

## **Results of ALPS Treated Water Marine Monitoring: Seawater Survey (tritium) (May 2024)**

### **1 Outline of survey**

(1) Date of sampling

May 21-30, 2024

(2) Sampling points

27 sampling points on coastal waters in the Fukushima Prefecture, 1 sampling point on coastal waters in the Miyagi Prefecture, and 1 sampling point on coastal waters in the Ibaraki Prefecture.

\* Water samples were collected from surface and bottom layers at 23 sampling points within 30 km of ALPS treated water discharge outlet and from surface layer at 6 sampling points beyond 30 km .

(3) Detail of the survey

- The measurement of radioactive material concentrations in seawater. (tritium)

Analysis with target lower limit of detection of 0.1 Bq/L.

\* A target lower limit of detection means a value that is set for quality control to assure at least the detection up to the value when analysis is conducted. Each actual lower limit of detection differs according to samples, and is equal to or lower than a target lower limit of detection.

### **2 Outline of results**

(1) Seawater survey (29 sampling points (52 samples))

Concentrations of tritium in seawater range from below the lower limit of detection to 2.8 Bq/L.

(Detailed are attached)

(Maps attached)

## Sampling points within 3 km of ALPS treated water discharge outlet analysis result for tritium in seawater

| Sampling point | Sampling date | Sampling layer | Sampling depth (m) | Nuclide | Radioactivity concentration <sup>*1*2</sup> |   |        | Unit |
|----------------|---------------|----------------|--------------------|---------|---------------------------------------------|---|--------|------|
| E-S1           | 2024/05/21    | Surface layer  | 1.5                | H-3     | 0.086                                       | ± | 0.0086 | Bq/L |
| E-S1           | 2024/05/21    | Bottom layer   | 4.5                | H-3     | 0.075                                       | ± | 0.0084 | Bq/L |
| E-S3           | 2024/05/21    | Surface layer  | 1.5                | H-3     | 0.14                                        | ± | 0.025  | Bq/L |
| E-S3           | 2024/05/21    | Bottom layer   | 7.3                | H-3     | 0.075                                       | ± | 0.024  | Bq/L |
| E-S4           | 2024/05/21    | Surface layer  | 1.5                | H-3     | 0.25                                        | ± | 0.014  | Bq/L |
| E-S4           | 2024/05/21    | Bottom layer   | 5.2                | H-3     | 0.30                                        | ± | 0.016  | Bq/L |
| E-S5           | 2024/05/21    | Surface layer  | 1.5                | H-3     | 0.77                                        | ± | 0.044  | Bq/L |
| E-S5           | 2024/05/21    | Bottom layer   | 9.1                | H-3     | 2.8                                         | ± | 0.13   | Bq/L |
| E-S10          | 2024/05/21    | Surface layer  | 1.5                | H-3     | 1.0                                         | ± | 0.05   | Bq/L |
| E-S10          | 2024/05/21    | Bottom layer   | 12.0               | H-3     | 0.25                                        | ± | 0.027  | Bq/L |
| E-S13          | 2024/05/21    | Surface layer  | 1.5                | H-3     | 1.1                                         | ± | 0.06   | Bq/L |
| E-S13          | 2024/05/21    | Bottom layer   | 10.0               | H-3     | 1.2                                         | ± | 0.06   | Bq/L |
| E-S14          | 2024/05/21    | Surface layer  | 1.5                | H-3     | 1.8                                         | ± | 0.08   | Bq/L |
| E-S14          | 2024/05/21    | Bottom layer   | 6.3                | H-3     | 1.1                                         | ± | 0.06   | Bq/L |
| E-S15          | 2024/05/22    | Surface layer  | 1.5                | H-3     | 0.91                                        | ± | 0.047  | Bq/L |
| E-S15          | 2024/05/22    | Bottom layer   | 5.9                | H-3     | 0.86                                        | ± | 0.045  | Bq/L |
| E-S16          | 2024/05/22    | Surface layer  | 1.5                | H-3     | 0.75                                        | ± | 0.041  | Bq/L |
| E-S16          | 2024/05/22    | Bottom layer   | 3.4                | H-3     | 0.75                                        | ± | 0.041  | Bq/L |

\*1 Radioactivity concentrations are presented as radioactivity concentration ± combined standard uncertainty.

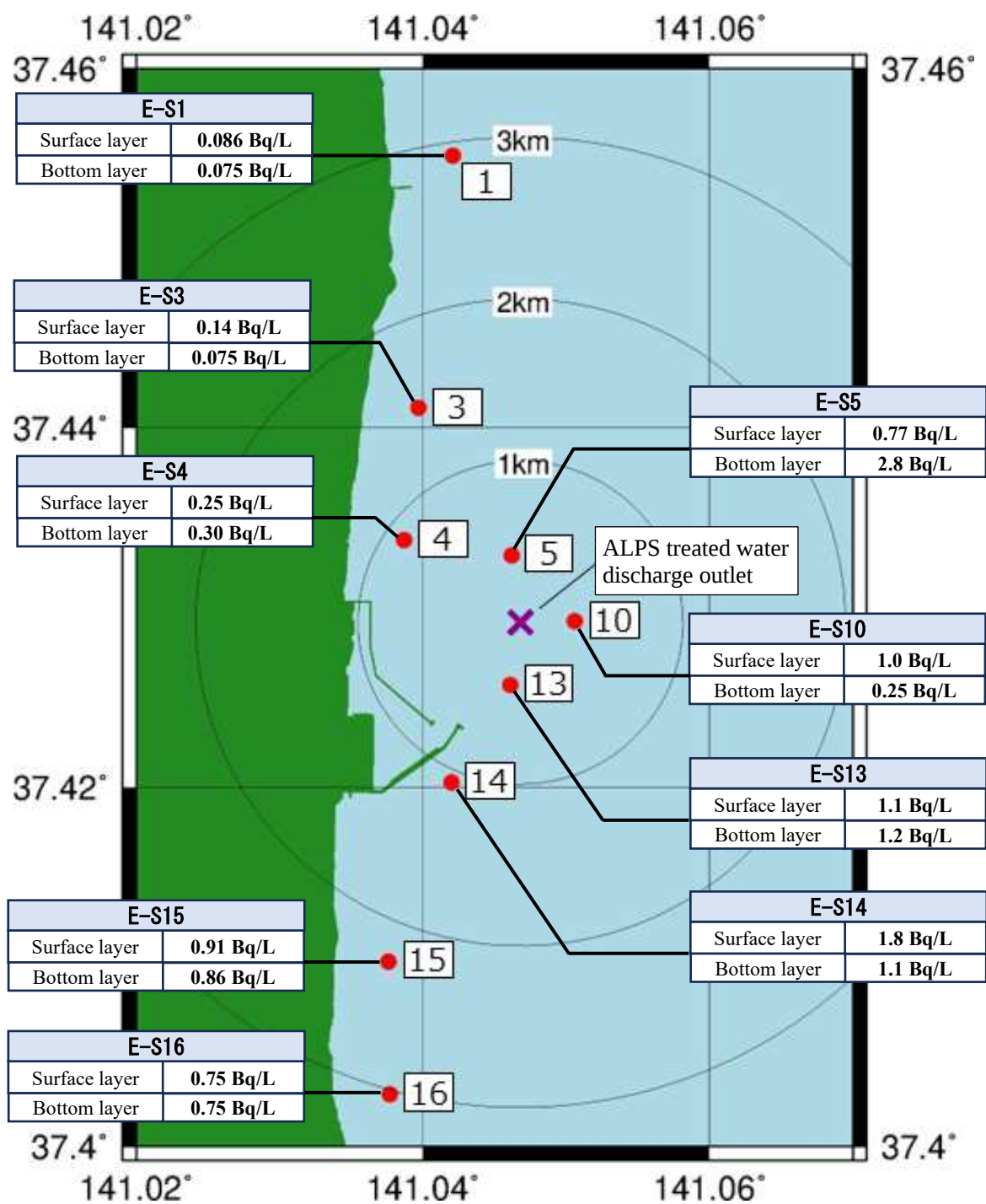
\*2 Values below detection limit are shown by lower limit of detection (e.g., “<10 Bq/L” indicates a value below 10 Bq/L).

Sampling points beyond 3 km of ALPS treated water discharge outlet analysis result for tritium in seawater

| Sampling point | Sampling date | Sampling layer | Sampling depth (m) | Nuclide | Radioactivity concentration <sup>*1*2</sup> |   |        | Unit |
|----------------|---------------|----------------|--------------------|---------|---------------------------------------------|---|--------|------|
| E-S17          | 2024/05/21    | Surface layer  | 1.5                | H-3     | 0.048                                       | ± | 0.0076 | Bq/L |
| E-S18          | 2024/05/21    | Surface layer  | 1.5                | H-3     | 0.071                                       | ± | 0.0083 | Bq/L |
| E-S19          | 2024/05/21    | Surface layer  | 1.5                | H-3     | 0.066                                       | ± | 0.0085 | Bq/L |
| E-S19          | 2024/05/21    | Bottom layer   | 10.2               | H-3     | 0.049                                       | ± | 0.0080 | Bq/L |
| E-S20          | 2024/05/21    | Surface layer  | 1.5                | H-3     | 0.079                                       | ± | 0.011  | Bq/L |
| E-S20          | 2024/05/21    | Bottom layer   | 7.3                | H-3     | 0.10                                        | ± | 0.012  | Bq/L |
| E-S21          | 2024/05/23    | Surface layer  | 1.5                | H-3     | 0.14                                        | ± | 0.013  | Bq/L |
| E-S21          | 2024/05/23    | Bottom layer   | 21.6               | H-3     | 0.11                                        | ± | 0.014  | Bq/L |
| E-S22          | 2024/05/21    | Surface layer  | 1.5                | H-3     | 0.15                                        | ± | 0.013  | Bq/L |
| E-S22          | 2024/05/21    | Bottom layer   | 7.3                | H-3     | 0.10                                        | ± | 0.012  | Bq/L |
| E-S23          | 2024/05/23    | Surface layer  | 1.5                | H-3     | 0.28                                        | ± | 0.016  | Bq/L |
| E-S23          | 2024/05/23    | Bottom layer   | 20.8               | H-3     | 0.18                                        | ± | 0.014  | Bq/L |
| E-S24          | 2024/05/23    | Surface layer  | 1.5                | H-3     | 0.054                                       | ± | 0.012  | Bq/L |
| E-S24          | 2024/05/23    | Bottom layer   | 23.9               | H-3     | 0.048                                       | ± | 0.012  | Bq/L |
| E-S25          | 2024/05/23    | Surface layer  | 1.5                | H-3     | 0.042                                       | ± | 0.012  | Bq/L |
| E-S25          | 2024/05/23    | Bottom layer   | 36.7               | H-3     | 0.040                                       | ± | 0.012  | Bq/L |
| E-S26          | 2024/05/22    | Surface layer  | 1.5                | H-3     | 0.11                                        | ± | 0.013  | Bq/L |
| E-S26          | 2024/05/22    | Bottom layer   | 22.2               | H-3     | 0.12                                        | ± | 0.013  | Bq/L |
| E-S27          | 2024/05/22    | Surface layer  | 1.5                | H-3     | 0.099                                       | ± | 0.013  | Bq/L |
| E-S27          | 2024/05/22    | Bottom layer   | 9.4                | H-3     | 0.27                                        | ± | 0.016  | Bq/L |
| E-S28          | 2024/05/22    | Surface layer  | 1.5                | H-3     | 0.049                                       | ± | 0.012  | Bq/L |
| E-S28          | 2024/05/22    | Bottom layer   | 32.2               | H-3     | 0.037                                       | ± | 0.012  | Bq/L |
| E-S29          | 2024/05/22    | Surface layer  | 1.5                | H-3     | 0.12                                        | ± | 0.012  | Bq/L |
| E-S29          | 2024/05/22    | Bottom layer   | 10.0               | H-3     | 0.26                                        | ± | 0.016  | Bq/L |
| E-S30          | 2024/05/30    | Surface layer  | 1.5                | H-3     | 0.077                                       | ± | 0.012  | Bq/L |
| E-S30          | 2024/05/30    | Bottom layer   | 12.7               | H-3     | 0.18                                        | ± | 0.014  | Bq/L |
| E-S31          | 2024/05/30    | Surface layer  | 1.5                | H-3     | 0.067                                       | ± | 0.012  | Bq/L |
| E-S32          | 2024/05/23    | Surface layer  | 1.5                | H-3     | 0.074                                       | ± | 0.012  | Bq/L |
| E-S33          | 2024/05/21    | Surface layer  | 1.5                | H-3     | < 0.05                                      |   |        | Bq/L |
| E-S34          | 2024/05/21    | Surface layer  | 1.5                | H-3     | 0.061                                       | ± | 0.0083 | Bq/L |
| E-S34          | 2024/05/21    | Bottom layer   | 12.0               | H-3     | 0.062                                       | ± | 0.0084 | Bq/L |
| E-S35          | 2024/05/30    | Surface layer  | 1.5                | H-3     | 0.27                                        | ± | 0.015  | Bq/L |
| E-S35          | 2024/05/30    | Bottom layer   | 12.5               | H-3     | 0.12                                        | ± | 0.010  | Bq/L |
| E-S36          | 2024/05/30    | Surface layer  | 1.5                | H-3     | < 0.05                                      |   |        | Bq/L |

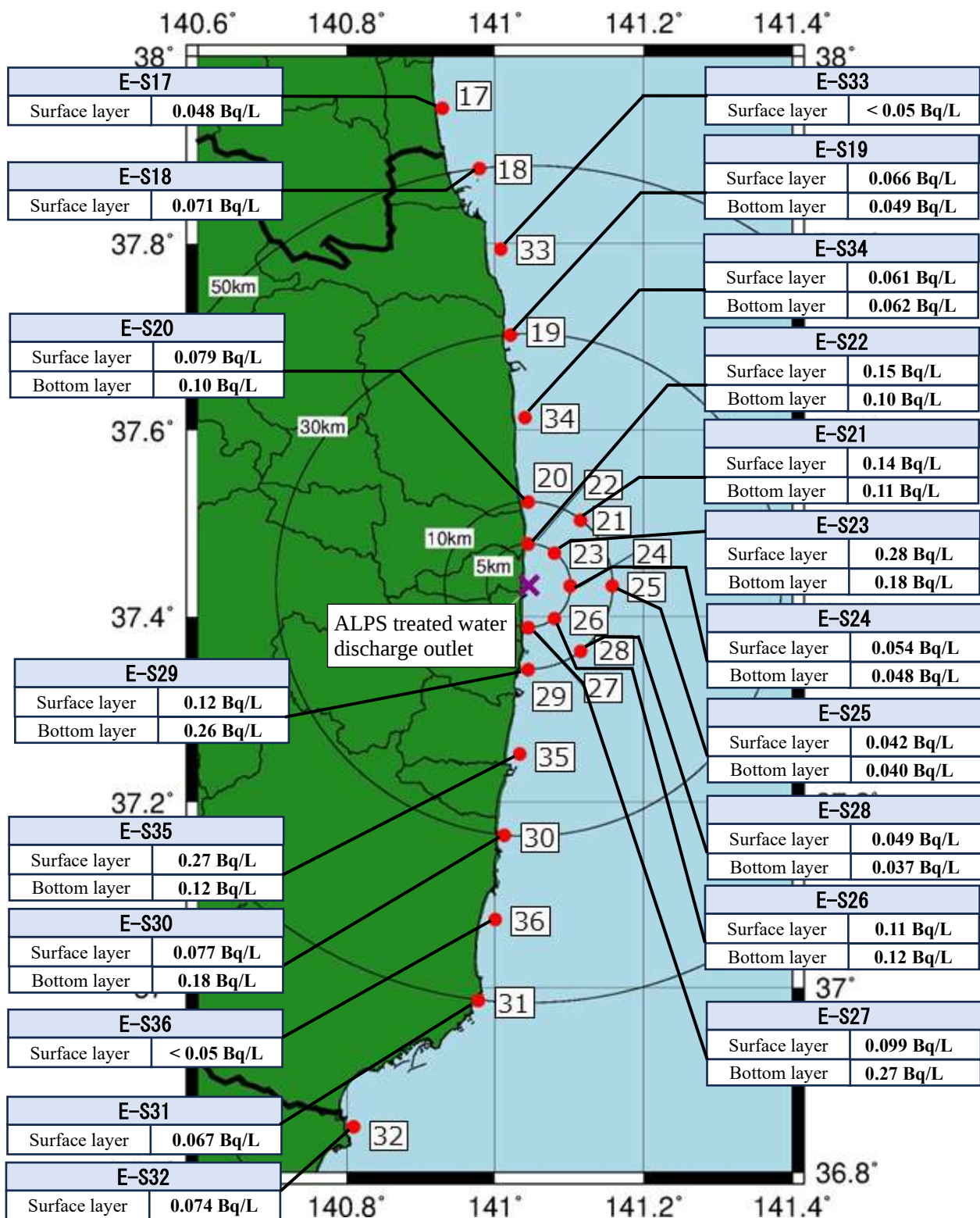
\*1 Radioactivity concentrations are presented as radioactivity concentration ± combined standard uncertainty.

\*2 Values below detection limit are shown by lower limit of detection (e.g., “<10 Bq/L” indicates a value below 10 Bq/L).



\* Numbers in the map are shown with "E-S" omitted from labels in the map (e.g., E-S1 is marked as 1).

Fig. 1 Sampling points within 3 km of ALPS treated water discharge outlet



\* Numbers in the map are shown with “E-S” omitted from labels in the map (e.g., E-S17 is marked as 17).

Fig. 2 Sampling points beyond 3 km of ALPS treated water discharge outlet