

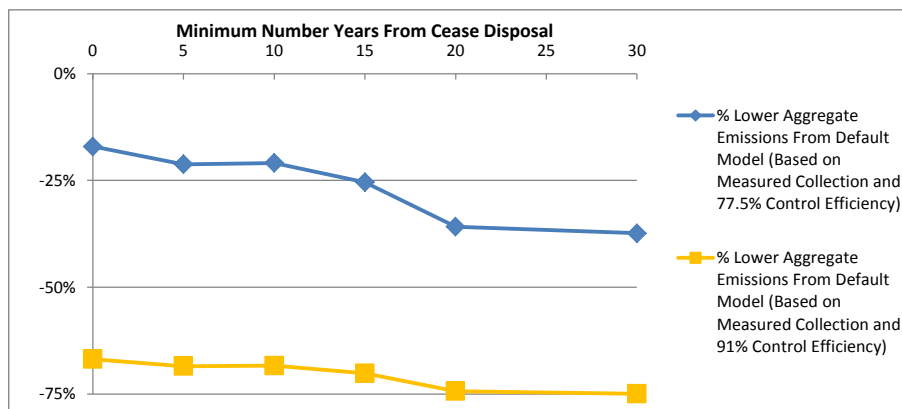
Attachment 2.1. Summary of 66 Active and 52 Closed Landfills- ARB Tool Compared with Measured Collection and Direct Measurement Studies

Total Active Sites, 2010 WIP, and % of total active WIP	ARB Model Collection (scfm)	Measured Collection (scfm)	Generation Based on ARB Default Model (Model/75% Collection Efficiency)	Generation Based on Measured/75% Collection Efficiency	Emissions Based on ARB Default Model (75%+10%=77.5 % Control Efficiency)	Emissions Based on Measured Collection and ARB Default 77.5% Control	% higher (+) or Lower (-) Aggregate Emissions From Default Model (Based on Measured Collection and 77.5% Control Efficiency)	Emissions Based on Measured Collection and 86% Control Efficiency	% Lower Aggregate From Default Model Emissions (Based on Measured Collection and 86% Control Efficiency)
66	54,531	62,689	72,708	83,585	16,359	18,807	15%	11,702	-28%
857,891,256	:Total 2010 WIP								
94%									
1,385,985,581									
90%	: % Total active and closed sites WIP was modeled (Note approximately 95% of California WIP have landfill gas collection and control systems).								

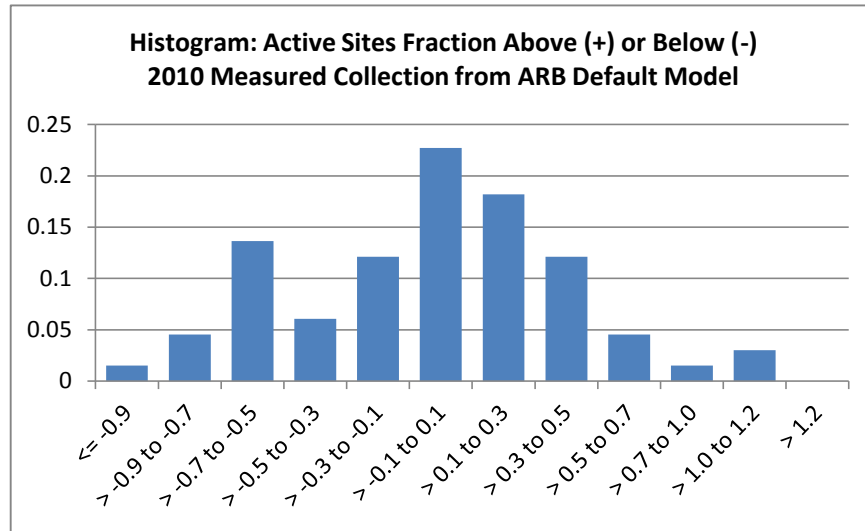
Total Active and Closed Sites and WIP (tons)	ARB Model (Aggregate)	Measured Collection (Aggregate)	Generation Based on ARB Default Model (Model/75% Collection Efficiency)	Emissions Based on ARB Default Model (77.5% Control Efficiency)	Generation Based on Measured Collection and ARB Default 75% Collection Efficiency	Emissions Based on Measured Collection and ARB Default 77.5% Control	% higher (+) or Lower (-) Aggregate Emissions From Default Model (Based on Measured Collection and 77.5% Control Efficiency)	Emissions Based on Measured Collection and 86% (Active) and 91% (Closed)Control Efficiency	% Lower Aggregate From Default Model Emissions (Based on Measured Collection and 86% (Active) and 91% (Closed)Control Efficiency)
118	54,531	62,689	72,708	16,359	83,585	18,807	15%	10,325	-37%
1,242,111,919	21,402	17,749	28,536	6,421	23,665	5,325	-17%	1,755	-73%
				22,780	107,251	24,131	6%	12,081	-47%

Total Closed Sites and WIP (tons)	Minimum Number Years From Cease Disposal	ARB Model	Measured Collection	Generation Based on ARB Default Model (Model/75% Collection Efficiency)	Emissions Based on ARB Default Model (75% + 10% Oxidation =77.5% Control Efficiency)	Generation Based on Measured/75% Collection Efficiency	Emissions Based on Measured Collection and ARB Default 77.5% Control	% Lower Aggregate Emissions From Default Model (Based on Measured Collection and 77.5% Control Efficiency)	Emissions Based on Measured Collection and 91% Control Efficiency	% Lower Aggregate Emissions From Default Model (Based on Measured Collection and 91% Control Efficiency)
52	0	21,402	17,749	28,536	6,421	23,665	5,325	-17%	2,130	-67%
384,220,663	5	18,360	14,467	24,480	5,508	19,289	4,340	-21%	1,736	-68%
	10	16,829	13,313	22,439	5,049	17,751	3,994	-21%	1,598	-68%
	15	9,569	7,136	12,759	2,871	9,515	2,141	-25%	856	-70%
	20	5,895	3,784	7,860	1,769	5,045	1,135	-36%	454	-74%
	30	3,016	1,889	4,021	905	2,519	567	-37%	227	-75%

Closed Sites (#52): % Lower Aggregate Statewide Emissions From ARB Default Model (Year 2010)



Minimum value           **-0.9**        If the value is:    **0.0**  
Maximum value           **1.2**        Points are <=    52%  
Average value            0.0        Points are >    48%  
Std Deviation            0.5



Data values            66  
Error values            0  
Bin Size                0.209889114  
Number of bins        12  
Bins                    Frequencies:        Cumul. Frequencies:

Bin Range	Frequencies	Cumul. Frequencies
<=-0.9	1 1.5%	<=-0.9 1 1.5%
>-0.9 to -0.7	3 4.5%	<=-0.7 4 6.1%
>-0.7 to -0.5	9 13.6%	<=-0.5 13 19.7%
>-0.5 to -0.3	4 6.1%	<=-0.3 17 25.8%
>-0.3 to -0.1	8 12.1%	<=-0.1 25 37.9%
>-0.1 to 0.1	15 22.7%	<= 0.1 40 60.6%
>0.1 to 0.3	12 18.2%	<= 0.3 52 78.8%
>0.3 to 0.5	8 12.1%	<= 0.5 60 90.9%
>0.5 to 0.7	3 4.5%	<= 0.7 63 95.5%
>0.7 to 1.0	1 1.5%	<= 1.0 64 97.0%
>1.0 to 1.2	2 3.0%	<= 1.2 66 100.0%
>1.2	0 0.0%	

Active Sites 2010 Measured Collection (scfm)	%Above (+) or Below (- ) ARB Model	Active Sites 2010 Measured Collection (scfm)	%Above (+) or Below (- ) ARB Model
776	116%	2,575	-1%
3,140	104%	528	-2%
229	79%	352	-3%
2,664	68%	272	-3%
500	60%	69	-4%
1,047	57%	394	-6%
266	46%	93	-8%
769	45%	941	-9%
2,980	45%	1,315	-11%
1,329	39%	446	-15%
2,135	35%	253	-18%
4,194	35%	113	-19%
3,102	33%	355	-23%
534	33%	72	-24%
648	32%	1,177	-28%
986	32%	102	-29%
1,387	31%	946	-32%
9,454	28%	298	-37%
692	28%	637	-46%
1,685	26%	195	-50%
884	23%	199	-52%
872	21%	79	-54%
629	18%	86	-57%
1,893	16%	114	-58%
365	15%	46	-60%
88	14%	90	-62%
1,993	8%	53	-65%
873	7%	74	-65%
2,155	7%	94	-71%
270	6%	47	-79%
833	2%	7	-86%
176	2%	9	-91%
1,103	2%	7	-94%
Mean:			-2%
St. Deviation:			46%

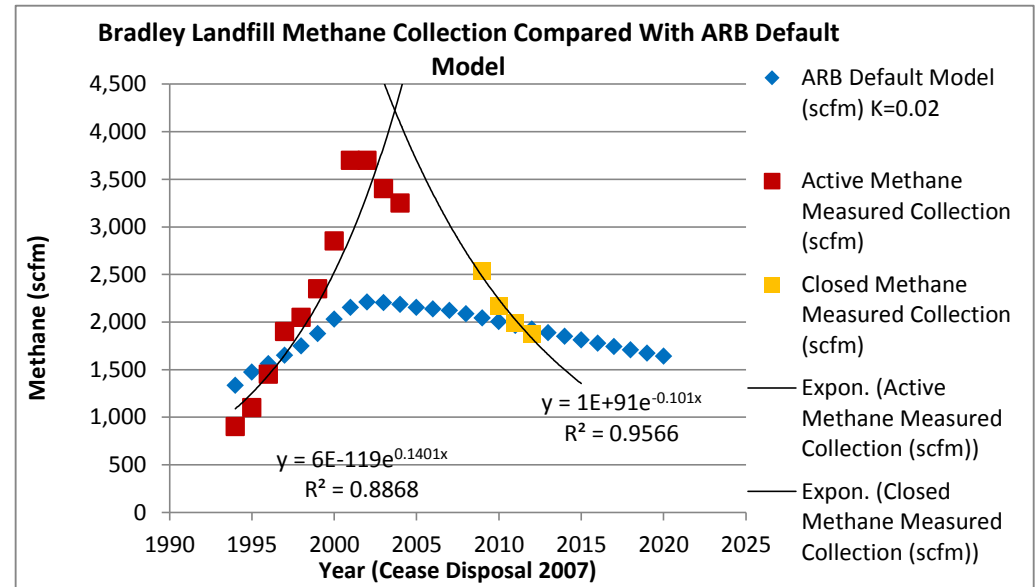
Attachment 2.3. Closed Site Plots of Methane Collection Compared With ARB Default Model

<b>Bradley (19-AR-0008)</b>	Active Methane Measured Collection (scfm)	Closed Methane Measured Collection (scfm)	ARB Default Model (scfm) K=0.02
1994	900		1,336
1995	1,100		1,472
1996	1,450		1,562
1997	1,900		1,650
1998	2,050		1,748
1999	2,350		1,878
2000	2,850		2,030
2001	3,700		2,154
2002	3,700		2,210
2003	3,400		2,205
2004	3,250		2,184
2005			2,154
2006			2,138
2007			2,121
2008			2,085
2009		2,539	2,044
2010		2,169	2,003
2011		1,993	1,964
2012		1,868	1,925
2013			1,887
2014			1,849
2015			1,813
2016			1,777
2017			1,742
2018			1,707
2019			1,673
2020			1,640

Cease Disposal

Cert. Approved

-3%



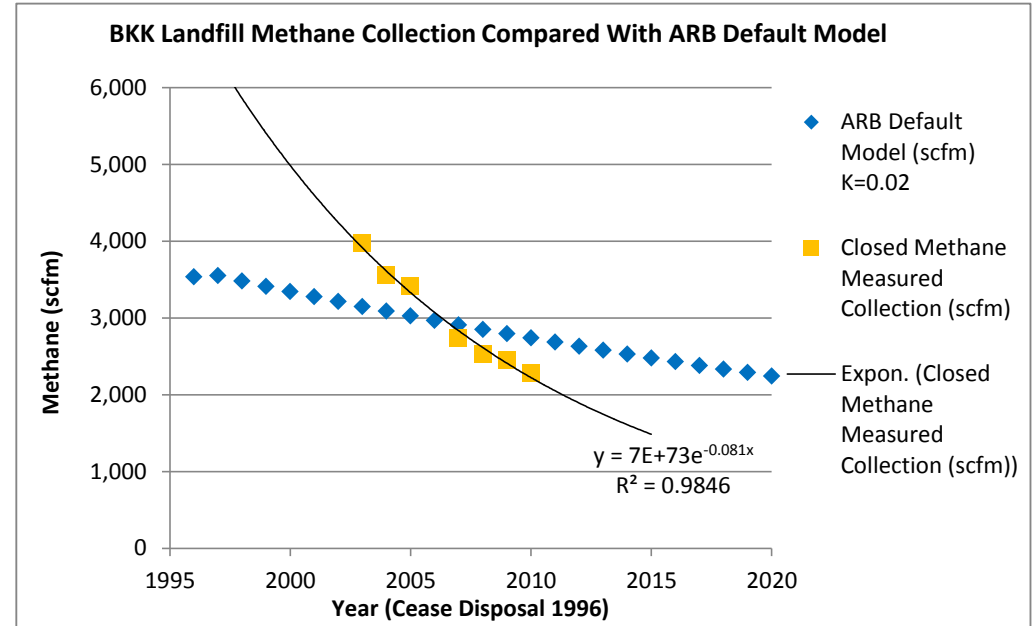
<b>BKK (19-AF-0001)</b>	Closed Methane Measured Collection (scfm)	ARB Default Model (scfm) K=0.02
1996		3,536
1997		3,549
1998		3,479
1999		3,410
2000		3,342
2001		3,276

Cease Disposal

Attachment 2.3. Closed Site Plots of Methane Collection Compared With ARB Default Model

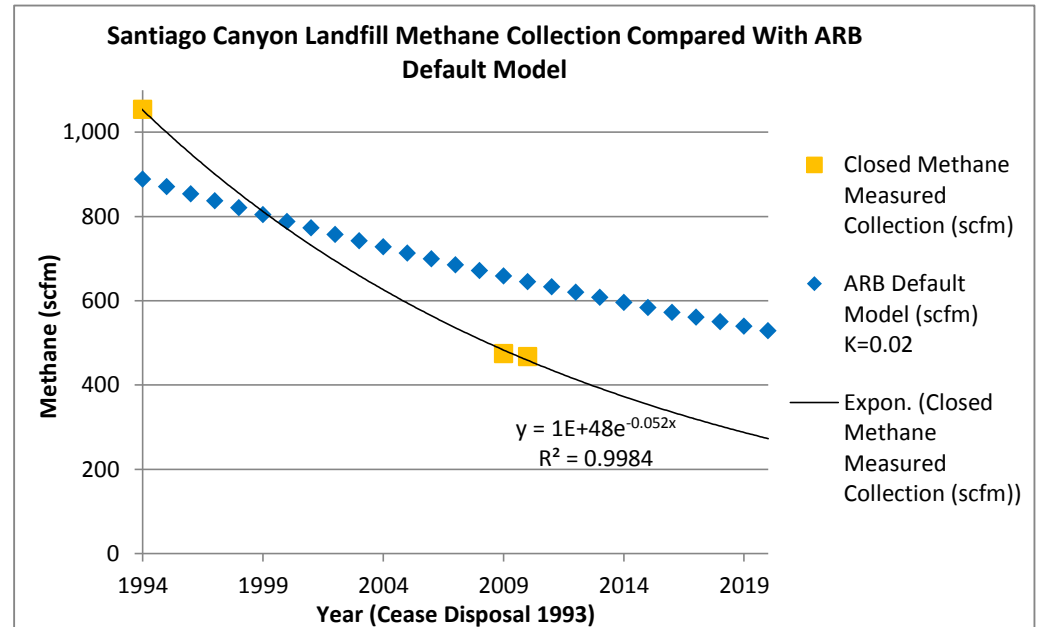
2002		3,211
2003	3978	3,148
2004	3556	3,085
2005	3416	3,024
2006		2,964
2007	2737	2,906
2008	2529	2,848
2009	2451	2,792
2010	2277	2,737
2011		2,682
2012		2,629
2013		2,577
2014		2,526
2015		2,476
2016		2,427
2017		2,379
2018		2,332
2019		2,286
2020		2,240

13%  
Cert. Approved  
-17%



<b>Santiago (30 AB-0018)</b>	Closed Methane Measured Collection (scfm)	ARB Default Model (scfm) K=0.02
1993		887
1994	1,054	888
1995		871
1996		854
1997		837
1998		820
1999		804
2000		788
2001		772
2002		757
2003		742
2004		727
2005		713
2006		699
2007		685
2008		671

Cease Disposal  
19%  
Cert. Approved



Attachment 2.3. Closed Site Plots of Methane Collection Compared With ARB Default Model

2009	474	658
2010	467	645
2011		632
2012		620
2013		608
2014		596
2015		584
2016		572
2017		561
2018		550
2019		539
2020		528

-28%

-28%

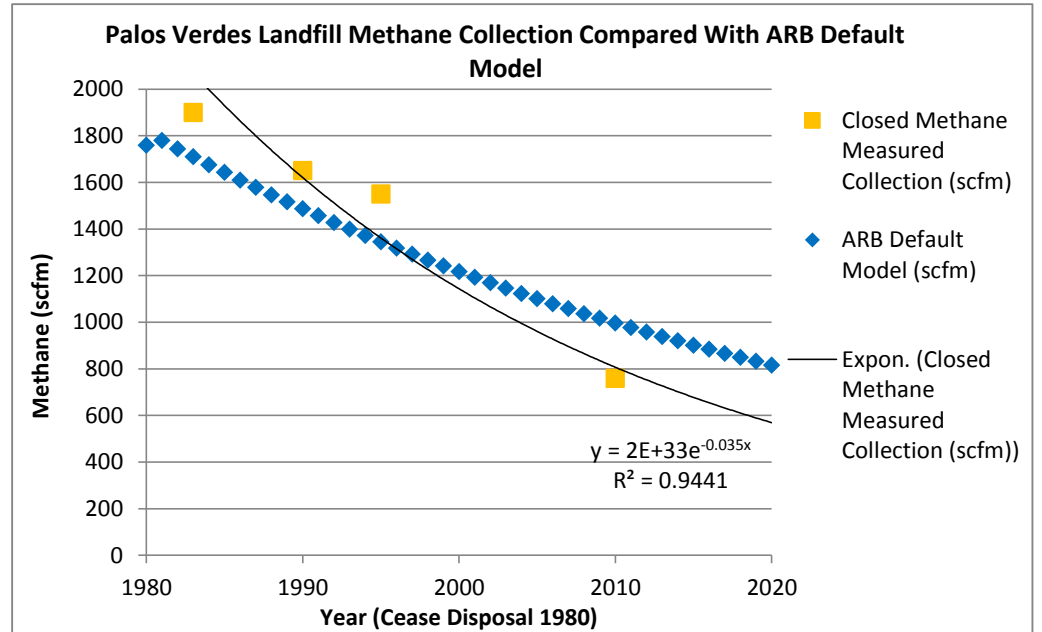
Palos Verde (19-AE- 0001)	Closed Methane Measured Collection (scfm)	ARB Default Model (scfm)
1980		1759
1981		1779
1982		1744
1983	1900	1709
1984		1675
1985		1642
1986		1610
1987		1578
1988		1546
1989		1516
1990	1650	1486
1991		1456
1992		1428
1993		1399
1994		1372
1995	1550	1344
1996		1318
1997		1292
1998		1266
1999		1241
2000		1217
2001		1192
2002		1169
2003		1146

Cease Disposal

11%

11%

15%



Attachment 2.3. Closed Site Plots of Methane Collection Compared With ARB Default Model

2004		1123
2005		1101
2006		1079
2007		1058
2008		1037
2009		1016
2010	758	996
2011		976
2012		957
2013		938
2014		919
2015		901
2016		883
2017		866
2018		849
2019		832
2020		815

-24%