

Annex F1

Surface Water Quality Monitoring Results

Table F1.1 Surface Water Quality Monitoring Results at DP3

Date	Time	Weather Condition	Water Appearance	Water Condition	Water Temperature (°C)	Dissolved Oxygen (DO) (mg/L)	pH	Suspended Solids (SS) (mg/L)	Remarks
3 Jan 2019	15:20	Cloudy		Unable to collect water sample due to insufficient flow					-
10 Jan 2019	15:15	Cloudy		Unable to collect water sample due to insufficient flow					-
17 Jan 2019	9:34	Sunny		Unable to collect water sample due to insufficient flow					-
24 Jan 2019	11:45	Sunny		Unable to collect water sample due to insufficient flow					-
31 Jan 2019	11:42	Sunny		Unable to collect water sample due to insufficient flow					-
8 Feb 2019	10:38	Sunny		Unable to collect water sample due to insufficient flow					-
13 Feb 2019	14:32	Sunny		Unable to collect water sample due to insufficient flow					-
20 Feb 2019	14:08	Sunny		Unable to collect water sample due to insufficient flow					-
27 Feb 2019	14:05	Sunny		Unable to collect water sample due to insufficient flow					-
8 Mar 2019	10:25	Fine	Yellow	Semi-clear	15.9	9.68	9.29	310	-
8 Mar 2019	10:41	Fine	Yellow	Semi-clear	15.8	9.70	9.42	308	DP3 (Duplicate)
8 Mar 2019	10:25	Fine	Yellow	Semi-clear	15.9	9.70	9.32	-	DP3 (Remeasurement)
8 Mar 2019	10:41	Fine	Yellow	Semi-clear	15.8	9.70	9.42	-	DP3 (Duplicate) (Remeasurement)
13 Mar 2019	14:30	Overcast	Light yellow	Semi-clear	19.4	8.44	8.41	6.5	-
13 Mar 2019	14:52	Overcast	Light yellow	Semi-clear	20.8	8.42	8.44	7.2	DP3 (Duplicate)
22 Mar 2019	14:20	Sunny		Unable to collect water sample due to insufficient flow					-
28 Mar 2019	14:00	Sunny		Unable to collect water sample due to insufficient flow					-
4 Apr 19	14:11	Sunny		Unable to collect water sample due to insufficient flow					-
10 Apr 19	14:02	Sunny		Unable to collect water sample due to insufficient flow					-
18 Apr 19	14:12	Sunny		Unable to collect water sample due to insufficient flow					-
24 Apr 19	14:29	Sunny		Unable to collect water sample due to insufficient flow					-
2 May 19	14:04	Cloudy		Unable to collect water sample due to insufficient flow					-
8 May 19	14:16	Rainy	Light yellow	Semi-clear	21.2	8.74	8.41	30.8	-
8 May 19	14:25	Rainy	Light yellow	Semi-clear	21.3	8.76	8.33	32.9	DP3 (Duplicate)
16 May 19	14:17	Sunny		Unable to collect water sample due to insufficient flow					-
23 May 19	14:39	Rainy	Brown	Turbid	24.3	8.59	9.96	858.0	-
23 May 19	14:39	Rainy	Brown	Turbid	24.3	8.54	9.98	-	DP3 (Remeasurement)
23 May 19	15:02	Rainy	Brown	Turbid	24.4	8.52	9.78	838.0	DP3 (Duplicate)
23 May 19	15:02	Rainy	Brown	Turbid	24.4	8.52	9.79	-	DP3 (Duplicate) (Remeasurement)
30 May 19	14:42	Overcast	Light yellow	Semi-clear	24.5	8.32	8.39	44.5	-
30 May 19	14:57	Overcast	Light yellow	Semi-clear	24.7	8.29	8.24	44.2	DP3 (Duplicate)
6 Jun 19	14:48	Sunny	Light yellow	Semi-clear	29.0	7.85	7.30	13.8	-
6 Jun 19	15:01	Sunny	Light yellow	Semi-clear	29.1	7.81	6.50	13.9	DP3 (Duplicate)
14 Jun 19	14:37	Sunny	Light yellow	Clear	29.6	7.38	8.22	6.7	-

Date	Time	Weather Condition	Water Appearance	Water Condition	Water Temperature (°C)	Dissolved Oxygen (DO) (mg/L)	pH	Suspended Solids (SS) (mg/L)	Remarks	
14 Jun 19	14:47	Sunny	Light yellow	Clear	30.1	6.79	8.29	7.4	DP3 (Duplicate)	
20 Jun 19	14:38	Sunny	Light yellow	Semi-clear	29.6	6.42	8.35	76.0	-	
20 Jun 19	14:47	Sunny	Light yellow	Semi-clear	29.8	6.81	8.38	74.1	DP3 (Duplicate)	
27 Jun 19	14:29	Sunny	Light yellow	Clear	29.5	6.96	8.00	8.9	-	
27 Jun 19	14:38	Sunny	Light yellow	Clear	29.6	6.89	8.00	8.7	DP3 (Duplicate)	
4 Jul 19	14:16	Sunny	Light green	Clear	28.9	7.31	8.17	17.2	-	
4 Jul 19	14:26	Sunny	Light green	Clear	29	7.34	8.19	16.8	DP3 (Duplicate)	
12 Jul 19	14:31	Sunny	Pale yellow	Turbid	29.9	6.91	8.48	74.2	-	
12 Jul 19	14:40	Sunny	Pale yellow	Turbid	29.9	6.81	8.52	71.4	DP3 (Duplicate)	
18 Jul 19	14:23	Sunny		Unable to collect water sample due to insufficient flow						-
Average						8.05	8.60	130.4	-	
Min						6.42	6.50	6.5	-	
Max						9.70	9.98	858.0	-	

Notes: Impact surface water quality monitoring at DP3 was suspended from the monitoring event on 25 July 2019 until the actual commencement of construction works affecting DP3 in 2021.

Table F1.2 Surface Water Quality Monitoring Results at DP4

Date	Time	Weather Condition	Water Appearance	Water Condition	Water Temperature (°C)	Dissolved Oxygen (DO) (mg/L)	pH	Suspended Solids (SS) (mg/L)	Remarks	
3 Jan 2019	15:26	Cloudy		Unable to collect water sample due to insufficient flow						-
10 Jan 2019	15:06	Cloudy		Unable to collect water sample due to insufficient flow						-
17 Jan 2019	9:32	Sunny		Unable to collect water sample due to insufficient flow						-
24 Jan 2019	11:32	Sunny		Unable to collect water sample due to insufficient flow						-
31 Jan 2019	9:55	Sunny		Unable to collect water sample due to insufficient flow						-
8 Feb 2019	10:30	Sunny		Unable to collect water sample due to insufficient flow						-
13 Feb 2019	14:35	Sunny		Unable to collect water sample due to insufficient flow						-
20 Feb 2019	14:15	Sunny		Unable to collect water sample due to insufficient flow						-
27 Feb 2019	14:12	Sunny		Unable to collect water sample due to insufficient flow						-
8 Mar 2019	11:00	Fine	Green	Semi-clear	16.1	9.83	8.88	22.9	-	
13 Mar 2019	15:20	Overcast		Unable to collect water sample due to insufficient flow						-
22 Mar 2019	14:24	Sunny		Unable to collect water sample due to insufficient flow						-
28 Mar 2019	14:05	Sunny		Unable to collect water sample due to insufficient flow						-

Date	Time	Weather Condition	Water Appearance	Water Condition	Water Temperature (°C)	Dissolved Oxygen (DO) (mg/L)	pH	Suspended Solids (SS) (mg/L)	Remarks
4 Apr 19	14:13	Sunny		Unable to collect water sample due to insufficient flow					-
10 Apr 19	14:05	Sunny		Unable to collect water sample due to insufficient flow					-
18 Apr 19	14:15	Sunny		Unable to collect water sample due to insufficient flow					-
24 Apr 19	14:33	Sunny		Unable to collect water sample due to insufficient flow					-
2 May 19	14:08	Cloudy		Unable to collect water sample due to insufficient flow					-
8 May 19	14:51	Rainy	Light yellow	Semi-clear	21.5	8.84	8.33	1.2	-
16 May 19	14:30	Sunny		Unable to collect water sample due to insufficient flow					-
23 May 19	15:55	Rainy	Yellow	Turbid	24.9	7.48	10.92	191.0	-
23 May 19	15:55	Rainy	Yellow	Turbid	24.9	7.42	10.80	-	DP4 (Future, temporary) (Remeasurement)
30 May 19	15:48	Overcast	Light yellow	Semi-clear	26.1	7.59	8.84	32.2	-
30 May 19	15:48	Overcast	Light yellow	Semi-clear	26.1	7.60	8.90	-	DP4 (Future, temporary) (Remeasurement)
6 Jun 19	15:39	Sunny	Light yellow	Turbid	33.0	5.19	6.90	125.0	-
6 Jun 19	15:39	Sunny	Light yellow	Turbid	33.1	5.12	6.90	-	DP4 (Future, temporary) (Remeasurement)
14 Jun 19	15:26	Sunny	Yellow	Turbid	31.7	6.02	8.38	62.2	-
20 Jun 19	15:15	Sunny	Light green	Semi-clear	32.0	6.71	9.37	19.6	-
20 Jun 19	15:15	Sunny	Light green	Semi-clear	32.0	6.70	9.37	-	DP4 (Future, temporary) (Remeasurement)
27 Jun 19	15:14	Sunny	Light green	Semi-clear	33.7	5.28	8.75	29.2	-
27 Jun 19	15:14	Sunny	Light green	Semi-clear	33.6	5.45	8.75	-	DP4 (Future, temporary) (Remeasurement)
4 Jul 19	15:09	Sunny	Yellow	Turbid	30.2	5.96	8.53	68.5	-
4 Jul 19	15:09	Sunny	Yellow	Turbid	30.1	5.81	8.56	-	DP4 (Future, temporary) (Remeasurement)
12 Jul 19	15:04	Sunny		Unable to collect water sample due to insufficient flow					-
18 Jul 19	15:04	Sunny	Pale yellow	Semi-clear	37	13.59	9.4	14.2	-
18 Jul 19	15:04	Sunny	Pale yellow	Semi-clear	37.1	13.5	9.41	-	DP4 (Future, temporary) (Remeasurement)
25 Jul 19	15:08	Sunny	Pale yellow	Semi-clear	34	9.58	9.11	21.8	-
25 Jul 19	15:08	Sunny	Pale yellow	Semi-clear	34.1	9.32	9.11	-	DP4 (Future, temporary) (Remeasurement)
1 Aug 19	14:16	Pouring		Monitoring was cancelled due to adverse weather.					-
8 Aug 19	14:58	Sunny		Unable to collect water sample due to insufficient flow					-
15 Aug 19	14:53	Sunny		Unable to collect water sample due to insufficient flow					-
22 Aug 19	14:54	Sunny	Light yellow	Semi-clear	34.2	10.05	8.91	31.2	-

Date	Time	Weather Condition	Water Appearance	Water Condition	Water Temperature (°C)	Dissolved Oxygen (DO) (mg/L)	pH	Suspended Solids (SS) (mg/L)	Remarks
22 Aug 19	14:54	Sunny	Light yellow	Semi-clear	34.2	9.58	8.91	-	DP4 (Future, temporary) (Remeasurement)
29 Aug 19	NA	Pouring			Monitoring was cancelled due to adverse weather.				-
5 Sep 19	14:50	Cloudy	Light yellow	Semi-clear	29.8	6.79	8.49	67.8	-
5 Sep 19	14:50	Cloudy	Light yellow	Semi-clear	29.9	6.70	8.51	-	DP4 (Future, temporary) (Remeasurement)
5 Sep 19	15:00	Cloudy	Light yellow	Semi-clear	29.8	8.12	8.49	66.1	DP4 (Future, temporary) (Duplicate)
5 Sep 19	15:00	Cloudy	Light yellow	Semi-clear	29.8	6.92	8.52	-	DP4 (Future, temporary) (Duplicate) (Remeasurement)
12 Sep 19	14:59	Sunny	Light yellow	Semi-clear	34.0	10.73	8.82	9.9	-
12 Sep 19	14:59	Sunny	Light yellow	Semi-clear	34.2	11.29	8.87	-	DP4 (Future, temporary) (Remeasurement)
19 Sep 19	14:44	Sunny			Unable to collect water sample due to insufficient flow				-
26 Sep 19	14:48	Sunny	Light yellow	Semi-clear	29.2	9.28	8.38	7.3	-
26 Sep 19	14:50	Sunny	Light yellow	Semi-clear	28.3	9.15	8.37	5.3	DP4 (Future, temporary) (Duplicate)
3 Oct 19	14:31	Sunny	Light yellow	Clear	29.7	8.12	7.92	6.2	-
3 Oct 19	14:40	Sunny	Light yellow	Clear	29.9	7.94	7.79	7.1	DP4 (Future, temporary) (Duplicate)
9 Oct 19	14:54	Sunny	Colourless	Clear	29.5	6.99	7.68	9.5	-
17 Oct 19	14:48	Sunny	Colourless	Clear	27.2	7.74	7.92	6.4	-
24 Oct 19	14:25	Sunny			Unable to collect water sample due to insufficient flow				-
31 Oct 19	14:26	Sunny			Unable to collect water sample due to insufficient flow				-
7 Nov 19	14:12	Sunny			Unable to collect water sample due to insufficient flow				-
15 Nov 19	14:10	Sunny			Unable to collect water sample due to insufficient flow				-
21 Nov 19	14:23	Sunny			Unable to collect water sample due to insufficient flow				-
28 Nov 19	14:26	Sunny			Unable to collect water sample due to insufficient flow				-
5 Dec 19	14:23	Rainy			Unable to collect water sample due to insufficient flow				-
12 Dec 19	14:22	Sunny			Unable to collect water sample due to insufficient flow				-
18 Dec 19	14:33	Sunny			Unable to collect water sample due to insufficient flow				-
27 Dec 19	14:27	Sunny			Unable to collect water sample due to insufficient flow				-
Average						8.07	8.69	38.3	-
Min						5.12	6.90	1.2	-
Max						13.59	10.92	191.0	-

Notes: DP4 was temporary relocated to DP4 (Future, temporary) (i.e. DP4T) as an interim discharge point from the monitoring event on 16 May 2019.

Table F1.3 Surface Water Quality Monitoring Results at DP6

Date	Time	Weather Condition	Water Appearance	Water Condition	Water Temperature (°C)	Dissolved Oxygen (DO) (mg/L)	pH	Suspended Solids (SS) (mg/L)	Remarks
3 Jan 2019	15:51	Cloudy		Unable to collect water sample due to insufficient flow					-
10 Jan 2019	11:19	Cloudy		Unable to collect water sample due to insufficient flow					-
17 Jan 2019	11:47	Sunny		Unable to collect water sample due to insufficient flow					-
24 Jan 2019	11:05	Sunny		Unable to collect water sample due to insufficient flow					-
31 Jan 2019	11:01	Sunny		Unable to collect water sample due to insufficient flow					-
8 Feb 2019	10:03	Sunny		Unable to collect water sample due to insufficient flow					-
13 Feb 2019	14:19	Sunny		Unable to collect water sample due to insufficient flow					-
20 Feb 2019	14:26	Sunny		Unable to collect water sample due to insufficient flow					-
27 Feb 2019	14:21	Sunny		Unable to collect water sample due to insufficient flow					-
8 Mar 2019	11:18	Fine		Unable to collect water sample due to insufficient flow					-
13 Mar 2019	15:27	Overcast		Unable to collect water sample due to insufficient flow					-
22 Mar 2019	14:32	Sunny		Unable to collect water sample due to insufficient flow					-
28 Mar 2019	14:11	Sunny		Unable to collect water sample due to insufficient flow					-
4 Apr 19	14:19	Sunny		Unable to collect water sample due to insufficient flow					-
10 Apr 19	14:12	Sunny		Unable to collect water sample due to insufficient flow					-
18 Apr 19	14:22	Sunny		Unable to collect water sample due to insufficient flow					-
24 Apr 19	14:39	Sunny		Unable to collect water sample due to insufficient flow					-
2 May 19	14:16	Cloudy		Unable to collect water sample due to insufficient flow					-
8 May 19	15:20	Rainy	Light yellow	Semi-clear	20.4	8.90	9.24	70.8	-
8 May 19	15:20	Rainy	Light yellow	Semi-clear	20.4	8.80	9.29	-	DP6 (Remeasurement)
16 May 19	14:23	Sunny		Unable to collect water sample due to insufficient flow					-
23 May 19	15:33	Rainy	Brown	Turbid	24.7	8.21	9.65	696.0	-
23 May 19	15:33	Rainy	Brown	Turbid	24.7	8.18	9.60	-	DP6 (Remeasurement)
30 May 19	15:19	Overcast	Light yellow	Semi-clear	25.4	7.89	8.68	244.0	-
30 May 19	15:19	Overcast	Light yellow	Semi-clear	25.3	7.85	8.71	-	DP6 (Remeasurement)
6 Jun 19	15:19	Sunny	Light yellow	Turbid	32.5	6.09	6.90	473.0	-
14 Jun 19	15:07	Sunny		Water sample was not collected due to negative flow					-
20 Jun 19	15:03	Sunny		Unable to collect water sample due to insufficient flow					-
27 Jun 19	14:55	Sunny		Unable to collect water sample due to insufficient flow					-
4 Jul 19	14:53	Sunny		Unable to collect water sample due to insufficient flow					-
12 Jul 19	14:55	Sunny		Unable to collect water sample due to insufficient flow					-
18 Jul 19	14:34	Sunny	Pale yellow	Semi-clear	34.3	8.48	7.08	5.7	-
18 Jul 19	14:42	Sunny	Pale yellow	Semi-clear	34.4	8.63	7.21	6.1	DP6 (Duplicate)
25 Jul 19	14:38	Sunny	Pale yellow	Semi-clear	34.1	6.39	7.48	10.8	-
25 Jul 19	14:46	Sunny	Pale yellow	Semi-clear	34.2	6.6	7.54	11.2	DP6 (Duplicate)

Date	Time	Weather Condition	Water Appearance	Water Condition	Water Temperature (°C)	Dissolved Oxygen (DO) (mg/L)	pH	Suspended Solids (SS) (mg/L)	Remarks
1 Aug 19	14:11	Pouring							Monitoring was cancelled due to adverse weather.
8 Aug 19	14:37	Sunny	Light yellow	Semi-clear	32.7	6.91	7.80	25.1	-
8 Aug 19	14:46	Sunny	Light yellow	Semi-clear	32.7	6.95	7.87	24.8	DP6 (Duplicate)
15 Aug 19	14:25	Sunny	Light yellow	Semi-clear	33.4	6.71	7.43	3.2	-
15 Aug 19	14:39	Sunny	Light yellow	Semi-clear	33.4	6.85	7.42	4.2	DP6 (Duplicate)
22 Aug 19	14:27	Sunny	Light yellow	Semi-clear	32.4	6.69	7.31	10.0	-
22 Aug 19	14:35	Sunny	Light yellow	Semi-clear	32.3	6.94	7.36	9.9	DP6 (Duplicate)
29 Aug 19	NA	Pouring							Monitoring was cancelled due to adverse weather.
5 Sep 19	14:35	Cloudy							Unable to collect water sample due to insufficient flow
12 Sep 19	14:26	Sunny	Light yellow	Semi-clear	31.5	6.93	6.44	8.2	-
12 Sep 19	14:28	Sunny	Light yellow	Semi-clear	31.9	6.93	6.53	8.1	DP6 (Duplicate)
19 Sep 19	14:35	Sunny							Unable to collect water sample due to insufficient flow
26 Sep 19	14:39	Sunny							Unable to collect water sample due to insufficient flow
3 Oct 19	14:20	Sunny							Unable to collect water sample due to insufficient flow
9 Oct 19	14:27	Sunny	Colourless	Clear	30.0	7.64	7.70	4.2	-
9 Oct 19	14:37	Sunny	Colourless	Clear	29.9	7.59	7.64	4.0	DP6 (Duplicate)
17 Oct 19	14:23	Sunny	Colourless	Clear	27.8	7.72	7.99	6.0	-
17 Oct 19	14:31	Sunny	Colourless	Clear	27.5	7.78	7.84	6.5	DP6 (Duplicate)
24 Oct 19	14:18	Sunny							Unable to collect water sample due to insufficient flow
31 Oct 19	14:18	Sunny							Unable to collect water sample due to insufficient flow
7 Nov 19	14:20	Sunny							Unable to collect water sample due to insufficient flow
15 Nov 19	14:21	Sunny							Unable to collect water sample due to insufficient flow
21 Nov 19	14:08	Sunny							Unable to collect water sample due to insufficient flow
28 Nov 19	14:12	Sunny							Unable to collect water sample due to insufficient flow
5 Dec 19	14:08	Rainy							Unable to collect water sample due to insufficient flow
12 Dec 19	14:10	Sunny							Unable to collect water sample due to insufficient flow
18 Dec 19	14:45	Sunny							Unable to collect water sample due to insufficient flow
27 Dec 19	14:18	Sunny							Unable to collect water sample due to insufficient flow
					Average	7.46	7.86	81.6	-
					Min	6.09	6.44	3.2	-
					Max	8.90	9.65	696.0	-

Figure F1.1 Graphical Presentation for Surface Water Quality Monitoring (DO)

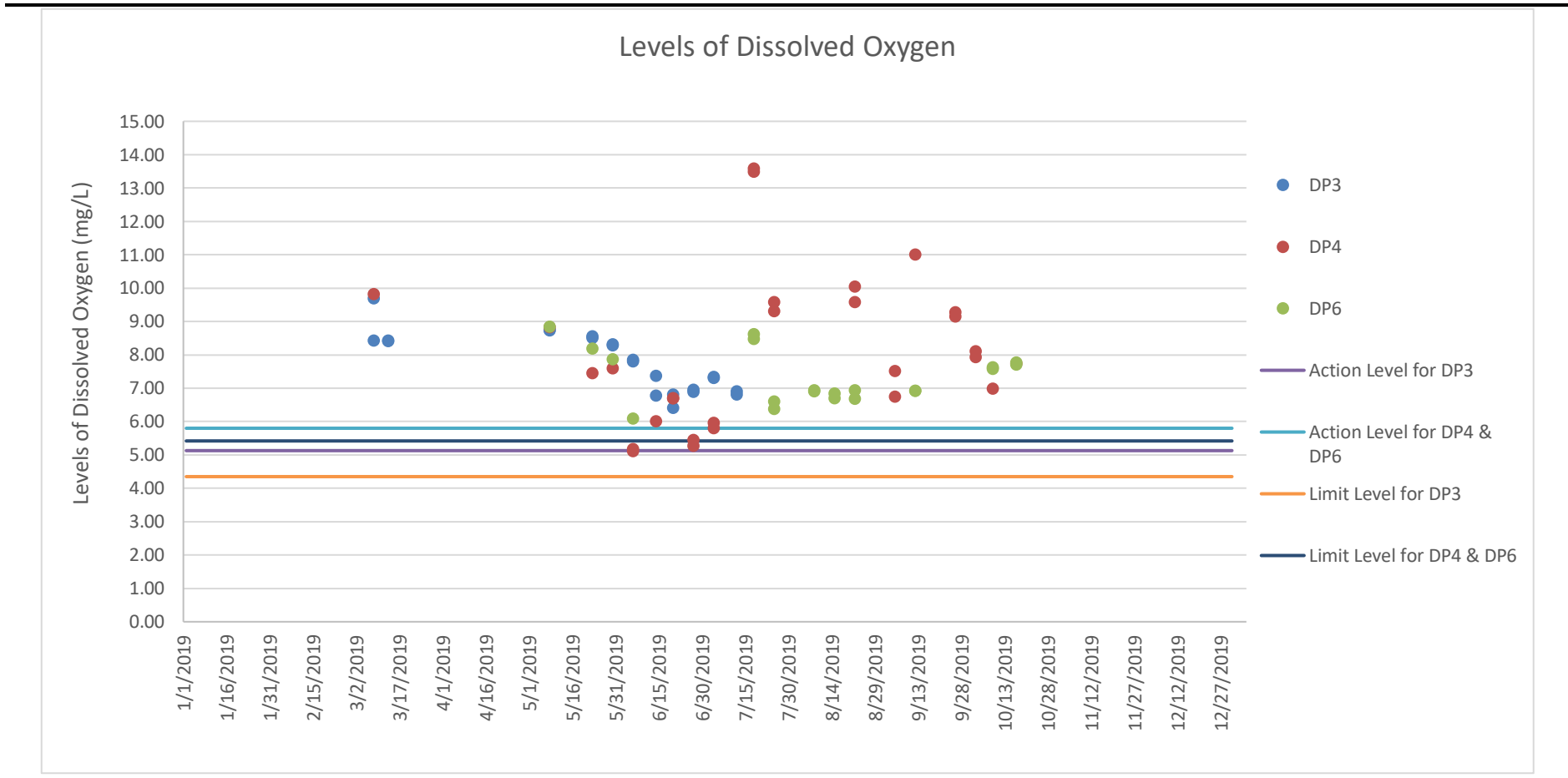


Figure F1.2 Graphical Presentation for Surface Water Quality Monitoring (pH)

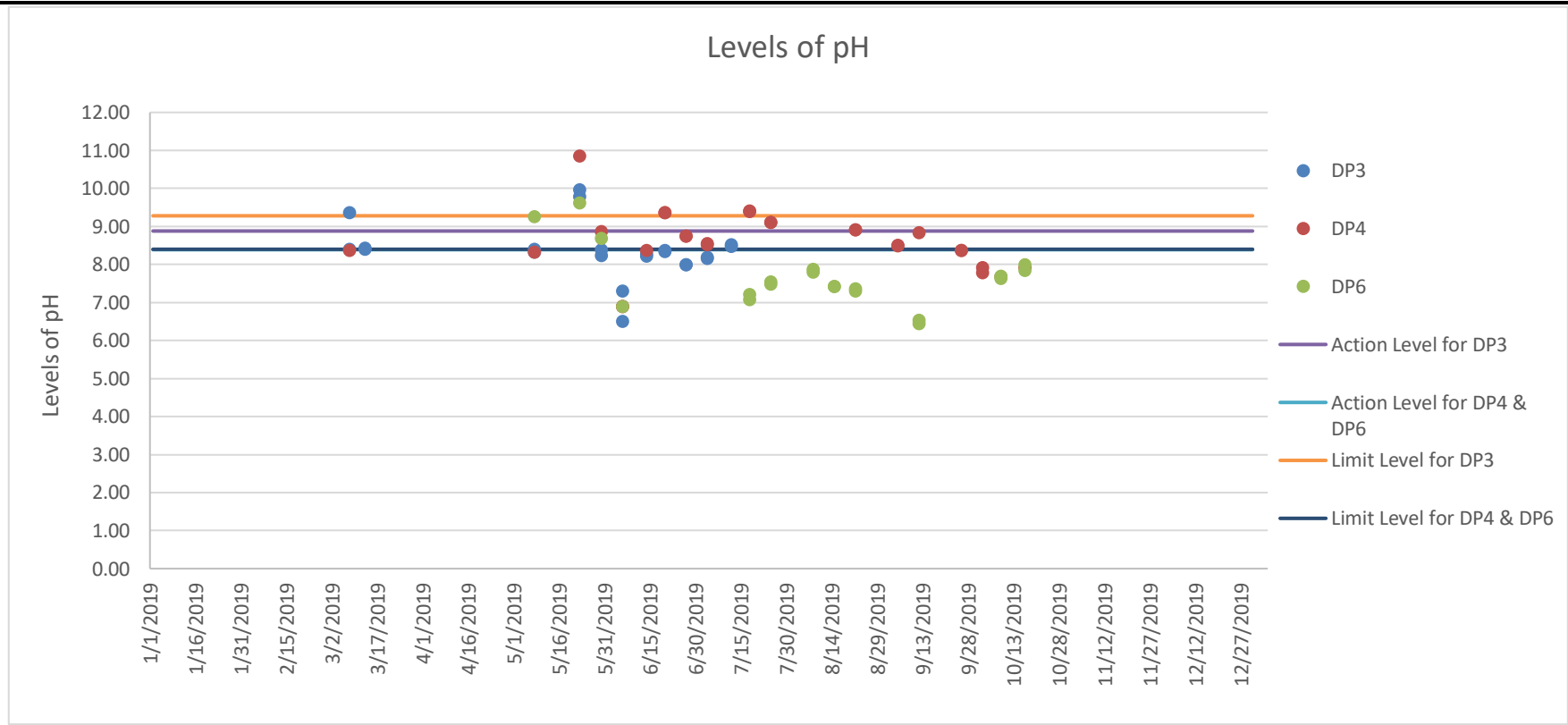


Figure F1.3 Graphical Presentation for Surface Water Quality Monitoring (SS)

