Atlantic Richfield Company

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March 31, 2011

CERTIFIED - RETURN RECEIPT REQUESTED

Mr. Scott Brown
U.S. Environmental Protection Agency
Region VIII, Montana Office
Drawer 10096
Helena, Montana 59626-0096

Re: Warm Springs Ponds Operable Units of the Silver Bow Creek Area NPL Site, Docket No. CERCLA-VIII-91-25; Transmittal of annual summary graphs and tables

Dear Scott,

Please find enclosed the following tables and graphs that were requested by EPA on an annual basis in their December 5, 2003 request for additional work letter:

- Table displaying minimum, maximum and average concentrations of all regulated constituents entering and leaving the pond system
- Table displaying number of measurements, number of exceedences, and percent of values exceeding final daily standards;
- Table displaying number of measurements, number of exceedences and percent of values exceeding final monthly standards;
- Quarterly water quality graphs for each of the regulated parameters (total recoverable; dissolved parameters are no longer sampled); and
- Flow hydrographs for the inlet and outlet stations.

As agreed to by EPA in 2005, these graphs and tables will be submitted on an annual basis by March 31 of each year so that the entire calendar year of data can be included.

If you have any questions regarding this letter, please contact me at (406) 723-1813.

Sincerely,

Shannon Dunlap
Project Manager

cc: Ron Halsey (email)
Daryl Reed (email)
Kristine Edwards (email)
Karen Nelson (email)
Brian Wilkins (email)
Brad Archibald (email)
Jenni Harris (email)

file: 71.01.110.1 (w/certs.)
71.01.160.1
Chronological

TABLE 1: DAILY PERFORMANCE STANDARDS EXCEEDENCE SUMMARY

Constituent	Final Daily Maximum Standards January 1, 2010 - December 31, 2010		
	No. of Measurements	No. of Exceedences	% of Exceedences
TSS	104	0	0
pH (1)	104	19	18
Arsenic	104	60	58
Cadmium	104	0	0
Copper	104	4	4
Iron	104	0	0
Lead	104	0	0
Mercury (2)	104	0	0
Selenium	24	0	0
Silver	24	0	0
Zinc	104	0	0

Notes:

(1) pH measurements at SS-5 greater than 9.0 result from natural biological activity.

(2) Mercury as total analysis, all other metals as total recoverable analysis.

TABLE 2: MONTHLY PERFORMANCE STANDARDS EXCEEDENCE SUMMARY

Constituent	Monthly Average Standards January 1, 2010 - December 31, 2010		
	No. of Measurements	No. of Exceedences	% of Exceedences
TSS	12	0	0
Arsenic	12	7	58
Cadmium	12	0	0
Copper	12	1	8
Iron	12	0	0
Lead	12	0	0
Mercury (1)	12	0	0
Selenium	12	0	0
Silver	12	See note 2	
Zinc	12	0	0

Notes:

(1) Mercury as total analysis, all other metals as total recoverable analysis.

(2) The detection limit for silver is greater than the monthly average standard of 0.00012 mg/L.

Table 3.
Minimum, Maximum, and Average Concentration of Regulated Constituents Entering and Leaving the Warm Springs Ponds, January 2006 through December 2010. (mg/L)

Constituent	Date	SS-1			SS-5		
		Min	Max	Avg	Min	Max	Avg
pH	2006	7.0	9.2	8.3	8.0	10.3	9.1
	2007	7.5	10.0	8.2	8.1	9.9	8.9
	2008	6.5	9.2	8.2	7.7	9.8	9.0
	2009	7.0	9.0	8.0	8.1	10.1	9.1
	2010	7.2	8.4	8.0	7.6	9.8	8.8
TSS	2006	<4	272	31.4	<4	28	4.8
	2007	<4	268	21.7	<4	13	4.6
	2008	<3.5	254	20.5	<3.5	15	4.5
	2009	<3.5	170	29.7	<3.5	12	3.5
	2010	<3.5	1238	80.4	<3.5	19	2.6
Arsenic	2006	0.009	0.085	0.019	0.008	0.062	0.029
	2007	0.008	0.049	0.015	0.008	0.055	0.024
	2008	0.008	0.059	0.015	0.013	0.078	0.034
	2009	0.006	0.047	0.014	0.011	0.063	0.029
	2010	0.007	0.118	0.018	0.008	0.054	0.027
Cadmium	2006	0.0003	0.0076	0.0012	<.0001	0.0006	0.0001
	2007	0.0002	0.0053	0.0010	<.0001	0.0003	0.0001
	2008	<.0.0001	0.0068	0.0010	<.000031	0.0005	0.0001
	2009	0.0002	0.0054	0.0009	<.000031	0.0004	0.0001
	2010	0.0002	0.0107	0.0014	<.00003	0.0005	0.0001
Copper	2006	0.007	1.065	0.135	0.002	0.034	0.008
	2007	0.027	0.581	0.094	0.003	0.017	0.008
	2008	0.027	0.556	0.097	0.004	0.026	0.010
	2009	0.013	0.340	0.083	0.005	0.026	0.011
	2010	0.026	1.100	0.138	0.004	0.034	0.011
Iron	2006	0.122	8.098	1.074	0.015	0.964	0.164
	2007	0.164	7.113	0.893	0.014	0.959	0.185
	2008	0.199	8.050	1.088	0.072	0.927	0.221
	2009	0.036	6.010	1.295	0.064	0.633	0.195
	2010	0.225	39.800	2.538	0.036	0.737	0.198
Mercury	2006	<.0001	0.0023	0.0003	<.0001	0.0002	<.0001
	2007	<.0001	0.0011	0.0002	<.0001	0.0002	<.0001
	2008	<.0000149	0.0011	0.0002	<.0000149	0.0002	<.0001
	2009	<.0001	0.0009	0.0002	<.0000149	0.0001	<.0001
	2010	<.0000123	0.0032	0.0002	<.00001	0.0001	0.00002
Lead	2006	0.002	0.217	0.026	<.001	0.009	0.001
	2007	0.003	0.133	0.017	<.001	0.004	0.001
	2008	<.001	0.232	0.019	<.000505	0.008	0.001
	2009	<.001	0.089	0.018	<.000505	0.007	0.001
	2010	0.002	0.349	0.034	0.000278	0.007	0.001
Selenium	2006	<.001	0.001	0.001	<.001	0.001	0.001
	2007	<.001	0.002	0.001	<.001	0.002	0.001
	2008	<.000528	0.002	0.001	<.000528	0.002	0.001
	2009	<.000528	0.002	0.001	<.000528	0.002	0.001
	2010	<0.0007	0.003	0.001	<0.0007	0.003	0.001
Silver	2006	<.001	0.001	0.001	<.001	0.001	0.001
	2007	<.001	0.001	0.001	<.001	0.001	0.001
	2008	<.001	0.002	0.001	<.001	0.001	0.001
	2009	<.001	0.002	0.001	<.001	0.001	0.001
	2010	<0.0004	0.006	0.0008	<0.0004	<0.0004	0.0002
Zinc	2006	0.036	1.378	0.340	0.006	0.073	0.014
	2007	0.055	1.274	0.289	0.006	0.039	0.016
	2008	0.069	1.540	0.275	0.007	0.049	0.017
	2009	0.072	1.380	0.260	0.005	0.054	0.018
	2010	0.075	2.490	0.342	<0.009	0.070	0.016

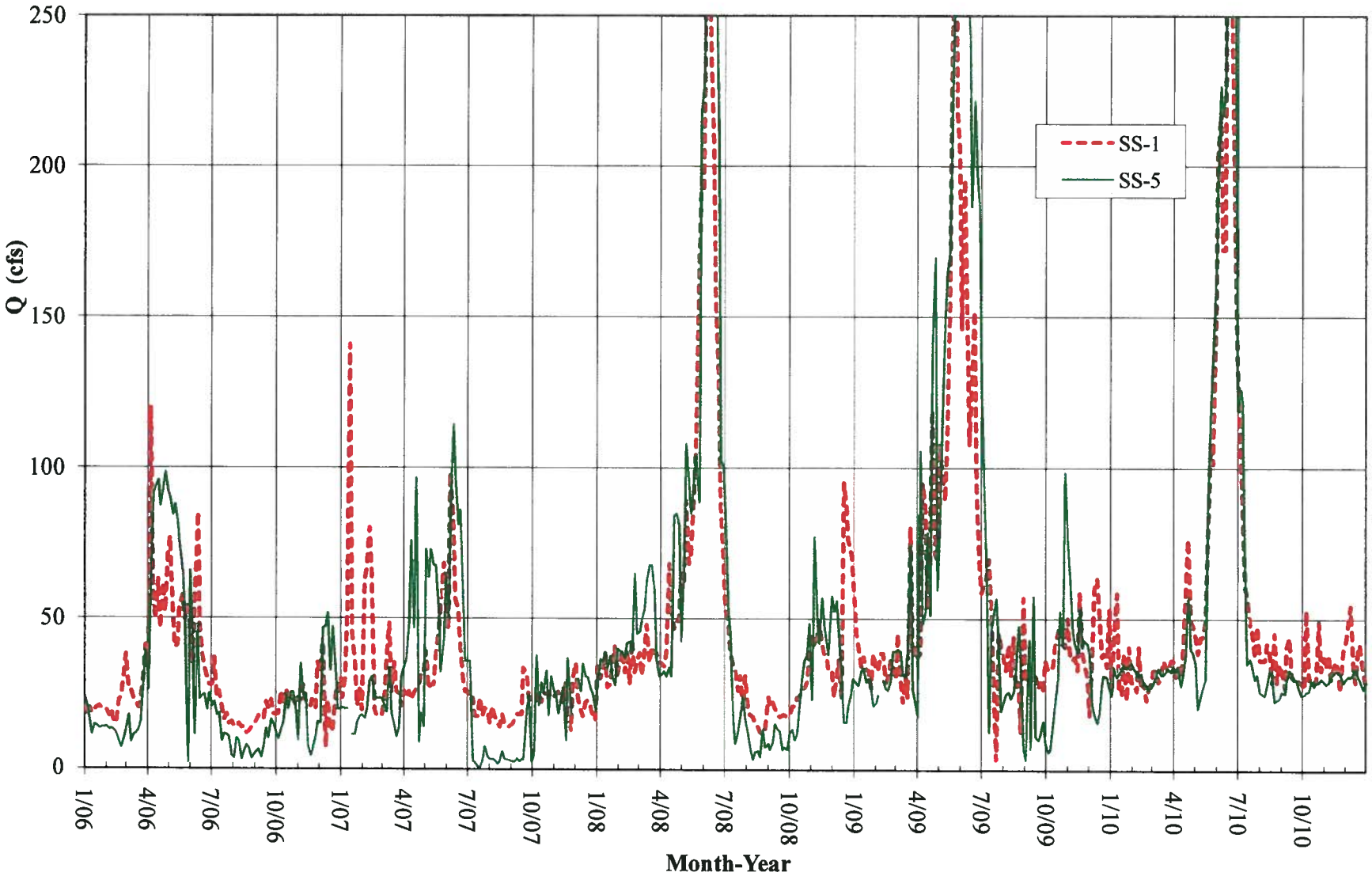

Figure Q-1. Comparison of influent (SS-1) and effluent (SS-5) hydrographs for 2006-2010.

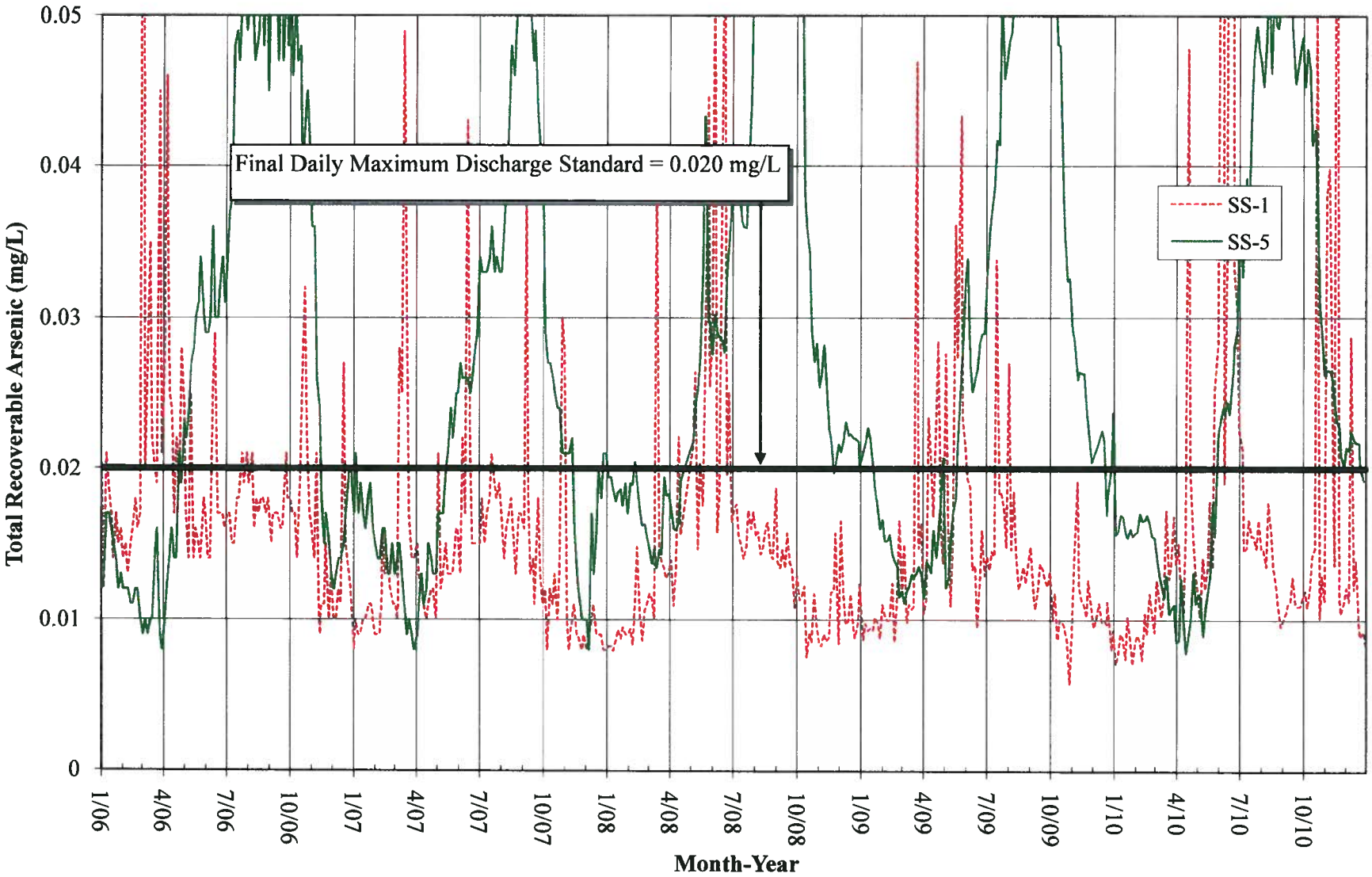

Figure As-1. Comparison of influent (SS-1) and effluent (SS-5) total recoverable arsenic concentrations (2006-2010) with final daily performance standard.

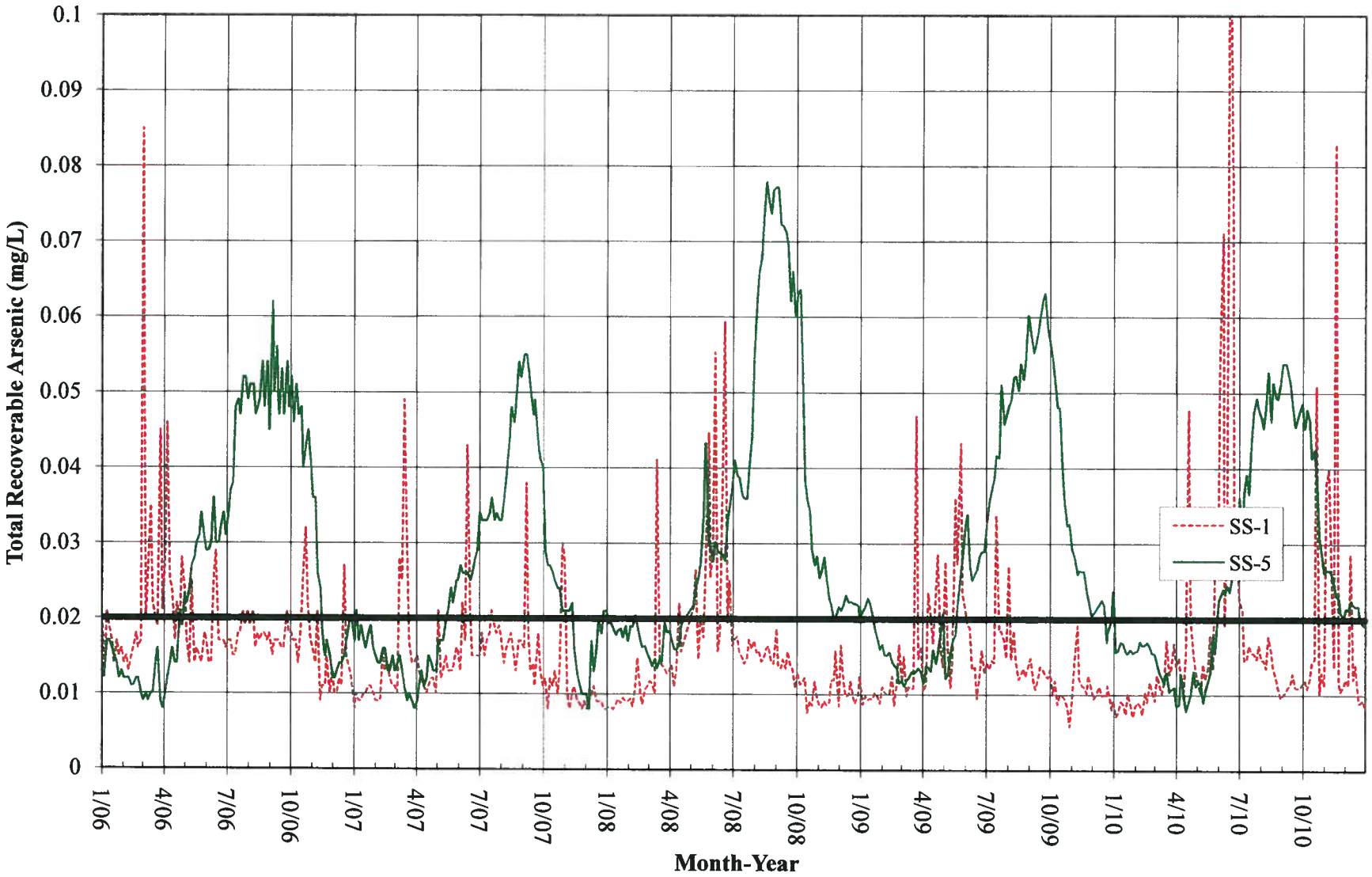

Figure As-2. Comparison of influent (SS-1) and effluent (SS-5) total recoverable arsenic concentrations (2006-2010) with final daily performance standard.

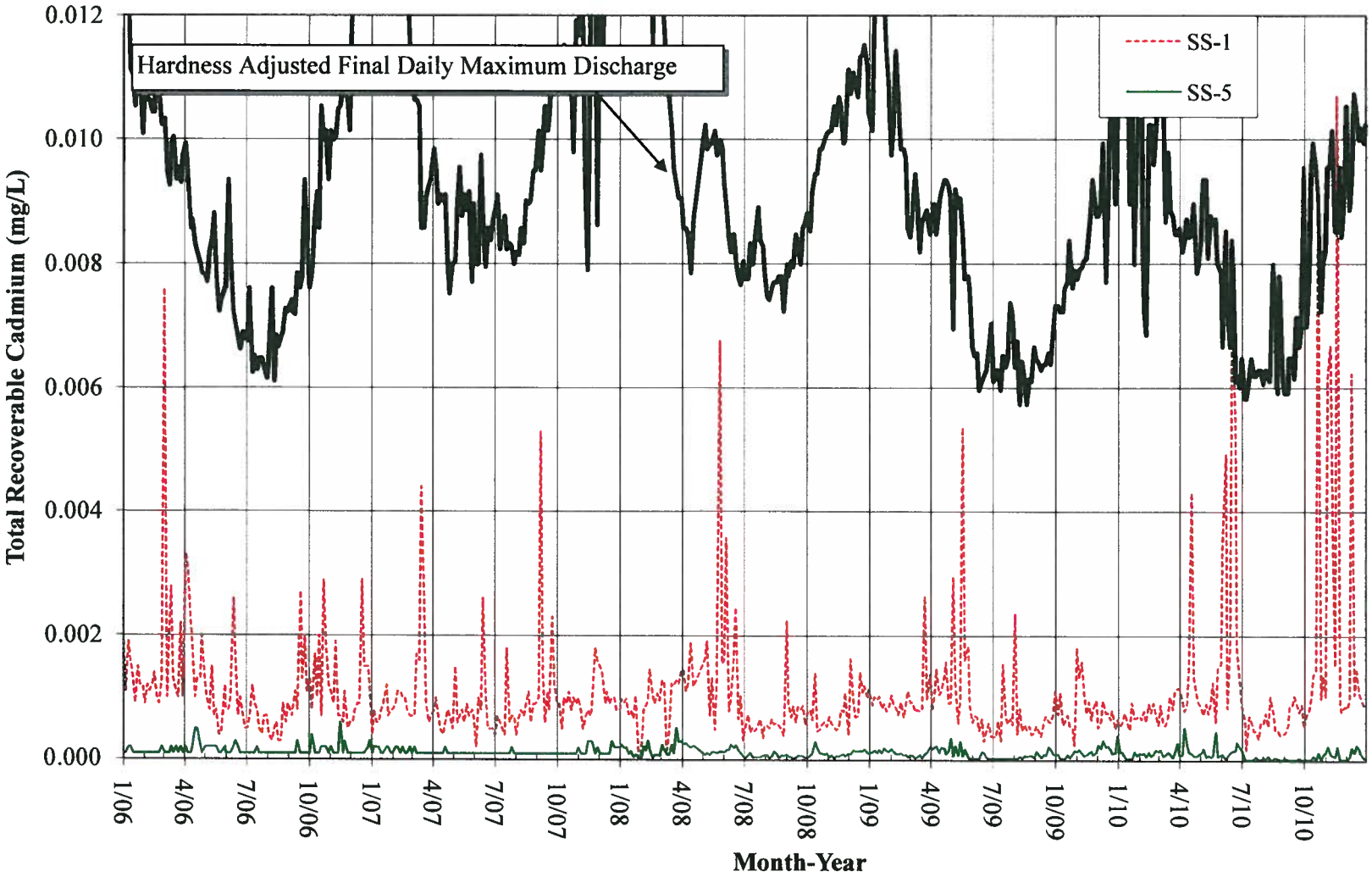

Figure Cd-1. Comparison of influent (SS-1) and effluent (SS-5) total recoverable cadmium concentrations (2006-2010) with final daily performance standard.

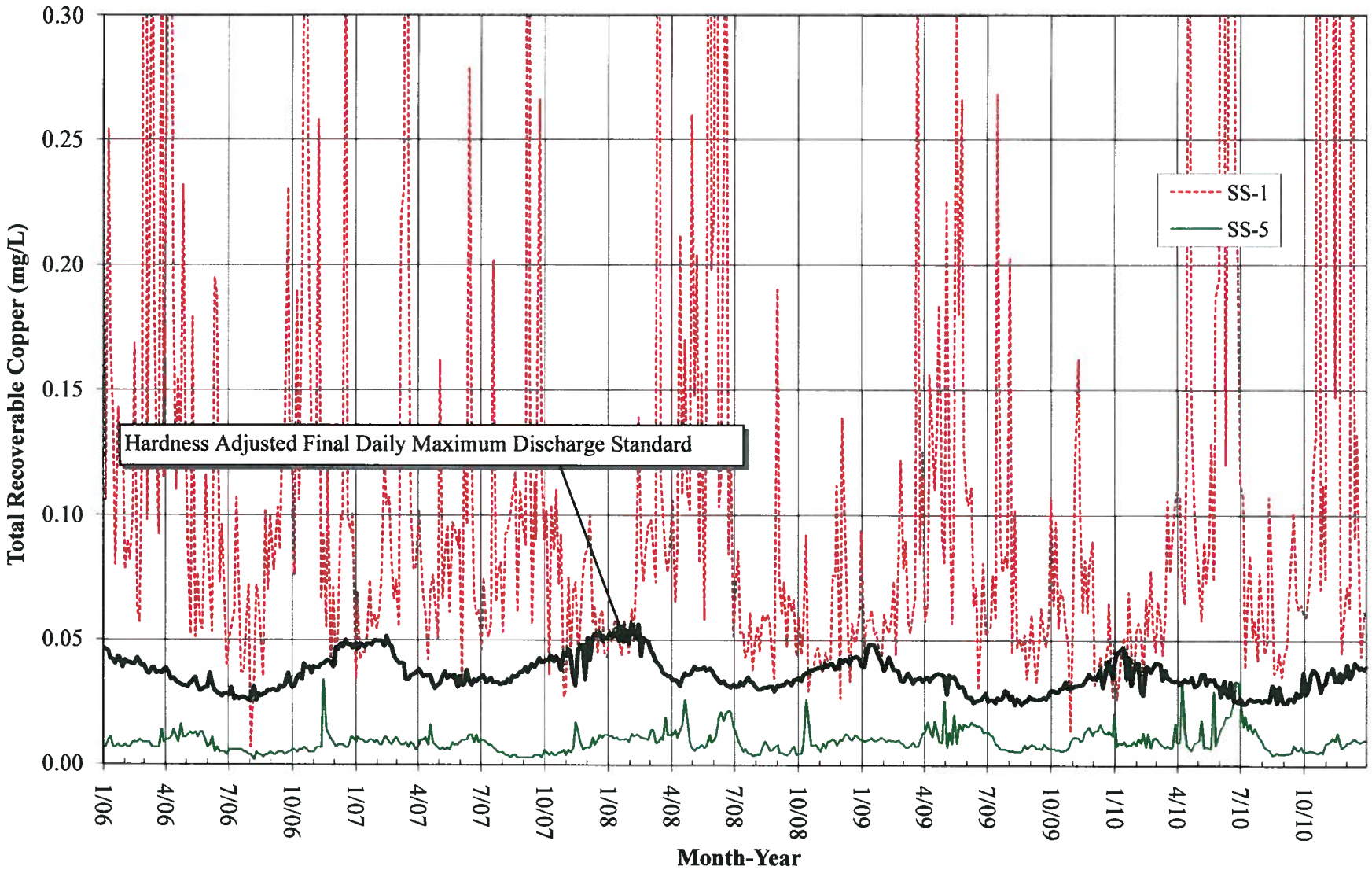

Figure Cu-1. Comparison of influent (SS-1) and effluent (SS-5) total recoverable copper concentrations (2006-2010) with final daily performance standard.

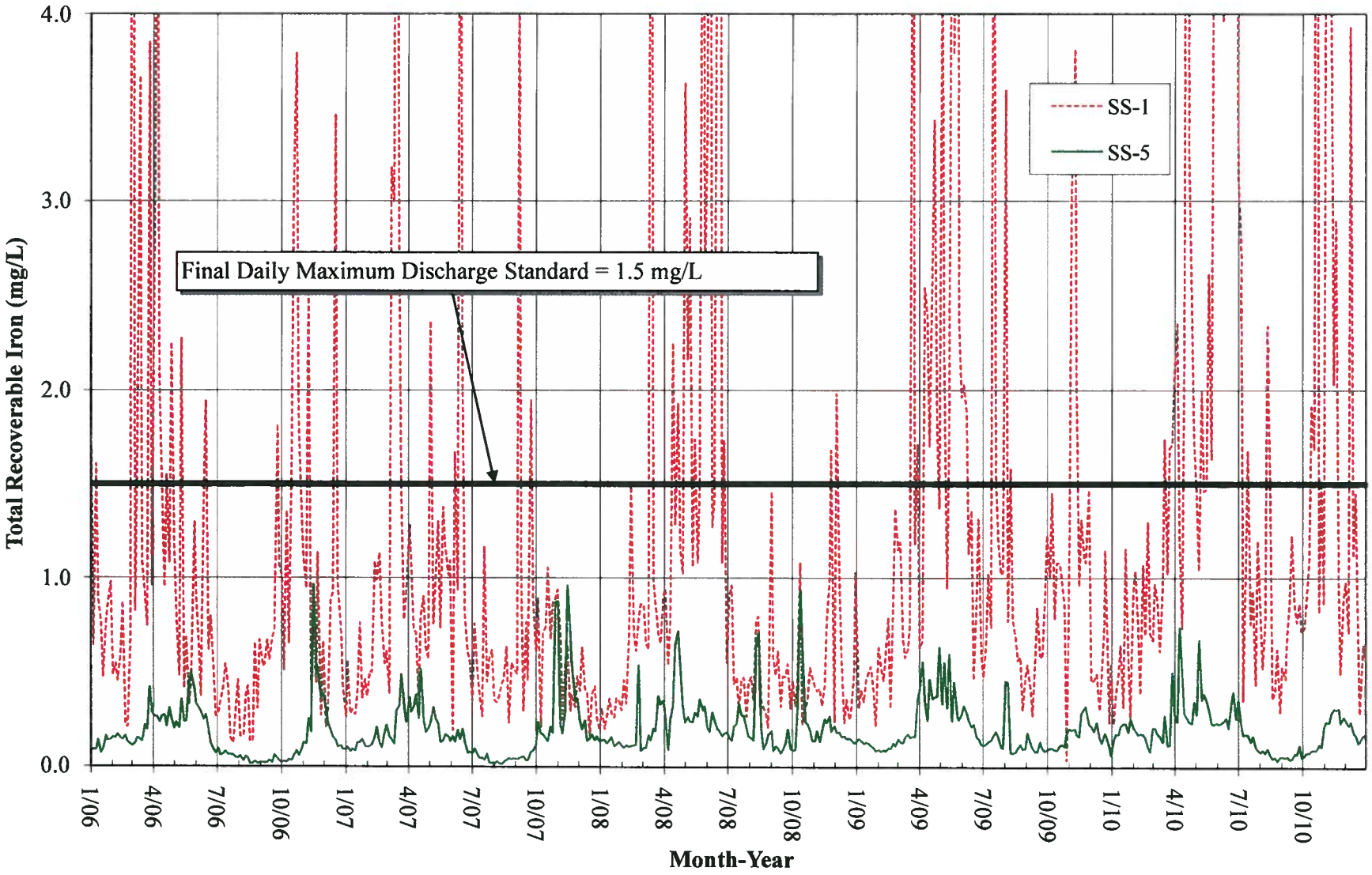

Figure Fe-1. Comparison of influent (SS-1) and effluent (SS-5) total recoverable iron concentrations (2006-2010) with final daily performance standard.

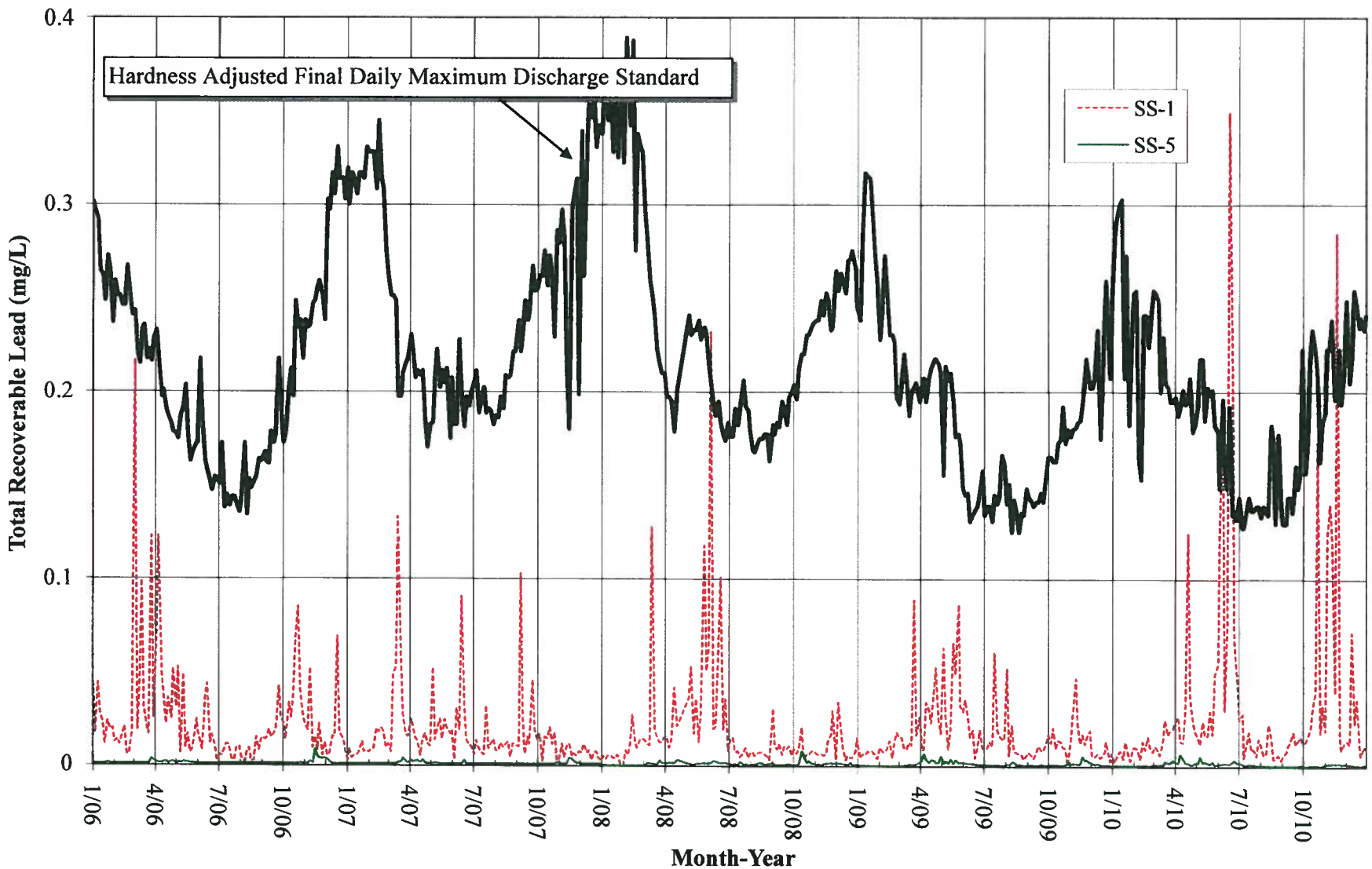

Figure Pb-1. Comparison of influent (SS-1) and effluent (SS-5) total recoverable lead concentrations (2006-2010) with final daily performance standard.

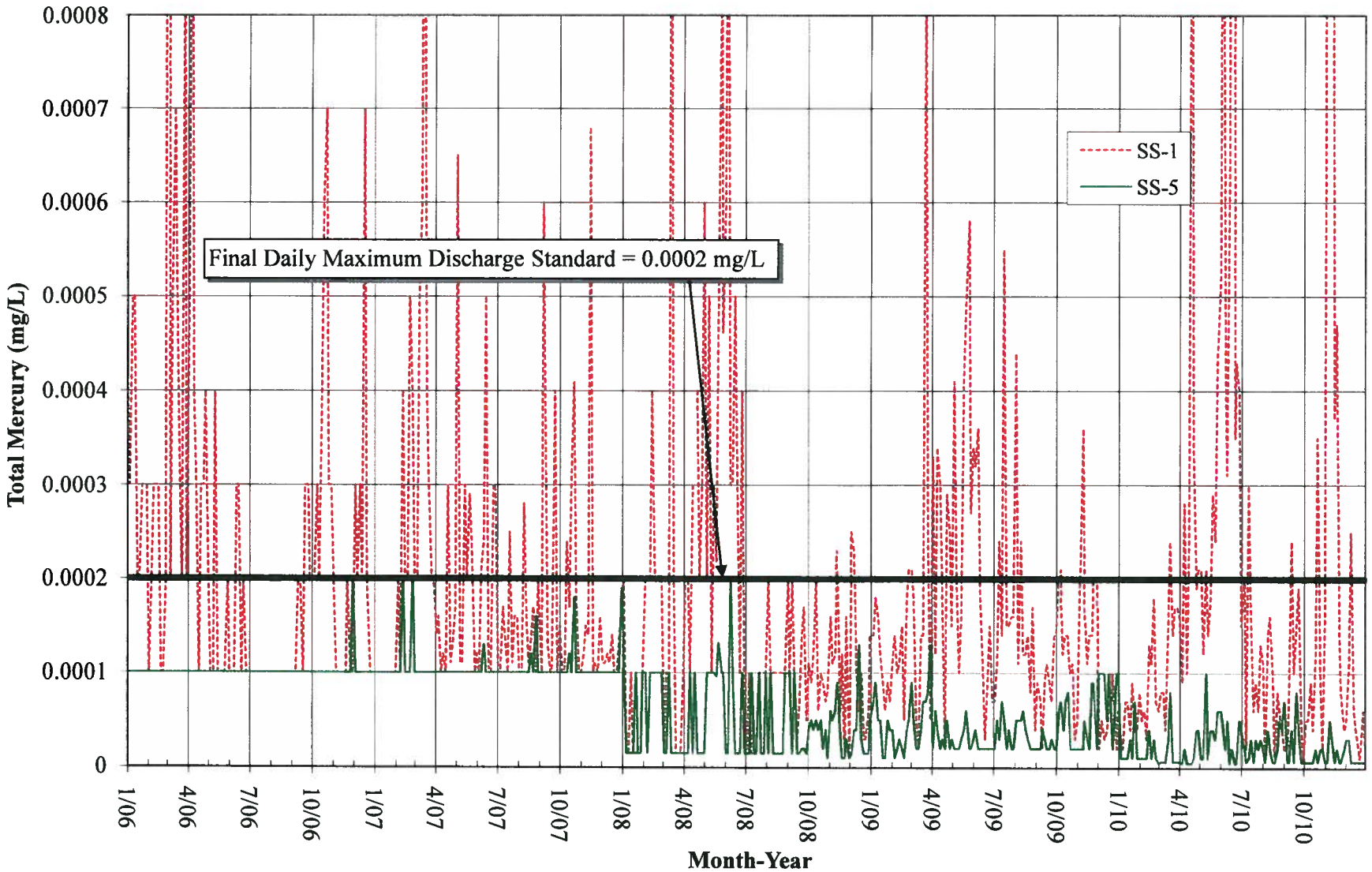

Figure Hg-1. Comparison of influent (SS-1) and effluent (SS-5) total mercury concentrations (2006-2010) with final daily performance standard.

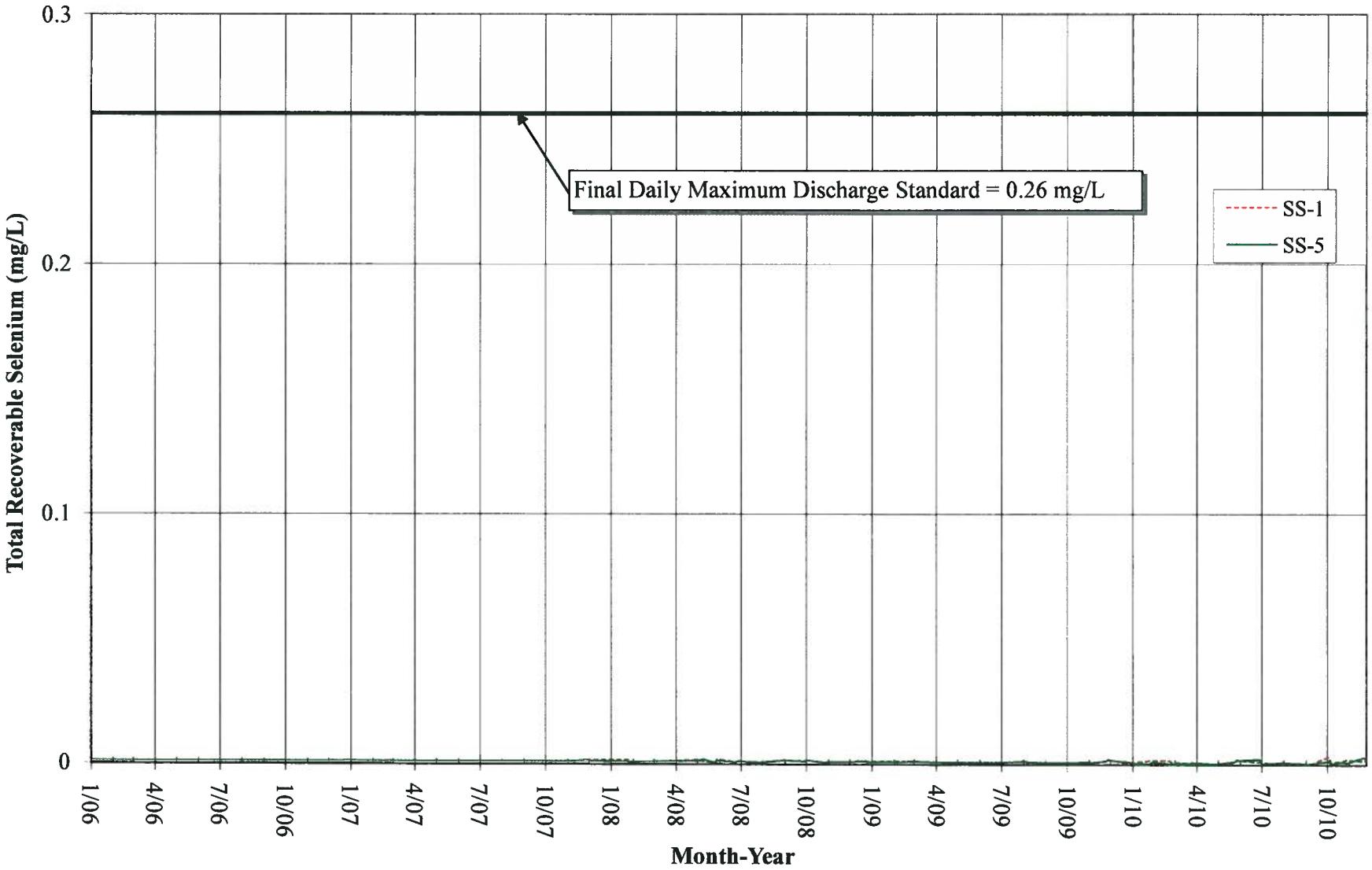

Figure Se-1. Comparison of influent (SS-1) and effluent (SS-5) total recoverable selenium concentrations (2006-2010) with final daily performance standard.

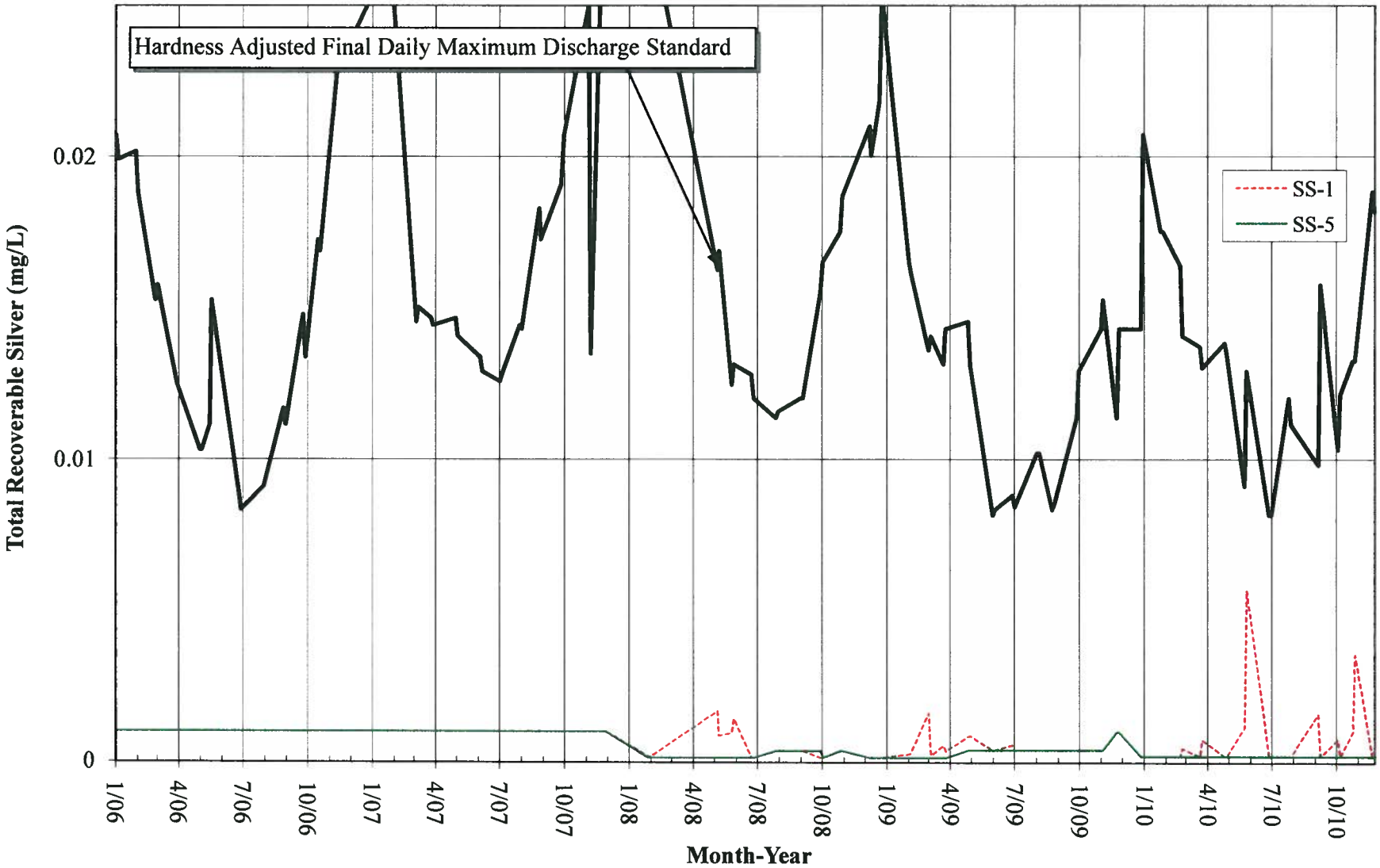

Figure Ag-1. Comparison of influent (SS-1) and effluent (SS-5) total recoverable silver concentrations (2006-2010) with final daily performance standard.

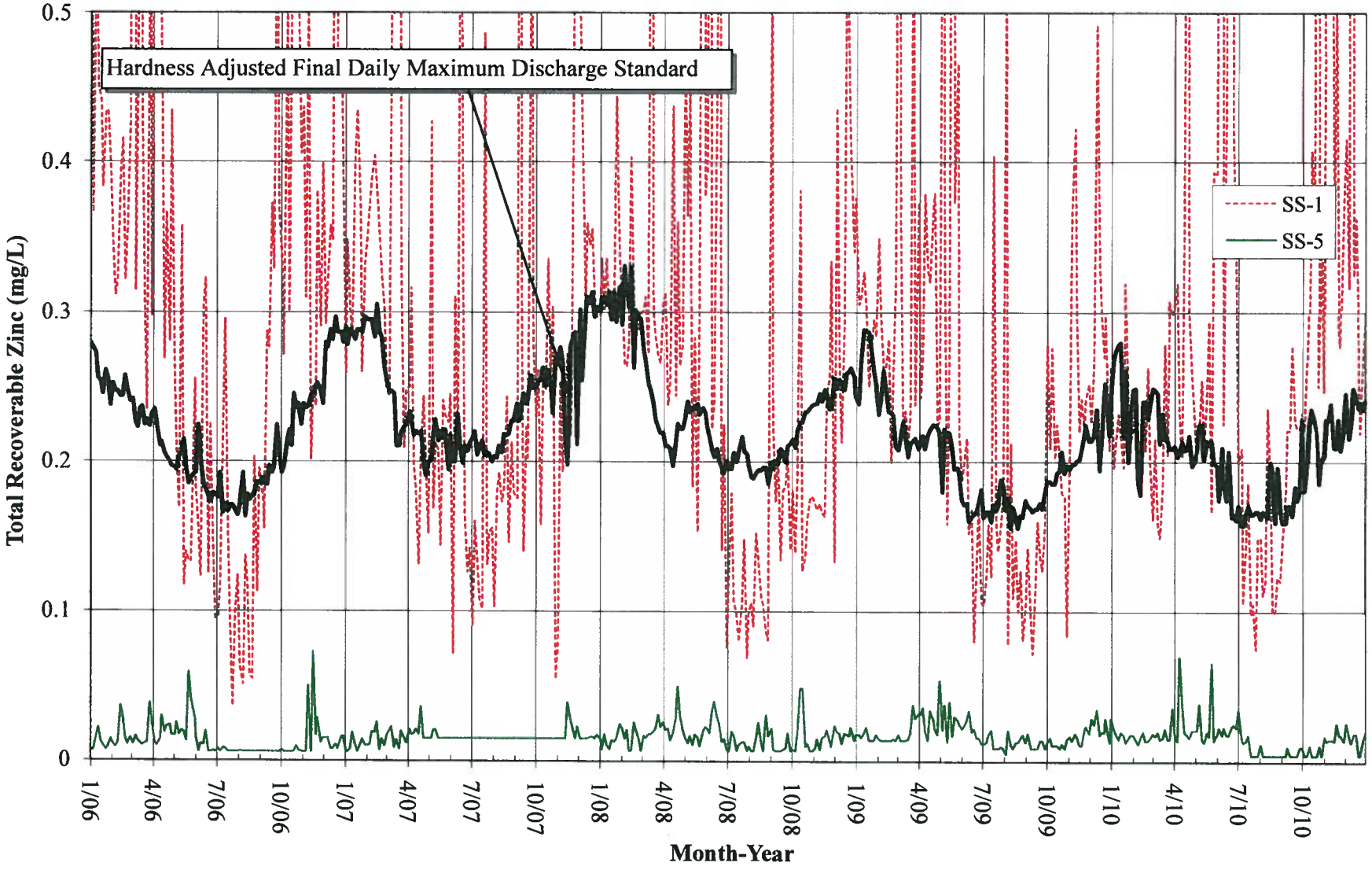

Figure Zn-1. Comparison of influent (SS-1) and effluent (SS-5) total recoverable zinc concentrations (2006-2010) with final daily performance standard.

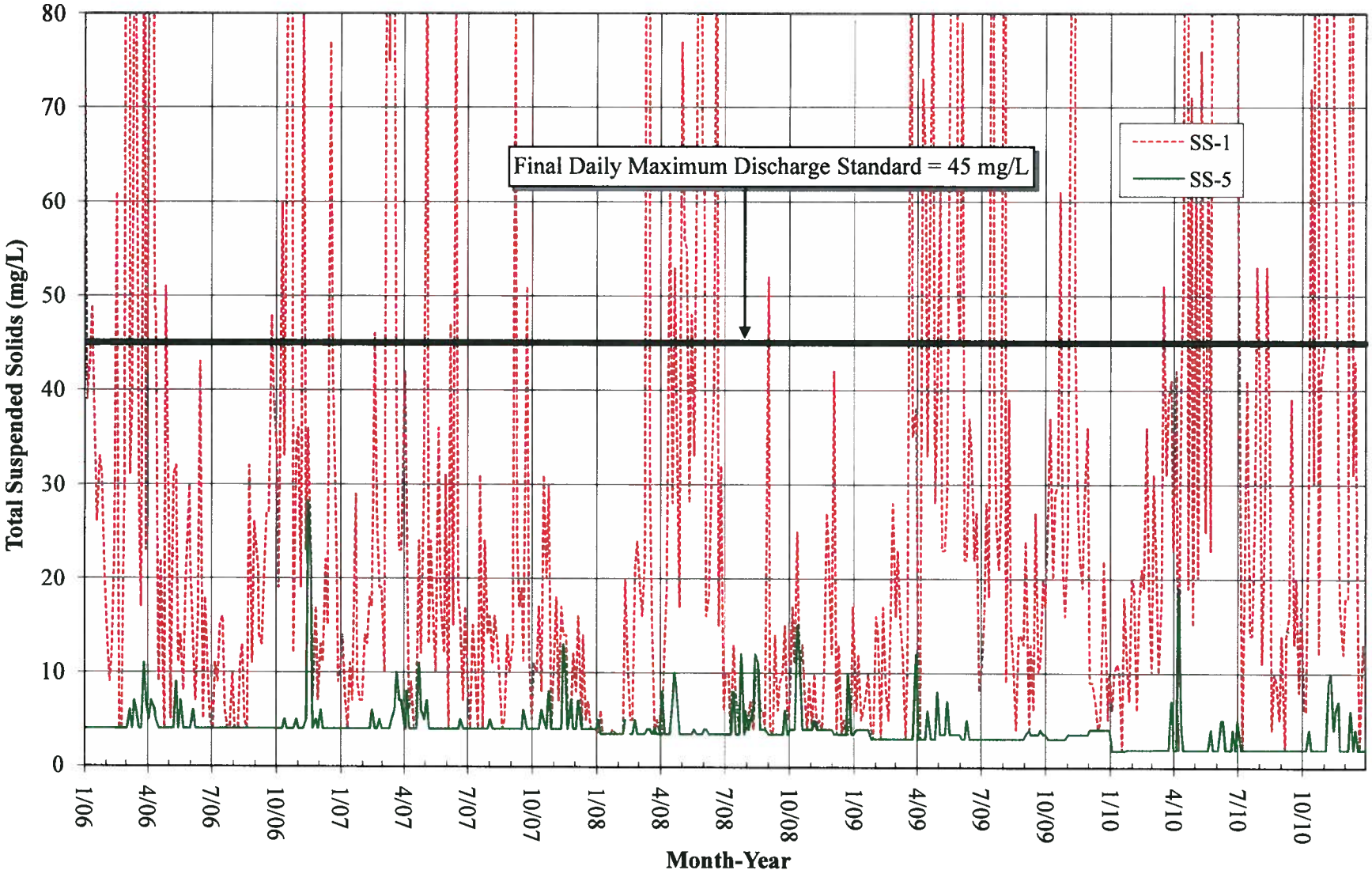

Figure TSS-1. Comparison of influent (SS-1) and effluent (SS-5) total suspended solids concentration (2006-2010) with final daily performance standard.

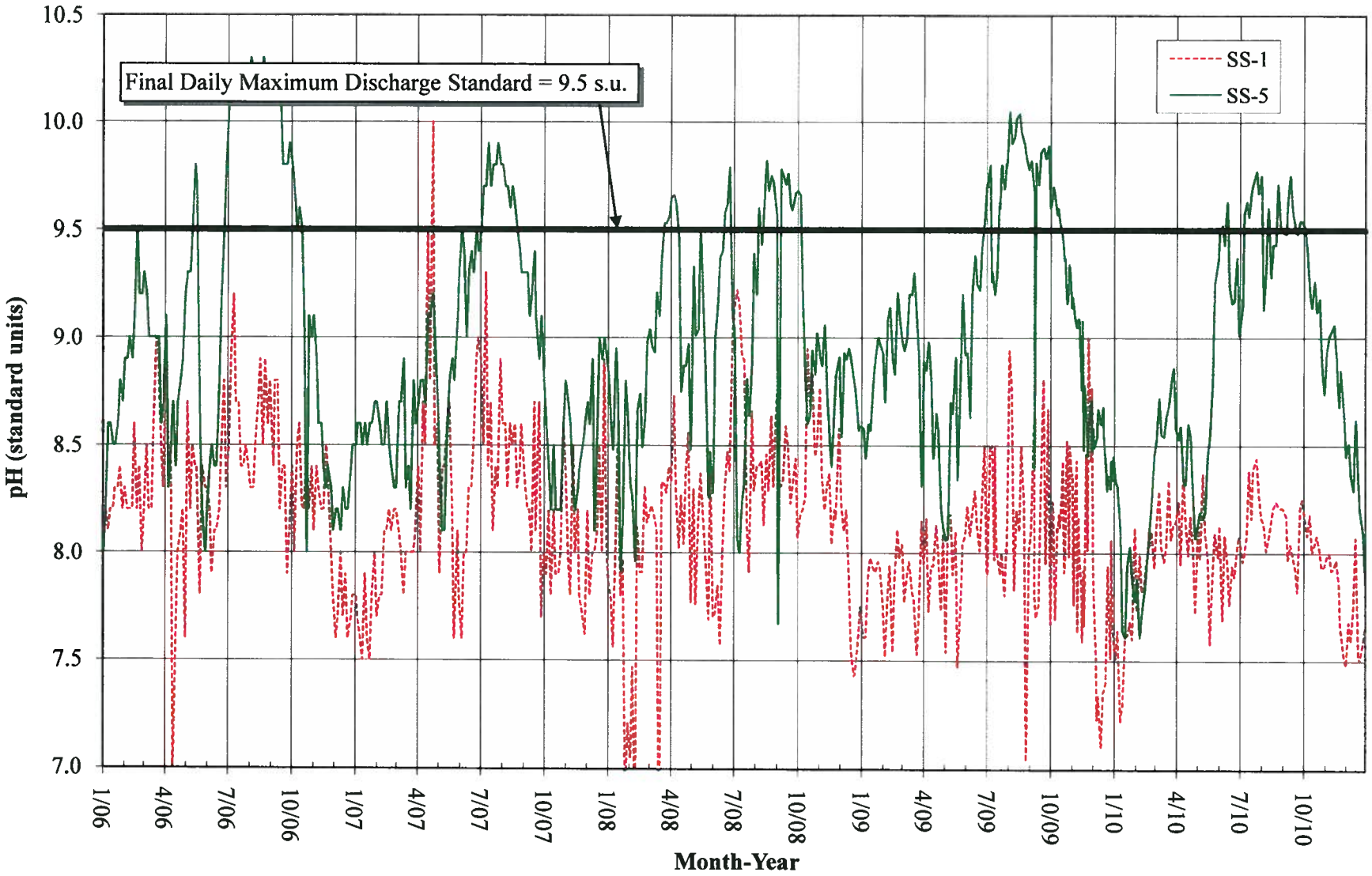

Figure pH-1. pH (2006-2010) at influent (SS-1) and effluent (SS-5) with final daily performance standard.