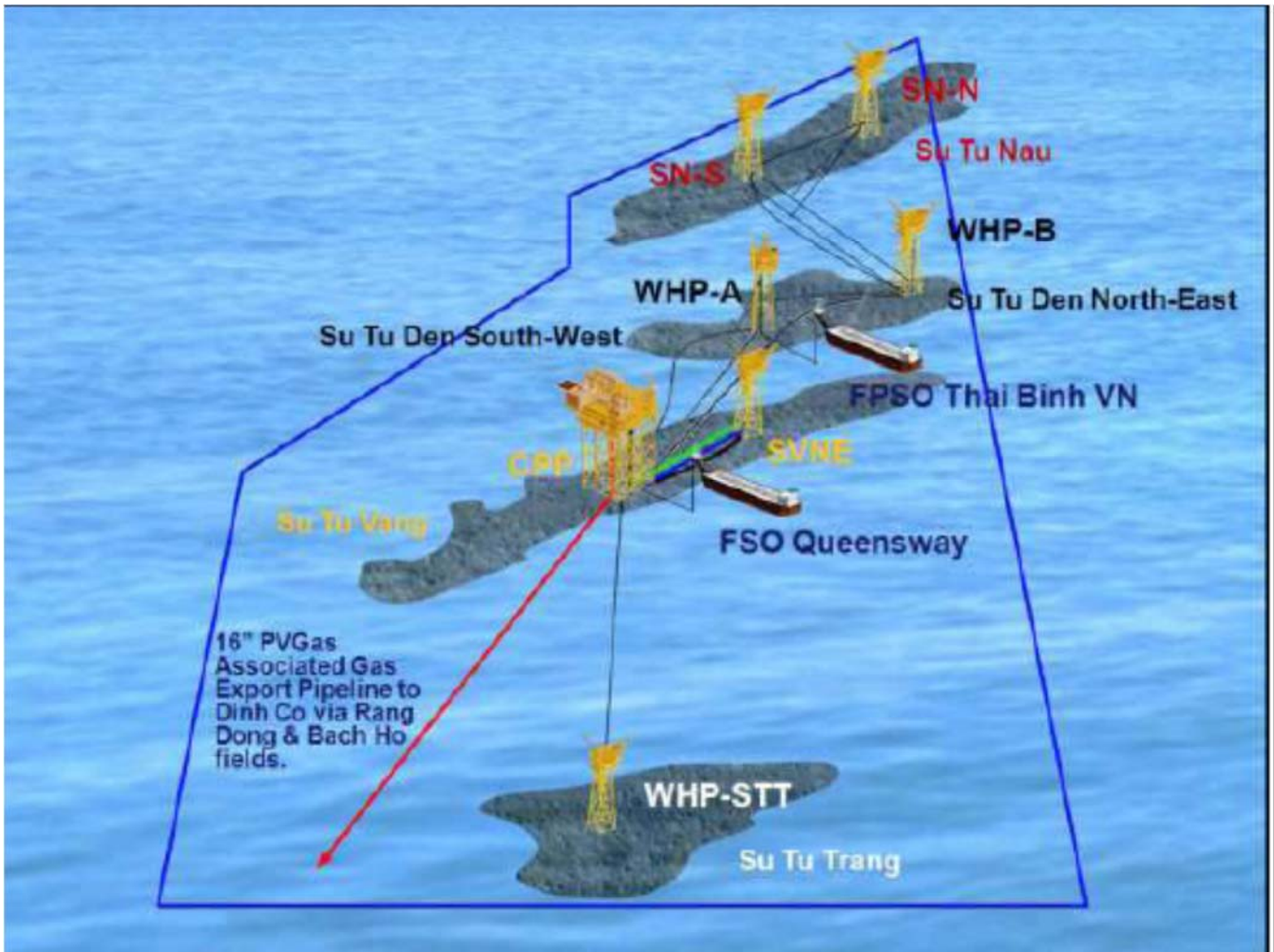


JOB COMPLETION REPORT  
AIR DIVING CAMPAIGN  
FOR  
SU TU NAU PRE INSTALLATION SURVEY PROJECT





**STN PRE INSTALLATION SURVEY  
PROJECT**



**AIR DIVING CAMPAIGN**

**JOB COMPLETION REPORT**

**Location** : SU TU NAU FIELD

**Report No.** : PMS-HYUNDAI.082013

**Client** : HYUNDAI HEAVY INDUSTRIES CO.,LTD.

**Subject** : Survey the seabed around jacket installation positions of STN-N and STN-S jackets with the survey area 200mx200m

Check the concrete condition around the wellhead No.5 of STN-S jacket with the area 35mx35m

Check the verticalness of wellhead No.5 of STN-S jacket

**Position** : STN-N :  
                   STN-S : N 1168617m – E 872304m  
                   Wellhead No.5 of STN-S : N 1168617m – E 872304m

Commencement : 11 August 2013                   06:00AM

Completion : 21 August 2013                   12.00PM

Diving Sup : CAO HUY PHONG – TRUONG CONG THANH

PREPARED BY			CHECKED BY			APPROVED BY		
Name/ Position	Sign	Date	Name/ Position	Sign	Date	Name/ Position	Sign	Date
CAO HUY PHONG/ PMS Diving Sup			KIM BYOUNG SO/ HHI Site Rep			CAO HUY PHUONG/ PMS Director		



AIR DIVING CAMPAIGN  
JOB COMPLETION REPORT

# REVISION LIST

SECTION	REV	DATE	DESCRIPTION OF AMENDMENT
All section	A	18/08/2013	Issued for information
	B	22/08/2013	Issued for check and approve



AIR DIVING CAMPAIGN

JOB COMPLETION REPORT

---

## DIVING REPORT

**Title:** Job Completion Report

**Location:** SU TU NAU FIELD

**Client:** HYUNDAI HEAVY INDUSTRIES CO.,LTD.

**Scope of work:**

PMS supply the diving team, diving equipment and diving supply vessel to carry out the air diving campaign for underwater survey the seabed within the area 200mx200m around the jacket installation positions of STN-N and STN-S jacket. Pick up all small debris and marking the position of big debris on GPS navigation and positioning.

Survey the concrete condition around the wellhead No.5 of STN-S jacket, check the verticalness of wellhead No.5, check the deflection angle between the wellhead tilt direction with the jacket North

**Submitted to:**

Hyundai Heavy Industries Co., Ltd.

**Job undertaken by:**

Pacific Marine Service Co., Ltd.

Address: 37C Nguyen Thien Thuat street, Thang Nhat Ward, Vung Tau City, Vietnam

Tel: + 84.64. 3563606 Fax: + 84.64. 3563608

**Prepared by:**

Cao Huy Phong



STN PRE INSTALLATION SURVEY  
PROJECT

AIR DIVING CAMPAIGN

JOB COMPLETION REPORT



---

**TABLE OF CONTENTS**

I.	<a href="#"><u>PROJECT DESCRIPTION</u></a> .....	6
	1. <a href="#"><u>Working requirements</u></a> .....	6
	2. <a href="#"><u>Working procedure</u></a> .....	6
	3. <a href="#"><u>Manpower and equipments</u></a> .....	10
II.	<a href="#"><u>DETAIL OF SURVEYING</u></a> .....	15
	1. <a href="#"><u>Survey around STN-N jacket installation position</u></a> .....	15
	a. <a href="#"><u>Survey around STN-N05</u></a> .....	15
	b. <a href="#"><u>Survey around STN-N06</u></a> .....	17
	c. <a href="#"><u>Survey around STN-N07</u></a> .....	18
	d. <a href="#"><u>Survey around STN-N08</u></a> .....	20
	2. <a href="#"><u>Checking the wellhead No.5</u></a> .....	22
	a. <a href="#"><u>Checking the general condition of the wellhead No.5</u></a> .....	22
	b. <a href="#"><u>Check the verticalness of wellhead No.5</u></a> .....	23
	c. <a href="#"><u>Wellhead No.5 measurement</u></a> .....	30
	d. <a href="#"><u>Survey seabed around wellhead No.5</u></a> .....	31
	3. <a href="#"><u>Survey around STN-S jacket installation position</u></a> .....	34
	a. <a href="#"><u>Survey around STN-S05 point</u></a> .....	34
	b. <a href="#"><u>Survey around STN-S06 point</u></a> .....	36
	c. <a href="#"><u>Survey around STN-S07 point</u></a> .....	37
	d. <a href="#"><u>Survey around STN-S08 point</u></a> .....	39
	<a href="#"><u>DVD Report</u></a> .....	42

# DIVING REPORT

## I. PROJECT DESCRIPTION

### 1. Working requirements:

PMS supply the diving team, diving equipment and diving supply vessel to carry out the air diving campaign for underwater survey the seabed within the area 200mx200m around the jacket installation positions of STN-N and STN-S jacket. Pick up all small debris and marking the position of big debris on GPS navigation and positioning.

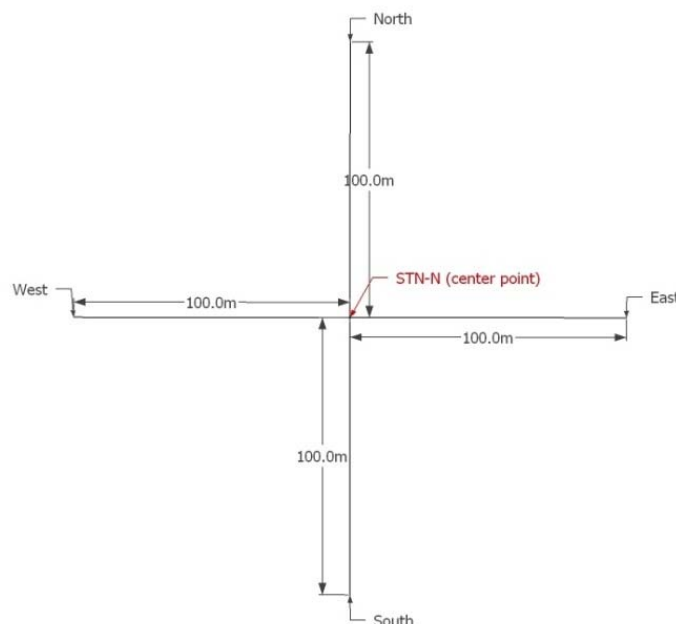
Survey the concrete condition around the wellhead No.5 of STN-S jacket, check the verticalness of wellhead No.5, check the deflection angle between the wellhead tilt direction with the jacket North

### 2. Working procedure:

#### 2.1. Survey the seabed at STN-N jacket installation area within 200mx200m

##### 2.1.1. Determine the coordinates of the survey area

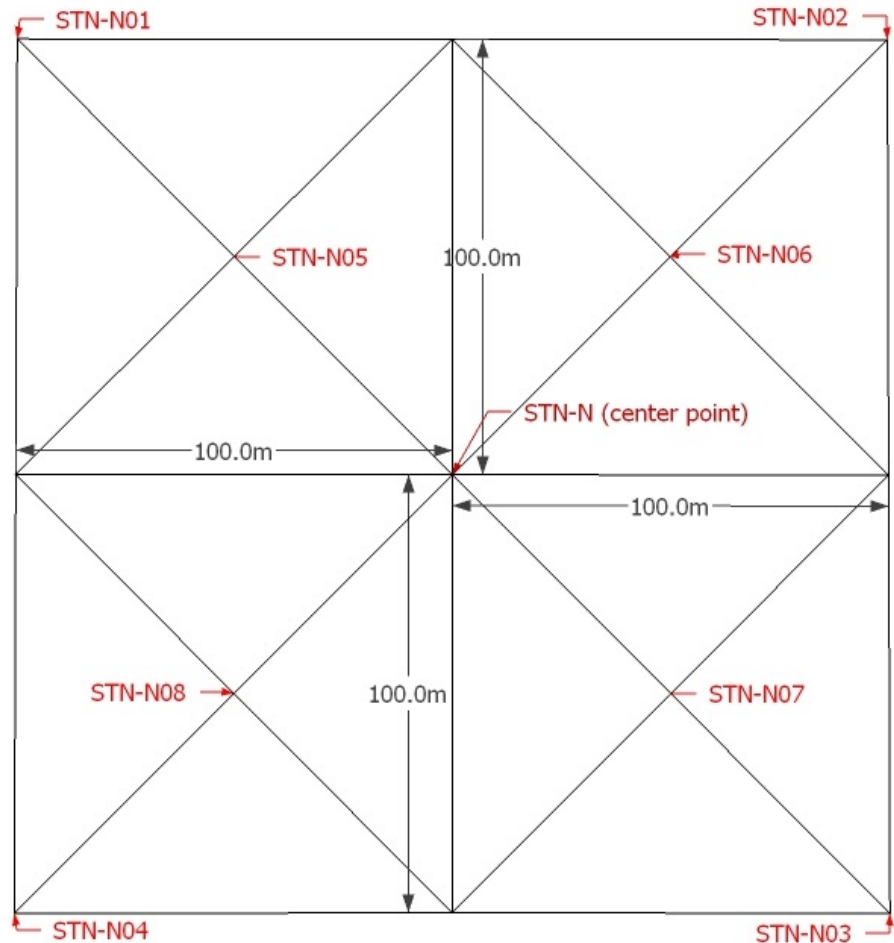
- Put STN-N coordinate (the center point of survey area) that is provided by Client to GPS navigation and position
- Determine and mark 4 points toward the East, West, South, North and the distance from the center point to each point is 100m



### AIR DIVING CAMPAIGN

### JOB COMPLETION REPORT

- Base on these 4 points, determine and making 8 points as below picture:



- The coordinate of above points:
  - o STN-N01: E 876858m – N 1173333m
  - o STN-N02: E 877058m – N 1173333m
  - o STN-N03: E 877058m – N 1173133m
  - o STN-N04: E 876858m – N 1173133m
  - o STN-N05: E 876908m – N 1173283m
  - o STN-N06: E 877008m – N 1173283m
  - o STN-N07: E 877008m – N 1173183m
  - o STN-N08: E 876908m – N 1173183m



### AIR DIVING CAMPAIGN

### JOB COMPLETION REPORT

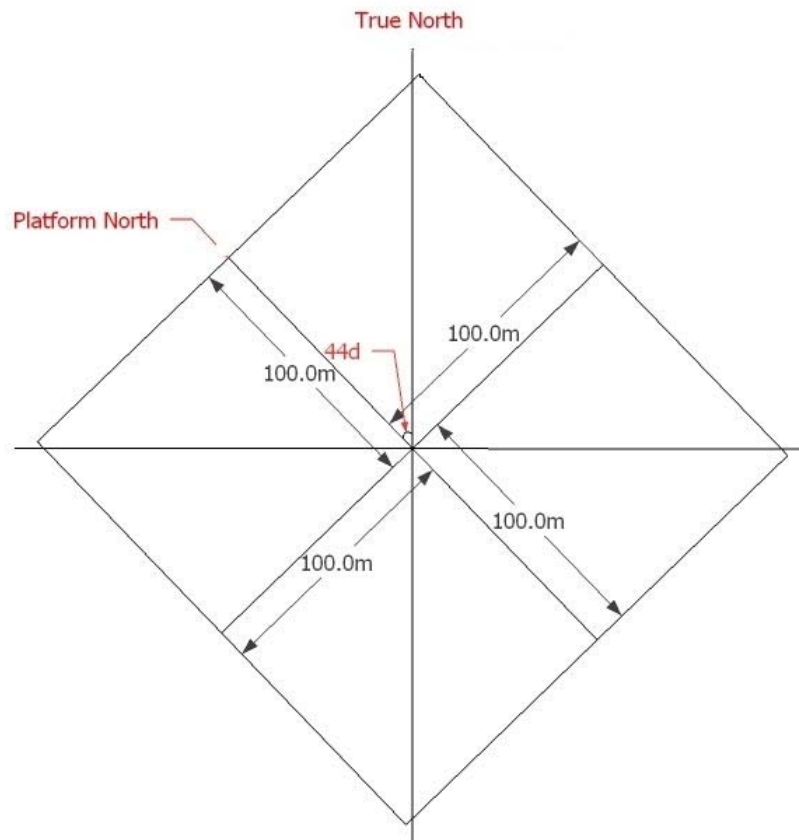
#### 2.1.2. Air diving plan for seabed survey

- Divers survey seabed and record video around 4 points STN-N05, STN-N06, STN-N07, STN-N08 with 80m radius for each point.
- The survey method please review file “**PMS-Air Diving Plan-STN project\_Rev.B.pdf**”

#### 2.2. Survey the seabed at STN-S jacket installation area within 200mx200m

##### 2.2.1. Determine the coordinates of the survey area

- Put STN-N coordinate (the center point of survey area) that is provided by Client to GPS navigation and position
- Determine and mark 4 points toward the East, West, South, North of jacket and the distance from the center point to each point is 100m
- ❖ **Note:** The Jacket North is deflected  $44^{\circ}$  with true North follow counter clockwise

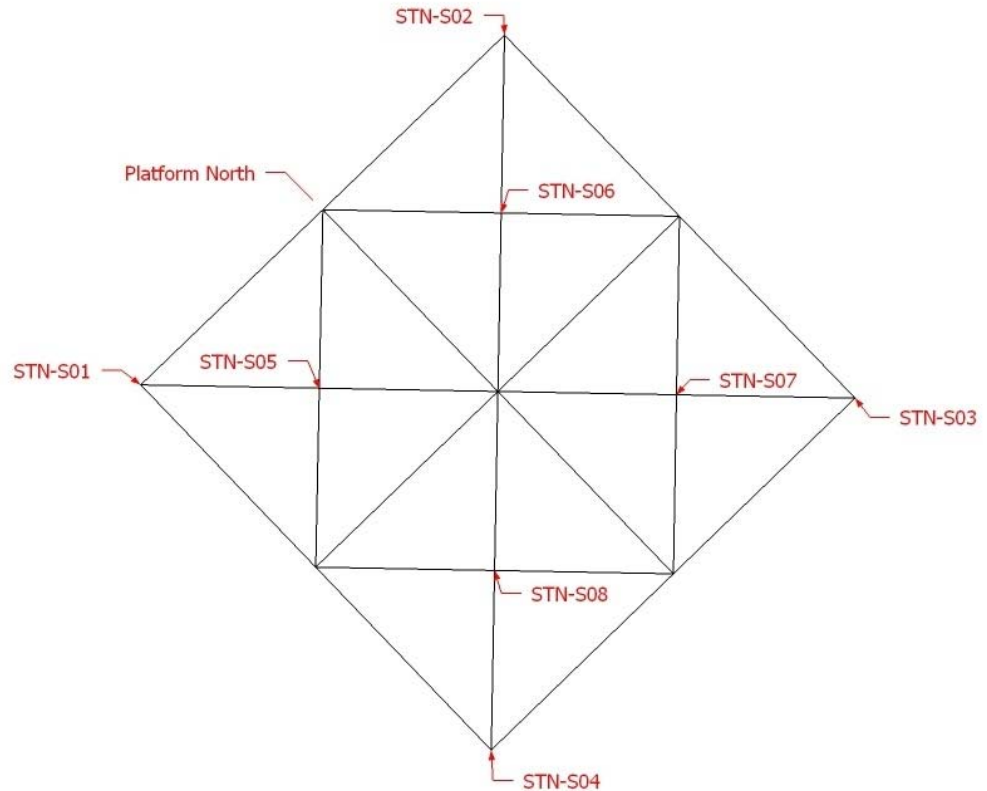




### AIR DIVING CAMPAIGN

### JOB COMPLETION REPORT

- Base on these 4 points, determine and making 8 points as below picture:



- The coordinate of above points:
  - o STN-S05: E 872233.300m – N 1168618.234m
  - o STN-S06: E 872305.23m – N 1168687.70m
  - o STN-S07: E 872373.47m – N 1168615.79m
  - o STN-S08: E 872302.77m – N 1168546.30m

#### 2.2.2. Air diving plan for seabed survey

- Divers survey seabed and record video around 4 points STN-S05, STN-S06, STN-S07, STN-S08 with 80m radius for each point.
- The survey method please review file “**PMS-Air Diving Plan-STN project\_Rev.B.pdf**”

AIR DIVING CAMPAIGN

JOB COMPLETION REPORT

**2.3. Check the verticalness of wellhead No.5 of STN-S jacket**

- Check the condition of wellhead No.5
- Check the verticalness of wellhead
- If the wellhead is tilt then measure the deflection angle between tilt direction with the North of Jacket
- The checking method please review file “PMS-Air Diving Plan-STN project\_Rev.B.pdf”

**2.4. Check the concrete condition around the wellhead No.5 of STN-S jacket**

- Check the concrete condition around the wellhead No.5 of STN-S jacket within the area 35x35m
- The checking method please review file “PMS-Air Diving Plan-STN project\_Rev.B.pdf”

**3. Manpower and equipments:**

**Personnel list:**

No	Name	Position	Date of birth	Personnality	Qualification / grade	Certificate	
						Cert. No.	Issued by
1.	Cao Huy Phong	Diving manager	1982	Vietnamese	SSI deep diver NDL medic first aid NDL rescue diver NDL diver master Safety	1204AD7801 CP-7-05141 CP-3-05127 CP-6-05140	SSI NDL NDL NDL PVMTC
2.	Truong Cong Thanh	Diving supervisor	1967	Vietnamese	Diver Grade ¼ NDL medic first aid NDL rescue diver NDL diver master Safety	CP-7-05143 CP-3-05126 CP-6-05142	Thang Long school NDL NDL NDL PVMTC

AIR DIVING CAMPAIGN

JOB COMPLETION REPORT

No	Name	Position	Date of birth	Personnality	Qualification / grade	Certificate	
						Cert. No.	Issued by
3.	Vu Canh Toan	Diver	1988	Vietnamese	Diver Grade 1/4 Safety	539	Thang Long school PVMTC
4.	Doan Anh Vu	Diver	1984	Vietnamese	NDL deep diver Safety	CP-1-05116	NDL PVMTC
5.	Duong Van Thinh	Diver	1988	Vietnamese	Diver Grade 1/4 Safety	002614105	Thang Long school PVMTC
6.	Nguyen Huu Nga	Diver	1988	Vietnamese	Diver Grade 1/4 Safety	002614106	Thang Long school PVMTC
7.	Duong Van Tiep	Diver	1987	Vietnamese	SSI deep diver Safety	1204AD7793	SSI PVMTC
8.	Nguyen Van Tai	Diver	1984	Vietnamese	SSI deep diver Safety	1204AD7528	SSI PVMTC
9.	Tran Minh Long	Diver	1983	Vietnamese	NDL deep diver Safety	CP-1-05122	NDL PVMTC
10.	Tran Minh Tay	Diver	1991	Vietnamese	NDL deep diver Safety	CP-1-05120	NDL PVMTC
11.	Tran Van Hai	Diver	1980	Vietnamese	Turtle deep diver Safety	784400Y	NDL PVMTC
12.	Doan Van Nhi	Diver	1983	Vietnamese	NDL deep diver Safety	CP-1-05114	NDL PVMTC
13.	Cao Duc Thang	Diver	1977	Vietnamese	NDL deep diver Safety	CP-1-05124	NDL PVMTC
14.	Pham Dinh Dien	Diver	1977	Vietnamese	Diver Grade 1/4 Safety	000022485	Thang Long school PVMTC
15.	Vang Thanh Tu	Diver	1992	Vietnamese	Diver Grade 1/4 Safety	002610514	Thang Long school PVMTC
16.	Phung Anh Khuong	Diver	1988	Vietnamese	Diver Grade 1/4 Safety	002614035	Thang Long school PVMTC

AIR DIVING CAMPAIGN

JOB COMPLETION REPORT

**Equipments list:**

	Item & Descriptions	Quantity	Model No	Made in	Year of made
	<b><u>DIVING EQUIPMENT</u></b>				
1	High Pressure Air Compressor	02 Units	MC1A- IC4IRDEW- 39920 MC1A- IC4IRDEW- 37476	USA  USA	2005  2005
2	High Pressure Air Storage	28 bottles  40liter/150 bar		China	2011
3	Bottle Scuba 13L X 202 bar	04  Bottles	Comexpro	USA	1997
4	Diving Umbilical, 150 m, Consist of Air supply Hose, Pneumo hose, Comm. Cable, Lifeline, Camera cable.	03  Sets	TRIM 150M  TRIM 150M  TRIM 150M	USA  -  -	2009  -  2009
5	Full face mask	03  Sets	KMB-18	KIRBY	2006
6	Full face mask	02  Sets	EXO-26	KIRBY	2009
7	SMP 3 Diver – Air Diving Control Panel HP/LP inlet	01  Sets	SMP	UK	2012
8	2 divers air control panel and communication KMACS-5	01	KMACS-5	USA	2009

AIR DIVING CAMPAIGN

JOB COMPLETION REPORT

	Item & Descriptions	Quantity	Model No	Made in	Year of made
		Sets			
9	Decompressore Chamber. POMMEC 3m <sup>3</sup>	01 Set	006/00004	Netherlan ds	2004
	<b><u>COMMUNICATION SYSTEM</u></b>				
10	Diving communication	01 Set	KMACS-5	USA	2009
11	Amcom 3 Diver Radio AC Powered	01 Sets	Amcom 2830A/24	USA	2012
	<b><u>CCTV SYSTEM</u></b>				
12	CCTV - PRS-1300 control box - Patima PHCS-2050 - Patima PL20 flash lights - DVD-HDD recorder Toshiba DR-S300	01 Sys		Korea	2010
13	Sony HD camcorder and housing	01 sys		Japan Korea	2011
14	Container 20"	02		USA	2010
15	Container lifting cable (4 legs and 4 8.5tons shackle)	02			2009
16	Hand tools (grinder, drilling machine...)	02			2010
	<b><u>TILT MEASUREMENT TOOLS</u></b>				
17	Bosch digital angle gauge	02	DWM 40L	USA	2013
18	Bosch digital inclinometer	02	DNM 60L	USA	2013
20	Plumb bob/plumb line	02		Vietnam	2013



STN PRE INSTALLATION SURVEY  
PROJECT



AIR DIVING CAMPAIGN

JOB COMPLETION REPORT

	Item & Descriptions	Quantity	Model No	Made in	Year of made
21	Underwater compass	02	Aqualung	USA	2013
22	Underwater marked pen	...			
	<b><u>DESTROY CONCRETE TOOLS</u></b>				
23	Hydraulic/air tools for concrete destruction	02		JAPAN	2013

**II. DETAIL OF SURVEYING:**

**1. Survey around STN-N jacket installation position**




**a. Survey around STN-N05 point within 80m radius**

Date & time	Detail activities	Illustration
05.30 – 06.30 13/08/2013	<ul style="list-style-type: none"> <li>- Move the vessel to the STN-N05 point</li> <li>- The coordinate of STN-N05 point is: E 876908m – N 1173283m</li> </ul>	
08.40 – 10.30 13/08/2013	<ul style="list-style-type: none"> <li>- Divers in water start survey the seabed around the STN-N05 point within the radius 5, 10, 15, 20, 25 meters</li> <li>- There are no any debris was detected</li> <li>- The seabed is a layer of hard sand under a thin layer of oyster shell, ephemeras and alluvium</li> </ul>	
10.40 – 12.30 13/08/2013	<ul style="list-style-type: none"> <li>- Divers in water continue survey the seabed around the STN-N05 point within the radius 30, 35, 40, 45 meters</li> <li>- There are no any debris was detected</li> <li>- The seabed is a layer of hard sand under a thin layer of oyster shell, ephemeras and alluvium</li> </ul>	



AIR DIVING CAMPAIGN

JOB COMPLETION REPORT

<p>06.30 – 07.20 14/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers in water continue survey the seabed around the STN-N05 point within the radius 50, 55, 60, 65 meters</li> <li>- There are no any debris was detected</li> <li>- The seabed is a layer of hard sand under a thin layer of oyster shell, ephemeras and alluvium</li> </ul>	
<p>07.25 – 08.30 14/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers in water continue survey the seabed around the STN-N05 point within the radius 70, 75 meters</li> <li>- There are no any debris was detected</li> <li>- The seabed is a layer of hard sand under a thin layer of oyster shell, ephemeras and alluvium</li> </ul>	
<p>08.35 – 09.40 14/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers in water continue survey the seabed around the STN-N05 point within the radius 80 meters</li> <li>- There are no any debris was detected</li> <li>- The seabed is a layer of hard sand under a thin layer of oyster shell, ephemeras and alluvium</li> </ul>	

AIR DIVING CAMPAIGN

JOB COMPLETION REPORT

b. Survey around STN-N06 point within 80m radius

Date & time	Detail activities	Illustration
<p>10.30 – 11.30 16/08/2013</p>	<ul style="list-style-type: none"> <li>- Move the vessel to the STN-N06 point</li> <li>- The coordinate of STN-N06 point is: E 876908m - N 1173183m</li> </ul>	
<p>15.30 – 16.30 16/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers in water start survey the seabed around the STN-N06 point within the radius 5, 10, 15, 20, 25, 30, 35 meters</li> <li>- There are no any debris was detected</li> <li>- The seabed is a layer of hard sand under a thin layer of oyster shell, ephemeras and alluvium</li> </ul>	
<p>16.30 – 17.30 16/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers in water start survey the seabed around the STN-N06 point within the radius 40, 45, 50, 55, 60 meters</li> <li>- There are no any debris was detected</li> <li>- The seabed is a layer of hard sand under a thin layer of oyster shell, ephemeras and alluvium</li> </ul>	

AIR DIVING CAMPAIGN

JOB COMPLETION REPORT




<p>17.30 – 18.30 16/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers in water start survey the seabed around the STN-N06 point within the radius 65,70, 75 meters</li> <li>- There are no any debris was detected</li> <li>- The seabed is a layer of hard sand under a thin layer of oyster shell, ephemeras and alluvium</li> </ul>	
-------------------------------------	--	--

c. Survey around STN-N07 point within 80m radius

Date & time	Detail activities	Illustration
<p>11.00 – 12.20 15/08/2013</p>	<ul style="list-style-type: none"> <li>- Move the vessel to the STN-N07 point</li> <li>- The coordinate of STN-N07 point is: E 877008m - N 1173183m</li> </ul>	
<p>13.10 – 14.30 15/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers in water start survey the seabed around the STN-N07 point within the radius 5, 10 meters</li> <li>- There are no any debris was detected</li> <li>- The seabed is a layer of hard sand under a thin layer of oyster shell, ephemeras and alluvium</li> </ul>	

AIR DIVING CAMPAIGN

JOB COMPLETION REPORT

<p>14.30 – 16.00 15/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers in water start survey the seabed around the STN-N07 point within the radius 15, 20, 25, 30, 35 meters</li> <li>- There are no any debris was detected</li> <li>- The seabed is a layer of hard sand under a thin layer of oyster shell, ephemeras and alluvium</li> </ul>	
<p>07.00 – 08.20 16/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers in water start survey the seabed around the STN-N07 point within the radius 40, 45, 50, 55, 60 meters</li> <li>- There are no any debris was detected</li> <li>- The seabed is a layer of hard sand under a thin layer of oyster shell, ephemeras and alluvium</li> </ul>	
<p>08.30 – 10.00 16/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers in water start survey the seabed around the STN-N07 point within the radius 65,70, 75, 80 meters</li> <li>- There are no any debris was detected</li> <li>- The seabed is a layer of hard sand under a thin layer of oyster shell, ephemeras and alluvium</li> </ul>	



AIR DIVING CAMPAIGN




JOB COMPLETION REPORT

d. Survey around STN-N08 point within 80m radius

Date & time	Detail activities	Illustration
09.40 – 12.00 14/08/2013	<ul style="list-style-type: none"> <li>- Move the vessel to the STN-N08 point</li> <li>- The coordinate of STN-N08 point is: E 876908m – N 1173183m</li> </ul>	
13.25 – 14.30 14/08/2013	<ul style="list-style-type: none"> <li>- Divers in water start survey the seabed around the STN-N08 point within the radius 5, 10, 15, 20 meters</li> <li>- There are no any debris was detected</li> <li>- The seabed is a layer of hard sand under a thin layer of oyster shell, ephemerias and alluvium</li> </ul>	
14.35 – 16.00 14/08/2013	<ul style="list-style-type: none"> <li>- Divers in water continue survey the seabed around the STN-N08 point within the radius 25, 30, 35 meters</li> <li>- There are no any debris was detected</li> <li>- The seabed is a layer of hard sand under a thin layer of oyster shell, ephemerias and alluvium</li> </ul>	

AIR DIVING CAMPAIGN

JOB COMPLETION REPORT


<p>06.20 – 07.30 15/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers in water continue survey the seabed around the STN-N08 point within the radius 40, 45, 50, 55 meters</li> <li>- There are no any debris was detected</li> <li>- The seabed is a layer of hard sand under a thin layer of oyster shell, ephemerias and alluvium</li> </ul>	
<p>07.35 – 09.00 15/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers in water continue survey the seabed around the STN-N08 point within the radius 60, 65, 70 meters</li> <li>- There are no any debris was detected</li> <li>- The seabed is a layer of hard sand under a thin layer of oyster shell, ephemerias and alluvium</li> </ul>	
<p>09.00 – 10.00 15/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers in water continue survey the seabed around the STN-N08 point within the radius 75, 80 meters</li> <li>- There are no any debris was detected</li> <li>- The seabed is a layer of hard sand under a thin layer of oyster shell, ephemerias and alluvium</li> </ul>	

AIR DIVING CAMPAIGN

JOB COMPLETION REPORT

2. Checking the wellhead No.5

a. Checking the general condition of the wellhead No.5:

Date & time	Detail activities	Illustration
<p>07.30 – 12.00 17/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers in water to GVI (general visual inspection) the wellhead No.5</li> <li>- The wellhead is in good condition when visual inspection</li> <li>- There are not any damage was detected on the wellhead</li> <li>- Divers clean the barnacle and marine growth around the wellhead</li> <li>- <b>Note:</b> the wellhead is not a smooth pipeline, divers confirm that there are 3 O-ring along the wellhead body (one of these O-ring is covered by trash cap). See the below section “3.c. wellhead mesurement” for more detail</li> </ul>	





**b. Check the verticalness of wellhead No.5**

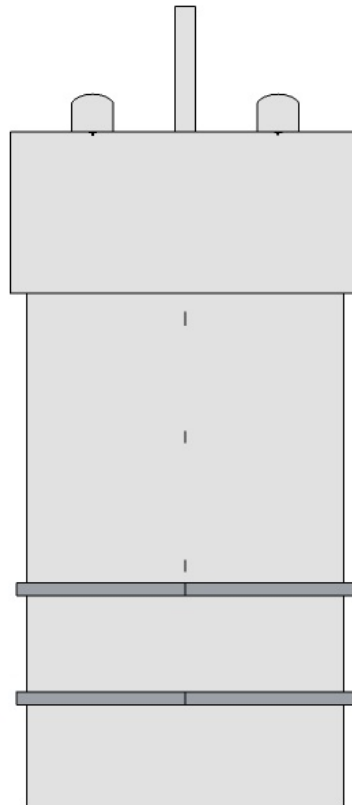
- Use the diving compass to determine the North, East, South, West of wellhead



- Divers check and mark some point to determine the vertical line for putting the digital inclinometer

## AIR DIVING CAMPAIGN

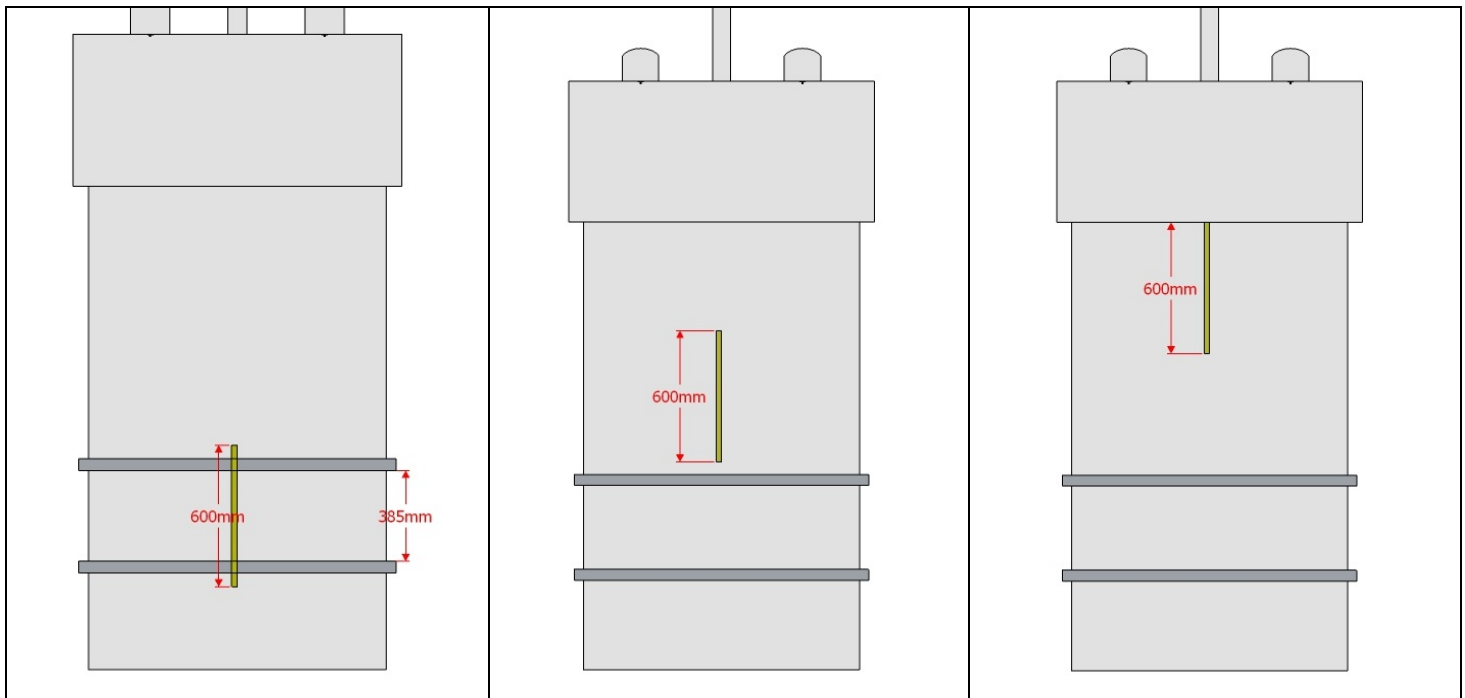
### JOB COMPLETION REPORT



### AIR DIVING CAMPAIGN


### JOB COMPLETION REPORT

- Put the inclinometer to the vertical line to check the tilt






AIR DIVING CAMPAIGN

JOB COMPLETION REPORT

Date & time	Detail activities	Illustration
<p>17.30 – 18.30 17/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers use diving compass to determine the <b>North of wellhead</b></li> <li>- Make the vertical line on the wellhead body</li> <li>- Divers put the digital inclinometer 3 times on the wellhead body (view above picture) to check the tilt of the wellhead               <ul style="list-style-type: none"> <li>• Putting inclinometer the first time, the angle value display on inclinometer: 88.7°</li> <li>• Putting inclinometer the second time, the angle value display on inclinometer: 89.5°</li> <li>• Putting inclinometer the third time, the angle value display on inclinometer: 89.8°</li> </ul> </li> </ul> <p><b>Note:</b> for more detail please view DVD report</p>	




### AIR DIVING CAMPAIGN

### JOB COMPLETION REPORT

<p>17.30 – 18.30 17/08/2013</p>	<ul style="list-style-type: none"><li>- Divers use diving compass to determine <b>the East of wellhead</b></li><li>- Make the vertical line on the wellhead body</li><li>- Divers put the digital inclinometer 3 times on the wellhead body to check the tilt of the wellhead<ul style="list-style-type: none"><li>• Putting inclinometer the first time, the angle value display on inclinometer: 89.1°</li><li>• Putting inclinometer the second time, the angle value display on inclinometer: 89.5°</li><li>• Putting inclinometer the third time, the angle value display on inclinometer: 89.2°</li></ul></li></ul> <p><b>Note:</b> for more detail please view DVD report</p>	  
-------------------------------------	--	---

AIR DIVING CAMPAIGN




JOB COMPLETION REPORT

<p>17.30 – 18.30 17/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers use diving compass to determine the <b>South of wellhead</b></li> <li>- Make the vertical line on the wellhead body</li> <li>- Divers put the digital inclinometer 3 times on the wellhead body to check the tilt of the wellhead             <ul style="list-style-type: none"> <li>• Putting inclinometer the first time, the angle value display on inclinometer: 88.9°</li> <li>• Putting inclinometer the second time, the angle value display on inclinometer: 88.7°</li> <li>• Putting inclinometer the third time, the angle value display on inclinometer: 88.7°</li> </ul> </li> </ul> <p><b>Note:</b> for more detail please view DVD report</p>	  
-------------------------------------	---	---



### AIR DIVING CAMPAIGN

### JOB COMPLETION REPORT

<p>17.30 – 18.30 17/08/2013</p>	<ul style="list-style-type: none"><li>- Divers use diving compass to determine the <b>West of wellhead</b></li><li>- Make the vertical line on the wellhead body</li><li>- Divers put the digital inclinometer 3 times on the wellhead body to check the tilt of the wellhead<ul style="list-style-type: none"><li>• Putting inclinometer the first time, the angle value display on inclinometer: 89.5°</li><li>• Putting inclinometer the second time, the angle value display on inclinometer: 89.4°</li><li>• Putting inclinometer the third time, the angle value display on inclinometer: 89.5°</li></ul></li></ul> <p><b>Note:</b> for more detail please view DVD report</p>	  
-------------------------------------	--	---



AIR DIVING CAMPAIGN

JOB COMPLETION REPORT

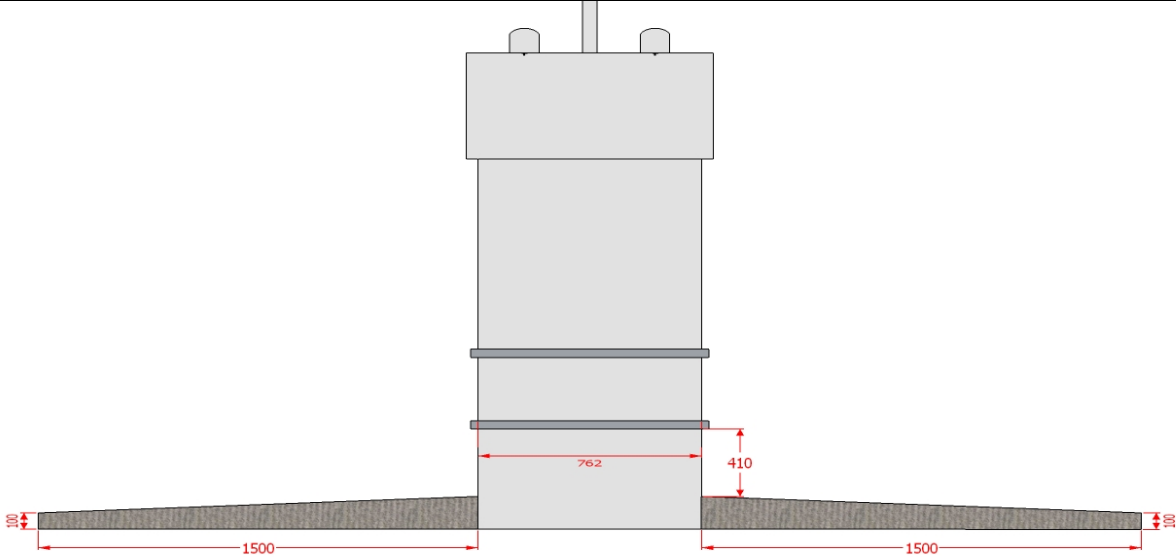
c. Wellhead measurement:

<p><b>Date &amp; time</b></p>	<p>17.30 – 18.30 17/08/2013</p>
<p><b>Detail activities</b></p>	<ul style="list-style-type: none"> <li>- Divers measure the height, the circumference of the wellhead and trash cap</li> <li>- Divers measure the height, the thickness, the circumference of O-ring</li> </ul>
<p><b>Illustration</b></p>	

AIR DIVING CAMPAIGN







JOB COMPLETION REPORT

d. Survey seabed around wellhead No.5

<b>Date &amp; time</b>	<p>07.30 – 09.20 18/08/2013</p>
<b>Detail activities</b>	<ul style="list-style-type: none"> <li>- Divers in water to set up the alignment rope and put the numbering plate</li> <li>- Divers measure the the concrete around wellhead No.5             <ul style="list-style-type: none"> <li>o The radius of concrete around wellhead is about 1.5m</li> <li>o The most thickness at our side is about 10cm</li> <li>o The thickness of concrete at wellhead leg is cannot checked</li> </ul> </li> </ul>
<b>Illustration</b>	
<b>Date &amp; time</b>	<p>09.30 – 11.20 18/08/2013</p>
<b>Detail activities</b>	<ul style="list-style-type: none"> <li>- Second diving team in water to survey around the wellhead within 30m radius</li> <li>- Some small debris was detected, include:             <ul style="list-style-type: none"> <li>o 02 wire ropes 32mm with a shackle around wellhead</li> <li>o 01 small steel pipe</li> </ul> </li> <li>- And the small debris was removed by divers</li> <li>- Divers also detect 3 big steel plates, the thickness of each plate is 22mm and it is not yet picked up</li> <li>- From the radius 15 to 30m:             <ul style="list-style-type: none"> <li>o There are no any debris was detected</li> <li>o The seabed is a layer of sand under a thin layer of oyster shell, ephemeras and alluvium</li> </ul> </li> </ul>

AIR DIVING CAMPAIGN

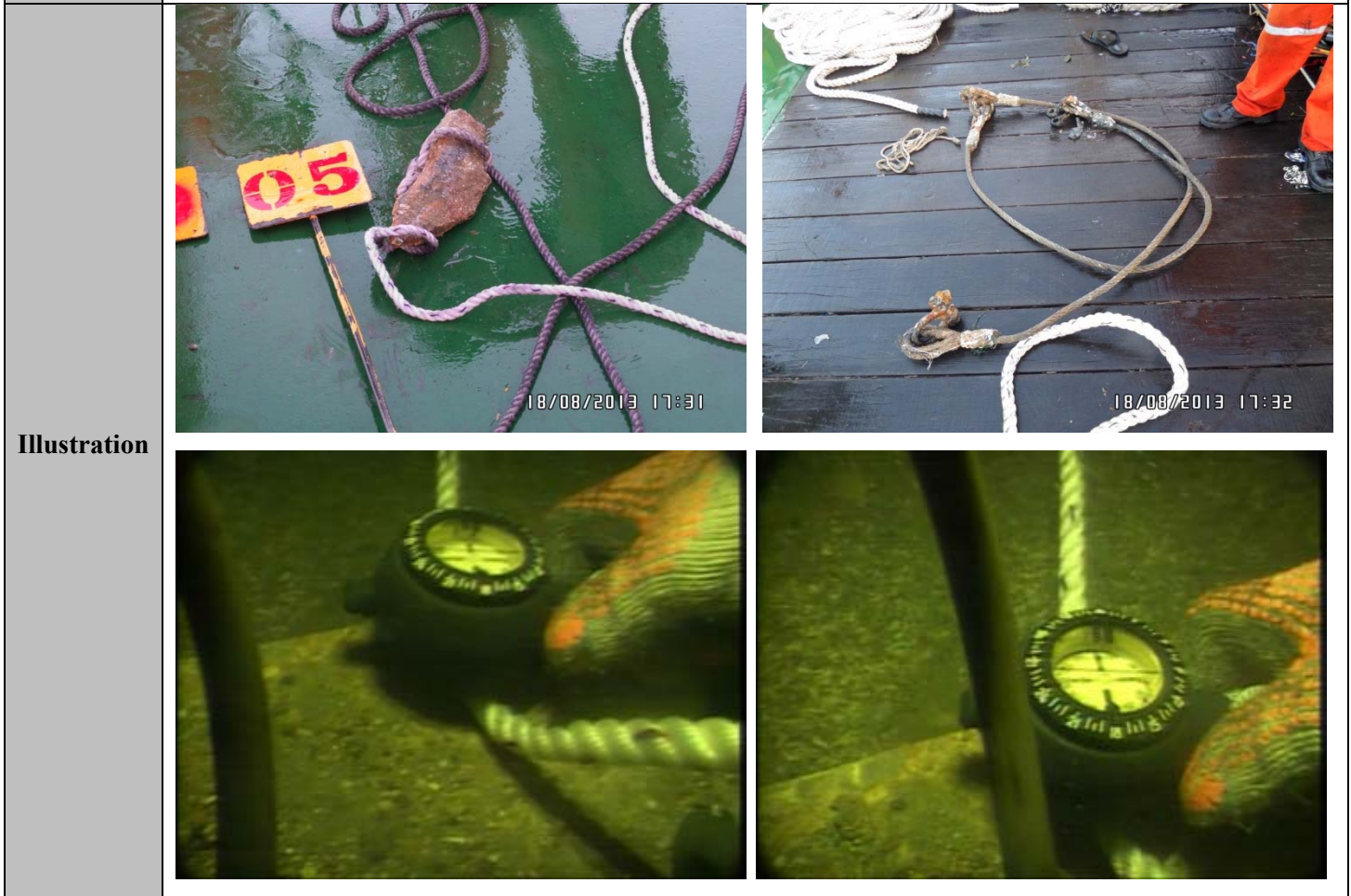
JOB COMPLETION REPORT

Illustration		
		
		
Date & time	16.30 – 17.30 18/08/2013	
Detail	- Divers in water to determine the position of steel plate, remove small debris	

### AIR DIVING CAMPAIGN

### JOB COMPLETION REPORT

- |                   |  |
|-------------------|--|
| <b>activities</b> | <ul style="list-style-type: none"><li>- From the wellhead to the steel plates is about 5m follow the North (determine by diving compass)</li><li>- The coordinate of the steel plates is: N 1168622m – E 872304m (determine by GPS Navigation and positioning)</li><li>- Almost surface of the steel plates are covered by a deep sand layer so divers cannot take the exact measurement</li></ul> |
|-------------------|--|





AIR DIVING CAMPAIGN

JOB COMPLETION REPORT


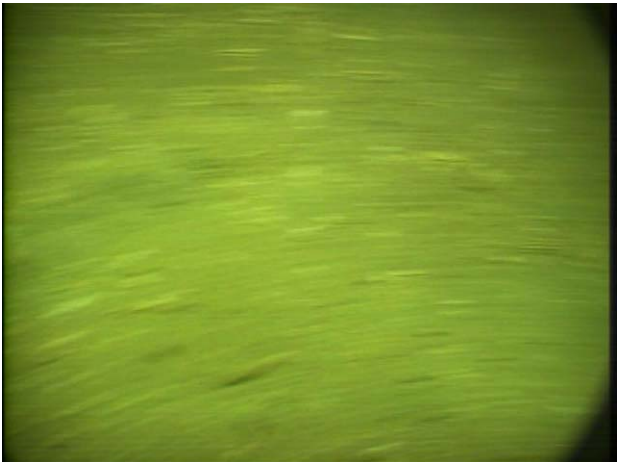
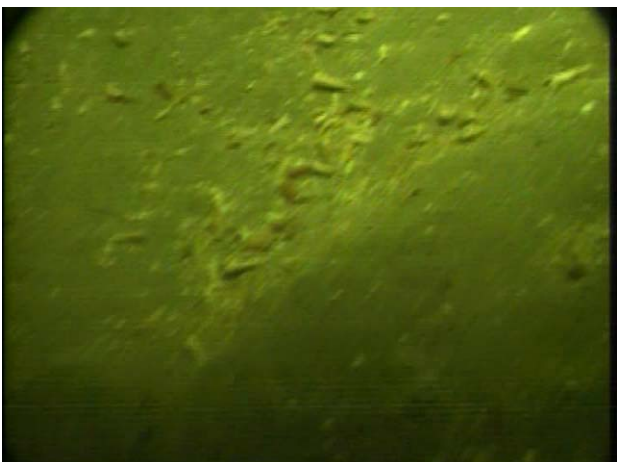
3. Survey around STN-S jacket installation position

a. Survey around STN-S05 point within 80m radius

Date & time	Detail activities	Illustration
<p>04.00 – 05.30 20/08/2013</p>	<ul style="list-style-type: none"> <li>- Move the vessel to the STN-S05 point</li> <li>- The coordinate of STN-S05 point is: E 872233.300m – N 1168618.234m</li> </ul>	
<p>05.30 – 06.40 20/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers survey seabed around STN-S05 point within radius from 5 to 10m</li> <li>- There are not any debris was detected</li> <li>- The seabed is a layer of sand under a thin layer of oyster shell, ephemeras and alluvium</li> <li>- The seabed is not flat and has a lot of small mound</li> </ul>	

AIR DIVING CAMPAIGN

JOB COMPLETION REPORT

<p>06.40 – 07.50 20/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers survey seabed around STN-S05 point within radius from 15 to 40m</li> <li>- There are not any debris was detected</li> <li>- The seabed is a layer of sand under a thin layer of oyster shell, ephemeras and alluvium</li> <li>- The seabed is not flat and has a lot of small mound</li> </ul>	
<p>07.50 – 09.00 20/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers survey seabed around STN-S05 point within radius from 45 to 60m</li> <li>- There are not any debris was detected</li> <li>- The seabed is a layer of sand under a thin layer of oyster shell, ephemeras and alluvium</li> <li>- The seabed is not flat and has a lot of small mound</li> </ul>	
<p>09.00 – 10.10 20/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers survey seabed around STN-S05 point within radius from 65 to 70m</li> <li>- There are not any debris was detected</li> <li>- The seabed is a layer of sand under a thin layer of oyster shell, ephemeras and alluvium</li> <li>- The seabed is not flat and has a lot of small mound</li> </ul>	

AIR DIVING CAMPAIGN

JOB COMPLETION REPORT

**b. Survey around STN-S06 point within 80m radius**

Date & time	Detail activities	Illustration
<p>10.10 – 11.30 20/08/2013</p>	<ul style="list-style-type: none"> <li>- Move the vessel to the STN-S06 point</li> <li>- The coordinate of STN-S06 point is: E 872373.47m – N 1168615.79m</li> </ul>	
<p>11.40 – 12.50 20/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers survey seabed around STN-S06 point within radius from 5 to 10m</li> <li>- There are not any debris was detected</li> <li>- The seabed is a layer of sand under a thin layer of oyster shell, ephemeras and alluvium</li> <li>- The seabed is not flat and has a lot of small mound</li> </ul>	
<p>12.50 – 14.00 20/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers survey seabed around STN-S06 point within radius from 15 to 40m</li> <li>- There are not any debris was detected</li> <li>- The seabed is a layer of sand under a thin layer of oyster shell, ephemeras and alluvium</li> <li>- The seabed is not flat and has a lot of small mound</li> </ul>	

AIR DIVING CAMPAIGN

JOB COMPLETION REPORT

<p>05.00 – 06.00 21/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers survey seabed around STN-S06 point within radius from 45 to 60m</li> <li>- There are not any debris was detected</li> <li>- The seabed is a layer of sand under a thin layer of oyster shell, ephemeras and alluvium</li> <li>- The seabed is not flat and has a lot of small mound</li> </ul>	
<p>06.00 – 07.00 21/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers survey seabed around STN-S06 point within radius from 65 to 70m</li> <li>- There are not any debris was detected</li> <li>- The seabed is a layer of sand under a thin layer of oyster shell, ephemeras and alluvium</li> <li>- The seabed is not flat and has a lot of small mound</li> </ul>	


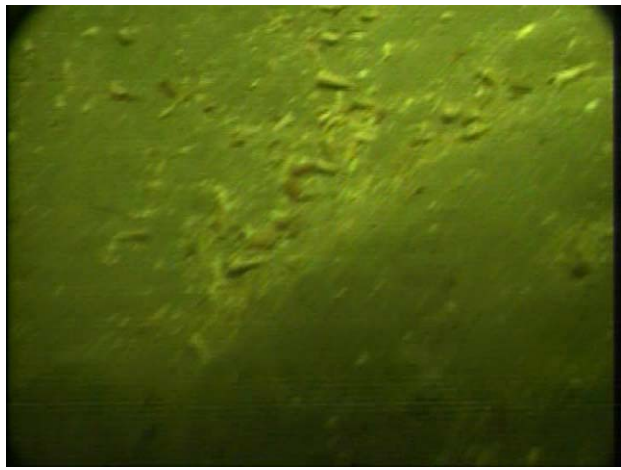

c. Survey around STN-S07 point within 80m radius

Date & time	Detail activities	Illustration
<p>07.00 – 08.00 21/08/2013</p>	<ul style="list-style-type: none"> <li>- Move the vessel to the STN-S07 point</li> <li>- The coordinate of STN-S07 point is: E 872233.300m – N 1168618.234m</li> </ul>	



AIR DIVING CAMPAIGN

JOB COMPLETION REPORT

<p>08.00 – 09.00 21/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers survey seabed around STN-S07 point within radius from 5 to 10m</li> <li>- There are not any debris was detected</li> <li>- The seabed is a layer of sand under a thin layer of oyster shell, ephemerias and alluvium</li> <li>- The seabed is not flat and has a lot of small mound</li> </ul>	
<p>09.00 – 10.00 21/08/2103</p>	<ul style="list-style-type: none"> <li>- Divers survey seabed around STN-S07 point within radius from 15 to 40m</li> <li>- There are not any debris was detected</li> <li>- The seabed is a layer of sand under a thin layer of oyster shell, ephemerias and alluvium</li> <li>- The seabed is not flat and has a lot of small mound</li> </ul>	
<p>10.00 – 11.00 21/08/2103</p>	<ul style="list-style-type: none"> <li>- Divers survey seabed around STN-S07 point within radius from 45 to 60m</li> <li>- There are not any debris was detected</li> <li>- The seabed is a layer of sand under a thin layer of oyster shell, ephemerias and alluvium</li> <li>- The seabed is not flat and has a lot of small mound</li> </ul>	

AIR DIVING CAMPAIGN

JOB COMPLETION REPORT

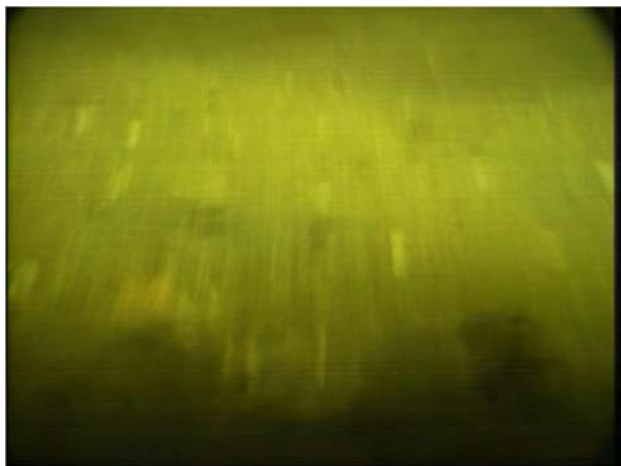


<p>11.00 – 12.00 21/08/2103</p>	<ul style="list-style-type: none"> <li>- Divers survey seabed around STN-S07 point within radius from 65 to 70m</li> <li>- There are not any debris was detected</li> <li>- The seabed is a layer of sand under a thin layer of oyster shell, ephemeras and alluvium</li> <li>- The seabed is not flat and has a lot of small mound</li> </ul>	
-------------------------------------	--	--

d. Survey around STN-S08 point within 80m radius

Date & time	Detail activities	Illustration
<p>08.30 – 09.30 19/08/2013</p>	<ul style="list-style-type: none"> <li>- Move the vessel to the STN-S08 point</li> <li>- The coordinate of STN-S08 point is: E 872302.77m – N 1168546.30m</li> </ul>	

AIR DIVING CAMPAIGN

JOB COMPLETION REPORT

<p>09.30 – 11.30 19/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers survey seabed around STN-S08 point within radius from 5 to 40m</li> <li>- There are not any debris was detected</li> <li>- The seabed is a layer of sand under a thin layer of oyster shell, ephemeras and alluvium</li> <li>- The seabed is not flat and has a lot of small mound</li> </ul>	 
<p>18.00 – 20.00 19/08/2013</p>	<ul style="list-style-type: none"> <li>- Divers survey seabed around STN-S08 point within radius from 45 to 70m</li> <li>- There are not any debris was detected</li> <li>- The seabed is a layer of sand under a thin layer of oyster shell, ephemeras and alluvium</li> <li>- The seabed is not flat and has a lot of small mound</li> </ul>	



STN PRE INSTALLATION SURVEY  
PROJECT

AIR DIVING CAMPAIGN

JOB COMPLETION REPORT



		
--	--	--

----- End of Written Report -----



**AIR DIVING CAMPAIGN**

**JOB COMPLETION REPORT**

---

# **DIVING DVD REPORT**

**Underwater video please view the attached DVD**

1. DVD01\_Su Tu Nau Pre Installation Project – Divers Survey Seabed Around STN-N05
2. DVD02\_Su Tu Nau Pre Installation Project – Divers Survey Seabed Around STN-N06
3. DVD03\_Su Tu Nau Pre Installation Project – Divers Survey Seabed Around STN-N07
4. DVD04\_Su Tu Nau Pre Installation Project – Divers Survey Seabed Around STN-N08
5. DVD05\_Su Tu Nau Pre Installation Project – Divers GVI & check the verticalness of Wellhead No.5 STN-S
6. DVD06\_Su Tu Nau Pre Installation Project – Divers survey seabed around Wellhead No.5 STN-S
7. DVD07\_Su Tu Nau Pre Installation Project – Divers Survey Seabed Around STN-S05
8. DVD08\_Su Tu Nau Pre Installation Project – Divers Survey Seabed Around STN-S06
9. DVD09\_Su Tu Nau Pre Installation Project – Divers Survey Seabed Around STN-S07
10. DVD10\_Su Tu Nau Pre Installation Project – Divers Survey Seabed Around STN-S08