

Widespread Use Analysis per U.S. EPA Guidance

Term	Values/Sources				Term	Sources				
η _{II}	In-use Stage II control efficiency	0.86	Based on 1985 guidance		# of Establishments	IDEM	400			
Q _{II}	Fraction of gasoline throughput covered by Stage II VRS	0.9			Average Annual Cost	Maintenance costs per page 22 of guidance	\$ 3,000.00			
Q _{IIva}	Fraction of gasoline throughput covered by traditional vacuum assist Stage II VRS	0.95			Emission Factor	Per formula page 20	6.535	lb/1000 gal		
VMTORVR	Fraction of annual VMT of gasoline powered highway motor vehicles by ORVR equipped vehicles				Summer Sales Ratio	0.47				
CF	Compatibility factor term	0.0777	Using Q _{ORVR} , see table below							
Q _{ORVR}	Fraction of annual gallons of highway motor gasoline dispensed to ORVR-equipped vehicles									
η _{ORVR}	ORVR in-use control efficiency	0.98								
Growth in Gallons	Average annual change of 10 Years of SEDS data	1.0005194								
Year	1000 Gal	% Gas Dispensed	C Factor	Excess Emissions (t)	Equation 1 Increment	Equation 2 Delta	O3 Season (tons)	Seasonday (tons)	Average Per Facility	Cost/Ton/Seasonday
2006		0.492								
2007		0.555								
2008	426,756.28	0.605	0.0470085	49.81205999	0.261071925	0.136441925				
2009	426,756.28	0.648	0.0503496	44.38948131	0.22461588	0.09112788				
2010	426,756.28	0.695	0.0540015	38.4624767	0.184768575	0.041598575				
2011	426,756.28	0.739	0.0574203	32.91379154	0.147464715	-0.004769285	96.63809763	0.631621553	0.001836109	\$ 5,019.14
2012	426,977.94	0.777	0.0603729	28.13635169	0.115247745	-0.044814255	75.5645685	0.493886069	0.001435715	\$ 6,418.88
2013	427,199.71	0.81	0.062937	23.98512774	0.08726985	-0.07959015	57.25000299	0.374183026	0.001087741	\$ 8,472.31
2014	427,421.60	0.84	0.065268	20.20849315	0.0618354	-0.1112046	40.58578708	0.265266582	0.000771124	\$ 11,950.98
2015	427,643.60	0.865	0.0672105	17.05977234	0.040640025	-0.137549975	26.68801534	0.174431473	0.000507068	\$ 18,174.45
2016	427,865.72	0.886	0.0688422	14.41351247	0.02283591	-0.15968009	15.00396868	0.098065155	0.000285073	\$ 32,327.45
2017	428,087.95	0.903	0.0701631	12.27049902	0.008423055	-0.177594945	5.537107774	0.036190247	0.000105204	\$ 87,598.08
2018	428,310.30	0.919	0.0714063	10.25182121	-0.005141985	-0.194455985	-3.381969289	-0.022104374	-6.42569E-05	\$ (143,419.40)
2019	428,532.77	0.932	0.0724164	8.610937387	-0.01616358	-0.20815558	-10.6365779	-0.069520117	-0.000202093	\$ (45,601.13)
2020	428,755.35	0.943	0.0732711	7.221740658	-0.025489545	-0.219747545	-16.78231874	-0.109688358	-0.000318862	\$ (28,901.85)
Bold indicates base year of gasoline sales										