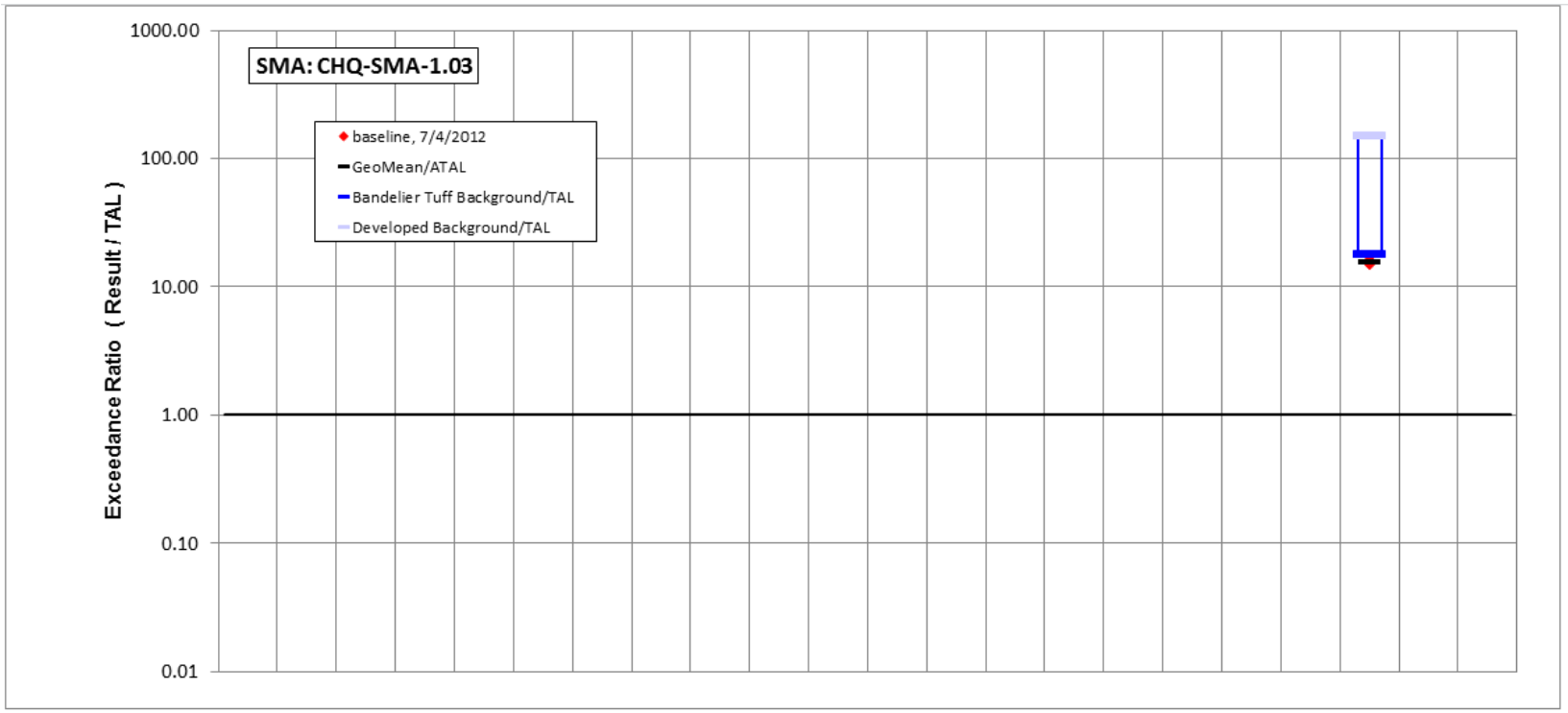
Figure 242-1 CHQ-SMA-1.03 location map



	Aluminum	Antimony	Arsenic	Boron	Cadmium	Chromium	Cobalt	**Copper**	Lead	Mercury	Nickel	Selenium	**Silver**	Thallium	Vanadium	Zinc	Cyanide, weak acid dissociable	**Gross alpha**	Radium-226 and Radium-228
std used in ratio calculations	MTAL	ATAL	ATAL	ATAL	MTAL	MTAL	ATAL	MTAL	MTAL	ATAL	MTAL	ATAL	MTAL	ATAL	ATAL	MTAL	ATAL	ATAL	ATAL
std value	750	640	9	5000	1	210	1000	4.3	17	0.77	170	5	0.5	6.3	100	42	0.01	15	30
unit	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	pCi/L	pCi/L
7/4/2012 result	440	*3*	*5*	47.6	0.14	*10*	2.06	**14.4**	*2*	0.08	2.06	*5*	***1***	*2*	3.93	10.3	*0.005*	**63.5**	4.03
result / TAL	0.59	*0.005*	*0.56*	0.0095	0.14	*0.048*	0.0021	**3.3**	*0.12*	0.1	0.012	*1*	***2***	*0.32*	0.039	0.25	*0.5*	**4.2**	0.13

Bold font indicates result>TAL; italic font indicates undetected results; "-" is used if no analytical results were available.

Figure 242-2 Inorganic analytical results summary plot for CHQ-SMA-1.03



	Aldrin	Benzo(a)pyrene	BHC[gamma-]	Chlordane (alpha/gamma)	Chlordane[alpha-]	Chlordane[gamma-]	DDD[4,4'-]	DDE[4,4'-]	DDT[4,4'-]	Dieldrin	Endosulfan I	Endosulfan II	Endrin	Heptachlor	Heptachlor Epoxide	Hexachlorobenzene	Pentachlorophenol	RDX	Tetrachlorodibenzo dioxin[2,3,7,8-]	**Total PCB**	Toxaphene (Technical Grade)	Trinitrotoluene [2,4,6-]
std used in ratio calculations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ATAL	-	-
std value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6E-04	-	-
unit	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
7/4/2012 result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.01**	-	-
result / TAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**16**	-	-

Bold font indicates result>TAL; italic font indicates undetected results; "-" is used if no analytical results were available.

Figure 242-3 Organic analytical results summary plot for CHQ-SMA-1.03

243.0 CHQ-SMA-2: SWMUs 33-004(d) and 33-007(c) and AOC C-33-003

243.1 Site Descriptions

Three historical industrial activity areas are associated with Q003, CHQ-SMA-2: Sites 33-004(d), 33-007(c), and C-33-003.

SWMU 33-004(d) consists of an abandoned septic tank (structure 33-0121) and associated drainline and drain field located at Area 6 at TA-33. Septic tank 33-0121 is located approximately 100 ft east of building 33-0016. The septic tank is constructed of corrugated iron and has a capacity of 500 gal. Septic tank 33-0121 received wastewater from a toilet and sink in a former laboratory building (33-0001). Building 33-0001 and associated machine shop building 33-0002 were built on skids and moved on-site sometime in 1946 or 1947. Although use of building 33-0001 was discontinued in 1991 and the building was removed in 1994, the septic tank is still in place. Building 33-0001 was used from 1948 to 1955 to support nonexplosive initiator tests conducted at Area 6. In 1958, the building was used to grow crystals of potassium niobate and possibly other types of crystals (aluminates, titanates, tungstates, etc.). Silver plating was also reportedly performed in this building. Later, building 33-0001 was used as office space and for storage until use of the building was discontinued in 1991. A 1993 study of drains and discharges at TA-33 identified the only discharges to the septic system were from a lavatory, toilet, and sink drain. Potential contaminants associated with industrial materials historically managed at this site are metals, including aluminum and silver.

SWMU 33-007(c) consists of abandoned firing sites associated with the initiator tests conducted at Area 6. The firing sites included firing pads and two catcher boxes. One pad was located immediately west of building 33-0016. The catcher boxes were located approximately 20 ft south of building 33-0016 and were approximately 6 ft × 6 ft, constructed of timber, and filled with soil, wood chips, and vermiculite. Guns (2-in. to 5-in. bore) were placed on the concrete pads and used to fire projectiles containing test assemblies into targets placed in front of the catcher boxes. Materials used in the projectiles included beryllium, polonium-210, uranium, copper, lead, tungsten, and stainless steel. The projectiles frequently cracked open, contaminating the pads and surrounding area with polonium-210. Potential contaminants associated with industrial materials historically managed at this site are metals, including copper, lead, and zinc, and radionuclides, including uranium.

AOC C-33-003 consists of two fill areas located at the Main Site area of TA-33. This fill was used to level the sites for two portable trailers. One of the trailers (structure 33-169) was installed next to the Main Site water tower. The filled area to accommodate trailer 33-0169 is approximately 100 ft × 100 ft × 4 ft deep. The other trailer (structure 33-0170) was installed north of building 33-0114. The filled area to accommodate trailer 33-0170 is approximately 70 ft × 90 ft × 7 ft deep. Both trailers were installed in January 1984 and removed in June 1988. After the trailers were removed, no further improvements were made to these sites. Three projectiles, one of which contained uranium, were discovered at the fill area near the water tower during brush-clearing activities conducted during the spring of 1996. The source of these projectiles appears to have been the fill material that had been obtained from the cinder cone located in Area 6, just west of Main Site. Projectiles historically were fired into the base of the cinder cone during experiments conducted at the Area 6 firing area [SWMU 33-007(c)]. Previous environmental investigations at AOC C-33-003 include geophysical investigations conducted at both fill areas in 1997. The results of these surveys included anomalies that may have been indicative of other projectiles. AOC C-33-003 was not included in the RFI work plan for TA-33 because it was discovered after the work plan had been prepared. Potential contaminants associated with industrial materials

historically managed at this site are metals, including copper, lead, and zinc, and radionuclides, including uranium.

The project map (Figure 243-1) is located at the end of this SMA update. Any future map updates will be posted on the IP website: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-monitoring-area-maps.php.

243.2 Control Measures

Run-on to the SMA may originate on the paved roads north and east of the area. Control measures serve to mitigate impacts from these potential run-on sources and to moderate runoff from the SMA. All active control measures are listed in the following table, and their locations are shown on the project map (Figure 243-1).

Table 243-1 Active Control Measures

Control ID	Control Name	Purpose of Control				Control Status
		Run-On	Runoff	Erosion	Sediment	
Q00302010004	Established Vegetation - Grasses and Shrubs			X		CB
Q00302020005	Established Vegetation - Forested/Needle Cast			X		CB
Q00303020001	Berms - Base Course	X			X	CB
Q00303020006	Berms - Base Course	X			X	CB
Q00303040015	Berms - Asphalt	X			X	CB
Q00303060016	Berms - Straw Wattles	X			X	CB
Q00303060017	Berms - Straw Wattles	X			X	CB
Q00303060018	Berms - Straw Wattles	X			X	CB
Q00303060019	Berms - Straw Wattles	X			X	CB
Q00303060020	Berms - Straw Wattles	X			X	CB
Q00303060021	Berms - Straw Wattles	X			X	CB
Q00304060002	Channel/Swale - Riprap	X		X		CB
Q00304060007	Channel/Swale - Riprap	X		X		CB
Q00306010003	Check Dam - Rock		X		X	CB
Q00306010008	Check Dam - Rock		X		X	CB
Q00306010009	Check Dam - Rock	X			X	CB
Q00306010010	Check Dam - Rock	X			X	CB
Q00306010011	Check Dam - Rock	X			X	CB
Q00306010012	Check Dam - Rock	X			X	CB
Q00306010013	Check Dam - Rock	X			X	CB
Q00306010014	Check Dam - Rock	X			X	CB

CB: Certified baseline control measure.

B: Additional baseline control measure.

EC: Enhanced control measure.

Enhanced control measures will be installed in 2013 as part of corrective action.

243.3 Storm Water Monitoring

SWMUs 33-004(d) and 33-007(c) and AOC C-33-003 are monitored within CHQ-SMA-2. Following the installation of baseline control measures, a baseline storm water sample was collected on July 4, 2012 (Figure 243-2). Analytical results from this sample yielded three TAL exceedances:

- Aluminum concentration of 967 µg/L (MTAL is 750 µg/L),
- Copper concentration of 6.75 µg/L (MTAL is 4.3 µg/L), and
- Gross-alpha activity of 91.2 pCi/L (ATAL is 15 pCi/L).

These exceedances were evaluated by comparing the results from soil samples collected at the Sites during Consent Order or previous investigations with the storm water TAL exceedances to determine whether the exceedances may be related to historical industrial activities. The discussion is organized by Site and analyte.

SWMU 33-004(d): Potential contaminants associated with industrial materials historically managed at this Site are metals, including aluminum and silver. Consent Order soil sampling has not yet been conducted at SWMU 33-004(d).

- Aluminum—RFI soil samples collected at the Site were not analyzed for aluminum. Although aluminum is associated with industrial materials historically managed at this Site, the quantities managed are believed to be very low.
- Copper—RFI soil samples collected at the Site were not analyzed for copper because copper is not associated with industrial materials historically managed at this site.
- Gross alpha—Uranium was detected above BV in previous RFI soil samples with a maximum uranium concentration 2.6 times BV.


CHQ-SMA-2, Rock Check Dam, Q00306010008 (photo ID 10887-11)

In summary, based on site history, the Site is an unlikely source of the aluminum and copper above in storm water results above TALs. Uranium, which has alpha-emitting isotopes, is not associated with industrial materials historically managed at the Site, and uranium isotopes were detected only slightly above BV in soil samples. In addition, uranium isotopes are excluded from the definition of adjusted gross-alpha radioactivity. Based on site history and previous soil sampling results, the Site is an unlikely source of adjusted gross alpha above ATAL in storm water.

SWMU 33-007(c): Potential contaminants associated with industrial materials historically managed at this Site are metals, including copper, lead, and zinc, and radionuclides, including uranium. Consent Order soil sampling has not yet been conducted at SWMU 33-007(c).

- Aluminum—Soil samples previously collected at the Site were not analyzed for aluminum because this constituent is not associated with industrial materials historically managed at this Site.

- Copper—Soil samples previously collected at the Site were not analyzed for copper. Although copper is associated with industrial materials historically managed at this Site, the quantities managed are believed to be low.
- Gross alpha—Uranium was detected above BV in previous RFI soil samples with a maximum uranium concentration 40 times BV.

In summary, based on site history, it was determined that the Site is an unlikely source of aluminum and copper in storm water results above TALs. Uranium, which has alpha-emitting isotopes, is associated with industrial materials historically managed at the Site and was detected substantially above BV in soil samples. Uranium isotopes, however, are excluded from the definition of adjusted gross-alpha radioactivity. No other alpha-emitting radionuclides are known to be associated with industrial materials historically managed at this Site. Based on site history, previous sampling results, and calculation of adjusted gross alpha, the Site is an unlikely source of adjusted gross alpha above ATAL in storm water.

AOC C-33-003: Potential contaminants associated with industrial materials historically managed at this Site are metals, including copper, lead, and zinc, and radionuclides, including uranium. Consent Order soil sampling has not yet been conducted at AOC C-33-003.

- Aluminum—Aluminum was not detected above BV in previous RFI soil samples collected at the Site. Aluminum is not associated with industrial materials historically managed at this Site.
- Copper—Copper was detected above BVs in previous RFI soil samples with a maximum concentration 2.5 times BV. Although copper is associated with industrial materials historically managed at this Site, the quantities managed are believed to be low.
- Gross alpha—Uranium-234 and uranium-238 were detected above BVs in previous RFI soil samples with maximum activities 2 times BV for each constituent.

In summary, based on site history, it was determined that the Site is an unlikely source of aluminum and copper in storm water results that were above TALs. Uranium, which has alpha-emitting isotopes, is associated with industrial materials historically managed at the Site and uranium isotopes were detected slightly above BV in soil samples. Uranium isotopes, however, are excluded from the definition of adjusted gross-alpha radioactivity. No other alpha-emitting radionuclides are known to be associated with industrial materials historically managed at this Site. Based on site history, previous sampling results, and calculation of adjusted gross alpha, the Site is an unlikely source of adjusted gross alpha above ATAL in storm water.

TAL exceedances were also evaluated against the appropriate storm water background value, that is, “Bandelier Tuff background” for undisturbed SMAs or “developed background” for urban settings. Background values are expressed as UTLs using the approved EPA method for calculating background values. UTLs for undisturbed SMAs were derived from storm water runoff containing entrained sediments derived from Bandelier Tuff and are labeled “Bandelier Tuff Background” in Figure 243-2. UTLs developed for urban settings were derived from runoff from developed landscapes on the Pajarito Plateau, including buildings, parking lots, roads, and associated features and are labeled “Developed Background” in Figure 243-2.

Most of the CHQ-SMA-2 drainage area is located on Bandelier Tuff, and minimal run-on occurs from developed facilities (i.e., buildings, pavement, and parking lots); therefore, calculated storm water UTLs from samples containing sediment derived from Bandelier Tuff were compared with aluminum, copper and gross-alpha MTAL and ATAL exceedances.

- Gross alpha—Gross alpha in Bandelier Tuff is associated with naturally occurring radioactive uranium- and thorium-bearing minerals. Aluminum is a major component of Bandelier Tuff, and copper is associated with trace minerals in the Bandelier Tuff as well.
- Aluminum—The aluminum UTL for storm water containing sediments derived from Bandelier Tuff is 2210 µg/L; the result from 2012 is less than this value.
- Copper—The copper UTL for storm water containing sediments derived from Bandelier Tuff is 3.43 µg/L; the result from 2012 is greater than this value.
- Gross alpha—The gross-alpha UTL for storm water containing sediments derived from Bandelier Tuff is 1490 pCi/L; the result from 2012 is less than this value.

All of the analytical results for these samples are reported in the 2012 Annual Report.

243.4 Inspections and Maintenance

RG340 recorded three storm events at CHQ-SMA-2 during the 2012 season. These rain events triggered three post-storm inspections. Post-storm inspections and all other inspection activity conducted at the SMA are summarized below.

Table 243-2 Control Measure Inspections during 2012

Inspection Type	Inspection Reference	Inspection Date
Annual Erosion Evaluation	COMP-23348	05-29-2012
Storm Rain Event	BMP-24930	07-18-2012
Storm Rain Event	BMP-26676	08-30-2012
Storm Rain Event	BMP-27527	09-19-2012
Visual Inspection	COMP-27870	09-27-2012

There were no maintenance activities conducted at CHQ-SMA-2 in 2012.

243.5 Compliance Status

The Sites associated with CHQ-SMA-2 are moderate priority Sites. Corrective action is to be certified complete within 5 yr of the effective date of the IP (i.e., November 2015).

Table 243-4 Compliance Status during 2012

Site	Compliance Status on Jan 1, 2012	Compliance Status on Dec 31, 2012	Comments
SWMU 33-004(d)	Baseline Monitoring	Corrective Action Initiated	Initiated August 27, 2012
SWMU 33-007(c)	Baseline Monitoring	Corrective Action Initiated	Initiated August 27, 2012
AOC C-33-003	Baseline Monitoring	Corrective Action Initiated	Initiated August 27, 2012

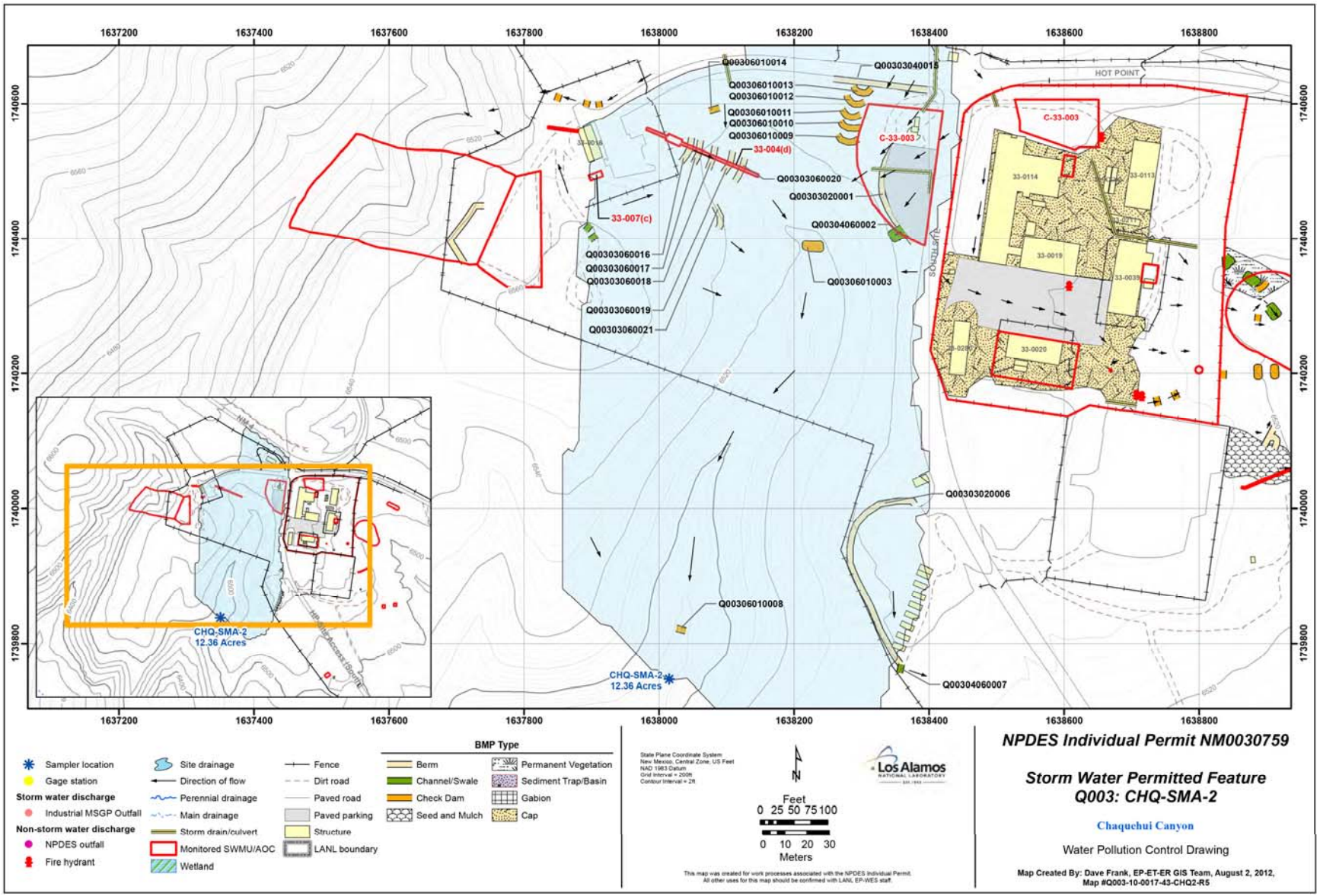
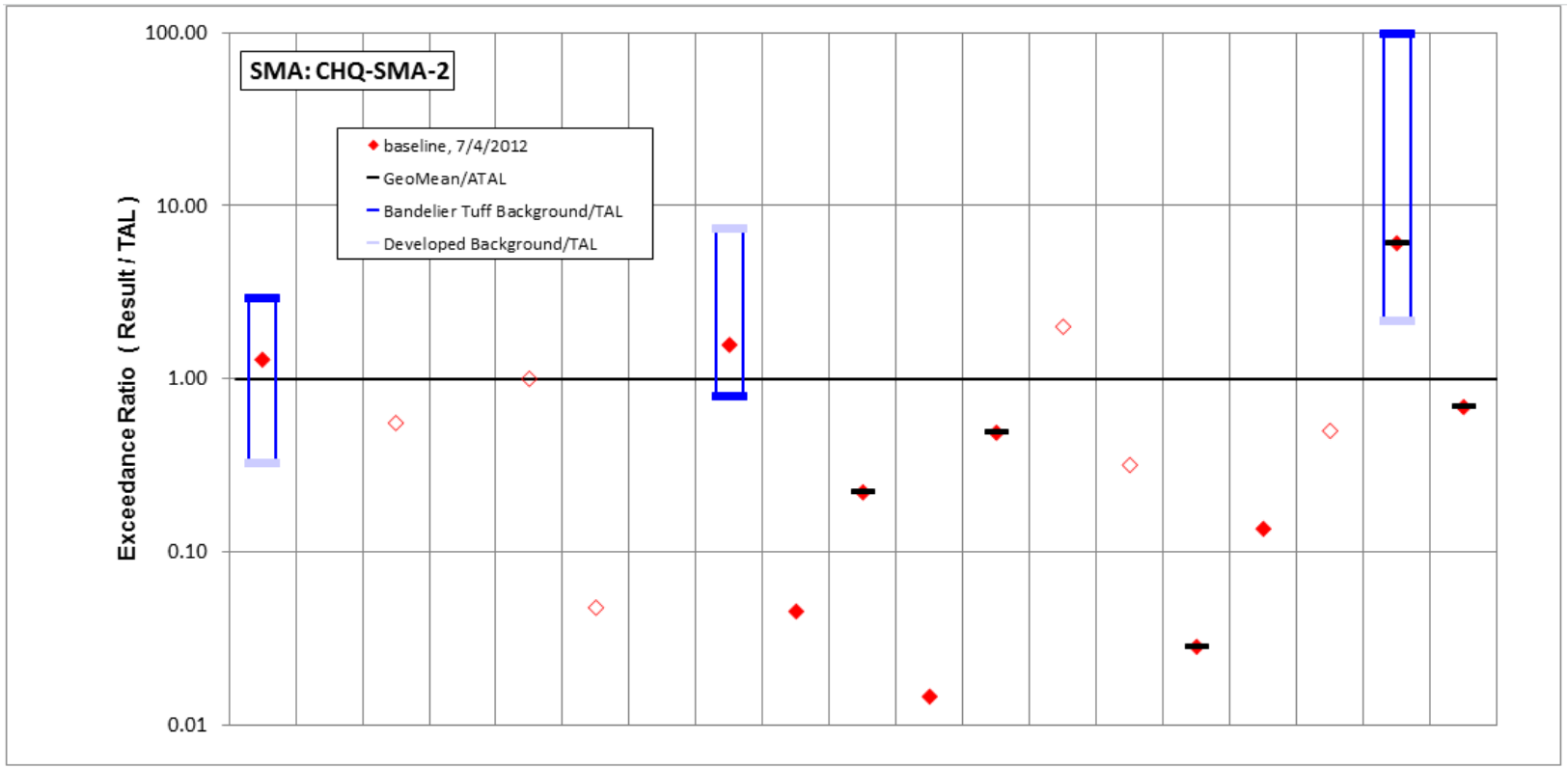


Figure 243-1 CHQ-SMA-2 location map



	Aluminum	Antimony	Arsenic	Boron	Cadmium	Chromium	Cobalt	**Copper**	Lead	Mercury	Nickel	Selenium	**Silver**	Thallium	Vanadium	Zinc	Cyanide, weak acid dissociable	**Gross alpha**	Radium-226 and Radium-228
std used in ratio calculations	MTAL	ATAL	ATAL	ATAL	MTAL	MTAL	ATAL	MTAL	MTAL	ATAL	MTAL	ATAL	MTAL	ATAL	ATAL	MTAL	ATAL	ATAL	ATAL
std value	750	640	9	5000	1	210	1000	4.3	17	0.77	170	5	0.5	6.3	100	42	0.01	15	30
unit	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	pCi/L	pCi/L
7/4/2012 result	**967**	*3*	*5*	20.3	*1*	*10*	3.69	**6.75**	0.77	0.17	2.48	2.44	***1***	*2*	2.83	5.71	*0.005*	**91.1**	20.6
result / TAL	**1.3**	*0.005*	*0.56*	0.0041	*1*	*0.048*	0.0037	**1.6**	0.045	0.22	0.015	0.49	***2***	*0.32*	0.028	0.14	*0.5*	**6.1**	0.69

Bold font indicates result>TAL; italic font indicates undetected results; "-" is used if no analytical results were available.

Figure 243-2 Inorganic analytical results summary plot for CHQ-SMA-2

244.0 CHQ-SMA-3.05: SWMU 33-010(f)

244.1 Site Descriptions

One historical industrial activity area is associated with Q004, CHQ-SMA-3.05: Site 33-010(f).

SWMU 33-010(f) is a surface disposal area located at south of Main Site at TA-33. The history of the site and the origins of the wastes are not known. The 1990 SWMU Report states the SWMU was observed during a 1987 former Environmental Restoration Project reconnaissance and describes it as concrete, cans, and metal pieces that littered the area east of former building 33-0086. This SWMU consists of two small surface disposal areas located 300 ft southeast of former building 33-0086 and approximately 50 ft apart. One of the areas is described as approximately 15 ft square, and the other as approximately 10 ft × 20 ft. Materials at the site included pieces of concrete; piles of tuff and cured asphalt; rusted metal cans, rebar, and strapping bands; and other debris. Although the source of these materials is not known, some are believed to be associated with roadwork activities.

The project map (Figure 244-1) is located at the end of this SMA update. Any future map updates will be posted on the IP website: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-monitoring-area-maps.php.

244.2 Control Measures

This SMA is located in an undeveloped area. There are no roads, structures, or other contributions of concentrated run-on to the monitored area. Control measures provide improved sediment retention and reduce any impact to the area from overland sheet flow. All active control measures are listed in the following table, and their locations are shown on the project map (Figure 244-1).

Table 244-1 Active Control Measures

Control ID	Control Name	Purpose of Control				Control Status
		Run-On	Runoff	Erosion	Sediment	
Q00402010001	Established Vegetation - Grasses and Shrubs			X		CB
Q00403010008	Berms - Earthen		X		X	B
Q00403060002	Berms - Straw Wattles	X			X	CB
Q00403060003	Berms - Straw Wattles	X			X	CB
Q00406010006	Check Dam - Rock		X		X	CB
Q00406010007	Check Dam - Rock		X		X	CB

CB: Certified baseline control measure.

B: Additional baseline control measure.

EC: Enhanced control measure.

244.3 Storm Water Monitoring

For calendar year 2012, storm water flow has not been sufficient for full-volume sample collection at CHQ-SMA-3.05. Initial confirmation sampling will continue until one confirmation sample is collected from this SMA.

244.4 Inspections and Maintenance

RG340 recorded three storm events at CHQ-SMA-3.05 during the 2012 season. These rain events triggered three post-storm inspections. Post-storm inspections and all other inspection activity conducted at the SMA are summarized below.

Table 244-2 Control Measure Inspections during 2012

Inspection Type	Inspection Reference	Inspection Date
Annual Erosion Evaluation	COMP-23349	05-29-2012
Storm Rain Event	BMP-24935	07-18-2012
Storm Rain Event	BMP-26681	08-20-2012
Storm Rain Event	BMP-27532	09-18-2012

There were no maintenance activities conducted at CHQ-SMA-3.05 in 2012.

244.5 Compliance Status

The Site associated with CHQ-SMA-3.05 is a moderate priority Site. Corrective action is to be certified complete within 5 yr of the effective date of the IP (i.e., November 2015).

Table 244-4 Compliance Status during 2012

Site	Compliance Status on Jan 1, 2012	Compliance Status on Dec 31, 2012	Comments
SWMU 33-010(f)	Baseline Monitoring	Baseline Monitoring Extended	No Comment

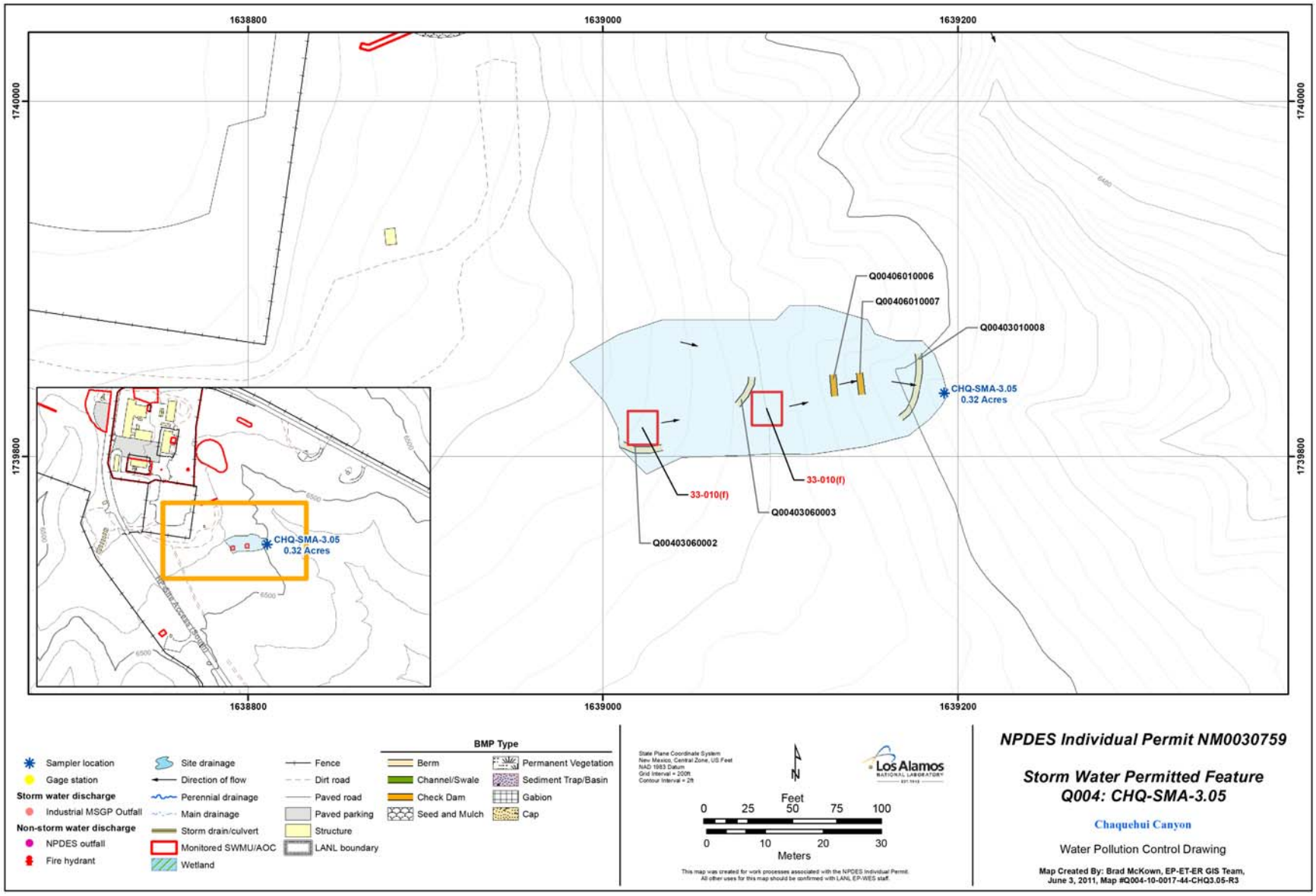


Figure 244-1 CHQ-SMA-3.05 location map

245.0 CHQ-SMA-4: SWMU 33-011(e)

245.1 Site Descriptions

One historical industrial activity area is associated with Q005, CHQ-SMA-4: Site 33-011(e).

SWMU 33-011(e) is a former drum-storage area located at the south end of TA-33 Main Site, approximately 30 ft northwest of building 33-0022, a former HE storage magazine. The area is unpaved and gradually slopes to the southwest. Drums containing unknown materials were previously stored at this area. The date the materials were first stored at this site is not known. At the time the OU 1122 RFI work plan was prepared in 1992, all drums had been removed from the site and the area had been cleared. The site is currently not used.

The project map (Figure 245-1) is located at the end of this SMA update. Any future map updates will be posted on the IP website: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-monitoring-area-maps.php.

245.2 Control Measures

Run-on in the form of sheet flow may originate from a small portion of paved area in proximity to this SMA. The majority of potential run-on flows to the south, away from the SWMU. Controls are installed to promote vegetative growth, mitigate any impacts from run-on sources, and to moderate runoff from the SMA. All active control measures are listed in the following table, and their locations are shown on the project map (Figure 245-1).

Table 245-1 Active Control Measures

Control ID	Control Name	Purpose of Control				Control Status
		Run-On	Runoff	Erosion	Sediment	
Q00502010001	Established Vegetation - Grasses and Shrubs			X		CB
Q00503010016	Berms - Earthen		X		X	B
Q00503010017	Berms - Earthen		X		X	B
Q00503010018	Berms - Earthen		X		X	B
Q00503060006	Berms - Straw Wattles	X			X	CB
Q00506010003	Check Dam - Rock		X		X	CB
Q00506010004	Check Dam - Rock		X		X	CB
Q00506010005	Check Dam - Rock		X		X	CB

CB: Certified baseline control measure.

B: Additional baseline control measure.

EC: Enhanced control measure.

245.3 Storm Water Monitoring

For calendar year 2012, storm water flow has not been sufficient for full-volume sample collection at CHQ-SMA-4. Initial confirmation sampling will continue until one confirmation sample is collected from this SMA.

245.4 Inspections and Maintenance

RG340 recorded three storm events at CHQ-SMA-4 during the 2012 season. These rain events triggered three post-storm inspections. Post-storm inspections and all other inspection activity conducted at the SMA are summarized below.

Table 245-2 Control Measure Inspections during 2012

Inspection Type	Inspection Reference	Inspection Date
Annual Erosion Evaluation	COMP-23350	05-29-2012
Storm Rain Event	BMP-24931	07-18-2012
Storm Rain Event	BMP-26677	08-20-2012
Storm Rain Event	BMP-27528	09-18-2012

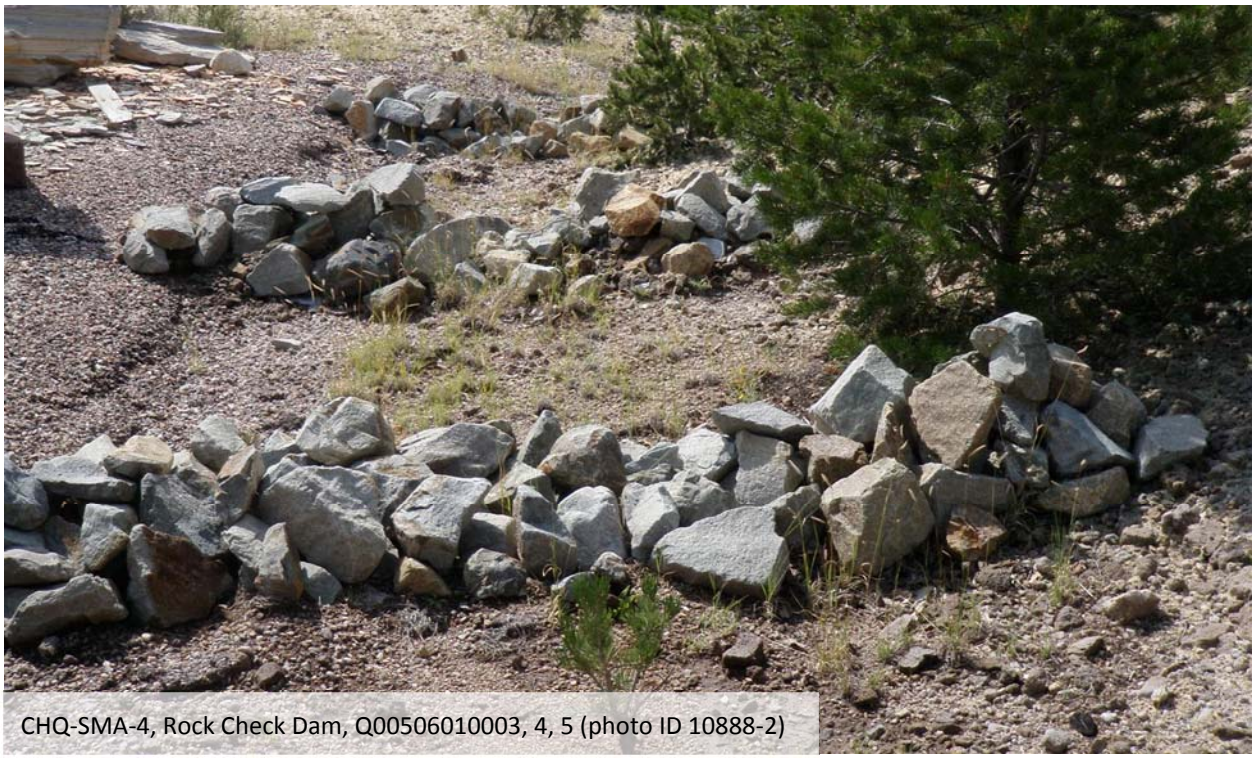
There were no maintenance activities conducted at CHQ-SMA-4 in 2012.

245.5 Compliance Status

The Site associated with CHQ-SMA-4 is a moderate priority Site. Corrective action is to be certified complete within 5 yr of the effective date of the IP (i.e., November 2015).

Table 245-4 Compliance Status during 2012

Site	Compliance Status on Jan 1, 2012	Compliance Status on Dec 31, 2012	Comments
SWMU 33-011(e)	Baseline Monitoring	Baseline Monitoring Extended	No Comment



CHQ-SMA-4, Rock Check Dam, Q00506010003, 4, 5 (photo ID 10888-2)

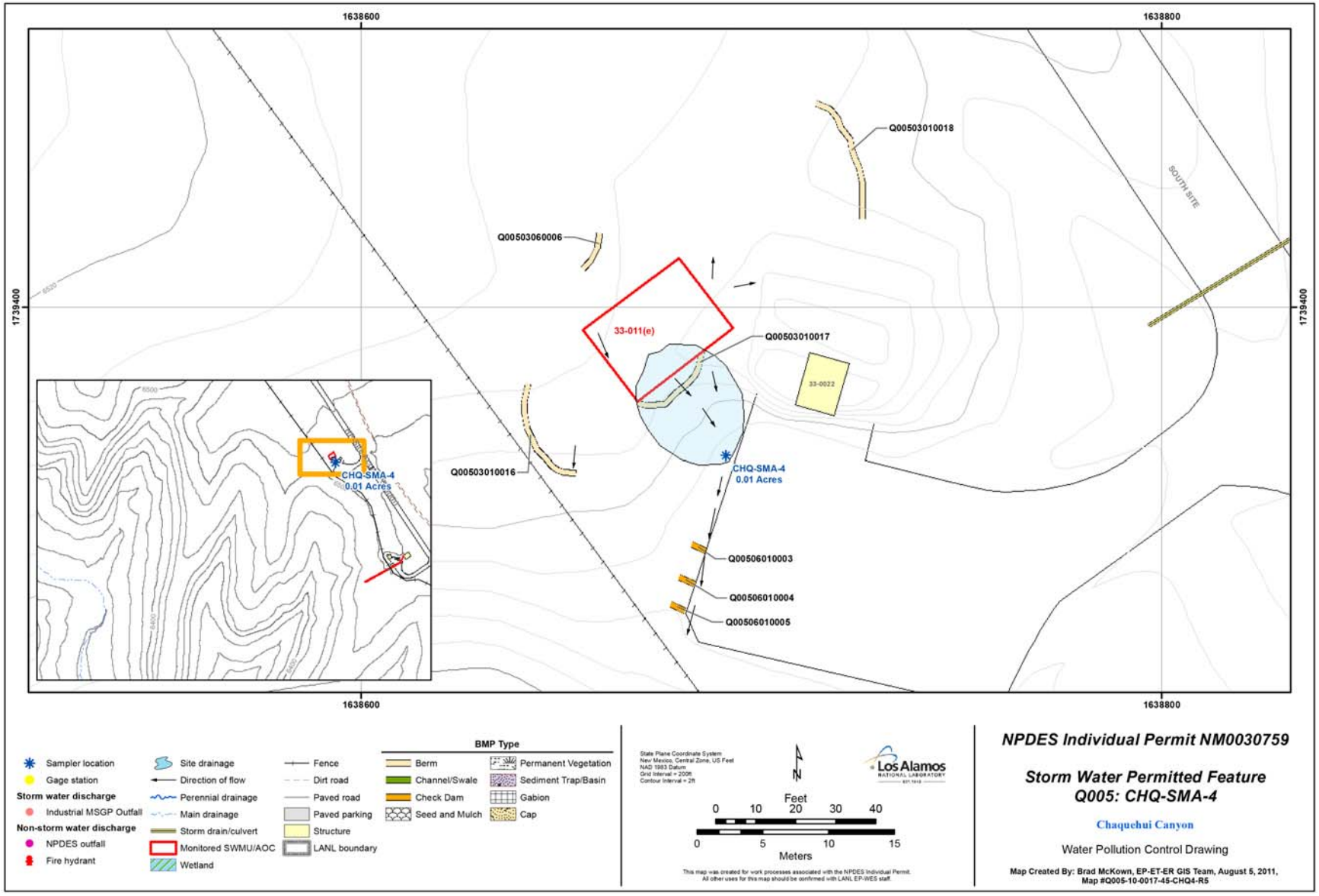


Figure 245-1 CHQ-SMA-4 location map

246.0 CHQ-SMA-4.1: SWMU 33-016

246.1 Site Descriptions

One historical industrial activity area is associated with Q006, CHQ-SMA-4.1: Site 33-016.

SWMU 33-016 is a sump and associated drainline and outfall at a process bunker located in the southern portion of Main Site. The concrete sump is 3 ft × 2 ft × 2 ft deep and is located next to the northwest corner of the bunker's exterior wall, near the door. A drainline leads from the sump to an outfall approximately 250 ft southwest of the building to a small side canyon to Chaquehui Canyon. The sump was connected to a sink and floor drain in the bunker, which was constructed in 1950. From 1950 until 1972, the bunker was used as a trim building to prepare propellant charges for gun tests at South Site. Structure 33-0023 was subsequently used until 1994 to store lithologic cores from the Hot Dry Rock Program. In addition to the sink and floor drain, the sump also may have received rainwater and snowmelt. The sump was decommissioned in 1995.

The project map (Figure 246-1) is located at the end of this SMA update. Any future map updates will be posted on the IP website: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-monitoring-area-maps.php.

246.2 Control Measures

There are no significant run-on sources at this SMA. Control measures serve to mitigate any impacts from overland flow along the southwestern boundary and to moderate runoff from this SMA. All active control measures are listed in the following table, and their locations are shown on the project map (Figure 246-1).

Table 246-1 Active Control Measures

Control ID	Control Name	Purpose of Control				Control Status
		Run-On	Runoff	Erosion	Sediment	
Q00602010001	Established Vegetation - Grasses and Shrubs			X		CB
Q00603060004	Berms - Straw Wattles	X			X	CB
Q00603060005	Berms - Straw Wattles	X			X	CB
Q00603060006	Berms - Straw Wattles	X			X	CB
Q00603060007	Berms - Straw Wattles	X			X	CB
Q00606010002	Check Dam - Rock		X		X	CB
Q00606010003	Check Dam - Rock		X		X	CB

CB: Certified baseline control measure.

B: Additional baseline control measure.

EC: Enhanced control measure.

246.3 Storm Water Monitoring

For calendar year 2012, storm water flow has not been sufficient for full-volume sample collection at CHQ-SMA-4.1. Initial confirmation sampling will continue until one confirmation sample is collected from this SMA.

246.4 Inspections and Maintenance

RG340 recorded three Storm events at CHQ-SMA-4.1 during the 2012 season. These rain events triggered three post-storm inspections. Post-storm inspections and all other inspection activity conducted at the SMA are summarized below.

Table 246-2 Control Measure Inspections during 2012

Inspection Type	Inspection Reference	Inspection Date
Annual Erosion Evaluation	COMP-23351	05-29-2012
Storm Rain Event	BMP-24936	07-18-2012
Storm Rain Event	BMP-26682	08-20-2012
Storm Rain Event	BMP-27533	09-18-2012

There were no maintenance activities conducted at CHQ-SMA-4.1 in 2012.

246.5 Compliance Status

The Site associated with CHQ-SMA-4.1 is a moderate priority Site. Corrective action is to be certified complete within 5 yr of the effective date of the IP (i.e., November 2015).

Table 246-4 Compliance Status during 2012

Site	Compliance Status on Jan 1, 2012	Compliance Status on Dec 31, 2012	Comments
SWMU 33-016	Baseline Monitoring	Baseline Monitoring Extended	No Comment

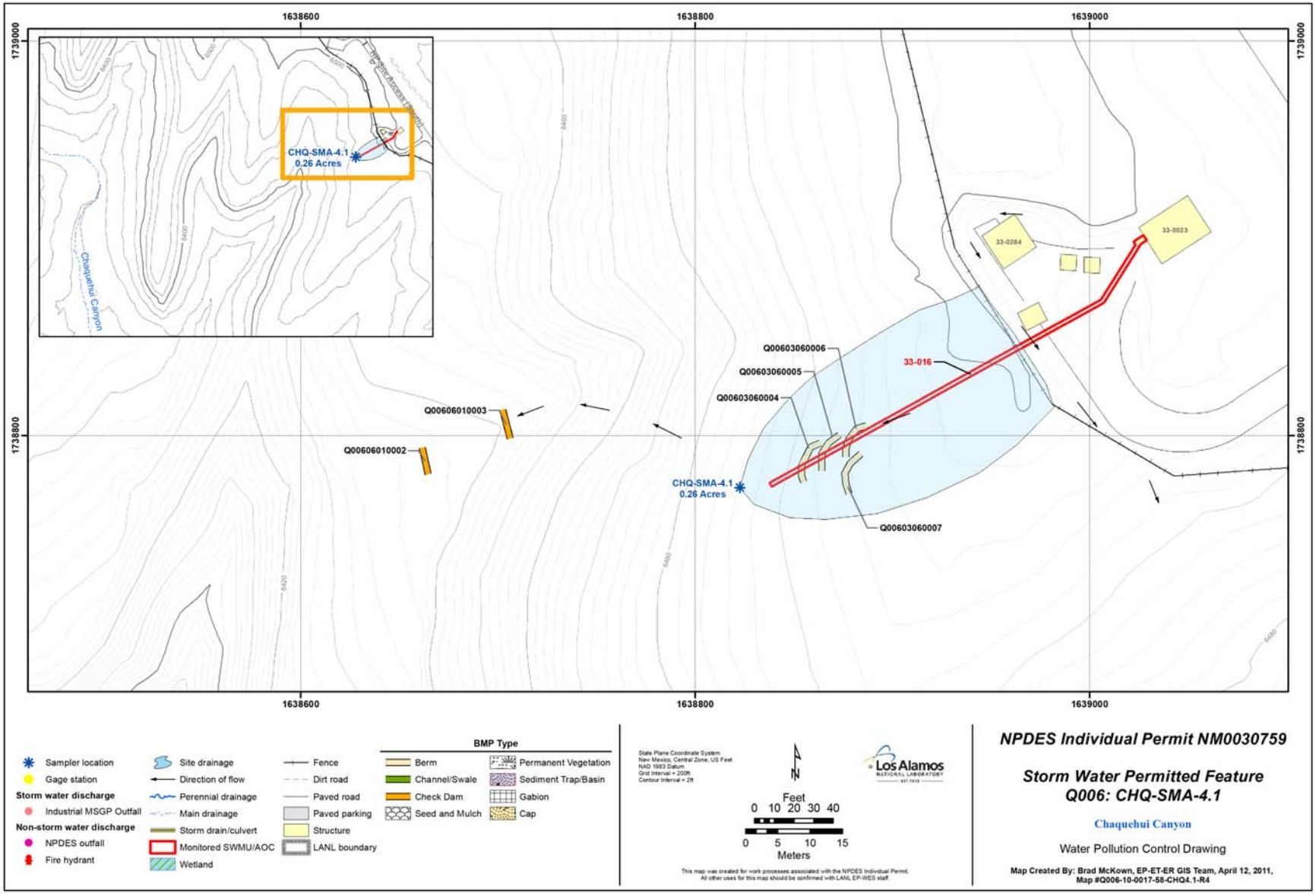


Figure 246-1 CHQ-SMA-4.1 location map

247.0 CHQ-SMA-4.5: AOC 33-011(b)

247.1 Site Descriptions

One historical industrial activity area is associated with Q007, CHQ-SMA-4.5: Site 33-011(b).

AOC 33-011(b) is a former storage area located just outside the northwest corner of the site at TA-33. This storage area was approximately 300 ft wide × 600 ft long. Beginning in the 1950s, the site served as a storage area for equipment, and materials such as tungsten, uranium, and beryllium were stored at the site. Equipment used at the TA-33 firing sites was also stored at the site. The storage area was cleaned in 1984, and most materials and debris were removed at that time, although some debris remained. Approximately 75% of the area had been scraped and leveled to or near the tuff bedrock.

The project map (Figure 247-1) is located at the end of this SMA update. Any future map updates will be posted on the IP website: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-monitoring-area-maps.php.

247.2 Control Measures

There are no significant run-on contributions to this monitored area. Paved areas in proximity to the SMA are graded away from the SMA. Control measures serve to moderate runoff from this SMA. All active control measures are listed in the following table, and their locations are shown on the project map (Figure 247-1).

Table 247-1 Active Control Measures

Control ID	Control Name	Purpose of Control				Control Status
		Run-On	Runoff	Erosion	Sediment	
Q00702010001	Established Vegetation - Grasses and Shrubs			X		CB
Q00703010009	Berms - Earthen		X		X	B
Q00703060004	Berms - Straw Wattles		X		X	CB
Q00703060008	Berms - Straw Wattles		X		X	CB
Q00706010002	Check Dam - Rock		X		X	CB
Q00706010003	Check Dam - Rock		X		X	CB

CB: Certified baseline control measure.

B: additional baseline control measure.

EC: enhanced control measure.

247.3 Storm Water Monitoring

For calendar year 2012, storm water flow has not been sufficient for full-volume sample collection at CHQ-SMA-4.5. Initial confirmation sampling will continue until one confirmation sample is collected from this SMA.

247.4 Inspections and Maintenance

RG340 recorded three storm events at CHQ-SMA-4.5 during the 2012 season. These rain events triggered three post-storm inspections. Post-storm inspections and all other inspection activity conducted at the SMA are summarized below.

Table 247-2 Control Measure Inspections during 2012

Inspection Type	Inspection Reference	Inspection Date
Annual Erosion Evaluation	COMP-23352	05-29-2012
Storm Rain Event	BMP-24937	07-18-2012
Storm Rain Event	BMP-26683	08-20-2012
Storm Rain Event	BMP-27534	09-18-2012

There were no maintenance activities conducted at CHQ-SMA-4.5 in 2012.

247.5 Compliance Status

The Site associated with CHQ-SMA-4.5 is a moderate priority Site. Corrective action is to be certified complete within 5 yr of the effective date of the IP (i.e., November 2015).

Table 247-4 Compliance Status during 2012

Site	Compliance Status on Jan 1, 2012	Compliance Status on Dec 31, 2012	Comments
AOC 33-011(b)	Baseline Monitoring	Baseline Monitoring Extended	No Comment

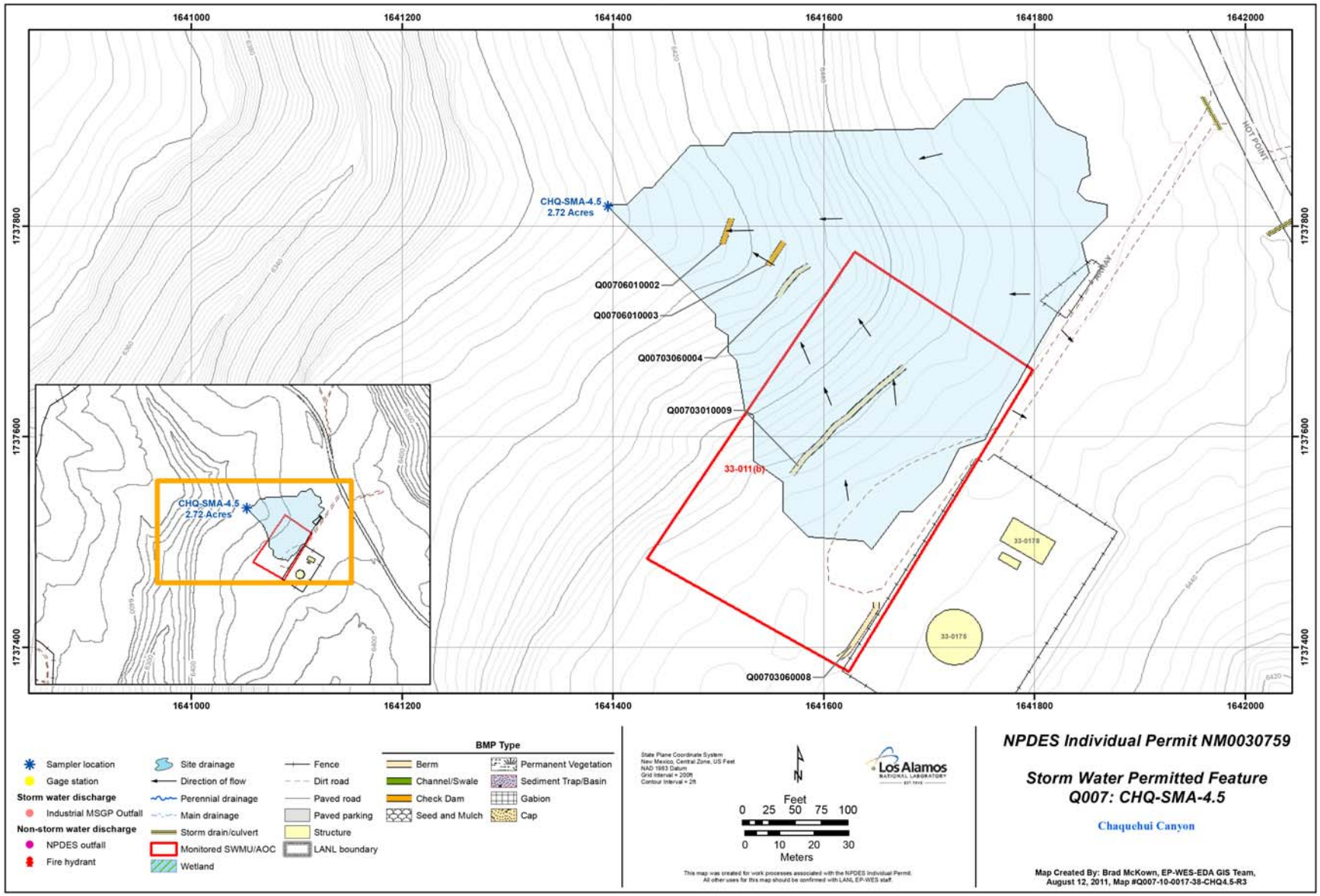


Figure 247-1 CHQ-SMA-4.5 location map

248.0 CHQ-SMA-5.05: SWMU 33-007(b)

248.1 Site Descriptions

One historical industrial activity area is associated with Q008, CHQ-SMA-5.05: Site 33-007(b).

SWMU 33-007(b) consists of two former gun firing sites. The first area is located approximately 600 ft north of structure 33-0026 [SWMU 33-006(a)] and consists of a 6-ft × 6-ft concrete pad and gun mount (structure 33-0085), a u-shaped soil berm (structure 33-0043), and a catcher box. The berm and catcher box were constructed in August 1950. The concrete pad and gun mount were constructed in June 1952. This area was used to test free-recoil weapons. Tests involved firing projectiles into the berm and the catcher box. Projectiles fired from the guns contained uranium, beryllium, titanium, and tritium housed inside steel casings. Activities at South Site were discontinued in the late 1950s. The second site was located approximately 400 ft northwest of structure 33-0026 and included a gun building (structure 33-0025) and a soil berm (structure 33-0063). Both structures were built in 1950. The projectiles used at this site contained uranium, beryllium, and tungsten. Firing site activities at SWMU 33-007(b) were discontinued in the late 1950s.

The project map (Figure 248-1) is located at the end of this SMA update. Any future map updates will be posted on the IP website: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-monitoring-area-maps.php.

248.2 Control Measures

There are minor run-on contributions from a roof and surrounding bare areas to the SMA. Existing controls effectively manage these run-on contributions and also provide sediment retention for any runoff from this SMA. All active control measures are listed in the following table, and their locations are shown on the project map (Figure 248-1).

Table 248-1 Active Control Measures

Control ID	Control Name	Purpose of Control				Control Status
		Run-On	Runoff	Erosion	Sediment	
Q00802010004	Established Vegetation - Grasses and Shrubs			X		CB
Q00803020006	Berms - Base Course		X		X	CB
Q00804060002	Channel/Swale - Riprap		X	X		CB
Q00804060005	Channel/Swale - Riprap	X		X		CB
Q00804060007	Channel/Swale - Riprap		X	X		CB
Q00806010003	Check Dam - Rock		X		X	CB

CB: Certified baseline control measure.

B: Additional baseline control measure.

EC: Enhanced control measure.

248.3 Storm Water Monitoring

For calendar year 2012, storm water flow has not been sufficient for full-volume sample collection at CHQ-SMA-5.05. Initial confirmation sampling will continue until one confirmation sample is collected from this SMA.

248.4 Inspections and Maintenance

RG340 recorded three storm events at CHQ-SMA-5.05 during the 2012 season. These rain events triggered three post-storm inspections. Post-storm inspections and all other inspection activity conducted at the SMA are summarized below.

Table 248-2 Control Measure Inspections during 2012

Inspection Type	Inspection Reference	Inspection Date
Annual Erosion Evaluation	COMP-23353	05-29-2012
Storm Rain Event	BMP-24940	07-18-2012
Storm Rain Event	BMP-26686	08-20-2012
Storm Rain Event	BMP-27537	09-18-2012

There were no maintenance activities conducted at CHQ-SMA-5.05 in 2012.

248.5 Compliance Status

The Sites associated with CHQ-SMA-5.05 are moderate priority Sites. Corrective action is to be certified complete within 5 yr of the effective date of the IP (i.e., November 2015).

Table 248-4 Compliance Status during 2012

Site	Compliance Status on Jan 1, 2012	Compliance Status on Dec 31, 2012	Comments
SWMU 33-007(b)	Baseline Monitoring	Baseline Monitoring Extended	No Comment

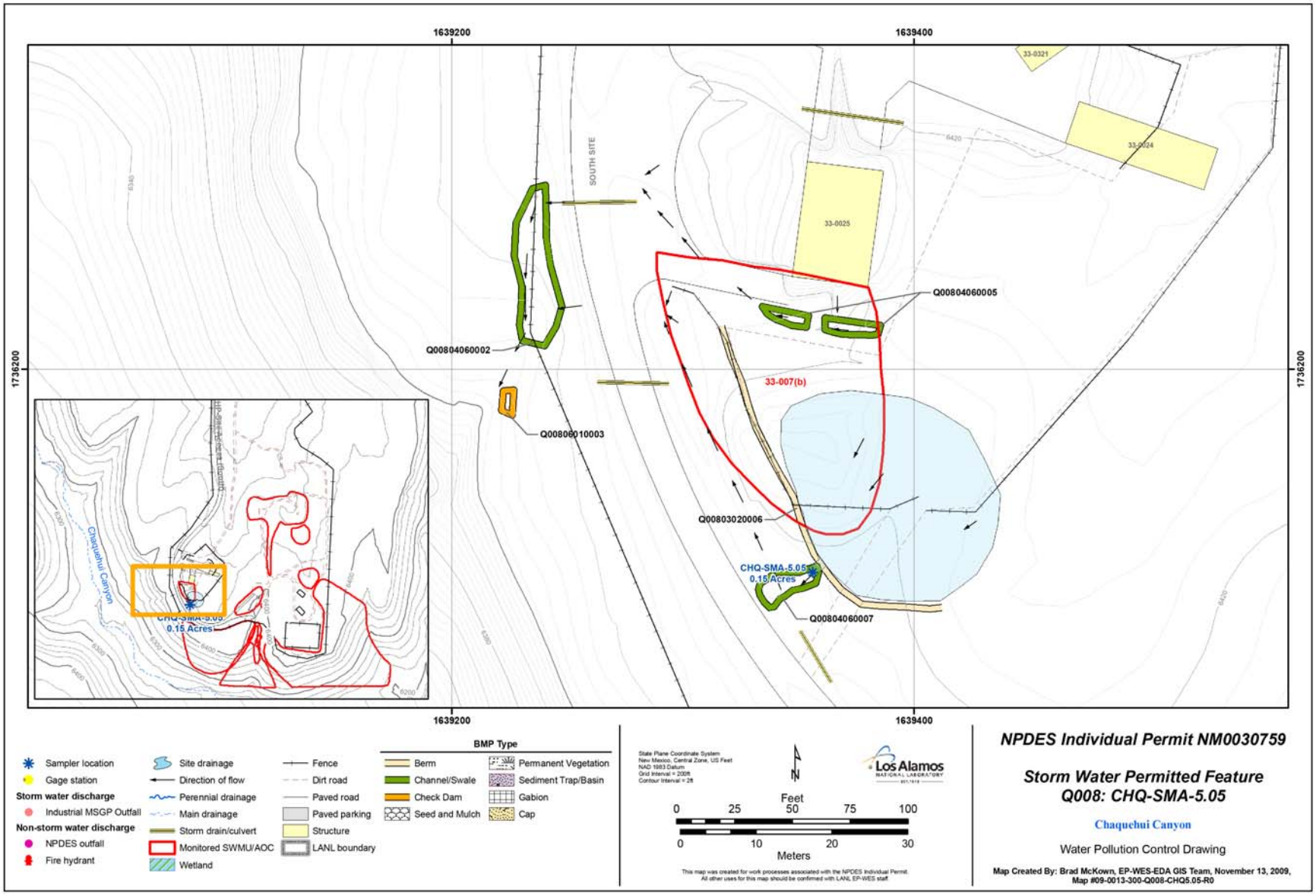


Figure 248-1 CHQ-SMA-5.05 location map

249.0 CHQ-SMA-6: SWMUs 33-004(j), 33-006(a), 33-007(b), 33-010(c), 33-010(g), 33-010(h), and 33-014

249.1 Site Descriptions

Seven historical industrial activity areas are associated with Q009, CHQ-SMA-6: Sites 33-004(j), 33-006(a), 33-007(b), 33-010(c), 33-010(g), 33-010(h), and 33-014.

SWMU 33-004(j) consists of a 4-in. steel drainpipe and outfall connected to structure 33-0026, a culvert located immediately east of structure 33-0026, and the drainage channel that flows south and empties into Chaquehui Canyon. The pipe is connected to a drain located on the concrete pad at the entrance to structure 33-0026. Structure 33-0026 held electronic equipment used for experiments on the shot pad [SWMU 33-006(a)] located directly above the structure. The drainpipe extends 75 ft southeast and discharges to an open channel that drains into Chaquehui Canyon. The culvert is situated beneath the unpaved portion of the road that extends beyond structure 33-0026. The upper portion of the drainage channel where both the outfall pipe and the culvert discharge has been cut into the tuff.

SWMU 33-006(a) is a shot pad at South Site where implosion studies were conducted. The shot pad was a 50-ft-diameter circular area located immediately north of and next to the roof of structure 33-0026, an x-unit chamber (i.e., a control chamber containing a firing voltage distribution system used for the remote detonation of test firings). Structure 33-0026 was completed in 1950. Implosion tests performed at the shot pad contained up to 5000 lb of HE. Before detonations, wooden boxes covered the assemblages. Detonations from the shot pad scattered debris, shrapnel, and wood fragments over the mesa top of South Site and into Chaquehui Canyon. Shrapnel has been found at distances up to a mile away from the shot pad. The shot pad has not been used since 1955 when implosion testing was discontinued at TA-33. Currently, the pad is covered with up to a foot or more of sand and debris from the firing site.

CHQ-SMA-6 (photo ID PA221158-10199)

SWMU 33-007(b) consists of two former gun-firing sites. The first area is located approximately 600 ft north of structure 33-0026 [SWMU 33-006(a)] and consists of a 6-ft × 6-ft concrete pad and gun mount (structure 33-0085), a u-shaped soil berm (structure 33-0043), and a catcher box. The berm and catcher box were constructed in August 1950. The concrete pad and gun mount were constructed in June 1952. This area was used to test free-recoil weapons. Tests involved firing projectiles into the berm and the catcher box. Projectiles fired from the guns contained uranium, beryllium, titanium, and tritium housed inside steel casings. Activities at South Site were discontinued in the late 1950s. The second site was located approximately 400 ft northwest of structure 33-0026 and included a gun building (structure 33-0025) and a soil berm (structure 33-0063). Both structures were built in 1950. The projectiles used at this site contained uranium, beryllium, and tungsten. Firing site activities at SWMU 33-007(b) were discontinued in the late 1950s.

SWMU 33-010(c) is a former surface disposal area located at South Site on the northern rim of Chaquehui Canyon, approximately 230 ft south of structure 33-0026. The disposal area dimensions were approximately 50 ft × 30 ft × 2 ft to 4 ft deep. The area is located along the western edge of the main South Site drainage channel. From approximately 1950 to 1955, this site was used to dispose of debris

from the implosion tests conducted at SWMU 33-006(a). Debris disposed of at the site includes copper and aluminum shrapnel, pieces of electronic cable, and wood. Between shots, the shot pad and surrounding area were scraped and the debris deposited at SWMU 33-010(c). A voluntary corrective action was performed in1999, and the debris pile was excavated and removed.

SWMU 33-010(g) is a former disposal area located on the northern rim of Chaquehui Canyon. Debris was scattered along the rim and upper walls of the canyon. This former disposal area is located next to MDA E [Consolidated Unit 33-001(a)-99]. Some debris present at SWMU 33-010(g) (such as dead tree trunks, rocks, and scraped earth) may have originated from the initial clearing of South Site in the 1940s. Other debris, including chunks of metal, was also present. The period of operation for this disposal site is not known, but firing site operations associated with initiator testing at South Site were conducted from 1950 to 1956. The debris was removed and disposed of in 1995.

SWMU 33-010(h) is a surface disposal area located approximately 450 ft northeast of structure 33-0026 and immediately south of berm 33-0043 at South Site at TA-33. The area appears to be a mound of dirt and firing-site debris is scattered on the soil surface. Debris includes metal, wood, cable, and shrapnel. The area is approximately 100 ft × 100 ft. There is no documentation regarding the history of the disposal area. The main drainage for South Site bounds the disposal area on the west, and an unimproved road is located to the east.

CHQ-SMA-6, Erosion Control Blanket, Q00901060006 (photo ID 11464-7)

SWMU 33-014 is the former location of an open burn area located approximately 300 ft north of the fence surrounding MDA E [Consolidated Unit 33-001(a)-99]. The soil at the burn site has been scraped to bedrock, and some bedrock is blackened from burning. This burn area was believed to have been established in 1950 when operations at South Site began and may have served all of TA-33. Materials burned at this site may have included construction debris, timber, sawdust used in catcher boxes, and black powder. It is not known when burning operations were discontinued at this site.

The project map (Figure 249-1) is located at the end of this SMA update. Any future map updates will be posted on the IP website: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-monitoring-area-maps.php.

249.2 Control Measures

Run-on contributions to this monitored area originate on the unpaved access road that runs north and south through the SMA as well as from the paved areas in proximity to the area. Control measures serve to encourage vegetative growth in the area and to moderate runoff from the SMA. All active control measures are listed in the following table, and their locations are shown on the project map (Figure 249-1).

Table 249-1 Active Control Measures

Control ID	Control Name	Purpose of Control				Control Status
		Run-On	Runoff	Erosion	Sediment	
Q00901010029	Seed and Mulch - Seed and Wood Mulch			X		B
Q00901030028	Seed and Mulch - Hydromulch			X		CB
Q00901060006	Seed and Mulch - Erosion Control Blanket		X	X		CB
Q00902010005	Established Vegetation - Grasses and Shrubs			X		CB
Q00903010017	Berms - Earthen		X		X	CB
Q00903060014	Berms - Straw Wattles		X		X	CB
Q00903060033	Berms - Straw Wattles		X		X	B
Q00903060034	Berms - Straw Wattles		X		X	B
Q00903060035	Berms - Straw Wattles		X		X	B
Q00903120030	Berms - Rock	X			X	B
Q00903120031	Berms - Rock	X			X	B
Q00903120032	Berms - Rock	X			X	B
Q00906010001	Check Dam - Rock		X		X	CB
Q00906010002	Check Dam - Rock		X		X	CB
Q00906010007	Check Dam - Rock		X		X	CB
Q00906010008	Check Dam - Rock		X		X	CB
Q00906010011	Check Dam - Rock	X			X	CB
Q00906010018	Check Dam - Rock	X			X	CB
Q00906010019	Check Dam - Rock	X			X	CB
Q00906010020	Check Dam - Rock	X			X	CB
Q00906010021	Check Dam - Rock		X		X	CB
Q00906010022	Check Dam - Rock		X		X	CB
Q00906010023	Check Dam - Rock		X		X	CB
Q00906010024	Check Dam - Rock	X			X	CB
Q00906010025	Check Dam - Rock	X			X	CB
Q00906010026	Check Dam - Rock	X			X	CB
Q00906010027	Check Dam - Rock	X			X	CB

CB: Certified baseline control measure.

B: Additional baseline control measure.

EC: Enhanced control measure.

249.3 Storm Water Monitoring

For calendar year 2012, storm water flow has not been sufficient for full-volume sample collection at CHQ-SMA-6. Initial confirmation sampling will continue until one confirmation sample is collected from this SMA.

249.4 Inspections and Maintenance

RG340 recorded three storm events at CHQ-SMA-6 during the 2012 season. These rain events triggered three post-storm inspections. Post-storm inspections and all other inspection activity conducted at the SMA are summarized below.

Table 249-2 Control Measure Inspections during 2012

Inspection Type	Inspection Reference	Inspection Date
Annual Erosion Evaluation	COMP-23354	05-29-2012
Storm Rain Event	BMP-24938	07-18-2012
Storm Rain Event	BMP-26684	08-20-2012
Storm Rain Event	BMP-27535	09-18-2012

Maintenance activities conducted at the SMA are summarized in the following table.

Table 249-3 Maintenance During 2012

Maintenance Reference	Maintenance Conducted	Maintenance Date	Response Time	Response Discussion
BMP-27805	Installed new straw wattle Q00903060033 in same location as -0003, which was retired.	10-01-2012	13 day(s)	Maintenance conducted in timely manner.
BMP-27829	Installed new straw wattle Q00903060034 in same location as -0015, which was retired.	10-01-2012	13 day(s)	Maintenance conducted in timely manner.
BMP-27830	Installed new straw wattle Q00903060035 in same location as -0016, which was retired.	10-01-2012	13 day(s)	Maintenance conducted in timely manner.

249.5 Compliance Status

The Sites associated with CHQ-SMA-6 are moderate priority Sites. Corrective action is to be certified complete within 5 yr of the effective date of the IP (i.e., November 2015).

Table 249-4 Compliance Status during 2012

Site	Compliance Status on Jan 1, 2012	Compliance Status on Dec 31, 2012	Comments
SWMU 33-004(j)	Baseline Monitoring	Baseline Monitoring Extended	No Comment
SWMU 33-006(a)	Baseline Monitoring	Baseline Monitoring Extended	No Comment
SWMU 33-007(b)	Baseline Monitoring	Baseline Monitoring Extended	No Comment
SWMU 33-010(c)	Baseline Monitoring	Baseline Monitoring Extended	No Comment
SWMU 33-010(g)	Baseline Monitoring	Baseline Monitoring Extended	No Comment
SWMU 33-010(h)	Baseline Monitoring	Baseline Monitoring Extended	No Comment
SWMU 33-014	Baseline Monitoring	Baseline Monitoring Extended	No Comment

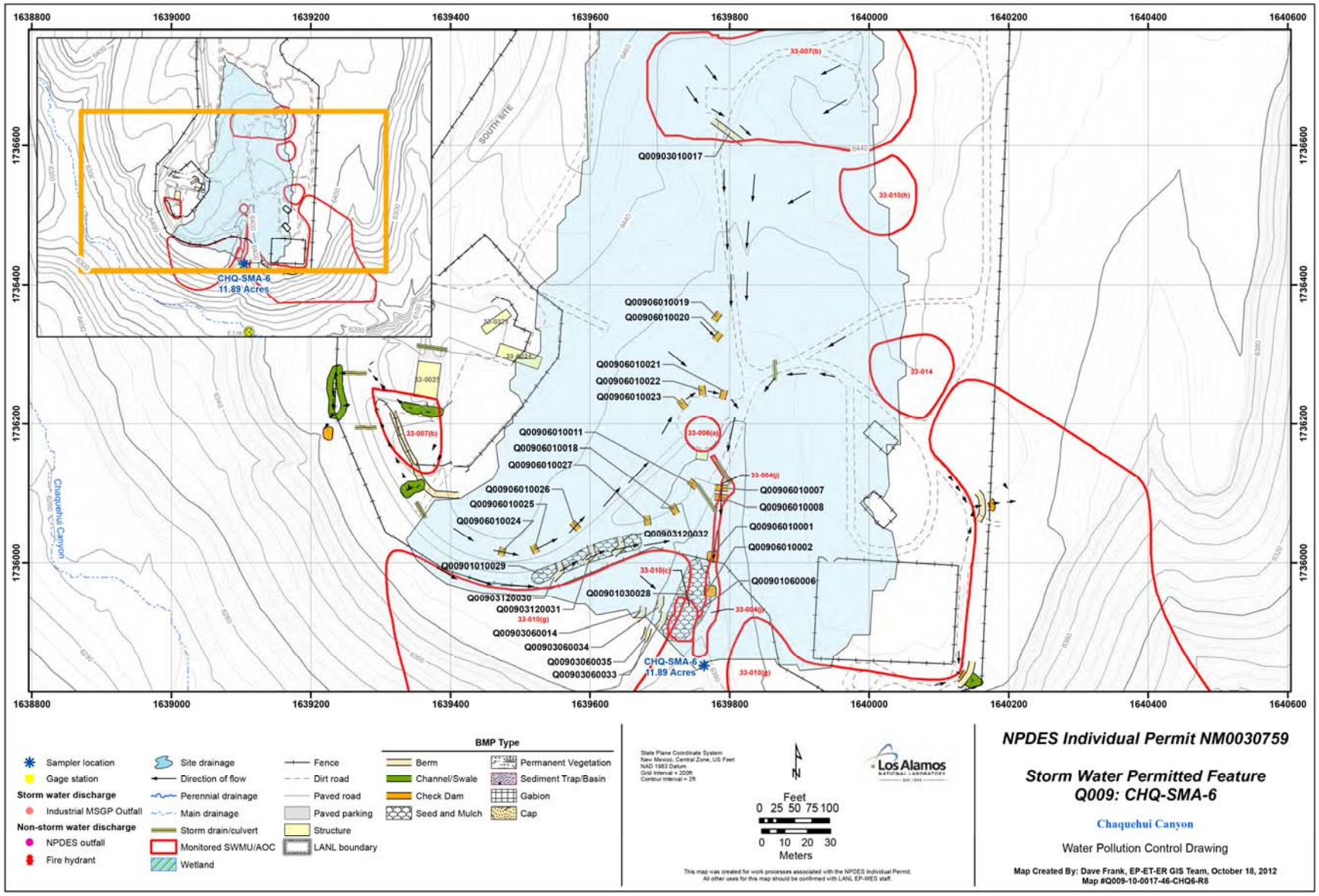


Figure 249-1 CHQ-SMA-6 location map

250.0 CHQ-SMA-7.1: SWMU 33-010(g)

250.1 Site Descriptions

One historical industrial activity area is associated with Q010, CHQ-SMA-7.1: Site 33-010(g).

SWMU 33-010(g) is a former disposal area located on the northern rim of Chaquehui Canyon. Debris was scattered along the rim and upper walls of the canyon. This former disposal area is located next to MDA E [Consolidated Unit 33-001(a)-99]. Some debris present at SWMU 33-010(g) (such as dead tree trunks, rocks, and scraped earth) may have originated from the initial clearing of South Site in the 1940s. Other debris, including chunks of metal, was also present. The period of operation for this disposal site is not known, but firing site operations associated with initiator testing at South Site were conducted from 1950 to 1956. The debris was removed and disposed of in 1995.

The project map (Figure 250-1) is located at the end of this SMA update. Any future map updates will be posted on the IP website: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-monitoring-area-maps.php.

250.2 Control Measures

Run-on contributions from the surrounding developed area are minor and originate on the unpaved north to south access road. Control measures serve to mitigate potential influences from run-on and to moderate runoff from this SMA. All active control measures are listed in the following table, and their locations are shown on the project map (Figure 250-1).

Table 250-1 Active Control Measures

Control ID	Control Name	Purpose of Control				Control Status
		Run-On	Runoff	Erosion	Sediment	
Q01002010001	Established Vegetation - Grasses and Shrubs			X		CB
Q01003010010	Berms - Earthen	X			X	B
Q01003010011	Berms - Earthen	X			X	B
Q01004060009	Channel/Swale - Riprap	X		X		CB
Q01006010003	Check Dam - Rock		X		X	CB
Q01006010008	Check Dam - Rock	X			X	CB

CB: Certified baseline control measure.

B: Additional baseline control measure.

EC: Enhanced control measure.

250.3 Storm Water Monitoring

For calendar year 2012, storm water flow has not been sufficient for full-volume sample collection at CHQ-SMA-7.1. Initial confirmation sampling will continue until one confirmation sample is collected from this SMA.

250.4 Inspections and Maintenance

RG340 recorded three storm events at CHQ-SMA-7.1 during the 2012 season. These rain events triggered three post-storm inspections. Post-storm inspections and all other inspection activity conducted at the SMA are summarized below.

Table 250-2 Control Measure Inspections during 2012

Inspection Type	Inspection Reference	Inspection Date
Annual Erosion Evaluation	COMP-23355	05-29-2012
Storm Rain Event	BMP-24939	07-18-2012
Storm Rain Event	BMP-26685	08-20-2012
Storm Rain Event	BMP-27536	09-18-2012

There were no maintenance activities conducted at CHQ-SMA-7.1 in 2012.

250.5 Compliance Status

The Sites associated with CHQ-SMA-7.1 are moderate priority Sites. Corrective action is to be certified complete within 5 yr of the effective date of the IP (i.e., November 2015).

Table 250-4 Compliance Status during 2012

Site	Compliance Status on Jan 1, 2012	Compliance Status on Dec 31, 2012	Comments
SWMU 33-010(g)	Baseline Monitoring	Baseline Monitoring Extended	No Comment

CHQ-SMA-7.1, Permanent Vegetation, Q01002010001 (photo ID 7357-4)

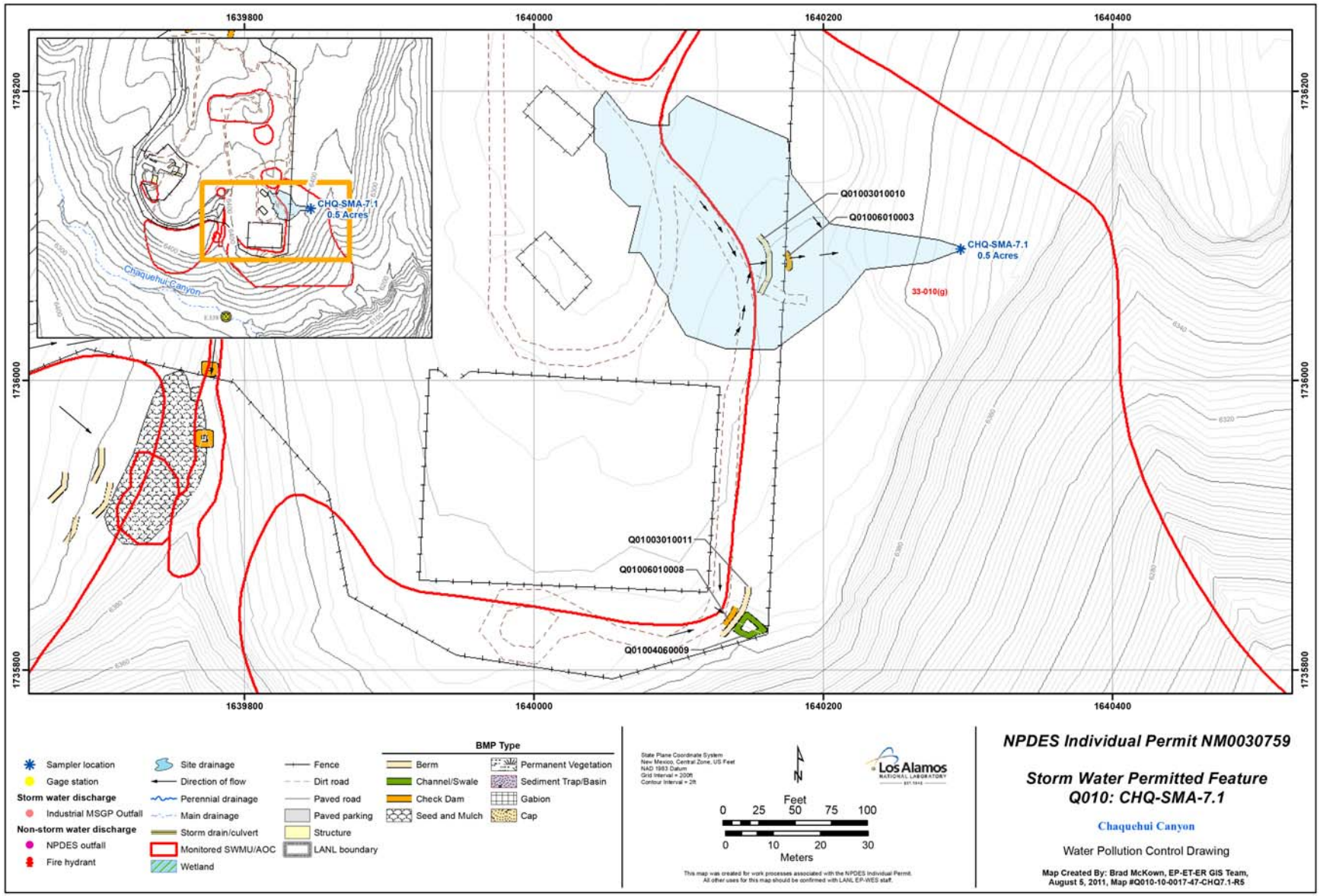


Figure 250-1 CHQ-SMA-7.1 location map

Attachment 1
Amendments

Amendment Number	Effective Date	SMA Number or Section Number	Description of Changes	Type of Change [Technical (T), Documentation (D), or Errata (E)]	Reference
V5.84	04-27-2012	A-SMA-2.8	Retire Control - Damaged and/or Replaced Control ID: A005-01-03-0003	T	CCN - 23111
V5.85	05-22-2012	A-SMA-2.8	New Control - Routine/Replacement Control ID: A005-01-01-0004	T	CCN - 23111
V5.86	05-29-2012	A-SMA-2.8	Map Revision (R4)	T	CCN - 23111
V5.87	05-29-2012	A-SMA-6	Retire Control - Lifecycle Expired Control ID: A009-03-06-0001	T	CCN - 23950
V5.88	06-12-2012	A-SMA-6	Map Revision (R3)	T	CCN - 23950
V5.89	05-23-2012	A-SMA-3	Retire Control - Damaged and/or Replaced Control ID: A006-03-01-0004	T	CCN - 23955
V5.90	05-23-2012	A-SMA-3	New Control - Routine/Replacement Control ID: A006-03-12-0017	T	CCN - 23955
V5.91	06-12-2012	A-SMA-3	Map Revision (R4)	T	CCN - 23955
V5.92	07-18-2012	A-SMA-6	Retire Control - Lifecycle Expired Control ID: A009-01-06-0022	T	CCN - 25779
V5.93	08-05-2012	A-SMA-6	Map Revision (R4)	T	CCN - 25779
V5.94	08-06-2012	CHQ-SMA-6	Map Revision (R7)	T	CCN - 25772
V5.95	07-18-2012	CHQ-SMA-2	Retire Control - Lifecycle Expired Control ID: Q003-01-03-0022	T	CCN - 25766
V5.96	08-02-2012	CHQ-SMA-2	Map Revision (R5)	T	CCN - 25766
V5.97	05-31-2012	A-SMA-2.7	Retire Control - Damaged and/or Replaced Control ID: A004-03-06-0005	T	CCN - 23751
V5.98	05-31-2012	A-SMA-2.7	Retire Control - Damaged and/or Replaced Control ID: A004-03-06-0011	T	CCN - 23751
V5.99	05-31-2012	A-SMA-2.7	Retire Control - Damaged and/or Replaced Control ID: A004-03-06-0012	T	CCN - 23751
V5.100	05-31-2012	A-SMA-2.7	New Control - Corrective Action Control ID: A004-03-01-0013	T	CCN - 23751
V5.101	05-31-2012	A-SMA-2.7	New Control - Corrective Action Control ID: A004-03-01-0014	T	CCN - 23751
V5.102	05-31-2012	A-SMA-2.7	New Control - Corrective Action Control ID: A004-03-01-0015	T	CCN - 23751
V5.103	05-31-2012	A-SMA-2.7	New Control - Corrective Action Control ID: A004-03-01-0016	T	CCN - 23751
V5.104	06-04-2012	A-SMA-2.7	Map Revision (R4)	T	CCN - 23751
V5.105	07-16-2012	A-SMA-2.7	Minor Sampler Adjustment, Updated Coordinates in Attachment 4	T	CCN - 23751

Attachment 1, Amendments (continued)

Amendment Number	Effective Date	SMA Number or Section Number	Description of Changes	Type of Change [Technical (T), Documentation (D), or Errata (E)]	Reference
V5.106	07-16-2012	A-SMA-2.7	SMA Boundary Modification	T	CCN - 23751
V5.107	07-18-2012	A-SMA-2.7	Retire Control - Damaged and/or Replaced Control ID: A004-06-01-0007	T	CCN - 23751
V5.108	07-18-2012	A-SMA-2.7	Retire Control - Damaged and/or Replaced Control ID: A004-06-01-0008	T	CCN - 23751
V5.109	07-18-2012	A-SMA-2.7	Retire Control - Damaged and/or Replaced Control ID: A004-06-01-0009	T	CCN - 23751
V5.110	07-18-2012	A-SMA-2.7	Retire Control - Damaged and/or Replaced Control ID: A004-06-01-0010	T	CCN - 23751
V5.111	07-18-2012	A-SMA-2.7	Retire Control - Damaged and/or Replaced Control ID: A004-04-04-0003	T	CCN - 23751
V5.112	07-18-2012	A-SMA-2.7	Retire Control - Damaged and/or Replaced Control ID: A004-04-01-0001	T	CCN - 23751
V5.113	07-18-2012	A-SMA-2.7	Map Revision (R5)	T	CCN - 23715
V5.114	08-22-2012	CHQ-SMA-1.02	New Control - Corrective Action Control ID: Q002A-03-01-0010	T	CCN - 26846
V5.115	08-22-2012	CHQ-SMA-1.02	New Control - Corrective Action Control ID: Q002A-03-01-0011	T	CCN - 26846
V5.116	08-22-2012	CHQ-SMA-1.02	New Control - Corrective Action Control ID: Q002A-03-01-0012	T	CCN - 26846
V5.117	08-22-2012	CHQ-SMA-1.02	New Control - Corrective Action Control ID: Q002A-03-01-0013	T	CCN - 26846
V5.118	08-22-2012	CHQ-SMA-1.02	Map Revision (R7)	T	CCN - 26846
V5.119	08-06-2012	A-SMA-2.5	Retire Control - Lifecycle Expired Control ID: A003-01-06-0004	T	CCN - 26328
V5.120	08-31-2012	A-SMA-2.5	Site Boundary Modification	T	CCN - 26328
V5.121	08-31-2012	A-SMA-2.5	Map Revision (R3)	T	CCN - 26328
V5.122	10-01-2012	CHQ-SMA-6	Retire Control - Damaged and/or Replaced Control ID: Q009-03-06-0003	T	CCN - 28251
V5.123	10-01-2012	CHQ-SMA-6	New Control - Routine/Replacement Control ID: Q009-03-06-0033	T	CCN - 28251
V5.124	10-01-2012	CHQ-SMA-6	Retire Control - Damaged and/or Replaced Control ID: Q009-03-06-0015	T	CCN - 28251
V5.125	10-01-2012	CHQ-SMA-6	New Control - Routine/Replacement Control ID: Q009-03-06-0034	T	CCN - 28251
V5.126	10-01-2012	CHQ-SMA-6	Retire Control - Damaged and/or Replaced Control ID: Q009-03-06-0016	T	CCN - 28251
V5.127	10-01-2012	CHQ-SMA-6	New Control - Routine/Replacement Control ID: Q009-03-06-0035	T	CCN - 28251
V5.128	10-01-2012	CHQ-SMA-6	Retire Control - Lifecycle Expired Control ID: Q009-03-06-0009	T	CCN - 28251
V5.129	10-01-2012	CHQ-SMA-6	Retire Control - Lifecycle Expired Control ID: Q009-03-06-0010	T	CCN - 28251

Attachment 1, Amendments (continued)

Amendment Number	Effective Date	SMA Number or Section Number	Description of Changes	Type of Change [Technical (T), Documentation (D), or Errata (E)]	Reference
V5.130	10-01-2012	CHQ-SMA-6	Retire Control - Lifecycle Expired Control ID: Q009-03-06-0012	T	CCN - 28251
V5.131	10-01-2012	CHQ-SMA-6	Retire Control - Lifecycle Expired Control ID: Q009-03-06-0013	T	CCN - 28251
V5.132	10-18-2012	CHQ-SMA-6	Map Revision (R8)	T	CCN - 28251
V5.133	11-21-2012	1.0 Background	Change to SDPPP - Updated hyperlink at end of section to: http://www.lanl.gov/community-environment/environmental-stewardship/protection/compliance/individual-permit-stormwater/site-discharge-pollution-prevention-plan.php	T	
V5.134	11-21-2012	Attachment 3: Precipitation Network	Change to SDPPP - Updated text for 2012 relevance.	T	
V5.135	11-21-2012	Appendix A: Acronyms	Change to SDPPP - Added: Certified Inspector of Sediment and Erosion Control (CISEC) and Certified Professional in Erosion and Sediment Control (CPESC).	T	
V5.137	11-26-2012		Add Reference Document Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, May 1, 2012, Volume 5, Ancho/Chaquehui Watershed, Receiving Waters: Ancho Canyon and Chaquehui Canyon	D	ER ID 215109
V5.138	11-26-2012	Appendix D: References	Add Reference Document Site Discharge Pollution Prevention Plan for Los Alamos National Laboratory, NPDES Permit No. NM0030759, August 25, 2010, Volume 5, Ancho/Chaquehui Watershed	D	LA-UR-11-01555
V5.139	11-27-2012	A-SMA-6	Change to SDPPP - New Site Description for 33-004(k)	T	
V5.140	11-27-2012	A-SMA-6	Change to SDPPP - New Site description for 33-007(a)	T	
V5.141	11-27-2012	A-SMA-6	Change to SDPPP - New Site description for 33-010(a)	T	
V5.142	11-27-2012	A-SMA-4	Change to SDPPP - New Site description for 33-010(d)	T	
V5.143	12-07-2012	1.0 Background	Change to SDPPP - Updated hyperlink to public website	T	

Attachment 1, Amendments (continued)

Amendment Number	Effective Date	SMA Number or Section Number	Description of Changes	Type of Change [Technical (T), Documentation (D), or Errata (E)]	Reference
V5.145	12-07-2012	Attachment 3: Precipitation Network	Change to SDPPP - Changed text to: "There were no adverse weather events affecting IP activities within the Ancho/Chaquehui Watershed aggregate during 2012."	T	
V5.146	12-07-2012	1.0 Background	Change to SDPPP - Removed sentence referencing hyperlink to procedures on public website.	T	
V5.148	12-07-2012	1.0 Background	Change to SDPPP - Replaced second and third sentences in second paragraph with: "These procedures reside on the public website and apply to the work activities described in this section."	T	
V5.151	12-07-2012	1.0 Background	Change to SDPPP - Replaced second bullet with: "SOP-5220, EX-ID/PR-ID Project Reviews for the FFCA Project and Individual Permit, describes the process for proactively identifying and managing proposed construction projects that may influence SMAs."	T	
V5.152	12-07-2012	1.0 Background	Change to SDPPP - Replaced second and third sentences in second paragraph with: "These procedures reside on the public website and apply to the work activities described in this section."	T	
V5.154	12-07-2012	A-SMA-2.8	Change to SDPPP - Updated second sentence with 2012 post-storm inspection data.	T	
V5.155	12-07-2012	A-SMA-2.8	Change to SDPPP - For SMAs that have sampled, updated second sentence with 2012 post-storm inspection data.	T	
V5.156	12-07-2012	A-SMA-2.8	Change to SDPPP - Changed (2)s to (1) for all suites in table for SMAs remaining in baseline sampling.	T	
V5.157	12-07-2012	A-SMA-2.8	Change to SDPPP - For SMAs remaining in baseline sampling, replaced second and third sentences with "Initial confirmation sampling will continue as provided above until one confirmation sample is collected from this SMA."	T	
V5.158	12-10-2012	A-SMA-2.8	Change to SDPPP - Removed paragraph below sampling table.	T	
V5.159	12-10-2012	A-SMA-2.7	Change to SDPPP - Changed (1)s to (2)s for all suites in sampling table.	T	
V5.160	12-10-2012	A-SMA-2.7	Change to SDPPP - Second paragraph, last sentence, changed "will be" to "was."	T	

Attachment 1, Amendments (continued)

Amendment Number	Effective Date	SMA Number or Section Number	Description of Changes	Type of Change [Technical (T), Documentation (D), or Errata (E)]	Reference
V5.161	12-10-2012	A-SMA-2.7	Change to SDPPP - Replaced all text and removed table.	T	
V5.162	12-10-2012	A-SMA-2.7	Change to SDPPP - Added as last sentence in first paragraph "Corrective action for Site 39-002(c) is complete."	T	
V5.163	12-10-2012	A-SMA-2.8	Change to SDPPP - In the first sentence, removed "without controls."	T	
V5.165	12-10-2012	CHQ-SMA-1.02	Change to SDPPP - Replaced first sentence with "Storm water monitoring under this IP shall commence following certification of all enhanced control measures."	T	
V5.166	12-10-2012	CHQ-SMA-1.2	Change to SDPPP - In the sampling table, changed (1)s to (2)s for PCBs and Metals, all other suites (0).	T	
V5.167	12-10-2012	CHQ-SMA-1.2	Change to SDPPP - Changed first paragraph to "One initial confirmation sample was collected from CHQ-SMA-1.02 on August 21, 2011. No further confirmation samples were collected."	T	
V5.168	12-10-2012	CHQ-SMA-1.2	Change to SDPPP - Second paragraph, last sentence, changed "will be" to "was."	T	
V5.169	12-10-2012	CHQ-SMA-1.2	Change to SDPPP - Added as third paragraph "Based on the analytical results from confirmation sampling conducted at this SMA, corrective actions have been initiated. The corrective action plan and schedule are provided in 1000.12.5.2."	T	
V5.170	12-10-2012	CHQ-SMA-1.2	Change to SDPPP - Inserted Corrective Action Plan and Schedule section.	T	
V5.171	12-10-2012	CHQ-SMA-1.03	Change to SDPPP - Replaced first sentence with "Storm water monitoring under this IP shall commence following certification of all enhanced control measures."	T	
V5.173	12-10-2012	CHQ-SMA-1.03	Change to SDPPP - Replaced first paragraph with "One initial confirmation sample was collected from CHQ-SMA-1.03 on July 04, 2012. No further confirmation samples were collected" and added second and third paragraphs.	T	
V5.174	12-10-2012	CHQ-SMA-1.03	Change to SDPPP - Inserted Corrective Action Plan and Schedule section.	T	

Attachment 1, Amendments (continued)

Amendment Number	Effective Date	SMA Number or Section Number	Description of Changes	Type of Change [Technical (T), Documentation (D), or Errata (E)]	Reference
V5.175	12-10-2012	CHQ-SMA-2	Change to SDPPP - Replaced first sentence with "Storm water monitoring under this IP shall commence following certification of all enhanced control measures."	T	
V5.176	12-10-2012	CHQ-SMA-2	Change to SDPPP – Replaced first paragraph with "One initial confirmation sample was collected from CHQ-SMA-2 on July 04, 2012. No further confirmation samples were collected" and added second and third paragraphs.	T	
V5.177	12-10-2012	CHQ-SMA-2	Change to SDPPP - Inserted Corrective Action Plan and Schedule section.	T	
V5.178	12-10-2012	Attachment 1: Amendments	Change to SDPPP - Suppressed the R1 amendments and included only fiscal year 2012 amendments in the table.	T	
V5.179	12-10-2012	Attachment 4: Physical Characteristics	Change to SDPPP - Updated A-SMA-2.7 sampler coordinates and SMA information.	T	
V5.180	12-10-2012	1.0 Background	Add New Procedure.	T	
V5.182	12-10-2012	Appendix A: Acronyms	Change to SDPPP - Added: Certified Inspector of Sediment and Erosion Control (CISEC) and Certified Professional in Erosion and Sediment Control (CPESC).	T	
V5.183	12-18-2012	CHQ-SMA-1.01	Change to SDPPP - Updated unit description for 33-002(d).	T	
V5.184	12-18-2012	CHQ-SMA-2	Change to SDPPP - Updated unit description for 33-004(d).	T	
V5.185	12-18-2012	CHQ-SMA-0.5	Change to SDPPP - Updated unit description for 33-004(g).	T	
V5.186	12-18-2012	CHQ-SMA-1.02	Change to SDPPP - Updated unit description for 33-004(h).	T	
V5.187	12-18-2012	CHQ-SMA-6	Change to SDPPP - Updated unit description for 33-004(j).	T	
V5.188	12-18-2012	CHQ-SMA-6	Change to SDPPP - Updated unit description for 33-006(a).	T	
V5.189	12-18-2012	CHQ-SMA-6	Change to SDPPP - Updated unit description for 33-007(b).	T	
V5.190	12-18-2012	CHQ-SMA-0.5	Change to SDPPP - Updated unit description for 33-007(c).	T	
V5.191	12-18-2012	CHQ-SMA-1.02	Change to SDPPP - Updated unit description for 33-008(c).	T	

Attachment 1, Amendments (continued)

Amendment Number	Effective Date	SMA Number or Section Number	Description of Changes	Type of Change [Technical (T), Documentation (D), or Errata (E)]	Reference
V5.192	12-18-2012	CHQ-SMA-0.5	Change to SDPPP - Updated unit description for 33-009.	T	
V5.193	12-18-2012	CHQ-SMA-6	Change to SDPPP - Updated unit description for 33-010(c).	T	
V5.194	12-18-2012	CHQ-SMA-3.05	Change to SDPPP - Updated unit description for 33-010(f).	T	
V5.195	12-18-2012	CHQ-SMA-6	Change to SDPPP - Updated unit description for 33-010(g).	T	
V5.196	12-18-2012	CHQ-SMA-6	Change to SDPPP - Updated unit description for 33-010(h).	T	
V5.197	12-18-2012	CHQ-SMA-4.5	Change to SDPPP - Updated unit description for 33-011(b).	T	
V5.198	12-18-2012	CHQ-SMA-1.02	Change to SDPPP - Updated unit description for 33-011(d).	T	
V5.199	12-18-2012	CHQ-SMA-4	Change to SDPPP - Updated unit description for 33-011(e).	T	
V5.200	12-18-2012	CHQ-SMA-1.03	Change to SDPPP - Updated unit description for 33-012(a).	T	
V5.201	12-18-2012	CHQ-SMA-6	Change to SDPPP - Updated unit description for 33-014.	T	
V5.202	12-18-2012	CHQ-SMA-1.02	Change to SDPPP - Updated unit description for 33-015.	T	
V5.203	12-18-2012	CHQ-SMA-4.1	Change to SDPPP - Updated unit description for 33-016.	T	
V5.204	12-18-2012	CHQ-SMA-1.03	Change to SDPPP - Updated unit description for 33-017.	T	
V5.205	12-18-2012	CHQ-SMA-1.03	Change to SDPPP - Updated unit description for C-33-001.	T	
V5.206	12-18-2012	CHQ-SMA-1.03	Change to SDPPP - Updated unit description for C-33-003.	T	
V5.207	12-18-2012	A-SMA-2.8	Change to SDPPP - Updated unit description for 39-001(b).	T	
V5.208	12-18-2012	A-SMA-3	Change to SDPPP - Updated unit description for 39-002(b).	T	
V5.209	12-18-2012	A-SMA-2.7	Change to SDPPP - Updated unit description for 39-002(c).	T	
V5.210	12-18-2012	A-SMA-1.1	Change to SDPPP - Updated unit description for 39-004(a).	T	
V5.211	12-18-2012	A-SMA-2	Change to SDPPP - Updated unit description for 39-004(b).	T	
V5.212	12-18-2012	A-SMA-3	Change to SDPPP - Updated unit description for 39-004(c).	T	
V5.213	12-18-2012	A-SMA-1.1	Change to SDPPP - Updated unit description for 39-004(d).	T	
V5.214	12-18-2012	A-SMA-2	Change to SDPPP - Updated unit description for 39-004(e).	T	
V5.215	12-18-2012	A-SMA-3.5	Change to SDPPP - Updated unit description for 39-006(a).	T	

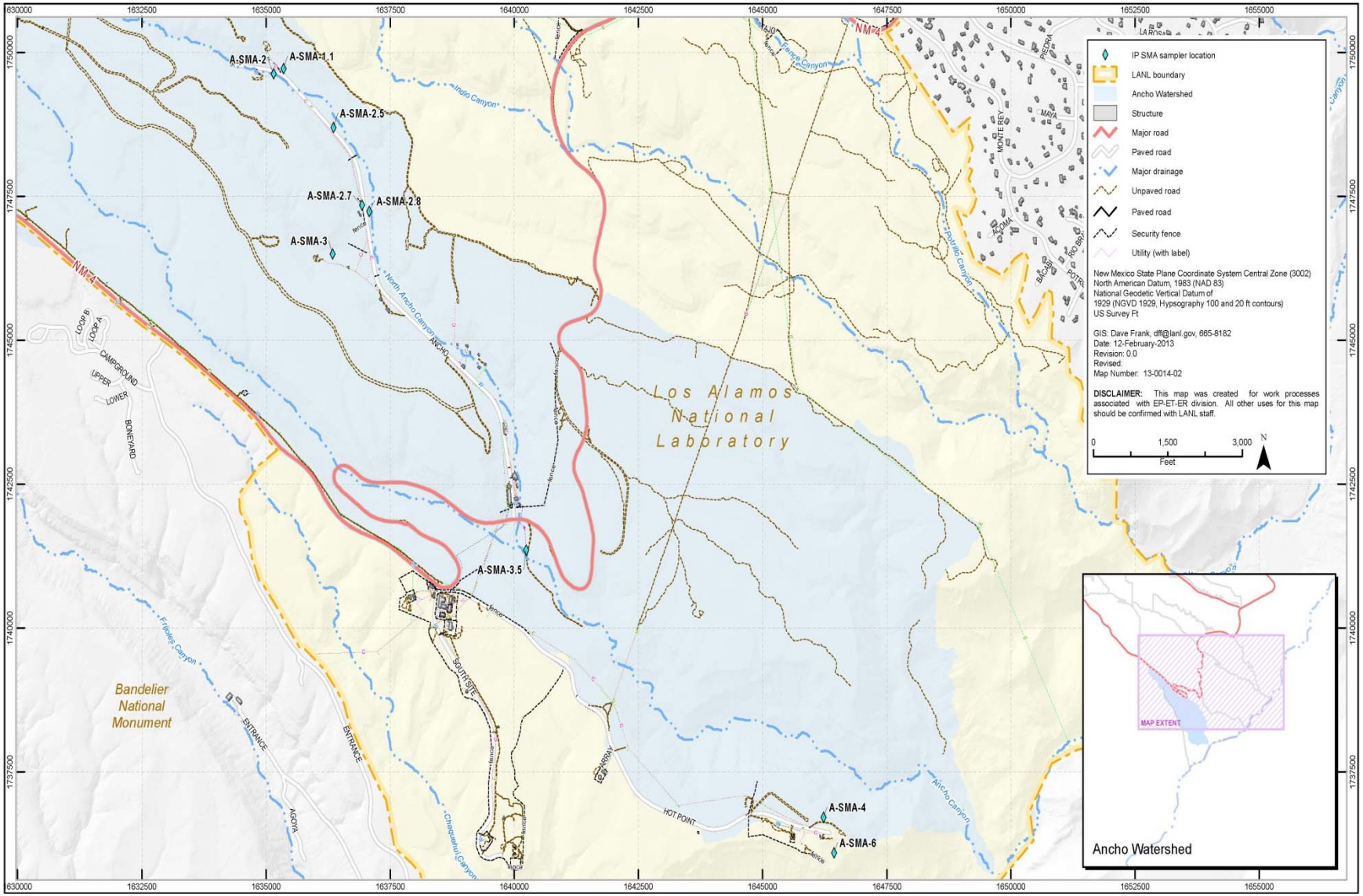
Attachment 1, Amendments (continued)

Amendment Number	Effective Date	SMA Number or Section Number	Description of Changes	Type of Change [Technical (T), Documentation (D), or Errata (E)]	Reference
V5.216	12-18-2012	A-SMA-2.7	Change to SDPPP - Updated unit description for 39-008.	T	
V5.217	12-18-2012	A-SMA-2.5	Change to SDPPP - Updated unit description for 39-010.	T	
V5.218	02-01-2013	A-SMA-4	Site Boundary Modification	T	CCN - 30480
V5.219	02-01-2013	A-SMA-4	Map Revision (R5)	T	CCN - 30480
V5.220	02-01-2013	A-SMA-6	Site Boundary Modification	T	CCN - 30501
V5.221	02-01-2013	A-SMA-6	Map Revision (R5)	T	CCN - 30501
V5.222	08-22-2012	CHQ-SMA-1.02	Retire Control - Damaged and/or Replaced Control ID: Q002A-06-01-0001	T	CCN - 26846
V5.223	08-22-2012	CHQ-SMA-1.02	Retire Control - Damaged and/or Replaced Control ID: Q002A-06-01-0008	T	CCN - 26846
V5.224	02-20-2013	Attachment 2: Vicinity Map	Map Revision (R0)	T	
V5.225	02-20-2013	A-SMA-1.1	Change to SDPPP - Updated Site description for 39-004(a).	T	
V5.226	02-20-2013	A-SMA-2	Change to SDPPP - Updated Site description for 39-004(b).	T	
V5.227	02-20-2013	A-SMA-2.8	Change to SDPPP - Updated Site description for 39-001(b).	T	
V5.228	02-20-2013	A-SMA-3	Change to SDPPP - Updated Site description for 39-002(b).	T	
V5.230	02-20-2013	A-SMA-4	Change to SDPPP - Updated Site description for 33-010(d).	T	
V5.231	02-20-2013	A-SMA-6	Change to SDPPP - Updated Site description for 33-004(k).	T	
V5.232	02-20-2013	A-SMA-6	Change to SDPPP - Updated Site description for 33-010(a).	T	
V5.233	02-20-2013	A-SMA-6	Change to SDPPP - Updated Site description for 33-007(a).	T	
V5.234	02-20-2013	CHQ-SMA-0.5	Change to SDPPP - Updated Site description for 33-004(g).	T	
V5.235	02-20-2013	CHQ-SMA-0.5	Change to SDPPP - Updated Site description for 33-007(c).	T	
V5.236	02-20-2013	CHQ-SMA-0.5	Change to SDPPP - Updated Site description for 33-009.	T	
V5.237	02-20-2013	CHQ-SMA-1.03	Change to SDPPP - Updated Site description for 33-012(a).	T	
V5.238	02-20-2013	CHQ-SMA-1.03	Change to SDPPP - Updated Site description for 33-017.	T	

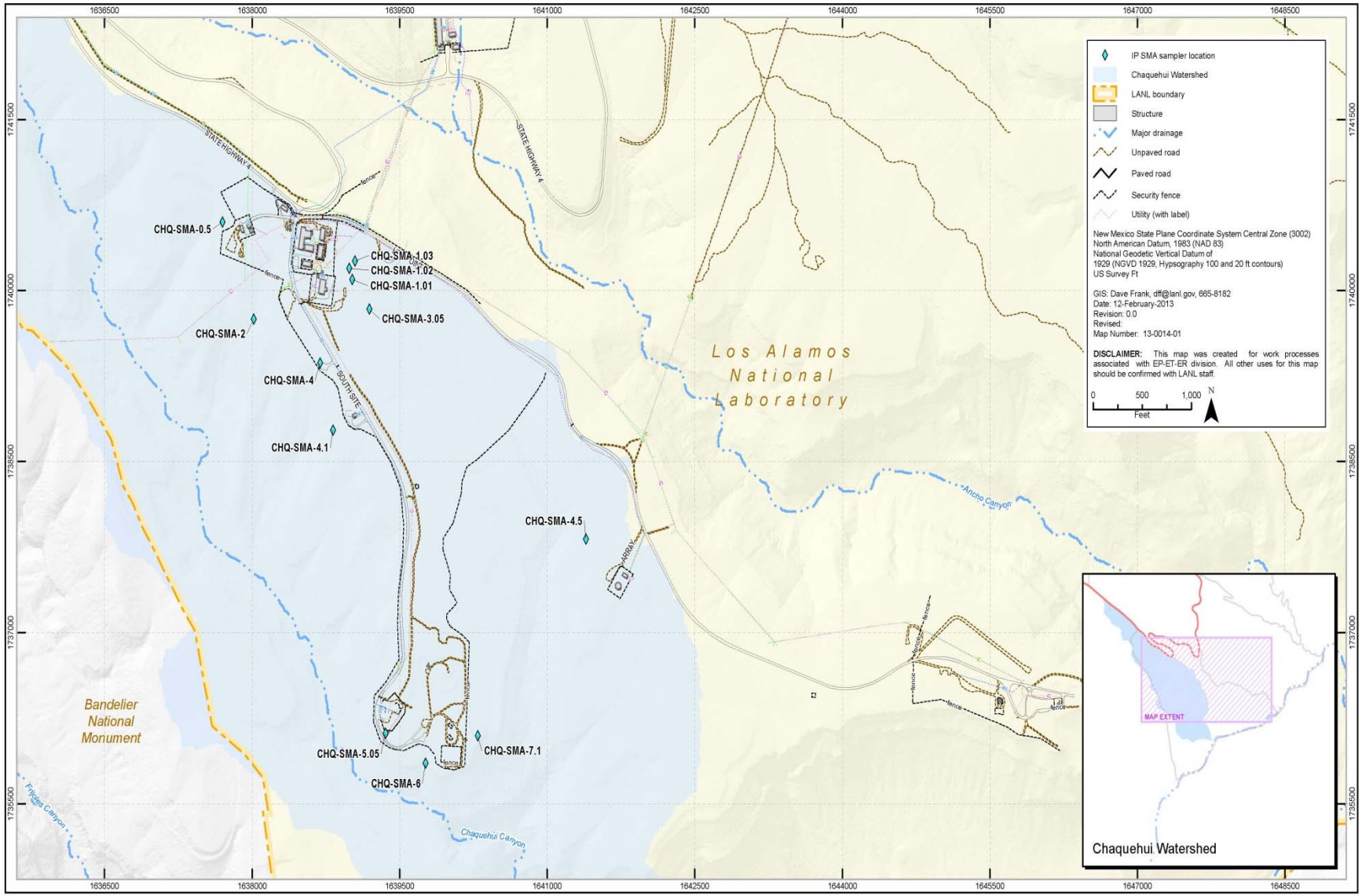
Attachment 1, Amendments (continued)

Amendment Number	Effective Date	SMA Number or Section Number	Description of Changes	Type of Change [Technical (T), Documentation (D), or Errata (E)]	Reference
V5.239	02-20-2013	CHQ-SMA-1.03	Change to SDPPP - Updated Site description for C-33-001	T	
V5.240	02-20-2013	CHQ-SMA-2	Change to SDPPP - Updated Site description for 33-004(d).	T	
V5.241	02-20-2013	CHQ-SMA-2	Change to SDPPP - Updated Site description for 33-007(c).	T	
V5.242	02-20-2013	CHQ-SMA-3.05	Change to SDPPP - Updated Site description for 33-010(f).	T	
V5.243	02-20-2013	CHQ-SMA-5.05	Change to SDPPP - Updated Site description for 33-007(b).	T	
V5.244	02-20-2013	CHQ-SMA-6	Change to SDPPP - Updated Site description for 33-007(b).	T	
V5.245	03-11-2013	A-SMA-2.5	Site Boundary Modification	T	CCN - 30658
V5.246	03-11-2013	A-SMA-2.5	Map Revision (R)	T	CCN - 30658

Attachment 2
Vicinity Map



Attachment 2, Vicinity Map (continued)



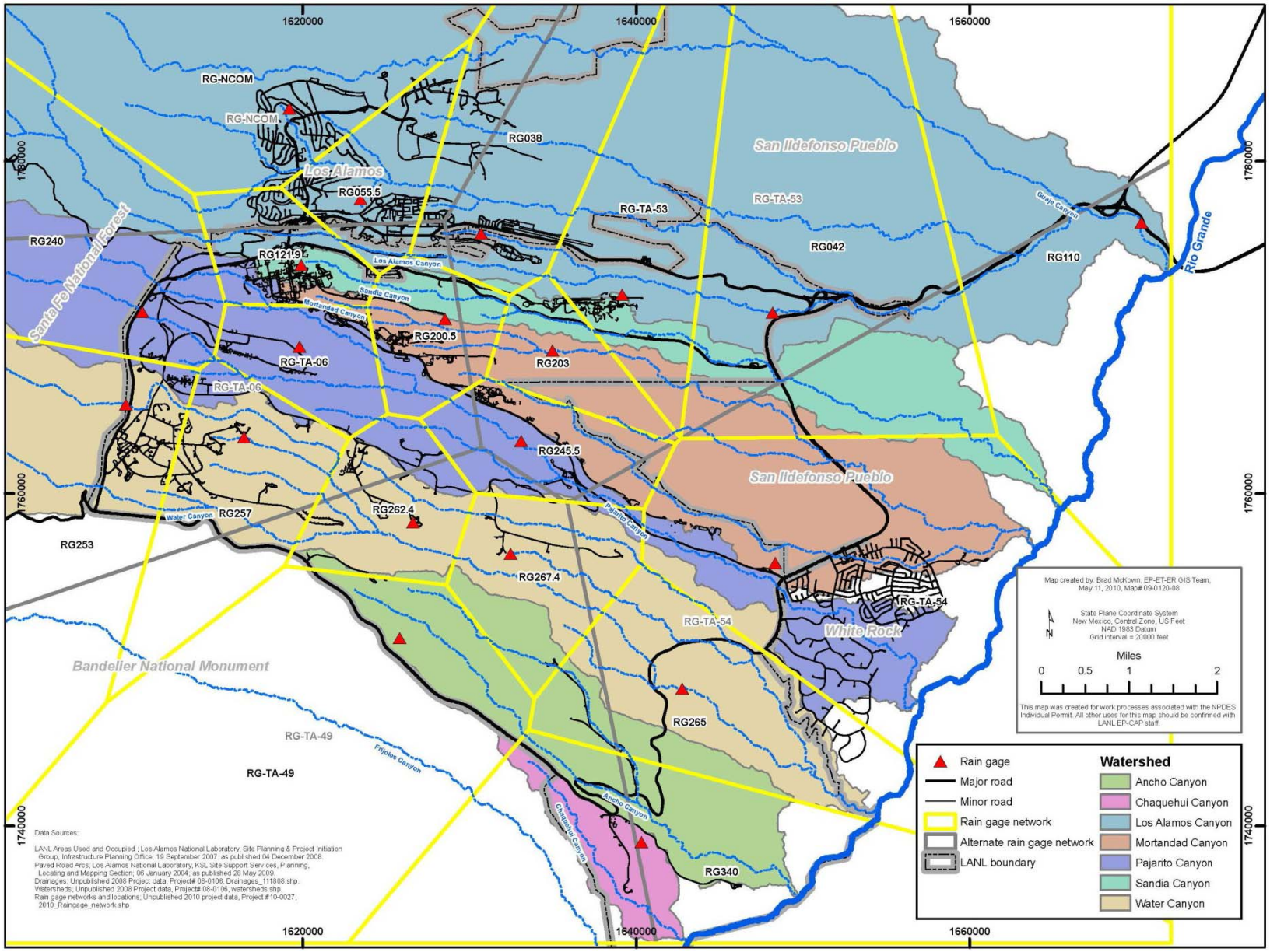
Attachment 3
Precipitation Network

Rain Gage	Date	Total (In.)	Intensity (In./Min)	Duration (Min)
RG265	April 26, 2012	0.02	0.02	0
	May 08, 2012	0.81	0.58	120
	May 13, 2012	0.17	0.07	60
	July 02, 2012	0.19	0.14	60
	July 03, 2012	0.25	0.16	60
	July 04, 2012	0.45	0.26	60
	July 10, 2012	0.12	0.12	0
	July 13, 2012	0.01	0.01	0
	July 21, 2012	0.01	0.01	0
	August 01, 2012	0.05	0.04	0
	August 02, 2012	0.41	0.26	120
	August 05, 2012	0.01	0.01	0
	August 16, 2012	0.25	0.14	60
	August 20, 2012	0.05	0.03	0
	August 22, 2012	0.03	0.01	0
	August 24, 2012	0.28	0.2	60
	August 26, 2012	0.3	0.26	60
	September 10, 2012	0.44	0.17	60
	October 12, 2012	0.16	0.09	60
RG267.4	April 26, 2012	0.01	0.01	0
	May 13, 2012	0.22	0.09	120
	July 02, 2012	0.04	0.02	0
	July 03, 2012	0.11	0.05	60
	July 04, 2012	0.35	0.21	60
	July 07, 2012	0.39	0.3	60
	July 13, 2012	0.01	0.01	0
	July 21, 2012	0.01	0.01	0
	July 24, 2012	0.01	0.01	0
	July 25, 2012	0.17	0.11	60
	August 02, 2012	0.26	0.15	60
	August 05, 2012	0.07	0.06	0
	August 16, 2012	0.24	0.15	60
	August 20, 2012	0.07	0.05	0
	August 22, 2012	0.33	0.24	60

Attachment 3, Precipitation Network (continued)

Rain Gage	Date	Total (In.)	Intensity (In./Min)	Duration (Min)
RG267.4	August 24, 2012	0.3	0.22	60
	August 26, 2012	0.42	0.39	60
	September 10, 2012	0.58	0.29	120
	September 28, 2012	0.06	0.03	60
	October 12, 2012	0.32	0.16	60
RG340	April 26, 2012	0.02	0.02	0
	May 13, 2012	0.17	0.09	60
	July 02, 2012	0.12	0.02	60
	July 03, 2012	0.12	0.09	60
	July 04, 2012	0.96	0.65	60
	July 10, 2012	0.1	0.1	0
	July 13, 2012	0.01	0.01	0
	July 25, 2012	0.01	0.01	0
	August 02, 2012	0.18	0.06	60
	August 03, 2012	0.01	0.01	0
	August 16, 2012	0.47	0.28	60
	August 20, 2012	0.07	0.03	60
	August 22, 2012	0.02	0.02	0
	August 24, 2012	0.08	0.08	0
	August 26, 2012	0.04	0.03	0
	September 10, 2012	0.57	0.28	60
	October 12, 2012	0.12	0.07	60

Attachment 3, Precipitation Network (continued)



Attachment 4
Physical Characteristics

Canyon	Permitted Feature	SMA Number	Sampler X Coordinate (Latitude)	Sampler Y Coordinate (Longitude)	SMA Drainage Area (ft^2)	Site Number	Site Drainage Area (ft^2)
Ancho	A001	A-SMA-1.1	1635351 (35.808933)	1749719 (-106.267083)	8,238,094.43	39-004(a) 39-004(d)	0.00 0.00
Ancho	A002	A-SMA-2	1635151 (35.808683)	1749627 (-106.267767)	23,123,516.61	39-004(b) 39-004(e)	589.79 1,074.60
Ancho	A003	A-SMA-2.5[1]	1636357 (35.806133)	1748696 (-106.263683)	21,301.09	39-010	20,028.18
Ancho	A004	A-SMA-2.7[1,2]	1636930.7 (35.80242)	1747347 (-106.26176)	390,728.84	39-002(c) 39-008	0.00 10,596.60
Ancho	A005	A-SMA-2.8	1637078 (35.802117)	1747235 (-106.261267)	30,457.26	39-001(b)	5,085.54
Ancho	A006	A-SMA-3	1636339 (35.800083)	1746495 (-106.26375)	8,516,072.97	39-002(b) 39-004(c)	10.14 374.92
Ancho	A007	A-SMA-3.5	1640239 (35.78595)	1741352 (-106.2506)	370.26	39-006(a)	124.10
Ancho	A008	A-SMA-4[1]	1646223 (35.7732)	1736711 (-106.230433)	114,205.09	33-010(d)	1,341.36
Ancho	A009	A-SMA-6[1]	1646439 (35.7715)	1736091 (-106.2297)	330,186.36	33-004(k) 33-007(a) 33-010(a)	131.75 95,198.36 87,558.30
Chaquehui	Q001	CHQ-SMA-0.5	1637696 (35.783883)	1740598 (-106.259167)	45,790.40	33-004(g) 33-007(c) 33-009	134.41 148.09 13,518.75
Chaquehui	Q002	CHQ-SMA-1.01	1639017 (35.7825)	1740096 (-106.254717)	8,055.69	33-002(d)	241.09
Chaquehui	Q002A	CHQ-SMA-1.02	1638988 (35.782767)	1740192 (-106.254817)	89,697.16	33-004(h) 33-008(c) 33-011(d) 33-015	7.02 1,551.30 8,051.69 85.85
Chaquehui	Q002B	CHQ-SMA-1.03	1639044 (35.78295)	1740258 (-106.254633)	207,276.81	33-008(c) 33-012(a) 33-017 C-33-001 C-33-003	13,224.91 591.95 114,281.55 518.51 7,614.69
Chaquehui	Q003	CHQ-SMA-2	1638015 (35.78155)	1739747 (-106.2581)	538,186.74	33-004(d) 33-007(c) C-33-003	862.46 140.21 19,037.77
Chaquehui	Q004	CHQ-SMA-3.05	1639192 (35.781783)	1739836 (-106.254133)	13,791.40	33-010(f)	640.17
Chaquehui	Q005	CHQ-SMA-4	1638691 (35.780483)	1739363 (-106.255817)	626.74	33-011(e)	104.66

Attachment 4, Physical Characteristics (continued)

Canyon	Permitted Feature	SMA Number	Sampler X Coordinate (Latitude)	Sampler Y Coordinate (Longitude)	SMA Drainage Area (ft^2)	Site Number	Site Drainage Area (ft^2)
Chaquehui	Q006	CHQ-SMA-4.1	1638823 (35.7788686)	1738774 (-106.2553743)	11,265.00	33-016	291.00
Chaquehui	Q007	CHQ-SMA-4.5	1641395 (35.77625)	1737819 (-106.2467)	118,510.86	33-011(b)	43,063.86
Chaquehui	Q008	CHQ-SMA-5.05	1639356 (35.77155)	1736112 (-106.253567)	6,700.00	33-007(b)	2,254.47
Chaquehui	Q009	CHQ-SMA-6	1639763 (35.77085)	1735852 (-106.2522)	518,103.82	33-004(j) 33-006(a) 33-007(b) 33-010(c) 33-010(g) 33-010(h) 33-014	4,008.38 1,955.76 53,013.12 1,954.18 20,307.29 4,695.05 3,519.27
Chaquehui	Q010	CHQ-SMA-7.1	1640295 (35.7715)	1736091 (-106.250417)	21,690.50	33-010(g)	12,401.55

[1] Site boundary revised.

[2] Minor sampler movement.

Attachment 5
Sampling Requirements and Plan

Sampling and Analysis Requirements

Sampling Conditions	Analytical Suite								
	Gross Alpha	Ra-226/ Ra-228	Cyanide	Dissolved Metals	Total Metals	Copper	PCBs	High Explosives	Pesticides
Analytical method	EPA 900.0	EPA 903.0 EPA 904.1	SM 4500 CN-I	EPA:200.7 EPA:200.8	EPA:200.7 EPA:200.8 EPA:245.2	EPA:200.8	EPA 1668A	SW8321	EPA 608
Order code	SW-IP-Gross Alpha	SW-Ra226/ Ra-228	SW-IP-Cyanide	SW-Metals-Dissolved	SW-Metals-Total	SW-IP-Cu F	SW-PCB-1668A-PQL	SW-HEXP-8330	SW-Pesticides
Field prep code	UF	UF	UF	F	UF	F	UF	UF	UF
Preservation	HNO_3	HNO_3	NaOH, Ice	HNO_3	HNO_3	HNO_3	Ice	Ice	Ice, some analytes store in dark
Holding time (days)	180	180	14	180	180	180	365	7	7
Preferred volume (L)	2	2	1	0.5	0.5	0.5	3	2.5	3
Minimum volume required (L)	1	2	0.5	0.25	0.25	0.25	1	0.77	1
Shipping container	Poly	Poly	Poly	Poly	Poly	Poly	Glass	Glass	Amber glass

UF: Unfiltered.

F: Filtered.

Attachment 5, Sampling Requirements and Plan (continued)

Sampling and Analysis Plan

Permit SMA Number	SDPPP Section	Station Name	Stage	Gross Alpha	Ra-226/ Ra-228	Cyanide	Dissolved Metals	Total Metals	Copper	PCBs	High Explosives	Pesticides
A-SMA-1.1	230	SS100209	MEx	X	X	X	X	X			X	
A-SMA-2	231	SS2732	MEx	X	X	X	X	X			X	
A-SMA-2.5	232	SS090204	MEx	X	X	X	X	X				
A-SMA-2.7	232	SS120211	CAM5	X	X	X	X	X			X	
A-SMA-2.8	232	SS090206	MEx	X	X	X	X	X				
A-SMA-3	235	SS100210	MEx	X	X	X	X	X		X	X	
A-SMA-3.5	236	SS090208	MEx	X	X	X	X	X		X		
A-SMA-4	237	SS276	MEx	X	X	X	X	X			X	
A-SMA-6	238	SS310	MEx	X	X	X	X	X			X	
CHQ-SMA-0.5	239	SS090601	MEx	X	X	X	X	X		X	X	
CHQ-SMA-1.01	240	SS090612	MEx	X	X	X	X	X		X		
CHQ-SMA-1.02	241	SS090613	CAM5						X	X		
CHQ-SMA-1.03	242	SS090614	CAI									
CHQ-SMA-2	243	SS3374	CAI									
CHQ-SMA-3.05	244	SS090615	MEx	X	X	X	X	X		X		X
CHQ-SMA-4	245	SS3375	MEx	X	X	X	X	X		X	X	
CHQ-SMA-4.1	246	SS100617	MEx	X	X	X	X	X		X	X	
CHQ-SMA-4.5	247	SS341	MEx	X	X	X	X	X				
CHQ-SMA-5.05	248	SS090616	MEx	X	X	X	X	X				
CHQ-SMA-6	249	SS3377	MEx	X	X	X	X	X			X	
CHQ-SMA-7.1	250	SS100618	MEx	X	X	X	X	X			X	

MEx = Extended Baseline Monitoring: One confirmation monitoring sample is collected to determine if corrective action is required.

CAM5 = Corrective Action Enhanced Control Monitoring: Two confirmation monitoring samples are collected following completion of corrective action control measures at moderate priority sites within 5 yr of effective date of the Permit.

CAI = Corrective Action Initiated: A sample was collected during baseline confirmation monitoring, and analytical results show at least one pollutant concentration is above TAL, resulting in initiation of corrective action.