

Appendix C: Bakersfield-Golden AMS Closure and Replacement

In December 2009, the District was forced to close the Bakersfield-Golden State Highway (Bakersfield-Golden) air monitoring site (AMS) due to the expansion of Golden State Highway and subsequent loss of the air monitoring site lease. As referenced in the District's previous Network Plans as a planned change to the air monitoring network, the Bakersfield-Golden site has been relocated to the Bakersfield-Municipal Airport (Bakersfield-Muni) site. This Appendix provides further information regarding the relocation, as outlined under 40 CFR Part 58.

40 CFR Part 58.14 paragraphs (c), and (c)(6), state that requests for discontinuation of a SLAMS monitoring station may be approved on a case-by-case basis if it does not compromise the data collection needed for comparison to the NAAQS and that the requirements listed in Appendix D of 40 CFR Part 58 continue to be met. A SLAMS monitor that is not eligible for removal under any of the criteria listed in 40 CFR Part 58, can be moved if logistical problems beyond the State's control make it impossible to continue operating at the current site. When that is the case, the SLAMS monitor may be moved to a nearby location with the same scale of representation. The District has met both of these conditions in the closure of Bakersfield-Golden. The Bakersfield-Golden site was shut down due to termination of the lease by the landowner and highway expansion which would directly impact the siting criteria for the station. The District notified and kept EPA and CARB fully informed throughout the entire siting and relocation process via telephone calls and in the appropriate Network Plans. After exhaustive effort, the Bakersfield-Golden monitoring site was relocated to the current Bakersfield-Muni location.

The Bakersfield-Golden monitoring site operated from June 1994 until December 2009 and served as both a PAMS Type 2 site and PM_{2.5} SLAMS site. The Bakersfield-Muni site is intended to be a long term site that will serve as the replacement PAMS Type 2 and PM_{2.5} SLAMS site for Bakersfield-Golden. A regulatory filter-based PM_{2.5} monitor served as the primary PM_{2.5} monitor at the Bakersfield-Golden site, and is also the primary PM_{2.5} monitor at the Bakersfield-Muni site. The primary PM₁₀ monitor at the Bakersfield-Golden site was a regulatory filter-based monitor, and the primary PM₁₀ monitor at the Bakersfield-Muni site is a regulatory real-time monitor. The speciated VOC equipment for PAMS became operational in June 2012. The station's carbonyl, and meteorological equipment for PAMS, and the PM_{2.5} and PM₁₀ equipment began operating in July 2012. The NMHC equipment will be installed and operational by October 2012.

Without operating the Bakersfield-Golden monitoring site, the District exceeds SLAMS monitoring requirements for Kern County, with monitoring equipment operating at the Shafter, Maricopa, Bakersfield-California Avenue, Bakersfield-Planz, Oildale, Edison, and Arvin-Di Giorgio AMSs (see Table 1 below). Air monitoring continued at these sites during the relocation of the Bakersfield-Golden site to the Bakersfield-Muni site so the mandated monitoring requirements were not compromised during the relocation process.

**Table 1 Air Monitoring Stations in the Valley Portion of Kern County
(not including Bakersfield-Golden/Muni sites)**

MSA/CBSA: Bakersfield		
County: Kern (Valley Portion)		
Site Name	AIRS Code	Operating Agency
Arvin-Di Giorgio	060295002	CARB
Bakersfield-California	060290014	CARB ¹
Bakersfield-Planz	060290016	CARB
Edison	060290007	CARB
Maricopa	060290008	SJVAPCD
Oildale	060290232	CARB
Shafter	060296001	Shared ²

¹ The Bakersfield-California site was a shared site in 2011. One temporary PM10 monitor that was operated by SJVAPCD during 2011 was moved to the new Bakersfield- Muni site in 2012.

² Site operated by CARB and SJVAPCD.

Finding an appropriate location took a considerable amount of time and staff effort (approximately two years) and proved very difficult. The District was unsuccessful in finding a location within a couple of kilometers of the Bakersfield-Golden site, so the siting radius was expanded which enabled the District to find a suitable location approximately 6 km away. The Bakersfield-Muni site is located at the northern end of the Municipal Airport in a light commercial/industrial area downwind from freeways, which is similar to the Bakersfield-Golden site's location.

Actual construction of the site was lengthy because it took over two years to get permits from the Federal Aviation Administration (FAA), approval from the City of Bakersfield, and electrical power installed. Once power was installed, construction of the platform to support the air quality monitoring equipment commenced and installation of the necessary equipment both inside the shelter and on the platform followed. Since the structure and power at Bakersfield-Golden have been removed and the site is closed, it is impossible to conduct parallel monitoring. As more data becomes available at the new Bakersfield-Muni site, the District will conduct ongoing comparative evaluation of the various Bakersfield monitoring sites.

Tables 2a and 2b show the 24-hour and annual PM2.5 design value trends for the Bakersfield-Golden, Bakersfield-California, and Bakersfield-Planz monitoring sites. When compared to Bakersfield-California and Bakersfield-Planz, Bakersfield-Golden's 24-hour PM2.5 design values were higher for 2005-2007 and lower for the subsequent years. Bakersfield-Golden's annual PM2.5 design values from the 2005-2007 through the 2007-2009 were lower compared to the other sites. Given its close proximity to the Bakersfield-Planz site, Bakersfield-Muni's PM2.5 concentrations are anticipated to be similar to those at Bakersfield-Planz site which are higher than those that were measured at Bakersfield-Golden.

Table 2a EPA 24-hour PM_{2.5} Design Values (µg/m³)					
Monitoring Site	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011
Bakersfield-Golden	69	64	66	NA	NA
Bakersfield-California	66	66	68	62	62
Bakersfield-Planz	68	70	70	65	55
Table 2b EPA Annual PM_{2.5} Design Values (µg/m³)					
Monitoring Site	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011
Bakersfield-Golden	19.2	18.8	19.3	NA	NA
Bakersfield-California	19.6	20.9	21.0	18.4	16.5
Bakersfield-Planz	20.3	21.5	22.6	21.2	18.2

NA – Data not available to calculate value.

Table 3 below compares the Bakersfield-Golden site to the Bakersfield-Muni site:

Table 3 Golden and Muni Comparison Table						
Site		Latitude		Longitude		
Golden		35.385269		119.014733		
Muni		35.331572		118.999995		
Parameters	Site		Sampling Schedule		Method Code	
	Golden	Muni	Golden	Muni	Golden	Muni
Ozone	x	x			087	087
CO	x	x			054	054
NO	x	x			074	074
NO ₂	x	x			074	074
NO _x	x	x			074	074
Speciated-VOC	x	x	1:3 (Seasonal)	1:3 (Seasonal)	011	011
NMHC	x	x			011	011
Carbonyls	x	x	1:3 (Seasonal)	1:3 (Seasonal)		
Regulatory PM 10 (Filter-Based)	x		1:6		063	
Regulatory PM 10 (Real-time)	x	x	1:1	1:1	079	079
Regulatory PM 2.5 (Filter Based)	x	x	1:3, 1:6 (Seasonal)	1:3, 1:6 (Seasonal)	120	145
Regulatory PM 2.5 (Real-time)	x		1:1		170	
Non-Regulatory PM 2.5 (Real-time)		x		1:1		170
IT	x	x			014	014
OT	x	x			040	040
BPR	x	x			014	014
WS	x	x			020	020
WD	x	x			020	020
RH	x	x			011	011
SRAD	x	x			011	011

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