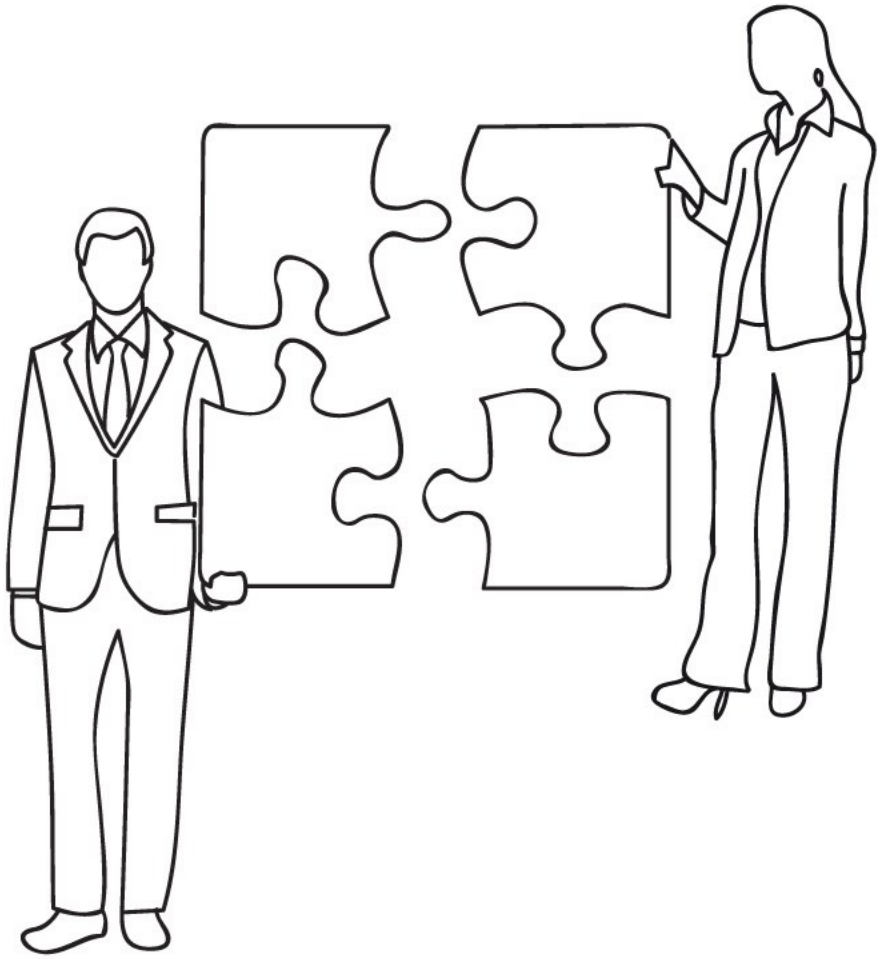
Report

2016 Annual Environmental Report r01 – OCTP Phase 1



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REVISION SHEET

Rev.	Date	N. pages	Change Description	Prep.	Checked	Reviewed	Apr.
01	16/05/2017	41	Updated to include air emissions	S. Anaglate	M. Kuzmina	M. Khan	G. Ruiu
0	31/03/2017	41	First issue	S. Anaglate	M. Fuks M. Kuzmina	M. Khan	G. Ruiu

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1 OBJECTIVE

This report is in accordance with the requirements of the following documents:

- Environmental Protection Agency (EPA) Environmental Permit to undertake the proposed installation and commissioning of infrastructure for Offshore Cape Three Points (OCTP) Block Phase-1 Field Development issued on July 9th, 2015 (Permit no. CE00217801146);
- EPA Environmental Permit to undertake drilling of thirteen (13) development wells in the OCTP Block issued on June 8th 2015 (Permit no. CE00217801143);
- EPA Environmental Permit to undertake drilling of five (5) additional development wells in the OCTP Block issued on May 27th 2016 (Permit no. CE00217801158) and;
- Regulation 25 of the Environmental Assessment Regulations 1999 (LI 1652

Eni Ghana Exploration & Production ("Eni Ghana) issued the Annual Environmental Report (AER) which presents environmental activities on the Offshore Cape Three Points (OCTP) Block conducted by Eni Ghana Exploration and Production Limited from January, 2016 to December, 2016.

2 SCOPE

The present Annual Environmental Report provides the description of Eni Ghana's environmental activities conducted in 2016.

3 INTERNAL REFERENCES

[Ref.A1]	"Eni Ghana IMS"
[Ref.A2]	Well Summary Reports for OP 5, WI-1, WI-3, SNK E-D, OP-4, OP-3, GI-3, SNK E-1X ST, SNK E-2A RE, SNK- 2AST 2, OP-6, OP-8, SNK E-C
[Ref.A3]	Environmental and Social Impact Assessment Doc. 000415_DV_CD.HSE.0208.000_00
[Ref.A4]	On Site Quality Control Reports for OP 5, WI-1, WI-3, SNK E-D, OP-4, OP-3, GI-3, SNK E-1X ST, SNK E-2A RE, SNK- 2AST 2, OP-6, OP-8, SNK E-C
[Ref.A5]	Drilling Program for OP 5, WI-1, WI-3, SNK E-D, OP-4, OP-3, GI-3, SNK E-1X ST, SNK E-2A RE, SNK- 2AST 2, OP-6, OP-8, SNK E-C

4 EXTERNAL REFERENCES

[Ref.B1]	EPA - Environmental Permit: CE00217801143, CE00217801146 and CE00217801158
[Ref.B2]	EPA Guidelines on Environmental Assessment and Management for Offshore Oil & Gas Development in Ghana (2011).
[Ref.B3]	MI Swaco Well Recap On Cuttings Dryer/Solids Control: OP 5, WI-1, WI-3, SNK E-D, OP-4, OP-3, GI-3, SNK E-1X ST, SNK E-2A RE, SNK- 2AST 2, OP-6, OP-8, SNK E-C
[Ref.B4]	Solid Control Daily Report: OP 5, WI-1, WI-3, SNK E-D, OP-4, OP-3, GI-3, SNK E-1X ST, SNK E-2A RE, SNK- 2AST 2, OP-6, OP-8, SNK E-C

5 ACRONYMS

AER	Annual environmental reports
bbl.	Barrel
CAR	Corrective Action Requested
CHPS	Community-based Health and Planning Services
CI	Community Investment
CLO	Community Liaison Officer
DCE	District Chief Executive
EIA	Environmental Impact Assessment
EMS	Environmental Management System
EPA	Environmental Protection Agency
ERP	Emergency Response Plan
FLET	Flowline End Termination
FPSO	Floating Production Storage Offloading

GNPC	Ghana National Petroleum Corporation
HSE	Health, Safety and Environment
HSEQ	Health, Safety Environment and Quality
HQ	Hazard Quotient
IMS	Integrated Management System
ISO	International Standard Organization
JV	Joint Venture
MCE	Municipal Chief Executive
MoU	Memorandum of Understanding
NADF	Non Aqueous Drilling Fluid
NAG	Non Associated Gas
LTOBM	Low Toxicity Oil Based Mud
OBM	Oil Base Mud
OCNS	Offshore Chemical Notification Scheme
OCTP	Offshore Cape Three Points
OSRL	Oil Spill Response Limited
OSCP	Oil Spill Contingency Plan
POD	Plan of Development
PLONOR	Posing Little Or No Risk
PSVs	Platform Supply Vessels
PTW	Permit to Work
R&F	Risers and Flowlines
SJA	Safe Job Analysis

SPS	Subsea Production System
SSIV	Subsea Isolation Valve
STMA	Sekondi-Takoradi Municipal Assembly
TBTs	Tool Box Talks
Vs.	Versus
WBM	Water Base Mud
WTN	Waste Transfer Note

6 DEFINITIONS

Company	Eni Ghana employees & assets engaged in the oil & gas operations
Contractor	An outside Company awarded a contract by the Company to perform a defined portion of work or to provide services or facilities
Environmental aspects	Elements of an organization's activities or products or services that can interact with the environment
Environmental impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects
ESHIA	Environmental, Social, Health Impact Assessment. Process for predicting and assessing the potential environmental social and health impacts of a proposed project, evaluating alternatives and designing appropriate mitigation, management and monitoring measures
Incident	Any accident or injury that disrupt the normal operations development. In this definition "near misses" are included.
Near Miss (NM)	An unplanned or uncontrolled event or chain of events that has not resulted in a recordable injury, illness or physical damage or environmental damage but had the potential to do so in other circumstances.

7 INTRODUCTION

The Offshore Cape Three Points (OCTP) development license is located approximately 60 km off the coast of the Western Region of the Republic of Ghana.

The license is for developing oil and gas and the joint venture (JV) is composed of Eni Ghana Exploration and Production Limited ("Operator") holding 44.444% participating interest (PI) Vitol Upstream Ghana Limited ("Vitol") holding 35.556% (PI), and Ghana National Petroleum Corporation (GNPC) holding 20% (PI) with 15% carried and 5% paid.

Figure 1 indicates the block area of the OCTP block.

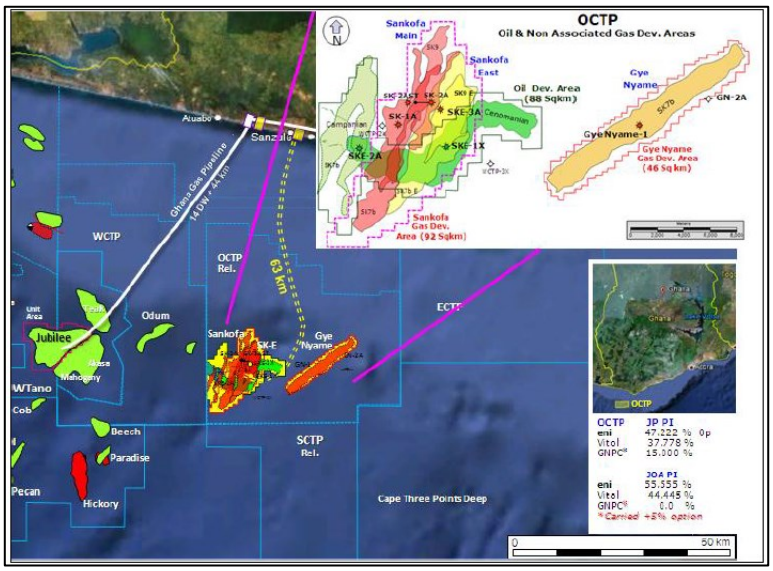

Figure 1: OCTP Block Area

The JV made three non-associated gas (NAG) discoveries: Sankofa Main Field in 2009, Gye Nyame Field in 2011, and Sankofa East Field in 2012. In addition, two oil discoveries were made: Sankofa East Field Cenomanian and Sankofa East Campanian, both in 2012 ("Oil Discoveries"). The estimated volumes in place associated with the discoveries are some 480 MMbbls of oil and 1.5 Tcf of non-associated gas.

The POD approved by the Petroleum Ministry on 30th December 2014 and its amendment approved on 11th May 2015 considered the integrated development of both oil and non-associated gas in 2 Phases:

- Phase 1: Oil Development Project. This phase consists of 14 subsea wells (8 oil producers, 3 water injectors and 3 associated gas injectors), subsea facilities, and a new conversion, double-hull floating production, storage and offloading (FPSO) unit that will be located about 60 km offshore, south of Sanzule;
- Phase 2: Non Associated Gas (NAG) Development Project. This phase consists of five (5) subsea wells, subsea facilities, gas treating facilities located on the FPSO unit, 63 km subsea gas pipeline, an Onshore Receiving Facility (ORF), and other associated onshore components.

The Phase 1 Oil Development Project Environmental Impact Assessment (EIA) process was undertaken by ESL Consulting (ESL). The Submission of the Final EIS to the Ghana Environmental Protection Agency (Ghana EPA) was done in July, 2015 and the Environmental Permit for the Phase 1 Development released on July 9th, 2015.

The Phase 2 Gas Development Project Environmental Impact Assessment (EIA) process was undertaken by ERM. The Submission of the Final EIS to the Ghana Environmental Protection Agency (Ghana EPA) was done on July 8th 2015 and the Environmental Permit for the Phase 2 Development released on July 24th 2015.

This AER provides the description of the Eni Ghana's environmental activities in 2016 for Phase 1 of the OCTP project.

Eni Ghana's activities in 2016 were covered by three (3) separate Environmental permits granted by the EPA. A fourth permit was obtained for a 3D seismic activity. The Permits are:

Existing Permits in 2016

- Environmental Protection Agency (EPA) Environmental Permit to undertake the proposed installation and commissioning of infrastructure for Offshore Cape Three Points (OCTP) Block Phase-1 Field Development issued on July 9th, 2015 (Permit no. CE00217801146);
- EPA Environmental Permit to undertake drilling of thirteen (13) development wells in the OCTP Block issued on June 8th 2015 (Permit no. CE00217801143).

New Permits acquired in 2016

- EPA Environmental Permit to undertake drilling of five (5) additional development wells in the OCTP Block issued on May 27th 2016 (Permit no. CE00217801158)

EPA Environmental Permit to commence the 3D Seismic Survey in the Cape Three Points (CTP) block 4 including the OCTP block issued on September 2nd 2016 (Permit no. CE00217801168).

8 OPERATIONAL SUMMARY AND EVENTS

8.1 DEVELOPMENT DRILLING AND COMPLETIONS

Eni Ghana obtained Environmental Permits (CE00217801143 obtained on 8th June 2015 with validity until 15th December 2016; CE00217801146 obtained on 9th July 2015 with validity until 31st January 2017; and CE00217801158 obtained on 27th May 2016 with validity until April 15 2017) for the development drilling of eighteen (18) wells and completion activities on 14 wells as part of the development of the OCTP Phase 1 project. Completion activities on remaining 4 wells are covered under Environmental Permit obtained for Phase 2 of the OCTP project (CE00217801152 obtained on 24th July 2015 with validity until 28th February 2017). Development drilling which started in 2015 continued in 2016 and thirteen (13) wells were drilled. The drillship used was the Maersk Voyager. One (1) Gas well, (Gye Name) is planned to be drilled later in 2028.

Wells drilled in 2016 were OP-7, WI-1, WI-3, SNK E-D, OP-4, OP-3, GI-3, SNK E-1X ST, SNK E-2A RE, SNK- 2AST 2, OP-6, OP-8 and SNK E-C. Drilling on OP-5 started in November 2015 and was completed in January 2016. Figure 2 illustrates the OCTP Phase 1 schematic layout.

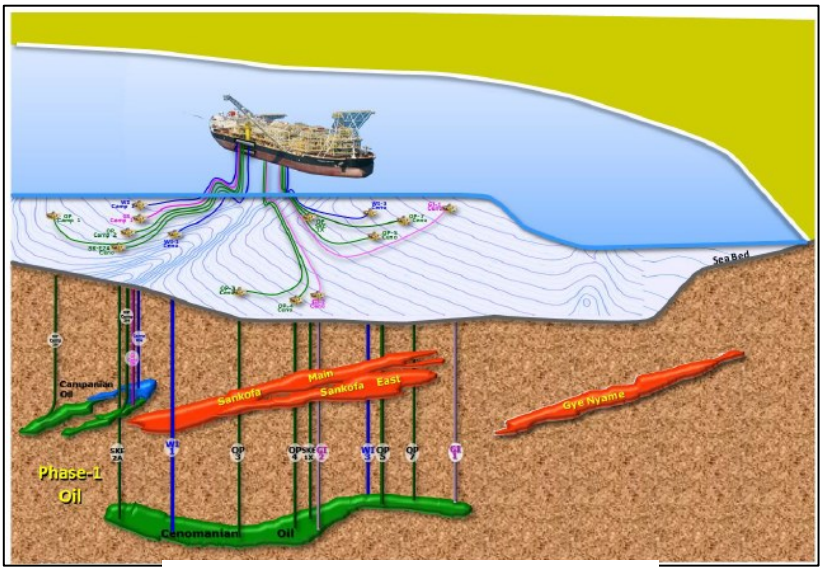

Figure 2: Schematic Layout-Phase 1

Drilling of wells were conducted without any environment related incident. Terminal reports covering these operations have been submitted to the EPA.

Table 1 below indicates the status of the drilled wells in the OCTP block area in 2016.

Well Name	Well Classification	Well Head Location		Drilling Status	Well Status
		Easting X	Northing Y		
OP-7	Oil Producer	554,588.52 m X	495,305.89 m Y	Drilled	Temporary Plugged & Abandoned
WI-1	Water Injector	547,049.01 m X	492,662.83 m Y	Drilled	Temporary Plugged & Abandoned
WI-3	Water Injector	553,349.69 m X	494,699.82 m Y	Drilled	Temporary Plugged & Abandoned
SNK E-D	Gas Producer	548, 887.27 m X	491, 800.26 m Y	Drilled	Temporary Plugged & Abandoned
OP-4	Oil Producer	550, 863.24 m X	492, 197.16 m Y	Drilled	Temporary Plugged & Abandoned
OP-3	Oil Producer	549,071.36 m X	491, 302.19 m Y	Drilled	Temporary Plugged & Abandoned
GI-3	Gas Injector	545, 812.15 m X	493, 542.86 m Y	Drilled	Temporary Plugged & Abandoned
SNK E-1X ST	Oil Producer	551, 399.79 m X	493, 700.58 m Y	Drilled	Temporary Plugged & Abandoned
SNK E-2A ST	Oil Producer	544, 565.81 m X	493, 151.73 m Y	Drilled	Temporary Plugged & Abandoned
SNK-2AST 2	Gas Producer	549, 396.50 m X	496, 615.96 m Y	Drilled	Temporary Plugged & Abandoned
OP-6	Oil Producer	554,665.12 m X	494,969.33 m Y	Drilled	Temporary Plugged & Abandoned
OP-8	Oil Producer	545,023.62 m X	493,405.32 m Y	Drilled	Temporary Plugged & Abandoned
SNK E-C	Gas Producer	551,565.83 m X	493,434.65 m Y	Drilled	Temporary Plugged & Abandoned

Table 1: Wells Drilled in 2016

8.2 DRILLING EQUIPMENT

The drillship, Maersk Voyager which started operations in July 2015, continued drilling in 2016 and will remain there until at least the 4th quarter of 2018. It is a double derrick dynamically positioned drilling ship. Its position and location is guaranteed by thrusters and GPS systems. A picture and a summary of the specifications of the drillship are provided in Figure 3 below and Table 2 below.

Figure 3: Maersk Voyager

Name	Owner	Rig Type	Maximum Rated Water Depth (m)	Maximum Drilling Depth (m)
Maersk Voyager	Maersk	Drilling Ship	3, 657	12, 190

Table 2: Specifications of Maersk Voyager

8.3 ONSHORE SUPPORT BASE FACILITIES

In 2016, the following facilities were used by Eni Ghana as onshore support facilities for offshore operations in Ghana:

- Eni Ghana Logistics Base in Takoradi;
- Dedicated berthing space in the Takoradi Commercial Port;
- GOIL Terminal in Sekondi Naval Base for bunkering operations;
- Takoradi Air Force Base passenger terminal and Inaer helicopter base;

There were several other onshore facilities abroad.

8.3.1 Takoradi Logistics Base

The Takoradi logistics base facility provided support in line with operational requirements. The logistics base provides pipe yard storage, covered warehousing, office accommodation as well as providing the offices for Eni Foundation. Below are some of the activities that continuously occur at the Logistics Base.

- Bundling of casings and pipes;
- Offloading of casings and pipes;
- Loading and Transferring of lifting equipment (mini containers, baskets and other

containers) to the Port;

- Offloading of backload (casings, pipes, baskets and mini containers) from the rig;
- Waste collection by Zoil; and
- Oil Spill Response training (Command Package Training, Aerial surveillance training, ATV Familiarization training and Shoreline package training).

The base consists of two yards and one building used as offices. It covers an area of 20,000 m^2 with 4,000 m^2 of warehousing facility, 15,000 m^2 used as pipe yard and 1,000 m^2 used as offices and other amenities (canteen and changing rooms). There is an additional pipe yard that covers an area of 10,000 m2. Casings and other materials such as mud mats, float shoe, mini containers, baskets and slings are stored in the warehouse. An aerial view of the logistics base is seen in Figure 4.

Figure 4: Logistics Base

8.3.2 Takoradi Commercial Port

Takoradi port facilities were used in 2016 for:

- Loading of Christmas Tree from GE Yard unto trailer and transported to the Eni Ghana quayside;
- Loading of Christmas Tree from trailer at quayside unto supply vessel (Pacific Gannet);
- The importation of materials with some dock space to serve as a loading/offloading point for equipment and machinery;
- Dispatching equipment and for temporary storage of materials and equipment;
- Pre-deployment of equipment and materials;

- Transfer of waste produced on rig to waste contractor;
- Loading of supplies for the rigs and support vessels;
- Oil Spill Response trainings;
- Waste collection by Zoil; and
- Bunkering operations at Cirrus Terminals.

8.3.3 Sekondi Naval Base

The GOIL Terminal in Sekondi Naval Base was used in 2016 for bunkering operations carried out on the supply vessels.

8.3.4 Takoradi Air Force Base

Eni Ghana leases part of the Takoradi Air force base as its logistical support base. The Takoradi Air Force base was used to facilitate efficient onshore storage and support facilities for ongoing offshore and onshore operations.

8.3.5 Main Work Package Update

8.3.5.1 FPSO Fabrication

FPSO hull conversion and repair works (China yard) were successfully completed in January 2016. The FPSO was transported to the Construction and Integration yard in Singapore in February 2016. All the modules were delivered to the Singapore yard and installed in the FPSO with the last module being installed at the beginning of September 2016. At the end of 2016, progress of topside modules completion was 100%. Construction and Commissioning works continued. Planned Sail away to Ghana is expected by Q2 2017. Figure 5 and 6 summarize the main milestone of the FPSO and the progress curve.

FPSO MILESTONES			
Contract Milestones	**Planned**	**Actual**	**Forecast**
Vessel Acquired	20-Oct-14	20-Oct-14	
Ship arrives in Shipyard	1-Nov-14	1-Nov-14	
Contract Award	Dec-2014	27-Jan-15	
Topside Module Ordered	3-Mar-15	3-Mar-15	
EI&T Package Order	15-Jan-15	25-Feb-15	
Refurbishment & Life extension	26-Jan-16	26-Jan-16	
Topside Module last shipment to Integration Yard	28-Jun-16	9-Sep-16	
Sail away	26-Jan-17		28-Feb-17*
Ready for SURF Hook-up	8-Apr-17		8-May-17

Figure 5: FPSO Main Milestone

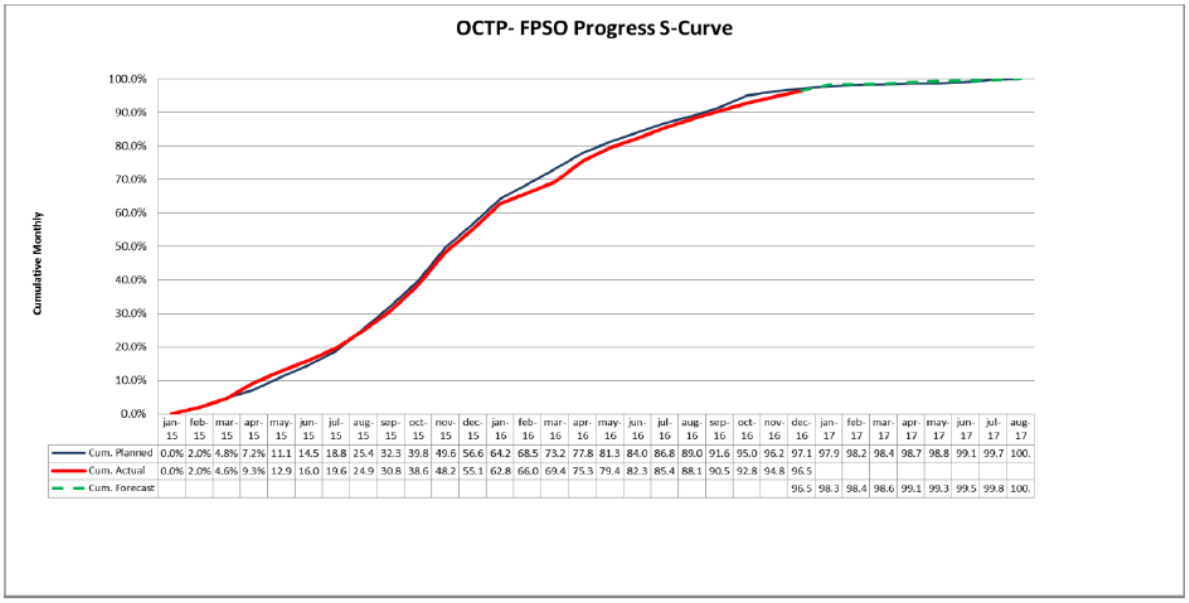

Figure 6: FPSO Progress Curve

8.3.5.2 Subsea Production System (SPS)

At the end of 2016, physical progress on the SPS package was 88.2%. Progress of the various phases of the SPS package is listed below:

- Completion System progress was 87.4%;
- Control System actual progress was 81.9% as against a planned progress of 83.6%;
- Flowline End Termination (FLET), Subsea Isolation Valve (SSIV), Riser Base and Structure System actual progress was 91.4% against a planned progress of 99.6%;
- Actual progress of the Connection System was 94.3% vs. a planned progress of 100.0%;
- Actual progress of the Workover System was 99.2% vs. a planned progress of 100.0%;and
- Progress on the Umbilical System was 90.0%.

Figure 7 and 8 summarize the main milestone of the SPS package and the progress curve.

SPS MILESTONES			
Contract Milestones	**Planned**	**Actual**	**Forecast**
Contract Award	4-Feb-15	4-Feb-15	
Wellheads (WH, Casing Hanger, etc.) **Batch#1**: 3-off	11-Nov-15	1-Dec-15	
Delivery of Umbilical i-tube interfaces to FPSO	19-Jan-16	6-May-16	
Delivery of TUTUs	20-May-16	18-May-16	
Delivery of main topside control items HPU/MCS/EPU to FPSO	19-Aug-16	24-Aug-16	
Umbilical System (Delivery Phase): **Batch#1**: 4 wells (OP-3, OP-4, GI-2 and WI-1)	4-Oct-16	3-Dec-16	
Subsea Structures System (FLET, SSIV, Riser Bases, etc) **Batch#1**: 4 wells (OP-3, OP-4, GI-2 and WI-1)	4-Oct-16		9-Feb-17
XT System (XT, FCM, TH, IWOCS etc) **Batch#1**: 4 wells (OP-3, OP-4, GI-2 and WI-1)	3-Dec-16	3-Dec-16	

Figure 7: SPS Main Milestone

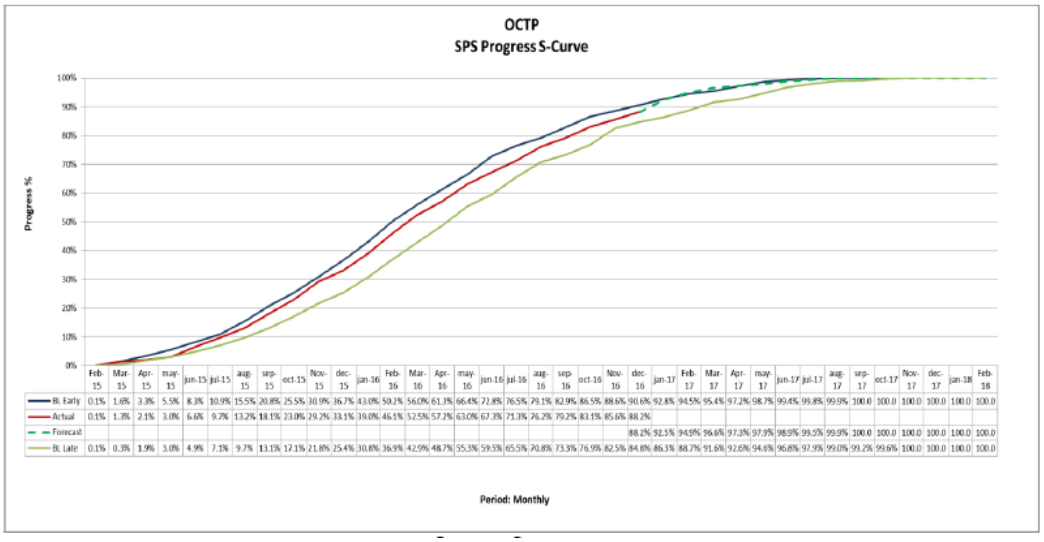

Figure 8: SPS Progress Curve

8.3.5.3 Risers & Flowlines (R&F) Supply

Engineering activities were slowed down by introduction of required additional items and modification of some already included in contract SoW (i.e. risers hold back clamps and anchors, counter flanges, automatic bend stiffener/automatic latching mechanism), in order to optimize the SURF installation activities. Final approval of some deliverables, part of the contract SoW, took longer than planned, due to the introduction of the new items. Figure 9 and 10 summarize the main milestone and progress curve of the risers and flowlines package.

R&F Supply MILESTONES			
Contract Milestones	**Planned**	**Actual**	**Forecast**
Contract Award	11-Sep-15	11-Sep-15	
Lot 1 Delivery	11-Jan-17	11-Jan-17	
Lot 2 Delivery	11-May-17		15-May-17
Lot 3 Delivery	11-Sep-17		14-Aug-17
Lot 4 Delivery	11-Jan-18		29-Oct-17

Figure 9: R&F Main Milestone

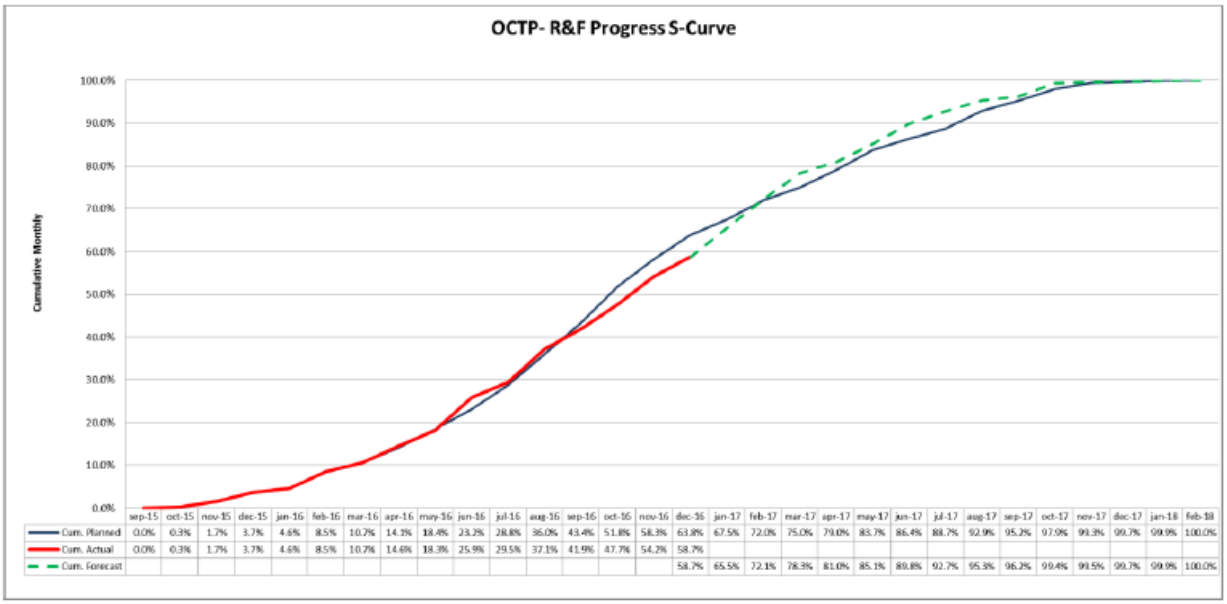

Figure 10: R&F Progress Curve

8.3.5.4 Subsea Umbilical, Risers and Flowlines Transportation & Installation (SURF)

Base case schedule is considering the start of operations after the FPSO arrival at site and ready for SURF Hook by April 2017. A second option (the wet storage plan) is already under implementation by Contractor considering the possible delay of FPSO Sail away and consequently delay of arrival at site (maximum 1 month). The wet storage plan implies the start of installation activities before FPSO arrives on site, avoiding any impact of First Oil date. Figure 11 and 12 summarize the main milestone and progress curve of the SURF package.

SURF T&I MILESTONES			
Contract Milestones	**Planned**	**Actual**	**Forecast**
Contract Award	31-May-16	31-May-16	
RFIC Wells Loop 1	16-May-17		2-Jun-17
RFIC Oil Producer Wells Loop 2	21-Jul-17		5-Aug-17
RFIC Gas Producer Wells for First Gas	1-Feb-18		1-Feb-18
RFIC Injector Wells Loop 2	7-Feb-18		8-Feb-18
RFIC Oil Producer Wells Loop 3	14-Mar-18		7-Mar-18
RFIC Injector Wells Loop 3	11-Jul-18		11-Jul-18
RFIC Last Gas Producer Wells	21-Jul-18		21-Jul-18

*RFIC: Ready for Integrated Commissioning

Figure 11: SURF Main Milestone

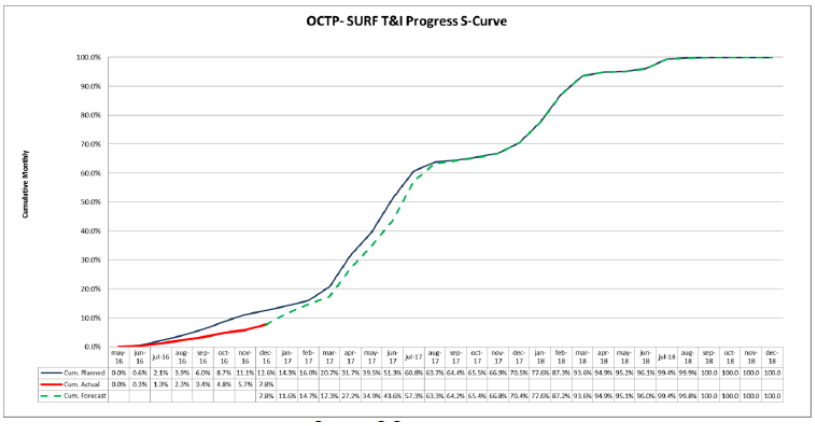

Figure 12: SURF Progress Curve

9 ENVIRONMENTAL MANAGEMENT

9.1 ENVIRONMENTAL MANAGEMENT STRUCTURE

Eni Ghana HSE Department was in charge of Environmental Management in 2016. There were HSE supervisors and HSE field supervisors serving as the focal points for all environmental related matters on the Rig, Logistics Base and other contractor operating sites. Since December 2010, Eni Ghana has been certified in accordance with the Environmental Management System (EMS) standard and regularly confirmed the

compliance by third body. ISO 14001, is an internationally agreed standard that sets out the requirements for an environmental management system and it helps organizations improve their environmental performance. This permitted Eni Ghana to implement proactive environmental objectives and manage the operating activities through the best practice tools.

Top Management provided leadership and direction to ensure the company was operating in an environmentally responsible manner. The HSE Integrated Management System (IMS) awareness was communicated effectively to the entire workforce and top management's commitment to achieving the objectives of the statement drove the implementation process. Eni Ghana employs a number of management tools to manage environmental impacts and risks associated with the Project. These include developing appropriate standards, procedures, plans and work instructions. Periodic auditing and inspections of procedures and operating sites are done for compliance, communicating responsibilities and monitoring. A number of management plans have been developed for specific environmental issues. Examples of these include the following:

- Environmental Management Plan;
- Waste Management Plan;
- Environmental Monitoring Program
- Marine Mammal and Sea Turtle Policy Protection Program;
- Offshore Hazardous Material Management Plan;
- Oil Spill Contingency Plan;
- Blowout Emergency Response Plan (BOERP).

Among others, these plans generally deal with the under-listed environmental issues:

- Emissions to air and ambient air quality;
- Liquid Discharges (produced water. bilge water, wastewater, sewage effluent etc.);
- Chemicals Management;
- Waste Management;
- Oil and chemical spills (spill prevention and response);
- Noise ;
- Drill cuttings discharge.

9.2 *ENVIRONMENTAL MONITORING*

Eni Ghana's operations have environmental aspects that have associated environmental impacts which have to be adequately monitored to ensure local environmental quality and ecological conditions are preserved. Monitoring programs are necessary to ensure discharges and emissions from operational activities meet regulatory limits for various environmental parameters and where there are exceedances, measures are put in place to achieve regulatory compliance limits. Permit requirements as well as company's policies and procedures require the monitoring, reporting and management of environmental parameters. In order to efficiently carry out this essential environmental monitoring function, eni Ghana put in place measures to monitor impacts to the environment. In 2016, routine monitoring concentrated on:

- Monitoring offshore and onshore water consumption;
- Offshore chemical usage;
- Drill cuttings management; and
- Waste management

This was done in order to ensure compliance with regulatory requirements as well as to evaluate the effectiveness of operational controls and other measures intended to mitigate potential impacts. Monitoring data was analyzed to identify trends in the quality of operational emissions and discharges and its associated impacts on the receiving environment.

9.2.1 Water Used and Discharged

Table 3 below illustrates quantities of water used and their disposal methods.

Location	Type of Withdrawal	Source	Use	Quantity Used	Type of Discharge	Quantity Discharged
Offshore	Seawater	Sea	Cooling systems	12,444,000 m^3	Sea	12,444,000 m3
Onshore	Freshwater	Surface Water	Domestic use	410 m^3	Sewage/offsite water treatment	400 m^3

Table 3: Water Consumption

9.2.2 Offshore Chemical Usage

Sea Water with high viscosity Bentonite sweeps for hole cleaning was used for the jetting of

the 36" conductor pipe and the drilling of the 26" wellbore. Non Aqueous Drilling Fluid (NADF) was used for the mid and lower sections of the wellbore.

Drilling operations used chemicals with Gold, E, C, D and B ratings according to the Hazard Quotient(HQ) and Offshore Chemical Notification Scheme (OCNS) ranking. Majority of the chemicals used were rated E under the OCNS system and thus pose little or no risk to the environment. Table 4 summarizes the offshore chemical usage for drilling operations in 2016. Chemicals used for drilling activities were regenerated after drilling of each well in preparation for the drilling of the next well. Thus reducing both cost and environmental impacts.

Chemical Product Name	Function Group	HQ/OCNS Ranking	Total Quantity Used/kg
BARABUF	Acidity Control Chemical	E	1325
BARACARB 150	Lost Circulation Material	E	29130.6
BARACARB 25	Lost Circulation Material	E	11900
BARACARB 5	Lost Circulation Material	E	12750
BARACARB 50	Lost Circulation Material	E	40700
BARACARB 5/25	Lost Circulation Material	E	54000
BARACARB 50	Lost Circulation Material	E	3800
BARACARB 50/150/600	Lost Circulation Material	E	4175
BARACARB 50/150/600 -1 ton	Lost Circulation Material	E	875
BARACARB 600	Lost Circulation Material	E	6575
BARACOR 100	Corrosion Inhibitor	D	26649
BARAKLEAN-648	Well Bore Clean-up Chemical	Gold	27240
BARAVIS	Viscosifier	Gold	1248.5
BARAZAN	Viscosifier	E	6850
BARAZAN D	Viscosifiers	Gold	126225
BARITE	Weighting material	E	4392000
BENTONITE	Viscosifiers	E	531800
CALCIUM CHLORIDE	Solid Salt	E	77000
CALCIUM CHLORIDE 94% - 97% 25 KG	Solid Salt	E	9425
CAUSTIC SODA	Acidity Control	E	7300
CFS-648 - 1000 L IBC	Surfactant/Soap	Gold	66110
DRILTREAT	Oil wetting agent	E	35343.05
DURATONE E	Filtration Control Additive	C	18882.3
DURATONE HT	Filtration Control Agent	C	68997.2
EZ MUD DP	Shale Control Inhibitors	Gold	1775
EZ MUL NT	Emulsifier	D	70095.25

GELTONE II	Viscosifiers	E	22063.5
GUAR GUM	Viscosifiers	E	35365
INVERMUL	Emulsifier	B	53185
INVERMUL NT	Emulsifier	B	18852
LIME	pH Control	E	61575
LIQUI-VIS	Viscosifier	E	197856.25
MI BARITE	Weighting Materials	E	208000
MI BENTONITE	Viscosifiers	E	64000
MI CAUSTIC SODA	Acidity Control	E	1100
MI DUO-VIS	Viscosifiers	Gold	1024
MI OIL MUD WASH	Surfactant/Soap	E	1456
MI SAFE CARB 10	Weighting Materials	E	1066.6
MI SAFE CARB 20	Weighting Materials	E	841
MI SAFE CARB 40	Weighting Materials	E	1000
MI SAFE VIS E	Viscosifiers	E	170
MONO ETHYLENE GLYCOL	Gas Hydrate Inhibitor	E	2309
OXYGON	Oxygen Scavenger	Gold	3050
PAC	Fluid loss Additive	E	13275
PAC-L	Fluid loss Additive	E	31975
POTASSIUM CHLORIDE	Salt	E	23800
SARALINE 185V	Synthetic Drilling Base Fluid	E	1509524
SODA ASH	Calcium Remover	E	8375
SODIUM BICARBONATE	Water Based Drilling Fluid Additive	E	25
STARCIDE P	Biocide-Control sulfate reducing bacteria	Gold	10784.21
STEELSEAL 100	Lost Circulation Material	E	2175
STEELSEAL 400	Lost Circulation Material	E	750

Table 4: Chemical Usage

9.2.3 Reservoir Flows

Blowout Emergency Response Plan (BOERP) was prepared to be activated in such situations. The plan has the below objectives:

- To protect personnel at well site preventing further accident during the first stage of the emergency;
- To prevent further environmental and/or facility damage while adequate equipment and personnel for the response are being mobilized;
- To reduce response time for the intervention by locating the critical equipment and planning for its mobilization, identifying in advance critical issues and properly address

them into the Company organization;

- To reduce the overall event time by determining the proper response structure and prioritizing response activities.

9.2.4 Waste Management

Waste generated during 2016 was managed as stated in the Eni Ghana Waste Management Plan. MARPOL regulations on offshore waste management were complied with as stipulated in the permit conditions. Eni Ghana currently has the practice of segregating waste into six (6) waste categories i.e. (metal, wood, plastic, general hazardous and spill kits). Segregation is carried out at source, both onshore and offshore. As per MARPOL requirements, food waste is discharged subsurface after maceration to <25 mm. The Waste Management Contractor, Zoil Services Limited, authorized by EPA provided waste management services. Table 8 below shows the types and volumes of waste generated. There is currently a recycling system (with facilities for recycling plastic waste generated) in place adopted by Eni Ghana's waste management contractor to minimise environmental impacts caused by disposing of plastics in landfills. Shredded plastics are transported to a plastics recycling company in Accra for remolding into waste bins. Bulk of Eni Ghana hazardous waste comprising oily water and drill cuttings (which hitherto could not be treated by the Verti-G dryer system onboard the drillship due to cuttings being contaminated by cleaning of mud pits and need to drill out cement plugs rendering the Verti-G dryer incapable of treating Oil Base Mud (OBM) cuttings contaminated with cement) were sent on shore to be managed via high temperature thermal desorption unit by Zoil Services Limited.

Waste management hierarchy used at all sites is depicted in Figure 13. To ensure effectiveness of the waste management hierarchy, appropriate identification and segregation of waste streams was adhered to. To facilitate this, color coded containers as described in Figure 14 below could be found at all operational sites.

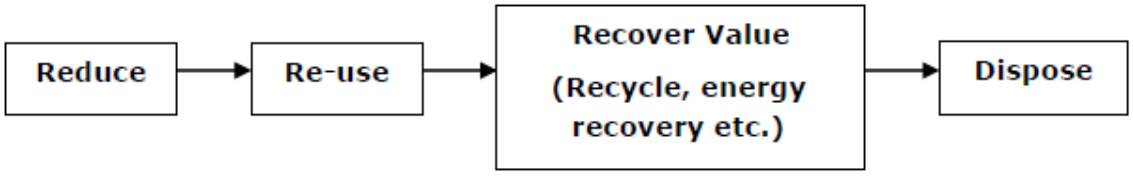

Figure 13: Waste Management Hierarchy

General Waste	
Hazardous Waste	
Scrap Metal	
Wood	
Plastic Waste	
Spill Kit	

Figure 14: Colour Coding for Waste Management

9.2.4.1 Waste Quantities Generated and Discharged

Wastes generated from operational activities were very diverse in their characteristics, large in their amounts and some of which were hazardous in nature. Thus, quantifying and characterizing the generated amounts in association with their types, sources, and their chemical and biological characteristics was critical to evaluating possible management practices.

On the rig, the wastes produced on the platform by all contractors are stored temporarily in suitable bins and skips placed at vantage points. The crew then fills out the manifest with the different types and volumes of waste. The Company HSE supervisor on board prepares Waste Transfer Note (WTN) from the waste manifest and according to Waste Management Plan. The WTN prepared has the following details:

- Details of the waste in transit (classification, description, characteristics, quantity and mode of transport);
- Transport operator with business name and details of permits (the condition of the vehicle and its preparation will be his responsibility);
- Identification of the vehicle and the person responsible for the waste (e.g. the driver, in the case of road transport);
- Addressee (business name, destination plant, location and details of permits) and intended route; The quantity of waste transported (a directly weighted quantity or, at least an estimation.

The waste is shipped onshore where the waste management contractor receives the waste, ensures waste segregation according to Eni Ghana's waste management plan before

transporting the waste for final disposal/treatment. A waste register (waste log) and copies of all WTNs that have been produced from the site are maintained by an HSE personnel in the office. The Waste Register include, as a minimum, the following information:

- Source of waste (e.g. rig, vessel, Logistics Base, etc.);
- Waste description (e.g.: oily rags);
- Classification of waste streams (i.e. hazardous or non-hazardous);
- Quantity (weight (kg) or volume (in liters or in m3));
- WTN numbers;
- Dates of transfer;
- Mode of transport;
- Transport operator;
- Vehicle;
- Details of permits.

Communited or ground food waste with particle size no greater than 25 mm is discharged at sea as defined by "MARPOL" (Marine Pollution) international standards.

Civil sewage discharged from W.Cs, washbasins, showers and camboose are treated in a purification system before being dumped into the sea. Discharge is compliant with "MARPOL" international standards. All discharges into sea and to a reception facility are recorded in a Garbage record book.

In Table 5 below, total quantities of waste generated in 2016 and the treatment/disposal options is presented. Main treatment options used were:

- Recycling;
- Disposal To Landfill;
- Treatment.

68.63 tonnes of waste material (comprising plastics and metals) was recycled over the reporting period. 185.74 tons non-hazardous, inert waste that cannot be avoided, reused or recycled was disposed of at the Sekondi-Takoradi Municipal Assembly (STMA) landfill. 1,047 tons of waste comprising oily water, OBM cuttings, and oil polluted concrete was sent to Zoil Services Limited for treatment through a contract with Halliburton.

Waste Type	Quantity Generated	Unit	Treatment Option	Contractor In Charge of Disposal

Food Waste	8,761	kg	Disposal to Landfill	Zoil
Rig Mixed Waste	115,650	kg	Disposal to Landfill	Zoil
Clinic Waste	47.5	kg	Incinerated	Zoil
Plastics	2300	kg	Recycling	Zoil
Wood	61,330	kg	Disposal to Landfill	Zoil
Scrap Metal	66,330	kg	Recycling	Zoil
Oily Rags and Waste	9,257	kg	Incinerated	Zoil
Oily Water	851,260	kg	Treatment	Halliburton
Empty chemical bags	160,270	kg	Incinerated	Zoil
Plastic Drum	9,045	kg	Recycling	Zoil
Metal Drum	11,490	kg	Recycling	Zoil
Septic Waste	351,930	kg	Treatment	Zoil
Oily Polluted Concrete	133,300	kg	Treatment	Halliburton
OBM Cuttings	62,800	kg	Treatment	Halliburton

Table 5: Waste Generated

9.2.4.2 Management of Drill Cuttings

Discharging cuttings contaminated with drill cuttings into the sea (Eni Ghana used low toxicity oil based mud (LTOBM) for its drilling operations) into the sea attracts surcharges as per the EPA regulations if the oil concentration exceeds 2% by weight – in other words, 20 grams of oil per kilogram of cuttings.

The mixture of drilling fluid and cuttings generated during the drilling process was brought back to the rig floor for treatment. MI Swaco's Solid Control System which includes two Verti G Dryers, two centrifuges and another centrifuge that works in-line with the Verti-G dryer were deployed on the drillship to reduce the oil based mud on the cuttings.

Drilling fluid and cuttings from the wellbore were routed to the shakers which consist of a

series of vibrating screens for removal of coarse grained cuttings and sand. The movement of the vibrating screens is designed to transport the oversize solids (drill cuttings) to the discharge end of the shaker, where they are collected and transported to the Verti-G dryer for further separation. Drill cuttings are then sent to the Verti-G cuttings dryer unit for further processing. The oil content in the drilling cuttings at the end of the process is reduced from 15% -20% output from shale shakers to an avg. of 2.5%. The centrifuges are used to remove fine solids content in the mud (mainly barite and fine clay that passes from shale shakers and the screens of the Verti-G). The fluids resulting from the process is recovered and put back in the mud system for reuse while the solids are mixed with cuttings dry products from Verti-G and discharged to the sea.

Terminal reports covering well operations (drilling) were completed and submitted to EPA as required by permit conditions. Table 6 below gives a summary of volume of cuttings discharged for sections drilled with NADF, and volumes of mud recovered and discharged for all wells drilled in 2016.

Well Name	Volume of Cuttings Discharged (m^3)	Volume of Mud Recovered (m^3)	Volume of Mud Discharged (m^3)	Percentage of Oil In Cuttings (%) Residue
OP-7	257.00	52.78 m3	4.15	2.34
WI-1	272.13	48.17	17.40	2.54
WI-3	264.70	32.59	14.80	2.59
SNK E-D	129.54	39.11	4.10	2.65
OP-4	251.24	39.75	25.10	2.35
OP-3	237.54	62	49.60	2.58
GI-3	259.61	74.8	46.10	2.52
SNK E-1X ST	38.58	19.8	3.65	2.57
SNK E-2A ST	20.81	10	5.20	2.59
SNK- 2AST 2	32.00	11.3	2.16	2.45
OP-6	247.71	27.96	10.70	2.32

OP-8	369.29	88.5	28.14	2.47
SNK E-C	147.00	46.1	3.28	2.45
Total/Avg. OOC%	**2527.12**	**552.86**	**214.38**	**2.49%**

Table 6: Drill Cuttings Summary

A total of 2527.12 m^3 of cuttings were discharged via a caisson from the drilling rig. The Verti-G recovered about 552.86 m^3 of mud. Mud recovered was put back into the system for re-use. Thus, Eni Ghana was able to successfully recover a considerable volume of fluid reducing both cost and environmental impacts. 214.38 m^3 of mud was discharged below the sea level after treatment.

9.2.4.3 Oil On Cuttings

The environmental permit granted by the Ghana EPA allows cuttings with oil content (%) values with the 2< OC <10 to be discharged in situ. Average oil on content (OOC) percentage for 2016 was 2.49%. OOC percentages for all wells drilled in 2016 are presented in Table 6 above. The surcharge invoice for twelve (12) wells was received and payment was done accordingly.

9.2.5 Emissions to air and ambient air quality

During the reporting year, Eni Ghana monitored hydrocarbons consumed by the rig and other supporting vessels. Emissions generated were calculated using SHERPA, an excel based tool developed by the Eni Upstream for accounting air emissions. The SHERPA tool is collects, manages and consolidates air emissions allowing accounting for GHG emissions, in addition to other air pollutants (SOx, NOx), on the basis of activity data (e.g., fuel consumptions, flaring/venting, production rates). Table 7 below indicates emissions generated by the rig and supporting vessels in 2016.

Site	Emission Source	Parameter	
		NOx	SO2
Rig + PSVs	Fuel engine	1087 (tons)	136 (tons)

Table 7: Air Emissions

9.3 ENVIRONMENTAL INITIATIVES

In 2016, new initiatives and additional managerial efforts were implemented to affect positively environmental aspects. These initiatives included:

- Reduced oil content on dry cuttings to ALARP - In 2016, the oil content on the drilling cuttings was reduced from 15% - 20% output from shale shakers to approximately 2.5%. The efficiency of the dryer unit in the Solids Control System onboard also permitted fluids to be recovered, upgraded and reused, thus volumes of chemicals that could have otherwise been discharged overboard was avoided;
- Minimized plastic waste – Water cooler dispensers were introduced to replace plastic water bottles and the consequent large amounts of plastic waste generated. Reusable water bottles were provided to the crew;
- Oil Spill Response Trainings were carried out in two sessions:
  - First session in March
  - Second session in October/November
- Oil Spill Reponses Drill (Tier 2) was carried out with offshore boom deployment for Maersk Voyager.
- Minivans introduced for personnel transportation – This initiative served to minimize the number of vehicles on roads and thus minimized fuel consumption and GHG emissions;
- HSE observation and stop work cards system also introduced; and
- Effective utilization of IVMS (In-Vehicle Monitoring System) – This allowed good control of vehicles by reducing unnecessary km driven thereby reducing the fuel consumption, dust generation and emissions.

9.4 INSPECTIONS AND AUDITS

In line with ESHIA Phase 1, Eni Ghana provided periodic audits and inspections. HSE inspections were conducted on a regular basis at all operational sites. These included both physical condition inspections as well as procedural audits. Eni Ghana assigned HSE supervisors at the rig, Logistics Base and other operational sites to ensure that Eni's expectations, compliance activities, and HSE procedures were adhered to onsite. Tasks performed by HSE supervisors at rig and the Logistics included the following:

- Area inspections conducted on a daily and weekly basis on rig floor, chemical storage area, service companies units, mud processing and treatment units, welding and cutting areas, emergency evacuation and mustering equipment, work and

accommodation areas and high pressure equipments;

- Risk assessment process including Project Risk Register, Permit to Work (PTW), Safe Job Analysis (SJA), Tool Box Talks (TBTs), and Pre Job Meetings;
- Safe Job Analysis (SJA) done on activities such as drilling, casing, lifting, completion, chemical mixing, mud processing, work at height, and working in confined spaces;
- Waste Management (Waste Segregation, Waste Inventories, issuing of WTN, monitoring and implementation of legal requirement for compliance;
- HSE daily and bi weekly meetings with contractors;
- Chemical Management (Handling, Storage, MSDS, Transportation, etc.);
- On-board solids control equipment for cuttings cleaning;
- Housekeeping;
- DROPS (hunting for potential dropped objects);
- Supervision of loading of Christmas Tree from trailer at quayside unto supply vessel (Pacific Gannet); and
- Monitoring of Operational Health and Safety standards.

Beyond routine inspection and monitoring activities conducted, audits were carried out by both internal and external auditors to ensure compliance with regulatory requirements as well as with internal HSE standards.

9.4.1 Internal Audit

Eni Ghana confirming the compliance with EMS ISO 14001 requirements performing on a scheduled basis internal audits including contractor's activities. Four (4) Internal Audits (internal to contractors) were conducted during 2016. One of these audits was carried out on the Zoil Services Ltd and Halliburton who are the responsible contractors for the Waste Management.

9.4.2 External Audits

- From June 13th to 17th, 2016, a joint visit from Eni HQ and Eni Ghana was carried out to assess the Construction progress and HSE performance of main contractor (Yinson) and subcontractors in the different FPSO related yards where the integration works of the FPSO was taking place (Singapore) as well as the construction and assembly of the different Topside Modules was ongoing (Batam, Indonesia);
- From 18th – 23rd July, 2016, a , Eni/OPS/LOGIS Lifting Competence Center and third party carried out a specific lifting assessment in Eni Ghana to verify the implementation level of the Lifting Management System (LMS). The team visited Eni

Ghana – Accra Headquarter, Maersk Voyager Drilling Unit (offshore), Takoradi Logistic Base and Port yard and Sanzule Onshore Receiving Facility. The main operational improvement areas recommended were the operational planning (non-routine lift plans, PtW, Tool Box Talk system) and execution (sensitization campaign about technical aspects of lifting operations and safe behaviors). The recommendations of this assessment have been satisfactorily closed out;

- RINA re-certification audit for ISO 14001 & 18001 (with inclusion of ORF) was carried out from 21st to 25th November with no non-conformities raised. Recommendations were however suggested by the auditors to Eni Ghana.

9.4.3 ISO 14001

Since December 2010, Eni Ghana has been certified in accordance with the Environmental Management System (EMS) standard, ISO 14001, and in 2016, a major task was to ensure Eni Ghana's EMS certification was maintained following the ISO 14001 recertification audit in November 2016. To this effect, two audits were conducted at the following locations

- Part I - Accra HQ & Takoradi Logistics Base;
- Part II - Offshore Operations, Maersk Voyager.

The main activities lined up and implemented in order to achieve the milestone included:

- Takoradi Logistics Base Operations;
- Drilling operations at the drillship;
- ISO 14001 EMS system maintenance;
- Review and upgrade of the ISO 14001 Legal register.

Certifications were re-confirmed for all premises.

9.4.4 Regulatory Visits

On the 8th and 9th of September 2016, three (3) officials visited the Maersk Voyager for an Environmental Inspection. During inspection EPA was mainly focused on waste management system, chemical management, cuttings cleaning system and overall discharge and OOC calculation. EPA also highlighted the issue of the fishing boats proximity to the drilling ship, and proposed to develop some actions to help us to solve the problem.

10 ENVIRONMENTAL INCIDENTS

Environmental incidents which include unintended contained spills are logged on the INDACO incidents reporting tool. A summary of environmental incidents recorded for 2016 are presented below:

1) Incident Type:	**Non Injurious Incident (Contained spill of OBM)**
Date:	2nd April, 2016
Company:	Maersk Rig
Location:	Maersk Voyager, OCTP
Description of Event:	At approximately 22:30hrs there was contained spill of NADF at the back of the shakers which overflowed the containments and went down into the lower process room. The Driller had requested that the sand traps be bypassed when running casing as they were going onto pit system with the riser boost running for ease of volume control while RIH and filing at the same time. The Driller was informed that everything was lined up but he could see returns going down the flow line and also see that cuttings were coming over the shakers. As the Driller could not see his active levelling off he stopped, called the Pump room and requested the line-up to be checked. It turned out one of the manual flow line valves had been left in the closed position and this had caused the flow line under the shakers to fill up and overflow causing the spill. There was no loss of NADF to environment. Spill response team assembled, area was barriered off and cleaned up.
CAR:	Spill was cleaned-up and residues were disposed properly. DSL discussed with crews good practices on how to prevent spills; "walk the line" was emphasized as one of the essential checks. Double checking of lineup was advised to be critical. Crew was advised that not to rush the job without confirming 100% that all is in good order.
2) Incident Type:	**Near Miss (NM - Contained Spill)**
Date:	23rd April, 2016
Company:	Pacific Gannet

Location:	Sekondi Naval Base, Sekondi
Description of Event:	On Saturday 23rd April, 2016 the supply vessel Pacific Gannet was to receive 400 m^3 of fuel from Goil terminal at the Sekondi Naval Base. At around 14:45 hours there was bunkering meeting. At about 15:00 hour the bunker hose (belonging to Goil) was connected to the Avery hardoll (connected to the vessel's manifold) using the vessel crane. At about 16:00 hours the vessel started receiving the fuel at 2 bar loading pressure according to the Chief Engineer. At about 16:10 hours the bunker hose came off from the Avery Hardoll spilling MGO on deck, quayside and some small volume into the sea. The loading pressure was about 5 bar and 14.5 m^3 of fuel had been received by the vessel. Command was sent to the Goil station for the operation to be stopped. About 10 liters of the fuel was spilled on the quayside and into the sea (about2 liters). The Naval Fire used water to from the fire car to clean the spilled fuel at the quayside into the fuel drains. At about 16:45 hour, almost 75 liters of MGO was contained on deck by the vessel crew. The contained fuel was transferred in waste bins provided by Goil and later sent away by Goil. Oil absorbents were used to clean the remaining fuel on deck. Saw dust too were placed on the fuel to prevent it from spreading. At about 17:15 hours after the spill on deck and quayside has been contained and cleaning on going on deck, it was agreed by the Captain, Intertek Supervisor (Henry Kesse) and Eni Ghana HSE Supervisor that before the bunkering operation can proceed Goil has to provide Pressure Test Certificates of the new hoses to be used. There was a wait till about 24:00 hours before the Goil team arrived with the certificates but they were deemed invalid because they had no signature and stamp of the inspector (attached are the certificates). The bunkering operation was called off at about 24:15 hours. It was found out that the outer diameter of the Avery Hardoll is 11.45cm while the inner diameter of the fuel hose is 12.45cm. The hose and Avery hardoll also had sealant applied but has almost wear off which could also affect the connection.
CAR:	All fuel hoses are to be pressure tested and certified by a third party and certificates made available to the Vessels and Eni Ghana before the next bunkering

operation. Hose and hardoll to be used for bunkering should be checked by the Chief Engineer of the vessel, Intertek, Eni Ghana rep and Goil prior to the each operation. Inspection of spill kits on supply vessels and Goil terminal to be carried out often.

3)	**Incident Type:**	**Contained Spill (NM)**
	Date:	19th September, 2016
	Company:	Maersk Rig
	Location:	Maersk Voyager, OCTP
	Description of Event:	At approx. 01.00 AM there was $2m^3$ of overflow in bulk room. This was water mixed with other materials from OWS. OWS was not working at that time. The over pressurization is believed to have been caused by a fresh water flushing valve passing. Normally this would not be a problem – the small amount of fresh water would pass through freely overboard. However as the overboard line was blocked the fresh water filled the pipe and eventually caused the over pressurization of the OWS. The over pressurization of the unit did not lead to any overboard spill (as the overboard was plugged).
	CAR:	Tech Dept. investigated, repaired, and suggested measures to prevent reoccurrence. Marine Dept. installed spray nozzles above the overboard to make this point less attractive for the fishermen to tie up to. Mess was cleaned up and residues were dispose of properly. the overboard line to be inspected for plugs prior to starting the OWS. Spray nozzles installed above the overboard line. Vents to be kept open on the 3 stages of the OWS when it is not in use to prevent pressure buildup.

All raised corrective actions have been closed formally.

11 EMERGENCY PREPAREDNESS

In 2016, Eni Ghana put in place an Emergency Response Plan to:

- Minimise negative consequences to human life, environment, eni ghana assets and business in case of an emergency situation, and eni reputation by an effective and efficient response;
- Ensure the availability of adequate information on emergency situations through a good communication system and at all levels;
- Ensure efficient management of the emergency through all available and dedicated resources.

The ERP covers all stages and phases of the emergency response, from initiation until the emergency is over and the normalization phase has started.

The development drilling & production operations Oil Spill Contingency Plan (OSCP) was also in place to offer guidance on the necessary actions to prevent and/or minimise any accidental discharge of oil and to mitigate any negative effects. Eni Ghana also utilized the services of Oil Spill Response Limited (OSRL) to carry out training exercises and inspections to further improve oil spill awareness and capability for both in house personnel, third party contractors and community members. Below is a summary of activities conducted and oil spill response equipment provided during 2016:

- Harbor Package Training for 14 eni personnel;
- Equipments Audit and vessel liaison;
- Equipments for the Takoradi Logistics Base;
- Equipment at the harbor;
- Offshore training sessions for 14 crew - Posh Sincero;
- Equipment for Posh Sincero.

12 SAFETY EXCLUSION ZONE

Consistent with industry practice and acquired Environmental Permits for the drilling operation, a 500m radius safety exclusion zone was established around the rig during the drilling activity. However, the safety exclusion zone was not kept clear of fishermen. There were several instances where fishing boats using fishing lines were spotted at both starboard and port side. On the average, there were about a minimum of 10 boats/day and

a maximum of 15 boats/day incursions. Recording of boats were done in the morning and evening. Eni Ghana with the support of the chase vessel, *Armada Tugas 4* is trying to keep these Fisherman boats out of the safety exclusion zone. Discussions are ongoing on attempts to draw up a Memorandum of Understanding (MoU) with the Ghana Navy.

13 SUSTAINABILITY & COMMUNITY ENGAGEMENT ACTIVITIES

Eni Ghana's social performance is made up of three component parts; community stakeholder engagement, social impact management and Community social investment. In 2016, Eni Ghana was committed to operating and acting in accordance with laws, rules of fair competition, honesty, integrity, transparency and good faith, with due respect to the legitimate interests of its employees, shareholders, commercial and financial partners, industry associations, communities and legitimate institutions, governments and their agencies. A fundamental value exhibited in 2016 was respecting the local communities and people impacted by its business. Proper management of the social impacts of its operations was critical to the growth and sustainability of the business. Managing impacts consistently helped to ensure risks were mitigated and also ensured that projects run on time and on budget. Positive reputation was built to strengthen access to growth opportunities. Broadly, milestones achieved in 2016 are listed below in the sections.

13.1 COMMUNITY ENGAGEMENTS

A series of grass-root interactions with communities' key influencer groups, individuals and institutions in Accra and Takoradi were made providing the possibility for stakeholders to become acquainted with the project, to understand its potential impacts and proposed mitigation and management measures and finally for the affected community and interested public, to raise concerns and issues.

Community Investment (CI) Strategy workshop was held in Accra from the 1st - 2nd March 2016 to define activities for the preparation of the Community Investment Strategy document. Below are CI Strategy Workshop 1-2 March Communique and the Ghana OCTP CI Strategy Working Document.

Three public hearings attended by the Western Regional House of Chiefs, Municipal Chief Executives (MCEs), District Chief Executives (DCEs), Assembly Members, the Media and the General Public were held to:

- Introduce the Company and begin the foundations of a friendly, mutually

understanding relationship between Eni Ghana and all the fishing communities along the coast who could in one way or another affect or be affected by our activities;

- Ensure that the fishing communities understand what the drilling operations are about, the benefits of the operations and the fishermen's limitations. The result would be that both the fishermen and Eni Ghana could occupy the waters for that frame of time with no or very minimal interruptions to drilling operations;
- Form a good relationship with the communities, understand their background, needs and concerns and where possible or feasible, work together to improve them.

Eni Ghana has in place a grievance mechanism. Project-related grievances (written and verbal) received from communities and stakeholders affected at by the project were evaluated and addressed. The CLOs received and examined complains and provided rapid responses to the complainant. In instances where the CLOs could not resolve grievances, the grievances are escalated to the Local Content & Sustainability Manager to further handle the issue. The Grievance Committee is brought into the grievance management only when grievances are escalated at the Managerial level.

In 2016, no grievance regarding the Phase 1 project was received from stakeholders.

Dedicated Oil Spill Response shoreline package trainings sessions were organized starting from 2nd of November to 4th of November 2016. The trainings were provided to local community representatives from the following regions: Bakanta, Anwonakrom, Krisan and Eikwe. The local community representatives were divided for three groups and three dedicated shoreline package trainings sessions were organized. In each training session the number of participants was around 23 person including 5 Tullow Ghana Limited participants.

The trainings were organized in cooperation with Tullow Ghana Limited (TGL). TGL provided experienced personnel and their own training equipment – shoreline package, towing vehicles with trained drivers and ATV vehicle with trained drivers which was used for training purposes. As a training facility the Casa Blanca Resort with access to the beach lagoon was used again because established by TGL relationships with the training facility. Eni Ghana provided the OSRL trainers and hospitality for participants and trainers.

14 CONCLUSION

In 2016, Eni Ghana worked to:

- Minimize environmental impacts from their operations both on offshore and onshore,
- Maximize safety for its personnel, and
- Comply with EPA permit conditions.

This achievement is reflected by the fact that only minor environmental incidents were recorded despite the high level of operational activity the company was engaged in. Thus the company's effort in achieving a high HSE performance on a continual basis has yielded some positive results.

Drilling and lower completion operations on the project were completed in 2016 to ensure the timely delivery of the project. All eighteen (18) wells were drilled (GI-1, Sankofa-D, OP CAMP-1, GI-2, OP-5, OP-7, WI-1, WI-3, SNKE-D, OP-4, OP-3, GI-3, SNKE-1X ST, SNKE-2A ST, SNK-2A ST 2, OP-6, OP-8 and SNKE-C) and fourteen wells had lower completion installed and temporary suspended. Upper completions will continue in 2017.

Eni Ghana worked with a number of regulators and parastatal organisations to further improve capacity in relation to the oil industry. The efficiency of the Verti-G dryer, permitted fluids to be recovered, upgraded and reused, thus volumes of chemicals that could have otherwise been discharged overboard was avoided.

Planning for oil spills, procurement of equipment and training of personnel were undertaken in 2016. Extensive oil spill training will be conducted in April & May 2017. A wide range of environmental monitoring activity will be conducted throughout 2017.

The project remains on track to deliver first oil Mid-2017. Subsea construction and installation works will be heavy during the first half of 2017 in readiness for first oil which expected by June 2017. Upon the completion of Installation Hook-Up and Commissioning (IHUC) phase of the OCTP development, the facility will be ready for first oil. Currently the necessary documentation required by the EPA for the issuance of the OCTP Phase 1 Operations Environmental Permit have been duly submitted for review and approval. Upon the issuance of the permit, production operations will commence on the facility and topside facilities will undergo full commissioning which is expected to last for a period of approximately 6 months. During operations, routine flaring will be avoided, however, there will be non-routine flaring to maintain safe conditions or during short-duration activities such as upset conditions, start-ups and maintenance activities.