# 神奈川県平塚市における地下水モニタリング(平成30年冬季~秋季) の結果について

## 1. 地下水モニタリングの概要

神奈川県平塚市においては、平成 16 年にA事案区域である旧相模海軍工廠化学実験部跡地 近傍の井戸水から有機ヒ素化合物が検出されたことを受け、要調査地域を設定し、地下水の飲 用自粛を呼びかけるとともに、当該地域において、有機ヒ素化合物が検出された井戸を中心と して、地下水モニタリングを実施している。

同地域における要調査地域の範囲については、平成 23 年度に見直しを実施しており、平成 24 年度以降、現在の要調査地域内及びその外縁部周辺の計 19 箇所で地下水モニタリングを実施している。



図1 平塚地区における要調査地域範囲及び外縁部周辺位置関係

## 2. 要調査地域における地下水の流れ及び地下水モニタリング結果について

平成 16 年以降、要調査地域における地下水の流動方向に大きな変化はなく、地下水は西北西から東南東に向かって流れている。また、有機ヒ素化合物の検出された井戸の分布範囲は、A事案区域内から東方向に広がる範囲(A事案区域内及びその周辺)とA事案区域外の北部地域から東南東方向に広がる範囲(A事案区域外の北部地域周辺)の二つに広がっている(図 1 参照)。

平成30年冬季~秋季は、A事案区域内及びその周辺で4箇所、A事案区域外の北部地域周辺で6箇所、要調査地域南東側で1箇所、要調査地域外縁部周辺で8箇所のモニタリング井戸(合計19箇所)において地下水モニタリングを実施した。その結果、有機ヒ素化合物のうち、DPAA(ジフェニルアルシン酸)は1箇所の井戸で、PAA(フェニルアルソン酸)及びPMAA(フェニルメチルアルシン酸)は8箇所の井戸で検出されているが、いずれも有機ヒ素化合物としては0.001~0.05mg-As/Lと低濃度であり、濃度上昇は認められない。なお、要調査地域外縁部周辺では有機ヒ素化合物は検出されていない。

### (1) 地下水の流れ

平成 30 年冬季~秋季の地下水位標高は、要調査地域の北西部では約 5.2~5.5m、東部では 約 2.1~2.4mであった。地表面から地下水面までの深さは、A事案区域内及びA事案区域外の 北部地域のいずれも、概ね 2.8~6.3m程度であった。地下水位は降雨による変動はあるものの、変動幅は小さく、高水位時期と低水位時期との水位差は概ね 1m程度である。

(図2-1、図2-2、図2-3、図2-4参照)

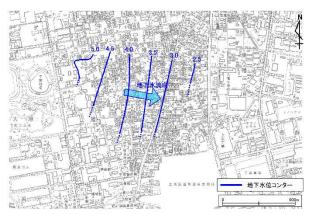


図2-1 地下水の流れと地下水位等高線 冬季:平成30年2月測定 (地下水位等高線の単位:標高m)

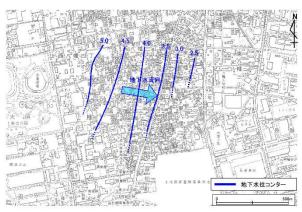


図2-2 地下水の流れと地下水位等高線 春季:平成30年5月測定 (地下水位等高線の単位:標高m)

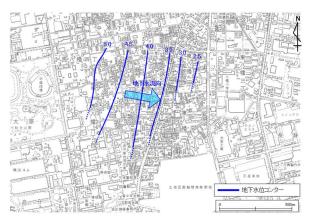


図2-3 地下水の流れと地下水位等高線 夏季:平成30年8月測定 (地下水位等高線の単位:標高m)

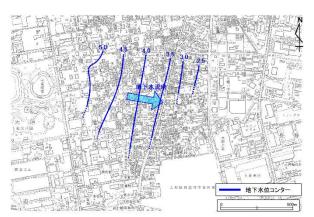


図2-4 地下水の流れと地下水位等高線 秋季:平成30年11月測定 (地下水位等高線の単位:標高m)

## (2) 有機ヒ素化合物の分析結果

## ア A事案区域内及びその周辺

本区域内で平成 16 年以降有機ヒ素化合物の濃度が 0.01mg-As/L を超えたモニタリング 井戸は 3 箇所あり、要調査地域を見直した平成 24 年春季以降の最大濃度は 0.029mg-As/L (平成 24 年冬季、春季) である。

平成 30 年、上記 3 箇所のうち冬季 2 箇所、春季 1 箇所、夏季 2 箇所、秋季 2 箇所で有機ヒ素化合物の濃度が 0.01mg-As/L を超過したが、その濃度は  $0.013\sim0.027$  mg-As/L の範囲であり、濃度推移はこれまでの調査結果とほぼ同様、横ばいの傾向にある。

本区域では、有機ヒ素化合物のうち PAA を主体とした汚染となっており、その推移は、 緩やかな低下傾向にある。

### イ A事案区域外の北部地域周辺

本区域内で平成 16 年以降有機ヒ素化合物の濃度が 0.01mg-As/L を超えたモニタリング 井戸は5箇所であり、要調査地域を見直した平成24年春季以降の最大濃度は0.143mg-As/L (平成26年春季) である。

平成 30 年、上記 5 箇所のうち冬季 3 箇所、春季 2 箇所、夏季 2 箇所、秋季 1 箇所で有機ヒ素化合物の濃度が 0.01mg-As/L を超過したが、その濃度は  $0.014\sim0.05$ mg-As/L の範囲である。

本区域では、有機ヒ素化合物のうち PMAA 及び PAA による汚染となっており、PAA が検出される井戸の分布域は PMAA に比べ狭く、地下水の流れの上流側に集中して存在している。また、地下水の流れの中流地域では、平成 18 年から PAA が検出されるようになり、緩やかな濃度上昇が見られたが、平成 26 年春季をピークに濃度低下し、現在は横ばい傾向にある。一方、PMAA については濃度に大きな変化はない。これらは今回も同様であり、全体としてみると、有機ヒ素化合物の濃度は、ほぼ横ばい傾向にある。

### ウ 要調査地域南東側

要調査地域南東側では、平成30年冬季~秋季のモニタリングにおいては、有機ヒ素化合物は検出されていない。

## 工 要調査地域外縁部周辺

要調査地域外縁部周辺では、平成30年冬季~秋季のモニタリングにおいては、有機ヒ素化合物は検出されていない。

#### A事案区域内及びその周辺

B-23

+₩ -L F	, н	16		H17			Н	18			Н	19			Н	20			Н	21			H	22			H	23			Н	24			H.	25	
採水日	5/31	10/15	1/26	4/28	7/11	1/26	5/26	8/30	11/22	2/27	5/24	8/27	11/27	2/28	5/27	8/29	11/27	2/25	5/28	8/25	11/25	2/27	5/28	8/25	11/26	2/17	5/27	8/29	11/24	2/24	5/28	8/24	11/30	2/28	6/6	9/13	11/29
DPA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	_	_	_
PAA	0.004	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	_		_
PMA	0.001	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	_	_	_

採水日		H:	26			H:	27			H	28			H:	29			H	30	
抹小口	2/17	6/12	8/28	12/3	2/19	5/27	8/25	11/27	2/23	5/30	8/30	11/30	2/21	5/30	8/29	11/29	2/28	5/31	8/28	11/26
DPAA	N.D.	N.D.	N.D.	N.D.	ı	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PAA	N.D.	N.D.	N.D.	N.D.	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PMAA	N.D.	N.D.	N.D.	N.D.	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

注)モニタリング井戸所在地の地権者が不在であったことから、平成25年春季~秋季の採水は未実施。

B-11

+177 -1		H16		H17			Н	18			Н	19			Н	20			H	21			H:	22			H	23			H:	24			H	25	
採水	5/3	1 10/12	1/27	4/28	7/11	1/26	5/26	8/30	11/22	2/27	5/24	8/27	11/27	2/29	5/27	8/29	11/27	2/25	5/28	8/25	11/25	2/27	5/28	8/25	11/26	2/17	5/27	8/29	11/24	2/24	5/28	8/24	11/30	2/28	6/6	9/13	11/29
DPA	A 0.024	4 0.005	N.D.	0.036	0.026	N.D.	0.003	0.001	N.D.	N.D.	0.001	0.001	N.D.	N.D.	N.D.	0.005	N.D.	0.001	N.D.																		
PA	A 0.189	0.155	0.116	0.128	0.159	0.034	0.091	0.074	0.057	0.060	0.071	0.071	0.055	0.047	0.065	0.048	0.034	0.032	0.027	0.032	0.024	0.020	0.021	0.022	0.014	0.012	0.016	0.011	0.013	0.011	0.017	0.008	0.005	0.004	0.004	0.004	0.002
PM/	A 0.006	0.005	N.D.	0.004	0.005	0.001	0.003	0.003	0.003	0.003	0.003	0.004	0.003	0.002	0.003	0.002	0.002	0.002	N.D.	0.001	0.001	0.001	0.002	0.001	0.001	N.D.	0.001	0.001	N.D.	0.001	0.001	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

採水日		Н	26			H	27			H:	28			Н	29			Н	30	
抹小口	2/17	6/12	8/28	12/3	2/19	5/27	8/25	11/27	2/23	5/30	8/30	11/30	2/21	5/30	8/29	11/29	2/28	5/31	8/28	11/26
DPAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	-	N.D.								
PAA	0.003	0.012	800.0	N.D.	N.D.	N.D.	N.D.	0.002	0.003	0.002	ı	0.004	0.004	0.011	0.013	0.011	800.0	0.007	0.004	0.004
PMAA	N.D.	0.001	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	-	N.D.	N.D.	0.001	0.001	N.D.	N.D.	N.D.	N.D.	N.D.

B-18

+₩ -L -	k FI H16 H17						Н	18			Н	19			Н	20			Н	21			H	22			H	23			Н	24			H	25	
休小口	5/31	10/15	1/27	4/28	7/11	1/26	5/26	8/30	11/22	2/27	5/24	8/27	11/27	2/29	5/27	8/29	11/27	2/25	5/28	8/25	11/25	2/27	5/28	8/25	11/26	2/17	5/27	8/29	11/24	2/24	5/28	8/24	11/30	2/28	6/6	9/13	11/29
DPAA	N.D.	0.001	N.D.	0.002	0.003	0.002	0.003	0.002	0.001	N.D.	0.001	0.002	N.D.	0.001	0.001	N.D.	N.D.	N.D.	N.D.	0.001	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.001	0.001	N.D.								
PAA	0.068	0.068	0.057	0.073	0.052	0.060	0.039	0.029	0.035	0.040	0.040	0.037	0.034	0.035	0.032	0.034	0.021	0.025	0.013	0.019	0.021	0.025	0.025	0.022	0.015	0.030	0.026	0.016	0.020	0.027	0.026	0.018	0.017	0.018	0.016	0.014	0.010
PMAA	0.005	0.003	N.D.	0.003	0.006	0.002	0.002	0.003	0.002	0.002	0.003	0.003	0.002	0.002	0.003	0.002	0.002	0.002	N.D.	0.001	0.001	0.002	0.003	0.002	0.002	0.001	0.003	0.003	0.002	0.002	0.003	0.004	N.D.	0.001	N.D.	N.D.	N.D.

ちゃっ		Н	26			H	27			Н	28			Н	29			Н	30	
採水日	2/17	6/12	8/28	12/3	2/19	5/27	8/25	11/27	2/23	5/30	8/30	11/30	2/21	5/30	8/29	11/29	2/28	5/31	8/28	11/26
DPAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PAA	N.D.	0.012	0.014	0.002	N.D.	0.003	0.003	0.003	0.004	0.003	0.001	0.001	0.013	0.024	0.018	0.020	0.018	0.011	0.012	0.018
PMAA	N.D.	0.003	0.002	N.D.	N.D.	N.D.	N.D.	N.D.	0.001	N.D.	N.D.	N.D.	0.003	0.003	0.003	0.002	0.003	0.002	0.002	0.003

F-/

セットロ	Н	16		H17			Н	18			H	19			H:	20			H	21			H:	22			H:	23			H:	24			H:	25	
沐小口					11/11	1/26	5/26	8/30	11/22	2/27	5/28	8/28	11/28	2/29	5/27	8/29	11/28	2/25	5/28	8/25	11/25	3/1	5/27	8/25	11/26	2/17	5/27	8/29	11/24	2/24	5/28	8/24	11/30	2/28	6/6	9/13	11/29
DPAA	_	_	_	_	N.D.	N.D.	N.D.	0.001	0.001	N.D.	N.D.	0.027	N.D.																								
PAA	_	_	_	_	0.062	0.069	0.023	0.027	0.028	0.033	0.023	0.027	0.026	0.015	0.019	0.025	0.016	0.019	0.010	0.010	0.023	0.012	0.012	0.008	0.015	0.022	0.019	0.021	0.023	0.018	0.013	0.017	0.020	0.017	0.007	0.014	0.013
PMAA	_	_	_	_	N.D.	N.D.	0.002	0.003	0.002	0.003	0.004	0.004	0.003	0.002	0.002	0.003	0.002	0.002	0.001	0.001	0.001	0.001	0.002	0.001	0.002	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.002	N.D.	0.002	N.D.

+425 ~1	<b>ν</b> Π		H:	26			H:	27			H:	28			H	29			Н	30	
採力		2/17	6/12	8/28	12/3	2/19	5/27	8/25	11/27	2/23	5/30	8/30	11/30	2/21	5/30	8/29	11/29	2/28	5/31	8/28	11/26
DP	AA	N.D.	0.003	N.D.	N.D.	N.D.	0.001	N.D.													
P/	۸A	0.013	0.007	0.016	0.008	0.007	0.004	0.010	0.012	0.009	0.005	0.010	0.014	0.014	0.013	0.017	0.018	0.015	0.006	0.016	0.025
PM	AA	0.001	0.001	0.002	N.D.	N.D.	N.D.	0.002	0.001	0.001	N.D.	0.001	0.001	0.002	0.002	0.002	0.002	0.001	N.D.	0.002	0.002

#### A事案区域外の北部地域周辺(1)

#### B-14

0 1	7																																				
+₩ -L	_ +	116		H17			Н	118			Н	19			Н	20			H	21			H:	22			H	23			H	24			H2	25	
採水	5/31	10/12	1/27	4/28	7/11	1/26	5/26	8/30	11/22	2/27	5/28	8/27	11/27	2/29	5/27	8/29	11/27	2/25	5/28	8/25	11/25	2/27	5/28	8/25	11/26	2/17	5/27	8/29	11/24	2/24	5/28	8/24	11/30	2/28	6/6	9/13	11/29
DPA	A N.D.	0.001	0.002	0.002	0.002	0.001	N.D.	0.001	0.002	0.002	0.002	0.002	0.001	N.D.																							
PA	N.D.	N.D.	N.D.	N.D.	N.D.	0.002	0.003	0.004	0.004	0.006	0.013	0.016	0.012	0.020	0.025	0.020	0.018	0.023	0.026	0.025	0.027	0.021	0.024	0.039	0.046	0.042	0.058	0.047	0.052	0.061	0.079	0.061	0.060	0.023	0.081	0.084	0.032
PMA	A 0.063	0.051	0.016	0.036	0.038	0.044	0.050	0.053	0.045	0.055	0.050	0.049	0.043	0.043	0.033	0.034	0.026	0.031	0.023	0.019	0.015	0.012	0.019	0.028	0.039	0.029	0.032	0.027	0.029	0.031	0.031	0.025	0.025	0.012	0.028	0.033	0.014

採水日		H	26			H	27			H:	28			H.	29			Н	30	
休小口	2/17	6/12	8/28	12/3	2/19	5/27	8/25	11/27	2/23	5/30	8/30	11/30	2/21	5/30	8/29	11/29	2/28	5/31	8/28	11/26
DPAA	N.D.																			
PAA	0.055	0.110	0.092	0.045	0.022	0.018	0.024	0.026	0.029	0.031	0.036	0.028	0.023	0.037	0.049	0.030	0.028	0.022	0.023	0.024
PMAA	0.021	0.033	0.018	0.011	0.017	0.026	0.019	0.017	0.020	0.021	0.024	0.020	0.024	0.036	0.029	0.019	0.022	0.019	0.019	0.021

#### D-13

ちゃっ	Н	16		H17			Н	18			Н	19			Н	20			H.	21			H:	22			Hź	23			H:	24			H:	25	
採水日		8/18	1/27	4/28	7/11	1/26	5/26	8/30	11/22	2/27	5/24	8/27	11/27	2/29	5/27	8/29	11/27	2/25	5/28	8/25	11/25	2/27	5/28	8/25	11/26	2/17	5/27	8/29	11/24	2/24	5/28	8/24	11/30	2/28	6/6	9/13	11/29
DPAA	_	N.D.	0.001	N.D.	N.D.	0.005	N.D.	N.D.	N.D.	N.D.	N.D.	0.002	0.006	0.005	0.003	0.002	N.D.																				
PAA	_	N.D.	0.001	N.D.	0.001	0.001	0.001	N.D.	N.D.	N.D.	N.D.																										
PMAA	_	0.067	0.023	0.009	0.005	N.D.	0.002	0.004	0.004	0.004	0.004	800.0	0.006	0.008	0.014	0.029	0.048	0.055	0.056	0.049	0.042	0.027	0.067	0.069	0.027	0.053	0.071	0.064	0.033	0.047	0.073	0.067	0.036	0.032	0.063	0.034	0.005

採水日		Н	26			H:	27			H:	28			Н	29			Н	30	
抹小口	2/17	6/12	8/28	12/3	2/19	5/27	8/25	11/27	2/23	5/30	8/30	11/30	2/21	5/30	8/29	11/29	2/28	5/31	8/28	11/26
DPAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.											
PAA	N.D.	0.001	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.									
PMAA	0.009	0.060	0.045	0.024	0.019	0.051	0.034	0.012	0.012	0.011	0.002	0.004	N.D.	0.036	0.022	0.002	0.005	0.024	0.019	N.D.

#### D-8

+₩ -L -	Н	16		H17			Н	18			Н	19			Н	20			Н	21			H	22			H	23			H	24			H:	125	
休小口		8/18	1/26	4/28	7/11	1/26	5/26	8/30	11/22	2/27	5/24	8/27	11/27	2/29	5/27	8/29	11/27	2/25	5/28	8/25	11/25	2/27	5/28	8/25	11/26	2/17	5/27	8/29	11/24	2/24	5/28	8/24	11/30	2/28	6/6	9/13	11/29
DPAA	_	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PAA		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PMAA	_	0.001	N.D.	N.D.	N.D.	N.D.	N.D.	0.001	N.D.	N.D.	0.001	0.001	0.001	0.002	0.002	0.001	N.D.	0.001	0.001	0.001	N.D.	N.D.	N.D.	N.D.	N.D.												

採水日		H:	26	
抹小口	2/17	6/12	8/28	12/3
DPAA	N.D.	N.D.	ı	_
PAA	N.D.	N.D.	_	_
PMAA	N.D.	N.D.		_

#### H-0250

₩	H1	16		H17			Н	18			Н	19			H.	20			H.	21			H:	22			H:	23			H.	24			H/	25	
抹小口																																					
DPAA	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	
PAA	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
PMAA	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_		_	_	_	_	_	_	_	_	_

採水日		H:	26			H	27			H	28			H:	29			Н	30	
抹小口				12/3	2/19	5/27	8/25	11/27	2/23	5/30	8/30	11/30	2/21	5/30	8/29	11/29	2/28	5/31	8/28	11/26
DPAA		_	_	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PAA	_	_	_	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PMAA	_	_	_	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

注)モニタリング井戸D-8は平成26年夏季に廃止されたことから、平成26年秋季より、H-0250に替えて調査を実施。

### A事案区域外の北部地域周辺(2)

HC-0020

+107 -10 F	, +	116		H17			Н	l18			Н	19			Н	20			Н	21			H	22			H	23			H	24			H	25	
採水	4/5	10/12	1/26	4/28	7/11	1/26	5/26	8/30	11/22	2/27	5/24	8/27	11/27	2/29	5/27	8/26	11/27	2/25	5/28	8/25	11/25	3/1	5/28	8/25	11/26	2/17	5/27	8/29	11/24	2/24	5/28	8/24	11/30	2/28	6/6	9/13	11/29
DPA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.														
PAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.001	N.D.	0.001	N.D.	N.D.	0.002	0.001	0.002	0.001	0.002	0.002	0.001	0.001	0.001														
PMA	0.026	0.049	0.053	0.049	0.038	0.025	0.020	0.021	0.014	0.014	0.017	0.015	0.015	0.014	0.012	0.01	0.012	0.011	0.009	0.009	0.008	0.008	0.012	0.018	0.016	0.010	0.010	0.015	0.023	0.013	0.025	0.020	0.026	0.026	0.014	0.016	0.008

採水日		H	26			H	27			H	28			Н	29			H	30	
休小口	2/17	6/12	8/28	12/3	2/19	5/27	8/25	11/27	2/23	5/30	8/30	11/30	2/21	5/30	8/29	11/29	2/28	5/31	8/28	11/26
DPAA	N.D.																			
PAA	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	N.D.	0.001	0.001	N.D.	N.D.	N.D.	N.D.	N.D.
PMAA	0.017	0.027	0.019	0.014	0.022	0.021	0.023	0.023	0.018	0.010	0.007	800.0	0.010	0.020	0.017	0.011	0.014	0.004	0.004	0.005

E-5

ちゃっ	H1	16		H17			Н	18			Н	19			H	20			Н	21			H:	22			H:	23			Н	24			H	25	
抹小口				1/27	7/11	1/26	5/26	8/30	11/22	2/27	5/24	8/27	11/27	2/29	5/27	8/29	11/27	2/25	5/28	8/25	11/25	2/27	5/28	8/25	11/26	2/17	5/27	8/29	11/24	2/24	5/28	8/24	11/30	2/28	6/6	9/13	11/29
DPAA	_	_	ı	N.D.																																	
PAA	_	_	-	N.D.																																	
PMAA	_	_	ı	0.007	0.003	0.004	0.010	0.011	0.008	0.008	0.009	0.014	0.013	0.013	0.020	0.020	0.016	0.015	0.009	0.015	0.014	0.012	0.014	0.021	0.025	0.013	0.010	0.012	0.012	0.008	0.008	0.008	0.008	0.008	0.009	0.009	0.009

採水日		Н	26			H	27			H:	28			Н	29			Н	30	
抹小口	2/17	6/12	8/28	12/3	2/19	5/27	8/25	11/27	2/23	5/30	8/30	11/30	2/21	5/30	8/29	11/29	2/28	5/31	8/28	11/26
DPAA	N.D.	_																		
PAA	N.D.	0.001	N.D.	N.D.	0.001	0.001	0.002	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.001	N.D.	N.D.	N.D.	N.D.	N.D.	_
PMAA	0.007	0.012	0.010	0.010	0.008	0.006	0.006	0.002	0.003	0.002	0.001	0.001	0.002	0.007	0.003	0.002	0.001	0.001	0.002	_

G-3

ちゃっ	H1	16		H17			Н	18			Н	19			Н	20			H.	21			H	22			H	23			Н	24			H	25	
休小口						1/26	5/26	8/30	11/22	2/27	5/24	8/28	11/27	2/29	5/27	8/29	11/27	2/25	5/28	8/25	11/25	3/1	5/28	8/26	11/26	2/17	5/27	8/29	11/24	2/24	5/28	8/24	11/30	2/28	6/6	9/13	11/29
DPAA	_	_	_	_	_	0.004	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.005	0.001	0.002	0.004	0.002	N.D.	0.002	0.001	0.002	N.D.	0.003	0.002	0.002	0.002	N.D.	N.D.	0.006								
PAA	_	_		_	_	0.024	0.007	0.004	0.004	0.005	0.015	0.019	0.019	0.012	0.022	0.057	0.009	0.003	0.022	0.015	0.007	0.006	0.008	0.002	0.005	0.002	0.021	0.060	0.036	0.002	0.036	0.011	0.059	0.023	0.010	0.005	0.005
PMAA	_	_	1	_	ı	N.D.	0.026	0.002	0.005	0.009	0.041	0.062	0.006	0.029	0.011	0.110	0.010	0.002	0.065	0.019	0.006	0.002	0.024	0.009	0.004	0.003	0.016	0.064	0.012	0.003	0.068	0.029	0.025	0.022	0.036	0.024	0.003

採水日		H:	26			H	27			H:	28			H.	29			Н	30	
抹小口	2/17	6/12	8/28	12/3	2/19	5/27	8/25	11/27	2/23	5/30	8/30	11/30	2/21	5/30	8/29	11/29	2/28	5/31	8/28	11/26
DPAA	0.002	0.001	0.003	0.002	0.002	0.002	N.D.	0.002	0.002	N.D.	N.D.	N.D.	N.D.	0.002	0.002	0.002	0.002	N.D.	N.D.	N.D.
PAA	0.003	0.010	0.014	0.034	0.024	0.018	0.038	0.024	0.028	0.002	0.006	0.006	0.001	0.019	0.030	0.049	0.008	0.006	0.007	0.002
PMAA	0.005	0.021	0.035	0.025	0.035	0.029	0.062	0.009	0.025	N.D.	0.007	0.007	0.005	0.037	0.032	0.075	0.004	0.004	0.003	N.D.

#### 要調査地域南東側

J35

+100 -10 1	,	H	22			Н	23			Н	24			Н	25			H	26			Н	27			H	28			H	29			H.	30	
採水日	2/26	5/28	8/26	11/26	2/17	5/27	8/30	11/25	2/24	5/28	8/24	11/30	2/28	6/6	9/11	11/29	2/17	6/12	8/27	12/3	2/19	5/27	8/25	11/27	2/23	5/30	8/30	11/30	2/21	5/30	8/29	11/29	2/28	5/31	8/28	11/26
DPAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PMAA	0.001	0.001	N.D.	N.D.	N.D.	0.001	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

#### 要調査地域外縁部周辺(1)

M1

+100 aV II		H	22			H	23			H:	24	
採水日	2/27	5/29	8/25	11/26	2/17	5/27	8/29	11/24	2/24	5/28	8/24	11/30
DPAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	_
PAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	_
PMAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	_

М3

14.21		H	22			H.	23			H:	24			Н	25			Н	26			Н	27			Н	28			Н	29			H:	30	
抹小口													2/28	6/6	9/13	11/29	2/17	6/12	8/28	12/3	2/19	5/27	8/25	11/27	2/23	5/30	8/30	11/30	2/21	5/30	8/29	11/29	2/28	5/31	8/28	11/26
DPAA	_		_	_		_	_	-	_	_	_	_	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PAA	_		1	1	1	-	_	1	_	_	_	_	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PMAA	_	_	_	_	_	_	_	_	_	_	_	_	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

注)モニタリング井戸M1は平成24年秋季に廃止されたことから、平成25年冬季より、M3に替えて調査を実施。

M10

10 V D		Н	22			Н	23			Н	24			Н	25			Н	26			Н	27			Н	28			Н	29			H	30	
採水口	2/27	5/28	8/25	11/26	2/17	5/27	8/29	11/24	2/24	5/28	8/24	11/30	2/28	6/6	9/13	11/29	2/17	6/12	8/28	12/3	2/19	5/27	8/25	11/27	2/23	5/30	8/30	11/30	2/21	5/30	8/29	11/29	2/28	5/31	8/28	11/26
DPAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.												
PAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.												
PMAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.												

M20

170 ab 17		Н	22			H.	23			H:	24			Н	25			Н	26			H:	27			H	28			Н	29			H	30	
採水日	2/27	5/28	8/25	11/26	2/17	5/27	8/29	11/24	2/24	5/28	8/24	11/30	2/28	6/6	9/13	11/29	2/17	6/12	8/28	12/3	2/19	5/27	8/25	11/27	2/23	5/30	8/30	11/30	2/21	5/30	8/29	11/29	2/28	5/31	8/28	11/26
DPAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.												
PAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.												
PMAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.												

M22

+101 × 11		H	22			Н	23			Н	24			H	25			Н	26			Н	27			Н	28			Н	29			H	30	
抹小口	2/27	5/28	8/25	11/26	2/17	5/27	8/29	11/24	2/24	5/28	8/24	11/30	2/28	6/6	9/13	11/29	2/17	6/12	8/28	12/3	2/19	5/27	8/25	11/27	2/23	5/30	8/30	11/30	2/21	5/30	8/29	11/29	2/28	5/31	8/28	11/26
DPAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.												
PAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.												
PMAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.												

### 要調査地域外縁部周辺(2)

SB225

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採	, L		H:	22			Н	123			Н	24			Н	25			Н	26			Н	127			Н	28			H:	29			H	30	
1本/	V [	2/24	5/28	8/25	11/26	2/17	5/27	8/29	11/24	2/24	5/28	8/24	11/30	2/28	6/6	9/13	11/29	2/17	6/12	8/28	12/3	2/19	5/27	8/25	11/27	2/23	5/30	8/30	11/30	2/21	5/30	8/29	11/29	2/28	5/31	8/28	11/26
DF	PAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.												
P	AA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.												
PΝ	IAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.												

F2																																				
+177 ml v F	1	H	22			H	23			Н	24			Н	25			H:	26			Н	27			H:	28			H:	29			H	30	
採水日	3/1	5/27	8/25	11/26	2/17	5/27	8/29	11/24	2/24	5/28	8/24	11/30	2/28	6/6	9/11	11/29	2/17	6/12	8/28	12/3	2/19	5/27	8/25	11/27	2/23	5/30	8/30	11/30	2/21	5/30	8/29	11/29	2/28	5/31	8/28	11/26
DPA	A N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.												
PAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PMA/	A N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.												

010-7																																				
+∞ -レ □		H2	22			H	23			Н	24			H.	25			Н	26			Н	27			H:	28			Н	29			H	30	
採水日	2/26	5/28	8/26	11/26	2/17	5/27	8/30	11/24	2/24	5/28	8/24	11/30	2/28	6/6	9/13	11/29	2/17	6/12	8/27	12/3	2/19	5/27	8/25	11/27	2/23	5/30	8/30	11/30	2/21	5/30	8/29	11/29	2/28	5/31	8/28	11/26
DPAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.												
PAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.												
PMAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.												

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+₩~L □		H	22			H.	23			Н	24			Н	25			H:	26			Н	27			Н	28			H:	29			H	30	
採水日	3/1	5/28	8/26	11/26	2/17	5/27	8/29	11/24	2/24	5/28	8/24	11/30	2/28	6/6	9/13	11/29	2/17	6/12	8/28	12/3	2/19	5/27	8/25	11/27	2/23	5/30	8/30	11/30	2/21	5/30	8/29	11/29	2/28	5/31	8/28	11/26
DPAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.												
PAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.												
PMAA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.												