

Table 1. Grand Total Average 2007-2009 for Labor Hours & Costs *

December 2008

Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract \$	Total Cost
1. Network Design	47,266	\$2,530,508	\$0	\$4,909,057	\$7,439,564
2. Site Installation	20,579	\$1,224,120	\$8,507,378	\$21,760,965	\$31,492,463
3. Sampling & Analys	675,171	\$36,718,732	\$5,776,739	\$20,491,600	\$62,987,070
4. Maintenance	265,854	\$13,056,809	\$4,574,549	\$0	\$17,631,358
5. Data Management	569,913	\$26,403,592	\$0	\$0	\$26,403,592
6. Quality Assurance	306,084	\$15,825,789	\$108,948	\$488,103	\$16,422,840
7. Supervision	194,622	\$10,229,389	\$0	\$0	\$10,229,389
Totals	2,079,490	\$105,988,939	\$18,967,614	\$47,649,724	\$172,606,277

* Burden estimates for Pb monitoring are based on years 2009 - 2011. All other pollutants are based on years 2007 - 2009.

Table 2. Summary All Items for 2007-2009 Monitoring Burden and Costs*

Cost Element	Average 2007-2009 SO2				Average 2007-2009 CO				Average 2007-2009 NO2				December 2008			
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Total Cost	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Total Cost	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Total Cost	
1. Network Design	832	\$47,947		\$709,981	\$757,928	794	\$45,760		\$677,641	\$723,400	746	\$42,948		\$748,079	\$42,948	
2. Site Installation	1,493	\$59,104	\$386,038	\$1,499,757	\$1,944,899	1,432	\$56,626	\$368,953	\$1,894,573	\$2,263,529	46,800	\$2,116,147	\$332,075		\$2,448,222	
3. Sampling & Analysis	54,360	\$2,480,026	\$482,547	\$881,614	\$3,844,187	51,960	\$2,351,153	\$461,191	\$1,894,573	\$4,707,917	33,540	\$1,877,393	\$415,094		\$2,292,487	
4. Maintenance	30,804	\$1,499,757	\$482,547	\$881,614	\$2,863,918	29,444	\$1,433,382		\$842,134	\$2,705,516	19,500	\$1,002,036			\$1,002,036	
5. Data Management	17,667	\$881,614		\$1,733,532	\$2,615,146	16,881	\$842,134		\$1,733,532	\$2,581,546	53,107	\$2,754,624			\$2,754,624	
6. Quality Assurance	35,355	\$1,813,903		\$1,021,552	\$2,837,357	33,831	\$1,733,532		\$978,342	\$2,711,874	16,380	\$878,753			\$878,753	
7. Supervision	19,026	\$1,021,552		\$1,021,552	\$2,043,104	18,186	\$978,342		\$677,641	\$1,655,983	67,358	\$3,522,881	\$747,463		\$4,373,344	
Totals	159,577	\$7,749,503	\$988,585	\$2,659,533	\$10,407,621	152,534	\$7,438,928	\$510,144	\$2,977,641	\$10,926,613	173,956	\$3,522,881	\$747,463	\$4,275,344	\$10,926,613	

Cost Element	Average 2007-2009 PM-10				Average 2007-2009 PM-2.5					
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Total Cost	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Total Cost
1. Network Design	733	\$42,180		\$1,666,077	\$1,708,257	769	\$43,391		\$1,667,158	\$1,710,549
2. Site Installation	4,356	\$168,106	\$707,097	\$2,747,073	\$3,623,276	1,562	\$72,467	\$324,256	\$1,145,147	\$1,941,870
3. Sampling & Analysis	89,960	\$4,505,971	\$893,872	\$1,614,833	\$6,915,676	150,543	\$7,371,480	\$917,388	\$3,710,980	\$11,089,848
4. Maintenance	56,417	\$2,747,073		\$3,387,227	\$6,134,299	31,760	\$1,395,411		\$1,235,044	\$2,630,455
5. Data Management	32,357	\$1,614,833		\$1,871,156	\$3,485,989	69,818	\$3,710,980		\$625,352	\$4,326,332
6. Quality Assurance	64,428	\$3,387,227		\$1,871,156	\$5,258,383	23,286	\$1,230,438		\$29,939	\$2,518,861
7. Supervision	34,846	\$1,871,156		\$1,871,156	\$3,742,312	10,815	\$625,352		\$7,093	\$632,445
Totals	267,857	\$12,465,553	\$1,330,469	\$5,966,672	\$14,762,694	266,603	\$12,445,519	\$1,330,469	\$7,093	\$14,762,694

Cost Element	Average 2007-2009 PM-coarse				Average 2009-2011 Pb				Average 2007-2009 Ambient Air Network for Hazardous AP						
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Total Cost	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Total Cost	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Total Cost
1. Network Design	100	\$3,141		\$97,440	\$100,581	814	\$29,638		\$84,506	\$87,642					
2. Site Installation	133	\$6,524	\$4,637	\$16,701	\$27,881	640	\$24,550	\$93,397	\$501,229	\$1,800,378				\$8,859,355	\$8,859,355
3. Sampling & Analysis	8,909	\$427,667	\$16,701	\$80,367	\$524,735	25,200	\$1,205,752	\$93,397	\$297,002	\$1,598,141					
4. Maintenance	1,172	\$58,483		\$90,367	\$148,850	4,480	\$203,605		\$315,370	\$518,975					
5. Data Management	1,766	\$80,367		\$69,139	\$149,506	7,000	\$315,370		\$282,366	\$597,736					
6. Quality Assurance	1,120	\$69,139		\$74,199	\$143,338	5,983	\$282,366		\$163,133	\$445,500					
7. Supervision	1,306	\$74,199		\$74,199	\$148,398	2,800	\$163,133		\$59,736	\$228,133					
Totals	19,500	\$1,000,000	\$4,637	\$239,976	\$1,034,613	46,637	\$2,204,424	\$186,734	\$856,736	\$2,961,154				\$8,859,355	\$8,859,355

Cost Element	Average 2007-2009 PAMS				Average 2007-2009 General Network					
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Total Cost	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Total Cost
1. Network Design	499	\$28,772		\$1,072,627	\$1,101,399	41,504	\$2,220,960		\$4,909,057	\$7,130,016
2. Site Installation	2,295	\$434,240	\$359,228	\$1,776,146	\$2,569,614	12,465	\$1,017,856	\$8,507,378	\$10,347,879	\$18,855,258
3. Sampling & Analysis	57,761	\$2,842,573	\$827,519	\$3,352,483	\$6,022,575	174,720	\$8,213,208	\$2,799,920	\$3,817,776	\$11,810,904
4. Maintenance	27,624	\$1,415,615		\$1,498,832	\$2,914,447				\$474,834	\$474,834
5. Data Management	62,977	\$3,352,483	\$108,948	\$599,287	\$4,852,718					\$0
6. Quality Assurance	25,272	\$1,387,884		\$599,287	\$2,376,453					\$0
7. Supervision	19,170	\$599,287		\$599,287	\$1,198,574					\$0
Totals	191,528	\$10,720,653	\$467,246	\$2,650,724	\$11,638,623	228,688	\$11,462,024	\$11,307,298	\$15,731,770	\$23,491,095

* Burden estimates for Pb monitoring are based on years 2009 - 2011. All other pollutants are based on years 2007 - 2009.

Grand Total Average 2007-2009

Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Total Cost
1. Network Design	47,266	\$2,530,508	\$0	\$4,909,057	\$7,439,565
2. Site Installation	20,579	\$4,224,120	\$8,507,378	\$21,760,965	\$31,492,463
3. Sampling & Analysis	675,171	\$36,718,732	\$5,776,739	\$20,491,800	\$62,987,070
4. Maintenance	265,854	\$13,056,809	\$0	\$0	\$17,631,358
5. Data Management	569,913	\$26,403,592	\$0	\$0	\$26,403,592
6. Quality Assurance	306,084	\$15,925,789	\$108,948	\$488,103	\$16,422,840
7. Supervision	194,622	\$10,229,389	\$0	\$0	\$10,229,389
Totals	2,079,490	\$105,985,939	\$16,987,614	\$47,648,724	\$172,606,277

Table 3.0, Summary of SO2 2007-2009 Monitoring Costs

Aug 2006

Cost Element	2007				2008				2009				Average 2007-2009 SO2			
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$
1. Network Design																
Network design study (RO)	463	\$26,340			463	\$26,844			463	\$27,388			463	\$26,857		
Site selection (RO)	123	\$6,754			123	\$6,883			123	\$7,023			123	\$6,887		
Precursor SO2 monitors (RO)	154	\$8,780			193	\$11,185			236	\$13,948			194	\$11,304		
Site selection	41	\$2,251			51	\$2,868			63	\$3,577			52	\$2,899		
Element #1 totals	782	\$44,125			831	\$47,780			885	\$51,936			832	\$47,947		
2. Site Installation																
Analyzer				\$626,880				\$606,936				\$580,448				\$604,755
Spare analyzers				\$31,344												\$10,448
Procurement	480	\$12,350			456	\$11,957			427	\$11,435			454	\$11,914		
Equipment installation	960	\$42,628			912	\$41,272			855	\$39,470			909	\$41,123		
Precursor SO2 monitors				\$73,614				\$93,778				\$116,943				\$94,778
Analyzer	21	\$1,059			26	\$1,348			31	\$1,682			26	\$1,363		
Procurement	82	\$3,654			103	\$4,655			126	\$5,804			104	\$4,704		
Equipment installation	1,543	\$59,690		\$731,838	1,497	\$59,231		\$700,714	1,439	\$58,391		\$697,391	1,493	\$59,104		\$709,981
Element #2 totals																
3. Supplies and Site Visits																
Supplies	50,400	\$2,237,084	\$351,053		47,880	\$2,165,912	\$339,884		44,880	\$2,071,387	\$325,051		47,720	\$2,158,128	\$338,663	
Routine site visits																
Precursor SO2 monitors			\$30,090				\$46,851				\$65,184					\$47,375
Supplies	4,320	\$191,750			6,600	\$298,559			9,000	\$415,385			6,640	\$301,898		
Routine site visits	54,720	\$2,428,834	\$381,143		54,480	\$2,464,471	\$386,735		53,860	\$2,486,772	\$390,235		54,360	\$2,460,026	\$386,038	
Element #3 totals																
4. Maintenance																
Spare parts/supplies			\$438,816				\$424,855				\$406,314					\$423,328
Remedial repairs	5,040	\$230,378			4,788	\$223,049			4,488	\$213,315			4,772	\$222,247		
Routine maintenance	23,520	\$1,133,462			22,344	\$1,097,401			20,944	\$1,049,508			22,269	\$1,093,457		
Precursor SO2 monitors			\$37,613				\$58,564				\$61,480					\$59,219
Spare parts/supplies	432	\$19,747			660	\$30,746			900	\$42,777			664	\$31,090		
Remedial repairs	2,016	\$97,154			3,080	\$151,271			4,200	\$210,463			3,099	\$152,963		
Routine maintenance	31,008	\$1,480,741	\$476,429		30,872	\$1,502,467	\$483,419		30,532	\$1,516,063	\$487,794		30,804	\$1,499,757	\$482,547	
Element #4 totals																
5. Data Management																
Data acquisition/processing	5,880	\$279,087			5,586	\$270,208			5,236	\$258,415			5,567	\$269,237		
Data reporting	3,780	\$191,763			3,591	\$185,662			3,366	\$177,559			3,579	\$184,994		
Data validation	5,040	\$250,125			4,788	\$242,167			4,488	\$231,599			4,772	\$241,297		
Data distribution	1,680	\$80,742			1,596	\$78,173			1,496	\$74,762			1,591	\$77,892		
Precursor SO2 monitors																
Data acquisition/processing	504	\$23,922			770	\$37,247			1,050	\$51,821			775	\$37,663		
Data reporting	324	\$16,437			495	\$25,592			675	\$35,607			498	\$25,879		
Data validation	432	\$21,439			660	\$33,381			900	\$46,444			664	\$33,755		
Data distribution	144	\$6,921			220	\$10,176			300	\$14,992			221	\$10,896		
Element #5 totals	17,784	\$870,435			17,706	\$883,207			17,511	\$891,199			17,667	\$881,614		
6. Quality Assurance																
Audits	15,120	\$821,902			14,364	\$795,754			13,464	\$761,025			14,316	\$792,894		

Table 4.0, Summary of CO 2007-2009 Monitoring Costs

Cost Element	2007				2008				2009				Average 2007-2009 CO			
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$
1. Network Design																
Network design study (RO)	433	\$24,633			433	\$25,104				433	\$25,613			433	\$25,117	
Site selection (RO)	115	\$6,316			115	\$6,437				115	\$6,568			115	\$6,441	
Precursor CO monitors (RO)	154	\$8,780			193	\$11,185				236	\$13,948			194	\$11,304	
Site selection	41	\$2,251			51	\$2,868				63	\$3,577			52	\$2,899	
Element #1 totals	744	\$41,980			793	\$45,594				847	\$49,706			794	\$45,760	
2. Site Installation																
Analyzer				\$600,014				\$581,077				\$541,648				\$574,246
Spare analyzers				\$30,001												\$10,000
Procurement	482	\$12,411			437	\$11,447				399	\$10,670			439	\$11,510	
Equipment installation	919	\$40,801			873	\$39,513				798	\$36,832			863	\$39,049	
Precursor CO monitors				\$72,539				\$92,409				\$115,236				\$93,395
Analyzer	21	\$1,059			26	\$1,348				31	\$1,662			26	\$1,363	
Procurement	82	\$3,654			103	\$4,655				126	\$5,804			104	\$4,704	
Equipment installation	1,504	\$57,925		\$702,563	1,436	\$56,964		\$673,486		1,354	\$54,989		\$656,884	1,432	\$56,826	
Element #2 totals	1,504	\$57,925		\$702,563	1,436	\$56,964		\$673,486		1,354	\$54,989		\$656,884	1,432	\$56,826	
3. Supplies and Site Visits																
Supplies			\$336,008				\$325,403					\$303,323				\$321,578
Routine site visits	48,240	\$2,141,209			45,840	\$2,073,630				41,880	\$1,932,925			45,320	\$2,049,255	
Precursor CO monitors			\$30,090				\$46,851					\$65,184				\$47,375
Supplies	4,320	\$191,750			6,600	\$298,559				9,000	\$415,385			6,640	\$301,898	
Routine site visits	52,560	\$2,332,959		\$366,098	52,440	\$2,372,189		\$372,254		50,880	\$2,348,310		\$368,507	51,960	\$2,351,453	
Element #3 totals	52,560	\$2,332,959		\$366,098	52,440	\$2,372,189		\$372,254		50,880	\$2,348,310		\$368,507	51,960	\$2,351,453	
4. Maintenance																
Spare parts/supplies			\$420,010				\$406,754					\$379,154				\$401,972
Remedial repairs	4,824	\$220,505			4,584	\$213,546				4,188	\$199,066			4,532	\$211,035	
Routine maintenance	22,512	\$1,084,885			21,392	\$1,050,645				19,544	\$979,354			21,149	\$1,038,294	
Precursor CO monitors			\$37,613				\$58,564					\$81,480				\$59,219
Spare parts/supplies	432	\$19,747			660	\$30,746				900	\$42,777			664	\$31,090	
Remedial repairs	2,016	\$97,154			3,080	\$151,271				4,200	\$210,463			3,099	\$152,963	
Routine maintenance	29,784	\$1,422,290		\$457,622	29,716	\$1,446,207		\$465,318		28,832	\$1,431,649		\$460,634	29,444	\$1,433,382	
Element #4 totals	29,784	\$1,422,290		\$457,622	29,716	\$1,446,207		\$465,318		28,832	\$1,431,649		\$460,634	29,444	\$1,433,382	
5. Data Management																
Data acquisition/processing	5,628	\$267,126			5,348	\$258,695				4,886	\$241,142			5,287	\$255,654	
Data reporting	3,618	\$183,544			3,438	\$177,751				3,141	\$165,690			3,399	\$175,662	
Data validation	4,824	\$239,405			4,584	\$231,850				4,188	\$216,118			4,532	\$229,124	
Data distribution	1,608	\$77,282			1,528	\$74,843				1,396	\$68,377			1,511	\$73,501	
Precursor CO monitors																
Data acquisition/processing	504	\$23,922			770	\$37,247				1,050	\$51,821			775	\$37,663	
Data reporting	324	\$16,437			495	\$25,592				675	\$35,607			498	\$25,879	
Data validation	432	\$21,439			660	\$33,381				900	\$46,444			664	\$33,755	
Data distribution	144	\$6,921			220	\$10,776				300	\$14,992			221	\$10,896	
Element #5 totals	17,032	\$836,076			17,043	\$850,135				16,536	\$840,191			16,887	\$842,134	
6. Quality Assurance																
Audits	14,472	\$786,678			13,752	\$761,849				12,564	\$710,155			13,596	\$752,894	

Table 4.0, Summary of CO 2007-2009 Monitoring Costs

Cost Element	2007 Summary CO					2008 Summary CO					2009 Summary CO					Average 2007-2009 CO				
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$		Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$		Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$		Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	
Routine calibrations	10,452	\$446,050				9,932	\$431,972				9,074	\$402,661				9,819	\$426,695			
Coordination/implementation	1,608	\$85,202				1,528	\$85,418				1,396	\$79,622				1,511	\$84,414			
Training	2,010	\$100,382				1,910	\$97,214				1,745	\$90,618				1,888	\$96,071			
Reporting	2,412	\$131,883				2,292	\$127,721				2,094	\$119,054				2,266	\$126,219			
QA plan review (annual) RO	51	\$2,534				51	\$2,583				51	\$2,635				51	\$2,584			
QA plan preparation (RO)	303	\$17,222				303	\$17,551				303	\$17,907				303	\$17,560			
Precursor CO monitors																				
Audits	1,296	\$70,449				1,980	\$109,690				2,700	\$152,612				1,992	\$110,917			
Routine calibrations	936	\$39,945				1,430	\$62,195				1,950	\$86,532				1,439	\$62,891			
Coordination/implementation	144	\$7,899				220	\$12,298				300	\$17,111				221	\$12,436			
Training	180	\$8,989				275	\$13,997				375	\$19,474				277	\$14,153			
Reporting	216	\$11,810				330	\$18,389				450	\$25,585				332	\$18,595			
QA plan preparation	108	\$6,138				135	\$7,820				165	\$9,782				136	\$7,903			
Element #6 totals	34,188	\$1,718,182				34,138	\$1,748,698				33,167	\$1,733,717				33,831	\$1,733,632			
7. Supervision																				
Planning/coordination	4,824	\$284,767				4,584	\$275,779				4,188	\$257,066				4,532	\$272,637			
Supervision/review	12,060	\$604,394				11,460	\$585,318				10,470	\$545,602				11,330	\$578,438			
Precursor CO monitors																				
Planning/coordination	432	\$25,501				660	\$39,706				900	\$55,243				664	\$40,150			
Supervision/review	1,080	\$54,125				1,650	\$84,274				2,250	\$117,250				1,660	\$85,216			
Element #7 totals	18,396	\$968,787				18,354	\$985,077				17,808	\$975,161				18,186	\$976,342			
Summary Totals																				

Table 4.2, 2008 CO Monitoring Costs

Cost Element	Previous: Amortized Hours and Costs				New: Site Hours and Costs				Summary Carbon Monoxide (CO)				
	# Old Sites	Hours/ Site	Years Amor.	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Non-labor O & M	Equip/ Contract \$
Audits									382	13,752	\$761,849		
Routine calibrations									382	9,932	\$431,972		
Coordination/implementation									382	1,528	\$85,418		
Training									382	1,910	\$97,214		
Reporting									382	2,292	\$127,721		
QA plan review (annual) RO	101	15	5	\$869				\$17,551	101	51	\$2,583		
QA plan preparation (RO)													
Precursor CO monitors													
Audits									55	1,980	\$109,690		
Routine calibrations									55	1,430	\$62,195		
Coordination/implementation									55	220	\$12,298		
Training									55	275	\$13,997		
Reporting									55	330	\$18,389		
QA plan preparation	45	15	5	\$869				\$7,820					
Element #6 totals										33,700	\$1,723,327		
7. Supervision													
Planning/coordination									382	4,584	\$275,779		
Supervision/review									382	11,460	\$585,318		
Precursor CO monitors													
Planning/coordination									55	660	\$39,706		
Supervision/review									55	1,650	\$84,274		
Element #7 totals										18,354	\$985,077		
Summary Totals													

Table 5.0, Summary of NO2 and NOy 2007-2009 Monitoring Costs

Cost Element	2007				2008				2009				Average 2007-2009			
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$
1. Network Design																
Network design study (RO)	394	\$22,438			394	\$22,867			394	\$23,331			394	\$22,878		
Site selection (RO)	105	\$5,754			105	\$5,864			105	\$5,983			105	\$5,867		
Precursor NOy monitors (RO)	154	\$8,780			193	\$11,185			236	\$13,948			194	\$11,304		
Site selection	41	\$2,251			51	\$2,868			63	\$3,577			52	\$2,899		
Element #1 totals	695	\$39,222			744	\$42,784			798	\$46,838			746	\$42,948		
2. Site Installation																
Analyzer				\$651,373				\$630,027				\$504,804				\$595,401
Spare analyzers				\$32,569												\$10,856
Procurement	448	\$11,516			405	\$10,608			318	\$8,500			390	\$10,208		
Equipment installation	853	\$37,858			809	\$36,617			635	\$29,339			766	\$34,605		
Precursor NOy monitors				\$110,152				\$140,325				\$174,988				\$141,822
Analyzer	21	\$1,059			26	\$1,348			31	\$1,682			26	\$1,363		
Procurement	82	\$3,654			103	\$4,655			126	\$5,804			104	\$4,704		
Equipment installation	1,403	\$54,086		\$794,094	1,342	\$53,228		\$770,352	1,110	\$45,325		\$679,792	1,285	\$50,880		\$748,079
3. Supplies and Site Visits																
Supplies			\$311,768				\$301,551				\$241,615				\$284,978	
Routine site visits	44,760	\$1,986,744			42,480	\$1,921,636			33,360	\$1,539,694			40,200	\$1,816,025		
Precursor NOy monitors			\$29,254				\$46,851				\$65,184				\$47,097	
Supplies	4,200	\$186,424			6,600	\$298,559			9,000	\$415,385			6,600	\$300,123		
Routine site visits	48,960	\$2,173,167	\$341,023		49,080	\$2,220,195	\$348,403		42,360	\$1,955,079	\$306,799		46,800	\$2,116,147	\$332,075	
Element #3 totals			\$389,710				\$376,939				\$302,019				\$356,223	
4. Maintenance																
Spare parts/supplies			\$291,114				\$281,574				\$225,608				\$266,099	
Remedial repairs	5,988	\$291,114			5,664	\$281,574			4,448	\$225,608			5,360	\$266,099		
Routine maintenance	26,110	\$1,283,706			24,780	\$1,241,638			19,460	\$994,851			23,450	\$1,173,398		
Precursor NOy monitors			\$36,568				\$58,564				\$81,480				\$68,871	
Spare parts/supplies	560	\$27,316			880	\$43,747			1,200	\$60,866			880	\$43,976		
Remedial repairs	2,450	\$120,455			3,850	\$192,910			5,250	\$268,395			3,850	\$193,920		
Routine maintenance	35,088	\$1,722,591	\$428,278		35,174	\$1,759,868	\$435,503		30,358	\$1,543,720	\$383,499		33,540	\$1,677,393	\$415,094	
Element #4 totals			\$377,629				\$365,254				\$292,657				\$345,180	
5 Data Management																
Data acquisition/processing	7,460	\$377,629			7,080	\$365,254			5,560	\$292,657			6,700	\$345,180		
Data reporting	3,730	\$192,907			3,540	\$186,585			2,780	\$149,500			3,350	\$176,330		
Data validation	5,595	\$278,253			5,310	\$269,135			4,170	\$215,642			5,025	\$254,343		
Data distribution	1,865	\$91,972			1,390	\$88,958			1,390	\$71,277			1,675	\$84,069		
Precursor NOy monitors			\$35,434				\$66,749				\$78,954				\$70,046	
Data acquisition/processing	700	\$35,434			1,100	\$66,749			1,500	\$78,954			1,100	\$70,046		
Data reporting	350	\$18,101			550	\$28,989			750	\$40,333			550	\$29,141		
Data validation	525	\$26,110			825	\$41,815			1,125	\$58,177			825	\$42,034		
Data distribution	175	\$8,630			275	\$13,821			375	\$19,229			275	\$13,893		
Element #5 totals	20,400	\$1,029,036			20,450	\$1,051,305			17,650	\$925,767			19,500	\$1,002,036		
6. Quality Assurance																
Audits	26,856	\$1,469,208			25,488	\$1,421,061			20,016	\$1,138,612			24,120	\$1,342,960		

Table 5.1, 2007 NO2 and NOy Monitoring Costs

Cost Element	Previous Amortized Hours and Costs					New Site Hours and Costs					Summary NO2/NOy					
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O. & M.	Labor Costs	Non-labor O. & M.	Equip/ Contract \$
1. Network Design																
Network design study (RO)	92	30	7	\$1,707	\$22,438							394		\$22,438		
Site selection (RO)	92	8	7	\$438	\$5,754							105		\$5,754		
Precursor NOy monitors (RO)	36	30	7	\$1,707	\$6,780							154		\$6,780		
Network design study	36	8	7	\$438	\$2,251							41		\$2,251		
Site selection	36	8	7	\$438	\$2,251							41		\$2,251		
Element #1 totals					\$39,222							695		\$39,222		
2. Site Installation																
Analyzer	373		7	\$12,224	\$651,373											\$651,373
Spare analyzers	19		7	\$12,224	\$32,569											\$32,569
Procurement	392	8	7	\$206	\$11,516							448		\$11,516		
Equipment installation	373	16	7	\$710	\$37,858							853		\$37,858		
Precursor NOy monitors	36		7	\$21,418	\$110,152											\$110,152
Analyzer	36	4	7	\$206	\$1,059							21		\$1,059		
Procurement	36	4	7	\$206	\$1,059							21		\$1,059		
Equipment installation	36	16	7	\$710	\$3,654							82		\$3,654		
Element #2 totals					\$848,179							1,403		\$54,086		\$794,094
3. Supplies and Site Visits																
Supplies																
Routine site visits																
Precursor NOy monitors																
Supplies																
Routine site visits																
Element #3 totals																
4. Maintenance																
Spare parts/supplies																
Remedial repairs																
Routine maintenance																
Precursor NOy monitors																
Spare parts/supplies																
Remedial repairs																
Routine maintenance																
Element #4 totals																
5 Data Management																
Data acquisition/processing																
Data reporting																
Data validation																
Data distribution																
Precursor NOy monitors																
Data acquisition/processing																
Data reporting																
Data validation																
Data distribution																
Element #5 totals												20,400	\$1,029,036	\$1,029,036		

Table 5.2, 2008 NO2 and NOy Monitoring Costs

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs				Summary NO2/NOy								
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amort. Hours	Total Amort. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amort. Hours	Total Amort. Cost	Labor Hours	Labor O & M	Non-labor O & M	Equip/ Contract \$	
1. Network Design																	
Network design study (RO)	92	30	7	\$1,740	394	\$22,867							394		\$22,867		
Site selection (RO)	92	8	7	\$446	105	\$5,864							105		\$5,864		
Precursor NOy monitors (RO)	45	30	7	\$1,740	193	\$11,185							193		\$11,185		
Network design study	45	8	7	\$446	51	\$2,868							51		\$2,868		
Element #1: totals					744	\$42,784							744		\$42,784		
2. Site Installation																	
Analyzer	354		7	\$12,458		\$630,027											\$630,027
Spare analyzers	354	8	7	\$210	405	\$10,608							405		\$10,608		
Procurement	354	16	7	\$724	809	\$36,617							809		\$36,617		
Equipment installation																	
Precursor NOy monitors	45	45	7	\$21,828	26	\$1,348							26		\$1,348		\$140,325
Analyzer	45	4	7	\$210	103	\$4,655							103		\$4,655		
Procurement	45	16	7	\$724													
Equipment installation																	
Element #2: totals					1,342	\$823,581							1,342		\$59,228		\$770,352
3. Supplies and Site Visits																	
Supplies																	
Routine site visits																	
Precursor NOy monitors																	
Supplies																	
Routine site visits																	
Element #3: totals													49,080	\$2,220,195	\$2,220,195		\$348,403
4. Maintenance																	
Spare parts/supplies																	
Remedial repairs																	
Routine maintenance																	
Precursor NOy monitors																	
Spare parts/supplies																	
Remedial repairs																	
Routine maintenance																	
Element #4: totals													35,174	\$1,759,868	\$1,759,868		\$435,503
5 Data Management																	
Data acquisition/processing																	
Data reporting																	
Data validation																	
Data distribution																	
Precursor NOy monitors																	
Data acquisition/processing																	
Data reporting																	
Data validation																	
Data distribution																	
Element #5: totals													20,450	\$1,051,305	\$1,051,305		\$13,821

Table 6.0, Summary of O3 2007-2009 Monitoring Costs

Cost Element	2007			2008			2009			Average 2007-2009		
	Labor Hours	Labor Costs	Equip/Contract \$	Labor Hours	Labor Costs	Equip/Contract \$	Labor Hours	Labor Costs	Equip/Contract \$	Labor Hours	Labor Costs	Equip/Contract \$
1. Network Design												
Network design study (RO)	579	\$32,925		579	\$33,655		579	\$34,236		579	\$33,572	
Site selection (RO)	154	\$8,443		154	\$8,604		154	\$8,779		154	\$8,609	
Element #1 totals	733	\$41,367		733	\$42,159		733	\$43,014		733	\$42,180	
2. Site Installation												
Analyzer			\$1,279,910			\$1,304,410			\$1,330,871			\$1,305,064
Spare analyzers	1,633	\$42,024	\$255,982	1,633	\$42,828	\$260,882	1,633	\$43,697	\$266,174	1,633	\$42,850	\$261,013
Procurement	2,722	\$120,880		2,722	\$123,194		2,722	\$125,693		2,722	\$123,256	
Equipment installation	4,356	\$162,904		4,356	\$166,022		4,356	\$169,390		4,356	\$166,106	
Element #2 totals	8,711	\$325,708		8,711	\$332,044		8,711	\$338,173		8,711	\$332,262	
3. Supplies and Site Visits												
Supplies												
4 month season			\$836			\$852						\$852
5 month season			\$15,324			\$15,617						\$15,625
6 month season			\$71,046			\$72,406						\$72,443
7 month season			\$215,995			\$220,130						\$220,240
8 month season			\$104,201			\$106,196						\$106,249
9 month season			\$4,368			\$4,472						\$4,474
12 month season			\$281,678			\$287,070						\$287,214
Routine site visits												
4 month season	120	\$5,326		120	\$5,428		120	\$5,538		120	\$5,431	
5 month season	2,200	\$97,650		2,200	\$99,520		2,200	\$101,539		2,200	\$99,570	
6 month season	10,200	\$452,743		10,200	\$461,410		10,200	\$470,770		10,200	\$461,641	
7 month season	31,010	\$1,376,428		31,010	\$1,402,776		31,010	\$1,431,232		31,010	\$1,403,479	
8 month season	14,960	\$664,023		14,960	\$676,734		14,960	\$690,462		14,960	\$677,073	
9 month season	630	\$27,964		630	\$28,499		630	\$29,077		630	\$28,513	
12 month season	40,440	\$1,794,994		40,440	\$1,829,354		40,440	\$1,866,463		40,440	\$1,830,270	
Element #3 totals	99,560	\$4,419,129		99,560	\$4,503,721		99,560	\$4,595,082		99,560	\$4,505,977	
4. Maintenance												
Spare parts/supplies												
4 month season			\$1,045			\$1,065						\$1,065
5 month season			\$19,155			\$19,521						\$19,531
6 month season			\$88,808			\$90,508						\$90,553
7 month season			\$269,994			\$275,162						\$275,300
8 month season			\$130,252			\$132,745						\$132,812
9 month season			\$5,485			\$5,590						\$5,593
12 month season			\$352,098			\$359,838						\$359,017
Remedial repairs												
4 month season	12	\$549		12	\$559		12	\$570		12	\$559	
5 month season	220	\$10,056		220	\$10,249		220	\$10,457		220	\$10,254	
6 month season	1,020	\$46,624		1,020	\$47,517		1,020	\$48,481		1,020	\$47,541	
7 month season	3,101	\$141,747		3,101	\$144,480		3,101	\$147,391		3,101	\$144,532	
8 month season	1,496	\$68,382		1,496	\$69,691		1,496	\$71,105		1,496	\$69,726	
9 month season	63	\$2,880		63	\$2,935		63	\$2,994		63	\$2,936	
12 month season	4,044	\$184,851		4,044	\$188,390		4,044	\$192,211		4,044	\$188,484	
Routine maintenance												
4 month season	56	\$2,699		56	\$2,750		56	\$2,806		56	\$2,752	
5 month season	1,027	\$49,477		1,027	\$50,424		1,027	\$51,446		1,027	\$50,449	
6 month season	4,760	\$229,391		4,760	\$233,782		4,760	\$238,525		4,760	\$233,899	

Table 6.1, 2007 O3 Monitoring Costs

Aug 2006

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs for Precursor O3				Summary Ozone (O3)									
	# Old Sites	Hours Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract \$	
1. Network Design																		
Network design study (RO)	135	30	7	\$1,707	579	\$32,925								579	\$32,925			
Site selection (RO)	135	8	7	\$438	154	\$8,443								154	\$8,443			
Element #1 totals					733	\$41,367								733	\$41,367			
2. Site Installation																		
Analyzer	1,191		7	\$7,523		\$1,279,910							1191				\$1,279,910	
Spare analyzers	238		7	\$7,523		\$255,982											\$255,982	
Procurement	1,429	8	7	\$206	1,633	\$42,024								1,633	\$42,024			
Equipment installation	1,191	16	7	\$710	2,722	\$120,880								2,722	\$120,880			
Element #2 totals					4,356	\$1,698,796								4,356	\$162,904			
3. Supplies and Site Visits																		
Supplies																		
4 month season													3			\$836		
5 month season													44			\$15,324		
6 month season													170			\$71,046		
7 month season													443			\$215,995		
8 month season													187			\$104,201		
9 month season													7			\$4,388		
12 month season													337			\$281,678		
Routine site visits																		
4 month season													3	120	\$5,326			
5 month season													44	2,200	\$97,650			
6 month season													170	10,200	\$452,743			
7 month season													443	31,010	\$1,376,428			
8 month season													187	14,960	\$664,023			
9 month season													7	630	\$27,964			
12 month season													337	40,440	\$1,794,994			
Element #3 totals														99,560	\$4,419,129	\$693,469		
4. Maintenance																		
Spare parts/supplies																		
4 month season													3			\$1,045		
5 month season													44			\$19,155		
6 month season													170			\$88,808		
7 month season													443			\$269,994		
8 month season													187			\$130,252		
9 month season													7			\$5,485		
12 month season													337			\$352,098		
Remedial repairs																		
4 month season													3	12	\$549			
5 month season													44	220	\$10,056			
6 month season													170	1,020	\$46,624			
7 month season													443	3,101	\$141,747			
8 month season													187	1,496	\$68,382			
9 month season													7	63	\$2,880			

Table 6.1, 2007 O3 Monitoring Costs

Aug 2006

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs for Precursor O3				Summary/Ozone (O3)							
	# Old Sites	Hours/ Site	Years Amort.	Cost/ Site	Total Hours	Total Amort. Cost	# New Sites	Hours/ Site	Years Amort.	Cost/ Site	Total Hours	Total Amort. Cost	Labor Hours	Labor O&M	Non-labor O&M	Equip/ Contract \$
12 month season													4,044	\$184,851		
Routine maintenance													56	\$2,699		
4 month season													1,027	\$49,477		
5 month season													4,760	\$229,391		
6 month season													14,471	\$697,394		
7 month season													6,981	\$336,440		
8 month season													294	\$14,168		
9 month season													18,872	\$909,468		
12 month season													56,417	\$2,694,125	\$866,836	
Element #4 totals																
5. Data Management																
Data acquisition/processing																
4 month season													14	\$664		
5 month season													257	\$12,182		
6 month season													1,190	\$56,482		
7 month season													3,618	\$171,716		
8 month season													1,745	\$82,840		
9 month season													74	\$3,489		
12 month season													4,718	\$223,934		
Data reporting																
4 month season													9	\$457		
5 month season													165	\$8,371		
6 month season													765	\$38,809		
7 month season													2,326	\$117,987		
8 month season													1,122	\$56,920		
9 month season													47	\$2,397		
12 month season													3,033	\$153,867		
Data validation																
4 month season													12	\$596		
5 month season													220	\$10,918		
6 month season													1,020	\$50,621		
7 month season													3,101	\$153,896		
8 month season													1,496	\$74,243		
9 month season													63	\$3,127		
12 month season													4,044	\$200,696		
Data distribution																
4 month season													4	\$192		
5 month season													73	\$3,524		
6 month season													340	\$16,341		
7 month season													1,034	\$49,679		
8 month season													499	\$23,966		
9 month season													21	\$1,009		
12 month season													1,348	\$64,786		
Element #5 totals													32,357	\$1,583,709		

Table 6.1, 2007 O3 Monitoring Costs

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs for Precursor O3				Summary Ozone (O3)								
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Non-labor O & M	Equip/ Contract \$
6. Quality Assurance																	
Audits																	
4 month season														36	\$1,957		
5 month season														660	\$35,877		
6 month season														3,060	\$166,337		
7 month season														9,303	\$505,698		
8 month season														4,488	\$243,961		
9 month season														189	\$10,274		
12 month season														12,132	\$659,479		
Routine calibrations																	
4 month season														26	\$1,110		
5 month season														477	\$20,342		
6 month season														2,210	\$94,314		
7 month season														6,719	\$286,733		
8 month season														3,241	\$138,327		
9 month season														137	\$5,825		
12 month season														8,762	\$373,928		
Coordination/implementation																	
4 month season														4	\$219		
5 month season														59	\$4,022		
6 month season														227	\$18,650		
7 month season														591	\$56,699		
8 month season														249	\$27,353		
9 month season														9	\$1,152		
12 month season														449	\$73,940		
Training														5,955	\$297,401		
Reporting																	
4 month season														6	\$328		
5 month season														110	\$6,015		
6 month season														510	\$27,886		
7 month season														1,551	\$84,778		
8 month season														748	\$40,899		
9 month season														32	\$1,722		
12 month season														2,022	\$110,559		
QA plan review (annual)														63	\$3,136		
QA plan preparation (RO)														405	\$23,019		
Element #6 totals	135	15	5	\$853	405	\$23,019								64,428	\$3,321,941		
7. Supervision																	
Planning/coordination																	
4 month season														12	\$708		
5 month season														220	\$12,987		
6 month season														1,020	\$60,212		
7 month season														3,101	\$183,056		
8 month season														1,496	\$88,311		

Table 6.1, 2007 O3 Monitoring Costs

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs for Precursor O3				Summary Ozone (O3)										
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O&M	Labor Costs	Non-labor O & M	Equip/ Contract, \$	
9 month season													7	63	\$3,719	\$3,719			
12 month season													337	4,044	\$238,722	\$238,722			
Supervision/review																			
4 month season													3	30	\$1,503	\$1,503			
5 month season													44	550	\$27,564	\$27,564			
6 month season													170	2,550	\$127,795	\$127,795			
7 month season													443	7,753	\$388,521	\$388,521			
8 month season													187	3,740	\$187,432	\$187,432			
9 month season													7	158	\$7,893	\$7,893			
12 month season													337	10,110	\$506,668	\$506,668			
Element #7 totals														34,846	\$1,835,091	\$1,835,091			
Summary Totals																			

Aug 2006

\$1,835,091

Table 6.2, 2008 O3 Monitoring Costs

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs for Precursor O3				Summary Ozone (O3)				Equip/Contract \$				
	# Old Sites	Hours/Site	Years Amor.	Cost/Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/Site	Years Amor.	Cost/Site	Total Amor. Hours	Total Amor. Cost		Labor Hours	Labor O & M	Labor Costs	Non-labor O & M
1. Network Design																	
Network design study (RO)	135	30	7	\$1,740	579	\$33,555									579	\$33,555	
Site selection (RO)	135	8	7	\$446	154	\$8,604									154	\$8,604	
Element #1 totals					733	\$42,159									733	\$42,159	
2. Site Installation																	
Analyzer	1,191		7	\$7,667		\$1,304,410											\$1,304,410
Spare analyzers	238		7	\$7,667		\$260,882											\$260,882
Procurement	1,429	8	7	\$210	1,633	\$42,828									1,633	\$42,828	
Equipment installation	1,191	16	7	\$724	2,722	\$123,194									2,722	\$123,194	
Element #2 totals					4,356	\$1,731,315									4,356	\$166,022	\$1,565,293
3. Supplies and Site Visits																	
Supplies																	
4 month season																	\$852
5 month season																	\$15,617
6 month season																	\$72,406
7 month season																	\$220,130
8 month season																	\$106,196
9 month season																	\$4,472
12 month season																	\$287,070
Routine site visits																	
4 month season																	
5 month season																	\$5,428
6 month season																	\$99,520
7 month season																	\$461,410
8 month season																	\$1,402,776
9 month season																	\$676,734
12 month season																	\$28,499
Element #3 totals																	\$706,743
4. Maintenance																	
Spare parts/supplies																	
4 month season																	\$1,065
5 month season																	\$19,521
6 month season																	\$90,508
7 month season																	\$275,162
8 month season																	\$132,745
9 month season																	\$5,590
12 month season																	\$358,838
Remedial repairs																	
4 month season																	
5 month season																	\$559
6 month season																	\$10,249
7 month season																	\$47,517
8 month season																	\$144,460
Element #4 totals																	\$69,691

Table 6.2, 2008 O3 Monitoring Costs

Aug 2006

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs for Precursor O3				Summary Ozone (O3)					
	# Old Sites	Hours/ Site	Years Amor.	Total Hours/ Cost	# New Sites	Hours/ Site	Years Amor.	Total Hours/ Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Costs	Non-labor O & M	Equip/ Contract \$
9 month season									7	63	\$2,935	\$2,935		
12 month season									337	4,044	\$188,390	\$188,390		
Routine maintenance														
4 month season									3	56	\$2,750	\$2,750		
5 month season									44	1,027	\$50,424	\$50,424		
6 month season									170	4,760	\$233,782	\$233,782		
7 month season									443	14,471	\$710,744	\$710,744		
8 month season									187	6,981	\$342,881	\$342,881		
9 month season									7	294	\$14,439	\$14,439		
12 month season									337	18,872	\$926,878	\$926,878		
Element #4 totals										56,417	\$2,745,698	\$2,745,698	\$883,429	
5. Data Management														
Data acquisition/processing														
4 month season									3	14	\$677	\$677		
5 month season									44	257	\$12,416	\$12,416		
6 month season									170	1,190	\$57,563	\$57,563		
7 month season									443	3,618	\$175,003	\$175,003		
8 month season									187	1,745	\$84,426	\$84,426		
9 month season									7	74	\$3,555	\$3,555		
12 month season									337	4,718	\$228,221	\$228,221		
Data reporting														
4 month season									3	9	\$465	\$465		
5 month season									44	165	\$8,531	\$8,531		
6 month season									170	765	\$39,552	\$39,552		
7 month season									443	2,326	\$120,246	\$120,246		
8 month season									187	1,122	\$58,010	\$58,010		
9 month season									7	47	\$2,443	\$2,443		
12 month season									337	3,033	\$156,812	\$156,812		
Data validation														
4 month season									3	12	\$607	\$607		
5 month season									44	220	\$11,127	\$11,127		
6 month season									170	1,020	\$51,590	\$51,590		
7 month season									443	3,101	\$156,842	\$156,842		
8 month season									187	1,496	\$75,665	\$75,665		
9 month season									7	63	\$3,186	\$3,186		
12 month season									337	4,044	\$204,537	\$204,537		
Data distribution														
4 month season									3	4	\$196	\$196		
5 month season									44	73	\$3,592	\$3,592		
6 month season									170	340	\$16,653	\$16,653		
7 month season									443	1,034	\$50,630	\$50,630		
8 month season									187	499	\$24,425	\$24,425		
9 month season									7	21	\$1,029	\$1,029		

Table 6.2, 2008 O3 Monitoring Costs

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs for Precursor O3				Summary Ozone (O3)					
	# Old Sites	Hours/ Site	Years Amor.	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Costs	Non-Labor O & M	Equip/ Contract \$
12 month season										1,348	\$66,026	\$66,026		
Element #5 totals										32,357	\$1,614,025	\$1,614,025		
6. Quality Assurance														
Audits														
4 month season										36	\$1,994	\$1,994		
5 month season										660	\$36,563	\$36,563		
6 month season										3,060	\$169,521	\$169,521		
7 month season										9,303	\$515,379	\$515,379		
8 month season										4,488	\$248,632	\$248,632		
9 month season										189	\$10,470	\$10,470		
12 month season										12,132	\$672,103	\$672,103		
Routine calibrations														
4 month season										26	\$1,131	\$1,131		
5 month season										477	\$20,732	\$20,732		
6 month season										2,210	\$96,119	\$96,119		
7 month season										6,719	\$292,222	\$292,222		
8 month season										3,241	\$140,975	\$140,975		
9 month season										137	\$5,937	\$5,937		
12 month season										8,762	\$381,086	\$381,086		
Coordination/implementation														
4 month season										4	\$224	\$224		
5 month season										59	\$4,099	\$4,099		
6 month season										227	\$19,007	\$19,007		
7 month season										591	\$57,784	\$57,784		
8 month season										249	\$27,876	\$27,876		
9 month season										9	\$1,174	\$1,174		
12 month season										449	\$75,356	\$75,356		
Training														
Reporting														
4 month season										6	\$334	\$334		
5 month season										110	\$6,130	\$6,130		
6 month season										510	\$28,420	\$28,420		
7 month season										1,551	\$86,401	\$86,401		
8 month season										748	\$41,682	\$41,682		
9 month season										32	\$1,755	\$1,755		
12 month season										2,022	\$112,675	\$112,675		
QA plan review (annual)														
QA plan preparation (RO)														
Element #6 totals	135	15	5	\$869	405	\$23,460				64,023	\$3,362,072	\$3,362,072	64,428	\$3,385,531
7. Supervision														
Planning/coordination														
4 month season										12	\$722	\$722		
5 month season										220	\$13,235	\$13,235		

Table 6.2, 2008 O3 Monitoring Costs

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs for Precursor O3				Summary Ozone (O3)										
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O&M	Labor Costs	Not-labor O & M	Equip/ Contract \$	
6 month season							170	1,020					170	1,020	\$61,364	\$61,364			
7 month season							443	3,101					443	3,101	\$186,560	\$186,560			
8 month season							187	1,496					187	1,496	\$90,001	\$90,001			
9 month season							7	63					7	63	\$3,790	\$3,790			
12 month season							337	4,044					337	4,044	\$243,292	\$243,292			
Supervision/review																			
4 month season							3	30					3	30	\$1,532	\$1,532			
5 month season							44	550					44	550	\$28,091	\$28,091			
6 month season							170	2,550					170	2,550	\$130,241	\$130,241			
7 month season							443	7,753					443	7,753	\$395,958	\$395,958			
8 month season							187	3,740					187	3,740	\$191,020	\$191,020			
9 month season							7	158					7	158	\$8,044	\$8,044			
12 month season							337	10,110					337	10,110	\$516,367	\$516,367			
Element #7 totals								34,846						34,846	\$1,870,219	\$1,870,219			
Summary Totals																			

Table 6.3, 2009 O3 Monitoring Costs

Aug 2006

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs for Precursor O3				Summary Ozone (O3)									
	# Old Sites	Hours/Site	Years Amor.	Cost/Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/Site	Years Amor.	Cost/Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Non-labor O & M	Equip/Contract \$	
1. Network Design																		
Network design study (RO)	135	30	7	\$1,775	579	\$34,236								579	\$34,236			
Site selection (RO)	135	8	7	\$455	154	\$8,779								154	\$8,779			
Element #1 totals					733	\$43,014								733	\$43,014			
2. Site Installation																		
Analyzer	1,191		7	\$7,822		\$1,330,871												\$1,330,871
Spare analyzers	238		7	\$7,822		\$266,174												\$266,174
Procurement	1,429	8	7	\$214	1,633	\$43,697								1,633	\$43,697			
Equipment installation	1,191	16	7	\$739	2,722	\$125,693								2,722	\$125,693			
Element #2 totals					4,366	\$1,766,436								4,366	\$169,390			
3. Supplies and Site Visits																		
Supplies																		
4 month season													3				\$869	
5 month season													44				\$15,934	
6 month season													170				\$73,875	
7 month season													443				\$224,595	
8 month season													187				\$108,350	
9 month season													7				\$4,563	
12 month season													337				\$292,893	
Routine site visits																		
4 month season													3	120	\$5,538			
5 month season													44	2,200	\$101,539			
6 month season													170	10,200	\$470,770			
7 month season													443	31,010	\$1,431,232			
8 month season													187	14,960	\$690,462			
9 month season													7	630	\$29,077			
12 month season													337	40,440	\$1,866,463			
Element #3 totals														99,560	\$4,595,082			\$721,080
4. Maintenance																		
Spare parts/supplies																		
4 month season													3				\$1,086	
5 month season													44				\$19,917	
6 month season													170				\$92,344	
7 month season													443				\$280,744	
8 month season													187				\$135,438	
9 month season													7				\$5,704	
12 month season													337				\$366,117	
Remedial repairs																		
4 month season													3	12	\$570			
5 month season													44	220	\$10,457			
6 month season													170	1,020	\$48,481			
7 month season													443	3,101	\$147,391			
8 month season													187	1,496	\$71,105			
9 month season													7	63	\$2,994			
12 month season													337	4,044	\$192,211			

Table 7.0, Summary of PM-10 2007-2009 Monitoring Costs

Aug 2006

Cost Element	2007			2008			2009			Average 2007-2009 PM-10			
	Labor Hours	Labor Costs	Non-labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$
1. Network Design													
Network design (reporting org)	591	\$33,656		591	\$34,301		591	\$34,996		591	\$34,318		
Site selection (reporting org)	197	\$8,898		197	\$9,068		197	\$9,252		197	\$9,073		
Element #1: totals	789	\$42,554		789	\$43,369		789	\$44,249		789	\$43,391		
2. Site Installation													
Analyzer													
PM-10 sampler													\$857,413
PM-10 sampler spares													\$42,871
PM-10 sampler (continuous)													\$484,818
PM-10 sampler (continuous) spares													\$24,241
Sampling platform													\$257,816
Procurement	865	\$39,774			\$35,223			\$25,430		716	\$33,476		
Equipment installation													
PM-10 sampler	721	\$30,679		613	\$26,580		429	\$18,973		567	\$25,411		
PM-10 sampler (continuous)	259	\$13,319		259	\$13,574		259	\$13,849		259	\$13,560		
Element #2: totals	1,844	\$83,772		1,623	\$75,376		1,219	\$56,253		1,562	\$72,467		\$1,667,158
3. Sampling & analysis													
Filter cost													
Filter (1/1) & acceptance testing			\$80,962										\$67,062
Filter (1/2) & acceptance testing			\$3,238										\$2,682
Filter (1/3) & acceptance testing			\$29,551										\$24,478
Filter (1/6) & acceptance testing			\$161,316										\$133,621
Filter tape continuous			\$94,554										\$96,413
Site visits													
Routine site visits (1/1)	9,000	\$414,916		7,650	\$359,430		5,355	\$256,705		7,335	\$343,664		
Routine site visits (1/2)	720	\$33,193		612	\$28,764		428	\$20,536		587	\$27,485		
Routine site visits (1/3)	13,140	\$640,976		\$11,169	\$55,259		7,818	\$396,566		10,709	\$530,934		
Routine site visits (1/6)	143,460	\$6,998,058		\$121,941	\$6,082,215		85,359	\$4,329,633		116,920	\$5,796,635		
Routine site visits (continuous)	5,792	\$268,156		\$5,792	\$273,289		5,792	\$278,833		5,792	\$273,426		
Laboratory service													
Microbalance													\$115,147
Laboratory													
PM-10 sampler 1/1	3,600	\$153,742		\$3,060	\$133,183		2,142	\$95,119		2,934	\$127,348		
PM-10 sampler 1/2	144	\$6,150		122	\$5,327		86	\$3,805		117	\$5,094		
PM-10 sampler 1/3	1,768	\$49,881		\$993	\$43,210		695	\$30,861		952	\$41,317		
PM-10 sampler 1/6 & collocated	6,376	\$272,295		\$5,420	\$235,881		3,794	\$168,466		5,196	\$225,547		
Element #3: totals	183,400	\$8,837,368	\$369,621	155,759	\$7,696,549	\$334,647	111,469	\$5,280,524	\$288,501	150,543	\$7,371,460	\$324,256	\$115,147
4. Maintenance													
Spare parts/supplies													
PM-10 sampler 1/1			\$658,224										\$527,844
PM-10 sampler 1/2			\$14,105										\$11,683
PM-10 sampler 1/3			\$63,897										\$67,218
PM-10 sampler 1/6 & collocated			\$129,069										\$103,624
PM-10 continuous			\$104,955										\$107,018
Remedial repairs													
PM-10 sampler 1/1	10,800	\$460,757		\$8,690	\$377,853		6,063	\$269,862		8,525	\$369,491		
PM-10 sampler 1/2	324	\$13,823		\$275	\$11,974		193	\$8,552		264	\$11,450		
PM-10 sampler 1/3	1,752	\$74,745		\$1,408	\$6,202		985	\$43,710		1,362	\$59,866		
PM-10 sampler 1/6 & collocated	4,782	\$204,013		\$3,856	\$167,639		2,699	\$119,728		3,779	\$163,793		
PM-10 continuous	1,358	\$64,959		\$1,358	\$66,202		1,358	\$67,545		1,358	\$66,236		

Table 7.0, Summary of PM-10, 2007-2009 Monitoring Costs

Cost Element	2007						2008						2009						Average 2007-2009 PM-10					
	Summary PM-10		Summary PM-10		Summary PM-10		Summary PM-10		Summary PM-10		Summary PM-10		Summary PM-10		Summary PM-10		Summary PM-10		Summary PM-10		Summary PM-10			
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$
Routine maintenance	10,800	\$460,757			8,690	\$377,853			6,083	\$269,862			8,525	\$369,491			8,525	\$369,491			8,525	\$369,491		
PM-10 sampler 1/1	324	\$13,823			\$275	\$11,974			193	\$8,552			264	\$11,450			264	\$11,450			264	\$11,450		
PM-10 sampler 1/2	1,752	\$74,745			\$1,408	\$61,202			985	\$43,710			1,382	\$59,886			1,382	\$59,886			1,382	\$59,886		
PM-10 sampler 1/3	4,782	\$204,013			\$3,956	\$167,639			2,699	\$119,728			3,779	\$163,793			3,779	\$163,793			3,779	\$163,793		
PM-10 sampler 1/6 & collocated	2,534	\$117,629			\$2,534	\$119,877			2,534	\$122,309			2,534	\$119,937			2,534	\$119,937			2,534	\$119,937		
PM-10 continuous	39,208	\$1,689,959	\$990,251		32,350	\$1,423,415	\$633,726		23,812	\$1,073,559	\$628,187		31,730	\$1,395,411	\$617,398		31,730	\$1,395,411	\$617,398		31,730	\$1,395,411	\$617,398	
Element #4 totals																								
5. Data Management																								
Data acquisition/processing																								
PM-10 sampler 1/1	14,400	\$885,155			\$11,587	\$725,869			8,111	\$518,430			11,366	\$709,824			11,366	\$709,824			11,366	\$709,824		
PM-10 sampler 1/2	432	\$19,916			\$367	\$17,253			257	\$12,322			352	\$16,497			352	\$16,497			352	\$16,497		
PM-10 sampler 1/3	2,336	\$107,694			\$1,877	\$88,180			1,314	\$62,978			1,842	\$86,284			1,842	\$86,284			1,842	\$86,284		
PM-10 sampler 1/6 & collocated	6,376	\$293,945			\$5,141	\$241,537			3,599	\$172,506			5,038	\$235,996			5,038	\$235,996			5,038	\$235,996		
PM-10 continuous	2,172	\$106,090			\$2,172	\$108,121			2,172	\$110,314			2,172	\$108,175			2,172	\$108,175			2,172	\$108,175		
Data reporting																								
PM-10 sampler 1/1	10,800	\$556,669			\$6,690	\$466,508			6,083	\$326,038			8,525	\$446,405			8,525	\$446,405			8,525	\$446,405		
PM-10 sampler 1/2	324	\$16,700			\$275	\$14,467			193	\$10,332			264	\$13,833			264	\$13,833			264	\$13,833		
PM-10 sampler 1/3	1,752	\$90,304			\$1,408	\$73,941			985	\$52,809			1,382	\$72,352			1,382	\$72,352			1,382	\$72,352		
PM-10 sampler 1/6 & collocated	4,782	\$246,481			\$3,956	\$202,535			2,699	\$144,651			3,779	\$197,889			3,779	\$197,889			3,779	\$197,889		
PM-10 continuous	3,620	\$161,877			\$3,620	\$164,976			3,620	\$168,322			3,620	\$165,058			3,620	\$165,058			3,620	\$165,058		
Data validation																								
PM-10 sampler 1/1	18,000	\$930,917			\$14,484	\$763,417			10,139	\$545,232			14,208	\$746,522			14,208	\$746,522			14,208	\$746,522		
PM-10 sampler 1/2	540	\$27,928			\$459	\$24,193			321	\$17,278			440	\$23,133			440	\$23,133			440	\$23,133		
PM-10 sampler 1/3	2,920	\$151,015			\$2,346	\$123,652			1,642	\$88,312			2,303	\$120,993			2,303	\$120,993			2,303	\$120,993		
PM-10 sampler 1/6 & collocated	7,970	\$412,189			\$6,426	\$338,699			4,498	\$241,899			6,298	\$330,929			6,298	\$330,929			6,298	\$330,929		
PM-10 continuous	3,620	\$180,599			\$3,620	\$184,056			3,620	\$187,790			3,620	\$184,148			3,620	\$184,148			3,620	\$184,148		
Data distribution																								
PM-10 sampler 1/1	900	\$48,897			\$2,897	\$160,395			2,028	\$114,554			1,942	\$107,948			1,942	\$107,948			1,942	\$107,948		
PM-10 sampler 1/2	36	\$1,956			\$92	\$5,083			64	\$3,630			64	\$3,556			64	\$3,556			64	\$3,556		
PM-10 sampler 1/3	292	\$15,864			\$469	\$25,979			328	\$18,554			363	\$20,133			363	\$20,133			363	\$20,133		
PM-10 sampler 1/6 & collocated	1,280	\$69,542			\$1,285	\$71,161			900	\$50,823			1,155	\$63,842			1,155	\$63,842			1,155	\$63,842		
PM-10 continuous	1,086	\$56,354			\$1,086	\$57,433			1,086	\$58,598			1,086	\$57,462			1,086	\$57,462			1,086	\$57,462		
Element #5 totals	83,638	\$4,380,092			72,157	\$3,847,474			53,659	\$2,905,373			69,816	\$3,710,980			69,816	\$3,710,980			69,816	\$3,710,980		
6. Quality Assurance																								
Audit/calibration kit																								
PM-10 sampler																								
PM-10 sampler (continuous)																								
QA plan preparation (RO)																								
QA plan review (annual)	442	\$22,723			\$442	\$23,158		\$2,864	442	\$23,628			442	\$23,170			442	\$23,170			442	\$23,170		
Audits																								
PM-10 sampler 1/1	5,400	\$239,782			\$4,590	\$207,716			3,213	\$148,351			4,401	\$198,616			4,401	\$198,616			4,401	\$198,616		
PM-10 sampler 1/2	216	\$9,591			\$184	\$8,309			129	\$5,934			176	\$7,945			176	\$7,945			176	\$7,945		
PM-10 sampler 1/3	876	\$77,796			\$745	\$67,392			521	\$48,132			714	\$64,440			714	\$64,440			714	\$64,440		
PM-10 sampler 1/6 & collocated	7,970	\$424,680			\$6,775	\$367,888			4,742	\$262,745			6,496	\$351,771			6,496	\$351,771			6,496	\$351,771		
PM-10 continuous	2,172	\$100,039			\$2,172	\$101,954			2,172	\$104,022			2,172	\$102,005			2,172	\$102,005			2,172	\$102,005		
Reporting																								
PM-10 sampler 1/1	1,800	\$98,734			\$1,530	\$85,530			1,071	\$61,086			1,467	\$81,783			1,467	\$81,783			1,467	\$81,783		
PM-10 sampler 1/2	72	\$3,949			\$61	\$3,421			43	\$2,443			59	\$3,271			59	\$3,271			59	\$3,271		
PM-10 sampler 1/3	584	\$32,034			\$496	\$27,750			347	\$19,819			476	\$26,534			476	\$26,534			476	\$26,534		
PM-10 sampler 1/6 & collocated	3,188	\$174,868			\$2,710	\$151,483			1,897	\$106,189			2,598	\$144,847			2,598	\$144,847			2,598	\$144,847		
Element #6 totals																								
6. Quality Assurance																								
Audit/calibration kit																								
PM-10 sampler																								
PM-10 sampler (continuous)																								
QA plan preparation (RO)																								
QA plan review (annual)	442	\$22,723			\$442	\$23,158		\$2,864	442	\$23,628			442	\$23,170			442	\$23,170			442	\$23,170		
Audits																								
PM-10 sampler 1/1	5,400	\$239,782			\$4,590	\$207,716			3,213	\$148,351			4,401	\$198,616			4,401	\$198,616			4,401	\$198,616		
PM-10 sampler 1/2	216	\$9,591			\$184	\$8,309			129	\$5,934			176	\$7,945			176	\$7,945			176	\$7,945		
PM-10 sampler 1/3	876	\$77,796			\$745	\$67,392			521	\$48,132			714	\$64,440			714	\$64,440			714	\$64,440		
PM-10 sampler 1/6 & collocated																								

Table 7.0, Summary of PM-10 2007-2009 Monitoring Costs

Cost Element	2007						2008						2009						Average 2007-2009 PM-10					
	Summary PM-10		Summary PM-10		Summary PM-10		Summary PM-10		Summary PM-10		Summary PM-10		Summary PM-10		Summary PM-10		Summary PM-10		Summary PM-10		Summary PM-10		Summary PM-10	
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$
PM-10 continuous	724	\$39,713			724	\$40,473			724	\$41,294			724	\$40,493			724	\$40,493			724	\$40,493		
Training																								
PM-10 sampler 1/1	300	\$15,437			255	\$13,373			179	\$9,551			245	\$12,787			245	\$12,787			245	\$12,787		
PM-10 sampler 1/2	24	\$1,235			\$20	\$1,070			14	\$764			20	\$1,023			20	\$1,023			20	\$1,023		
PM-10 sampler 1/3	292	\$15,025			\$248	\$13,016			174	\$9,286			238	\$12,446			238	\$12,446			238	\$12,446		
PM-10 sampler 1/6 & collocated	2,560	\$131,728			\$2,176	\$114,112			1,523	\$81,499			2,086	\$109,113			2,086	\$109,113			2,086	\$109,113		
PM-10 continuous	905	\$45,764			\$905	\$46,640			905	\$47,586			905	\$46,664			905	\$46,664			905	\$46,664		
Element # 6 totals	27,594	\$1,436,560		\$4,904	24,101	\$1,276,814		\$4,846	18,164	\$977,939		\$4,068	23,286	\$1,230,438		\$4,006								\$4,006
7. Supervision																								
Planning/coordination																								
PM-10 sampler 1/1	300	\$16,456			\$255	\$14,255			179	\$10,181			245	\$13,631			245	\$13,631			245	\$13,631		
PM-10 sampler 1/2	24	\$1,316			\$20	\$1,140			14	\$814			20	\$1,090			20	\$1,090			20	\$1,090		
PM-10 sampler 1/3	292	\$16,017			\$248	\$13,875			174	\$9,909			238	\$13,267			238	\$13,267			238	\$13,267		
PM-10 sampler 1/6 & collocated	2,560	\$140,421			\$2,176	\$121,643			1,523	\$86,877			2,086	\$116,314			2,086	\$116,314			2,086	\$116,314		
PM-10 continuous	3,258	\$181,923			\$3,258	\$185,405			3,258	\$189,166			3,258	\$185,498			3,258	\$185,498			3,258	\$185,498		
Supervision/review																								
PM-10 sampler 1/1	450	\$26,799			\$383	\$23,215			268	\$16,560			367	\$22,198			367	\$22,198			367	\$22,198		
PM-10 sampler 1/2	36	\$2,144			\$31	\$1,857			21	\$1,326			29	\$1,776			29	\$1,776			29	\$1,776		
PM-10 sampler 1/3	438	\$26,084			\$372	\$22,596			261	\$16,138			357	\$21,606			357	\$21,606			357	\$21,606		
PM-10 sampler 1/6 & collocated	3,840	\$228,666			\$3,264	\$198,104			2,285	\$141,486			3,130	\$189,425			3,130	\$189,425			3,130	\$189,425		
PM-10 continuous	1,086	\$59,380			\$1,086	\$60,517			1,086	\$61,744			1,086	\$60,547			1,086	\$60,547			1,086	\$60,547		
Element # 7 totals	12,284	\$699,226			11,093	\$642,608			9,068	\$534,223			10,815	\$625,352										
Summary Totals																								

Table 7.1, 2007 PM-10 Monitoring Costs

Aug 2006

Cost Element	Previous Amortized Hours and Costs					New Site Hours and Costs					Summary PM-10							
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# Old Plus New	Hours	Labor Costs	Non-labor O & M	Equip/ Contract \$	
1. Network Design																		
Network design (reporting org)	138	30	7	\$1,707	591	\$33,656								591	\$33,656			
Site selection (reporting org)	138	10	7	\$451	197	\$8,898								197	\$8,898			
Element #1 Totals					789	\$42,554								789	\$42,554			
2. Site Installation																		
Analyzer																		
PM-10 sampler	1,261		7	\$5,746		\$1,035,173											\$1,035,173	
PM-10 sampler spares	63		7	\$5,746		\$51,759											\$51,759	
PM-10 sampler (continuous)	181		7	\$18,388		\$475,474											\$475,474	
PM-10 sampler (continuous) spares	9		7	\$18,388		\$23,774											\$23,774	
Sampling platform	975		7	\$2,090		\$291,051											\$291,051	
Procurement	1,514	4	7	\$184	865	\$39,774								865	\$39,774			
Equipment installation																		
PM-10 sampler	1,261	4	7	\$170	721	\$30,679								721	\$30,679			
PM-10 sampler (continuous)	181	10	7	\$515	259	\$13,319								259	\$13,319			
Element #2 Totals					1,844	\$1,961,002								1,844	\$83,772		\$1,877,230	
3. Sampling & analysis																		
Filter cost																		
Filter (1/1) & acceptance testing	75												75			\$80,962		
Filter (1/2) & acceptance testing	6												6			\$3,238		
Filter (1/3) & acceptance testing	73												73			\$29,551		
Filter (1/6) & acceptance testing	797												797			\$161,316		
Filter tape continuous	181												181			\$94,554		
Site visits																		
Routine site visits (1/1)													75	9,000	\$414,916			
Routine site visits (1/2)													6	720	\$33,193			
Routine site visits (1/3)													73	13,140	\$640,976			
Routine site visits (1/6)													797	143,460	\$6,998,058			
Routine site visits (continuous)													181	5,792	\$268,156			
Laboratory service																		
Microbalance	1,261		7	\$90		\$112,928											\$112,928	
Laboratory																		
PM-10 sampler 1/1													75	3,600	\$153,742			
PM-10 sampler 1/2													6	144	\$6,150			
PM-10 sampler 1/3													73	1,168	\$49,881			
PM-10 sampler 1/6 & collocated													797	6,376	\$272,295			
Element #3 Totals														183,400	\$8,837,368		\$369,621	
4. Maintenance																		
Spare parts/supplies																		
PM-10 sampler 1/1													300		\$658,224			
PM-10 sampler 1/2													18		\$14,105			
PM-10 sampler 1/3													146		\$83,897			
PM-10 sampler 1/6 & collocated													797		\$129,069			
PM-10 continuous													181		\$104,955			
Remedial repairs																		
PM-10 sampler 1/1													300	10,800	\$460,757			
PM-10 sampler 1/2													18	324	\$13,823			
PM-10 sampler 1/3													146	1,752	\$74,745			
PM-10 sampler 1/6 & collocated													797	4,782	\$204,013			
PM-10 continuous													181	1,358	\$64,959			

Table 7.1, 2007 PM-10 Monitoring Costs

Cost Element	Previous Amortized Hours and Costs				New/Site Hours and Costs				Summary PM-10											
	# Old Sites	Hours/Site	Years Amort.	Cost/Site	Total Amort. Hours	Total Amort. Cost	# New Sites	Hours/Site	Years Amort.	Cost/Site	Total Amort. Hours	Total Amort. Cost	# Old Plus/New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	
Routine maintenance																				
PM-10 sampler 1/1													300	10,800			10,800	\$460,757		
PM-10 sampler 1/2													18	324			324	\$13,823		
PM-10 sampler 1/3													146	1,752			1,752	\$74,745		
PM-10 sampler 1/6 & collocated													797	4,782			4,782	\$204,013		
PM-10 continuous													181	2,534			2,534	\$117,626		
Element #4 totals													300	39,208			39,208	\$1,689,259		\$990,251
5. Data Management																				
Data acquisition/processing																				
PM-10 sampler 1/1													300	14,400			14,400	\$885,155		
PM-10 sampler 1/2													18	432			432	\$19,916		
PM-10 sampler 1/3													146	2,336			2,336	\$107,694		
PM-10 sampler 1/6 & collocated													797	6,376			6,376	\$293,945		
PM-10 continuous													181	2,172			2,172	\$106,090		
Data reporting																				
PM-10 sampler 1/1													300	10,800			10,800	\$556,669		
PM-10 sampler 1/2													18	324			324	\$16,700		
PM-10 sampler 1/3													146	1,752			1,752	\$90,304		
PM-10 sampler 1/6 & collocated													797	4,782			4,782	\$246,481		
PM-10 continuous													181	3,620			3,620	\$161,877		
Data validation																				
PM-10 sampler 1/1													300	18,000			18,000	\$930,917		
PM-10 sampler 1/2													18	540			540	\$27,928		
PM-10 sampler 1/3													146	2,920			2,920	\$151,015		
PM-10 sampler 1/6 & collocated													797	7,970			7,970	\$412,189		
PM-10 continuous													181	3,620			3,620	\$180,599		
Data distribution																				
PM-10 sampler 1/1													75	900			900	\$48,897		
PM-10 sampler 1/2													6	36			36	\$1,956		
PM-10 sampler 1/3													73	292			292	\$15,864		
PM-10 sampler 1/6 & collocated													640	1,280			1,280	\$69,542		
PM-10 continuous													181	1,086			1,086	\$56,354		
Element #5 totals													300	83,638			83,638	\$4,380,092		
6. Quality Assurance																				
Audit/calibration kit																				
PM-10 sampler	793		7	\$131																\$2,959
PM-10 sampler (continuous)	181		7	\$376																\$1,945
QA plan preparation (RO)			5	\$623	442															\$22,723
QA plan review (annual)	138	16																		
Audits																				
PM-10 sampler 1/1													75	5,400			5,400	\$239,782		
PM-10 sampler 1/2													6	216			216	\$9,591		
PM-10 sampler 1/3													73	876			876	\$77,796		
PM-10 sampler 1/6 & collocated													797	7,970			7,970	\$424,680		
PM-10 continuous													181	2,172			2,172	\$100,039		
Reporting																				
PM-10 sampler 1/1													75	1,800			1,800	\$98,734		
PM-10 sampler 1/2													6	72			72	\$3,949		
PM-10 sampler 1/3													73	584			584	\$32,034		
PM-10 sampler 1/6 & collocated													797	3,188			3,188	\$174,868		

Table 7.2, 2008 PM-10 Monitoring Costs

Aug 2006

Cost Element	Previous Amortized Hours and Costs						New Site Hours and Costs						Summary PM-10							
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract \$	
1. Network Design																				
Network design (reporting org)	138	30	7	\$1,740	591	\$34,301										591	\$34,301			
Site selection (reporting org)	138	10	7	\$460	197	\$9,068										197	\$9,068			
Element #1 totals					789	\$43,369										789	\$43,369			
2. Site Installation																				
Analyzer																				
PM-10 sampler	1,072		7	\$5,856		\$896,866													\$896,866	
PM-10 sampler spares	54		7	\$5,856		\$44,843													\$44,843	
PM-10 sampler (continuous)	181		7	\$18,740		\$484,575													\$484,575	
PM-10 sampler (continuous) spares	9		7	\$18,740		\$24,229													\$24,229	
Sampling platform	925		7	\$2,130		\$281,411													\$281,411	
Procurement	1,316	4	7	\$187	752	\$35,223										752	\$35,223			
Equipment installation																				
PM-10 sampler	1,072	4	7	\$174	613	\$26,580										613	\$26,580			
PM-10 sampler (continuous)	181	10	7	\$525	259	\$13,574										259	\$13,574			
Element #2 totals					1,623	\$1807,301										1,623	\$75,376		\$1,731,925	
3. Sampling and analysis																				
Filter cost																				
Filter (1/1) & acceptance testing	64												64					\$70,135		
Filter (1/2) & acceptance testing	5												5					\$2,805		
Filter (1/3) & acceptance testing	62												62					\$25,599		
Filter (1/6) & acceptance testing	677												677					\$139,743		
Filter tape continuous	181												181					\$96,364		
Site visits																				
Routine site visits (1/1)													64	7,650			\$359,430			
Routine site visits (1/2)													5	612			\$28,754			
Routine site visits (1/3)													62	11,169			\$555,259			
Routine site visits (1/6)													677	121,941			\$6,062,215			
Routine site visits (continuous)													181	5,792			\$273,289			
Laboratory service																				
Microbalance	1,261		7	\$91		\$115,090													\$115,090	
Laboratory																				
PM-10 sampler 1/1													64	3,060			\$133,183			
PM-10 sampler 1/2													5	122			\$5,327			
PM-10 sampler 1/3													62	993			\$43,210			
PM-10 sampler 1/6 & collocated													677	5,420			\$235,881			
Element #3 totals														156,759			\$7,696,549		\$115,090	
4. Maintenance																				
Spare parts/supplies																				
PM-10 sampler 1/1													241					\$539,790		
PM-10 sampler 1/2													15					\$12,219		
PM-10 sampler 1/3													117					\$68,696		
PM-10 sampler 1/6 & collocated													643					\$106,057		
PM-10 continuous													181					\$106,964		
Remedial repairs																				
PM-10 sampler 1/1													241	8,690			\$377,853			
PM-10 sampler 1/2													15	275			\$11,974			

Table 7.2, 2008 PM-10 Monitoring Costs

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs				Summary, PM-10											
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract \$	
Reporting														181	2,172	\$101,954	2,172	\$101,954		
PM-10 sampler 1/1														64	1,530	\$85,530	1,530	\$85,530		
PM-10 sampler 1/2														5	61	\$3,421	61	\$3,421		
PM-10 sampler 1/3														62	496	\$27,750	496	\$27,750		
PM-10 sampler 1/6 & collocated														677	2,710	\$151,483	2,710	\$151,483		
PM-10 continuous														181	724	\$40,473	724	\$40,473		
Training														64	255	\$13,373	255	\$13,373		
PM-10 sampler 1/1														5	20	\$1,070	20	\$1,070		
PM-10 sampler 1/2														62	248	\$13,016	248	\$13,016		
PM-10 sampler 1/3														544	2,176	\$114,112	2,176	\$114,112		
PM-10 sampler 1/6 & collocated														181	905	\$46,640	905	\$46,640		
PM-10 continuous														23,660	\$1,253,655	\$1,276,814	24,101	\$1,276,814		\$4,846
Element #6 totals					442	\$28,004														
7. Supervision																				
Planning/coordination														64	255	\$14,255	255	\$14,255		
PM-10 sampler 1/1														5	20	\$1,140	20	\$1,140		
PM-10 sampler 1/2														62	248	\$13,875	248	\$13,875		
PM-10 sampler 1/3														544	2,176	\$121,643	2,176	\$121,643		
PM-10 sampler 1/6 & collocated														181	3,258	\$185,405	3,258	\$185,405		
PM-10 continuous																				
Supervision/review														64	383	\$23,215	383	\$23,215		
PM-10 sampler 1/1														5	31	\$1,857	31	\$1,857		
PM-10 sampler 1/2														62	372	\$22,596	372	\$22,596		
PM-10 sampler 1/3														544	3,264	\$198,104	3,264	\$198,104		
PM-10 sampler 1/6 & collocated														181	1,086	\$60,517	1,086	\$60,517		
PM-10 continuous														11,093	\$642,608	\$642,608	11,093	\$642,608		
Element #7 totals																				
Summary Totals																				\$1,607,583.72

Table 7.3. 2009 PM-10 Monitoring Costs

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs				Summary PM-10								
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost.	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost.	# Old Plus New	Hours	Labor Costs	Non-labor O & M	Equip/ Contract \$
1. Network Design	138	30	7	\$1,775	591	\$34,996								591	\$34,996		
Site selection (reporting org)	138	10	7	\$469	197	\$9,252								197	\$9,252		
Element #1 totals					789	\$44,248								789	\$44,249		
2. Site Installation																	
Analyzer																	
PM-10 sampler	750		7	\$5,975		\$640,200											\$640,200
PM-10 sampler spares	38		7	\$5,975		\$32,010											\$32,010
PM-10 sampler (continuous)	181		7	\$19,121		\$494,405											\$494,405
PM-10 sampler (continuous) spares	9		7	\$19,121		\$24,720											\$24,720
Sampling platform	648		7	\$2,173		\$200,984											\$200,984
Procurement	931	4	7	\$191	532	\$25,430								532	\$25,430		
Equipment installation																	
PM-10 sampler	750	4	7	\$177	429	\$18,973								429	\$18,973		
PM-10 sampler (continuous)	181	10	7	\$536	259	\$13,849								259	\$13,849		
Element #2 totals					1,219	\$1,450,572								1,219	\$58,253		\$1,392,319
3. Sampling & analysis																	
Filter cost																	
Filter (1/1) & acceptance testing	45													45			\$50,090
Filter (1/2) & acceptance testing	4													4			\$2,004
Filter (1/3) & acceptance testing	43													43			\$18,283
Filter (1/6) & acceptance testing	474													474			\$99,805
Filter tape continuous	181													181			\$98,319
Site visits																	
Routine site visits (1/1)														45	\$256,705		
Routine site visits (1/2)														4	\$20,536		
Routine site visits (1/3)														43	\$396,566		
Routine site visits (1/6)														474	\$4,329,633		
Routine site visits (continuous)														181	\$278,833		
Laboratory service																	
Microbalance	1,261		7	\$93		\$117,424											\$117,424
Laboratory																	
PM-10 sampler 1/1														45	\$95,119		
PM-10 sampler 1/2														4	\$3,805		
PM-10 sampler 1/3														43	\$30,861		
PM-10 sampler 1/6 & collocated														474	\$168,466		
Element #3 totals														1,1469	\$5,580,524		\$117,424
4. Maintenance																	
Spare parts/supplies																	
PM-10 sampler 1/1														169			\$385,518
PM-10 sampler 1/2														11			\$8,727
PM-10 sampler 1/3														82			\$49,062
PM-10 sampler 1/6 & collocated														450			\$75,746
PM-10 continuous														181			\$109,134
Remedial repairs																	
PM-10 sampler 1/1														169	\$269,862		
PM-10 sampler 1/2														11	\$8,552		
PM-10 sampler 1/3														82	\$43,710		
Element #4 totals														6,083	\$269,862		
														11	\$8,552		
														82	\$43,710		

Table 8.0, Summary of PM-2.5 2007-2009 Monitoring Costs

Cost Element	2007						2008						2009						Average 2007-2009 PM-2.5					
	Summary PM-2.5		Summary PM-2.5		Summary PM-2.5		Summary PM-2.5		Summary PM-2.5		Summary PM-2.5		Summary PM-2.5		Summary PM-2.5		Summary PM-2.5		Summary PM-2.5		Summary PM-2.5			
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$				
1. Network Design																								
Network design (RO)	326	\$18,513			326	\$18,867			326	\$19,250			326	\$18,876			326	\$18,876						
Site selection (RO)	130	\$6,761			130	\$6,890			130	\$7,030			130	\$6,894			130	\$6,894						
Element #1 totals	456	\$25,273			456	\$25,757			456	\$26,280			456	\$25,770			456	\$25,770						
2. Site Installation																								
Analyzer																								
PM-2.5 sampler (sequential)				\$1,260,924				\$1,285,061														\$1,285,705		
PM-2.5 sampler (sequential) spares				\$189,139				\$192,759														\$192,856		
PM-2.5 sampler (single channel)				\$150,451				\$153,331														\$153,408		
PM-2.5 sampler (single chan) spare				\$22,568				\$23,000														\$23,011		
PM-2.5 sampler (sequential) coil				\$262,693				\$267,721														\$267,855		
PM-2.5 sampler (single channel) coil				\$31,344				\$31,944														\$31,960		
PM-2.5 sampler (seasonal)				\$27,911				\$28,445														\$28,460		
PM-2.5 sampler (continuous)				\$1,469,496				\$1,497,626														\$1,498,376		
PM-2.5 sampler (continuous) spares				\$220,424				\$224,644														\$224,756		
Speciation sampler (RTI, CA, OR)				\$471,056				\$480,073														\$480,313		
Data acquisition (laptop/PDA)				\$65,016				\$66,261														\$66,294		
Sampling platform				\$516,430				\$526,315														\$526,579		
Procurement	4,886	\$238,321			4,886	\$242,883			4,886	\$247,810			4,886	\$243,004			4,886	\$243,004						
Equipment installation																								
Installation (single channel)	199	\$9,090			199	\$9,264			199	\$9,452			199	\$9,268			199	\$9,268						
Installation (sequential)	1,061	\$48,479			1,061	\$49,407			1,061	\$50,409			1,061	\$49,431			1,061	\$49,431						
PM-2.5 sampler (seasonal)	19	\$888			19	\$905			19	\$923			19	\$906			19	\$906						
Installation (continuous)	769	\$29,069			769	\$29,625			769	\$30,226			769	\$29,640			769	\$29,640						
Installation (speciation)	451	\$20,962			451	\$21,363			451	\$21,797			451	\$21,374			451	\$21,374						
Element #2 totals	7,384	\$346,808		\$4,687,452	7,384	\$353,447		\$4,777,181	7,384	\$360,617		\$4,874,089	7,384	\$353,624		\$4,779,574	7,384	\$353,624						
3. Sampling & analysis																								
Filter (1/1) & acceptance testing				\$117,540				\$119,790														\$119,860		
Filter (1/3) & acceptance testing				\$226,735				\$231,075														\$231,191		
Filter (1/6) & acceptance testing				\$16,749				\$17,070														\$17,079		
Filter (1/12) & acceptance testing				\$6,994				\$7,128														\$7,131		
Filter (seasonal) & acceptance testing																								
Speciation sampling national contract				\$7,282,329				\$7,422,061														\$7,425,590		
Routine site visits (1/1)	22,500	\$1,016,590			22,500	\$1,036,050			22,500	\$1,057,067			22,500	\$1,036,569			22,500	\$1,036,569						
Routine site visits (1/3)	57,870	\$2,614,671			57,870	\$2,664,722			57,870	\$2,718,777			57,870	\$2,666,056			57,870	\$2,666,056						
Routine site visits (1/6)	12,960	\$585,556			12,960	\$596,765			12,960	\$608,871			12,960	\$597,064			12,960	\$597,064						
Routine site visits (1/12)	8,550	\$386,304			8,550	\$393,699			8,550	\$401,686			8,550	\$393,696			8,550	\$393,696						
Routine site visits (seasonal)	527	\$34,564			527	\$35,226			527	\$35,940			527	\$35,243			527	\$35,243						
Routine site visits (continuous)	17,216	\$797,061			17,216	\$812,319			17,216	\$828,797			17,216	\$812,726			17,216	\$812,726						
Routine site visits (speciation)	47,340	\$2,309,271			47,340	\$2,353,476			47,340	\$2,401,218			47,340	\$2,354,655			47,340	\$2,354,655						
Laboratory service																								
Microbalance				\$501,056				\$510,648														\$510,903		
Clean room for weighing				\$1,276,149				\$1,300,577														\$1,301,229		
Laboratory																								
PM-2.5 sampler (sequential) 1/1	240	\$1,425,368			240	\$1,452,653			240	\$1,482,121			240	\$1,453,381			240	\$1,453,381						
PM-2.5 sampler (sequential) 1/3	120	\$2,444,032			120	\$2,490,816			120	\$2,541,344			120	\$2,492,064			120	\$2,492,064						
PM-2.5 sampler (single channel) 1/6	40	\$273,671			40	\$278,909			40	\$284,567			40	\$279,049			40	\$279,049						
PM-2.5 sampler (collocated) 1/12	20	\$180,547			20	\$184,003			20	\$187,795			20	\$184,095			20	\$184,095						
PM-2.5 sampler (seasonal)	140	\$113,079			140	\$115,244			140	\$117,582			140	\$115,302			140	\$115,302						
Element #3 totals	167,523	\$12,180,715		\$9,059,534	167,523	\$12,413,893		\$9,233,286	167,523	\$12,665,705		\$9,409,070	167,523	\$12,420,101		\$9,401,138	167,523	\$12,420,101				\$9,237,722		

Table 8.0, Summary of PM-2.5 2007-2009 Monitoring Costs

Cost Element	2007				2008				2009				Average 2007-2009 PM2.5			
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$
4. Maintenance																
Spare parts/supplies																
PM-2.5 sampler (sequential)			\$290,872				\$296,440								\$296,589	
PM-2.5 sampler (single channel)			\$45,449				\$46,319								\$46,342	
PM-2.5 sampler (seasonal)			\$4,884				\$4,978								\$4,980	
PM-2.5 sampler (continuous)			\$87,126				\$88,794								\$88,838	
PM-2.5 sampler (speciation)			\$137,391				\$140,021								\$140,091	
Remedial repairs																
PM-2.5 sampler (sequential)	12,992	\$623,436			12,992	\$635,370			12,992	\$648,259			12,992	\$635,689		
PM-2.5 sampler (single channel)	1,392	\$66,719			1,392	\$67,996			1,392	\$69,375			1,392	\$68,030		
PM-2.5 sampler (seasonal)	238	\$11,421			238	\$11,639			238	\$11,875			238	\$11,645		
PM-2.5 sampler (continuous)	5,918	\$309,716			5,918	\$315,647			5,918	\$322,050			5,918	\$315,805		
PM-2.5 sampler (speciation)	3,682	\$190,699			3,682	\$194,349			3,682	\$198,292			3,682	\$194,447		
Routine maintenance																
PM-2.5 sampler (sequential)	12,992	\$718,455			12,992	\$732,208			12,992	\$747,061			12,992	\$732,574		
PM-2.5 sampler (single channel)	1,392	\$100,715			1,392	\$102,642			1,392	\$104,725			1,392	\$102,694		
PM-2.5 sampler (seasonal)	238	\$13,161			238	\$13,413			238	\$13,665			238	\$13,420		
PM-2.5 sampler (continuous)	7,532	\$349,628			7,532	\$356,320			7,532	\$363,549			7,532	\$356,499		
PM-2.5 sampler (speciation)	4,208	\$191,523			4,208	\$195,190			4,208	\$199,149			4,208	\$195,287		
Element #4 totals	50,584	\$2,575,475	\$585,723		50,584	\$2,624,776	\$576,552		50,584	\$2,678,021	\$586,248		50,584	\$2,626,090	\$576,841	
5. Data Management																
Data acquisition/processing																
PM-2.5 sampler (sequential) 1/1	15,000	\$696,620			15,000	\$709,955			15,000	\$724,357			15,000	\$710,311		
PM-2.5 sampler (sequential) 1/3	38,580	\$1,194,472			38,580	\$1,217,337			38,580	\$1,242,031			38,580	\$1,217,947		
PM-2.5 sampler (single channel) 1/6	2,592	\$128,786			2,592	\$131,252			2,592	\$133,914			2,592	\$131,317		
PM-2.5 sampler (collocated) 1/12	935	\$87,721			935	\$89,401			935	\$91,214			935	\$89,445		
PM-2.5 sampler (seasonal)	765	\$47,370			765	\$48,277			765	\$49,256			765	\$48,301		
PM-2.5 sampler (continuous)	8,608	\$445,747			8,608	\$454,280			8,608	\$463,495			8,608	\$454,507		
Data reporting																
PM-2.5 sampler (sequential) 1/1	3,750	\$173,959			3,750	\$177,289			3,750	\$180,886			3,750	\$177,378		
PM-2.5 sampler (sequential) 1/3	9,645	\$298,282			9,645	\$303,992			9,645	\$310,159			9,645	\$304,144		
PM-2.5 sampler (single channel) 1/6	576	\$26,780			576	\$27,293			576	\$27,847			576	\$27,307		
PM-2.5 sampler (collocated) 1/12	935	\$21,345			935	\$21,754			935	\$22,195			935	\$21,765		
PM-2.5 sampler (seasonal)	383	\$11,829			383	\$12,056			383	\$12,300			383	\$12,062		
PM-2.5 sampler (continuous)	6,456	\$327,706			6,456	\$333,979			6,456	\$340,754			6,456	\$334,146		
Data validation																
PM-2.5 sampler (sequential) 1/1	7,875	\$548,520			7,875	\$559,020			7,875	\$570,360			7,875	\$559,300		
PM-2.5 sampler (sequential) 1/3	40,509	\$940,529			40,509	\$958,533			40,509	\$977,977			40,509	\$959,013		
PM-2.5 sampler (single channel) 1/6	1,728	\$87,713			1,728	\$89,392			1,728	\$91,205			1,728	\$89,437		
PM-2.5 sampler (collocated) 1/12	935	\$67,646			935	\$68,940			935	\$70,339			935	\$68,975		
PM-2.5 sampler (seasonal)	1,071	\$37,299			1,071	\$38,013			1,071	\$38,784			1,071	\$38,032		
PM-2.5 sampler (continuous)	9,146	\$476,944			9,146	\$486,074			9,146	\$495,934			9,146	\$486,317		
Data distribution																
PM-2.5 sampler (sequential) 1/1	2,250	\$164,556			2,250	\$167,706			2,250	\$171,108			2,250	\$167,790		
PM-2.5 sampler (sequential) 1/3	11,574	\$282,159			11,574	\$287,560			11,574	\$293,393			11,574	\$287,704		
PM-2.5 sampler (single channel) 1/6	288	\$15,647			288	\$15,946			288	\$16,270			288	\$15,954		
PM-2.5 sampler (collocated) 1/12	935	\$19,183			935	\$19,550			935	\$19,946			935	\$19,560		
PM-2.5 sampler (seasonal)	306	\$11,190			306	\$11,404			306	\$11,635			306	\$11,410		
PM-2.5 sampler (continuous)	2,690	\$145,585			2,690	\$148,371			2,690	\$151,381			2,690	\$148,446		
Element #5 totals	167,532	\$6,257,588			167,532	\$6,377,374			167,532	\$6,506,742			167,532	\$6,380,568		

Table 8.1, 2007 PM-2.5 Monitoring Costs

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs				Summary PM-2.5									
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	Labor Costs	Non-labor O & M	Equip/ Contract \$	
1. Network Design																		
Network design (RO)	152	15	7	\$853	326	\$18,513								326	\$18,513			
Site selection (RO)	152	6	7	\$311	130	\$6,761								130	\$6,761			
Element #1: totals					456	\$25,273								456	\$25,273			
2. Site Installation																		
Analyzer																		
PM-2.5 sampler (sequential)	768		7	\$11,493		\$1,260,924												\$1,260,924
PM-2.5 sampler (sequential) spares	115		7	\$11,493		\$189,139												\$189,139
PM-2.5 sampler (single channel)	144		7	\$7,314		\$150,451												\$150,451
PM-2.5 sampler (single chan) spare	22		7	\$7,314		\$22,568												\$22,568
PM-2.5 sampler (sequential) coll	160		7	\$11,493		\$262,693												\$262,693
PM-2.5 sampler (single channel) coll	30		7	\$7,314		\$31,344												\$31,344
PM-2.5 sampler (seasonal)	17		7	\$11,493		\$27,911												\$27,911
PM-2.5 sampler (continuous)	538		7	\$19,120		\$1,469,496												\$1,469,496
PM-2.5 sampler (continuous) spares	81		7	\$19,120		\$220,424												\$220,424
Specialist sampler (RTI, CA, OR)	263		7	\$12,538		\$471,056												\$471,056
Data acquisition (laptop/PDA)	1,089		7	\$418		\$65,016												\$65,016
Sampling platform	1,730		7	\$2,090		\$516,430												\$516,430
Procurement	2,138	16	7	\$780	4,886	\$238,321								4,886	\$238,321			
Equipment installation																		
Installation (single channel)	174	8	7	\$366	199	\$9,090								199	\$9,090			
Installation (sequential)	928	8	7	\$366	1,061	\$48,479								1,061	\$48,479			
PM-2.5 sampler (seasonal)	17	8	7	\$366	19	\$888								19	\$888			
Installation (continuous)	538	10	7	\$378	769	\$29,069								769	\$29,069			
Installation (speciation)	263	12	7	\$558	451	\$20,962								451	\$20,962			
Element #2: totals					7,384	\$5,034,260								7,384	\$346,806			\$4,687,452
3. Sampling & analysis																		
Filter (1/1) & acceptance testing	125												125					
Filter (1/3) & acceptance testing	643												643					\$117,540
Filter (1/6) & acceptance testing	144												144					\$226,735
Filter (1/12) & acceptance testing	190												190					\$25,389
Filter (seasonal) & acceptance testing	17												17					\$16,749
Speciation sampling national contract																		\$6,994
Speciation sampling national contract																		
Routine site visits (1/1)													125	22,500	\$1,016,590			\$7,282,329
Routine site visits (1/3)													643	57,870	\$2,614,671			
Routine site visits (1/6)													144	12,960	\$585,556			
Routine site visits (1/12)													190	8,550	\$386,304			
Routine site visits (seasonal)													17	527	\$34,564			
Routine site visits (continuous)													538	17,216	\$797,061			
Routine site visits (speciation)													263	47,340	\$2,309,271			
Laboratory service																		
Microbalance	1,119		7	\$448		\$501,056												\$501,056
Clean room for weighing	114		7	\$11,194		\$1,276,149												\$1,276,149
Laboratory																		
PM-2.5 sampler (sequential) 1/1													125	240	\$1,425,368			
PM-2.5 sampler (sequential) 1/3													643	120	\$2,444,032			
PM-2.5 sampler (single channel) 1/6													144	40	\$273,671			
PM-2.5 sampler (collocated) 1/12													190	20	\$180,547			

Table 8.1, 2007 PM-2.5 Monitoring Costs

Aug 2006

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs				Summary PM-2.5						
	# Old Sites	Hours/ Site	Years Amor.	Total Amor. Hours	# New Sites	Hours/ Site	Years Amor.	Total Amor. Hours	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract \$
PM-2.5 sampler (seasonal)									17	140	\$113,079	140	\$113,079	\$393,406	\$9,059,534
4. Maintenance															
Spare parts/supplies															
PM-2.5 sampler (sequential)									928					\$290,872	
PM-2.5 sampler (single channel)									174					\$45,449	
PM-2.5 sampler (seasonal)									17					\$4,884	
PM-2.5 sampler (continuous)									538					\$87,126	
PM-2.5 sampler (speciation)									263					\$137,391	
Remedial repairs															
PM-2.5 sampler (sequential)									928	12,992	\$623,436	12,992	\$623,436		
PM-2.5 sampler (single channel)									174	1,392	\$66,719	1,392	\$66,719		
PM-2.5 sampler (seasonal)									17	238	\$11,421	238	\$11,421		
PM-2.5 sampler (continuous)									538	5,918	\$309,718	5,918	\$309,718		
PM-2.5 sampler (speciation)									263	3,682	\$190,699	3,682	\$190,699		
Routine maintenance															
PM-2.5 sampler (sequential)									928	12,992	\$718,455	12,992	\$718,455		
PM-2.5 sampler (single channel)									174	1,392	\$100,715	1,392	\$100,715		
PM-2.5 sampler (seasonal)									17	238	\$13,161	238	\$13,161		
PM-2.5 sampler (continuous)									538	7,532	\$349,628	7,532	\$349,628		
PM-2.5 sampler (speciation)									263	4,208	\$191,523	4,208	\$191,523		
Element # totals										50,584	\$2,575,475	50,584	\$2,575,475	\$565,723	
5. Data Management															
Data acquisition/processing															
PM-2.5 sampler (sequential) 1/1									125	15,000	\$696,620	15,000	\$696,620		
PM-2.5 sampler (sequential) 1/3									643	38,580	\$1,194,472	38,580	\$1,194,472		
PM-2.5 sampler (single channel) 1/6									144	2,592	\$128,786	2,592	\$128,786		
PM-2.5 sampler (collocated) 1/12									190	935	\$87,721	935	\$87,721		
PM-2.5 sampler (seasonal)									17	765	\$47,370	765	\$47,370		
PM-2.5 sampler (continuous)									538	8,608	\$445,747	8,608	\$445,747		
Data reporting															
PM-2.5 sampler (sequential) 1/1									125	3,750	\$173,959	3,750	\$173,959		
PM-2.5 sampler (sequential) 1/3									643	9,645	\$298,282	9,645	\$298,282		
PM-2.5 sampler (single channel) 1/6									144	576	\$26,780	576	\$26,780		
PM-2.5 sampler (collocated) 1/12									190	935	\$21,345	935	\$21,345		
PM-2.5 sampler (seasonal)									17	383	\$11,829	383	\$11,829		
PM-2.5 sampler (continuous)									538	6,456	\$327,706	6,456	\$327,706		
Data validation															
PM-2.5 sampler (sequential) 1/1									125	7,875	\$548,520	7,875	\$548,520		
PM-2.5 sampler (sequential) 1/3									643	40,509	\$940,529	40,509	\$940,529		
PM-2.5 sampler (single channel) 1/6									144	1,728	\$87,713	1,728	\$87,713		
PM-2.5 sampler (collocated) 1/12									190	935	\$67,646	935	\$67,646		
PM-2.5 sampler (seasonal)									17	1,071	\$37,299	1,071	\$37,299		
PM-2.5 sampler (continuous)									538	9,146	\$476,944	9,146	\$476,944		
Data distribution															
PM-2.5 sampler (sequential) 1/1									125	2,250	\$164,556	2,250	\$164,556		
PM-2.5 sampler (sequential) 1/3									643	11,574	\$282,159	11,574	\$282,159		
PM-2.5 sampler (single channel) 1/6									144	288	\$15,647	288	\$15,647		

Table 8.1, 2007 PM-2.5 Monitoring Costs

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs				Summary PM-2.5											
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amort. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amort. Hours	Total Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract \$	
PM-2.5 sampler (collocated) 1/12														935	\$19,183		\$19,183			
PM-2.5 sampler (seasonal)														306	\$11,199		\$11,199			
PM-2.5 sampler (continuous)														2,690	\$145,585		\$145,585			
Element #5 totals														167,532	\$6,257,588		\$6,257,588			
6. Quality Assurance																				
Audit/calibration kit																				
PM-2.5 Filter based sampler	1,382		7	\$125		\$4,951														\$4,951
PM-2.5 sampler (continuous)			7	\$75		\$1,156														\$1,156
QA plan preparation (RO)																				
QA plan review (annual)	152	15	5	\$853	456	\$25,918														
Audits																				
PM-2.5 sampler (sequential)																				
PM-2.5 sampler (single channel)														928	\$432,430		\$432,430			
PM-2.5 sampler (seasonal)														174	\$81,081		\$81,081			
PM-2.5 sampler (continuous)														17	\$7,922		\$7,922			
PM-2.5 sampler (speciation)														538	\$247,887		\$247,887			
Reporting														263	\$121,179		\$121,179			
PM-2.5 sampler (sequential)														928	\$203,611		\$203,611			
PM-2.5 sampler (single channel)														174	\$38,177		\$38,177			
PM-2.5 sampler (seasonal)														17	\$3,730		\$3,730			
PM-2.5 sampler (continuous)														538	\$118,042		\$118,042			
PM-2.5 sampler (speciation)														263	\$57,704		\$57,704			
Implementation/coordination																				
PM-2.5 sampler (sequential)														928	\$561,384		\$561,384			
PM-2.5 sampler (single channel)														174	\$105,259		\$105,259			
PM-2.5 sampler (seasonal)														17	\$10,284		\$10,284			
PM-2.5 sampler (continuous)														538	\$358,059		\$358,059			
PM-2.5 sampler (speciation)														263	\$175,036		\$175,036			
Training																				
PM-2.5 sampler (sequential)														928	\$277,298		\$277,298			
PM-2.5 sampler (single channel)														174	\$51,993		\$51,993			
PM-2.5 sampler (seasonal)														17	\$5,080		\$5,080			
PM-2.5 sampler (continuous)														538	\$160,761		\$160,761			
PM-2.5 sampler (speciation)														263	\$78,588		\$78,588			
Element #6 totals					456	\$32,025								63,207	\$3,099,319		\$3,125,237			\$6,107
7. Supervision																				
Planning/coordination																				
PM-2.5 sampler (sequential)														928	\$612,618		\$612,618			
PM-2.5 sampler (single channel)														174	\$86,171		\$86,171			
PM-2.5 sampler (seasonal)														17	\$11,223		\$11,223			
PM-2.5 sampler (continuous)														538	\$286,437		\$286,437			
PM-2.5 sampler (speciation)														263	\$213,506		\$213,506			
Supervision/review																				
PM-2.5 sampler (sequential)														928	\$1,230,390		\$1,230,390			
PM-2.5 sampler (single channel)														174	\$230,698		\$230,698			
PM-2.5 sampler (seasonal)														17	\$11,223		\$11,223			
PM-2.5 sampler (continuous)														538	\$713,308		\$713,308			
PM-2.5 sampler (speciation)														263	\$213,506		\$213,506			

Table 8.1, 2007 PM-2.5 Monitoring Costs

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs				Summary PM-2.5										
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# Old Plus New	Hours	O & M	Labor Costs	Non-labor O & M	Equip/ Contract \$	
Element #7 totals														72,093	\$3,589,076	\$3,589,076			
Summary Totals														72,093	\$3,589,076	\$3,589,076			

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Table 8.2, 2008 PM-2.5 Monitoring Costs

Cost/Element	Previous Amortized Hours and Costs				New Site Hours and Costs				Summary, PM-2.5								
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	Hours	Costs	Non-labor O & M	Equip/ Contract \$	
PM-2.5 sampler (collocated) 1/12														20	\$184,003		
PM-2.5 sampler (seasonal)													140	\$115,244			
Element #3 totals						\$9,233,286							167,523	\$12,413,883	\$400,937	\$9,233,286	
4. Maintenance																	
Spare parts/supplies																	
PM-2.5 sampler (sequential)																\$296,440	
PM-2.5 sampler (single channel)																\$46,319	
PM-2.5 sampler (seasonal)																\$4,978	
PM-2.5 sampler (continuous)																\$88,794	
PM-2.5 sampler (speciation)																\$140,021	
Remedial repairs																	
PM-2.5 sampler (sequential)													12,992	\$635,370			
PM-2.5 sampler (single channel)													1,392	\$67,996			
PM-2.5 sampler (seasonal)													238	\$11,639			
PM-2.5 sampler (continuous)													5,918	\$315,647			
PM-2.5 sampler (speciation)													3,682	\$194,349			
Routine maintenance																	
PM-2.5 sampler (sequential)													12,992	\$732,208			
PM-2.5 sampler (single channel)													1,392	\$102,642			
PM-2.5 sampler (seasonal)													238	\$13,413			
PM-2.5 sampler (continuous)													7,532	\$356,320			
PM-2.5 sampler (speciation)													4,208	\$195,190			
Element #4 totals													50,584	\$2,624,776	\$576,552		
5. Data Management																	
Data acquisition/processing																	
PM-2.5 sampler (sequential) 1/1													15,000	\$709,955			
PM-2.5 sampler (sequential) 1/3													38,580	\$1,217,337			
PM-2.5 sampler (single channel) 1/6													2,592	\$131,252			
PM-2.5 sampler (collocated) 1/12													935	\$89,401			
PM-2.5 sampler (seasonal)													765	\$48,277			
PM-2.5 sampler (continuous)													8,608	\$454,280			
Data reporting																	
PM-2.5 sampler (sequential) 1/1													3,750	\$177,289			
PM-2.5 sampler (sequential) 1/3													9,645	\$303,992			
PM-2.5 sampler (single channel) 1/6													576	\$27,293			
PM-2.5 sampler (collocated) 1/12													935	\$21,754			
PM-2.5 sampler (seasonal)													383	\$12,056			
PM-2.5 sampler (continuous)													6,456	\$333,979			
Data validation																	
PM-2.5 sampler (sequential) 1/1													7,875	\$559,020			
PM-2.5 sampler (sequential) 1/3													40,509	\$958,533			
PM-2.5 sampler (single channel) 1/6													1,728	\$89,392			
PM-2.5 sampler (collocated) 1/12													935	\$68,940			
PM-2.5 sampler (seasonal)													1,071	\$38,013			
PM-2.5 sampler (continuous)													9,146	\$486,074			
Data distribution																	
PM-2.5 sampler (sequential) 1/1													2,250	\$167,706			

Table 8.2, 2008 PM-2.5 Monitoring Costs

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs				Summary PM-2.5								
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract \$	
Element #5 totals																	
6. Quality Assurance																	
Audit/calibration kit																	
PM-2.5 Filter based sampler	1,382		7	\$128		\$5,045											\$5,045
PM-2.5 sampler (continuous)	538		7	\$77		\$1,178											\$1,178
QA plan preparation (RO)	152	15	5	\$869	456	\$26,414											
QA plan review (annual)																	
Audits																	
PM-2.5 sampler (sequential)																	
PM-2.5 sampler (single channel)																	
PM-2.5 sampler (seasonal)																	
PM-2.5 sampler (continuous)																	
PM-2.5 sampler (speciation)																	
Reporting																	
PM-2.5 sampler (sequential)																	
PM-2.5 sampler (single channel)																	
PM-2.5 sampler (seasonal)																	
PM-2.5 sampler (continuous)																	
PM-2.5 sampler (speciation)																	
Implementation/coordination																	
PM-2.5 sampler (sequential)																	
PM-2.5 sampler (single channel)																	
PM-2.5 sampler (seasonal)																	
PM-2.5 sampler (continuous)																	
PM-2.5 sampler (speciation)																	
Training																	
PM-2.5 sampler (sequential)																	
PM-2.5 sampler (single channel)																	
PM-2.5 sampler (seasonal)																	
PM-2.5 sampler (continuous)																	
PM-2.5 sampler (speciation)																	
Element #6 totals					456	\$32,638							63,207	\$3,158,648	\$3,185,061		\$6,224
7. Supervision																	
Planning/coordination																	
PM-2.5 sampler (sequential)																	
PM-2.5 sampler (single channel)																	
PM-2.5 sampler (seasonal)																	
PM-2.5 sampler (continuous)																	
PM-2.5 sampler (speciation)																	
Supervision/review																	
PM-2.5 sampler (sequential)																	
PM-2.5 sampler (single channel)																	
PM-2.5 sampler (seasonal)																	
PM-2.5 sampler (continuous)																	
PM-2.5 sampler (speciation)																	
Element #7 totals													29,689	\$1,253,943	\$1,253,943		
PM-2.5 sampler (sequential)													4,176	\$235,114	\$235,114		
PM-2.5 sampler (single channel)																	
PM-2.5 sampler (seasonal)																	
PM-2.5 sampler (continuous)																	
PM-2.5 sampler (speciation)																	

Table 8.3, 2009 PM-2.5 Monitoring Costs

Cost Element	Previous Amortized Hours and Costs					New Site Hours and Costs					Summary PM-2.5									
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Annot. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Annot. Hours	Total Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract \$	
1. Network Design																				
Network design (RO)	152	15	7	\$887	326	\$19,250								326			\$19,250			
Site selection (RO)	152	6	7	\$324	130	\$7,030								130			\$7,030			
Element #1 Totals					456	\$26,280								456			\$26,280			
2. Site Installation																				
Analyzer																				
PM-2.5 sampler (sequential)	768		7	\$11,950		\$1,311,130														\$1,311,130
PM-2.5 sampler (sequential) spares	115		7	\$11,950		\$196,689														\$196,689
PM-2.5 sampler (single channel)	144		7	\$7,605		\$156,442														\$156,442
PM-2.5 sampler (single chan) spare	22		7	\$7,605		\$23,466														\$23,466
PM-2.5 sampler (sequential) coll	160		7	\$11,950		\$273,152														\$273,152
PM-2.5 sampler (single channel) coll	30		7	\$7,605		\$32,592														\$32,592
PM-2.5 sampler (seasonal)	17		7	\$11,950		\$29,022														\$29,022
PM-2.5 sampler (continuous)	538		7	\$19,881		\$1,528,006														\$1,528,006
PM-2.5 sampler (continuous) spares	81		7	\$19,881		\$229,201														\$229,201
Speciation sampler (RTI, CA, OR)	263		7	\$13,037		\$489,811														\$489,811
Data acquisition (laptop/PDA)	1,089		7	\$435		\$67,605														\$67,605
Sampling platform	1,730		7	\$2,173		\$536,992														\$536,992
Procurement	2,138	16	7	\$812	4,886	\$247,810								4,886			\$247,810			
Equipment installation																				
Installation (single channel)	174	8	7	\$380	199	\$9,452								199			\$9,452			
Installation (sequential)	928	8	7	\$380	1,061	\$50,409								1,061			\$50,409			
PM-2.5 sampler (seasonal)	17	8	7	\$380	19	\$923								19			\$923			
Installation (continuous)	538	10	7	\$393	769	\$30,226								769			\$30,226			
Installation (speciation)	263	12	7	\$580	451	\$21,797								451			\$21,797			
Element #2 Totals	9,014	62		\$128,946	7,384	\$5,234,705								7,384			\$360,617			\$4,874,089
3. Sampling & analysis																				
Filter (1/1) & acceptance testing	125													125						\$122,220
Filter (1/3) & acceptance testing	643													643						\$235,762
Filter (1/6) & acceptance testing	144													144						\$26,400
Filter (1/12) & acceptance testing	190													190						\$17,416
Filter (seasonal) & acceptance testing	17													17						\$7,272
Speciation sampling national contract						\$7,572,380														\$7,572,380
Routine site visits (1/1)														22,500			\$1,057,067			
Routine site visits (1/3)														57,870			\$2,716,777			
Routine site visits (1/6)														12,960			\$608,871			
Routine site visits (1/12)														8,550			\$401,686			
Routine site visits (seasonal)														527			\$35,940			
Routine site visits (continuous)														538			\$828,797			
Routine site visits (speciation)														263			\$2,401,218			
Laboratory service																				\$521,006
Microbalance																				\$1,326,960
Clean room for weighing																				
Laboratory																				
PM-2.5 sampler (sequential) 1/1														240			\$1,482,121			
PM-2.5 sampler (sequential) 1/3														120			\$2,541,344			
PM-2.5 sampler (single channel) 1/6														40			\$284,567			
PM-2.5 sampler (collocated) 1/12														20			\$187,735			
PM-2.5 sampler (seasonal)														140			\$117,582			

Table 8.3, 2009 PM-2.5 Monitoring Costs

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs				Summary PM-2.5									
	# Old Sites	Hours/ Site	Years Anor.	Cost/ Site	Total Anor. Hours	Total Anor. Cost	# New Sites	Hours/ Site	Years Anor.	Cost/ Site	Total Anor. Hours	Total Anor. Cost	# Old Plus New	Hours	O & M	Labor Costs	Non-labor O & M	Equip/ Contract \$
4. Maintenance														167,523	\$12,665,705	\$409,070		\$9,420,346
Spare parts/supplies																		
PM-2.5 sampler (sequential)													928					\$302,454
PM-2.5 sampler (single channel)													174					\$47,258
PM-2.5 sampler (seasonal)													17					\$5,079
PM-2.5 sampler (continuous)													538					\$90,595
PM-2.5 sampler (speciation)													263					\$142,862
Remedial repairs																		
PM-2.5 sampler (sequential)													928					
PM-2.5 sampler (single channel)													174			\$648,259		
PM-2.5 sampler (seasonal)													17			\$69,375		
PM-2.5 sampler (continuous)													538			\$11,875		
PM-2.5 sampler (speciation)													263			\$322,050		
Routine maintenance																		
PM-2.5 sampler (sequential)													928					
PM-2.5 sampler (single channel)													174			\$747,061		
PM-2.5 sampler (seasonal)													17			\$104,725		
PM-2.5 sampler (continuous)													538			\$13,685		
PM-2.5 sampler (speciation)													263			\$363,549		
Element #4 totals													50,584	\$2,678,021	\$588,248			
5. Data Management																		
Data acquisition/processing																		
PM-2.5 sampler (sequential) 1/1													125					
PM-2.5 sampler (sequential) 1/3													643			\$724,357		
PM-2.5 sampler (single channel) 1/6													144			\$1,242,031		
PM-2.5 sampler (collocated) 1/12													190			\$133,914		
PM-2.5 sampler (seasonal)													17			\$91,214		
PM-2.5 sampler (continuous)													538			\$49,256		
Data reporting																		
PM-2.5 sampler (sequential) 1/1													125					
PM-2.5 sampler (sequential) 1/3													643			\$180,886		
PM-2.5 sampler (single channel) 1/6													144			\$310,159		
PM-2.5 sampler (collocated) 1/12													190			\$27,847		
PM-2.5 sampler (seasonal)													17			\$22,195		
PM-2.5 sampler (continuous)													538			\$12,300		
Data validation																		
PM-2.5 sampler (sequential) 1/1													125					
PM-2.5 sampler (sequential) 1/3													643			\$570,360		
PM-2.5 sampler (single channel) 1/6													144			\$977,977		
PM-2.5 sampler (collocated) 1/12													190			\$91,205		
PM-2.5 sampler (seasonal)													17			\$70,339		
PM-2.5 sampler (continuous)													538			\$38,764		
Data distribution																		
PM-2.5 sampler (sequential) 1/1													125					
PM-2.5 sampler (sequential) 1/3													643			\$171,108		
PM-2.5 sampler (single channel) 1/6													144			\$293,393		
PM-2.5 sampler (collocated) 1/12													190			\$16,270		
PM-2.5 sampler (seasonal)													17			\$19,946		
PM-2.5 sampler (continuous)													538			\$495,934		
Element #5 totals													2,250	\$171,108	\$171,108	\$171,108	\$171,108	\$171,108
Grand Totals													50,584	\$2,678,021	\$588,248			

Table 8.3, 2009 PM-2.5 Monitoring Costs

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs				Summary PM-2.5								
	# Old Sites	Hours/ Site	Years Amort.	Cost/ Site	Total Amort. Hours	Total Cost	# New Sites	Hours/ Site	Years Amort.	Cost/ Site	Total Amort. Hours	Total Cost	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract \$	
Element #5 totals													2,690	\$151,381	\$6,506,742		
6. Quality Assurance																	
Audit/calibration kit																	
PM-2.5 Filter based sampler	1,382		7	\$130		\$5,148											\$5,148
PM-2.5 sampler (continuous)	-538		7	\$78		\$1,202											\$1,202
QA plan preparation (RO)	152	15	5	\$887	456	\$26,950											
QA plan review (annual)																	
Audits																	
PM-2.5 sampler (sequential)																	
PM-2.5 sampler (single channel)																	
PM-2.5 sampler (seasonal)																	
PM-2.5 sampler (continuous)																	
PM-2.5 sampler (speciation)																	
Reporting																	
PM-2.5 sampler (sequential)	928																
PM-2.5 sampler (single channel)	174																
PM-2.5 sampler (seasonal)	17																
PM-2.5 sampler (continuous)	538																
PM-2.5 sampler (speciation)	263																
Implementation/coordination																	
PM-2.5 sampler (sequential)	928																
PM-2.5 sampler (single channel)	174																
PM-2.5 sampler (seasonal)	17																
PM-2.5 sampler (continuous)	538																
PM-2.5 sampler (speciation)	263																
Implementation/coordination																	
PM-2.5 sampler (sequential)	928																
PM-2.5 sampler (single channel)	174																
PM-2.5 sampler (seasonal)	17																
PM-2.5 sampler (continuous)	538																
PM-2.5 sampler (speciation)	263																
Training																	
PM-2.5 sampler (sequential)	928																
PM-2.5 sampler (single channel)	174																
PM-2.5 sampler (seasonal)	17																
PM-2.5 sampler (continuous)	538																
PM-2.5 sampler (speciation)	263																
Element #6 totals					456	\$33,300							63,207	\$3,222,722	\$3,663		\$6,350
7. Supervision																	
Planning/coordination																	
PM-2.5 sampler (sequential)	928																
PM-2.5 sampler (single channel)	174																
PM-2.5 sampler (seasonal)	17																
PM-2.5 sampler (continuous)	538																
PM-2.5 sampler (speciation)	263																
Supervision/review																	
PM-2.5 sampler (sequential)	928																
PM-2.5 sampler (single channel)	174																
PM-2.5 sampler (seasonal)	17																
PM-2.5 sampler (continuous)	538																
PM-2.5 sampler (speciation)	263																
Element #7 totals													72,093	\$3,731,982	72,093		\$3,731,982

Table 8.3, 2009 PM-2.5 Monitoring Costs

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs				Summary, PM-2.5										
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Costs	Non-labor O & M	Equip/ Contract \$	
Summary Totals																			

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Table 9.0, Summary of PM coarse 2007-2009 Monitoring Costs

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Cost Element	2007 Summary PM coarse				2008 Summary PM coarse				2009 Summary PM coarse				Average 2007-2009 PM coarse			
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$
PM-coarse sampler (cont collocated)																
PM-coarse sampler (FRM)			\$1,005				\$10,861								\$8,075	
PM-coarse sampler (FRM collocated)							\$1,597								\$1,184	
PM-coarse speciation sampler																
Remedial repairs																
PM-coarse sampler (continuous)					187	\$10,028			187	\$10,232			125	\$6,753		
PM-coarse sampler (cont collocated)					19	\$1,003			19	\$1,023			12	\$675		
PM-coarse sampler (FRM)					476	\$23,279			574	\$28,641			350	\$17,306		
PM-coarse sampler (FRM collocated)					70	\$3,423			84	\$4,191			51	\$2,538		
PM-coarse speciation sampler																
Routine maintenance																
PM-coarse sampler (continuous)					238	\$11,259			238	\$11,488			159	\$7,582		
PM-coarse sampler (cont collocated)					24	\$1,126			24	\$1,149			16	\$758		
PM-coarse sampler (FRM)					544	\$26,827			656	\$33,006			400	\$19,944		
PM-coarse sampler (FRM collocated)					80	\$3,945			96	\$4,830			59	\$2,925		
PM-coarse speciation sampler																
Element #4 totals					1,638	\$80,890	\$23,509		1,878	\$92,559	\$26,593		1,172	\$58,483	\$16,701	
5. Data Management																
Data acquisition/processing																
PM-coarse sampler (continuous)					272	\$14,355			272	\$14,646			181	\$9,667		
PM-coarse sampler (cont collocated)					27	\$1,435			27	\$1,465			18	\$967		
PM-coarse sampler (FRM)					646	\$31,587			779	\$38,863			475	\$23,484		
PM-coarse sampler (FRM collocated)					95	\$4,645			114	\$5,687			70	\$3,444		
PM-coarse speciation (contract)																
Data reporting																
PM-coarse sampler (continuous)					204	\$10,553			204	\$10,767			136	\$7,107		
PM-coarse sampler (cont collocated)					20	\$1,055			20	\$1,077			14	\$711		
PM-coarse sampler (FRM)					153	\$6,444			185	\$7,929			113	\$4,791		
PM-coarse sampler (FRM collocated)					23	\$948			27	\$1,160			17	\$703		
PM-coarse speciation (contract)																
Data validation																
PM-coarse sampler (continuous)					289	\$15,359			289	\$15,671			193	\$10,343		
PM-coarse sampler (cont collocated)					29	\$1,536			29	\$1,567			19	\$1,034		
PM-coarse sampler (FRM)					442	\$23,224			533	\$28,574			325	\$17,266		
PM-coarse sampler (FRM collocated)					65	\$3,415			78	\$4,182			48	\$2,532		
PM-coarse speciation (contract)																
Data distribution																
PM-coarse sampler (continuous)					85	\$4,688			85	\$4,783			57	\$3,157		
PM-coarse sampler (cont collocated)					9	\$469			9	\$478			6	\$316		
PM-coarse sampler (FRM)					102	\$5,684			123	\$6,993			75	\$4,226		
PM-coarse sampler (FRM collocated)					15	\$836			18	\$1,023			11	\$620		
PM-coarse speciation sampler																
Element #5 totals					2,476	\$126,235			2,792	\$144,865			1,756	\$90,367		

Table 9.2, 2008 PM-coarse Monitoring Costs

Cost Element	Previous Amortized Hours and Costs					New Site Hours and Costs					Summary, PM-coarse							
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Hours	Total Cost	# Old Plus New	Hours	O & M	Non-labor	Equip/ Contract \$	
1. Network Design																		
Network design (RO)																		
Site selection (RO)																		
Element #1 totals														107		\$3,103		\$56,891
2. Site Installation																		
Analyzer cost																		
PM-coarse sampler (continuous)																		\$5,689
PM-coarse sampler (cont collocated)																		\$67,235
PM-coarse sampler (FRM)																		\$9,887
PM-coarse sampler (FRM collocated)																		
PM-coarse speciation sampler																		
Sampling platform (see PM-2.5)																		
Data acquisition (laptop/PDA)																		
Procurement (FEM & FRM)																		\$1,034
Procurement (speciation)																		
Equipment installation																		
PM-coarse sampler (continuous)																		
PM-coarse sampler (cont collocated)																		
PM-coarse sampler (FRM)																		\$905
PM-coarse sampler (FRM collocated)																		\$91
PM-coarse speciation sampler																		\$1,810
PM-coarse speciation sampler																		\$266
Element #2 totals														132		\$6,556		\$1,034
3. Sampling & analysis																		
Filters and acceptance testing																		
PM-coarse sampler (FRM)																		
PM-coarse speciation sampler																		\$6,167
Site visits																		
PM-coarse sampler (continuous)																		
PM-coarse sampler (cont collocated)																		
PM-coarse sampler (FRM)																		
PM-coarse sampler (FRM collocated)																		
PM-coarse speciation sampler																		
Laboratory service																		
Microbalance (see PM-2.5)																		
Clean room (see PM-2.5)																		
Laboratory																		
PM-coarse sampler (FRM)																		
PM-coarse sampler (FRM collocated)																		
PM-coarse speciation (contract)																		
Element #3 totals														12,298		\$578,097		\$6,167
4. Maintenance																		
Spare parts/supplies																		
PM-coarse sampler (continuous)																		
PM-coarse sampler (cont collocated)																		\$10,046
																		\$1,005
Element #4 totals														198		\$9,625		\$140,736

Table 9.3, 2009 PM-coarse Monitoring Costs

Cost Element	Previous Amortized Hours and Costs						New Site Hours and Costs						Summary, PM-coarse				
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Hours	Total Amor. Cost	Total Plus New	Hours	Labor Costs	Non-labor O & M	Equip/ Contract \$
1. Network Design																	
Network design (RO)	25	30	7	\$887	107	\$3,166	5	30	7	887	21	\$633		129	\$3,799		
Site selection (RO)	25	8	7	\$324	29	\$1,156	5	8	7	324	6	\$231		34	\$1,387		
Element #1 totals					136	\$4,322					27	\$864		163	\$5,187		
2. Site Installation																	
Analyzer cost																	
PM-coarse sampler (continuous)	17		7	\$23,901		\$68,045	3		7	23,901		\$10,243					\$68,288
PM-coarse sampler (cont collocated)	2		7	\$23,901		\$5,804	1		7	\$23,901		\$3,414					\$9,219
PM-coarse sampler (FRM)	34		7	\$14,123		\$68,598	7		7	\$14,123		\$14,123					\$82,722
PM-coarse sampler (FRM collocated)	6		7	\$14,123		\$12,106	1		7	\$14,123		\$2,018					\$14,123
PM-coarse speciation sampler																	
Sampling platform (see PM-2.5)	17		7	\$435		\$1,055	3		7	435		\$186					\$1,242
Data acquisition (laptop/PDA)	59	16	7	\$812	134	\$6,805								134	\$6,805		
Procurement (speciation)																	
Equipment installation																	
PM-coarse sampler (continuous)	17	8	7	\$380	19	\$923	3	8	7	\$380	3	\$163					
PM-coarse sampler (cont collocated)	2	8	7	\$380	2	\$92											
PM-coarse sampler (FRM)	34	8	7	\$380	39	\$1,847	7	8	7	380	8	\$380					
PM-coarse sampler (FRM collocated)	5	8	7	\$380	6	\$272	1	8	7	380	1	\$54					
PM-coarse speciation sampler																	
Element #2 totals					200	\$155,548					13	\$30,562		213	\$10,537		\$175,593
3. Sampling & analysis																	
Filters and acceptance testing																	
PM-coarse sampler (FRM)													48				\$7,744
PM-coarse speciation sampler																	
Site visits																	
PM-coarse sampler (continuous)													17	544	\$26,189		\$26,189
PM-coarse sampler (cont collocated)													2	54	\$2,619		\$2,619
PM-coarse sampler (FRM)													41	7,380	\$346,718		\$346,718
PM-coarse sampler (FRM collocated)													6	1,080	\$50,739		\$50,739
PM-coarse speciation sampler																	
Laboratory service																	
Microbalance (see PM-2.5)																	
Clean room (see PM-2.5)																	
Laboratory																	
PM-coarse sampler (FRM)													41	4,920	\$243,068		\$243,068
PM-coarse sampler (FRM collocated)													6	720	\$35,571		\$35,571
PM-coarse speciation (contract)																	
Element #3 totals														14,698	\$704,904		\$704,904
4. Maintenance																	
Spare parts/supplies																	
PM-coarse sampler (continuous)													17				\$10,250
PM-coarse sampler (cont collocated)													2				\$1,025
PM-coarse sampler (FRM)													41				\$13,363
PM-coarse sampler (FRM collocated)													6				\$1,956

Table 9.3, 2009 PM-coarse Monitoring Costs

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs				Summary PM-coarse										
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# Old Plus New	Hours	O & M	Labor Hours	Non-labor O & M	Equip/ Contract \$	
QA plan review (annual) RO														52	\$2,700				
Audits																			
PM-coarse sampler (continuous)														200	\$9,582				
PM-coarse sampler (FRM)														410	\$19,866				
PM-coarse speciation sampler																			
Reporting																			
PM-coarse sampler (continuous)														80	\$4,563				
PM-coarse sampler (FRM)														164	\$9,354				
PM-coarse spec. sampler (contract)																			
Implementation/coordination																			
PM-coarse sampler (continuous)														260	\$13,841				
PM-coarse sampler (FRM)														267	\$25,790				
PM-coarse speciation sampler																			
Training																			
PM-coarse sampler (continuous)														120	\$6,214				
PM-coarse sampler (FRM)														123	\$12,739				
PM-coarse speciation sampler																			
Element # 6 totals					75	\$7,776					15	\$1,570	1,675	\$104,649		1,765	\$109,968		\$4,029
7. Supervision																			
Planning/coordination																			
PM-coarse sampler (continuous)														180	\$10,299				
PM-coarse sampler (single channel)														41	\$21,113				
PM-coarse speciation sampler																			
Supervision/review																			
PM-coarse sampler (continuous)														480	\$27,573				
PM-coarse sampler (single channel)														41	\$56,524				
PM-coarse speciation sampler																			
Element # 7 totals													2,013	\$115,509		2,013	\$115,509		
Summary Totals																			

Table 10.0, Summary of Pb 2009-2011 Monitoring Costs

December 2008

Cost Element	2009				2010				2011				Average 2009-2011 Pb			
	Summary Pb		Summary Pb		Summary Pb		Summary Pb		Summary Pb		Summary Pb		Summary Pb		Summary Pb	
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$
1. Network Design																
Network design (reporting org)	643	\$18,996			643	\$19,376			643	\$19,764			643	\$19,379		
One time waivers	0	\$0			0	\$0			0	\$0			0	\$0		
Site selection (reporting org)	171	\$10,057			171	\$10,258			171	\$10,463			171	\$10,259		
Element #1 totals	814	\$29,053			814	\$29,635			814	\$30,227			814	\$29,638		
2. Site Installation																
High volume sampler				\$58,355				\$103,214								\$88,949
Audit calibration kit				\$3,647				\$6,451								\$6,559
Procurement	215	\$8,403			373	\$14,863			373	\$15,160			320	\$12,809		
Equipment installation	215	\$7,703			373	\$13,624			373	\$13,897			320	\$11,741		
Element #2 totals	430	\$16,106		\$62,002	745	\$28,487		\$109,665	745	\$29,057		\$111,856	640	\$24,550		\$94,509
3. Sampling and Analysis																
Supplies			\$30,636				\$30,636				\$54,187				\$55,271	\$46,688
Filters			\$30,636				\$30,636				\$54,187				\$55,271	\$46,698
Laboratory services (contract)				\$328,832				\$581,612								\$501,229
Routine site visits	16,920	\$791,034			29,340	\$1,399,120			29,340	\$1,427,103			25,200	\$1,205,752		\$501,229
Element #3 totals	16,920	\$791,034	\$61,273	\$328,832	29,340	\$1,399,120	\$108,375	\$581,612	29,340	\$1,427,103	\$110,542	\$593,244	25,200	\$1,205,752	\$93,397	\$501,229
4. Maintenance																
Spare parts/supplies	1,504	\$66,788	\$61,273		2,608	\$118,129	\$108,375		2,608	\$120,491	\$110,542		2,240	\$101,802	\$93,397	
Remedial repairs	1,504	\$66,788			2,608	\$118,129			2,608	\$120,491			2,240	\$101,802		
Routine maintenance	3,008	\$133,575	\$61,273		5,216	\$236,257	\$108,375		5,216	\$240,982	\$110,542		4,480	\$203,605	\$93,397	
Element #4 totals	3,008	\$133,575	\$61,273		5,216	\$236,257	\$108,375		5,216	\$240,982	\$110,542		4,480	\$203,605	\$93,397	
5. Data Management																
Data acquisition/processing	1,504	\$35,947			2,608	\$63,580			2,608	\$64,852			2,240	\$54,793		
Data reporting	752	\$40,236			1,304	\$71,166			1,304	\$72,590			1,120	\$61,331		
Data validation	2,256	\$120,708			3,912	\$213,499			3,912	\$217,769			3,360	\$183,982		
Data distribution	188	\$10,008			326	\$17,701			326	\$18,055			280	\$15,255		
Element #5 totals	4,700	\$206,898			8,150	\$365,946			8,150	\$373,265			7,000	\$315,370		
6. Quality Assurance																
Audits	2,256	\$85,782			3,912	\$151,725			3,912	\$154,759			3,360	\$130,755		
Coordination/implementation	752	\$38,602			1,304	\$68,276			1,304	\$69,642			1,120	\$58,840		
Training	752	\$33,292			1,304	\$58,884			1,304	\$60,061			1,120	\$50,746		
QA plan review (annual) RO	23	\$2,348			23	\$2,395			23	\$2,443			23	\$2,395		
QA plan preparation (RO)	360	\$19,282			360	\$19,647			360	\$20,040			360	\$19,650		
Element #6 totals	4,143	\$179,286			6,903	\$300,927			6,903	\$306,945			5,983	\$262,386		
7. Supervision																
Planning/coordination	752	\$42,891			1,304	\$75,862			1,304	\$77,360			1,120	\$65,378		
Supervision/review	1,128	\$64,132			1,956	\$113,432			1,956	\$115,701			1,680	\$97,755		
Element #7 totals	1,880	\$107,023			3,260	\$189,295			3,260	\$193,061			2,800	\$163,133		
Summary of Elements and Costs	31,605	\$1,462,976	\$122,546	\$350,834	54,423	\$2,549,667	\$216,758	\$691,277	54,423	\$2,560,660	\$221,085	\$703,105	46,977	\$2,204,434	\$186,794	\$595,738
Summary Totals			\$1,976,356				\$3,457,694					\$3,526,848				\$2,986,966

Table 11. PAMS Summary of 2007-2009 Monitoring Burden and Costs

Aug 2006

Cost/Element	Average 2007-2009 VOC			Average 2007-2009 NMOC			Average 2007-2009 NOx and NOy			Total Cost
	Labor Hours	Labor Costs	Non-labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Labor Hours	Labor Costs	Non-labor O & M	
1. Network Design	1,112	\$375,186		118	\$6,814		81	\$4,687		\$4,687
2. Site Installation	47,377	\$2,299,126	\$106,201	99	\$3,871		43	\$2,002	\$46,799	\$48,801
3. Sampling & Analysis	17,920	\$934,175	\$439,305	3,480	\$157,501	\$24,716	1,800	\$81,466	\$12,784	\$94,250
4. Maintenance	50,119	\$2,720,235		1,131	\$56,445	\$30,895	1,290	\$64,575	\$15,980	\$80,555
5. Data Management	12,990	\$743,720	\$37,713	2,572	\$133,768		4,950	\$254,600		\$254,600
6. Quality Assurance	9,315	\$553,444		1,218	\$65,404		2,072	\$107,721		\$107,721
7. Supervision							4,158	\$223,276		\$223,276

Cost/Element	Average 2007-2009 Surface Met			Average 2007-2009 Upper Air			Average 2007-2009 Carbonyl Freq E (8/3/1)			Total Cost
	Labor Hours	Labor Costs	Non-labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Labor Hours	Labor Costs	Non-labor O & M	
1. Network Design	240	\$13,826		60	\$3,445		8	\$407		\$10,183
2. Site Installation	555	\$29,372		286	\$13,630		414	\$48,983	\$37,072	\$124,240
3. Sampling & Analysis	2,650	\$108,635	\$70,542	352	\$18,469	\$23,437	1,032	\$51,290	\$32,458	\$83,747
4. Maintenance	1,767	\$87,472	\$188,112	110	\$5,766	\$46,875	384	\$20,006		\$20,006
5. Data Management	4,240	\$203,913		220	\$11,180		181	\$9,296	\$14,320	\$23,615
6. Quality Assurance	4,677	\$247,867		638	\$29,949		216	\$12,353		\$12,353
7. Supervision	2,562	\$2,562		113	\$9,023					

Cost/Element	Average 2007-2009 Carbonyl Freq D (4/3/3)			Average 2007-2009 Carbonyl Freq Half D (4/3/3)			Average 2007-2009 Carbonyl Misc Freq			Total Cost
	Labor Hours	Labor Costs	Non-labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Labor Hours	Labor Costs	Non-labor O & M	
1. Network Design	15	\$723		34	\$1,627		46	\$2,214		\$55,438
2. Site Installation	277	\$33,496	\$24,594	273	\$38,541	\$27,685	270	\$37,810	\$32,197	\$207,891
3. Sampling & Analysis	960	\$47,611	\$19,223	1,080	\$53,593	\$21,639	1,256	\$62,298	\$25,153	\$87,450
4. Maintenance	341	\$17,770		384	\$20,003		453	\$23,616		\$23,616
5. Data Management	247	\$12,643	\$8,481	293	\$14,984	\$19,093	503	\$25,661	\$25,986	\$51,648
6. Quality Assurance	192	\$10,980		216	\$12,359		257	\$14,717		\$14,717
7. Supervision										

Grand Total PAMS 2007-2009

Cost/Element	Average 2007-2009 California/Alternative Plant (CAP)			Average 2007-2009 All PAMS (except O3 and NO2)			Total Cost
	Labor Hours	Labor Costs	Non-labor O & M	Labor Hours	Labor Costs	Non-labor O & M	
1. Network Design	97	\$5,208		499	\$28,772	\$0	\$28,772
2. Site Installation	868	\$18,547	\$7,881	2,295	\$434,240	\$0	\$1,072,627
3. Sampling & Analysis	237	\$12,815	\$7,881	57,761	\$2,842,573	\$359,228	\$4,979,948
4. Maintenance	454	\$24,715	\$3,356	27,624	\$1,415,615	\$827,519	\$2,243,134
5. Data Management	1,099	\$62,275		62,677	\$3,352,483	\$0	\$3,352,483
6. Quality Assurance	924	\$55,169		25,272	\$1,387,884	\$108,948	\$1,496,832
7. Supervision				19,170	\$959,287	\$0	\$959,287
Grand Total	195,297	\$10,420,853	\$1,295,696	195,297	\$2,850,773	\$2,850,773	\$14,567,323

Table 12. Summary of PAMS VOC 2007-2009 Monitoring Costs

Cost Element	2007 Summary VOC Costs				2008 Summary VOC Costs				2009 Summary VOC Costs				Average 2007-2009 VOC Costs			
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$
1. Network Design																
Network design study (PAMS area) (see O3)																
Site selection (see O3)																
Element #1 totals				\$120,361 \$134,570				\$122,665 \$137,146								\$122,726 \$137,215
2. Site Installation																
Canister sampling system																
3 months operation																
12 months operation (1/6 collocation)																
Procurement																
GC (on site) & GC (lab) for 23 areas	378	\$20,046			378	\$20,430			378	\$20,845			378	\$20,440		
Canister sampling sys and cans	91	\$4,693			91	\$4,783			91	\$4,880			91	\$4,785		
Equipment installation																
GC (on site) & GC (lab) for 16 area & ca	472	\$334,045			472	\$340,439			472	\$347,345			472	\$340,609		
Canister sampling system	171	\$9,171			171	\$9,347			171	\$9,536			171	\$9,351		
Element #2 totals	1,112	\$367,955		\$254,931	1,112	\$374,998		\$259,811	1,112	\$382,606		\$265,082	1,112	\$375,186		\$259,941
3. Sampling & Analysis																
Automated GC with FID																
GC installation	3,186	\$158,534		\$1,109,578	3,186	\$161,569		\$1,130,818	3,186	\$164,846		\$1,153,757	3,186	\$161,650		\$1,131,384
GC annual checkout	3,740	\$189,799			3,580	\$193,433			3,460	\$197,357			3,593	\$193,530		
Operation of GC	30,680	\$1,425,869			30,680	\$1,453,163			30,680	\$1,482,642			30,680	\$1,453,691		
Canisters																
80 for 8/3/1				\$26,747				\$27,259								\$27,812
40 for 8/3/3				\$43,464				\$44,296								\$45,194
20 for 4/3/3				\$30,090				\$30,259								\$30,781
4 for 1/6				\$19,057				\$18,740								\$18,078
Canister analysis																
8/3/1	728	\$9,162			728	\$9,337			728	\$9,526			728	\$9,342		
8/3/3	806	\$10,143			806	\$10,337			806	\$10,547			806	\$10,343		
4/3/3	209	\$21,067			186	\$19,084			186	\$19,472			194	\$19,874		
1/6	435	\$43,757			419	\$43,030			397	\$41,508			417	\$42,765		
Canister cleaning system				\$28,420				\$28,964								\$29,552
GC support gases																
Routine site visits (canister)	8,096	\$416,687	\$106,201		7,744	\$406,200	\$106,201		7,480	\$400,311	\$106,201		7,773	\$407,793	\$106,201	
Element #3 totals	47,880	\$2,275,018	\$106,201	\$1,257,356	47,329	\$2,296,153	\$106,201	\$1,277,336	46,923	\$2,326,208	\$106,201	\$1,302,204	47,377	\$2,299,126	\$106,201	\$1,278,965
4. Maintenance																
Spare parts/supplies (GC)																
Spare parts/supplies (canister)				\$154,108				\$157,058								\$157,137
Remedial repairs (GC)	4,720	\$240,162			4,720	\$244,759			4,720	\$249,724			4,720	\$244,882		
Remedial repairs (canister)	2,944	\$156,294			2,816	\$152,360			2,720	\$150,151			2,827	\$152,935		
Routine maintenance (GC)	4,720	\$226,046			4,720	\$230,373			4,720	\$235,046			4,720	\$230,488		
Routine maintenance (canister)	5,888	\$312,587			5,632	\$304,720			5,440	\$300,303			5,653	\$305,870		
Element #4 totals	18,272	\$995,089	\$442,473		17,888	\$932,212	\$438,165		17,900	\$935,224	\$437,276		17,920	\$934,175	\$439,305	
5. Data Management																
Data acquisition/processing (GC)	4,956	\$242,381			4,956	\$247,021			4,956	\$252,032			4,956	\$247,145		
Data acquisition/processing (canisters)	2,208	\$113,616			2,112	\$110,756			2,040	\$109,151			2,120	\$111,174		
Data reporting (GC)	1,888	\$100,972			1,888	\$102,904			1,888	\$104,982			1,888	\$102,986		
Data reporting (canister)	920	\$48,830			880	\$47,601			850	\$46,911			883	\$47,780		
Data validation (GC)	7,552	\$400,927			7,552	\$408,602			7,552	\$416,881			7,552	\$408,807		
Data validation (canister)	3,680	\$194,166			3,520	\$189,279			3,400	\$186,535			3,533	\$189,993		
Data analysis & trends (GC)	19,470	\$1,055,701			19,470	\$1,075,910			19,470	\$1,097,735			19,470	\$1,076,449		

Table 12.2, 2008 PAMS VOC Costs

Aug 2008

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs				Summary VOC Costs								
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract \$	
1. Network Design																	
Network design study (PAMS area) (see O3)																	
Site selection (see O3)																	
Element #1 totals																	
2. Site Installation																	
Canister sampling system	36		5	\$17,037													\$122,665
3 months operation	92		5	\$7,454													\$137,146
12 months operation (1/6 collocation)																	
Procurement	59	32	5	\$1,731	378	\$20,430							378	\$20,430			
GC (on site) & GC (lab) for 23 areas	57	8	5	\$420	91	\$4,783							91	\$4,783			
Canister sampling sys and cans																	
Equipment installation	59	40	5	\$28,851	472	\$340,439							472	\$340,439			
GC (on site) & GC (lab) for 16 area & ca	57	15	5	\$820	171	\$9,347							171	\$9,347			
Canister sampling system																	
Element #2 totals																	
					1,112	\$634,810							1,112	\$974,998			\$259,811
3. Sampling & Analysis																	
Automated GC with FID	59		5	\$95,832		\$1,130,618							3,186	\$161,569			\$1,130,818
GC installation	59	270	5	\$13,692	3,186	\$161,569							3,186	\$161,569			
Operation of GC													59	\$193,433			
													59	\$1,453,163			
Canisters																	
80 for 8/3/1	4		5	\$34,074		\$27,259											\$27,259
40 for 8/3/3	13		5	\$17,037		\$44,296											\$44,296
20 for 4/3/3	16		5	\$8,518		\$27,259											\$27,259
4 for 1/6	55		5	\$1,704		\$18,740											\$18,740
Canister analysis																	
8/3/1													4	\$9,337			\$9,337
8/3/3													13	\$10,337			\$10,337
4/3/3													16	\$19,084			\$19,084
1/6													55	\$43,030			\$43,030
Canister cleaning system	24		5	\$6,034		\$28,964											\$28,964
GC support gases																	
Routine site visits (canister)																	
Element #3 totals																	
					3,186	\$1,438,904							353	\$2,296,153	\$106,201		\$1,277,356
4. Maintenance																	
Spare parts/supplies (GC)																	
Spare parts/supplies (canister)																	
Remedial repairs (GC)																	
Remedial repairs (canister)																	
Routine maintenance (GC)																	
Routine maintenance (canister)																	
Element #4 totals																	
													17,888	\$932,212	\$438,165		
5. Data Management																	
Data acquisition/processing (GC)																	
Data acquisition/processing (canisters)																	
Data reporting (GC)																	
Data reporting (canister)																	
Data validation (GC)																	
Data validation (canister)																	
Data analysis & trends (GC)																	
													59	\$247,021	\$157,058		\$1,075,910
													88	\$110,756	\$281,107		
													59	\$102,904			
													88	\$47,601			
													59	\$408,602			
													88	\$189,279			
													59	\$1,075,910			

Table 13.2, 2008 NMOC Monitoring Costs

Aug 2006

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs for NMOC				Summary NMOC						
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor Costs	Non-Labor O & M	Equip/ Contract \$
1. Network Design															
Network design study (RO)	29	30	7	\$1,740	124							124	\$7,208		
Site selection (RO)	29	8	7	\$446	33							33	\$1,848		
Element #1 totals					\$9,056							157	\$9,056		
2. Site Installation															
Analyzer	29		7	\$12,166	\$50,404										\$50,404
Procurement	29	8	7	\$210	\$869							33	\$869		
Equipment installation	29	16	7	\$724	\$3,000							66	\$3,000		
Element #2 totals					\$54,272							99	\$3,869		
3. Supplies and Site Visits															
Supplies															
Routine site visits															
Element #3 totals												3,480	\$157,422	\$24,703	
4. Maintenance															
Spare parts/supplies															
Remedial repairs															
Routine maintenance															
Element #4 totals												3,480	\$157,422	\$24,703	
5 Data Management															
Data acquisition/processing															
Data reporting															
Data validation															
Data distribution															
Element #5 totals												1,972	\$95,973	\$30,879	
6. Quality Assurance															
Audits															
Routine calibrations															
Coordination/implementation															
Training															
Reporting															
QA plan review (annual) RO															
QA plan preparation (RO)															
Element #6 totals	108	15	5	\$869	\$18,768							324	\$18,768		
7. Supervision															
Planning/coordination															
Supervision/review															
Element #7 totals												2,248	\$114,933		
Summary Totals												2,572	\$133,701	\$24,703	\$50,404

Table 13.3, 2009 NMOC Monitoring Costs

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs for NMOC				Summary NMOC									
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Non-labor O & M	Equip/ Contract \$	
1. Network Design																		
Network design study (RO)	29	30	7	\$1,775	124	\$7,354								124				
Site selection (RO)	29	8	7	\$455	33	\$1,886								33				
Element #1 totals					157	\$9,240								157				
2. Site Installation																		
Analyzer	29		7	\$12,413		\$51,426												\$51,426
Procurement	29	8	7	\$214	33	\$887								33				
Equipment installation	29	16	7	\$739	66	\$3,061								66				
Element #2 totals					99	\$55,373								99				\$55,373
3. Supplies and Site Visits																		
Supplies																		
Routine site visits																		
Element #3 totals																		
4. Maintenance																		
Spare parts/supplies																		
Remedial repairs																		
Routine maintenance																		
Element #4 totals																		
5. Data Management																		
Data acquisition/processing																		
Data reporting																		
Data validation																		
Data distribution																		
Element #5 totals																		
6. Quality Assurance																		
Audits																		
Routine calibrations																		
Coordination/implementation																		
Training																		
Reporting																		
QA plan review (annual) RO																		
QA plan preparation (RO)																		
Element #6 totals																		
7. Supervision																		
Planning/coordination																		
Supervision/review																		
Element #7 totals																		
Summary Totals																		

Table 14, Summary of 2007- 2009 NOx & NOy Monitoring Costs

Aug 2006

Cost/Element	2007				2008				2009				Average 2007-2009 NOx-NOy			
	Summary NOx-NOy		Summary NOx-NOy		Summary NOx-NOy		Summary NOx-NOy		Summary NOx-NOy		Summary NOx-NOy		Summary NOx-NOy		Summary NOx-NOy	
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$
1. Network Design																
Network design study (see NO2)																
Site selection (see NO2)																
Precursor NOy monitors																
Network design study																
Site selection	64	\$3,658			64	\$3,728			64	\$3,804			64	\$3,730		
Element #1 totals	17	\$938			17	\$956			17	\$975			17	\$957		
Element #1 totals	81	\$4,596			81	\$4,684			81	\$4,779			81	\$4,687		
2. Site Installation																
Analyzer (see NO2)																
Procurement (see NO2)																
Equipment installation (see NO2)																
Precursor NOy monitors																
Analyzer																
Procurement	9	\$441		\$45,897	9	\$449		\$46,775	9	\$459		\$47,724	9	\$450		\$46,799
Equipment installation	34	\$1,522			34	\$1,552			34	\$1,583			34	\$1,552		
Element #2 totals	43	\$1,963		\$45,897	43	\$2,001		\$46,775	43	\$2,042		\$47,724	43	\$2,002		\$46,799
3. Supplies and Site Visits																
Supplies (see NO2)																
Routine site visits (see NO2)																
Precursor NOy monitors																
Supplies																
Routine site visits	1,800	\$79,896	\$12,538		1,800	\$81,425	\$12,778		1,800	\$83,077	\$13,037		1,800	\$81,466	\$12,784	
Element #3 totals	1,800	\$79,896	\$12,538		1,800	\$81,425	\$12,778		1,800	\$83,077	\$13,037		1,800	\$81,466	\$12,784	
4. Maintenance																
Spare parts/supplies (see NO2)																
Remedial repairs (see NO2)																
Routine maintenance (see NO2)																
Precursor NOy monitors																
Spare parts/supplies																
Remedial repairs	240	\$11,707	\$15,672		240	\$11,931	\$15,972		240	\$12,173	\$16,296		240	\$11,937	\$15,980	
Routine maintenance	1,050	\$51,624			1,050	\$52,612			1,050	\$53,679			1,050	\$52,638		
Element #4 totals	1,290	\$63,331	\$15,672		1,290	\$64,543	\$15,972		1,290	\$65,852	\$16,296		1,290	\$64,575	\$15,980	
5 Data Management																
Data acquisition/processing																
Data reporting	1,680	\$85,043			1,680	\$86,670			1,680	\$88,429			1,680	\$86,714		
Data validation	840	\$43,443			840	\$44,274			840	\$45,173			840	\$44,297		
Data distribution	1,260	\$62,663			1,260	\$63,862			1,260	\$65,158			1,260	\$63,894		
Element #5 totals	420	\$20,712			420	\$21,109			420	\$21,537			420	\$21,119		
6. Quality Assurance																
Precursor NOy monitors																
Data acquisition/processing	300	\$15,186			300	\$15,477			300	\$15,791			300	\$15,485		
Data reporting	150	\$7,758			150	\$7,906			150	\$8,067			150	\$7,910		
Data validation	225	\$11,190			225	\$11,404			225	\$11,635			225	\$11,410		
Data distribution	75	\$3,699			75	\$3,769			75	\$3,846			75	\$3,771		
Element #6 totals	4,950	\$249,093			4,950	\$254,472			4,950	\$259,634			4,950	\$254,600		

Table 14.1, 2007 NOx & NOy Monitoring Costs

Aug 2006

Cost Element	Previous Amortized Hours and Cost				New Site Hours and Costs for NOx & Precursor NOy				Summary NOx:NOy									
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract \$	
1. Network Design																		
Network design study (see NO2)																		
Site selection (see NO2)																		
Precursor NOy monitors																		
Network design study	15	30	7	\$1,707	64	\$3,658								64	\$3,658			
Site selection	15	8	7	\$438	17	\$938								17	\$938			
Element #1 totals					81	\$4,596								81	\$4,596			
2. Site Installation																		
Analyzer (see NO2)																		
Procurement (see NO2)																		
Equipment installation (see NO2)																		
Precursor NOy monitors																		
Analyzer	15		7	\$21,418		\$45,897								9	\$441		\$45,897	
Procurement	15	4	7	\$206	9	\$441								34	\$1,522			
Equipment installation	15	16	7	\$710	34	\$1,522								43	\$1,963		\$45,897	
Element #2 totals					43	\$47,860								43	\$1,963		\$45,897	
3. Supplies and Site Visits																		
Supplies (see NO2)																		
Routine site visits (see NO2)																		
Precursor NOy monitors																		
Supplies																		
Routine site visits														15			\$12,538	
Element #3 totals														15			\$12,538	
4. Maintenance																		
Spare parts/supplies (see NO2)																		
Remedial repairs (see NO2)																		
Routine maintenance (see NO2)																		
Precursor NOy monitors																		
Spare parts/supplies																		
Remedial repairs																		
Routine maintenance														15			\$15,672	
Element #4 totals														15			\$15,672	
5 Data Management																		
Data acquisition/processing																		
Data reporting																		
Data validation																		
Data distribution																		
Precursor NOy monitors																		
Data acquisition/processing																		
Data reporting																		
Data validation																		
Data distribution																		
Element #5 totals														4,950	\$249,693		\$249,693	

Aug 2006
Table 14.1, 2007 NOx & NOy Monitoring Costs

Cost Element	Previous Amortized Hours and Cost							New Site Hours and Costs for NOx & Precursor NOy							Summary NOx-NOy		
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Non-labor O & M	Equip/ Contract \$
6. Quality Assurance																	
Audits (see NO2)																	
Routine calibrations (see NO2)																	
Coordination/implementation (see NO2)																	
Training (see NO2)																	
Reporting (see NO2)																	
QA plan review (annual) (see NO2)																	
QA plan preparation (RO) (see NO2)																	
Precursor NOy monitors																	
Audits																	
Routine calibrations																	
Coordination/implementation																	
Training																	
Reporting																	
QA plan review (annual)																	
QA plan preparation	15	15	5	\$853	45	\$2,558											
Element #6 totals					45	\$2,558								2,027	\$103,087		
7. Supervision																	
Planning/coordination																	
Supervision/review																	
Precursor NOy monitors																	
Planning/coordination																	
Supervision/review																	
Element #7 totals														4,158	\$218,972		
Summary Totals														6,185	\$321,059		

Table 14.3, 2009 NOx & NOy Monitoring Costs

Cost Element	Previous Amortized Hours and Costs					New Site Hours and Costs for Precursor NOy					Summary NOx-NOy						
	# Old Sites	Hours Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Non-labor O & M	Equip/ Contract \$
1. Network Design																	
Network design study (see NO2)																	
Site selection (see NO2)																	
Precursor NOy monitors																	
Network design study	15	30	7	\$1,775	64	\$3,804								64		\$3,804	
Site selection	15	8	7	\$455	17	\$975								17		\$975	
Element #1 totals					81	\$4,779								81		\$4,779	
2. Site Installation																	
Analyzer (see NO2)																	
Procurement (see NO2)																	
Equipment installation (see NO2)																	
Precursor NOy monitors																	
Analyzer	15	4	7	\$22,271	9	\$47,724								9		\$459	\$47,724
Procurement	15	16	7	\$214	34	\$459								34		\$1,583	
Equipment installation	15	16	7	\$739	43	\$1,583								43		\$2,042	
Element #2 totals					43	\$49,766								43		\$2,042	\$47,724
3. Supplies and Site Visits																	
Supplies (see NO2)																	
Routine site visits (see NO2)																	
Precursor NOy monitors																	
Supplies																	
Routine site visits																	
Element #3 totals																	
4. Maintenance																	
Spare parts/supplies (see NO2)																	
Remedial repairs (see NO2)																	
Routine maintenance (see NO2)																	
Precursor NOy monitors																	
Spare parts/supplies																	
Remedial repairs																	
Routine maintenance																	
Element #4 totals																	
5. Data Management																	
Data acquisition/processing																	
Data reporting																	
Data validation																	
Data distribution																	
Precursor NOy monitors																	
Data acquisition/processing																	
Data reporting																	
Data validation																	
Data distribution																	
Element #5 totals																	
6. Quality Assurance																	

Table 16, Summary of 2007-2009 Upper Air Meteorological Monitoring Costs

Aug 2006

Cost Element	2007				2008				2009				Average 2007-2009			
	Summary Upper Air Met				Summary Upper Air Met				Summary Upper Air Met				Summary Upper Air Met			
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$
1. Network Design																
Network design and site selection	60	\$3,379			60	\$3,444			60	\$3,513			60	\$3,445		
Element #1 totals	\$60	\$3,379			\$60	\$3,444			\$60	\$3,513			\$60	\$3,445		
2. Site Installation																
Continuous - LAP/RASS				\$167,914				\$171,129				\$174,600				\$171,214
Continuous - radar profiler				\$74,629				\$76,057				\$77,600				\$76,095
Inter. soundings - Rawinsondes				\$6,903				\$7,035				\$7,177				\$7,038
Continuous - SODAR				\$69,793				\$71,129				\$72,572				\$71,165
Continuous - LAP/RASS + NEXRA				\$18,657				\$19,014				\$19,400				\$19,024
Computer hardware & software				\$26,269				\$26,772				\$27,315				\$26,786
Acceptance testing	189	\$8,088			189	\$8,242			189	\$8,410			189	\$8,247		
Procurement	50	\$2,752			50	\$2,804			50	\$2,861			50	\$2,806		
Equipment installation	47	\$2,528			47	\$2,577			47	\$2,629			47	\$2,578		
Element #2 totals	\$286	\$13,368		\$364,165	\$286	\$13,624		\$371,136	\$286	\$13,900		\$378,665	\$286	\$13,630		\$371,322
3. Sampling and Analysis																
Supplies/spare parts	352	\$18,113	\$22,986		352	\$18,459	\$23,426		352	\$18,834	\$23,901		352	\$18,469	\$23,437	
Routine field service checks	\$352	\$18,113	\$22,986		\$352	\$18,459	\$23,426		\$352	\$18,834	\$23,901		\$352	\$18,469	\$23,437	
Element #3 totals																
4. Maintenance																
Remedial field service	110	\$5,654	\$45,971		110	\$5,763	\$46,851		110	\$5,880	\$47,802		110	\$5,766	\$46,875	
Spare parts	\$110	\$5,654	\$45,971		\$110	\$5,763	\$46,851		\$110	\$5,880	\$47,802		\$110	\$5,766	\$46,875	
Element #4 totals																
5. Data Management																
Data acquisition, processing, etc.	132	\$6,436			132	\$6,559			132	\$6,692			132	\$6,562		
Data validation	88	\$4,528			88	\$4,615			88	\$4,708			88	\$4,617		
Element #5 totals	\$220	\$10,964			\$220	\$11,174			\$220	\$11,401			\$220	\$11,180		
6. Quality Assurance																
Audits	176	\$4,827			176	\$4,919			176	\$5,019			176	\$4,922		
Routine calibrations	110	\$5,953			110	\$6,067			110	\$6,190			110	\$6,070		
Coordination/implementation	44	\$2,345			44	\$2,389			44	\$2,438			44	\$2,391		
Training	176	\$9,631			176	\$9,815			176	\$10,014			176	\$9,820		
QA/QC reporting & review	33	\$1,770			33	\$1,804			33	\$1,840			33	\$1,805		
QA plan review (annual)	11	\$1,104			11	\$1,125			11	\$1,148			11	\$1,126		
QA plan preparation	88	\$3,742			88	\$3,814			88	\$3,891			88	\$3,816		
Element #6 totals	\$638	\$29,372			\$638	\$29,934			\$638	\$30,541			\$638	\$29,949		
7. Supervision																
Planning/coordination	41	\$2,345			41	\$2,389			41	\$2,438			41	\$2,391		
Supervision/review	72	\$6,505			72	\$6,629			72	\$6,764			72	\$6,633		
Element #7 totals	\$113	\$8,849			\$113	\$9,019			\$113	\$9,202			\$113	\$9,023		

Table 16.2, 2008 Upper Air Meteorology Monitoring Costs

Aug 2006

Cost Element	Previous/Amortized Hours and Costs					New Site Hours and Costs for Upper Air Met					Summary Upper Air Met							
	# Old Sites	Hours Site	Years Amor.	Cost/ Site	Total Amor. Hours	# New Sites	Hours Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# Old Plus New	Hours	O & M	Labor Hours	Non-labor Costs	Equip/ O & M	Contract \$
1. Network Design																		
Network design and site selection	22	19	7	\$1,096	60					\$3,444					60	\$3,444		
Element #1 totals					60					\$3,444					\$60	\$3,444		
2. Site Installation																		
Continuous - LAP/RASS	9		7	\$133,100						\$171,129							\$171,129	
Continuous - radar profiler	4		7	\$133,100						\$76,057							\$76,057	
Inter. soundings - Rawindsondes	1		7	\$49,243						\$7,035							\$7,035	
Continuous - SODAR	7		7	\$71,129						\$71,129							\$71,129	
Continuous - LAP/RASS +NEXRA	1		7	\$133,100						\$19,014							\$19,014	
Computer hardware & software	22		7	\$8,518						\$26,772							\$26,772	
Acceptance testing	22	60	7	\$2,623	189					\$8,242					189	\$8,242		
Procurement	22	16	7	\$892	50					\$2,804					50	\$2,804		
Equipment installation	22	15	7	\$820	47					\$2,577					47	\$2,577		
Element #2 totals					286					\$384,760					286	\$13,624		\$371,136
3. Sampling and Analysis																		
Supplies/spare parts												22						\$23,426
Routine field service checks											22				352	\$18,459		\$23,426
Element #3 totals															352	\$18,459		\$23,426
4. Maintenance																		
Remedial field service											22				110	\$5,763		\$46,851
Spare parts											22				110	\$5,763		\$46,851
Element #4 totals															220	\$11,526		\$93,702
5. Data Management																		
Data acquisition, processing, etc.											22				132	\$6,559		\$6,559
Data validation											22				88	\$4,615		\$4,615
Element #5 totals															220	\$11,174		\$11,174
6. Quality Assurance																		
Audits											22				176	\$4,919		\$4,919
Routine calibrations											22				110	\$6,067		\$6,067
Coordination/implementation											22				44	\$2,389		\$2,389
Training											22				176	\$9,815		\$9,815
QA/QC reporting & review											22				33	\$1,804		\$1,804
QA plan review (annual)											22				11	\$1,125		\$1,125
QA plan preparation		20	5	\$867	88					\$3,814					88	\$3,814		\$3,814
Element #6 totals					88					\$3,814					550	\$26,120		\$29,934
7. Supervision																		
Planning/coordination											22				41	\$2,389		\$2,389
Supervision/review											22				72	\$6,629		\$6,629

Table 17, Summary of 2007- 2009 Carbonyl Frequency E

Cost Element	2007										2008										2009										Average 2007-2009									
	Summary Carbonyl Frequency E					Summary Carbonyl Frequency E					Summary Carbonyl Frequency E					Summary Carbonyl Frequency E					Summary Carbonyl Frequency E					Summary Carbonyl Frequency E					Summary Carbonyl Frequency E									
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Frequency E	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Frequency E	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Frequency E	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Frequency E	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Frequency E	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Frequency E										
1. Network Design (see O3)																																								
Element #1 totals																																								
2. Site Installation																																								
Cartridge sampler																																								
Procurement	6	\$329		\$13,373		5	\$252		\$10,222		3	\$171														5	\$251			\$10,183										
Equipment installation	5	\$205				4	\$157				2	\$106														4	\$156													
Element #2 totals	11	\$534		\$13,373		8	\$408		\$10,222		6	\$278														8	\$407			\$10,183										
3. Sampling & Analysis																																								
Supplies			\$3,134					\$2,396																																
Carbonyl sample cartridges			\$35,523					\$27,152																																
HPLC/UV with autosampler				\$49,315				\$37,694																																
Equipment (auxiliary)				\$836				\$639																																
Supplies/reagents			\$10,030					\$7,667																																
Sample analysis	270	\$55,583				270	\$42,486				270	\$28,898													270	\$42,322														
Equipment setup	32	\$1,647				24	\$1,259				16	\$856													24	\$1,254														
Routine site visits	160	\$7,100				120	\$5,427				80	\$3,692													120	\$5,406														
Element #3 totals	462	\$64,330	\$48,688	\$50,150		414	\$49,171	\$37,215	\$38,333		366	\$33,446	\$25,313	\$26,074		414	\$48,983	\$37,072	\$38,166						414	\$48,983	\$37,072	\$38,166												
4. Maintenance																																								
Spare parts/supplies			\$42,628					\$32,583																																
Remedial calibrations	64	\$3,034				48	\$2,319				32	\$1,577													48	\$2,310														
Repairs	416	\$19,584				312	\$14,969				208	\$10,182													312	\$14,911														
Maintenance	896	\$44,743				672	\$34,199				448	\$23,262													672	\$34,068														
Element #4 totals	1,376	\$67,360	\$42,628			1,032	\$51,487	\$32,583			688	\$35,021	\$22,163			1,032	\$51,290	\$32,458							1,032	\$51,290	\$32,458													
5. Data Management																																								
Data acquisition/processing	192	\$9,366				144	\$7,159				96	\$4,869													144	\$7,131														
Data reporting	80	\$4,246				60	\$3,246				40	\$2,208													60	\$3,233														
Data validation	240	\$12,663				180	\$9,679				120	\$6,584													180	\$9,642														
Element #5 totals	512	\$26,275				384	\$20,083				256	\$13,660													384	\$20,006														
6. Quality Assurance																																								
Calibration standards			\$18,806					\$14,375																																
Calibrations (site & lab)	56	\$2,796				42	\$2,137				28	\$1,454													42	\$2,129														
Audits	48	\$2,382				36	\$1,821				24	\$1,238													36	\$1,814														
Training	64	\$3,139				48	\$2,399				32	\$1,632													48	\$2,390														
Implementation/coordination	64	\$3,398				48	\$2,597				32	\$1,766													48	\$2,587														
QA plan preparation	10	\$494				7	\$378				5	\$257													7	\$378														
Element #6 totals	242	\$12,208	\$18,806			181	\$9,331	\$14,375			121	\$6,347	\$9,778			181	\$9,296	\$14,320							181	\$9,296	\$14,320													
7. Supervision																																								
Planning/coordination	144	\$7,723				108	\$5,903				72	\$4,015													108	\$5,881														
Supervision/review	144	\$8,500				108	\$6,497				72	\$4,419													108	\$6,472														
Element #7 totals	288	\$16,224				216	\$12,401				144	\$8,435													216	\$12,353														
Summary Totals																																								

Table 19, Summary of 2007- 2009 Carbonyl Frequency Half D (4/3/3)

Cost Element	2007						2008						2009						Average 2007-2009						
	Summary Carbonyl Half D			Summary Carbonyl Half D			Summary Carbonyl Half D			Summary Carbonyl Half D			Summary Carbonyl Half D			Summary Carbonyl Half D			Summary Carbonyl Half D			Summary Carbonyl Half D			
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	
1. Network Design (see O3)																									
Element #1 totals																									
2. Site Installation																									
Cartridge sampler				\$53,494				\$40,888																	\$40,731
Procurement	26	\$1,317			19	\$1,007				13	\$685										19	\$1,003			
Equipment installation	19	\$919			14	\$626				10	\$426										14	\$624			
Element #2 totals	45	\$2,136		\$53,494	34	\$1,633		\$40,888		22	\$1,111										34	\$1,627			\$40,731
3. Sampling & Analysis																									
Supplies			\$2,090				\$1,597																		
Carbonyl sample cartridges			\$24,239				\$18,528																		
HPLC/UV with autosampler				\$197,258				\$150,776																	\$150,197
Equipment (auxiliary)				\$3,343				\$2,556																	\$2,546
Supplies/reagents			\$10,030				\$7,667																		\$7,637
Sample analysis	45	\$37,053			45	\$28,322				45	\$19,264										45	\$28,213			
Equipment setup	48	\$2,197			36	\$1,679				24	\$1,142										36	\$1,673			
Routine site visits	256	\$11,367			192	\$8,689				128	\$5,910										192	\$8,655			
Element #3 totals	349	\$50,617	\$36,359	\$200,602	273	\$38,689	\$27,791	\$153,331		197	\$26,316										273	\$38,541			\$152,742
4. Maintenance																									
Spare parts/supplies			\$28,419				\$21,722																		
Remedial calibrations	128	\$6,068			96	\$4,638				64	\$3,155										96	\$4,620			\$21,639
Repairs	416	\$19,575			312	\$14,963				208	\$10,177										312	\$14,905			
Maintenance	896	\$44,743			672	\$34,199				448	\$23,262										672	\$34,068			
Element #4 totals	1,440	\$70,386	\$28,419		1,080	\$53,800	\$21,722			720	\$36,594										1,080	\$53,593			\$21,639
5. Data Management																									
Data acquisition/processing	192	\$9,361			144	\$7,155				96	\$4,867										144	\$7,128			
Data reporting	80	\$4,246			60	\$3,246				40	\$2,208										60	\$3,233			
Data validation	240	\$12,663			180	\$9,679				120	\$6,584										180	\$9,642			
Element #5 totals	512	\$26,270			384	\$20,080				256	\$13,658										384	\$20,003			
6. Quality Assurance																									
Calibration standards			\$25,075				\$19,166																		
Calibrations (site & lab)	56	\$2,800			42	\$2,140				28	\$1,456										42	\$2,132			\$19,093
Audits	96	\$4,764			72	\$3,642				48	\$2,477										72	\$3,628			
Training	128	\$6,277			96	\$4,798				64	\$3,264										96	\$4,780			
Implementation/coordination	72	\$3,862			54	\$2,952				36	\$2,008										54	\$2,940			
QA plan preparation	38	\$1,976			29	\$1,510				19	\$1,027										29	\$1,505			
Element #6 totals	390	\$19,679	\$25,075		283	\$15,042	\$19,166			195	\$10,231										293	\$14,984			\$19,093
7. Supervision																									
Planning/coordination	144	\$7,723			108	\$5,903				72	\$4,015										108	\$5,881			
Supervision/review	144	\$8,509			108	\$6,504				72	\$4,424										108	\$6,479			
Element #7 totals	288	\$16,232			216	\$12,407				144	\$8,439										216	\$12,359			
Summary Totals																									

Table 20, Summary of 2007 - 2009 Carbonyl Misc Frequency

Aug 2006

Cost Element	2007					2008					2009					Average 2007-2009				
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Summary Carbonyl/Misc Frequency	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Summary Carbonyl/Misc Frequency	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Summary Carbonyl/Misc Frequency	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	
1. Network Design (see O3)																				
Element #1: totals																				
2. Site Installation																				
Cartridge sampler																				
Procurement	35	\$1,811		\$73,554		26	\$1,342		\$54,518		18	\$942		\$38,241		26	\$1,365			\$55,438
Equipment installation	26	\$1,126				19	\$835				13	\$586				20	\$849			
Element #2: totals	62	\$2,938		\$73,554		45	\$2,177		\$54,518		31	\$1,527		\$38,241		46	\$2,214			\$55,438
3. Sampling & Analysis																				
Supplies (44/yr)			\$287					\$293					\$199					\$260		
Supplies (32/yr)			\$139					\$142					\$72					\$118		
Supplies (16/yr)			\$35					\$18					\$36					\$30		
Supplies (61/yr)			\$133					\$68					\$138					\$113		
Supplies (collocated 61/yr)			\$1,992					\$1,218					\$828					\$1,346		
Carbonyl sample cartridges (44/yr)			\$3,333					\$3,397					\$1,733					\$2,821		
Carbonyl sample cartridges (32/yr)			\$1,616					\$1,647					\$840					\$1,368		
Carbonyl sample cartridges (16/yr)			\$404					\$206					\$420					\$343		
Carbonyl sample cartridges (61/yr)			\$1,540					\$765					\$1,602					\$1,309		
Carbonyl sample cartridges (coll 61/yr)			\$23,103					\$14,127					\$9,609					\$15,613		
HPLC/UV with autosampler				\$271,230					\$201,034					\$141,015					\$204,428	
Equipment (auxiliary)				\$4,597					\$3,407					\$2,390					\$3,465	
Supplies/reagents (44/yr)			\$1,379					\$1,406					\$717					\$1,167		
Supplies/reagents (32/yr)			\$669					\$681					\$348					\$566		
Supplies/reagents (16/yr)			\$167					\$85					\$174					\$142		
Supplies/reagents (61/yr)			\$637					\$325					\$663					\$542		
Supplies/reagents (collocated 61/yr)			\$9,560					\$5,846					\$3,976					\$6,461		
Sample analysis (44/yr)	33	\$5,095				33	\$5,192				33	\$2,649				33	\$4,312			
Sample analysis (32/yr)	24	\$2,470				24	\$2,517				24	\$1,284				24	\$2,091			
Sample analysis (16/yr)	12	\$618				12	\$315				12	\$642				12	\$525			
Sample analysis (61/yr)	46	\$2,354				46	\$1,200				46	\$2,448				46	\$2,001			
Sample analysis (collocated 61/yr)	46	\$35,316				46	\$21,595				46	\$14,689				46	\$23,867			
Equipment setup	66	\$3,020				48	\$2,239				33	\$1,570				49	\$2,276			
Routine site visits (44/yr)	35	\$1,563				35	\$1,593				18	\$813				29	\$1,323			
Routine site visits (32/yr)	17	\$758				17	\$772				9	\$394				14	\$641			
Routine site visits (16/yr)	4	\$189				2	\$97				4	\$197				4	\$161			
Routine site visits (61/yr)	16	\$722				8	\$368				16	\$751				14	\$614			
Routine site visits (collocated 61/yr)	244	\$10,835				146	\$6,625				98	\$4,506				163	\$7,322			
Element #3: totals	299	\$52,106	\$44,994	\$275,827		271	\$35,888	\$30,242	\$204,442		240	\$25,437	\$21,355	\$143,405		270	\$37,810	\$32,197	\$207,891	
4. Maintenance																				
Spare parts/supplies (44/yr)			\$3,908					\$3,982					\$2,032					\$3,307		
Spare parts/supplies (32/yr)			\$1,895					\$1,931					\$985					\$1,603		
Spare parts/supplies (16/yr)			\$474					\$241					\$493					\$402		

Table 20, Summary of 2007- 2009 Carbonyl Misc Frequency

Cost Element	2007				2008				2009				Average 2007-2009			
	Summary Carbonyl/Misc Frequency		Summary Carbonyl/Misc Frequency		Summary Carbonyl/Misc Frequency		Summary Carbonyl/Misc Frequency		Summary Carbonyl/Misc Frequency		Summary Carbonyl/Misc Frequency		Summary Carbonyl/Misc Frequency		Summary Carbonyl/Misc Frequency	
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$
Spare parts/supplies (61/yr)			\$1,806				\$920									
Spare parts/supplies (collocated 61/yr)			\$27,086				\$16,563									
Remedial calibrations (44/yr)	18	\$834			18	\$850			9	\$434			15	\$706		
Remedial calibrations (32 yr)	9	\$405			9	\$412			4	\$210			7	\$342		
Remedial calibrations (16/yr)	2	\$101			1	\$52			2	\$105			2	\$86		
Remedial calibrations (61/yr)	8	\$386			4	\$196			8	\$401			7	\$328		
Remedial calibrations (collocated 61/yr)	122	\$5,784			73	\$3,537			49	\$2,406			81	\$3,909		
Repairs (44/yr)	57	\$2,692			57	\$2,743			29	\$1,399			48	\$2,278		
Repairs (32/yr)	28	\$1,305			28	\$1,330			14	\$678			23	\$1,105		
Repairs (16/yr)	7	\$326			3	\$166			7	\$339			6	\$277		
Repairs (61/yr)	26	\$1,244			13	\$634			26	\$1,293			22	\$1,057		
Repairs (collocation 61/yr)	397	\$18,658			238	\$11,409			159	\$7,760			264	\$12,609		
Maintenance (44/yr)	123	\$6,152			123	\$6,270			62	\$3,199			103	\$5,207		
Maintenance (32/yr)	60	\$2,983			60	\$3,040			30	\$1,551			50	\$2,525		
Maintenance (16/yr)	15	\$746			7	\$380			15	\$775			12	\$634		
Maintenance (61/yr)	57	\$2,843			28	\$1,449			57	\$2,956			47	\$2,416		
Maintenance (collocation 61/yr)	854	\$42,645			512	\$26,077			342	\$17,737			569	\$28,820		
Element # 4 totals	1,782	\$87,103	\$35,168		1,175	\$58,545	\$23,638		812	\$41,245	\$16,653		1,256	\$62,298	\$25,153	
5. Data Management																
Data acquisition/processing (44/yr)	26	\$1,287			26	\$1,312			13	\$669			22	\$1,089		
Data acquisition/processing (32/yr)	13	\$624			13	\$636			6	\$324			11	\$528		
Data acquisition/processing (16/yr)	3	\$156			2	\$80			3	\$162			3	\$133		
Data acquisition/processing (61/yr)	12	\$595			6	\$303			12	\$619			10	\$505		
Data acquisition/processing (coll 61/yr)	183	\$8,923			110	\$5,456			73	\$3,711			122	\$6,030		
Data reporting (44/yr)	11	\$584			11	\$595			7	\$405			10	\$528		
Data reporting (32/yr)	5	\$283			5	\$288			3	\$147			4	\$240		
Data reporting (16/yr)	1	\$71			1	\$72			1	\$74			1	\$72		
Data reporting (61/yr)	5	\$270			5	\$275			5	\$281			5	\$275		
Data reporting (collocation 61/yr)	76	\$4,047			46	\$2,475			31	\$1,683			51	\$2,735		
Data validation (44/yr)	33	\$1,741			33	\$1,774			22	\$1,207			29	\$1,574		
Data validation (32/yr)	16	\$844			16	\$860			8	\$439			13	\$714		
Data validation (16/yr)	4	\$211			4	\$215			4	\$219			4	\$215		
Data validation (61/yr)	15	\$805			15	\$820			15	\$837			15	\$820		
Data validation (collocation 61/yr)	229	\$12,069			137	\$7,380			92	\$5,020			153	\$8,157		
Element # 5 totals	634	\$32,510			431	\$22,542			296	\$15,797			453	\$23,616		
6. Quality Assurance																
Calibration standards			\$34,478				\$25,555								\$25,986	
Calibrations (site & lab)	154	\$7,700			112	\$5,707			77	\$4,003			114	\$5,804		
Audits	264	\$13,102			192	\$9,711			132	\$6,812			196	\$9,875		
Training	112	\$5,493			112	\$5,598			112	\$5,711			112	\$5,600		
Implementation/coordination (44/yr)	10	\$531			10	\$541			7	\$368			9	\$480		

Table 20.1, 2007 PAMS Carbonyl Costs, Misc Frequency

Aug 2006

Cost Element	Previous Amortized Hours and Costs					New Site Hours & Costs for Carbonyl Misc Frequency					Summary Carbonyl/Misc Freq						
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract \$
1. Network Design (see O3)																	
Element #1 totals																	
Cartridge sampler	22		5	\$16,717													
Procurement	22	8	5	\$412	35									35	\$1,811		\$73,554
Equipment installation	22	6	5	\$256	26									26	\$1,126		
Element #2 totals																	
3. Sampling & Analysis																	
Supplies (44/yr)											3					\$287	
Supplies (32/yr)											2					\$139	
Supplies (16/yr)											1					\$35	
Supplies (61/yr)											15					\$1,992	
Supplies (collocated 61/yr)											3					\$3,333	
Carbonyl sample cartridges (44/yr)											2					\$1,616	
Carbonyl sample cartridges (32/yr)											1					\$404	
Carbonyl sample cartridges (16/yr)											1					\$1,540	
Carbonyl sample cartridges (61/yr)											15					\$23,103	
Carbonyl sample cartridges (coll 61/yr)											22						\$271,230
HPLC/UV with autosampler	22		5	\$61,643							22						\$4,597
Equipment (auxiliary)	22		5	\$1,045							22						
Supplies/reagents (44/yr)											3					\$1,379	
Supplies/reagents (32/yr)											2					\$669	
Supplies/reagents (16/yr)											1					\$167	
Supplies/reagents (61/yr)											1					\$637	
Supplies/reagents (collocated 61/yr)											15					\$9,560	
Sample analysis (44/yr)											3					\$5,095	
Sample analysis (32/yr)											2					\$2,470	
Sample analysis (16/yr)											1					\$618	
Sample analysis (61/yr)											1					\$2,354	
Sample analysis (collocated 61/yr)											15					\$35,316	
Equipment setup	22	15	5	\$686	66						22					\$3,020	
Routine site visits (44/yr)											3					\$1,563	
Routine site visits (32/yr)											2					\$758	
Routine site visits (16/yr)											1					\$189	
Routine site visits (61/yr)											1					\$722	
Routine site visits (collocated 61/yr)											15					\$10,835	
Element #3 totals																	
4. Maintenance																	
Spare parts/supplies (44/yr)											3					\$3,908	
Spare parts/supplies (32/yr)											2					\$1,895	
Spare parts/supplies (16/yr)											1					\$474	
Spare parts/supplies (61/yr)											1					\$1,806	
Element #4 totals																	
Summary																	
					66						233			299	\$52,106	\$44,994	\$275,827

Table 20.3, 2009 PAMS Carbonyl Costs, Misc Frequency

Aug 2006

Cost Element	Previous Amortized Hours and Costs				New Site Hours & Costs for Carbonyl				Misc Frequency				Summary Carbonyl Misc Freq				
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# Old Plus New	Hours	Labor Costs	Non-labor O & M	Equip/ Contract \$
1. Network Design (see O3)																	
Element #1 totals																	
2. Site Installation																	
Cartridge sampler	11		5	\$17,382		\$38,241											\$38,241
Procurement	11	8	5	\$428	18	\$942								18	\$942		
Equipment installation	11	6	5	\$266	13	\$586								13	\$586		
Element #2 totals					31	\$39,769								31	\$1,527		\$38,241
3. Sampling & Analysis																	
Supplies (44/yr)													2			\$199	
Supplies (32/yr)													1			\$72	
Supplies (16/yr)													1			\$36	
Supplies (61/yr)													1			\$138	
Supplies (collocated 61/yr)													6			\$828	
Carbonyl sample cartridges (44/yr)													2			\$1,733	
Carbonyl sample cartridges (32/yr)													1			\$840	
Carbonyl sample cartridges (16/yr)													1			\$420	
Carbonyl sample cartridges (61/yr)													1			\$1,602	
Carbonyl sample cartridges (coll 61/yr)													6			\$9,609	
HPLC/UV with autosampler	11		5	\$64,098		\$141,015							11				\$141,015
Equipment (auxiliary)	11		5	\$1,086		\$2,390							11				\$2,390
Supplies/reagents (44/yr)													2			\$717	
Supplies/reagents (32/yr)													1			\$348	
Supplies/reagents (16/yr)													1			\$174	
Supplies/reagents (61/yr)													1			\$663	
Supplies/reagents (collocated 61/yr)													6			\$3,976	
Sample analysis (44/yr)													2	33	\$2,649		
Sample analysis (32/yr)													1	24	\$1,284		
Sample analysis (16/yr)													1	12	\$642		
Sample analysis (61/yr)													1	46	\$2,448		
Sample analysis (collocated 61/yr)													6	46	\$14,689		
Equipment setup	11	15	5	\$714	33	\$1,570							11	33	\$1,570		
Routine site visits (44/yr)													2	18	\$813		
Routine site visits (32/yr)													1	9	\$394		
Routine site visits (16/yr)													1	4	\$197		
Routine site visits (61/yr)													1	16	\$751		
Routine site visits (collocated 61/yr)													6	98	\$4,506		
Element #3 totals					33	\$144,975								207	\$23,867		\$21,355
4. Maintenance																	
Spare parts/supplies (44/yr)													2			\$2,032	
Spare parts/supplies (32/yr)													1			\$985	
Spare parts/supplies (16/yr)													1			\$493	
Spare parts/supplies (61/yr)													1			\$1,878	
Spare parts/supplies (collocated 61/yr)													6			\$11,266	

Table 20.3, 2009 PAMS Carbonyl Costs, Misc Frequency

Aug 2006

Cost Element	Previous Amortized Hours and Costs					New Site Hours & Costs for Carbonyl Misc Frequency					Summary Carbonyl Misc Freq.						
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract \$
Remedial calibrations (44/yr)											2	9	\$434	9	\$434		
Remedial calibrations (32 yr)											1	4	\$210	4	\$210		
Remedial calibrations (16/yr)											1	2	\$105	2	\$105		
Remedial calibrations (61/yr)											1	8	\$401	8	\$401		
Remedial calibrations (collocated 61/yr)											6	49	\$2,406	49	\$2,406		
Repairs (44/yr)											2	29	\$1,399	29	\$1,399		
Repairs (32/yr)											1	14	\$678	14	\$678		
Repairs (16/yr)											1	7	\$339	7	\$339		
Repairs (61/yr)											1	26	\$1,293	26	\$1,293		
Repairs (collocation 61/yr)											6	159	\$7,760	159	\$7,760		
Maintenance (44/yr)											2	62	\$3,199	62	\$3,199		
Maintenance (32/yr)											1	30	\$1,551	30	\$1,551		
Maintenance (16/yr)											1	15	\$775	15	\$775		
Maintenance (61/yr)											1	57	\$2,956	57	\$2,956		
Maintenance (collocation 61/yr)											6	342	\$17,737	342	\$17,737		
Element # 4 totals											812	\$41,245	\$16,853	812	\$41,245	\$16,853	
5. Data Management																	
Data acquisition/processing (44/yr)											2	13	\$669	13	\$669		
Data acquisition/processing (32/yr)											1	6	\$324	6	\$324		
Data acquisition/processing (16/yr)											1	3	\$162	3	\$162		
Data acquisition/processing (61/yr)											1	12	\$619	12	\$619		
Data acquisition/processing (coll 61/yr)											6	73	\$3,711	73	\$3,711		
Data reporting (44/yr)											2	7	\$405	7	\$405		
Data reporting (32/yr)											1	3	\$147	3	\$147		
Data reporting (16/yr)											1	1	\$74	1	\$74		
Data reporting (61/yr)											1	5	\$281	5	\$281		
Data reporting (collocation 61/yr)											6	31	\$1,683	31	\$1,683		
Data validation (44/yr)											2	22	\$1,207	22	\$1,207		
Data validation (32/yr)											1	8	\$439	8	\$439		
Data validation (16/yr)											1	4	\$219	4	\$219		
Data validation (61/yr)											1	15	\$837	15	\$837		
Data validation (collocation 61/yr)											6	92	\$5,020	92	\$5,020		
Element # 5 totals											296	\$15,797	\$15,797	296	\$15,797		
6. Quality Assurance																	
Calibration standards											11						
Calibrations (site & lab)											11	77	\$4,003	77	\$4,003		\$17,926
Audits											11	132	\$6,812	132	\$6,812		
Training											7	112	\$5,711	112	\$5,711		
Implementation/coordination (44/yr)											2	7	\$368	7	\$368		
Implementation/coordination (32/yr)											1	2	\$134	2	\$134		
Implementation/coordination (16/yr)											1	1	\$67	1	\$67		
Implementation/coordination (61/yr)											1	5	\$255	5	\$255		
Implementation/coordination (coll 61/yr)											6	27	\$1,531	27	\$1,531		

Table 21, Summary of California Alternative Plan (CAP) 2007-2009 Monitoring Costs

Aug 2006

Cost Element	2007						2008						2009						Average 2007-2009 CAP									
	Summary CAP			Summary CAP			Summary CAP			Summary CAP			Summary CAP			Summary CAP			Summary CAP			Summary CAP						
	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$	Labor Hours	Labor Costs	Non-labor O & M	Equip/Contract \$				
1. Network Design Network design study (PAMS area) (see O3 Site selection (see O3) Element #1 totals																												
2. Site Installation Canister sampling system Procurement (can sampling sys and cans) Equipment installation (can sampling system) Element # 2 totals	34	\$1,729		\$30,717	34	\$1,762		\$31,305	34	\$1,798		\$31,940	34	\$1,763		\$31,321	63	\$3,379			63	\$3,444			63	\$3,445		
3. Sampling & Analysis Canisters (4 for 1/6) Canister cleaning system Canister analysis Routine site visits (canister) Element # 3 totals	651	\$7,021		\$7,021	651	\$7,155		\$7,155	651	\$7,301		\$7,301	651	\$7,159		\$7,159	217	\$11,169			217	\$11,382			217	\$11,388		
4. Maintenance Spare parts/supplies (canister) Remedial repairs (canister) Routine maintenance (canister) Element #4 totals	79	\$4,189	\$7,729		79	\$4,269	\$7,877		79	\$4,356	\$8,037		79	\$4,272	\$7,881		158	\$8,378			158	\$8,539			158	\$8,543		
5. Data Management Data acquisition/processing (canisters) Data reporting (canister) Data validation (canister) Data analysis & trends (canister) Element # 5 totals	237	\$12,568	\$7,729		237	\$12,808	\$7,877		237	\$13,068	\$8,037		237	\$12,815	\$7,881		59	\$3,045			59	\$3,104			59	\$3,105		
6. Quality Assurance Calibration standards Audits Routine calibrations Training Implementation/coordination QA plan review (annual) QA plan preparation Element # 6 totals	315	\$18,600	\$3,291		315	\$18,956	\$3,354		315	\$19,341	\$3,422		315	\$18,966	\$3,356		252	\$13,516			252	\$13,774			252	\$13,781		
7. Supervision Planning/coordination (canister) Supervision/review (canister) Element #7 totals	420	\$24,332			420	\$24,798			420	\$25,301			420	\$24,811			504	\$29,774			504	\$30,344			504	\$30,359		
Summary Totals	924	\$54,106			924	\$55,142			924	\$56,260			924	\$55,169														

Table 22, Summary Ambient Air Monitor Network for Hazardous Air Pollutants 2007-2009 Monitoring Costs

Aug 2006

Cost Element	2007				2008				2009				Average 2007-2009				
	Labor Hours	Non-labor Costs	O & M	Hazardous AP Equip/Contract \$	Labor Hours	Non-labor Costs	O & M	Hazardous AP Equip/Contract \$	Labor Hours	Non-labor Costs	O & M	Hazardous AP Equip/Contract \$	Labor Hours	Non-labor Costs	O & M	Hazardous AP Equip/Contract \$	
1. Network Design																	
Network design study																	
Site selection																	
Element #1 totals																	
2. Site Installation																	
Analyzer																	
Procurement																	
Equipment installation																	
Element #2 totals																	
3. Supplies and Site Visits																	
Supplies																	
Routine site visits																	
Analysis (grant for NATTS)				\$2,804,243				\$2,857,923								\$2,859,355	
Analysis (grant for CSATMP)				\$6,000,000				\$6,000,000								\$6,000,000	
Element #3 totals				\$8,804,243				\$8,857,923								\$8,859,355	
4. Maintenance																	
Spare parts/supplies																	
Remedial repairs																	
Routine maintenance																	
Element #4 totals																	
5 Data Management																	
Data acquisition/processing																	
Data reporting																	
Data validation																	
Data distribution																	
Element #5 totals																	
6. Quality Assurance																	
Audits																	
Routine calibrations																	
Coordination/implementation																	
Training																	
Reporting																	
QA plan review (annual)																	
QA plan preparation (RO)																	
Element #6 totals																	
7. Supervision																	
Planning/coordination																	
Supervision/review																	
Element #7 totals																	
Summary Totals				\$8,804,243				\$8,857,923					\$8,915,898				\$8,859,355

Table 22.1, 2007 Ambient Air Monitor Network for Hazardous Air Pollutants

Aug 2006

Cost Element	Previous Amortized Hours and Costs				New Site Hours and Costs				Summary Ambient Net for Hazardous AP							
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	Labor Hours	Non-labor O & M	Equip/ Contract \$	
1. Network Design																
Network design study																
Site selection																
Element #1 totals																
2. Site Installation																
Analyzer																
Procurement																
Equipment installation																
Element #2 totals																
3. Supplies and Site Visits																
Supplies																
Routine site visits																
Analysis (grant for NATTS)	23					\$2,804,243										\$2,804,243
Analysis (grant for CSATMP)	15					\$6,000,000										\$6,000,000
Element #3 totals																
4. Maintenance																
Spare parts/supplies																
Remedial repairs /																
Routine maintenance																
Element #4 totals																
5 Data Management																
Data acquisition/processing																
Data reporting																
Data validation																
Data distribution																
Element #5 totals																
6. Quality Assurance																
Audits																
Routine calibrations																
Coordination/implementation																
Training																
Reporting																
QA plan review (annual)																
QA plan preparation (RO)																
Element #6 totals																
7. Supervision																
Planning/coordination																
Supervision/review																
Element #7 totals																
Summary Totals																

\$8,804,243

