

## **Investigation of environmental impact assessment method by measurement of atmospheric methane concentration on methane plume**

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[Purpose] When methane seeps out to the sea from the seabed, the following need to be observed and confirmed if the water concentration remains the same. (1) High methane concentration in the atmosphere directly above the seeping point and (2) separation of methane hydrate into gas and water. Then, by confirming the impact on the environment, we propose a survey method for environmental impact assessment of surface methane hydrate.

[Conclusion] Methane concentration in the atmosphere of the sea (the area near directly above) in the sea area where the methane seeps from the seabed to the sea tends to rise [U+FF0E] Sodium concentration around 300 m depth where methane hydrate separates into methane and water did not differ from the concentration at other depths.

[Proposal for environmental impact assessment] When extracting surface methane hydrate and at experimental stages at sea, it is effective to monitor methane concentration on the sea, not in the seawater to detect sudden seepage of methane into seawater as soon as possible [U+FF0E] Even if methane hydrate leaks into the sea, there is no change in sodium concentration, so we do not have to be concerned about the influence on the environment.