

5.01 Number of Specified Sites in accordance with the Water Pollution Control Act

	Total number of specified sites	Breakdown by water discharge regulations			
		Discharge per day is more than 50 m3	Specified sites dealing with hazardous substances.	Discharge per day is less than 50 m3	Specified sites dealing with hazardous substances
FY1985	279,762	29,890	3,900	249,872	9,507
	(5,035)	(4,797)	(849)	(238)	(25)
1986	280,443	29,802	3,854	250,641	9,035
	(4,740)	(4,518)	(765)	(222)	(20)
1987	281,057	29,968	3,983	251,089	9,253
	(4,728)	(4,514)	(800)	(214)	(19)
1988	285,860	31,420	4,067	254,440	9,030
	(5,168)	(4,901)	(817)	(267)	(25)
1989	287,679	31,692	4,295	255,987	12,953
	(5,018)	(4,757)	(759)	(261)	(16)
1990	290,328	32,190	4,328	258,138	13,295
	(5,008)	(4,742)	(803)	(266)	(16)
1991	304,663	36,548	4,387	268,115	14,022
	(5,004)	(4,733)	(771)	(271)	(20)
1992	303,810	36,901	4,430	266,909	13,613
	(5,009)	(4,751)	(801)	(258)	(22)
1993	305,318	36,939	5,025	268,379	13,233
	(4,741)	(4,507)	(848)	(234)	(22)
1994	305,987	37,948	5,295	268,039	13,546
	(5,106)	(4,849)	(918)	(257)	(29)
1995	303,807	38,417	5,258	265,390	13,024
	(5,124)	(4,861)	(917)	(263)	(28)
1996	303,100	38,534	5,128	264,566	13,146
	(4,989)	(4,745)	(893)	(244)	(26)
1997	298,967	38,127	4,934	260,840	12,707
	(4,676)	(4,455)	(836)	(221)	(20)
1998	298,044	38,386	5,178	259,658	12,432
	(4,599)	(4,382)	(861)	(217)	(16)
1999	298,529	38,415	4,712	260,114	12,005
	(4,528)	(4,299)	(718)	(229)	(18)
2000	298,245	38,502	4,815	259,743	12,127
	(4,462)	(4,221)	(734)	(241)	(22)
2001	297,973	38,751	5,091	259,222	11,892
	(4,617)	(4,365)	(811)	(252)	(29)
2002	296,157	38,292	4,582	257,865	10,975
	(4,551)	(4,304)	(774)	(247)	(27)
2003	293,481	37,226	4,434	256,255	10,926
	(4,289)	(4,027)	(664)	(262)	(27)
2004	292,379	37,017	4,475	255,362	10,526
	(4,188)	(3,926)	(677)	(262)	(32)
2005	290,759	36,543	4,424	254,216	10,567
	(4,158)	(3,874)	(603)	(284)	(33)
2006	289,091	36,139	4,471	252,952	11,234
	(4,118)	(3,842)	(651)	(276)	(43)
2007	280,517	35,506	4,330	245,011	10,757
	(3,906)	(3,662)	(617)	(244)	(37)
2008	276,952	34,807	4,336	242,145	10,611
	(3,854)	(3,595)	(639)	(259)	(36)
2009	274,039	34,271	4,179	239,768	10,348
	(3,813)	(3,543)	(628)	(270)	(31)
2010	271,242	33,964	4,156	237,278	10,119
	(3,743)	(3,492)	(622)	(251)	(24)
2011	266,860	33,529	4,025	233,331	10,046
	(3,685)	(3,440)	(623)	(245)	(24)
2012	271,168	33,067	3,931	233,146	10,917
	(3,559)	(3,321)	(545)	(238)	(28)
2013	(269,847)	(32,589)	(3,877)	(232,300)	(11,388)
	(3,485)	(3,241)	(541)	(244)	(31)
2014	267,328	32,381	3,813	230,225	11,207
	(3,444)	(3,202)	(538)	(242)	(30)

Note:

Parenthesized is the number of specified sites with the specified facilities, in accordance with Law concerning Special Measures for Conservation of the Environment of the Seto Inland Sea.

Source: "Enforcement of Water Pollution Control Law etc.," Water Environment Division, Environment Management Bureau, MOE, the Government of Japan.

5.02 Number of specified sites by prefecture in accordance with Water Pollution Control Act

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Hokkaido	7,127	6,936	6,818	6,569	6,372	6,332	6,242	6,186	6,252	6,129	6,361	6,130	6,112
Aomori	5,353	5,299	5,445	5,401	5,494	5,374	5,035	4,984	4,974	4,861	4,856	4,788	4,795
Iwate	5,489	5,521	5,414	5,339	5,346	5,287	5,282	5,266	5,228	5,173	5,288	5,300	5,268
Miyagi	6,714	6,699	6,746	6,725	6,717	6,761	5,787	5,758	5,771	5,703	5,792	5,631	5,539
Akita	4,380	4,405	4,401	4,241	4,310	4,181	3,974	3,939	3,847	3,737	3,781	3,735	3,638
Yamagata	4,235	4,206	4,245	4,235	4,289	4,331	4,364	4,282	3,660	3,672	3,712	3,753	3,760
Fukushima	7,991	7,940	7,975	7,973	7,899	7,892	7,827	7,711	7,643	7,649	7,652	8,037	7,975
Ibaraki	9,750	9,767	9,783	10,039	9,580	8,634	9,346	9,327	9,279	9,000	9,353	8,905	8,563
Tochigi	8,445	8,490	8,183	8,174	8,220	8,240	8,239	8,234	8,233	8,233	8,251	8,198	8,173
Gunma	5,230	5,237	5,345	5,387	5,484	5,376	5,270	5,285	5,300	5,308	5,275	5,242	5,143
Saitama	10,276	10,081	10,161	9,314	9,608	9,670	9,670	9,625	9,461	9,577	9,590	9,482	9,321
Chiba	11,836	11,491	11,302	11,199	11,022	10,787	10,581	10,401	10,260	10,194	10,278	10,597	10,487
Tokyo	1,777	1,855	1,878	2,216	2,289	2,325	2,304	2,295	2,265	2,218	3,352	3,333	3,390
Kanagawa	8,960	8,985	8,904	8,775	8,564	8,229	8,142	8,017	7,915	7,800	7,832	7,792	7,767
Niigata	10,857	10,841	10,784	10,787	10,694	10,635	10,593	10,498	10,145	9,477	8,917	8,664	8,621
Toyama	3,386	3,382	3,389	3,412	3,430	3,458	3,472	3,486	3,452	3,383	3,421	3,448	3,454
Ishikawa	4,180	4,079	4,064	3,979	3,979	3,982	3,837	3,911	3,871	3,824	3,835	3,856	3,840
Fukui	2,788	2,813	2,891	2,906	2,772	2,648	2,542	2,474	2,457	2,430	2,431	2,398	2,375
Yamanashi	5,385	5,361	5,301	5,312	5,302	5,195	5,148	5,153	5,124	5,067	5,049	5,013	4,854
Nagano	13,073	13,046	13,058	13,077	12,986	12,941	12,911	12,871	12,670	12,499	12,587	12,447	12,434
Gifu	8,898	8,843	8,873	8,874	8,827	8,820	8,790	8,714	8,614	8,545	8,538	8,573	8,473
Shizuoka	12,581	12,573	12,552	12,476	12,378	12,535	12,499	11,853	11,941	11,848	12,290	11,541	11,501
Aichi	14,372	14,138	14,001	13,849	13,695	13,393	13,139	12,894	12,658	12,468	12,203	12,172	11,956
Mie	8,544	8,592	8,663	8,618	8,484	8,516	8,549	8,568	8,547	8,513	8,525	8,565	8,333
Shiga	3,580	3,523	3,418	3,422	3,284	3,238	2,957	2,902	3,165	2,866	2,897	3,467	3,414
Kyoto	4,920	4,798	4,760	4,874	5,063	5,048	5,036	5,038	4,791	4,693	4,579	4,524	4,473
Osaka	5,516	5,362	5,230	5,214	4,936	5,001	4,965	4,468	4,029	3,403	4,569	4,572	4,470
Hyogo	10,700	10,667	10,538	10,027	9,986	9,825	9,783	9,680	9,071	8,984	9,283	9,344	9,132
Nara	3,058	3,070	3,270	3,332	3,340	3,358	3,356	3,355	3,101	3,107	3,124	3,254	3,095
Wakayama	3,631	3,672	3,721	3,953	3,951	3,871	3,843	3,853	3,678	3,643	3,678	3,705	3,991
Tottori	2,465	2,430	2,366	2,269	2,351	2,345	2,370	2,326	2,316	2,309	2,333	2,396	2,396
Shimane	3,875	3,355	3,330	3,325	3,341	3,348	3,256	3,233	3,179	3,101	3,123	3,126	3,124
Okayama	5,894	5,898	5,896	5,723	5,713	5,680	5,604	5,571	5,031	5,020	5,020	4,801	4,645
Hiroshima	7,315	7,289	7,270	7,520	7,159	6,636	6,491	6,308	5,788	5,764	5,799	5,814	5,772
Yamaguchi	4,781	4,780	4,251	4,249	4,241	4,243	4,242	4,236	3,900	3,911	3,950	3,946	3,849
Tokushima	4,224	4,256	4,303	4,323	4,316	4,324	4,334	4,356	4,148	4,159	4,175	4,187	4,177
Kagawa	4,924	4,924	4,931	4,929	4,923	4,841	4,700	4,580	4,290	4,296	4,280	4,108	4,090
Ehime	5,743	5,290	5,236	5,077	5,046	4,972	4,859	4,726	4,329	4,185	4,197	4,132	4,082
Kochi	3,291	3,287	3,300	3,320	3,288	3,309	3,318	3,203	3,210	3,049	2,951	2,947	2,903
Fukuoka	6,789	6,583	6,545	6,462	6,544	6,184	6,096	5,899	5,510	5,048	5,200	5,372	5,365
Saga	2,891	2,872	2,896	2,908	2,907	2,952	2,980	2,991	2,906	2,733	3,497	3,539	2,739
Nagasaki	5,647	5,634	5,397	5,468	5,651	5,789	5,889	5,954	6,182	6,144	5,421	5,639	6,381
Kumamoto	8,413	8,474	8,532	8,584	8,865	3,579	3,103	3,198	3,211	3,299	3,445	3,471	3,479
Oita	5,466	5,477	5,607	5,546	5,652	5,733	5,624	5,663	5,273	5,374	5,434	5,344	5,355
Miyazaki	4,059	3,953	4,009	3,942	4,009	4,066	4,107	4,176	4,189	4,154	4,051	3,883	3,867
Kagoshima	5,724	5,763	5,825	5,817	5,287	5,246	5,236	5,284	5,311	5,314	5,479	5,416	5,477
Okinawa	1,624	1,544	1,572	1,598	1,497	1,387	1,260	1,307	1,324	1,311	1,355	1,377	1,383
Total	296,157	293,481	292,379	290,759	289,091	280,517	276,952	274,039	267,499	263,175	267,009	265,964	263,431

Source: "Enforcement of Water Pollution Control Law etc.," Water Environment Division, Environment Management Bureau, MOE, the Government of Japan.

5.03 Results of the comprehensive survey of release of water pollution substances

(FY2013)

	Number of subjected business establishments	Effluent concentration (mg/L)		
		Average	Maximum	Minimum
BOD	21,142	7.10	2,900.00	0.00
COD	17,215	11.64	8,612.00	0.00
Cadmium and its compounds	609	0.01	1.20	0.00
Organic phosphorus compound	409	0.15	7.20	0.00
Hexavalent chromium compounds	946	0.05	2.00	0.00
Arsenic and its compounds	659	0.01	1.50	0.00
Total mercury	477	0.00	0.01	0.00
Alkyl mercury compounds	258	0.00	0.03	0.00
PCB	332	0.00	0.01	0.00
Trichloroethylene	539	0.01	0.30	0.00
Tetrachloroethylene	507	0.25	3.20	0.00

Source: "Comprehensive survey of release of water pollution substance in fiscal year 2013," Water Environment Division, Environment Management Bureau, MOE, the Government of Japan

5.04 Rate of compliance with environmental quality on health issues (non-achievement rate)

	FY2014									FY2013		
	Rivers		Lakes		Sea areas		Total			Total		
	a: Number of exceeding points	b: Number of monitoring points	a: Number of exceeding points	b: Number of monitoring points	a: Number of exceeding points	b: Number of monitoring points	a: Number of exceeding points	b: Number of monitoring points	a / b (%)	a: Number of exceeding points	b: Number of monitoring points	a / b (%)
Cadmium	3	3,102	0	261	0	818	3	4,181	0.07	4	4,171	0.10
Total cyanide	0	2,788	0	219	0	693	0	3,700	0	0	3,686	0
Lead	2	3,243	0	261	0	837	2	4,341	0.05	2	4,346	0.05
Hexavalent chromium	0	2,882	0	236	0	784	0	3,902	0	0	3,920	0
Arsenic	21	3,188	1	262	0	839	22	4,289	0.51	25	4,290	0.58
Total mercury	0	2,970	0	245	0	831	0	4,046	0	1	4,069	0
Alkyl mercury	0	687	0	66	0	178	0	931	0	0	894	0
PCB	0	1,745	0	145	0	421	0	2,311	0	0	2,337	0
Dichloromethane	0	2,688	0	202	0	558	0	3,448	0	0	3,490	0
Carbon tetrachloride	0	2,677	0	200	0	513	0	3,390	0	0	3,401	0
1,2-dichloroethane	1	2,689	0	202	0	546	1	3,437	0	1	3,466	0
1,1-dichloroethylene	0	2,677	0	202	0	546	0	3,425	0	0	3,476	0
cis-1,2-dichloroethylene	0	2,679	0	202	0	546	0	3,427	0	0	3,476	0
1,1,1-trichloroethane	0	2,713	0	208	0	546	0	3,467	0	0	3,500	0
1,1,2-trichloroethane	0	2,678	0	202	0	546	0	3,426	0	0	3,474	0
Trichloroethylene	0	2,748	0	214	0	569	0	3,531	0	0	3,600	0
Tetrachloroethylene	0	2,747	0	214	0	569	0	3,530	0	0	3,600	0
1,3-dichloropropene	0	2,697	0	209	0	505	0	3,411	0	0	3,439	0
Thiuram	0	2,652	0	212	0	496	0	3,360	0	0	3,368	0
Simazine	0	2,636	0	209	0	493	0	3,338	0	0	3,401	0
Thiobencarb	0	2,621	0	209	0	493	0	3,323	0	0	3,392	0
Benzene	0	2,643	0	203	0	547	0	3,393	0	0	3,440	0
Selenium	0	2,659	0	203	0	554	0	3,416	0	0	3,458	0
Nitrate nitrogen and nitrite nitrogen	2	3,135	0	355	0	757	2	4,247	0.05	2	4,074	0.05
Fluorine	17 (29)	2,690 (2,702)	0	226 (226)	-	(24)	17 (29)	2,916 (2,952)	0.58	14 (25)	2,919 (2,959)	0.48
Boron	1 (75)	2,566 (2,640)	0 (4)	216 (220)	-	(22)	1 (79)	2,782 (2,882)	0.04	1 (100)	2,779 (2,905)	0.04
1,4-dioxane	0	2,564	0	209	0	600	0	3,373	0	0	3,387	0
Total (total number of points)	45 <47>	3,902	1 <1>	400	0 <0>	1,073	46 <48>	5,375	0.86	44 <50>	5,409	0.81

Notes:

- Nitrate nitrogen and nitrite nitrogen, fluorine, and boron have been included in water quality measurements across the country since 1999.
- Environmental standards of fluorine and boron are not applicable to sea areas.

Measurement points of sea areas of these two items as described in () are for reference purpose only and are excluded from environmental standards as well as the total field. Also, in rivers and lakes, a number of points, not including exceeding points of environmental standards which are affected in the sea, are described. These points are described below () for reference.

- Upper number in the "Total" field: the number of points without overlaps.

Lower number in the total field: gross number of points counted as one when it detects multiple exceeding values beyond environmental standards. Non-achievement rates are calculated based on the number "46" which is equivalent to the number of points that detect multiple exceeding values beyond the environmental standards.

Source: "Results of water quality measurement in public waters FY2014," Environment Management Bureau, MOE, the Government of Japan

5.05 Rate of compliance for environmental standards (BOD or COD)

	Rivers	Lakes	Sea areas								Total	Number of Water Areas
				Tokyo Bay	Ise Bay	Osaka Bay	Seto Inland Sea*	Seto Inland Sea	Ariake Sea	Yatsushiro Sea		
FY1974	51.3	41.9	70.7	44	47	67	-	67	88	75	54.9	1,927
1975	57.1	38.6	72.4	44	53	67	-	69	81	100	59.6	2,394
1976	57.6	40.7	76.4	67	47	67	-	72	88	86	60.6	2,586
1977	58.5	35.2	76.9	61	47	67	-	73	81	93	61.2	2,769
1978	59.5	37.6	75.3	61	53	67	-	75	94	93	61.7	2,814
1979	65.0	41.8	78.2	61	53	67	-	76	88	93	66.7	2,866
1980	67.2	41.6	79.8	61	53	67	-	72	88	79	68.7	2,913
1981	63.3	42.7	81.6	61	59	75	81	81	94	86	66.0	2,935
1982	65.3	41.7	81.3	61	41	67	83	81	94	93	67.5	2,982
1983	65.9	40.8	79.8	61	53	67	83	81	94	93	67.7	3,009
1984	63.4	42.7	81.3	61	47	67	81	81	94	100	66.1	3,044
1985	67.7	41.2	80.0	61	47	67	81	81	94	93	69.0	3,052
1986	68.6	40.0	81.2	63	59	67	79	78	94	100	69.9	3,061
1987	68.3	43.1	82.6	63	47	67	81	80	94	86	70.1	3,070
1988	73.3	44.2	82.7	63	65	67	81	81	88	93	73.9	3,083
1989	73.8	46.3	82.4	63	53	67	79	78	94	93	74.3	3,092
1990	73.6	44.2	77.6	63	59	67	75	75	94	100	73.1	3,103
1991	75.4	42.3	80.2	63	59	67	79	78	94	100	75.0	3,123
1992	75.4	44.6	80.9	74	53	67	79	78	88	100	75.2	3,149
1993	77.3	46.1	79.5	63	65	67	73	72	94	100	76.5	3,147
1994	67.9	40.6	79.2	63	47	67	77	76	94	100	68.9	3,170
1995	72.3	39.5	78.6	63	56	67	75	75	93	100	72.1	3,181
1996	73.6	42.0	81.1	63	56	67	79	78	93	100	73.7	3,231
1997	80.9	41.0	74.9	63	44	67	75	75	93	86	78.1	3,244
1998	81.0	40.9	73.6	63	44	67	75	76	80	79	77.9	3,258
1999	81.5	45.1	74.5	63	50	67	75	75	93	79	78.7	3,270
2000	82.4	42.3	75.3	63	56	67	77	76	87	43	79.4	3,274
2001	81.5	45.8	79.3	68	56	67	75	74	93	86	79.5	3,291
2002	85.1	43.8	76.9	68	44	67	69	69	87	86	81.7	3,300
2003	87.4	55.2	76.2	68	50	67	70	70	93	86	83.8	3,301
2004	89.8	50.9	75.5	63	50	67	67	67	80	71	85.2	3,313
2005	87.2	53.4	76.0	63	50	67	74	74	87	64	83.4	3,319
2006	91.2	55.6	74.5	68	44	67	71	70	87	64	86.3	3,334
2007	90.0	50.3	78.7	63	56	67	78	77	80	86	85.8	3,324
2008	92.3	53.0	76.4	74	56	67	72	72	93	79	87.4	3,331
2009	92.3	50.0	79.2	68	56	67	77	77	93	86	87.6	3,335
2010	92.5	53.2	78.3	63	56	67	81	80	87	79	87.8	3,337
2011	93.0	53.7	78.4	68	56	67	79	78	80	64	88.2	3,326
2012	93.1	55.3	79.8	63	56	67	79	78	87	86	88.6	3,329
2013	92.0	55.1	77.3	63	56	67	77	77	87	79	87.3	3,335
2014	93.9	55.6	79.1	63	50	67	78	77	93	86	89.1	3,339

Notes:

- BOD is applied for Rivers, COD for Lakes and Sea Areas.
- Achievement rate (%) = (number of water areas meeting the standards / number of water areas in a specified type) × 100
- Mikawa Bay is included in Ise Bay.
- "Seto Inland Sea", the column shadowed with a gray does not include Osaka Bay. Osaka Bay is included in "Seto Inland Sea."

Source: "Measurement Results of Water Quality in Public Waters FY2014," Water Environment Division, Environment Management

5.06 Water quality of enclosed sea area (annual average of COD)

		FY	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Average of the last 10 years
Tokyo Bay	Average (mg/L)		2.8	2.7	2.5	2.6	2.5	2.8	2.7	2.7	2.6	2.8	2.7 mg/L
	Category A		2.2	2.0	1.8	2.3	1.7	2.3	2.1	2.3	2.0	2.2	
	Category B		2.7	2.7	2.5	2.4	2.5	2.9	2.7	2.7	2.5	2.8	
	Category C		3.2	3.0	2.9	2.9	2.8	3.1	3.0	3.2	2.9	3.1	
	Total points of environment standards ㉑		49	49	49	49	49	49	49	49	49	49	
	Environment standards point to satisfy standard level ㉒		31	30	30	38	35	25	35	29	29	29	
㉒ / ㉑ (%)			63	61	61	78	71	51	71	59	59	59	
Ise Bay (including Mikawa Bay)	Average (mg/L)		3.1	3.3	3.2	3.4	2.9	3.1	2.8	2.8	3.1	3.2	3.1 mg/L
	Category A		2.8	3.0	2.6	3.1	2.5	2.6	2.5	2.6	2.8	2.8	
	Category B		2.9	3.0	3.2	3.0	2.8	2.8	2.6	2.7	2.8	2.8	
	Category C		3.6	3.8	3.7	4.0	3.2	3.8	3.5	3.8	3.7	3.9	
	Total points of environment standards ㉑		32	32	32	32	32	32	32	32	32	32	
	Environment standards point to satisfy standard level ㉒		14	13	17	15	17	17	16	17	19	15	
㉒ / ㉑ (%)			44	41	53	47	53	53	50	53	59	47	
Osaka Bay	Average (mg/L)		2.9	2.7	2.7	2.8	2.8	2.8	2.5	2.7	2.6	2.4	2.7 mg/L
	Category A		2.5	2.4	2.4	2.5	2.4	2.4	2.3	2.4	2.4	2.1	
	Category B		3.1	2.8	2.8	2.9	2.8	3.0	2.7	2.9	2.7	2.6	
	Category C		3.2	3.0	2.9	3.0	3.2	3.1	2.5	2.8	2.8	2.7	
	Total points of environment standards ㉑		28	28	28	28	28	28	28	28	28	28	
	Environment standards point to satisfy standard level ㉒		13	18	16	15	15	16	18	15	17	18	
㉒ / ㉑ (%)			46	64	57	54	54	57	64	54	61	64	
Seto Inland Sea (excluding Osaka Bay)	Average (mg/L)		2.1	2.1	2.0	2.0	1.9	1.9	1.9	1.9	2.1	2.0	2.0 mg/L
	Category A		1.8	1.9	1.8	1.8	1.7	1.7	1.7	1.8	1.8	1.8	
	Category B		2.3	2.3	2.2	2.3	2.2	2.2	2.2	2.0	2.0	2.2	
	Category C		3.0	3.0	2.8	2.7	2.8	2.7	2.7	2.7	2.5	2.6	
	Total points of environment standards ㉑		426	426	426	423	401	421	424	424	424	424	
	Environment standards point to satisfy standard level ㉒		294	277	322	297	310	323	323	334	325	332	
㉒ / ㉑ (%)			69	65	76	70	77	77	76	79	77	78	
Seto Inland Sea (including Osaka Bay)	Average (mg/L)		2.1	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.0	2.0 mg/L
	Category A		1.8	1.9	1.8	1.8	1.7	1.7	1.8	1.8	1.9	1.8	
	Category B		2.3	2.4	2.3	2.3	2.2	2.2	2.2	2.0	2.0	2.2	
	Category C		3.1	3.0	2.8	2.8	2.8	2.8	2.7	2.6	2.5	2.6	
	Total points of environment standards ㉑		454	454	454	451	429	449	452	452	452	452	
	Environment standards point to satisfy standard level ㉒		307	295	338	312	325	339	340	349	342	350	
㉒ / ㉑ (%)			68	65	74	69	76	76	75	77	76	77	
Ariake Sea	Average (mg/L)		1.8	1.8	1.9	1.8	1.8	1.9	2.3	2.3	2.1	1.8	1.9 mg/L
	Category A		2.1	2.0	2.2	1.9	2.0	2.2	2.1	2.1	2.0	2.0	
	Category B		1.5	1.5	1.6	1.4	1.5	1.5	2.6	2.3	2.2	1.5	
	Category C		2.0	2.0	2.1	2.1	2.2	2.3	2.2	2.0	2.0	2.2	
	Total points of environment standards ㉑		34	34	34	34	34	34	34	34	34	34	
	Environment standards point to satisfy standard level ㉒		26	26	25	28	28	25	20	19	26	28	
㉒ / ㉑ (%)			76	76	74	82	82	74	59	56	76	82	
Yatsushiro Sea	Average (mg/L)		2.0	1.9	1.9	1.6	1.7	1.8	1.9	1.9	1.9	1.7	1.8 mg/L
	Category A		1.8	1.8	1.7	1.5	1.6	1.7	1.8	1.6	1.7	1.7	
	Category B		2.1	2.0	2.0	1.6	1.8	1.9	2.1	1.9	1.9	1.9	
	Category C		3.1	2.8	2.6	2.1	2.6	2.5	2.4	2.3	2.4	1.9	
	Total points of environment standards ㉑		29	29	29	29	29	29	29	29	29	29	
	Environment standards point to satisfy standard level ㉒		19	20	26	26	27	26	21	27	23	27	
㉒ / ㉑ (%)			66	69	90	90	93	90	72	93	79	93	

Source: "Measurement Results of Water Quality in Public Waters FY2014," Water Environment Division, Environment Management Bureau, MOE, the Government of Japan

5.07 Changes in Water quality in the specified lakes (COD)

(Unit: mg / L)

	Category	Number of points	FY 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	
Kamafusa Dam	A A	1	2.7	2.6	2.2	2.3	2.5	2.6	2.5	2.4	2.5	2.9	
			2.3	2.1	2.0	2.1	2.3	2.5	2.4	2.2	2.4	2.7	
Hachirogata Regulating Pond	A	3	12.0	12.0	9.5	10.0	8.8	9.7	10.0	12.0	9.4	9.8	
			7.5	8.8	7.5	6.8	6.8	7.5	7.2	8.5	6.3	7.0	
Kasumigaura Lake	(Nishiura)	A	4	8.9	9.3	9.7	9.8	10.0	10.0	9.0	8.3	7.5	7.9
				7.6	8.2	8.5	8.4	9.3	8.2	8.1	7.5	6.6	6.6
	(Lake Kitaura)	A	2	8.1	9.4	9.8	10.0	11.0	12.0	9.1	9.2	8.5	9.6
				7.7	8.4	9.5	9.3	10.0	9.1	8.0	8.3	7.3	7.5
	(Hitachitonegawa)	A	2	7.9	8.9	9.6	9.7	9.7	10.0	9.2	8.3	7.2	7.4
				7.4	8.1	8.8	8.7	9.3	9.2	8.5	8.0	6.7	7.3
Lake Inba-numa	A	1	9.6	10.0	12.0	9.6	9.8	10.0	13.0	12.0	14.0	11	
			8.1	8.6	11.0	8.5	8.6	8.9	11.0	11.0	12.0	11	
Lake Teganuma	B	1	9.3	9.6	9.7	9.1	10.0	9.6	10.0	11.0	10.0	8.4	
			8.2	7.9	8.4	8.2	8.6	8.9	9.3	9.6	9.5	7.6	
Lake Suwa	A	3	7.3	7.4	6.2	6.8	6.0	6.7	4.9	6.7	7.5	7.5	
			5.7	5.5	5.1	5.3	4.8	4.5	4.0	4.9	5.9	5.0	
Lake Nojiri	A A	2	1.7	1.8	2.0	2.3	2.4	2.2	2.2	2.3	2.4	2.3	
			1.6	1.6	1.6	1.9	2.1	1.9	1.9	2.0	2.0	2.1	
Lake Biwa	(North lake)	A A	4	3.0	2.5	2.9	3.0	3.0	2.9	2.8	2.8	2.6	2.9
				2.6	2.4	2.6	2.7	2.7	2.6	2.5	2.6	2.4	2.4
	(South lake)	A A	4	4.2	3.7	4.3	4.3	4.7	5.0	4.5	5.3	4.4	4.3
				3.2	2.9	3.4	3.5	3.5	3.7	3.3	3.7	3.1	3.1
Lake Nakaumi	A	12	5.3	5.9	5.6	6.0	5.9	5.3	5.4	5.4	5.6	5.0	
			4.2	4.5	4.5	4.4	4.1	3.8	3.4	3.6	4.0	3.4	
Lake Shinji	A	5	4.9	4.8	6.2	6.1	5.5	5.9	6.1	6.5	5.7	4.9	
			4.5	4.3	5.4	5.4	4.8	5.1	5.1	5.3	4.9	4.1	
Lake Kojima	B	2	8.3	8.0	7.9	8.1	7.5	8.0	7.8	7.7	7.4	7.6	
			7.5	7.4	7.0	7.3	7.1	7.6	7.6	6.9	6.7	7.3	
Overall average of designated lakes		46	5.4	5.5	6.0	5.9	6.0	6.0	5.9	6.0	5.7	5.5	

Note:

- Upper rows indicate 75% of the Environmental Quality Standards values for COD. Lower rows for the annual average of the same.
- 75% values for COD refer to the highest among that in each point. The annual COD average values are taken from the average values of all measuring points.
- Value for the whole of a specified lakes is calculated from the mean value of each lake by averaging them. (Hachirogata Regulating Pond was excluded until FY2007. It was included in FY 2008.)
- Hachirogata Regulating Pond was designated as a specified lake in December 2007.
- The number of points describe the number of measuring points of the Environmental Quality Standards in each lakes of FY2014.

Source: "Measurement Results of Water Quality in Public Waters FY2014," Water Environment Division, Environment Management Bureau, MOE, the Government of Japan

5.08 Achievement rate of Environmental Quality Standards for total nitrogen and total phosphorus in marine water

	Total Nitrogen			Total Phosphorus			Total Nitrogen, Total Phosphorus		
	Number of type-designated water areas	Number of achievement water areas	Achievement rate (%)	Number of type-designated water areas	Number of achievement water areas	Achievement rate (%)	Number of type-designated water areas	Number of achievement water areas	Achievement rate (%)
FY1995	9	2	22.2	9	4	44.4	9	2	22.2
1996	29	20	69.0	29	16	55.2	29	16	55.2
1997	49	33	67.3	49	32	65.3	49	27	55.1
1998	112	83	74.1	112	94	83.9	112	79	70.5
1999	124	96	77.4	124	107	86.3	124	90	72.6
2000	132	102	77.3	132	112	84.8	132	94	71.2
2001	145	128	88.3	145	127	87.6	145	119	82.1
2002	152	134	88.2	152	134	88.2	152	122	80.3
2003	152	135	88.8	152	135	88.8	152	128	84.2
2004	152	126	82.9	152	134	88.2	152	119	78.3
2005	152	131	86.2	152	134	88.2	152	125	82.2
2006	152	133	87.5	152	132	86.8	152	122	80.3
2007	152	141	92.8	152	133	87.5	152	125	82.2
2008	152	140	92.1	152	136	89.5	152	129	84.9
2009	151	143	94.7	151	128	84.8	151	123	81.5
2010	152	137	90.1	152	133	87.5	152	124	81.6
2011	151	142	94.0	151	132	87.4	151	128	84.8
2012	149	132	88.6	149	131	87.9	149	125	83.9
2013	149	141	94.6	149	137	91.9	149	132	88.6
2014	151	145	96.0	151	139	92.1	151	135	89.4

Notes:

- Only when both Total Nitrogen and Total Phosphorus satisfy the Environmental Quality Standards (EQS.), an area is considered as achievement water area
- No sea area is subjected to EQS for only Total Nitrogen nor for only Total Phosphorus.
- Survey on total Nitrogen and total Phosphorus in Sea area began in 1995.

Source: "Measurement Results of Water Quality in Public Waters FY2014," Water Environment Division, Environment Management Bureau, MOE, the Government of Japan

5.09 Achievement of Environment Standards for Total Nitrogen and Total Phosphorus in Lakes

	Total Nitrogen			Total Phosphorus			Total Nitrogen, Total Phosphorus		
	Number of type-designated water areas	Number of water areas achieving the standard	Achievement rate (%)	Number of type-designated water areas	Number of water areas achieving the standard	Achievement rate (%)	Number of type-designated water areas	Number of water areas achieving the standard	Achievement rate (%)
FY1984	3	0	0.0	3	0	0.0	3	0	0.0
1985	7	1	14.3	17	9	52.9	17	8	47.1
1986	15	2	13.3	31	17	54.8	31	15	48.4
1987	17	2	11.8	37	16	43.2	37	15	40.5
1988	21	1	4.8	42	16	38.1	42	13	31.0
1989	22	3	13.6	45	17	37.8	45	16	35.6
1990	22	3	13.6	47	24	51.1	47	20	42.6
1991	22	1	4.5	48	17	35.4	48	14	29.2
1992	22	1	4.5	48	23	47.9	48	18	37.5
1993	22	1	4.5	48	19	39.6	48	15	31.3
1994	23	1	4.3	49	23	46.9	49	20	40.8
1995	23	1	4.3	50	24	48.0	50	18	36.0
1996	24	3	12.5	51	27	52.9	51	24	47.1
1997	25	3	12.0	54	25	46.3	54	23	42.6
1998	27	3	11.1	60	25	41.7	60	23	38.3
1999	27	2	7.4	64	30	46.9	64	27	42.2
2000	28	2	7.1	67	31	46.3	67	27	40.3
2001	32	2	6.3	79	35	44.3	79	30	38.0
2002	32	3	9.4	81	34	42.0	81	28	34.6
2003	32	2	6.3	93	47	50.5	93	40	43.0
2004	35	3	8.6	98	50	51.0	98	43	43.9
2005	35	4	11.4	103	54	52.4	103	48	46.6
2006	35	3	8.6	109	57	52.3	109	50	45.9
2007	35	4	11.4	110	57	51.8	110	51	46.4
2008	37	3	8.1	112	64	57.1	112	56	50.0
2009	39	6	15.4	115	67	58.3	115	60	52.2
2010	38	5	13.2	117	62	53.0	117	59	50.4
2011	39	5	12.8	119	61	51.3	119	57	47.9
2012	39	5	12.8	119	65	54.6	119	61	51.3
2013	39	5	12.8	119	62	52.1	119	60	50.4
2014	39	6	15.4	121	64	52.9	121	61	50.4

Notes:

- In "Total Nitrogen" column, "water areas achieving the standard" is water areas where the standards for Total Nitrogen is achieved.
- In "Total Phosphorus" column, "water areas achieving the standard" is water areas where the standards for Total Phosphorus are achieved.
- In regard to achievement of environment standards for Total Nitrogen and Total Phosphorus,
 - 1) For the water areas subject to environment standards both for Total Nitrogen and Total Phosphorus, they are classified as water area achieving the standard only when both Total Nitrogen and Total Phosphorus fulfill the environment standards.
 - 2) For the water areas subject to environment standard for Total Phosphorus only, they are classified as water area achieving the standard only when Total Phosphorus fulfills the environment standards.
- Survey on Total Nitrogen and Total Phosphorus in Lake began in 1984.

Source: "Measurement Results of Water Quality in Public Waters FY2014," Water Environment Division, Environment Management Bureau, MOE, the Government of Japan

5.10 Generation Loads and Reduction Targets for 3 Sea Areas with Area-wide Total Pollutant Controls by Source

① Generation load and reduction target for COD for 3 seas areas with Area-wide Total Pollutant Controls by Source

(Unit: t/day)

		Actual									Reduction Target
		FY1979	1984	1989	1994	1999	2004	2009	2014	FY2014	
Tokyo Bay	Domestic Wastewater	324	290	243	197	167	144	124	110	119	
	Industrial Wastewater	115	83	76	59	52	42	36	34	36	
	Others	38	40	36	30	28	25	23	19	22	
	Sub Total	477	413	355	286	247	211	183	163	177	
Ise Bay	Domestic Wastewater	151	150	141	134	118	99	81	69	71	
	Industrial Wastewater	119	101	97	83	76	65	57	54	56	
	Others	37	35	34	29	27	22	20	18	19	
	Sub Total	307	286	272	246	221	186	158	141	146	
Seto Inland Sea	Domestic Wastewater	488	444	400	365	319	261	221	180	201	
	Industrial Wastewater	429	367	356	309	286	245	193	173	215	
	Others	95	89	82	72	67	55	54	51	56	
	Sub Total	1,012	900	838	746	672	561	468	404	472	
Total	Domestic Wastewater	963	884	784	696	604	504	426	359	391	
	Industrial Wastewater	663	551	529	451	414	352	286	261	307	
	Others	170	164	152	131	122	102	97	88	97	
	Sub Total	1,796	1,599	1,465	1,278	1,140	958	809	708	795	

Notes:

- Reduction target volume during FY2014 was formulated at the seventh series of total pollutant load control.
- The target years for load reduction are as follows; The first series: FY 1984, the second: FY1989, the third: FY1994, the forth: FY1999, the fifth: FY2004, the sixth: FY 2009 and the seventh: FY2014.

Source: materials by Office for Environmental management of Enclosed Coastal Seas, Water Environment Division, Environment Management Bureau, MOE, the Government of Japan

② Generation load and reduction target for Nitrogen Content for 3 seas areas with Area-wide Total Pollutant Controls by Source

(Unit: t/day)

		Actual									Reduction Target
		FY1979	1984	1989	1994	1999	2004	2009	2014	FY2014	
Tokyo Bay	Domestic Wastewater	201	187	183	175	164	136	122	111	118	
	Industrial Wastewater	96	82	72	50	41	29	26	25	25	
	Others	67	64	64	55	49	43	37	34	38	
	Sub Total	364	333	319	280	254	208	185	170	181	
Ise Bay	Domestic Wastewater	69	73	64	64	60	52	47	42	44	
	Industrial Wastewater	52	49	42	39	29	26	22	21	22	
	Others	66	63	62	58	54	51	49	47	49	
	Sub Total	188	185	168	161	143	129	118	110	115	
Seto Inland Sea	Domestic Wastewater	189	188	201	205	184	159	143	125	138	
	Industrial Wastewater	249	225	223	259	191	117	95	87	111	
	Others	228	226	232	233	221	200	195	178	191	
	Sub Total	666	639	656	697	596	476	433	390	440	
Total	Domestic Wastewater	459	448	448	444	408	347	312	278	300	
	Industrial Wastewater	397	356	337	348	261	172	143	133	158	
	Others	361	353	358	346	324	294	281	259	278	
	Sub Total	1,218	1,157	1,143	1,138	993	813	736	670	736	

Notes:

- The pollutant load reduction target volume during FY2014 was formulated at the seventh series of total pollutant load control.
- Reduction of nitrogen content was implemented from the fifth series. The target years of the fifth, sixth, and seventh series are 2004, 2009, and 2014 respectively.
- Actual figures in 1994 or before are aggregated data of the prefectures involved.

Source: materials by Office for Environmental management of Enclosed Coastal Seas, Water Environment Division, Environment Management Bureau, MOE, the Government of Japan

③ Transition of pollutant load generation in the total pollutant load control areas and the pollutant load reduction target for phosphorus

(Unit: t/day)

		Actual									Reduction Target
		FY1979	1984	1989	1994	1999	2004	2009	2014	FY2014	
Tokyo Bay	Domestic Wastewater	24.9	17.6	15.1	14.2	13.5	10.4	9.0	8.8	8.5	
	Industrial Wastewater	9.5	6.4	5.2	4.3	3.5	1.8	1.4	1.4	1.4	
	Others	6.8	6.2	5.6	4.5	4.1	3.1	2.5	2.1	2.2	
	Sub Total	41.2	30.2	25.9	23.0	21.1	15.3	12.9	12.3	12.1	
Ise Bay	Domestic Wastewater	9.8	6.7	6.3	6.4	6.5	5.1	4.3	3.7	3.9	
	Industrial Wastewater	7.0	6.5	5.3	4.8	4.1	2.9	2.5	2.3	2.5	
	Others	7.6	7.2	7.2	6.1	4.6	2.8	2.2	2.2	2.3	
	Sub Total	24.4	20.4	18.8	17.3	15.2	10.8	9.0	8.2	8.7	
Seto Inland Sea	Domestic Wastewater	29.6	19.1	16.6	16.8	16.0	12.4	11.4	10.2	10.7	
	Industrial Wastewater	20.4	16.2	14.2	13.3	13.2	8.0	6.5	5.7	7.0	
	Others	12.9	11.7	11.9	11.0	11.2	10.2	10.1	8.7	9.7	
	Sub Total	62.9	47.0	42.7	41.1	40.4	30.6	28.0	24.6	27.4	
Total	Domestic Wastewater	64.3	43.4	38.0	37.4	36.0	27.9	24.7	22.7	23.1	
	Industrial Wastewater	36.9	29.1	24.7	22.4	20.8	12.7	10.4	9.4	10.9	
	Others	27.3	25.1	24.7	21.6	19.9	16.1	14.8	13.0	14.2	
	Sub Total	128.5	97.6	87.4	81.4	76.7	56.7	49.9	45.1	48.2	

Notes:

- Reduction of phosphorus content was implemented from the fifth series. The target years of the fifth, sixth, and seventh series are 2004, 2009, and 2014 respectively.
- Actual figures in 1994 or before are aggregated data of the prefectures involved.

Source: materials by Office for Environmental management of Enclosed Coastal Seas, Water Environment Division, Environment Management Bureau, MOE, the Government of Japan

5.11 Number of occurrences of Red Tides in Seto Inland Sea

	Number of confirmed cases of occurrence	Number of confirmed cases causing fishery damage
1971	136	39
1972	164	23
1973	210	18
1974	269	17
1975	255	29
1976	299	18
1977	196	27
1978	151	15
1979	172	17
1980	188	8
1981	171	8
1982	166	18
1983	165	13
1984	130	5
1985	170	8
1986	162	14
1987	107	12
1988	117	10
1989	124	6
1990	108	7
1991	107	5
1992	100	6
1993	105	6
1994	96	2
1995	90	10
1996	89	12
1997	135	11
1998	105	11
1999	112	7
2000	106	10
2001	97	7
2002	89	8
2003	106	8
2004	118	13
2005	115	7
2006	94	11
2007	99	9
2008	116	19
2009	104	7
2010	91	9
2011	89	11
2012	116	18
2013	83	9
2014	97	13

Source: "Red tides in Seto Inland Sea" Setonaikai Fisheries Coordination Office, Ministry of Agriculture, Forestry and Fisheries

5.12 Licensed landfill area of Seto inland sea

	Area (ha)
FY1965	2,197.2
1966	479.9
1967	1,230.0
1968	1,010.3
1969	3,595.2
1970	1,464.9
1971 ~ 1973	6,391.5
1974	390.3
1975	546.9
1976	266.1
1977	1,040.5
1978	991.3
1979	271.6
1980	534.1
1981	300.9
1982	110.7
1983	427.9
1984	206.9
1985	198.2
1986	266.8
1987	1,691.5
1988	399.9
1989	379.3
1990	265.2
1991	173.7
1992	147.8
1993	244.3
1994	462.0
1995	565.7
1996	315.7
1997	462.3
1998	465.3
1999	1,016.0
2000	146.3
2001	398.2
2002	35.2
2003	49.5
2004	43.9
2005	76.5
2006	17.8
2007	37.6
2008	94.4
2009	14.9
2010	33.4
2011	18.4
2012	1.8
2013	68.4
2014	38.0
2015	1.1

Notes:

- From 1965 through 1970, a cumulative total from 1st January to 31st December is shown. After 1974, that from 2nd November in the previous year to 1st November is shown.
- Figure for "1971 ~ 1973" is a cumulative total from 1st January 1971 to 1st November 1973.

Source: Materials by Office for Environmental Management of Enclosed Coastal Seas, Water Environment Division, Environment Management Bureau, MOE, the Government of Japan

5.13 Amount of sea gravel extracted in coastal prefectures in Seto Inland Sea

	Amount of sea gravel extracted (thousand/m ³)
FY1968	6,052
1969	12,745
1970	21,966
1971	17,750
1972	17,301
1973	22,829
1974	21,975
1975	21,245
1976	20,187
1977	23,379
1978	28,384
1979	30,017
1980	29,314
1981	26,463
1982	25,828
1983	25,021
1984	23,274
1985	24,093
1986	24,356
1987	29,719
1988	27,056
1989	25,512
1990	25,491
1991	24,254
1992	24,904
1993	23,179
1994	23,958
1995	25,152
1996	23,913
1997	20,396
1998	19,904
1999	19,282
2000	17,397
2001	14,938
2002	13,123
2003	9,881
2004	9,435
2005	7,072
2006	4,628
2007	5,160
2008	4,931
2009	4,309
2010	3,687
2011	3,420
2012	3,640
2013	4,302
2014	4,311

Note:

Including amount of sea gravel extracted outside the scope of Law concerning Special Measures for Conservation of the Environment of the Seto Inland Sea.

Source: "Schedules of status report of gravel extraction work," Ministry of Economy, Trade and Industry; Ministry of Land, Infrastructure, Transport and Tourism.

5.14 Groundwater contamination - Yearly number of confirmed cases where contamination level exceeds the standards

("Year" is the fiscal year when cases were identified by the authority)

	Total		Number of confirmed contamination incidents							
			VOC		Heavy Metals		Nitric acid/nitrous acid	Complex contamination		
~ FY1983	76	(34)	64	(26)	9	(6)	2	(1)	1	(1)
1984	55	(27)	50	(25)	4	(2)	0	(0)	1	(0)
1985	75	(35)	75	(35)	0	(0)	0	(0)	0	(0)
1986	46	(22)	46	(22)	0	(0)	0	(0)	0	(0)
1987	60	(26)	54	(24)	2	(0)	2	(2)	2	(0)
1988	98	(45)	94	(43)	0	(0)	2	(0)	2	(2)
1989	237	(132)	215	(116)	16	(13)	3	(1)	3	(2)
1990	207	(103)	178	(86)	21	(12)	4	(2)	4	(3)
1991	145	(68)	121	(57)	18	(8)	5	(2)	1	(1)
1992	116	(57)	91	(41)	16	(9)	4	(4)	5	(3)
1993	140	(61)	59	(32)	55	(21)	24	(6)	2	(2)
1994	148	(88)	63	(39)	56	(35)	29	(14)	0	(0)
1995	165	(77)	62	(29)	45	(25)	58	(23)	0	(0)
1996	165	(90)	53	(25)	54	(35)	58	(30)	0	(0)
1997	168	(96)	42	(23)	56	(29)	83	(41)	4	(3)
1998	285	(166)	137	(92)	40	(24)	102	(47)	6	(3)
1999	344	(226)	93	(62)	72	(39)	175	(124)	4	(1)
2000	428	(322)	87	(57)	107	(77)	224	(180)	10	(8)
2001	386	(287)	68	(42)	79	(60)	230	(180)	9	(5)
2002	393	(287)	67	(41)	81	(54)	239	(187)	6	(5)
2003	455	(324)	74	(51)	85	(54)	288	(213)	8	(6)
2004	411	(294)	89	(48)	110	(80)	204	(160)	8	(6)
2005	367	(258)	100	(56)	113	(81)	145	(116)	9	(5)
2006	355	(269)	94	(50)	106	(83)	139	(124)	16	(12)
2007	350	(281)	79	(43)	126	(107)	139	(126)	6	(5)
2008	315	(261)	51	(33)	118	(100)	134	(119)	12	(9)
2009	295	(249)	62	(41)	98	(82)	129	(120)	6	(6)
2010	271	(241)	41	(29)	97	(85)	130	(124)	3	(3)
2011	256	(244)	46	(40)	96	(91)	108	(107)	6	(6)
2012	241	(232)	35	(32)	112	(108)	90	(88)	4	(2)
2013	255	(252)	44	(42)	106	(105)	103	(103)	2	(2)
2014	224	(221)	41	(38)	99	(99)	82	(82)	2	(2)
Parameter	7,325	(5,154)	2,434	(1,382)	1,898	(1,425)	2,853	(2,244)	140	(103)

Note:

Parentthesized figures are the total number of cases of exceeding the standards" and cases of temporarily exceeding" as of the end of FY2014.

Source: "Test result of groundwater quality measurement in FY2014," Environmental Management Bureau, MOE, the Government of Japan

5.15 Itemized breakdown of groundwater contamination cases

(As of the end of fiscal year 2014)

Item category	Item name	Number of cases					
		Excess cases		Temporary achievement cases	Improvement case	Non-survey case	
		cases that exceeds	cases that does not exceed currently (Note 2)				
VOC	Dichloromethane	57	16	12	10	18	1
	Carbon tetrachloride	108	28	23	14	41	2
	Vinyl chloride monomer	187	118	29	27	10	3
	1,2-dichloroethane	85	26	22	11	21	5
	1,1-dichloroethylene	262	28	112	40	73	9
	1,2-dichloroethylene	342	182	71	54	28	7
	1,1,1-trichloroethane	123	11	26	20	57	9
	1,1,2-trichloroethane	40	10	12	10	8	0
	Trichloroethylene	1,206	421	145	194	353	93
	Tetrachloroethylene	1,428	551	71	243	432	131
	1,3-dichloropropene	0	0	0	0	0	0
	Benzene	299	94	12	28	150	15
	1,4-dioxane	12	11	1	0	0	0
Heavy metals	Cadmium	17	9	1	2	5	0
	Total cyanide	49	25	8	4	11	1
	Lead	295	72	29	51	111	32
	Hexavalent chromium	73	30	4	19	17	3
	Arsenic	1218	840	20	108	133	117
	Total mercury	126	52	4	18	36	16
	Alkyl mercury	1	0	1	0	0	0
	PCB	10	4	1	0	4	1
	Thiuram	0	0	0	0	0	0
	Simazine	0	0	0	0	0	0
	Thiobencarb	0	0	0	0	0	0
	Selenium	22	14	2	1	3	2
	Fluorine	500	330	15	69	44	42
Boron	204	131	11	22	20	20	
Nitrate nitrogen and nitrite nitrogen		2,946	1,710	0	587	461	188
Parameter		7,589		4,020	1,265	1,708	596

Notes:

- 1) Contamination may happen in multiple items in one case, and the total may not foot the parameter.
- 2) "Item that does not exceed currently" refers to the case where contamination happened multiple times in the past and currently EQS is satisfied as to the indicated item but as to other items EQS is not satisfied.

Source: "Results of the FY 2014 Water Quality Survey of underground water," Environmental Management Bureau, MOE, the Government of Japan

5.16 Results of groundwater quality survey

Researched groups	Researched items	General monitoring survey			Survey of contaminated wells and vicinities		Continuance surveillance or Regular monitoring survey		Remarks	
		Number of survey	Exceeding number	Exceeding rate (%)	Number of survey	Exceeding number	Number of survey	Exceeding rate	Standard type	Standard value
Cadmium	1998	3,102	0	0.0	50	0	340	0	Environmental standards	0.01mg/L or less
	1999	3,152	1	0.0	30	0	333	0		
	2000	2,997	0	0.0	35	0	252	0		
	2001	3,003	0	0.0	45	0	237	0		
	2002	3,242	0	0.0	25	0	298	0		
	2003	3,591	0	0.0	31	0	308	0		
	2004	3,247	0	0.0	73	0	246	0		
	2005	3,092	0	0.0	56	0	216	0		
	2006	3,166	0	0.0	27	0	117	0		
	2007	3,160	0	0.0	56	0	154	0		
	2008	2,871	0	0.0	48	0	230	0		
	2009	3,185	0	0.0	24	0	79	0		
	2010	2,996	0	0.0	52	0	54	0		
	2011	2,910	2	0.0	76	0	31	1		
	2012	2,899	0	0.0	24	0	49	2		
2013	2,904	0	0.0	24	0	44	2			
2014	2,704	0	0.0	20	0	43	1	0.003mg/L or less		
Total cyanide	1998	2,659	0	0.0	42	0	282	0	Environmental standards	Should not be detected
	1999	2,786	0	0.0	25	0	297	0		
	2000	2,616	0	0.0	26	0	230	0		
	2001	2,660	0	0.0	47	0	225	0		
	2002	2,639	0	0.0	28	2	284	0		
	2003	2,870	0	0.0	50	2	300	0		
	2004	2,723	0	0.0	46	0	236	0		
	2005	2,830	0	0.0	28	0	218	1		
	2006	2,904	0	0.0	40	0	120	1		
	2007	2,737	0	0.0	44	0	155	0		
	2008	2,508	0	0.0	40	0	234	0		
	2009	2,904	0	0.0	21	0	101	0		
	2010	2,774	0	0.0	36	0	73	0		
	2011	2,713	0	0.0	30	0	54	0		
	2012	2,642	0	0.0	27	0	60	1		
2013	2,736	0	0.0	26	0	55	0			
2014	2,534	0	0.0	22	0	58	0			
Lead	1998	3,312	8	0.2	90	1	374	5	Environmental standards	0.01mg/L or less
	1999	3,198	15	0.5	84	0	374	7		
	2000	3,360	10	0.3	82	3	298	13		
	2001	3,362	13	0.4	110	4	275	6		
	2002	3,484	8	0.2	149	7	346	8		
	2003	3,689	21	0.6	164	6	349	7		
	2004	3,566	14	0.4	145	2	344	11		
	2005	3,374	15	0.4	162	6	306	10		
	2006	3,484	8	0.2	130	2	220	10		
	2007	3,466	12	0.3	296	4	283	8		
	2008	3,193	10	0.3	232	7	360	10		
	2009	3,219	11	0.3	115	1	189	9		
	2010	3,041	12	0.4	426	14	173	9		
	2011	2,975	13	0.4	282	4	149	16		
	2012	2,962	12	0.4	138	2	178	15		
2013	2,964	9	0.3	215	4	205	13			
2014	2,755	7	0.3	66	2	197	13			
Hexavalent chromium	1998	3,232	0	0.0	60	0	403	11	Environmental standards	0.05mg/L or less
	1999	3,129	0	0.0	25	0	376	11		
	2000	3,187	1	0.0	49	2	285	9		
	2001	3,175	0	0.0	38	2	264	11		
	2002	3,308	0	0.0	25	0	325	11		
	2003	3,562	1	0.0	60	1	334	10		
	2004	3,420	0	0.0	49	0	291	15		
	2005	3,286	0	0.0	58	0	267	14		
	2006	3,387	0	0.0	58	1	173	15		
	2007	3,388	1	0.0	74	0	208	15		
	2008	3,116	0	0.0	68	1	294	15		
	2009	3,189	0	0.0	48	27	140	14		
	2010	3,015	0	0.0	43	0	124	21		
	2011	2,882	0	0.0	33	0	117	22		
	2012	2,849	0	0.0	50	0	129	20		
2013	2,869	0	0.0	43	0	139	23			
2014	2,662	0	0.0	58	0	139	22			
Arsenic	1998	3,424	45	1.3	275	32	688	234	Environmental standards	0.01mg/L or less
	1999	3,310	45	1.4	186	29	695	223		
	2000	3,386	65	1.9	380	83	613	238		
	2001	3,422	44	1.3	284	108	626	246		
	2002	3,520	53	1.5	255	49	720	261		
	2003	3,760	54	1.4	217	32	727	270		
	2004	3,666	74	2.0	441	138	727	285		
	2005	3,457	61	1.8	411	100	834	293		
	2006	3,663	78	2.1	318	66	786	301		
	2007	3,591	73	2.0	326	71	693	305		
	2008	3,239	77	2.4	394	107	826	315		
	2009	3,338	63	1.9	236	43	568	292		
	2010	3,088	66	2.1	589	78	580	300		
	2011	3,038	57	1.9	440	85	582	308		
	2012	3,017	68	2.3	331	67	600	313		
2013	3,020	63	2.1	383	47	647	332			
2014	2,816	69	2.5	301	29	644	361			

5.16 Results of groundwater quality survey

Researched groups	Researched items	General monitoring survey			Survey of contaminated wells and vicinities		Continuance surveillance or Regular monitoring survey		Remarks	
		Number of survey	Exceeding number	Exceeding rate (%)	Number of survey	Exceeding number	Number of survey	Exceeding rate	Standard type	Standard value
Total mercury	1998	2,961	1	0.0	68	5	413	15	Environmental standards	0.0005mg/L or less
	1999	3,084	0	0.0	55	2	383	16		
	2000	2,833	2	0.1	43	2	302	16		
	2001	2,907	3	0.1	270	34	300	18		
	2002	3,253	0	0.0	44	0	351	15		
	2003	3,318	1	0.0	60	0	353	9		
	2004	3,235	5	0.2	63	4	289	12		
	2005	3,120	3	0.1	108	6	256	14		
	2006	3,234	3	0.1	35	3	157	14		
	2007	3,233	5	0.2	73	8	197	13		
	2008	2,944	2	0.1	71	5	275	25		
	2009	3,154	2	0.1	39	4	145	23		
	2010	2,999	0	0.0	45	2	119	24		
	2011	2,908	0	0.0	75	3	107	21		
	2012	2,886	1	0.0	46	5	117	19		
2013	2,900	1	0.0	68	4	113	20			
2014	2,701	1	0.0	51	6	104	24			
Alkyl mercury	1998	1,315	0	0.0	21	0	121	0	Environmental standards	Should not be detected
	1999	1,278	0	0.0	37	0	85	0		
	2000	1,048	0	0.0	26	0	57	0		
	2001	1,075	0	0.0	43	0	61	0		
	2002	1,020	0	0.0	25	0	108	0		
	2003	931	0	0.0	24	0	106	0		
	2004	993	0	0.0	33	0	52	0		
	2005	1,008	0	0.0	77	0	34	0		
	2006	762	0	0.0	21	0	38	0		
	2007	683	0	0.0	22	0	50	0		
	2008	545	0	0.0	22	0	53	0		
	2009	523	0	0.0	30	0	43	0		
	2010	500	0	0.0	35	0	38	0		
	2011	692	0	0.0	22	0	38	0		
	2012	450	0	0.0	26	0	41	0		
2013	642	0	0.0	25	0	44	0			
2014	526	0	0.0	27	0	40	0			
P C B	1998	1,852	0	0.0	21	0	141	0	Environmental standards	Should not be detected
	1999	1,930	0	0.0	25	0	132	0		
	2000	1,818	0	0.0	26	0	113	0		
	2001	2,044	0	0.0	26	0	125	0		
	2002	1,738	0	0.0	25	0	164	0		
	2003	1,816	0	0.0	24	0	148	0		
	2004	1,899	0	0.0	26	0	117	0		
	2005	1,883	0	0.0	30	0	61	0		
	2006	1,830	0	0.0	21	0	53	0		
	2007	1,732	0	0.0	21	0	45	0		
	2008	1,685	0	0.0	48	0	55	0		
	2009	2,082	0	0.0	21	0	30	0		
	2010	2,005	0	0.0	35	0	32	0		
	2011	1,946	0	0.0	23	0	15	0		
	2012	1,969	0	0.0	22	0	20	0		
2013	2,057	2	0.1	40	0	16	0			
2014	2,022	2	0.0	23	0	19	2			
Trichlorethylene	1998	4,492	17	0.4	1,251	34	3,301	242	Environmental standards	0.03mg/L or less
	1999	4,455	15	0.3	916	37	3,338	267		
	2000	4,225	22	0.5	846	47	3,054	292		
	2001	4,371	11	0.3	586	14	3,070	301		
	2002	4,414	10	0.2	436	21	2,954	286		
	2003	4,473	16	0.4	457	22	3,001	265		
	2004	4,234	18	0.4	457	19	2,922	243		
	2005	3,968	11	0.3	370	21	2,704	263		
	2006	3,911	6	0.2	346	15	2,490	260		
	2007	3,948	7	0.2	314	13	2,331	231		
	2008	3,658	3	0.1	431	22	2,470	237		
	2009	3,676	2	0.1	411	14	2,220	226		
	2010	3,366	1	0.0	464	15	2,123	215		
	2011	3,285	1	0.0	387	13	2,049	182		
	2012	3,245	2	0.1	468	8	2,021	171		
2013	3,235	4	0.1	413	9	1,997	157			
2014	2,965	7	0.2	440	25	1,941	279			
Tetrachlorethylene	1998	4,492	28	0.6	1,255	73	3,362	645	Environmental standards	Should not be detected
	1999	4,451	23	0.5	921	49	3,376	589		
	2000	4,225	17	0.4	825	15	3,104	653		
	2001	4,374	10	0.2	620	39	3,072	624		
	2002	4,414	7	0.2	435	31	2,945	595		
	2003	4,472	21	0.5	431	22	2,992	586		
	2004	4,248	22	0.5	477	39	2,950	556		
	2005	3,961	6	0.2	328	39	2,710	559		
	2006	3,922	13	0.3	346	21	2,509	537		
	2007	3,938	12	0.3	323	21	2,327	543		
	2008	3,660	9	0.2	411	24	2,472	520		
	2009	3,679	5	0.1	405	30	2,186	513		
	2010	3,363	4	0.1	453	8	2,083	473		
	2011	3,283	7	0.2	393	18	2,004	448		
	2012	3,242	3	0.1	430	26	1,967	414		
2013	3,233	7	0.2	390	17	1,945	424			
2014	2,958	8	0.3	423	18	1,885	417			

5.16 Results of groundwater quality survey

Researched groups	Researched items	General monitoring survey			Survey of contaminated wells and vicinities		Continuance surveillance or Regular monitoring survey		Remarks	
		Number of survey	Exceeding number	Exceeding rate (%)	Number of survey	Exceeding number	Number of survey	Exceeding rate	Standard type	Standard value
1,1,1-trichloroethane	1998	4,436	1	0.0	1,189	0	3,123	0	Environmental standards	1mg/L or less
	1999	4,362	0	0.0	879	0	2,987	3		
	2000	4,219	0	0.0	808	0	2,539	2		
	2001	4,290	0	0.0	564	0	2,586	3		
	2002	4,270	0	0.0	377	0	2,379	2		
	2003	4,312	0	0.0	359	0	2,417	2		
	2004	3,990	0	0.0	389	0	2,320	3		
	2005	3,739	0	0.0	207	0	2,123	1		
	2006	3,717	0	0.0	187	0	1,820	0		
	2007	3,635	0	0.0	193	0	1,631	0		
	2008	3,473	0	0.0	172	0	1,608	0		
	2009	3,430	0	0.0	186	0	1,443	0		
	2010	3,222	0	0.0	309	0	1,355	0		
	2011	3,189	0	0.0	239	0	1,212	0		
2012	3,150	0	0.0	216	0	1,196	0			
2013	3,136	0	0.0	207	0	1,162	0			
2014	2,872	0	0.0	225	0	1,109	0			
Carbon tetrachloride	1998	3,631	2	0.1	388	2	1,376	24	Environmental standards	0.002mg/L or less
	1999	3,695	3	0.1	372	0	1,413	21		
	2000	3,675	2	0.1	291	3	1,272	24		
	2001	3,700	0	0.0	313	2	1,341	22		
	2002	3,814	3	0.1	232	5	1,323	22		
	2003	3,824	0	0.0	146	0	1,318	22		
	2004	3,661	4	0.1	221	2	1,287	23		
	2005	3,554	3	0.1	106	1	1,017	26		
	2006	3,628	3	0.1	103	4	888	23		
	2007	3,536	0	0.0	96	0	798	25		
	2008	3,379	0	0.0	72	2	799	26		
	2009	3,340	1	0.0	102	1	702	24		
	2010	3,120	1	0.0	193	1	653	29		
	2011	3,036	0	0.0	153	2	567	21		
2012	3,005	0	0.0	170	3	556	19			
2013	2,986	1	0.0	182	3	513	16			
2014	2,740	0	0.0	156	3	532	15			
Dichloromethane	1998	3,729	1	0.0	349	0	768	0	Environmental standards	0.02mg/L or less
	1999	3,740	0	0.0	223	0	770	3		
	2000	3,534	0	0.0	229	0	744	0		
	2001	3,548	1	0.0	280	0	802	0		
	2002	3,635	1	0.0	146	0	835	0		
	2003	3,865	1	0.0	169	1	890	0		
	2004	3,535	0	0.0	141	0	877	0		
	2005	3,381	0	0.0	52	0	730	1		
	2006	3,455	0	0.0	97	1	627	1		
	2007	3,370	0	0.0	88	0	571	0		
	2008	3,276	0	0.0	72	0	557	0		
	2009	3,349	0	0.0	98	0	486	0		
	2010	3,178	0	0.0	141	0	467	0		
	2011	3,121	0	0.0	145	0	398	0		
2012	3,077	0	0.0	138	0	389	0			
2013	3,087	0	0.0	106	0	360	0			
2014	2,823	0	0.0	137	0	382	0			
1,2-dichloroethane	1998	3,580	0	0.0	328	9	867	5	Environmental standards	0.004mg/L or less
	1999	3,687	1	0.0	254	0	1,030	7		
	2000	3,301	0	0.0	296	6	959	6		
	2001	3,316	0	0.0	345	1	1,055	12		
	2002	3,360	2	0.1	155	0	1,094	11		
	2003	3,555	0	0.0	148	0	1,129	9		
	2004	3,267	0	0.0	172	0	1,104	9		
	2005	3,136	0	0.0	55	0	1,102	7		
	2006	3,300	1	0.0	120	1	872	8		
	2007	3,198	0	0.0	112	0	690	10		
	2008	3,120	0	0.0	88	0	650	5		
	2009	3,203	0	0.0	105	0	580	7		
	2010	3,025	0	0.0	177	1	597	4		
	2011	2,984	0	0.0	145	0	535	3		
2012	2,953	0	0.0	178	0	516	5			
2013	2,985	1	0.0	182	3	513	16			
2014	2,733	0	0.0	171	0	516	1			
1,1-dichloroethylene	1998	3,594	2	0.1	905	9	1,685	26	Environmental standards	0.02mg/L or less
	1999	3,727	1	0.0	729	3	1,804	35		
	2000	3,650	2	0.1	702	11	1,831	37		
	2001	3,668	0	0.0	535	1	1,964	41		
	2002	3,771	1	0.0	244	0	1,967	40		
	2003	3,846	0	0.0	322	2	2,032	38		
	2004	3,744	2	0.1	404	2	2,077	39		
	2005	3,584	1	0.0	264	4	2,026	46		
	2006	3,651	0	0.0	215	0	1,890	33		
	2007	3,567	0	0.0	225	1	1,843	30		
	2008	3,337	0	0.0	340	0	1,885	31		
	2009	3,306	0	0.0	347	0	1,804	2		
	2010	3,078	0	0.0	468	0	1,764	4		
	2011	3,037	0	0.0	342	0	1,750	3		
2012	3,001	0	0.0	419	0	1,721	3			
2013	2,979	0	0.0	378	0	1,689	2			
2014	2,723	0	0.0	403	1	1,647	2			
										0.1mg/L or less

5.16 Results of groundwater quality survey

Researched groups	Researched items	General monitoring survey			Survey of contaminated wells and vicinities		Continuance surveillance or Regular monitoring survey		Remarks	
		Number of survey	Exceeding number	Exceeding rate (%)	Number of survey	Exceeding number	Number of survey	Exceeding rate	Standard type	Standard value
1,1,2-trichloroethane	1998	3,574	0	0.0	174	0	854	0	Environmental standards	0.006mg/L or less
	1999	3,679	0	0.0	239	0	989	6		
	2000	3,286	0	0.0	278	2	962	6		
	2001	3,308	0	0.0	307	1	1,052	4		
	2002	3,359	0	0.0	146	0	1,084	5		
	2003	3,590	0	0.0	148	0	1,120	3		
	2004	3,259	1	0.0	191	1	1,107	2		
	2005	3,127	0	0.0	74	0	1,014	4		
	2006	3,240	1	0.0	159	2	773	4		
	2007	3,136	1	0.0	118	0	715	9		
	2008	2,987	0	0.0	65	2	659	3		
	2009	3,170	1	0.0	123	0	583	1		
	2010	2,938	0	0.0	175	0	599	1		
	2011	2,878	0	0.0	153	0	522	0		
2012	2,851	1	0.0	183	0	529	1			
2013	2,876	0	0.0	121	0	509	0			
2014	2,630	0	0.0	191	0	535	1			
1,3-dichloropropene	1998	3,179	0	0.0	98	0	368	0	Environmental standards	0.002mg/L or less
	1999	3,181	0	0.0	178	0	385	0		
	2000	3,039	0	0.0	162	0	372	0		
	2001	2,898	0	0.0	81	0	412	0		
	2002	3,085	0	0.0	95	0	454	0		
	2003	3,082	0	0.0	115	0	509	0		
	2004	3,043	0	0.0	103	0	520	0		
	2005	2,886	0	0.0	41	0	437	0		
	2006	2,940	0	0.0	71	0	347	0		
	2007	2,883	0	0.0	78	0	294	0		
	2008	2,799	0	0.0	46	0	317	0		
	2009	2,922	0	0.0	89	0	261	0		
	2010	2,773	0	0.0	124	0	270	0		
	2011	2,661	0	0.0	93	0	216	0		
2012	2,646	0	0.0	116	0	220	0			
2013	2,645	0	0.0	30	0	210	0			
2014	2,392	0	0.0	137	0	234	0			
Thiuram	1998	2,764	0	0.0	8	0	195	0	Environmental standards	0.006mg/L or less
	1999	2,490	0	0.0	2	0	186	0		
	2000	2,528	0	0.0	10	0	171	0		
	2001	2,506	0	0.0	2	0	201	0		
	2002	2,494	0	0.0	3	0	258	0		
	2003	2,625	0	0.0	2	0	233	0		
	2004	2,472	0	0.0	4	0	204	0		
	2005	2,322	0	0.0	4	0	222	0		
	2006	2,411	0	0.0	1	0	92	0		
	2007	2,404	0	0.0	0	0	81	0		
	2008	2,330	0	0.0	15	0	90	0		
	2009	2,585	0	0.0	0	0	53	0		
	2010	2,509	0	0.0	14	0	47	0		
	2011	2,432	0	0.0	1	0	32	0		
2012	2,451	0	0.0	1	0	35	0			
2013	2,460	0	0.0	2	0	34	0			
2014	2,263	0	0.0	3	0	33	0			
Simazine	1998	2,826	0	0.0	41	0	194	0	Environmental standards	0.003mg/L or less
	1999	2,549	0	0.0	2	0	190	0		
	2000	2,508	0	0.0	10	0	174	0		
	2001	2,638	0	0.0	7	0	205	0		
	2002	2,547	0	0.0	3	0	258	0		
	2003	2,614	0	0.0	2	0	233	0		
	2004	2,628	0	0.0	4	0	204	0		
	2005	2,402	0	0.0	4	0	222	0		
	2006	2,478	0	0.0	1	0	92	0		
	2007	2,471	0	0.0	3	0	81	0		
	2008	2,391	0	0.0	15	0	91	0		
	2009	2,643	0	0.0	0	0	52	0		
	2010	2,563	0	0.0	14	0	47	0		
	2011	2,420	0	0.0	1	0	32	0		
2012	2,448	0	0.0	1	0	34	0			
2013	2,457	0	0.0	2	0	34	0			
2014	2,260	0	0.0	3	0	33	0			
Thiobencarb	1998	2,759	0	0.0	8	0	194	0	Environmental standards	0.02mg/L or less
	1999	2,476	0	0.0	2	0	186	0		
	2000	2,453	0	0.0	10	0	171	0		
	2001	2,575	0	0.0	2	0	201	0		
	2002	2,487	0	0.0	3	0	258	0		
	2003	2,573	0	0.0	2	0	233	0		
	2004	2,539	0	0.0	4	0	204	0		
	2005	2,319	0	0.0	4	0	222	0		
	2006	2,409	0	0.0	1	0	92	0		
	2007	2,399	0	0.0	0	0	81	0		
	2008	2,327	0	0.0	15	0	90	0		
	2009	2,583	0	0.0	0	0	52	0		
	2010	2,506	0	0.0	14	0	47	0		
	2011	2,419	0	0.0	1	0	32	0		
2012	2,448	0	0.0	1	0	34	0			
2013	2,456	0	0.0	2	0	34	0			
2014	2,260	0	0.0	3	0	33	0			

5.16 Results of groundwater quality survey

Researched groups	Researched items	General monitoring survey			Survey of contaminated wells and vicinities		Continuance surveillance or Regular monitoring survey		Remarks	
		Number of survey	Exceeding number	Exceeding rate (%)	Number of survey	Exceeding number	Number of survey	Exceeding rate	Standard type	Standard value
Benzene	1998	3,536	0	0.0	178	4	451	2	Environmental standards	0.01mg/L or less
	1999	3,610	0	0.0	243	2	442	0		
	2000	3,436	0	0.0	211	1	425	1		
	2001	3,324	0	0.0	266	1	496	11		
	2002	3,563	1	0.0	136	1	544	6		
	2003	3,590	0	0.0	118	0	606	4		
	2004	3,524	0	0.0	107	0	604	3		
	2005	3,389	2	0.1	122	1	517	3		
	2006	3,485	0	0.0	96	0	466	3		
	2007	3,396	0	0.0	168	4	410	2		
	2008	3,238	0	0.0	156	0	431	5		
	2009	3,277	0	0.0	139	1	367	4		
	2010	3,106	0	0.0	177	0	353	3		
	2011	3,044	0	0.0	154	0	302	3		
2012	2,999	0	0.0	158	0	324	3			
2013	3,010	0	0.0	104	1	293	4			
2014	2,751	1	0.0	193	0	320	4			
Selenium	1998	2,935	0	0.0	41	0	198	0	Environmental standards	0.01mg/L or less
	1999	2,758	0	0.0	27	0	192	0		
	2000	2,634	0	0.0	36	0	193	0		
	2001	2,600	0	0.0	24	0	203	0		
	2002	2,650	0	0.0	37	1	272	0		
	2003	2,919	0	0.0	24	0	276	0		
	2004	2,698	1	0.0	32	0	242	0		
	2005	2,599	1	0.0	48	0	218	0		
	2006	2,713	0	0.0	35	0	119	0		
	2007	2,830	0	0.0	46	0	157	0		
	2008	2,624	0	0.0	64	0	208	0		
	2009	2,965	0	0.0	21	0	81	0		
	2010	2,818	0	0.0	49	0	58	0		
	2011	2,738	0	0.0	23	0	47	0		
2012	2,725	0	0.0	22	0	46	0			
2013	2,720	0	0.0	24	0	46	0			
2014	2,533	0	0.0	20	0	48	0			
Nitrate nitrogen and nitrite nitrogen	2000	4,167	253	6.1	1,682	479	988	165	Environmental standards	10mg/L or less
	2001	4,017	231	5.8	1,343	535	1,113	272		
	2002	4,207	247	5.9	1,199	296	1,324	423		
	2003	4,288	280	6.5	1,101	309	1,504	501		
	2004	4,260	235	5.5	928	283	1,750	637		
	2005	4,122	174	4.2	714	221	1,815	651		
	2006	4,193	179	4.3	789	266	1,732	715		
	2007	4,232	172	4.1	608	128	1,654	729		
	2008	3,830	167	4.4	461	96	1,945	757		
	2009	3,895	149	3.8	500	96	1,713	788		
	2010	3,361	144	4.3	691	160	1,723	813		
	2011	3,227	117	3.6	427	89	1,677	796		
	2012	3,240	117	3.6	401	94	1,625	769		
	2013	3,289	107	3.3	389	60	1,629	760		
2014	3,084	90	2.9	266	42	1,661	733			
Fluorine	2000	3,276	25	0.8	658	112	417	19	Environmental standards	0.8mg/L or less
	2001	3,558	25	0.7	285	31	839	53		
	2002	4,117	16	0.4	207	31	446	80		
	2003	3,934	27	0.7	218	29	455	83		
	2004	3,542	19	0.5	142	18	441	89		
	2005	3,703	30	0.8	270	47	601	108		
	2006	3,817	32	0.8	190	41	536	103		
	2007	3,890	41	1.1	203	46	376	114		
	2008	3,537	23	0.7	185	10	582	148		
	2009	3,527	17	0.5	155	5	365	138		
	2010	3,088	20	0.6	253	20	380	156		
	2011	3,027	21	0.7	184	14	362	158		
	2012	2,964	18	0.6	142	5	391	151		
	2013	2,983	16	0.5	113	7	417	162		
2014	2,783	26	0.9	120	12	422	167			
Boron	2000	3,210	16	0.5	231	4	314	5	Environmental standards	1mg/L or less
	2001	3,408	14	0.4	141	20	738	9		
	2002	3,989	5	0.1	217	12	287	15		
	2003	3,819	9	0.2	157	12	297	20		
	2004	3,499	8	0.2	92	1	291	26		
	2005	3,342	5	0.1	145	9	396	32		
	2006	3,396	8	0.2	59	4	301	39		
	2007	3,289	6	0.2	71	1	199	35		
	2008	3,149	9	0.3	62	2	220	39		
	2009	3,068	7	0.2	48	0	203	45		
	2010	2,956	9	0.3	176	11	176	44		
	2011	2,926	7	0.2	101	11	162	41		
	2012	2,868	3	0.1	68	3	176	43		
	2013	2,891	9	0.3	67	6	181	42		
2014	2,676	7	0.3	50	5	174	43			

5.16 Results of groundwater quality survey

Researched groups	Research- ed items	General monitoring survey			Survey of contaminated wells and vicinities		Continuance surveillance or Regular monitoring survey		Remarks	
		Number of survey	Exceeding number	Exceeding rate (%)	Number of survey	Exceeding number	Number of survey	Exceeding rate	Standard type	Standard value
Vinyl chloride monomer	2009	179	0	0.0	25	0	23	8	Environmental standards	0.002mg/L or less
	2010	2,311	4	0.2	282	5	852	48		
	2011	2,764	7	0.3	295	13	1,189	57		
	2012	2,716	1	0.0	273	14	1,365	83		
	2013	2,679	5	0.2	244	1	1,381	92		
	2014	2,495	2	0.1	357	8	1,374	94		
1,2- dichloroethylene	2009	138	0	0.0	107	0	97	8	Environmental standards	0.04mg/L or less
	2010	2,935	0	0.0	325	3	1,833	160		
	2011	3,133	3	0.0	321	5	1,846	162		
	2012	3,097	2	0.1	427	13	1,826	154		
	2013	3,043	2	0.1	376	4	1,808	148		
	2014	2,831	0	0.0	388	7	1,758	143		
1,4-dioxane	2009	226	0	0.0	22	0	0	0	Environmental standards	0.05mg/L or less
	2010	2,456	0	0.0	52	0	116	0		
	2011	2,731	1	0.0	61	1	83	1		
	2012	2,672	1	0.0	26	2	92	2		
	2013	2,701	0	0.0	31	0	102	3		
	2014	2,519	0	0.0	149	2	143	4		

Notes

- The exceeding number is the number of wells exceeding the standard measure at the time, and exceeding rate is the ratio of excess following a number of surveys.
- The environmental Standards for Water Pollution of groundwater was set in fiscal year 1997, and the standards before 1997 had been evaluation standards or provisional guidelines.
- Environmental standards related to ground water contamination were set in FY 1997. All other standards prior to FY 1997 were considered to be evaluation standards or tentative guidelines.
- Nitrate nitrogen and nitrite nitrogen, fluorine, boron were added to the environmental standards in 1999.
- Starting in FY 2009, Continuance surveillance was changed to Regular monitoring survey in the survey group.
- Nitrate nitrogen and nitrite nitrogen, fluorine, boron were added to the environmental standards in 1999.

Source: "FY 2014 Quality Survey of Underground Water," Environmental Management Bureau, MOE, the Government of Japan

5.17 Changes in number of confirmed marine pollution cases by sea area

(Unit: Case)

Year	Type	Sea area	Coast of Hokkaido	Eastern coast of Honshu	Tokyo Bay	Ise Bay	Osaka Bay	Seto inland sea (excluding Osaka Bay)	Southern coast of Honshu	Coastal Kyushu	Japan sea coast	Southwest ern sea	Total
2009	Oil		66	47	59	19	4	60	30	48	23	13	369
	Hazardous liquid substance		0	0	0	0	0	2	1	0	0	0	3
	Non-oil		26	16	2	23	3	2	9	7	15	1	104
	Waste		8	1	2	0	0	4	0	9	0	0	24
	Others		34	17	4	23	2	8	10	16	15	1	131
Subtotal		0	0	6	4	0	1	0	1	2	0	14	
Red tide		100	64	69	46	7	69	40	65	40	14	514	
Total													
2010	Oil		39	46	32	10	10	66	23	24	30	20	300
	Hazardous liquid substance		0	0	0	1	0	4	0	1	0	0	6
	Non-oil		36	27	0	33	1	4	6	5	12	2	126
	Waste		3	3	3	4	0	6	2	2	10	0	33
	Others		39	30	6	38	1	14	8	7	23	2	168
Subtotal		0	0	6	2	0	0	1	3	0	0	12	
Red tide		78	76	41	50	11	80	32	34	53	22	477	
Total													
2011	Oil		17	23	37	12	16	56	22	25	27	21	256
	Hazardous liquid substance		0	0	0	2	0	0	0	0	0	1	3
	Non-oil		22	0	0	21	0	11	8	9	17	3	91
	Waste		3	1	1	0	1	4	0	3	12	0	25
	Others		25	1	1	23	1	15	8	12	29	4	119
Subtotal		0	2	5	1	0	1	2	4	1	0	16	
Red tide		42	26	43	36	17	72	32	41	57	25	391	
Total													
2012	Oil		12	27	34	18	14	38	18	34	27	22	244
	Hazardous liquid substance		0	2	1	3	2	3	0	0	0	0	11
	Non-oil		29	16	0	23	2	6	4	3	32	1	116
	Waste		3	2	0	3	0	1	0	0	2	0	11
	Others		32	20	1	29	4	10	4	3	34	1	138
Subtotal		0	0	3	6	0	5	2	0	2	0	18	
Red tide		44	47	38	53	18	53	24	37	63	23	400	
Total													
2013	Oil		11	30	31	23	16	46	25	30	27	18	257
	Hazardous liquid substance		0	0	1	0	1	0	0	0	1	0	3
	Non-oil		35	58	1	39	3	6	1	3	41	0	187
	Waste		1	3	1	1	0	0	1	1	0	0	8
	Others		36	61	3	40	4	6	2	4	42	0	198
Subtotal		47	91	34	63	20	52	27	34	69	18	455	
Red tide													
2014	Oil		18	24	13	25	18	46	19	35	30	7	235
	Hazardous liquid substance		0	0	0	0	0	1	1	0	1	0	3
	Non-oil		29	11	1	28	0	9	8	10	30	2	128
	Waste		1	2	1	2	0	2	0	2	4	0	14
	Others		30	13	2	30	0	12	9	12	35	2	145
Subtotal		48	37	15	55	18	58	28	47	65	9	380	
Red tide													
2015	Oil		11	17	21	10	19	56	38	26	40	9	247
	Hazardous liquid substance		0	0	0	1	1	3	2	1	0	1	9
	Non-oil		35	27	1	18	1	13	3	1	13	0	112
	Waste		0	1	3	2	0	3	0	7	8	0	24
	Others		35	28	4	21	2	19	5	9	21	1	145
Subtotal		46	45	25	31	21	75	43	35	61	10	392	
Red tide													
Total													

Notes:

· "Others" in the "Non-oil" column refer to factory effluent, blue tide and the like.

· Confirmed cases of "Oil" in the "Eastern coast of Honshu" includes the continuous oil spill of 23 cases from "the Chilsong" which was stranded at Hitachi Harbor.

Source: Compiled from "Current situations of Oceanic pollution: 2009~2015" by Japan Coast Guard.

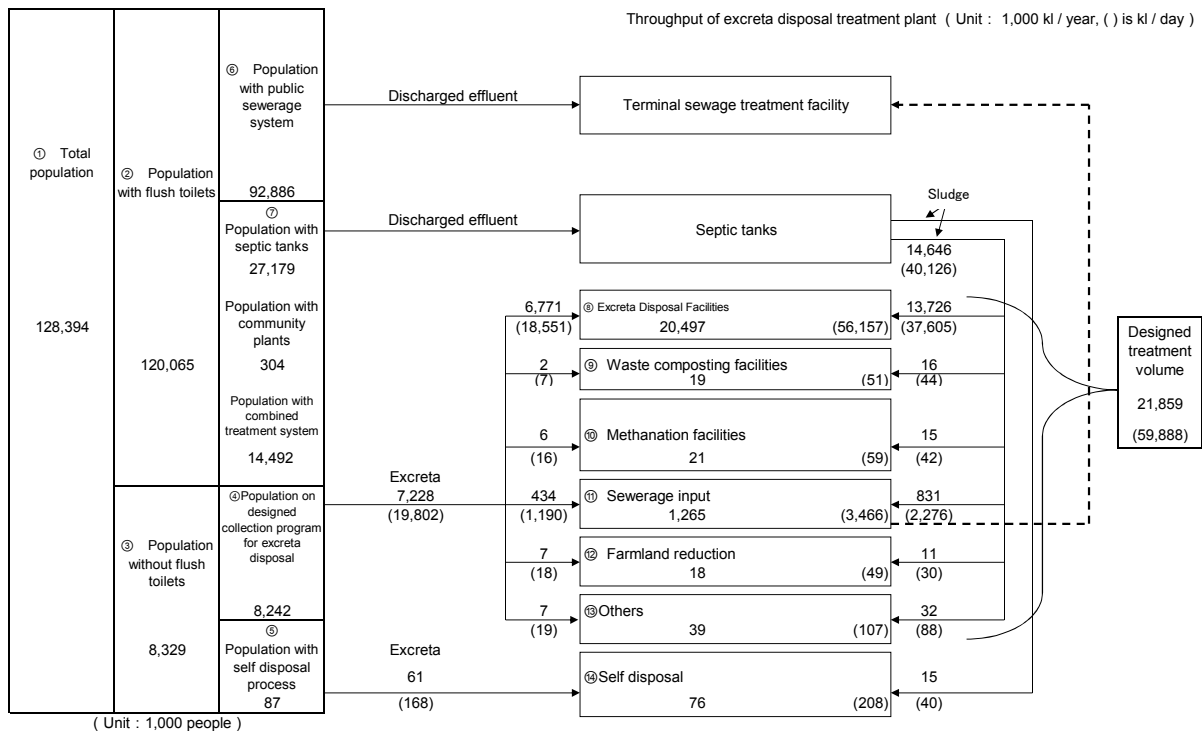
5.18 Changes in number of cases of referral by violations against marine environmental laws

(Unit: case)

Name of Act	Group	Violation	Number detained						
			2007	2008	2009	2010	2011	2012	2013
Prevention of Marine Pollution and Maritime Disaster Act		Violation against prohibiting discharge of oil from ships	141	195	182	140	125	106	106
		Violation against prohibiting discharge of hazardous liquids from ships	6	1	4	3	0	2	2
		Violation against prohibiting discharge of waste from ships	34	6	33	33	25	43	43
		Violation against prohibiting the disposal of disabled ship	167	83	156	102	127	118	118
		Other violations	100	99	94	142	132	101	101
		Subtotal	448	384	469	420	409	370	370
Waste Management and Public Cleansing Act		Violation against prohibiting the disposal of waste	115	190	156	161	114	135	135
Water Pollution Control Act		Violation against prohibiting discharge of drainage with unadoptable emission standard	13	11	2	7	16	5	5
Port Regulations Act		Violation against prohibiting the disposal of waste and provisions ordering the mounting of equipment to prevent falling of cargos	45	43	77	41	52	37	37
Other laws		Violation of Prefectural fisheries coordination regulation	31	11	35	9	2	15	15
		Total	652	639	739	638	593	562	562

Source: Compiled from "Current situations of Oceanic Pollution 3: 2007~2013" by Japan Coast Guard.

5.19 Night soil treatment flow sheet (FY2013)



• Rate of flush-toilet use	= ②/①	= 93.5 %
• Use rate of non-flush toilet	= ③/①	= 6.5 %
• Public sewerage rate	= ⑥/①	= 72.3 %
• Use rate of flush toilet with a Septic tank (includes community plant) (combined treatment system 11.3%)	= ⑦/①	= 21.2 %
• Designed collection rate in population with non-flush toilets	= ④/③	= 99.0 %
• Self disposal rate in population with non-flush toilets	= ⑤/③	= 1.0 %
• Designed treatment volume (includes septic tanks sludge)	= ⑧ + ⑨ + ⑩ + ⑪ + ⑫ + ⑬	= 59,888 kl/day a
• Total amount of treatment (designed treatment volume+self disposal volume)	= ⑧ + ⑨ + ⑩ + ⑪ + ⑫ + ⑬ + ⑭	= 60,096 kl/day b
• Treatment rate by waste composting facility and sewerage input.	= (⑨ + ⑪)+a	= 99.6 %
• Designed treatment volume of urine per person per day	= (a - 40,086)÷④	= 2.40 l/person-day
• Discharged volume of night soil per person per day	= (b - 40,086 - 40)÷④	= 2.40 l/person-day
• Designed treatment volume of septic tanks sludge per person per day	= 40,086÷⑦	= 1.47 l/person-day
• Discharged volume of sludge from septic tanks per person per day	= (40,086 + 40)÷⑦	= 1.48 l/person-day

Source: "Waste & Recycling (FY2013)," Waste Management Division, Waste Management and Recycling Department, Minister's Secretariat, MOE, the Government of Japan

5.20 Changes in population using flush toilets and treatment volume of night soil

1. Population by treatment type

(Unit : 1,000 people)

Group	FY 2002	2003	2004	2005	2006	2007	
Total population	127,299	127,507	127,606	127,712	127,781	127,487	
Population with flush toilet	Population with public sewage	76,004	78,174	80,061	81,880	83,742	84,982
	Population with community plant	418	362	383	552	361	336
	Population with septic tanks	33,053	32,516	31,947	31,095	30,473	29,863
	Stand-alone	21,038	20,035	19,163	18,303	17,187	15,924
	Combined	12,015	12,481	12,784	12,792	13,286	13,939
	Total	109,475	111,052	112,390	113,526	114,576	115,181
Population without flush toilet	Population covered with scheduled collection	17,348	16,049	14,877	13,920	12,983	12,121
	Self-disposal	476	405	339	266	222	185
	Total	17,824	16,455	15,215	14,186	13,205	12,306
Rate with flush toilets	(%)	86.0	87.1	88.1	88.9	89.7	90.3
Rate without flushing toilet	(%)	14.0	12.9	11.9	11.1	10.3	9.7
Rate with flush toilets using public sewage	(%)	59.7	61.3	62.7	64.1	65.5	66.7
Rate with flush toilets using septic tanks	(%)	26.3	25.8	25.3	24.8	24.1	23.7
Combined treatment	(%)	9.6	10.1	10.3	10.0	10.7	11.2

Notes:

"Combined" of population septic tanks is the sum of population of combined septic tanks and population of Including community plant.
Population of septic tanks is included population using an agricultural community effluent treatment facility.

2. Current night soil treatment

Group	FY2002	2003	2004	2005	2006	2007	
Number of total treatment	Night soil treatment facilities	26,406 (89.6)	26,187 (90.8)	25,013 (91.2)	24,191 (91.1)	23,953 (91.8)	23,248 (93.1)
	Amount of night soil collected	12,720	12,390	11,269	10,400	9,864	9,261
	Amount of septic tanks sludge	13,686	13,797	13,744	13,790	14,089	13,987
	Composting facilities	-	-	-	4 (0.0)	7 (0.0)	11 (0.0)
	Amount of night soil collected	-	-	-	3	3	4
	Amount of septic tanks sludge	-	-	-	1	3	6
	Methane composting facilities	-	-	-	1 (0.0)	7 (0.0)	15 (0.1)
	Amount of night soil collected	-	-	-	0	1	5
	Amount of septic tanks sludge	-	-	-	1	6	10
	Outflow to sewage	1,513 (5.1)	1,377 (4.8)	1,293 (4.7)	1,385 (5.2)	1,442 (5.5)	1,476 (5.9)
	Amount of night soil collected	753	642	575	608	649	581
	Amount of septic tanks sludge	759	734	718	777	793	894
	Farmland reduction	61 (0.2)	60 (0.2)	59 (0.2)	51 (0.2)	48 (0.2)	41 (0.2)
	Amount of night soil collected	33	34	33	28	25	16
	Amount of septic tanks sludge	28	27	26	23	23	26
	Sea dumping	1,082 (3.7)	842 (2.9)	748 (2.7)	623 (2.3)	393 (1.5)	-
	Amount of night soil collected	390	255	234	192	121	-
	Amount of septic tanks sludge	692	587	514	431	272	-
	Others	61 (0.2)	65 (0.2)	53 (0.2)	109 (0.4)	110 (0.4)	54 (0.2)
	Amount of night soil collected	34	28	19	30	34	20
Amount of septic tanks sludge	27	37	34	79	76	35	
Subtotal	29,123 (98.8)	28,531 (99.0)	27,165 (99.1)	26,364 (99.3)	25,960 (99.4)	24,845 (99.5)	
Amount of night soil collected	13,929	13,349	12,130	11,262	10,698	9,887	
Amount of septic tanks sludge	15,193	15,182	15,035	15,102	15,262	14,959	
Self disposal volume	340 (1.2)	296 (1.0)	257 (0.9)	197 (0.7)	144 (0.6)	129 (0.5)	
Amount of night soil collected	316	280	243	170	138	123	
Amount of septic tanks sludge	23	16	14	27	7	6	
Total	29,462 (100.0)	28,827 (100.0)	27,422 (100.0)	26,561 (100.0)	26,105 (100.0)	24,974 (100.0)	
Amount of night soil collected	14,246	13,629	12,374	11,432	10,836	10,010	
Quantity of septic tanks sludge	15,216	15,198	15,049	15,128	15,269	14,964	
Designed treatment volume of urine per person per day (l / person · day)	2.20	2.27	2.23	2.22	2.26	2.23	
Discharged night soil per person per day (l / person · day)	2.19	2.26	2.23	2.21	2.25	2.22	
Designed treatment volume of septic tanks sludge per person per day (l / person · day)	1.24	1.26	1.27	1.31	1.36	1.35	
Discharge of sludge from septic tanks per day (l / person · day)	1.25	1.26	1.28	1.31	1.36	1.35	

Notes:

"Night soil treatment facilities": Facility to treat excreta by anaerobic digestion process, chemical processing, aerobic treatment, wet oxidation system etc.

"Composting facility": Facility to make compost from collected excreta and septic tanks sludge.

"Methane composting facility": Facility for methane fermentation of collected excreta, septic tank's sludge and ejection of biogas.

"Sewage input": Outflow or pressurized transportation to a sewage system with terminal treatment plants.

"Farmland reduction": To use collected night soil or septic tanks sludge as fertilizer for farmland.

"Sea dumping": To dump collected night soil or septic tanks sludge into the sea.

Data in parenthesis are the rate of percentage to total.

5.20 Changes in population using flush toilets and treatment volume of night soil

1. Population by treatment type

(Unit : 1,000 people)

Group	FY2008	2009	2010	2011	2012	2013	
Total population	127,529	127,429	127,302	127,146	128,622	128,394	
Population with flush toilet	Population with public sewage	86,027	87,819	88,865	89,810	91,984	92,886
	Population with community plant	416	297	293	286	289	304
	Population with septic tanks	29,267	28,504	28,030	27,591	27,392	26,875
	Stand-alone	15,413	14,712	13,948	13,316	13,052	12,383
	Combined	13,854	13,792	14,082	14,276	14,341	14,492
Total	115,710	116,620	117,188	117,687	119,666	120,065	
Population without flush toilet	Population covered with scheduled collection	11,301	10,671	9,984	9,348	8,849	8,242
	Self-disposal	518	139	130	112	107	87
	Total	11,819	10,810	10,114	9,460	8,956	8,329
Rate with flush toilets (%)	(%) 90.7	91.5	92.1	92.6	93.0	93.5	
Rate without flushing toilet (%)	(%) 9.3	8.5	7.9	7.4	7.0	6.5	
Rate with flush toilets using public sewage (%)	(%) 67.5	68.9	69.8	70.6	71.5	72.3	
Rate with flush toilets using sept (%)	(%) 22.9	22.4	22.0	21.7	21.3	20.9	
Combined treatment (%)	(%) 11.2	11.1	11.3	11.2	11.1	11.3	

2. conditions of current urine treatment

Group	FY2008	2009	2010	2011	2012	2013	
Number of designed treatment	Night soil treatment facilities	22,958 (93.5)	22,343 (93.6)	21,678 (93.1)	20,912 (91.6)	20,538 (92.1)	20,497 (93.4)
	Amount of night soil collected	8,894	8,353	7,917	7,365	7,018	6,771
	Amount of septic tanks sludge	14,064	13,989	13,760	13,547	13,519	13,726
	Composting facilities	28 (0.1)	58 (0.2)	17 (0.1)	15 (0.1)	21 (0.1)	19 (0.1)
	Amount of night soil collected	3	16	4	3	3	2
	Amount of septic tanks sludge	25	42	13	13	17	16
	Methane composting facilities	16 (0.1)	27 (0.1)	16 (0.1)	16 (0.1)	15 (0.1)	21 (0.1)
	Amount of night soil collected	5	5	4	4	4	6
	Amount of septic tanks sludge	11	23	12	12	11	15
	Outflow to sewage	1,347 (5.5)	1,265 (5.3)	1,346 (5.8)	1,654 (7.2)	1,544 (6.9)	1,285 (5.8)
	Amount of night soil collected	519	455	462	587	502	434
	Amount of septic tanks sludge	828	810	884	1,068	1,042	831
	Farmland reduction	39 (0.2)	33 (0.1)	72 (0.3)	69 (0.3)	23 (0.1)	18 (0.1)
	Amount of night soil collected	17	9	13	9	9	7
	Amount of septic tanks sludge	22	23	59	60	14	11
	Sea dumping	-	-	-	-	-	-
	Amount of night soil collected	-	-	-	-	-	-
	Amount of septic tanks sludge	-	-	-	-	-	-
	Others	54 (0.2)	47 (0.2)	69 (0.3)	61 (0.3)	71 (0.3)	39 (0.2)
	Amount of night soil collected	18	16	16	17	14	7
Amount of septic tanks sludge	36	30	53	44	56	32	
Subtotal	24,442 (99.5)	23,772 (99.6)	23,198 (99.6)	22,728 (99.6)	22,211 (99.6)	21,859 (99.7)	
Amount of night soil collected	9,455	8,855	8,417	7,984	7,551	7,228	
Amount of septic tanks sludge	14,987	14,917	14,781	14,744	14,660	14,631	
Self-disposal volume	111 (0.5)	102 (0.4)	83 (0.4)	99 (0.4)	78 (0.4)	76 (0.3)	
Amount of night soil collected	104	91	76	93	62	61	
Amount of septic tanks sludge	6	11	7	6	16	15	
Total	24,553 (100.0)	23,874 (100.0)	23,280 (100.0)	22,827 (100.0)	22,289 (100.0)	21,935 (100.0)	
Amount of night soil collected	9,560	8,946	8,493	8,077	7,613	7,289	
Amount of septic tanks sludge	14,993	14,928	14,788	14,750	14,676	14,646	
Designed treatment volume of urine per person per day (l / person · day)	2.29	2.27	2.31	2.33	2.34	2.40	
Discharged night soil per person per day (l / person · day)	2.32	2.30	2.30	2.33	2.33	2.40	
Designed treatment volume of septic tanks sludge per person per day (l / person · day)	1.38	1.42	1.43	1.45	1.45	1.47	
Discharge of sludge from septic tanks per day (l / person · day)	1.38	1.42	1.43	1.45	1.45	1.48	

Source: "Waste Treatment in Japan (annual version)," Waste Management Division, Waste and Recycling Department, Minister's Secretariat, MOE, the Government of Japan

5.21 Current situations of night soil treatment facilities by prefectures

(FY2013)

	Total Population (Thousand person)	Population using flush toilet (Thousand person)							The population not using flush toilet				
		Public sewage System		Community Plants	septic tank		Total	The usage rate of flush toilet(%)		Population on designed disposal program	Population covered with designed disposal program (%)	Population under self-disposal process	
			Use rate of flush toilet(%)			Use rate of flush toilet(%)							Combined Septic Tanks
Hokkaido	5,460	4,775	87.5	0	269	4.9	190	5,045	92.4	416	412	7.6	3
Aomori	1,370	692	50.5	0	478	34.9	205	1,170	85.4	200	200	14.6	0
Iwate	1,312	632	48.2	2	283	21.5	237	916	69.8	396	395	30.2	1
Miyagi	2,327	1,723	74.0	6	250	10.7	168	1,979	85.0	349	344	15.0	5
Akita	1,072	534	49.8	0	269	25.1	198	803	74.9	269	269	25.1	0
Yamagata	1,151	739	64.2	0	295	25.6	137	1,034	89.8	117	117	10.2	0
Fukushima	1,964	889	45.3	7	833	42.4	478	1,729	88.0	235	235	12.0	0
Ibaraki	2,984	1,625	54.5	17	1,085	36.3	584	2,727	91.4	257	257	8.6	0
Tochigi	2,011	1,216	60.4	1	673	33.5	381	1,890	93.9	122	122	6.1	0
Gunma	2,022	925	45.7	25	949	46.9	428	1,898	93.9	124	124	6.1	0
Saitama	7,287	5,462	75.0	9	1,683	23.1	841	7,154	98.2	133	132	1.8	0
Chiba	6,249	4,216	67.5	9	1,817	29.1	910	6,042	96.7	207	206	3.3	1
Tokyo	13,195	13,067	99.0	2	98	0.7	40	13,168	99.8	27	27	0.2	0
Kanagawa	9,100	8,615	94.7	0	446	4.9	144	9,061	99.6	39	39	0.4	0
Niigata	2,357	1,475	62.6	0	710	30.1	269	2,185	92.7	172	172	7.3	0
Toyama	1,092	830	76.0	5	211	19.4	110	1,046	95.8	46	46	4.2	0
Ishikawa	1,164	845	72.6	5	269	23.1	124	1,119	96.2	45	45	3.8	0
Fukui	809	554	68.4	0	218	27.0	109	772	95.4	37	36	4.6	1
Yamanashi	862	480	55.7	7	312	36.2	113	799	92.7	63	63	7.3	0
Nagano	2,157	1,637	75.9	8	305	14.1	202	1,950	90.4	208	207	9.6	0
Gifu	2,055	1,289	62.7	12	642	31.2	344	1,942	94.5	112	112	5.5	1
Shizuoka	3,808	2,085	54.8	16	1,599	42.0	632	3,699	97.2	108	106	2.8	2
Aichi	7,494	5,270	70.3	11	2,048	27.3	992	7,329	97.8	166	165	2.2	0
Mie	1,833	832	45.4	3	859	46.9	561	1,695	92.5	138	138	7.5	0
Shiga	1,421	1,144	80.5	0	205	14.4	140	1,349	94.9	72	70	5.1	2
Kyoto	2,636	2,344	88.9	7	150	5.7	95	2,502	94.9	135	133	5.1	2
Osaka	8,877	8,133	91.6	0	541	6.1	236	8,674	97.7	203	202	2.3	1
Hyogo	5,652	5,094	90.1	68	351	6.2	213	5,513	97.6	138	137	2.4	1
Nara	1,404	975	69.4	4	340	24.2	144	1,319	93.9	85	85	6.1	0
Wakayama	1,013	191	18.9	1	605	59.7	324	798	78.7	216	215	21.3	1
Tottori	587	349	59.5	1	183	31.2	72	533	90.9	54	52	9.1	1
Shimane	712	279	39.2	4	278	39.0	208	561	78.8	151	147	21.2	4
Okayama	1,946	1,087	55.9	0	600	30.9	371	1,687	86.7	259	255	13.3	4
Hiroshima	2,877	1,912	66.5	11	614	21.3	391	2,537	88.2	340	326	11.8	14
Yamaguchi	1,444	850	58.9	0	443	30.7	283	1,293	89.6	151	143	10.4	8
Tokushima	783	116	14.8	7	592	75.6	279	715	91.3	68	62	8.7	6
Kagawa	1,011	397	39.2	0	496	49.1	275	894	88.4	117	116	11.6	1
Ehime	1,438	665	46.3	6	602	41.9	304	1,273	88.5	165	163	11.5	2
Kochi	755	219	29.0	8	367	48.6	261	594	78.7	161	159	21.3	2
Fukuoka	5,116	3,863	75.5	18	644	12.6	501	4,526	88.5	590	589	11.5	2
Saga	853	403	47.3	1	228	26.8	194	632	74.1	221	220	25.9	1
Nagasaki	1,420	775	54.6	12	261	18.4	216	1,049	73.8	372	370	26.2	1
Kumamoto	1,826	1,100	60.2	1	490	26.8	278	1,590	87.1	236	233	12.9	3
Oita	1,199	484	40.4	1	565	47.1	285	1,050	87.6	149	133	12.4	16
Miyazaki	1,143	556	48.7	0	448	39.2	288	1,004	87.9	138	138	12.1	0
Kagoshima	1,701	654	38.4	9	809	47.6	525	1,471	86.5	230	230	13.5	0
Okinawa	1,441	885	61.4	0	463	32.1	212	1,348	93.5	93	93	6.5	0
Total	128,394	92,886	72.3	304	26,875	20.9	14,492	120,065	93.5	8,329	8,242	6.5	87

5.21 Current situations of night soil treatment facilities by prefectures

(FY2013)

	Total throughput of resulting products (Thousand KL/Year)									
	Throughput of designed disposal program								Throughput of self-disposal process	Total
	Night soil treatment facilities	Waste Composting Facilities	Methane Composting Facilities	Outflow to sewage	Farmland Reduction	Sea Dumping	Others	Sub Total		
Hokkaido	565	3	5	100	0	-	0	674	4	678
Aomori	446	0	0	0	0	-	0	446	0	446
Iwate	570	0	0	0	0	-	0	570	1	570
Miyagi	462	0	0	0	0	-	0	462	6	468
Akita	430	0	0	0	0	-	0	430	0	430
Yamagata	229	0	0	0	0	-	0	229	0	229
Fukushima	564	0	0	46	0	-	0	611	1	612
Ibaraki	637	0	0	5	0	-	0	642	0	642
Tochigi	344	0	0	0	0	-	0	344	0	344
Gunma	467	6	0	0	0	-	9	482	0	482
Saitama	807	0	0	0	0	-	0	807	7	813
Chiba	819	0	0	11	0	-	0	830	1	831
Tokyo	71	0	0	16	0	-	13	99	0	99
Kanagawa	174	0	0	175	0	-	0	349	1	350
Niigata	460	0	0	53	0	-	0	514	0	514
Toyama	102	0	0	34	0	-	0	136	0	136
Ishikawa	136	0	0	0	0	-	0	136	0	136
Fukui	138	0	0	16	0	-	0	154	1	155
Yamanashi	149	2	0	0	0	-	0	151	0	151
Nagano	339	0	0	29	0	-	0	368	0	368
Gifu	608	0	0	0	0	-	0	608	0	609
Shizuoka	927	0	0	33	0	-	5	964	1	965
Aichi	1,116	0	0	103	0	-	0	1,219	0	1,219
Mie	629	0	0	10	0	-	0	639	0	639
Shiga	189	1	0	16	0	-	0	205	2	207
Kyoto	227	0	0	25	0	-	0	252	2	254
Osaka	475	0	0	128	0	-	0	603	1	603
Hyogo	264	0	0	83	0	-	0	347	1	348
Nara	244	0	0	2	0	-	0	245	0	246
Wakayama	519	0	0	0	0	-	0	519	0	519
Tottori	124	0	0	0	0	-	0	124	1	125
Shimane	276	0	0	1	0	-	0	277	4	280
Okayama	614	0	0	30	0	-	0	644	5	649
Hiroshima	598	0	0	82	0	-	0	680	9	689
Yamaguchi	410	0	5	36	0	-	1	452	5	457
Tokushima	276	0	0	0	0	-	0	276	7	283
Kagawa	182	0	0	0	0	-	0	183	0	183
Ehime	409	0	0	1	0	-	0	409	1	410
Kochi	359	1	0	0	0	-	0	361	1	362
Fukuoka	1,117	0	11	122	0	-	0	1,249	1	1,251
Saga	415	2	0	0	0	-	0	417	1	418
Nagasaki	615	0	0	3	0	-	0	619	2	620
Kumamoto	433	2	0	73	0	-	1	509	2	511
Oita	419	2	0	0	0	-	0	420	6	427
Miyazaki	325	0	0	12	0	-	0	337	0	337
Kagoshima	707	0	0	1	12	-	3	724	0	724
Okinawa	110	0	0	23	5	-	7	145	0	145
Total	20,497	19	21	1,265	18	-	39	21,859	76	21,935

Source: "Waste & Recycling (FY2013)," Waste Management Division, Waste Management and Recycling Department, Minister's Secretariat, MOE, the Government of Japan

5.22 Trends in breakdown of nationwide night soil treatment facilities by type (start-of-construction-basis)

(Unit: KL/Day)

	Anaerobic treatment		Aerobic treatment		Standard Denitrification treatment		High-loading denitrification treatment		Membrane Bioreactor treatment		Others		Total	
	Number of facilities	Processing capacity	Number of facilities	Processing capacity	Number of facilities	Processing capacity	Number of facilities	Processing capacity	Number of facilities	Processing capacity	Number of facilities	Processing capacity	Number of facilities	Processing capacity
FY1990	385	34,580	703	60,008	-	-	-	-	-	-	124	13,777	1,212	108,365
1991	355	30,681	346	33,353	245	26,048	138	9,672	-	-	175	18,053	1,259	117,807
1992	304	26,312	289	22,745	247	25,995	139	10,681	11	509	195	23,068	1,185	109,310
1993	289	24,021	300	22,306	260	27,816	139	10,674	14	653	191	21,558	1,193	107,028
1994	270	22,901	286	21,261	279	30,149	157	12,310	21	994	200	21,080	1,213	108,695
1995	234	19,869	265	19,716	281	30,157	175	13,817	28	1,616	200	20,028	1,183	105,203
1996	210	17,510	246	17,951	286	30,751	187	15,312	29	1,645	210	21,474	1,168	104,643
1997	183	15,585	240	17,215	294	31,251	202	17,525	35	2,042	207	21,422	1,161	105,039
1998	167	14,068	217	14,781	302	31,850	192	16,235	36	2,036	236	24,795	1,150	103,764
1999	142	12,277	194	12,730	300	31,815	195	16,331	40	2,314	245	25,159	1,116	100,625
2000	130	10,996	191	12,166	300	31,908	198	16,498	41	2,375	259	25,917	1,119	99,860
2001	121	9,892	181	11,070	307	32,245	195	16,177	41	2,597	279	27,551	1,124	99,532
2002	101	8,518	169	10,411	306	32,230	196	16,735	40	2,759	299	27,566	1,111	98,219
2003	96	8,090	160	10,005	307	32,375	197	17,177	38	4,401	303	28,716	1,101	100,764
2004	86	7,032	152	9,369	307	31,628	199	16,973	37	4,350	320	29,707	1,101	99,329
2005	76	6,476	136	8,465	288	29,655	203	17,493	38	3,055	317	30,277	1,058	95,420
2006	66	5,856	127	8,005	272	28,363	189	15,980	31	4,264	366	34,733	1,051	97,200
2007	59	4,801	126	7,892	273	28,102	186	15,784	27	3,861	370	33,115	1,041	93,555
2008	56	4,444	118	7,535	268	27,737	182	14,938	26	3,650	389	35,441	1,039	93,745
2009	52	4,144	108	6,961	269	27,748	189	16,285	24	3,573	389	34,654	1,031	93,364
2010	50	3,891	105	6,753	257	26,173	186	16,104	27	3,684	393	34,577	1,018	91,182
2011	44	3,265	94	6,200	251	25,694	184	15,778	27	3,684	400	34,622	1,000	89,243
2012	43	3,159	96	6,469	248	25,608	179	15,030	32	4,062	391	33,556	989	87,884
2013	43	3,059	90	6,001	244	25,153	175	14,529	31	4,074	399	33,975	982	86,791

Notes:

- Facilities established by municipalities and administration associations include idle facilities and facilities started construction in the fiscal year, but not abolished facilities.
- "Standard Denitrification treatment" and "Standard Denitrification treatment" were included in Aerobic treatment prior to survey 1990.
- Membrane Bioreactor treatment is included in others prior to survey 1991.

Source: "Waste & Recycling (Yearly report)," Waste Management Division, Waste Management and Recycling Department, Minister's Secretariat, MOE, the Government of Japan

5.23 Changes in number of installed Johkasou※ (Nationwide)

(Unit: Plant)

		FY2003	2004	2005	2006	2007	2008
Plant for ~ 20 people		7,683,252 (5,874,096)	7,659,463 (5,941,469)	7,676,160 (6,021,016)	7,688,392 (6,097,153)	7,534,990 (6,066,922)	7,480,780 (6,083,458)
21 ~ 100		832,765 (523,288)	818,145 (527,228)	808,594 (526,998)	793,545 (524,396)	747,142 (510,199)	730,606 (506,074)
101 ~ 500		136,935 (81,776)	134,724 (83,313)	130,645 (81,235)	127,481 (80,977)	121,025 (79,123)	117,473 (78,958)
Sub Total		8,652,952 (6,479,160)	8,612,332 (6,552,010)	8,615,399 (6,629,249)	8,609,418 (6,702,526)	8,403,157 (6,656,244)	8,328,859 (6,668,490)
501 ~ 1,000		8,745 (6,264)	8,633 (6,354)	8,369 (6,136)	8,298 (6,153)	7,971 (5,996)	7,930 (6,108)
1,001 ~ 2,000		4,557 (3,437)	4,477 (3,447)	4,463 (3,452)	4,441 (3,458)	4,439 (3,499)	4,372 (3,499)
2,001 ~ 3,000		1,397 (1,062)	1,383 (1,077)	1,376 (1,077)	1,384 (1,094)	1,358 (1,082)	1,396 (1,112)
3,001 ~ 4,000		407 (312)	399 (312)	407 (319)	412 (316)	417 (329)	411 (326)
4,001 ~ 5,000		242 (197)	245 (201)	230 (194)	221 (186)	221 (186)	215 (182)
5,001 ~		353 (220)	335 (217)	327 (221)	321 (222)	321 (223)	312 (222)
Sub Total		15,701 (11,492)	15,472 (11,608)	15,172 (11,399)	15,077 (11,429)	14,727 (11,315)	14,636 (11,449)
Total		8,668,653 (6,490,652)	8,627,804 (6,563,618)	8,630,571 (6,640,648)	8,624,495 (6,713,955)	8,417,884 (6,667,559)	8,343,495 (6,679,939)
Break -down	Black water only type	6,513,810 (4,360,395)	6,299,840 (4,258,880)	6,131,836 (4,166,189)	5,965,513 (4,081,040)	5,641,662 (3,916,080)	5,442,181 (3,803,133)
	Both black + grey water type	2,154,843 (2,130,257)	2,327,964 (2,304,738)	2,498,735 (2,474,459)	2,658,982 (2,632,915)	2,776,222 (2,751,479)	2,901,314 (2,876,806)

		FY2009	2010	2011	2012	2013	2014
Plant for ~ 20 people		7,340,054 (6,098,795)	7,162,437 (6,025,052)	7,066,207 (6,004,392)	7,028,375 (6,014,594)	6,984,374 (6,036,702)	6,948,435 (6,047,384)
21 ~ 100		691,535 (495,735)	657,270 (480,207)	637,111 (473,461)	620,588 (465,127)	608,635 (462,011)	596,578 (455,869)
101 ~ 500		111,631 (77,733)	106,452 (75,982)	101,361 (73,629)	97,088 (71,416)	96,312 (71,116)	93,789 (70,070)
Sub Total		8,143,220 (6,672,263)	7,926,159 (6,581,241)	7,804,679 (6,551,482)	7,746,051 (6,551,137)	7,689,321 (6,569,829)	7,638,802 (6,573,323)
501 ~ 1,000		7,715 (6,076)	7,517 (5,988)	7,155 (5,776)	6,870 (5,615)	6,790 (5,545)	6,655 (5,512)
1,001 ~ 2,000		4,280 (3,484)	4,212 (3,465)	4,053 (3,374)	3,943 (3,313)	3,910 (3,297)	3,877 (3,312)
2,001 ~ 3,000		1,328 (1,085)	1,326 (1,092)	1,300 (1,084)	1,263 (1,066)	1,250 (1,057)	1,244 (1,079)
3,001 ~ 4,000		401 (317)	388 (311)	375 (301)	374 (305)	372 (305)	363 (302)
4,001 ~ 5,000		212 (182)	217 (186)	205 (175)	199 (171)	203 (177)	200 (175)
5,001 ~		315 (228)	296 (223)	291 (219)	286 (215)	293 (222)	282 (220)
Sub Total		14,251 (11,372)	13,956 (11,265)	13,379 (10,929)	12,935 (10,685)	12,818 (10,603)	12,621 (10,600)
Total		8,157,471 (6,683,635)	7,940,115 (6,592,506)	7,818,058 (6,562,411)	7,758,986 (6,561,822)	7,702,139 (6,580,432)	7,651,423 (6,583,923)
Break -down	Black water only type	5,170,659 (3,723,893)	4,883,467 (3,559,629)	4,674,779 (3,441,912)	4,531,552 (3,356,153)	4,368,516 (3,266,792)	4,233,122 (3,184,853)
	Both black + grey water type	2,986,812 (2,959,742)	3,056,648 (3,032,877)	3,143,279 (3,120,499)	3,227,434 (3,205,669)	3,333,623 (3,313,640)	3,418,301 (3,399,070)

Note:

※Packaged Aerated Wastewater Treatment Plant

•Parenthesized figures in lower rows refer to the number of tanks subjected to new standard structures.

Source: "Governance survey results on Johkasou FY2015," Office for promotion of Johkasou, Waste Management Division, Waste Management and Recycling Department, Minister's Secretariat, MOE, the Government of Japan

5.24 Night soil treatment facilities (established by municipalities and administration associations) by prefecture

(FY2013)

	Anaerobic treatment		Aerobic treatment		Standard Denitrification treatment		High-loading denitrification treatment		Membrane Bioreactor treatment		Others		Total	
	Number of facilities	Processing capacity (kl/Day)	Number of facilities	Processing capacity (kl/Day)	Number of facilities	Processing capacity (kl/Day)	Number of facilities	Processing capacity (kl/Day)	Number of facilities	Processing capacity (kl/Day)	Number of facilities	Processing capacity (kl/Day)	Number of facilities	Processing capacity (kl/Day)
Hokkaido	15	1,046	8	521	1	60	7	237	1	43	31	1,730	63	3,638
Aomori	0	0	0	0	6	872	4	200	0	0	3	562	13	1,634
Iwate	1	105	1	80	4	463	5	672	0	0	5	636	16	1,956
Miyagi	0	0	0	0	5	537	5	536	0	0	6	705	16	1,778
Akita	0	0	2	133	4	572	7	493	0	0	5	467	18	1,665
Yamagata	0	0	0	0	5	660	1	180	0	0	4	282	10	1,122
Fukushima	3	440	3	316	7	535	3	252	0	0	6	563	22	2,106
Ibaraki	1	50	5	384	7	912	9	753	1	39	12	727	35	2,865
Tochigi	0	0	0	0	7	980	6	452	0	0	1	191	14	1,623
Gunma	0	0	5	253	2	174	11	775	1	46	6	573	25	1,821
Saitama	0	0	1	100	15	1,817	4	428	1	80	16	1,438	37	3,863
Chiba	1	200	1	110	9	899	8	935	4	451	11	1,340	34	3,935
Tokyo	0	0	1	23	1	140	1	4	3	2,055	9	254	15	2,476
Kanagawa	1	47	1	50	3	309	1	37	0	0	6	630	12	1,073
Niigata	1	20	2	50	9	682	1	20	0	0	14	1,250	27	2,022
Toyama	0	0	1	66	1	80	1	45	0	0	4	360	7	551
Ishikawa	2	155	1	120	3	263	1	80	0	0	6	485	13	1,103
Fukui	0	0	0	0	1	50	4	211	0	0	8	433	13	694
Yamanashi	2	90	3	204	5	230	1	85	1	40	2	151	14	800
Nagano	0	0	1	200	8	1,154	6	599	0	0	10	524	25	2,477
Gifu	1	60	2	106	8	606	6	287	1	35	10	995	28	2,089
Shizuoka	1	36	6	201	9	871	3	301	2	272	15	1,981	36	3,662
Aichi	1	60	5	600	7	1,187	5	527	0	0	13	1,918	31	4,292
Mie	0	0	2	24	5	733	2	340	2	48	7	1,027	18	2,172
Shiga	0	0	2	313	4	501	2	208	0	0	4	170	12	1,192
Kyoto	0	0	4	259	3	221	1	76	1	94	5	421	14	1,071
Osaka	0	0	3	428	3	225	5	819	0	0	10	1,073	21	2,545
Hyogo	0	0	3	132	7	526	3	122	1	44	13	1,268	27	2,092
Nara	1	76	1	3	1	50	4	178	1	6	7	624	15	937
Wakayama	1	2	1	450	6	624	1	37	1	131	4	383	14	1,627
Tottori	0	0	0	0	1	140	3	275	0	0	2	191	6	606
Shimane	0	0	1	40	2	117	4	218	1	125	4	342	12	842
Okayama	0	0	0	0	8	743	3	270	0	0	11	1,087	22	2,100
Hiroshima	2	210	3	38	7	687	5	325	1	176	16	1,065	34	2,501
Yamaguchi	0	0	0	0	5	597	3	93	0	0	10	690	18	1,380
Tokushima	0	0	3	210	6	400	2	45	1	35	4	291	16	981
Kagawa	0	0	1	30	2	257	4	509	1	2	3	130	11	927
Ehime	0	0	0	0	10	1,170	2	50	2	67	6	208	20	1,495
Kochi	1	47	2	40	6	774	3	139	0	0	7	181	19	1,181
Fukuoka	1	90	4	117	7	953	6	957	0	0	15	1,469	33	3,585
Saga	1	10	1	2	3	300	3	475	0	0	6	641	14	1,428
Nagasaki	0	0	1	22	8	702	9	665	0	0	12	688	30	2,077
Kumamoto	2	195	3	161	2	110	3	198	2	187	11	635	23	1,486
Oita	0	0	1	50	5	229	2	140	0	0	10	1,076	18	1,495
Miyazaki	0	0	0	0	6	375	3	262	0	0	11	593	20	1,230
Kagoshima	0	0	2	123	9	586	2	19	2	98	14	1,270	29	2,096
Okinawa	4	120	3	43	1	80	0	0	0	0	4	259	12	502
Total	43	3,059	90	6,001	244	25,153	175	14,529	31	4,074	399	33,975	982	86,791

Note: Figures include facilities of which construction started in FY2013 and idle facilities, but not abolished facilities.

Source: "Waste treatment in Japan (FY2013)," Waste Management Division, Waste Management and Recycling Department, Minister's Secretariat, MOE, the Government of Japan

5.25 Diffusion of Johkasou and community plants by prefecture

(As of the end of FY2014)

	Rate of population served by sewage treatment system	Coverage rate of Johkasou (Both black + grey water type)	Coverage rate of community plants
Hokkaido	94.7%	3.0%	-
Aomori	76.4%	9.6%	-
Iwate	77.8%	12.6%	0.1%
Miyagi	89.5%	6.6%	0.3%
Akita	84.5%	11.3%	-
Yamagata	90.1%	7.7%	-
Fukushima	-	-	-
Ibaraki	81.5%	15.5%	0.3%
Tochigi	83.7%	15.4%	0.0%
Gunma	77.5%	18.0%	1.2%
Saitama	90.0%	9.4%	0.0%
Chiba	85.8%	12.8%	0.1%
Tokyo	99.7%	0.2%	0.0%
Kanagawa	97.8%	1.3%	-
Niigata	85.5%	5.4%	-
Toyama	95.9%	3.6%	0.3%
Ishikawa	92.9%	4.4%	0.2%
Fukui	93.5%	5.0%	-
Yamanashi	80.6%	13.6%	0.7%
Nagano	97.3%	5.7%	0.0%
Gifu	90.7%	10.5%	0.2%
Shizuoka	77.8%	15.0%	0.4%
Aichi	88.4%	10.5%	0.1%
Mie	82.2%	25.9%	0.2%
Shiga	98.3%	2.9%	-
Kyoto	97.2%	2.2%	0.0%
Osaka	97.0%	2.0%	0.0%
Hyogo	98.6%	1.9%	1.3%
Nara	87.5%	8.3%	0.3%
Wakayama	59.0%	29.6%	-
Tottori	91.4%	5.5%	0.1%
Shimane	77.0%	15.0%	0.6%
Okayama	83.6%	16.3%	-
Hiroshima	85.9%	11.4%	0.5%
Yamaguchi	84.9%	16.3%	0.0%
Tokushima	55.7%	34.7%	1.0%
Kagawa	73.4%	27.7%	0.1%
Ehime	75.3%	20.4%	0.4%
Kochi	73.3%	34.0%	0.2%
Fukuoka	90.5%	9.4%	0.3%
Saga	79.9%	14.4%	0.1%
Nagasaki	78.1%	13.4%	0.4%
Kumamoto	84.7%	14.3%	0.0%
Oita	72.3%	20.8%	0.1%
Miyazaki	83.0%	21.5%	-
Kagoshima	76.4%	32.6%	0.3%
Okinawa	84.7%	10.1%	-
Total	89.5%	8.9%	0.2%
(The end of FY2013)	(88.9%)	(8.9%)	(0.2%)

Note:

Due to the devastating damage of the Great East Japan Earthquake, data are tabulated without figures from Fukushima prefecture.

Source: "Diffusion of Johkasou (as of the end of FY2014)," Office for promotion of Johkasou, Waste Management Division, Waste Management and Recycling Department, Minister's Secretariat, MOE, the Government of Japan

5.26 Population served by waste-water treatment system by year

	Rate of population served by waste water treatment system (B/A)	Total population (A) (Thousand person)	Total population served by waste-water treatment system (B) (Thousand person)	Sewage system (Thousand person)	Agricultural drainage facilities (Thousand person)	Johkasou (Both black + grey water type) (Thousand person)	Community Plant (Thousand person)
FY1999	68.9%	126,071	86,893	75,477	2,301	8,719	396
2000	71.4%	126,285	90,182	78,031	2,589	9,139	423
2001	73.7%	126,478	93,260	80,317	2,896	9,646	402
2002	75.8%	126,688	95,990	82,570	3,106	9,932	382
2003	77.7%	126,824	98,536	84,584	3,280	10,297	375
2004	79.4%	126,869	100,793	86,365	3,439	10,618	371
2005	80.9%	127,055	102,815	88,021	3,521	10,926	347
2006	82.4%	127,053	104,680	89,610	3,607	11,142	322
2007	83.7%	127,066	106,347	91,106	3,697	11,214	330
2008	84.8%	127,076	107,741	92,412	3,741	11,273	314
2009	85.7%	127,058	108,899	93,600	3,785	11,236	278
※ 2010	86.9%	121,233	105,311	91,035	3,435	10,590	250
※ 2011	87.6%	123,350	108,104	93,548	3,502	10,794	263
※ 2012	88.1%	126,396	111,378	96,446	3,601	11,065	266
※ 2013	88.9%	126,186	112,160	97,136	3,564	11,208	251
※ 2014	89.5%	126,017	112,755	97,751	3,520	11,245	239

Notes:

- Due to rounding off, a sum of the breakdown may not match the total population.
- The figure of "Total Population" is quoted from population of Basic Resident Register published by Ministry of Internal Affairs and Communications.
- In FY2010, Iwate, Miyagi, and Fukushima prefectures were out of the scope of the survey to tabulate because the prefectures were affected by the Great East Japan Earthquake.
- In FY2011, Iwate and Fukushima prefectures were out of the scope of the survey to tabulate because the prefectures were affected by the Great East Japan Earthquake.
- In FY2012, 2013 and 2014, Fukushima prefecture was out of the scope of the survey to tabulate because the prefecture was affected by the Great East Japan Earthquake.

Source: From materials for press release of "population served by waste disposal system (September, 2015)," MOE, the Government of Japan.

5.27 Changes in expenses for night soil treatment projects

(Unit: Million yen / year)

		FY2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013			
Total population (Thousand people)		127,299	127,507	127,606	127,712	127,781	127,487	127,529	127,429	127,302	127,146	128,622	128,394			
Target population	Septic tanks	33,471	32,879	32,330	31,646	30,834	30,199	29,683	28,801	28,323	27,877	27,682	27,179			
	Total Population without flush toilet	17,824	16,455	15,215	14,186	13,205	12,306	11,819	10,810	10,114	9,460	8,956	8,329			
	Total	51,295	49,333	47,545	45,832	44,039	42,505	41,502	39,611	38,437	37,337	36,638	35,508			
Revenues (Municipalities)	General revenue source		226,355	218,735	208,676	203,003	196,471	198,554	186,694	180,919	172,002	173,892	169,832	220,491		
	Earmarked revenue sources	National treasury disbursement	4,434	3,824	5,181	8,321	6,869	4,870	4,542	4,167	5,860	4,398	4,265	170,434		
		Prefectural disbursement	2,108	2,276	1,794	1,903	2,224	1,510	1,309	1,285	1,386	1,411	1,235	5,278		
		Handling fees/commissions	25,495	23,400	24,690	25,445	36,782	34,436	32,538	31,601	29,946	29,225	28,598	1,819		
		Local Bonds	8,565	4,285	8,072	16,186	21,706	8,241	7,725	8,492	6,514	10,341	7,400	27,887		
		Others	4,782	5,903	5,550	8,602	7,730	7,496	6,663	6,803	5,905	7,123	5,350	9,353		
	Subtotal		45,383	39,688	45,286	60,456	75,311	56,553	52,776	52,347	49,612	52,498	46,848	5,721		
	Total		271,738	258,423	253,962	263,459	271,782	246,107	239,470	233,266	221,613	226,389	216,680	50,057		
	Expenditure (Total of municipalities and cooperatives)	Expenses for night soil treatment		335,231	314,519	310,648	313,596	271,782	246,107	238,737	231,594	221,613	226,332	216,634	220,491	
		Construction and improvement costs	Construction	Expenses for travelling or the like.	-	-	-	-	4,373	1,252	683	591	688	267	219	455
Intermediate processing facilities				53,219	42,522	46,640	57,569	31,090	13,164	15,157	19,192	16,992	22,147	16,557	20,561	
Final disposal site				3,687	2,499	2,929	4,996	2,547	884	96	169	367	690	357	1,531	
Others				4,527	6,763	5,480	3,636	2,948	2,457	1,191	1,054	904	1,327	1,617	942	
Inspection fee				551	634	432	1,918	287	297	274	454	396	342	396	1,077	
Subtotal		61,984	52,417	55,481	68,119	41,245	18,054	17,401	21,461	19,347	24,772	19,147	24,565			
(Reference) Financial contributions to partial-affairs association		7,644	7,764	6,525	7,677	3,473	1,899	2,377	3,779	4,119	5,387	2,979	4,506			
Processing and maintenance costs, etc.		Outsourcing costs	Labor cost	71,816	67,528	64,541	60,463	57,199	59,496	55,757	50,413	47,251	45,326	42,993	40,548	
			Treatment costs	Collection and transportation	5,911	5,716	5,129	4,949	3,665	4,865	5,256	3,937	3,704	3,752	3,532	2,588
				Intermediate treatment	80,766	75,088	73,745	71,164	70,420	65,496	66,837	63,317	61,808	61,073	60,936	60,632
				Final disposal	3,852	3,555	4,000	2,888	2,679	2,630	2,624	2,070	1,777	1,906	2,085	2,047
			Purchasing vehicles and related costs	804	515	704	463	451	374	415	491	437	343	249	332	
			Outsourcing costs	Collection and transportation	-	-	-	36,076	33,746	31,086	29,983	28,906	27,865	27,178	26,181	26,066
				Intermediate treatment	-	-	-	30,240	32,105	33,571	33,657	35,041	35,824	38,062	38,071	40,015
				Final disposal	-	-	-	7,502	5,510	4,635	4,444	4,143	3,470	3,631	3,104	3,545
				Others	-	-	-	8,713	4,547	4,342	3,835	4,601	3,868	3,719	3,623	4,535
	Total outsourcing costs		80,473	79,432	76,977	82,530	75,908	73,633	71,920	72,690	71,026	72,590	70,979	74,160		
Others		12,301	12,172	11,640	-	-	-	-	-	-	16,471	16,621	15,433			
Research expenses		-	-	-	704	103	63	67	169	227	99	93	186			
Subtotal		255,922	244,007	236,736	223,162	210,424	206,558	202,875	193,087	186,231	185,089	180,866	180,494			
(Reference) Financial contributions to partial-affairs association		103,433	98,838	93,326	81,268	77,326	75,124	73,951	72,664	67,887	65,849	66,250	64,546			
Others		17,325	18,094	18,431	22,315	20,112	21,495	18,461	17,046	16,035	16,471	16,621	15,433			
Expenses of urine treatment project per person (Yen / person, year)		6,500	6,400	6,500	6,800	6,200	5,800	5,800	5,800	5,800	6,100	5,900	6,200			

Note:

"Financial contributions to a partial-affairs association" are payable to a partial-affairs association from of the municipality and are not included in the totals because they are appropriated for the expenses of the treatment projects.

Source: "Waste Treatment in Japan (annual version)," Waste Management Division, Waste and Recycling Department, Minister's Secretariat, MOE, the Government of Japan

5.28 Production and Shipment of Major Agrochemicals

Agrochemical type	Production/ shipment	2012	2013	2014
		Agrochemical year		
Insecticides	Production	82,878	82,831	82,526
	Shipment	83,711	84,356	83,162
Disinfectants	Production	44,397	43,965	45,114
	Shipment	43,900	43,245	43,238
Insect - fungicides	Production	23,200	20,086	20,765
	Shipment	20,991	20,266	19,844
Herbicides	Production	72,923	78,345	82,410
	Shipment	71,423	75,511	77,406
Rodenticides	Production	308	344	304
	Shipment	338	349	337
Plant growth regulators (PGRs)	Production	1,877	1,544	1,590
	Shipment	1,618	1,692	1,652
adjuvants	Production	2,851	2,833	2,898
	Shipment	2,824	2,750	2,887
Other	Production	7,080	8,827	8,068
	Shipment	7,619	8,176	8,019
Total	Production	235,515	238,773	243,675
	Shipment	232,483	236,345	236,545

Notes:

- Unit: t or kl
- An agrochemical year refers a year from October in the previous year to September in the current year.
- "Other" under the heading "Agrochemical type" presents a total of the following:
 - agrochemical fertilizer; insect-fungicide-PGR combination; repellent; lime and others (excluding calcium cyanamide)

Source: "Agrochemical handbook 2015," Japan Plant Protection Association

5.29 Changes in registered number of agrochemicals by year

Kinds of agrochemicals	Agrochemical year 2010	2011	2012	2013	2014
Insecticide	1,203	1,168	1,137	1,093	1,092
Disinfectant	979	948	930	911	914
Insect-fungicide	522	512	503	512	509
Herbicide	1,491	1,486	1,439	1,491	1,494
Pesticide-fertilizer combination products	62	69	76	72	64
Rodenticides	31	31	31	29	28
Plant growth regulators	84	89	92	89	92
Insect-fungicide PGR	2	2	2	2	1
Others	142	145	148	143	145
Total	4,516	4,450	4,358	4,342	4,339

Note:

Figures are the registered number of agrochemicals as of September 30 every year.

5.30 Production of chemical fertilizer

(Unit : t)

Chemical fertilizer year	Ammonium sulfate	Calcium cyanamide	Urea	Ammonium nitrate	Ammonium chloride
2005	1,419,512	60,187	427,150	39,319	91,938
2006	1,455,571	55,422	449,579	35,532	84,667
2007	1,479,520	51,019	453,487	29,400	67,147
2008	1,208,438	49,466	403,417	30,400	77,744
2009	1,351,078	49,439	366,955	-	70,611
2010	1,320,726	42,969	412,670	-	74,293
2011	1,270,308	52,511	453,487	-	73,976
2012	1,224,963	47,913	358,338	-	79,284

Chemical fertilizer year	Calcium superphosphate	Double/triple superphosphate	Calcined phosphate	Fused phosphate	High analysis compound fertilizers
2005	186,831	19,223	79,804	68,410	1,034,520
2006	175,100	22,423	69,160	63,941	965,793
2007	185,479	30,243	71,183	70,738	939,907
2008	165,332	22,465	52,788	61,388	721,445
2009	137,534	7,839	45,962	48,724	718,235
2010	149,328	8,672	62,677	49,666	791,827
2011	139,312	8,819	55,295	46,654	790,627
2012	124,298	6,783	50,135	41,075	785,899

Notes:

- Data for Ammonium nitrate are no longer taken after FY2009.
- Chemical fertilizer year starts on July 1st and finishes on June 30th in the following year.

Source: "Pocket handbook of chemical fertilizer 2013/2014," Association of Agriculture and Forestry Statistics

5.31 Changes in numbers of soil pollution incidents where Environmental Quality Standards (EQS) were exceeded

	Incidents that exceeded EQS for soil pollution		VOC (Volatile Organic Compounds) (Type1)		Heavy metals and the like (Type2)		Agrochemicals and the like (Type3)		Complex contamination	
Prior to FY1993	32		-		32		-		-	
1994	25		8		13		-		4	
1995	37		16		19		-		2	
1996	50		18		28		-		4	
1997	48		13		29		-		6	
1998	130		76		47		-		7	
1999	130		67		51		-		12	
2000	151		55		72		1		23	
2001	210		42		124		2		42	
2002	274	(0)	56	(0)	177	(0)	2	(0)	39	(0)
2003	366	(21)	56	(4)	257	(15)	2	(0)	51	(2)
2004	456	(43)	78	(12)	298	(28)	1	(0)	79	(3)
2005	673	(48)	125	(18)	451	(29)	6	(0)	91	(1)
2006	696	(77)	127	(24)	490	(46)	1	(0)	78	(7)
2007	728	(81)	110	(15)	542	(61)	1	(0)	75	(5)
2008	700	(71)	104	(13)	521	(55)	2	(0)	73	(3)
2009	575	(94)	89	(20)	423	(71)	3	(0)	60	(3)
2010	798	(275)	-	(13)	-	(207)	-	(0)	-	(13)
2011	943	(468)	-	(34)	-	(344)	-	(0)	-	(66)
2012	906	(487)	-	(34)	-	(371)	-	(0)	-	(59)
2013	867	(479)	-	(43)	-	(393)	-	(0)	-	(44)
Cumulative Total	8,795	(2,144)	-	(230)	-	(1,620)	-	(0)	-	(206)

Notes:

- "Incidents that exceed EQS" refers to the number of incidents that exceed either the designated standards by the Soil Contamination Countermeasures Act or EQS for soil contamination.
- Parenthesized figures are the numbers of over-the-standards incidents identified by a survey based on laws.
- Since 2010, a survey not based on the law has not been conducted for number of incidents in which the standard value was exceed; VOC, heavy metals, agrochemicals and complex contamination.

Source: "The survey on the enforcement status of the Soil Contamination Countermeasures Act and Soil Contamination Investigations and Countermeasures in FY 2013," Environment Management Bureau, MOE, the Government of Japan

5.32 Number of soil contamination investigations and countermeasures taken by prefecture

Prefectures (including ordinance-designated cities)	Number of cases							
	Number of survey results reported	Number of designated cases	VOC	Heavy metals and the like	Agrochemicals and the like	Complex contamination	Survey not conducted	
Hokkaido area	Hokkaido	56	29	4	16	0	5	4
	Total	56	29	4	16	0	5	4
Tohoku area	Aomori	19	7	0	5	0	0	2
	Iwate	21	6	1	4	0	1	0
	Miyagi	47	38	4	30	0	2	2
	Akita	9	4	0	4	0	0	0
	Yamagata	23	4	1	3	0	0	0
	Fukushima	61	26	0	24	0	1	1
Total	180	85	6	70	0	4	5	
Kanto area	Ibaraki	56	25	1	20	0	4	0
	Tochigi	43	24	5	12	0	7	0
	Gunma	79	26	2	21	0	2	1
	Saitama	250	139	26	97	0	15	1
	Chiba	117	65	9	47	0	7	2
	Tokyo	856	467	54	361	0	50	2
	Kanagawa	432	239	35	162	0	33	9
	Niigata	96	34	9	24	0	1	0
	Yamanashi	39	22	4	15	0	3	0
	Shizuoka	90	41	1	31	0	5	4
Total	2,058	1,082	146	790	0	127	19	
Chubu area	Toyama	12	7	4	3	0	0	0
	Ishikawa	30	17	0	16	0	1	0
	Fukui	27	11	2	8	0	0	1
	Nagano	36	20	5	11	0	4	0
	Gifu	43	22	4	18	0	0	0
	Aichi	237	93	8	79	0	4	2
Total	406	174	24	136	0	9	5	
Kinki area	Shiga	53	12	0	11	0	1	0
	Kyoto	75	43	2	36	0	4	1
	Osaka	529	305	15	253	0	31	6
	Hyogo	231	133	14	109	0	7	3
	Nara	13	6	1	5	0	0	0
	Wakayama	20	5	1	3	0	0	1
Total	921	504	33	417	0	43	11	
Chugoku-shikoku area	Tottori	11	4	0	3	0	1	0
	Shimane	5	2	0	2	0	0	0
	Okayama	33	18	2	16	0	0	0
	Hiroshima	60	34	2	28	0	3	1
	Yamaguchi	31	25	3	18	0	4	0
	Tokushima	14	2	1	1	0	0	0
	Kagawa	24	11	0	10	0	1	0
	Ehime	14	3	0	2	0	1	0
Total	193	100	8	81	0	10	1	
Kyushu area	Fukuoka	120	62	4	46	0	7	5
	Saga	7	3	0	3	0	0	0
	Nagasaki	23	19	2	16	0	1	0
	Kumamoto	28	23	1	22	0	0	0
	Oita	19	12	2	10	0	0	0
	Miyazaki	14	4	0	4	0	0	0
	Kagoshima	33	9	0	9	0	0	0
	Okinawa	10	0	0	0	0	0	0
Total	254	132	9	110	0	8	5	
Grand Total	4,068	2,106	230	1,620	0	206	50	

Note

- The figures are the number of surveys conducted based on the Soil Contamination Countermeasures Act.
- The figures are cumulative total from the enforcement date of the Soil Contamination Countermeasures Act (February 15th, 2003) to the end of FY2013.

Source: "The survey on the enforcement status of the Soil Contamination Countermeasures Act and Soil Contamination Investigations and Countermeasures in FY 2013," Environment Management Bureau, MOE, the Government of Japan

5.33 Progress of agricultural land soil pollution countermeasures

(As of the end of FY2014)

Specific harmful substance	①Area where values above the standard levels were detected, etc.										
	② Designated area needing countermeasures								⑨Area completed a project by the sole prefecture	⑩ Undesignated area	
	③Area where plans for countermeasures have been already formulated						⑧Area where formulation of plans for countermeasures is in progress				
	④Area where project for countermeasures have been already completed				⑦Area with projects for countermeasures in progress						
				⑤ Designation has canceled	⑥Not yet						
Cadmium	7,050ha	6,460ha	6,343ha	6,113ha	5,831ha	282ha	230ha	117ha	393ha	197ha	
	97	64	63	63	59	11	13	2	52	17	
Copper	1,405ha	1,225ha	1,225ha	1,199ha	1,169ha	30ha	26ha	-	171ha	9ha	
	37	12	12	12	12	1	1	-	25	1	
Arsenic	391ha	164ha	164ha	164ha	150ha	14ha	-	-	162ha	65ha	
	14	7	7	7	6	1	-	-	7	5	
Total	Area	7,592ha	6,609ha	6,492ha	6,262ha	5,966ha	296ha	230ha	117ha	713ha	270ha
	# of areas	134	73	72	72	67	12	13	2	80	22
									⑩Completed area (= ④ + ⑨)		6,975ha
									⑪Progression rate (= ⑩ / ①×100)		91.9%

(Upper row: Area, Lower row: Number of areas)

Notes:

- "Area where values over standard level were detected" is based on the results of detailed investigation until fiscal year 2014.
- When added up the columns vertically, the sum does not match the "Total"column because of multiple contaminations.
- When added up the rows horizontally, the sum of the regions is not consistent with the value in "Total" since there are some areas where designation is partially canceled, or projects for countermeasures are partially completed .
- "Area where plans for countermeasures have been already completed" among "Area where plans for countermeasures have been formulated" refers to the area where state-subsidized surface work has been completed as well as the areas that have been changed their purposes of use.
- "Area completed a project by the sole prefecture" includes the area that no longer contamination is detected as the area has been changed its use in purposes.

Source: 'Enforcement status of the Soil Contamination Countermeasures Act for farmland in FY 2014,' Environment Management Bureau, MOE, the Government of Japan

5.34 Designated-contamination areas and areas with projects for countermeasures completed in each year

(Unit: ha)

	①Above the detection standard value	②Designated area	③Formulation of plans for countermeasures	④Completion of projects for countermeasures		⑤Area which requires future countermeasures
	Cumulative area	Cumulative	Cumulative	Current FY	Cumulative	Current FY
FY 1970						
1971		112				
1972		400	164	70	70	
1973		1,140	357	30	100	
1974		2,579	502	30	130	
1975	6,100	3,398	713	40	170	5,930
1976	6,200	4,110	887	460	630	5,570
1977	6,390	4,336	1,650	10	640	5,750
1978	6,440	4,459	1,896	340	980	5,460
1979	6,510	4,577	2,334	370	1,350	5,160
1980	6,530	4,674	2,836	250	1,600	4,930
1981	6,610	4,891	3,015	270	1,870	4,740
1982	6,700	5,390	3,233	250	2,120	4,580
1983	6,710	5,451	4,148	320	2,440	4,270
1984	6,910	5,616	4,197	250	2,690	4,220
1985	7,030	6,053	4,364	330	3,020	4,010
1986	7,030	6,053	4,660	280	3,300	3,730
1987	7,030	6,078	4,841	320	3,620	3,410
1988	7,050	6,122	4,865	340	3,960	3,090
1989	7,050	6,146	4,911	220	4,180	2,870
1990	7,050	6,146	4,938	180	4,360	2,690
1991	7,050	6,146	6,021	120	4,480	2,570
1992	7,140	6,214	6,021	120	4,600	2,540
1993	7,140	6,255	6,105	120	4,720	2,420
1994	7,140	6,258	6,170	200	4,920	2,220
1995	7,140	6,258	6,170	240	5,160	1,980
1996	7,140	6,262	6,173	140	5,300	1,840
1997	7,140	6,265	6,176	110	5,410	1,730
1998	7,152	6,266	6,178	160	5,570	1,582
1999	7,156	6,266	6,181	61	5,631	1,525
2000	7,166	6,266	6,181	187	5,818	1,348
2001	7,217	6,275	6,181	54	5,872	1,345
2002	7,224	6,275	6,181	182	6,054	1,170
2003	7,228	6,276	6,190	254	6,308	920
2004	7,327	6,376	6,236	49	6,357	970
2005	7,327	6,376	6,236	41	6,398	929
2006	7,483	6,577	6,306	162	6,560	923
2007	7,487	6,577	6,306	20	6,580	907
2008	7,487	6,577	6,492	20	6,600	887
2009	7,487	6,577	6,492	104	6,704	783
2010	7,575	6,577	6,492	23	6,727	848
2011	7,575	6,577	6,492	57	6,784	791
2012	7,592	6,577	6,492	119	6,903	689
2013	7,592	6,577	6,492	40	6,943	649
2014	7,592	6,609	6,492	32	6,975	617

Notes:

- "③Formulation of plans for countermeasures" column is tabulated by the year when Minister of Environment approved the plans.
- "④Completion of projects for countermeasures" includes the area where countermeasures only by prefectures have been completed. Also, partially completed areas are not included in fiscal year 1977.
- Figures of "④Completion of projects for countermeasures" and "⑤Area which requires future countermeasures" from FY2012 to FY2013 were updated.

Source: 'Enforcement status of the Soil Contamination Countermeasures Act for farmland in FY 2014,' Environment Management Bureau, MOE, the Government of Japan

5.35 Use of ground water in Japan

(Unit : Ten thousand m³ / year)

		Total amount of water used	Surface water and the like	Ground water	Dependency on ground water (%)	Source
FY 1972	For industrial use	127.7	82.0	45.7	36	1972 Statistical Charts on Industry
	For city water	116.3	90.0	26.3	23	FY 1972 Statistics on water supply
	For agriculture	528	495.3	32.7	6.2	Refer to the Notes at the bottom.
1978	For industrial use	116.9	77.7	39.2	34	1977 Statistical Charts on Industry
	For city water	132.9	105.0	27.9	21	FY 1977 Statistics on water supply
	For agriculture	570	532.5	37.5	6.6	Refer to the Notes at the bottom.
1983	For industrial use	105.4	72.6	32.9	31	1982 Statistical Charts on Industry
	For city water	140.6	110.4	30.2	21	FY 1982 Statistics on water supply
	For agriculture	580	542.5	37.5	6.5	Refer to the Notes at the bottom.
1987	For industrial use	103.3	72.5	30.8	30	1987 Statistical Charts on Industry
	For city water	152.2	118.0	34.2	22	FY 1987 Statistics on water supply
	For agriculture	585	546.2	38.8	7	1990 Water supply in Japan
1993	For industrial use	107.0	76.5	30.5	29	1992 Statistical Charts on Industry
	For city water	167.4	131.0	36.4	22	FY 1992 Statistics on water supply
	For agriculture	586	547.2	38.8	7	1994 Water supply in Japan
1998	For industrial use	101.0	73.3	27.8	27	1997 Statistical Charts on Industry
	For city water	169.3	132.6	36.7	22	FY 1997 Statistics on water supply
	For agriculture	589.7	550.9	38.8	7	1999 Water supply in Japan
2003	For industrial use	92.4	68.4	24.0	26	2002 Statistical Charts on Industry
	For city water	165.0	130.4	34.6	21	FY 2002 Statistics on water supply
	For agriculture	568.0	535.0	33.0	6	2004 Water supply in Japan
2008	For industrial use	90.1	67.7	22.4	25	2007 Statistical Charts on Industry
	For city water	161.7	129.1	32.6	20	FY 2007 Conditions of the source of water supply
	For agriculture	547.0	514.0	33.0	6	2009 Water supply in Japan
2009	For industrial use	87.5	66.2	21.3	24	2008 Statistical Charts on Industry
	For city water	159.1	127.3	31.8	20	FY 2008 Conditions of the source of water supply
	For agriculture	546.0	513.0	33.0	6	2010 Water supply in Japan
2010	For industrial use	82.4	62.7	19.7	24	2009 Statistical Charts on Industry
	For city water	158.2	127.0	31.2	20	FY 2009 Conditions of the source of water supply
	For agriculture	546.0	517.3	28.7	5	2011 Water supply in Japan
2011	For industrial use	83.5	63.5	20.0	24	2010 Statistical Charts on Industry
	For city water	158.4	127.0	31.4	20	FY 2010 Conditions of the source of water supply
	For agriculture	544.0	515.3	28.7	5	2012 Water supply in Japan
2012	For industrial use (2011)	79.5	60.3	19.2	24	2011 Statistical Charts on Industry
	For city water (FY 2011)	157.3	126.5	30.8	20	FY 2011 Conditions of the source of water supply
	For agriculture (2008)	546.0	517.3	28.7	5	2013 Water supply in Japan
2013	For industrial use (2012)	81.0	61.4	19.6	24	2012 Statistical Charts on Industry
	For city water (FY 2012)	155.9	125.4	30.5	20	FY 2012 Conditions of the source of water supply
	For agriculture (2008)	546.0	517.3	28.7	5	2014 Water supply in Japan
2014	For industrial use (2013)	79.4	60.3	19.0	24.0	2013 Statistical Charts on Industry
	For city water (FY 2013)	155.4	125.2	30.2	19.5	FY 2012 Conditions of the source of water supply
	For agriculture (2008)	546.0	517.3	28.7	5.3	2014 Water supply in Japan

Note:

- Data for industrial use is calculated from by "Statistical chart on industry", Ministry of Economy, Trade and Industry, based on 300 operating days.
Total quantity of water for industrial use refers to freshwater abstraction except recycled water, and ground water refers to water from wells (water taken from shallow wells, deep wells and spring water.)
- Data for water and sewerage service prior to FY 2003 was tabulated (water supply and wholesale supply were combined) based on the quantity of water abstraction from "Statistics on water supply survey" provided from Ministry of Health, Labor and Welfare .
Ground water refers to water from wells (both shallow wells and deep wells.)

Source: Total quantity of water for agriculture and the quantity of ground water for agriculture for FY 1972 were provided by Ministry of Agriculture, Forestry and Fisheries.
Data of total quantity of water for agriculture in 1978 is an estimated data for water demand in 1983.
Figure of ground water for agricultural use is from "Survey on use of underground water for agricultural use" (actual FY1979) , Ministry of Agriculture, Forestry, and Fisheries.
Data of total quantity of water for agriculture in 1983 is an estimated data for water demand in 1980.

5.36 Changes in nationwide ground subsidence

	Area subsided at 2 cm or more per year		Area subsided at 4 cm or more per year	
	Number of areas	Square kilometers (km ²)	Number of areas	Square kilometers (km ²)
FY 1978	28	1,946	13	404
1979	25	624	9	176
1980	23	467	8	100
1981	25	689	8	60
1982	22	616	8	45
1983	22	594	6	45
1984	31	814	12	161
1985	19	499	7	40
1986	18	396	6	7
1987	12	500	7	22
1988	17	617	5	63
1989	16	285	4	7
1990	18	360	5	14
1991	17	467	4	6
1992	19	525	6	25
1993	11	276	1	0
1994	21	902	6	113
1995	14	21	2	0
1996	13	258	4	22
1997	9	244	-	-
1998	9	250	-	-
1999	9	6	-	-
2000	7	6	-	-
2001	9	28	-	-
2002	8	461	-	-
2003	6	3	1	0
2004	9	176	2	0
2005	7	4	-	-
2006	5	17	1	1
2007	9	72	-	-
2008	3	1	2	0
2009	6	24	1	0
2010	6	6	-	-
2011	14	5,920	11	4,061
2012	7	2	-	-
2013	4	1	-	-
2014	2	2	-	-

Note:

- Area is not measured for all areas subject to.
- "-" shows that there is no relevant data.
- "0" indicates to the case that the value is less than 0.5km².
- Area expressed in terms of Km² is rounded off at the first digit.
- The data in FY 2011 includes ground subsidence cases that are considered to be affected by Great East Japan Earthquake.

Source: "Nationwide ground subsidence in FY 2014," Environment Management Bureau, MOE, the Government of Japan