HORNBLOWER YACHTS, LLC
Emissions Workbook - Summary

SUMMARY (Credits-Debits)				Summary By Pollutant				
San Francisco Vessels	Emissions Credits (Tons)	Emissions Debits (Tons)		Total	NOx	ROG	PM10	Compliance Extension From/To 12/31/XXXX
California Hornblower	36.481		Credit Total	36.481	34.372	0.904	1.205	
Pacific Hornblower		5.608		5.608	5.274	0.158	0.175	2012 / 2015
Sunset Hornblower		1.168		1.168	1.069	0.058	0.041	2012 / 2016
Solitary		4.992		4.992	4.745	0.108	0.138	2012 / 2013
Commodore Hornblower		4.939		4.939	4.596	0.168	0.175	2013 / 2016
Ranger		7.355		7.355	6.933	0.180	0.242	2014 / 2017
San Francisco Spirit		10.336		10.336	9.766	0.212	0.358	2014 / 2017
			Debit Total	34.398	32.384	0.884	1.130	
SubTotal	36.481	34.398	Remaining	2.083	1.988	0.020	0.075	

CALIFORNIA HORNBLOWER	**O.N. 947942**												
Engine	**Model**	**Year**	**HP**	**Serial No.**	**Avg Annual Hours**	**Tier**	**Compliance Date (CARB)**	**Repower Completion Date**	**Years Early**			**Hour Meter Reading**	
Port Propulsion Engine (E)	Cummins KT-19M	1988	510	Unk	1427	0	12/31/2014	3/31/2009	5.75				
Stbd Propulsion Engine (E)	Cummins KT-19M	1988	510	Unk	1428	0	12/31/2014	3/31/2009	5.75				
Port Auxiliary Engine (E)	Cummins NT-855-G3	1989	390	Unk	2073	0	12/31/2013	3/31/2009	4.75	(>1500 hrs)			
Stbd Auxiliary Engine (E)	Cummins NT-855-G3	1989	390	Unk	991	0	12/31/2014	3/31/2009	5.75				
												12/31/2011	
Port Propulsion Engine (N)	Caterpillar C-18	2008	553	T2P00434	1427	2	N/A	N/A	N/A			4051	
Stbd Propulsion Engine (N)	Caterpillar C-18	2008	553	T2P00440	1428	2	N/A	N/A	N/A			4054	
Port Auxiliary Engine (N)	Caterpillar C-9	2008	361	C9A00813	2073	2	N/A	N/A	N/A			4044	
Stbd Auxiliary Engine (N)	Caterpillar C-9	2007	361	C9A00456	991	2	N/A	N/A	N/A			2821	
Note: Port Auxiliary (most used aux) installed as new Tier 2 in March 2009 and replaced as new Tier 2 in April 2010 by Caterpillar due unresolved mechanical issues.													
Emission Reduction Calculations													
Engine	**Model**	**Year**	**HP**	**NOx**	**ROG**	**PM10**	**Activity hr/yr**	**ELF**	**WEF**	**ton/yr NOx**	**ton/yr ROG**	**ton/yr PM10**	
Port Propulsion Engine (E)	Cummins KT-19M	1988	510	12.07	0.65	0.363	1427	0.42	0.80	3.253	0.175	0.098	
Port Propulsion Engine (N)	Caterpillar C-18	2008	553	4.84	0.49	0.120	1427	0.42	0.80	1.415	0.143	0.035	
Stbd Propulsion Engine (E)	Cummins KT-19M	1988	510	12.07	0.65	0.363	1428	0.42	0.80	3.256	0.175	0.098	
Stbd Propulsion Engine (N)	Caterpillar C-18	2008	553	4.84	0.49	0.120	1428	0.42	0.80	1.416	0.143	0.035	
Port Auxiliary Engine (E)	Cummins NT-855-G3	1989	390	10.23	0.77	0.321	2073	0.43	0.80	3.136	0.236	0.098	
Port Auxiliary Engine (N)	Caterpillar C-9	2008	361	4.84	0.58	0.120	2073	0.43	0.80	1.373	0.165	0.034	
Stbd Auxiliary Engine (E)	Cummins NT-855-G3	1989	390	10.23	0.77	0.321	991	0.43	0.80	1.499	0.113	0.047	
Stbd Auxiliary Engine (N)	Caterpillar C-9	2007	361	4.84	0.58	0.120	991	0.43	0.80	0.657	0.079	0.016	
Annual Weighted Surplus Emission Reductions (ton/yr)							**By Pollutant**	**tons/year**	**years**	**tons**		**Totals**	
Engine	**ton/yr NOx**	**ton/yr ROG**	**ton/yr PM10**				NOx	6.284	4.75	29.850			
Port Propulsion	1.839	0.032	0.063				NOx	4.522	1.00	4.522	NOx	34.372	
Stbd Propulsion	1.840	0.032	0.063				ROG	0.170	4.75	0.806			
Port Auxiliary	1.763	0.071	0.064				ROG	0.098	1.00	0.098	ROG	0.904	
Stbd Auxiliary	0.843	0.034	0.031				PM10	0.221	4.75	1.048			
							PM10	0.156	1.00	0.156	PM10	1.205	
Total	6.284	0.170	0.221									36.481	
				ton/yr									
Reductions All Engines	x1	x1	x1	**6.675**		Tons Reduced Due Early Repower (4 Engines - 4.75 Yrs)				**31.704**	**Tons**		
Reductions Mains & Stbd Aux:	4.522	0.098	0.156	**4.776**		Tons Reduced Due Early Repower (3 Engines - 1.00 Yrs)				**4.776**	**Tons**		
						Total Tons Reduced Due Early Repower				**36.481**	**Tons**		

PACIFIC HORNBLOWER	**O.N. 653409**											
Engine	**Model**	**Year**	**HP**	**Serial No.**	**2011 Annual Hours**	**Tier**	**Compliance Date**					
Port Propulsion Engine (E)	DD 12V-71	1975	475	12VA-44940	409	0	12/31/2012 (*)					
Stbd Propulsion Engine (E)	DD 12V-71	1975	475	12VA-45729	417	0	12/31/2012 (*)					
Port Auxiliary Engine (E)	DD 3-71	1981	74	3A98417A	334	0	12/31/2012 (*)					
Stbd Auxiliary Engine (E)	Lugger MP55C	2000	74	4452-26288	277	0	12/31/2016					
(*) Engines had been < 300 hours; clearly > 300 hours 2011.												
					Forward							
Port Propulsion Engine (N)	New (N)	2012	475	New	500	2	N/A					
Stbd Propulsion Engine (N)	New (N)	2012	475	New	500	2	N/A					
Port Auxiliary Engine (N)	New (N)	2012	74	New	500	2	N/A					
Stbd Auxiliary Engine (N)	Lugger MP55C (E)	2000	74	4452-26288	500	0	N/A					
Emission Reduction Calculations												
Engine	**Model**	**Year**	**HP**	**NOx**	**ROG**	**PM10**	**Activity hr/yr**	**ELF**	**WEF**	**ton/yr NOx**	**ton/yr ROG**	**ton/yr PM10**
Port Propulsion Engine (E)	DD 12V-71	1975	475	14.27	0.76	0.431	500	0.42	0.80	1.255	0.067	0.038
Port Propulsion Engine (N)	New	2012	475	4.84	0.49	0.120	500	0.42	0.80	0.426	0.043	0.011
Stbd Propulsion Engine (E)	DD 12V-71	1975	475	14.27	0.76	0.431	500	0.42	0.80	1.255	0.067	0.038
Stbd Propulsion Engine (N)	New	2012	475	4.84	0.49	0.120	500	0.42	0.80	0.426	0.043	0.011
Port Auxiliary Engine (E)	DD 3-71	1981	74	12.09	1.23	0.508	500	0.43	0.80	0.170	0.017	0.007
Port Auxiliary Engine (N)	New	2012	74	5.04	0.85	0.240	500	0.43	0.80	0.071	0.012	0.003
Stbd Auxiliary Engine (E)	Lugger MP55C	2000	74	12.09	1.23	0.508	500	0.43	0.80	0.170	0.017	0.007
Stbd Auxiliary Engine (N)	Lugger MP55C (E)	2000	74	12.09	1.23	0.508	500	0.43	0.80	0.170	0.017	0.007
Annual Weighted Surplus Emission Reductions (ton/yr)												
Engine	**ton/yr NOx**	**ton/yr ROG**	**ton/yr PM10**				**By Pollutant**	**tons/year**	**years**	**tons**		
Port Propulsion	0.829	0.024	0.027				NOx	1.758	3	5.274		
Stbd Propulsion	0.829	0.024	0.027				ROG	0.053	3	0.158		
Port Auxiliary	0.099	0.005	0.004				PM10	0.058	3	0.175		
Stbd Auxiliary	0.000	0.000	0.000							5.608		
Total	1.758	0.053	0.058									
				ton/yr								
Reductions	x1	x1	x1	**1.869**								
Summary Points:												
1. If we replaced the existing main engines and one aux with new Tier 2 engines on 12/31/2012, we would reduce emissions by 1.869 tons/year.												
2. We propose to use "credits" from the early repower of California Hornblower to extend Pacific Hornblower main engines' & one aux compliance date from 12/31/2012 to 12/31/2015.												
		ton/yr	**years**	**Credits Used (Tons)**								
Credits Used by Pacific Hornblower:		1.869	3	**5.608**								

SUNSET HORNBLOWER	**O.N. 636835**											
Engine	**Model**	**Year**	**HP**	**Serial No.**	**2011 Annual Hours**	**Tier**	**Compliance Date**					
Port Propulsion Engine (E)	Caterpillar 3406	2000	550	9WR02013	379	0	12/31/2016					
Stbd Propulsion Engine (E)	Caterpillar 3406	2000	550	9WR02010	373	0	12/31/2016					
Port Auxiliary Engine (E)	DD 6-71	1975	100	6A17404	270	0	N/A <300 (*)					
Stbd Auxiliary Engine (E)	DD 6-71	1975	100	6A051387	459	0	12/31/2012 (#)					
(*) Less than 300 hours, but including w/ extension.												
(#) Engine hours < 300 in 2010, but 2011 hours > 300.												
					Forward							
Port Propulsion Engine (N)	Cat 3406 (E)	2000	550	9WR02013	500	0	N/A					
Stbd Propulsion Engine (N)	Cat 3406 (E)	2000	550	9WR02010	500	0	N/A					
Port Auxiliary Engine (N)	New (N)	2012	100	New	500	2	N/A					
Stbd Auxiliary Engine (N)	New (N)	2012	100	New	500	2	N/A					
Emission Reduction Calculations												
Engine	**Model**	**Year**	**HP**	**NOx**	**ROG**	**PM10**	**Activity hr/yr**	**ELF**	**WEF**	**ton/yr NOx**	**ton/yr ROG**	**ton/yr PM10**
Port Propulsion Engine (E)	Caterpillar 3406	2000	550	8.97	0.49	0.260	500	0.42	0.80	0.914	0.050	0.026
Port Propulsion Engine (N)	Caterpillar 3406 (E)	2000	550	8.97	0.49	0.260	500	0.42	0.80	0.914	0.050	0.026
Stbd Propulsion Engine (E)	Caterpillar 3406	2000	550	8.97	0.49	0.260	500	0.42	0.80	0.914	0.050	0.026
Stbd Propulsion Engine (N)	Caterpillar 3406 (E)	2000	550	8.97	0.49	0.260	500	0.42	0.80	0.914	0.050	0.026
Port Auxiliary Engine (E)	DD 6-71	1975	100	12.09	1.23	0.508	500	0.43	0.80	0.229	0.023	0.010
Port Auxiliary Engine (N)	New (N)	2012	100	5.04	0.85	0.240	500	0.43	0.80	0.096	0.016	0.005
Stbd Auxiliary Engine (E)	DD 6-71	1975	100	12.09	1.23	0.508	500	0.43	0.80	0.229	0.023	0.010
Stbd Auxiliary Engine (N)	New (N)	2012	100	5.04	0.85	0.240	500	0.43	0.80	0.096	0.016	0.005
Annual Weighted Surplus Emission Reductions (ton/yr)												
Engine	**ton/yr NOx**	**ton/yr ROG**	**ton/yr PM10**				**By Pollutant**	**tons/year**	**years**	**tons**		
Port Propulsion	0.000	0.000	0.000				NOx	0.267	4	1.069		
Stbd Propulsion	0.000	0.000	0.000				ROG	0.014	4	0.058		
Port Auxiliary	0.134	0.007	0.005				PM10	0.010	4	0.041		
Stbd Auxiliary	0.134	0.007	0.005							1.168		
Total	0.267	0.014	0.010									
				ton/yr								
Reductions	x1	x1	x1	**0.292**								
Summary Points:												
1. If we replaced the existing aux engines with new Tier 2 engines on 12/31/2012, we would reduce emissions by 0.292 tons/year.												
2. The existing main engines do not need to be replaced with Tier 3 engines until 12/31/2016.												
3. We propose to use "credits" from the early repower of California Hornblower to extend Sunset Hornblower's aux engines' compliance date from 12/31/2012 to 12/31/2016.												
		ton/yr	**years**	**Credits Used (Tons)**								
Credits Used by Sunset Hornblower:		0.292	4	**1.168**								

SOLITARY	**(Crew/Supply Vessel)**	**O.N. 1191433**										
Engine	**Model**	**Year**	**HP**	**Serial No.**	**2011 Annual Hours**	**Tier**	**Compliance Date**					
Port Propulsion Engine (E)	Detroit Diesel 12V71	1981	500	7122-7000	601	0	12/31/2012					
Stbd Propulsion Engine (E)	Detroit Diesel 12V71	1981	500	Unknown	621	0	12/31/2012					
Note: No Generating Sets												
					Forward							
Port Propulsion Engine (N)	New	2011	500	N/A	1700	2	N/A					
Stbd Propulsion Engine (N)	New	2011	500	N/A	1700	2	N/A					
Emission Reduction Calculations												
Engine	**Model**	**Year**	**HP**	**NOx**	**ROG**	**PM10**	**Activity hr/yr**	**ELF**	**WEF**	**ton/yr NOx**	**ton/yr ROG**	**ton/yr PM10**
Port Propulsion Engine (E)	Detroit Diesel 12V71	1981	500	13.17	0.68	0.363	1700	0.38	0.80	3.751	0.194	0.103
Port Propulsion Engine (N)	New	2011	500	4.84	0.49	0.120	1700	0.38	0.80	1.379	0.140	0.034
Stbd Propulsion Engine (E)	Detroit Diesel 12V71	1981	500	13.17	0.68	0.363	1700	0.38	0.80	3.751	0.194	0.103
Stbd Propulsion Engine (N)	New	2011	500	4.84	0.49	0.120	1700	0.38	0.80	1.379	0.140	0.034
Annual Weighted Surplus Emission Reductions (ton/yr)												
Engine	**ton/yr NOx**	**ton/yr ROG**	**ton/yr PM10**				**By Pollutant**	**tons/year**	**years**	**tons**		
Port Propulsion	2.373	0.054	0.069				NOx	4.745	1	4.745		
Stbd Propulsion	2.373	0.054	0.069				ROG	0.108	1	0.108		
							PM10	0.138	1	0.138		
Total	4.745	0.108	0.138							4.992		
				ton/yr								
Reductions	x1	x1	x1	**4.992**								
Summary Points:												
1. We propose to use "credits" from the early repower of California Hornblower to extend Solitary's main engines' compliance date from 12/31/2012 to 12/31/2013.												
		ton/yr	**years**	**Credits Used (Tons)**								
Credits Used by Solitary:		4.992	1	**4.992**								

COMMODORE HORNBLOWER	**O.N. 298974**											
Engine	**Model**	**Year**	**HP**	**Serial No.**	**2011 Annual Hours**	**Tier**	**Compliance Date**					
Port Propulsion Engine (E)	DD 6-110	1961	300	6B-20296	238	0	12/31/2010 (*)					
Stbd Propulsion Engine (E)	DD 6-110	1961	300	6B-20297	221	0	12/31/2010 (*)					
Port Auxiliary Engine (E)	DD 3-71	1961	60	RCA3914	436	0	12/31/2010 (#)					
Stbd Auxiliary Engine (E)	Onan	2011	74	I110248856	22	2	New 12/31/2011					
(*) Main Engines < 300 hours per year in 2011; but anticipate 420 (Port) and 405 (Stbd) hours in 2012, requiring compliance by 12/31/2013.												
(#) Generator acceptable >300 hours in 2011 per CARB approval letter 3/29/11; will maintain <300 hrs going forward												
					Forward							
Port Propulsion Engine (N)	New (N)	2013	300	New	600	3	N/A					
Stbd Propulsion Engine (N)	New (N)	2013	300	New	600	3	N/A					
Port Auxiliary Engine (N)	DD 3-71 (E)	1961	60	RCA3914	300	0	N/A					
Stbd Auxiliary Engine (N)	Onan (E)	2011	74	I110248856	600	2	N/A					
Emission Reduction Calculations												
Engine	**Model**	**Year**	**HP**	**NOx**	**ROG**	**PM10**	**Activity hr/yr**	**ELF**	**WEF**	**ton/yr NOx**	**ton/yr ROG**	**ton/yr PM10**
Port Propulsion Engine (E)	DD 6-110	1961	300	15.36	0.91	0.506	600	0.42	0.80	1.024	0.061	0.034
Port Propulsion Engine (N)	New (N)	2013	300	3.87	0.49	0.068	600	0.42	0.80	0.258	0.033	0.005
Stbd Propulsion Engine (E)	DD 6-110	1961	300	15.36	0.91	0.506	600	0.42	0.80	1.024	0.061	0.034
Stbd Propulsion Engine (N)	New (N)	2013	300	3.87	0.49	0.068	600	0.42	0.80	0.258	0.033	0.005
Port Auxiliary Engine (E)	DD 3-71	1961	60	12.09	1.23	0.508	300	0.43	0.80	0.083	0.008	0.003
Port Auxiliary Engine (N)	DD 3-71 (E)	1961	60	12.09	1.23	0.508	300	0.43	0.80	0.083	0.008	0.003
Stbd Auxiliary Engine (E)	Onan	2011	74	5.04	0.85	0.240	600	0.43	0.80	0.085	0.014	0.004
Stbd Auxiliary Engine (N)	Onan	2011	74	5.04	0.85	0.240	600	0.43	0.80	0.085	0.014	0.004
Annual Weighted Surplus Emission Reductions (ton/yr)												
Engine	**ton/yr NOx**	**ton/yr ROG**	**ton/yr PM10**				**By Pollutant**	**tons/year**	**years**	**tons**		
Port Propulsion	0.766	0.028	0.029				NOx	1.532	3	4.596		
Stbd Propulsion	0.766	0.028	0.029				ROG	0.056	3	0.168		
Port Auxiliary	0.000	0.000	0.000				PM10	0.058	3	0.175		
Stbd Auxiliary	0.000	0.000	0.000							4.939		
Total	1.532	0.056	0.058									
				ton/yr								
Reductions	x1	x1	x1	**1.646**								
Summary Points:												
1. If we replaced the existing main engines with new Tier 3 engines on 12/31/2013, we would reduce emissions by 1.646 tons/year.												
2. The existing auxiliary engines do not need to be replaced with Tier 2 engines (port aux will be < 300 hours per year going forward; stbd aux is new Tier 2 as of 12/31/2011).												
3. We propose to use "credits" from the early repower of California Hornblower to extend Commodore Hornblower main engines' compliance date from 12/31/2013 to 12/31/2016.												
		ton/yr	**years**	**Credits Used (Tons)**								
Credits Used by Commodore Hornblower:		1.646	3	**4.939**								

RANGER	**O.N. 532668**											
Engine	**Model**	**Year**	**HP**	**Serial No.**	**2011 Annual Hours**	**Tier**	**Compliance Date**					
Port Propulsion Engine (E)	DD 12V71	1971	500	237167123-70009	276	0	12/31/2010 (*)					
Stbd Propulsion Engine (E)	DD 12V71	1971	500	237167123-70012	271	0	12/31/2010 (*)					
Port Auxiliary Engine (E)	DD 3-71	1971	41	3A-44541	244	0	N/A < 50hp					
Stbd Auxiliary Engine (E)	John Deere	1995	41		35	0	N/A < 50hp					
(*) Main Engines < 300 hours per year in 2011; vessel now used very little and anticipate < 100 hours each main engine in 2012												
(*) Anticipate vessel could exceed 300 hours in 2013, thereby triggering compliance date of 12/31/2014												
					Forward							
Port Propulsion Engine (N)	New (N)	2014	500	New	600	3	N/A					
Stbd Propulsion Engine (N)	New (N)	2014	500	New	600	3	N/A					
Port Auxiliary Engine (N)	DD 3-71 (E)	1971	41	3A-44541	600	0	N/A					
Stbd Auxiliary Engine (N)	John Deere (E)	1995	41		600	0	N/A					
Emission Reduction Calculations												
Engine	**Model**	**Year**	**HP**	**NOx**	**ROG**	**PM10**	**Activity hr/yr**	**ELF**	**WEF**	**ton/yr NOx**	**ton/yr ROG**	**ton/yr PM10**
Port Propulsion Engine (E)	DD 12V71	1971	500	14.27	0.76	0.431	600	0.42	0.80	1.586	0.084	0.048
Port Propulsion Engine (N)	New (N)	2013	500	3.87	0.49	0.068	600	0.42	0.80	0.430	0.054	0.008
Stbd Propulsion Engine (E)	DD 12V71	1971	500	14.27	0.76	0.431	600	0.42	0.80	1.586	0.084	0.048
Stbd Propulsion Engine (N)	New (N)	2013	500	3.87	0.49	0.068	600	0.42	0.80	0.430	0.054	0.008
Port Auxiliary Engine (E)	DD 3-71	1971	41	6.42	1.58	0.460	600	0.43	0.80	0.060	0.015	0.004
Port Auxiliary Engine (N)	DD 3-71 (E)	1971	41	6.42	1.58	0.460	600	0.43	0.80	0.060	0.015	0.004
Stbd Auxiliary Engine (E)	John Deere	1995	41	6.42	1.58	0.460	600	0.43	0.80	0.060	0.015	0.004
Stbd Auxiliary Engine (N)	John Deere (E)	1995	41	6.42	1.58	0.460	600	0.43	0.80	0.060	0.015	0.004
Annual Weighted Surplus Emission Reductions (ton/yr)												
Engine	**ton/yr NOx**	**ton/yr ROG**	**ton/yr PM10**				**By Pollutant**	**tons/year**	**years**	**tons**		
Port Propulsion	1.156	0.030	0.040				NOx	2.311	3	6.933		
Stbd Propulsion	1.156	0.030	0.040				ROG	0.060	3	0.180		
Port Auxiliary	0.000	0.000	0.000				PM10	0.081	3	0.242		
Stbd Auxiliary	0.000	0.000	0.000							7.355		
Total	2.311	0.060	0.081									
				ton/yr								
Reductions	x1	x1	x1	**2.452**								
Summary Points:												
1. If we replaced the existing main engines with new Tier 3 engines on 12/31/2014, we would reduce emissions by 2.452 tons/year.												
2. The existing auxiliary engines are exempt at < 50hp												
3. We propose to use "credits" from the early repower of California Hornblower to extend Ranger main engines' compliance date from 12/31/2014 to 12/31/2017.												
		ton/yr	**years**	**Credits Used (Tons)**								
Credits Used by Ranger:		2.452	3	**7.355**								

SAN FRANCISCO SPIRIT	**O.N. 971235**											
Engine	**Model**	**Year**	**HP**	**Serial No.**	**2011 Annual Hours**	**Tier**	**Compliance Date**					
Port Propulsion Engine (E)	Cummins	1991	350	11613632	630	0	12/31/2014					
Stbd Propulsion Engine (E)	Cummins	1991	350	11613644	390	0	12/31/2014					
Ctr Propulsion Engine (E)	Cummins	1991	350	11613633	602	0	12/31/2014					
Port Auxiliary Engine (E)	Cummins	1991	288	11615231	362	0	12/31/2014					
Stbd Auxiliary Engine (E)	Cummins	1991	288	11615232	360	0	12/31/2014					
					Forward							
Port Propulsion Engine (N)	New (N)	2014	350	New	800	3	N/A					
Stbd Propulsion Engine (N)	New (N)	2014	350	New	800	3	N/A					
Ctr Propulsion Engine (N)	New (N)	2014	350	New	800	3	N/A					
Port Auxiliary Engine (N)	New (N)	2014	288	New	500	3	N/A					
Stbd Auxiliary Engine (N)	New (N)	2014	288	New	500	3	N/A					
Emission Reduction Calculations												
Engine	**Model**	**Year**	**HP**	**NOx**	**ROG**	**PM10**	**Activity hr/yr**	**ELF**	**WEF**	**ton/yr NOx**	**ton/yr ROG**	**ton/yr PM10**
Port Propulsion Engine (E)	Cummins	1991	350	12.07	0.65	0.363	800	0.42	0.80	1.252	0.067	0.038
Port Propulsion Engine (N)	New	2014	350	3.87	0.49	0.068	800	0.42	0.80	0.401	0.051	0.007
Stbd Propulsion Engine (E)	Cummins	1991	350	12.07	0.65	0.363	800	0.42	0.80	1.252	0.067	0.038
Stbd Propulsion Engine (N)	New	2014	350	3.87	0.49	0.068	800	0.42	0.80	0.401	0.051	0.007
Ctr Propulsion Engine (E)	Cummins	1991	350	12.07	0.65	0.363	800	0.42	0.80	1.252	0.067	0.038
Ctr Propulsion Engine (N)	New	2014	350	3.87	0.49	0.068	800	0.42	0.80	0.401	0.051	0.007
Port Auxiliary Engine (E)	Cummins	1991	288	10.23	0.77	0.321	500	0.43	0.80	0.559	0.042	0.018
Port Auxiliary Engine (N)	New	2014	288	3.78	0.58	0.068	500	0.43	0.80	0.206	0.032	0.004
Stbd Auxiliary Engine (E)	Cummins	1991	288	10.23	0.77	0.321	500	0.43	0.80	0.559	0.042	0.018
Stbd Auxiliary Engine (N)	New	2014	288	3.78	0.58	0.068	500	0.43	0.80	0.206	0.032	0.004
Annual Weighted Surplus Emission Reductions (ton/yr)												
Engine	**ton/yr NOx**	**ton/yr ROG**	**ton/yr PM10**				**By Pollutant**	**tons/year**	**years**	**tons**		
Port Propulsion	0.850	0.017	0.031				NOx	3.255	3	9.766		
Stbd Propulsion	0.850	0.017	0.031				ROG	0.071	3	0.212		
Ctr Propulsion	0.850	0.017	0.031				PM10	0.119	3	0.358		
Port Auxiliary	0.352	0.010	0.014							10.336		
Stbd Auxiliary	0.352	0.010	0.014									
Total	3.255	0.071	0.119									
				ton/yr								
Reductions	x1	x1	x1	**3.445**								
Summary Points:												
1. If we replaced the existing main and aux engines with new Tier 3 engines on 12/31/2014, we would reduce emissions by 3.445 tons/year.												
2. We propose to use "credits" from the early repower of California Hornblower to extend San Francisco Spirit main engines' compliance date from 12/31/2014 to 12/31/2017.												
		ton/yr	**years**	**Credits Used (Tons)**								
Credits Used by San Francisco Spirit:		3.445	3	**10.336**								