Appendix 1

Exhibit ("Study Specifications")
Study of sand control for methane hydrate formation

21st November, 2008

Japan Oil, Gas and Metals National Corporation

1. **Title of Study**

The Study of sand control for methane hydrate formation. (**"Study"**).

2. Objective of Study

The objective of the Study is to propose the applicable specific method of sand control and pressure/temperature sensor with effective use of above specific method for "offshore Japan methane hydrate production test" and to analysis of sand production phenomenon from the results of former onshore production test data (No.2 onshore Canada methane hydrate production test data with sand production in 2008, sand screen data, methane hydrate formation core data and other necessary data).

3. Scope of work

In order to achieve the objective set out in paragraph 2 above, the contractor shall perform, research, prepare and provide JOGMEC with a written report on the subjects described in paragraphs 3.(1) – 3.(4) below.

(1) **Propose the applicable specific method of sand control and pressure/temperature sensor.**

a. Propose the applicable specific method of sand control and pressure/temperature sensor with effective use of specific method for offshore Japan methane hydrate production test with existent technology based on:
   - No.2 onshore production test data at 2008;
   - Methane hydrate formation core data;
   - Other necessary data;
   - Experience of sand control in oil & gas field
   - Other factors (if any).

b. Investigation into the potential problems and provision for sand screen on offshore methane hydrate well from the aspect of:
   - Run and set of sand screen operation;
   - Collapse of sand screen with differential pressure and with sand production;
   - Clog the sand screen with sand production.
   - Cut the sand screen by low temperature effect.

c. Investigation into the potential problems and provision for pressure/temperature sensor for offshore methane hydrate well from the aspect of:
   - Run and set of pressure/temperature sensor;
   - Data reading and keeping during the emergency release from the Sub sea test tree (SSTT).
   - Breakdown the sensor by low temperature effect or any other thing.
   - Data transfer during the well shut in period and production test.

(2) **Investigation of gas, water and sand production phenomenon and evaluation of sand control equipment from the results of former onshore Canada production test data.**

a. Investigation of gas, water and sand production phenomenon with No.2 onshore Canada production test data with sand production in 2008, methane hydrate formation core data and other necessary data

b. Evaluation of sand control equipment from the results of former onshore Canada production test data

(3) **"Study" of general evaluation**

a. Comparative investigation of choosing those evaluation of sand control equipment from the results of former onshore Canada production test data and the proposed specific method of sand control and pressure/temperature sensor on Offshore Japan methane hydrate production test from the aspect of ;
   - Extract the potential problem of the proposed sand control and pressure/temperature sensor

b. Investigations into the cost evaluation from the aspect of:
   - The proposed sand screen;
   - The proposed pressure/temperature sensor;

(4) **Suggestions from the contractor (if any)**

4. **Deliverables, Duration of Study**

Deliverables shall include and satisfy all of the following items:

(1) **Final Report**

a. Final Report shall be completed and delivered no later than 10th March, 2009.
b. Three copies of Final Reports shall be delivered in 10th March 2009.
c. Electronic Files shall be delivered in 10th March 2009. : Three copies of a CD (or DVD) including the reports and the information contained in the reports. For the avoidance of doubt, the CDs (or DVDs) shall also include files compiling the public information used and collected in this investigation. All electronic files consisting of the reports shall be written by Microsoft Word and recorded on the CDs. Such electronic files shall be editable and citable by JOGMEC.

5. Methodology

The contractor shall carry out all work related to the Study with such care and skill as could reasonably be expected from a professional providing the same or similar services and in conformance with industry practices and standards.

6. Workplace

The workplace shall either be the contractor's workplace or a place designated by JOGMEC.

End of "Study Specification"