



# **BPXP Plea Agreement**

**2014**

## **Annual Progress Report**

**Report publication date:**

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## Preface

On the evening of April 20, 2010, a gas release and subsequent explosion occurred on the Deepwater Horizon drilling rig working on the Macondo exploration well for BP in the Gulf of Mexico. Eleven people died as a result of the accident and others were injured. We deeply regret this loss of life and recognize the tremendous loss suffered by the families, friends and co-workers of those who died.

The accident involved a well integrity failure, followed by a loss of hydrostatic control of the well. This was followed by a failure to control the flow from the well with the blowout preventer (BOP) equipment, which allowed the release and subsequent ignition of hydrocarbons. Ultimately, the BOP emergency functions failed to seal the well after the initial explosions. Multiple investigations and evidence presented in federal court have shown the accident was the result of multiple causes involving multiple parties.

We regret the impacts on the environment and livelihoods of those in the communities affected. We have, and continue to, put in place measures to help ensure it does not happen again. BP is committed to sharing what we have learned to advance the capabilities and practices that enhance safety in our company and the deepwater industry.

On November 15, 2012, BP reached an agreement with the US Government to resolve all federal criminal claims arising out of the incident. On January 29, 2013, the Plea Agreement was entered and BP Exploration & Production Inc. (BXP) plead guilty to federal crimes. The Plea Agreement can be found at:

<http://www.justice.gov/iso/opa/resources/43320121115143613990027.pdf>

As required by the Plea Agreement the following document summarizes the efforts that BXP has made to comply with the obligations of Paragraphs 5 through 31 of the Remedial Order (Exhibit B) of the Plea Agreement. Each of the Remedial Order obligations in 2014 were completed by BXP on time and were in compliance with the requirements.

Paragraph 23 of the Remedial Order requires BXP to create a public website where the following information must be posted:

- Lessons learned from the Deepwater Horizon incident;
- Annual progress reports summarizing BXP's compliance with Paragraphs 5 through 31 of the Remedial Order;
- Annual summaries of recordable safety incidents, days away from work, hydrocarbon spills and the volume thereof; and
- An annual list of all incidents of non-compliance (INC) with the Bureau of Safety and Environmental Enforcement (BSEE) or the Bureau of Ocean Energy Management (BOEM) regulations or probation for which BXP is cited, including corrective actions taken and penalties assessed.

The BXP public website is found at the following link:

<http://www.bxpcompliancereports.com>

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# **BPXP Plea Agreement**

**2014**

**Annual Progress Report  
Safety and Environmental Management  
Systems (SEMS) Audits  
(Paragraphs 5-8)**

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## **Safety and Environmental Management Systems (SEMS) Audits**

BPXP utilizes Safety and Environmental Management System (SEMS) audits to assess conformance with its operating management system in the areas of health, safety and the environment. These audits are conducted by independent third parties following the “Third Party SEMS Auditing and Certification of Deepwater Operations Requirements” as specified by the Center for Offshore Safety (COS). Additionally, BPXP utilizes Drilling Rig Contractors who are members of the COS which requires its members to conduct SEMS audits. In 2014, all of BPXP’s contracted deepwater drilling rigs operating in the Gulf of Mexico had COS membership.

In 2014, BPXP utilized the COS certified Audit Service Provider (ASP) ERM-CVS to conduct SEMS audits of its Na Kika Platform and Ensco’s DS-3 Drilling Rig per the SEMS Audit Schedule. The audits were conducted during the period July 7 to August 27 at BPXP’s Houston office, the Drilling Rig Contractor’s Houston office and the offshore facilities (Na Kika Platform and DS-3 Drilling Rig). An Audit Plan, a final Audit Report and Corrective Action Plan were submitted to BSEE per the required timelines.

In 2014, BPXP’s contracted rig fleet changed with the addition of one new Drilling Rig (DS-4), and the removal of one existing Drilling Rig (DD II). The DD II Drilling Rig contract expired on April 28, 2014. For 2015, the Implementation Plan calls for BPXP to audit the DD III and the West Sirius drilling rigs.

### **5-8.1 Measures Taken to Comply**

In 2014, BPXP’s efforts to enhance its SEMS Audit program included:

1. Continuing to work with COS on industry standardization and audit programs.
2. Verification of COS membership provision in new drilling rig contracts.
3. Revisions to the BPXP SEMS Program to address new requirements.
4. Completion of SEMS audits for BPXP’s Na Kika Platform and the DS-3 Drilling Rig, including visits to BPXP’s and the Drilling Rig Contractor’s Office locations.
5. Submission of SEMS Audit documentation (Audit Plan, Audit Report and Corrective Action Plan) per required schedules to BSEE.

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# **BPXP Plea Agreement**

**2014**

**Annual Progress Report  
Third Party Verification of Blowout  
Preventers (BOP)  
(Paragraph 9)**

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## Third Party Verification of Blowout Preventers (BOP)

BPXP has developed and implemented processes to sustain enhanced operational oversight of the testing and maintenance of subsea blowout preventers (BOP). Each time BPXP or its contractors initially latch a subsea BOP at the well site and each time the BOP is brought to the surface after it has been latched to a well, BPXP or its contractors, through a third party, verifies that all required surface testing and maintenance of the BOP were performed in accordance with the manufacturer recommendations and API Recommended Practice or API Standard 53, as applicable.

### 9.1 Measures Taken to Comply

Multiple processes, tools, and techniques were deployed to sustain enhanced rigor and additional oversight to the BOP testing and maintenance activities. The following activities were used in 2013 and continued to be utilized throughout 2014:

- A process and associated checklist to verify that the relevant Applications for Permit to Drill (APD) include the requirement for Third Party Verification.
- A BOP register, which identifies each time a subsea BOP was unlatched and brought to surface after being latched to a well. This register indicates the date a BOP was latched at the well site, the date the BOP was unlatched and brought to the surface, the date(s) the verification occurred, identification of the third party verifier, a link to a copy of the verification letters and additional pertinent information.
- An electronic storage location for verification letters and BOP associated documentation.

### 9.2 Additional Information

#### 9.2.1 Deepwater Drilling Rigs with Subsea BOPs

During the 2014 calendar year, BPXP operated 10 subsea BOP equipped rigs in the Gulf of Mexico (GoM).

#### 9.2.2 Third Party Verifiers

The BOP register contains each of the Drilling Rigs and has effectively tracked the required BOP activities. BPXP interchangeably utilizes two companies to provide third party verification of surface testing and maintenance for each time BPXP or its contractors initially latch a subsea BOP at the well site and each time the subsea BOP is brought to the surface after it has been latched to a well. This verification confirms that such surface testing and maintenance are in accordance with manufacturer recommendations and API Recommended Practice or API Standard 53, as applicable.

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# **BPXP Plea Agreement**

**2014**

**Annual Progress Report  
Deepwater Well Control Competency  
Assessments  
(Paragraph 10)**

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## Deepwater Well Control Competency Assessments

A Well Control Competency Assessment (WCCA) Plan that exceeds the competency requirements of 30 CFR § 250.1500-1510 (Subpart O) was developed and implemented for Deepwater Well Control Personnel in BPXP in 2013.

### 10.1 Measures Taken to Comply

During 2014, 21 BPXP Well Control Personnel were assessed against the WCCA Plan. Seventeen of the assessed individuals met the established requirements. Four of the assessed individuals were found in need of further training. In addition to the WCCA for Well Site Leaders (WSL), BPXP initiated a comprehensive Competency Assessment program for Wells Team Leaders (WTL). This assessment focuses on four key areas, which include: Leadership, Core Technical, Role Specific, and Well Control competencies. During 2014, 10 Wells Team Leaders were assessed against these competencies, all were found to have met the established requirements.

### 10.2 Additional Information

#### 10.2.1 Subpart O - IADC WellCAP Training

The International Association of Drilling Contractors (IADC) WellCAP program is adaptive and changes to meet industry specific needs. The IADC WellCAP program provides the fundamental knowledge and skills for well control personnel, resulting in a comprehensive organizational well control program. BPXP Well Control Personnel have continued to attend IADC WellCAP Supervisory Training. In December 2014, the Bureau of Safety and Environmental Enforcement (BSEE) provided concurrence to modify the Subpart O Well Control training requirements to allow for the use of either the International Well Control Forum (IWCF) Well Control course or the IADC WellCAP course, based on their determination that the courses are equivalent. In December 2014, the U.S. Department of Justice (DOJ) approved the corresponding modifications to Paragraphs 10.2, 10.3, and 12.2 of the BPXP Remedial Order Implementation Plan. On January 15, 2015, BPXP also received approval from the Probation Office with respect to the modification previously approved by the DOJ.

In 2014, 57 BPXP Well Control Personnel attended the IADC Drilling Surface and Subsea training sessions; and 50 attended the IADC Well Servicing training sessions. In addition, one Well Site Leader attended the IWCF Drilling Well Control Level 4 and Well Intervention Pressure Control Level 4 courses.

#### 10.2.2 Additional Training Capability

In addition to the IADC WellCAP and IWCF training noted above, the WCCA Plan includes "Well Control Bundle" training. The Well Control Bundle training covers topics such as well control, pressure testing, well control bridging documents, drilling well control manual, and responsibilities and requirements for well monitoring. The Well Control Bundle training began late in 2013 with a total of four BPXP Well Control Personnel trained. In 2014, 80 BPXP Well Control Personnel attended the training course.

As a separate effort from the WCCA Plan requirements, BPXP provides additional in house training with our Applied Deepwater Well Control course using BP's well control simulator. During 2014, 13 Well Site Leaders and two Wells Team Leaders attended this rig team based training.

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# **BPXP Plea Agreement**

**2014**

## **Annual Progress Report Cement Design and Competency (Paragraph 11)**

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## Cement Design and Competency

In 2013, BPXP developed a procedure that established the framework for screening and selecting Cementing Technical Specialist candidates. This procedure outlines the necessary skills, qualifications, experience, and development for Cementing Technical Specialists as the qualified Subject Matter Expert (SME). Using this procedure to select Cementing Technical Specialists helps maintain enhanced oversight on cement designs used for primary cementing of casing and exposed hydrocarbon zones. The selected Cementing Technical Specialists review and approve cement designs for Deepwater Drilling Operations.

### 11.1 Measures Taken to Comply

The *Procedure for Cementing Technical Specialist Candidate Screening* was resubmitted on February 24, 2014, and subsequently approved by BSEE on March 20, 2014. In 2014, an analysis was completed to assure that all four existing Cementing Technical Specialists had fulfilled the requirements of the approved *Procedure for Cementing Technical Specialist Candidate Screening*. There were no additional BPXP Gulf of Mexico Cementing Technical Specialists hired in 2014.

BPXP uses third party independent laboratories to test relevant cement slurry designs for primary cementing of casing and exposed hydrocarbon bearing zones relating to Deepwater Drilling Operations. A qualified Cementing Technical Specialist subsequently reviewed and approved all of the required cement designs and corresponding independent laboratory test results during the 2014 calendar year. These laboratory test results were included in the relevant Well Activity Reports (WAR) submitted to the Bureau of Safety and Environmental Enforcement (BSEE).

The name and title of the respective Cementing Technical Specialist who reviewed and approved the cement designs were included in each relevant Application for Permit to Drill (APD) submitted to BSEE for primary cementing of casing and exposed hydrocarbon-bearing zones related to the Deepwater Drilling Operation.

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# **BPXP Plea Agreement**

**2014**

**Annual Progress Report  
Houston Monitoring Center  
(Paragraph 12)**

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## Houston Monitoring Center

BPXP's Houston Monitoring Center (HMC) is located on the BP Westlake Campus in the Westlake 4 office building located at 200 Westlake Park Boulevard, Houston, Texas 77079. The HMC started monitoring Gulf of Mexico Drilling Rigs conducting Deepwater Drilling Operations with a subsea BOP installed on the wellhead in July of 2011. The HMC was designed to remotely monitor drilling data transmitted from offshore to onshore for drilling information, which includes active pit volumes, pump pressures, flow rates out, gas units, and trip displacements. It operates 24 hours a day, 7 days a week throughout the year on rotational 12-hour shifts.

There was one instance during the 2014 calendar year that the HMC was unable to monitor mud logging information from one Drilling Rig for more than eight consecutive hours. The outage occurred on the DS-3 rig from 1605 hours on 10/21/2014 until 0806 hours on 10/22/2014, for a total outage time of 16:01 hours. The cause of the outage was a third party equipment failure in the mud logging unit. The HMC continued to monitor DS-3 rig data and partial data from the mud logger. The applicable elements of the HMC Operating Procedure were followed. This procedure addresses appropriate steps and procedures to be taken when the operation of the HMC has been disrupted. The HMC otherwise remained available and continued to monitor all other applicable rigs throughout the outage period.

### 12.1 Measures Taken to Comply

Multiple processes, tools, and techniques have been deployed in the maintenance of the HMC. These include, but are not limited to:

- Maintenance of the real-time drilling monitoring center with the capability to monitor Well Control data such as active pit volume, pump pressure, flow rate out, gas units and trip displacement;
- Continuous staffing of the HMC with relevant personnel who possess International Association of Drilling Contractors (IADC) WellCAP certification to monitor such data;
- A written contingency plan addressing appropriate steps and procedures when the operation of the HMC has been disrupted; and
- Well control data backup and retention.

The HMC is staffed by several different roles including, but not limited to:

- Well Monitoring Specialists;
- HMC Well Site Leaders (WSL);
- Team Leader;
- Information Technology Specialists; and
- Software Application Support Specialists.

The HMC hosted numerous visitors during the Calendar Year 2014. These visitors included representatives from the Bureau of Safety & Environmental Enforcement (BSEE), U.S. Coast Guard (USCG), Department of Defense, the Process Safety Monitor, and the Third Party Auditor.

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# **BPXP Plea Agreement**

**2014**

**Annual Progress Report  
Incident Reporting  
(Paragraph 13)**

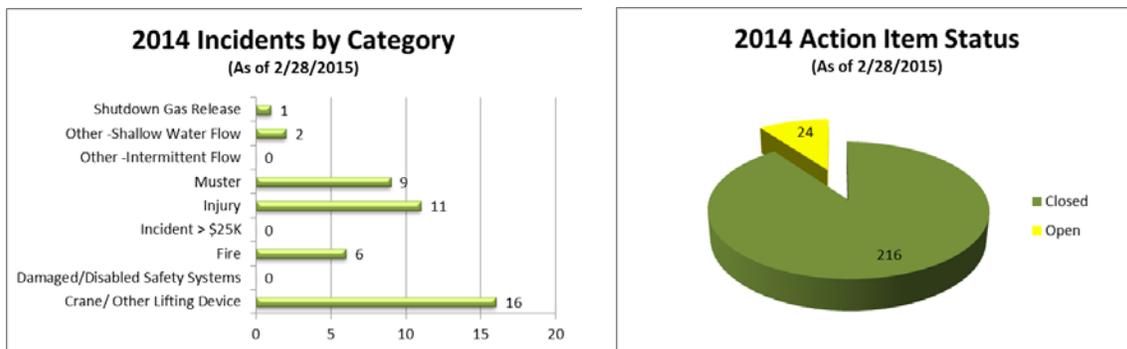
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## Incident Reporting

In 2014, BPXP continued to document incidents reported per the Bureau of Safety and Environmental Enforcement (BSEE) regulations in 30 CFR § 250.188. These incidents were reviewed monthly to identify trends, address systemic issues and monitor closure of corrective and/or preventive actions.

In 2014, there were 45 incidents that were required to be reported to BSEE under 30 CFR § 250.188. The most common types of incidents were those involving cranes or other lifting devices, followed by injuries (mostly to fingers and knees), and musters<sup>1</sup>. Following an analysis of the crane / lifting incidents sustained in 2014, BPXP, working closely with its contractors, has made equipment modifications to eliminate hazards, modified pre-lift inspection checks and revised or created new procedures to provide clarity on the process for planning and executing lifts. Additionally, BPXP worked with the Drilling Rig contractors to increase focus on safe zone management during crane and other lifting operations. An analysis of the injuries resulted in improvements to equipment design and new or revised work procedures. Most musters were the result of either equipment leaks or overheated electrical equipment, which were quickly resolved without further escalation. The fires, which were quickly extinguished, were the result of auxiliary equipment operation and kitchen management. Analysis of the fires has resulted in improvements to preventative maintenance programs and changes to equipment checklists to ensure readiness for service.



As a result of the 45 incidents, 240 actions were identified. Two hundred sixteen of these actions have been closed and 24 remain open as of February 28, 2015. Of the 24 actions that were open, none were overdue. There were 34 open actions identified in the 2013 Annual Report. Of the 34 actions, 29 were closed in 2014; none of the five remaining 2013 open actions are overdue.

The completed actions resulted in 53 changes to the Safety and Environmental Management System (SEMS) plan; i.e. site-specific changes to BPXP or contractor safety and environmental work practices, systems and/or tools. The most frequent SEMS changes involved policy or practice improvements (24), mostly in the areas of clarified procedures. Other common SEMS changes were in the areas of control of work improvements (8) dealing primarily with updates to task-based risk-assessments, and improvements to preventative maintenance systems (5) involving new scheduled activities.

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<sup>1</sup> Two crane incidents also resulted in injuries; the shutdown gas release and one of the fires also resulted in musters.

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## **13.1 Measures Taken to Comply**

In 2014, BPXP continued to improve its incident investigation processes, analyze trends in incidents and make modifications to its management system to address systemic issues. The incidents were reviewed monthly to evaluate progress and assure proper classification, reporting and timely closure of corrective and preventive actions. In 2014, BPXP maintained focus on safety hazards related to hand and powered tools, tethered tools and working at heights that resulted in changes to work practices.



# **BPXP Plea Agreement**

**2014**

**Annual Progress Report  
Oil Spill Response Plan Training and  
Exercises  
(Paragraphs 14-19)**

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## Oil Spill Response Plan Training and Exercises

In 2014, BPXP maintained two crisis management centers; one in Westlake 4 office building located at 200 Westlake Park Boulevard, Houston, Texas 77079, and the other located in Houma, Louisiana, at the Houma Operations Learning Center (HOLC), 1597 Highway 311, Schreiver, Louisiana, 70395-3237. BPXP utilized only the Houston Crisis Center for oil spill response training and exercises during 2014.

The 2014 oil spill response training included position-specific training for all Incident Management Team (IMT) leadership roles and, where applicable, covered the subject matter outlined in Incident Command System (ICS) 100, 200, 300 and Federal Emergency Management Agency Independent Study (FEMA IS) 700/800. The oil spill response exercises included activation of source control equipment suppliers such as Marine Well Containment Company (MWCC) and spill management team table top exercises to practice the scenarios in BPXP's Oil Spill Response Plan (OSRP).

BPXP maintained a crisis management organization of six Crisis and Continuity Management/Emergency Response (CCM/ER) Advisors with responsibilities for maintaining readiness. The two BPXP Crisis Centers were available to address emergencies all year, except for 12 hours on June 20, 2014, when the HOLC was unavailable because of planned electrical work. During the 12 hours that the HOLC was unavailable, BPXP could utilize its crisis management center in Houston as an alternate crisis management site. Additionally, BPXP replaced two CCM/ER Advisors in the crisis management organization in 2014 due to organizational changes. The replacement of staff did not impact the function of the crisis management organization since the new CCM/ER Advisors assumed all roles and responsibilities of the former staff, and have previous experience in crisis management. During the transition of replacement staff, BPXP provided additional coverage on CCM/ER activity through its central crisis management organization. As a result, the crisis management organization was available for emergencies from January 1, 2014, through December 31, 2014, and BPXP's ability to respond was not reduced or impacted during the year.

BPXP periodically reviews its CCM/ER program to assure compliance with legal and other requirements and to identify opportunities for continual improvement. In 2014, BPXP reviewed the existing crisis management organization and CCM/ER Response Program to identify opportunities to increase awareness of IMT member progression, and set minimum training requirements for new IMT positions. Additionally, BPXP worked closely with MWCC to begin an early awareness of key IMT roles on upcoming 2015 changes to the MWCC Expanded Containment System. As a result of these reviews, BPXP increased the number of training opportunities and exercises featuring the source control equipment supplier, MWCC. BPXP incorporated new programs from the USCG Incident Management Handbook and tested BSEE job aids for source control positions in its November 2014 oil spill response exercise. Representatives from Helix Well Control Group (HWCG) and Transocean participated in the BPXP November oil spill response exercise. BPXP has also scheduled a major functional exercise at the HOLC in October 2015.

In 2014, BPXP continued to monitor and certify training and exercise completion for leadership positions in the IMT to manage capability to respond. Personnel who did not complete the required training program were removed from the list of qualified individuals for the coming year. BPXP had only one individual removed from the list of qualified applicants due to incomplete training. The remaining IMT leadership and the crisis management organization completed 100% of the training and exercises required to qualify them for their roles in the coming year. The organization continued to communicate

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activities for crisis management to encourage feedback and increase transparency of its oil spill response operations in 2014. BPXP notified BSEE, USCG, and other regulatory agencies on November 19, 2014, of the 2015 CCM/ER oil spill response training plan and exercise schedule and invited them to attend.

## **14-19.1 Measures Taken to Comply**

In 2014, BPXP's efforts to enhance its crisis management and emergency response program included:

- Maintaining two crisis management centers located in Houston, Texas and in Houma, Louisiana;
- Maintaining a crisis management organization of at least six personnel who are experienced in crisis management;
- Revision of BPXP's Crisis Management Organization, Training and Exercises Plan (CMOTEP) to specify training and exercise requirements for its crisis management organization and IMT leadership positions;
- Monitoring and certification of oil spill response training and exercise completion for the IMT leadership positions to develop and enable response capability;
- Submission of notice for BPXP's 2015 Oil Spill Response Training Plan and Exercises Schedule to BSEE, USCG, and to other regulatory agencies with invitations to attend;
- Monitoring and updating its triennial cycle exercise documentation to ensure adequate representation and practice of exercises in its Oil Spill Response Plan;
- Participated with BSEE and USCG in BPXP's November 2014 Oil Spill Response exercise to test BSEE's new ICS job aids for source control positions and new programs in USCG Incident Management Handbook; and
- Maintaining descriptions of exercises and documentation of lessons learned in After-Action Reports for each series of table top oil spill response exercise.



# **BPXP Plea Agreement**

**2014**

**Annual Progress Report  
OSRP Best Practices  
(Paragraph 20)**

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## OSRP Best Practices

BPXP received approval from the Bureau of Safety and Environmental Enforcement (BSEE) for its Version 11, 2013 Oil Spill Response Plan (OSRP) on March 24, 2014. The approved OSRP included the following:

- a. Provisions to maintain access to a supply of dispersant and fire boom for use in the event of an uncontrolled long-term blowout for the length of time required to drill a relief well;
- b. Contingencies for maintaining an ongoing response for the length of time required to drill a relief well;
- c. Description of measures and equipment necessary to maximize the effectiveness and efficiency of the response equipment used to recover the discharge on the water's surface, including methods to increase encounter rates;
- d. Information regarding remote sensing technology and equipment to be used to track oil slicks, including oil spill detection systems and remote thickness detection systems (e.g., X-band/infrared systems);
- e. Information regarding the use of communication systems between response vessels and spotter personnel;
- f. Shoreline protection strategy that is consistent with applicable area contingency plans; and
- g. For operations using a subsea BOP or a surface BOP on a floating facility, a discussion regarding strategies and plans related to source abatement and control for blowouts from drilling.

### 20.1 Measures Taken to Comply

In 2014, BPXP continued to review and practice scenarios from its Gulf of Mexico Regional Oil Spill Response Plan (OSRP) to increase knowledge of responders and continually improve oil spill response. The learnings from the 2014 oil spill response exercises were reviewed with internal and external stakeholders and compiled in preparation for a revision of the OSRP in 2015. The 2015 OSRP revision will incorporate best practices and will be submitted to BSEE with a document describing where the requirements of the Remedial Order Implementation Plan Paragraph 20 (a)-(g) are found in the OSRP.

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# **BPXP Plea Agreement**

**2014**

## **Annual Progress Report Safety Technology Developed with Industry (Paragraph 21)**

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## Safety Technology Developed with Industry

In 2013, BPXP submitted plans to the Bureau of Safety and Environmental Enforcement (BSEE) for two Pilot Safety Technology Projects as described below. These technologies are designed to enhance operational safety with respect to deepwater drilling.

**Pilot Project Plan 21.1: Real-Time Remote Blowout Preventer (BOP) Pressure Test Monitoring** aims to extend the capabilities of digital BOP testing technology. The system will enable remote observation of pressure testing of subsea BOPs by personnel from onshore.

**Pilot Project Plan 21.2: Real-Time Rig-Site Fluid Monitoring** aims to identify additional parameters that may be indicative of developing well control or lost circulation events.

### 21.1 Measures Taken to Comply

BSEE formally approved the proposed projects on May 30, 2014. The Pilot projects are being developed collaboratively with industry. In 2014, BPXP submitted a Request for Proposal (RFP) to five universities with Petroleum Engineering programs to conduct the independent feasibility testing and economic analysis for these projects. In late 2014, BPXP selected a proposal from a major university to discuss contract terms.

The 2014 status of the two Pilot Project Plans are:

#### **Pilot Project Plan 21.1: Real-Time Remote BOP Pressure Test Monitoring**

- a. The Dashboard design for the console has been completed and a vendor is being commissioned to build the Dashboard. The Dashboard build will begin in 2015.

#### **Pilot Project Plan 21.2: Real-Time Rig-Site Fluid Monitoring**

- a. The design for the console was completed.
- b. The console build commenced.
- c. Early versions have begun testing.
- d. The Information Technology (IT) has been deployed for the Pilot.

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# **BPXP Plea Agreement**

**2014**

**Annual Progress Report  
Other Safety Technology Development  
(Paragraph 22)**

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## Other Safety Technology Development

In 2013 and 2014, BPXP advanced three potential options for Other Safety Technology Development projects. The Pilot Project Plans will develop new technologies in one or more of the following categories:

1. Enhancing functionality, intervention, testing and activation of blowout preventer (BOP) systems;
2. Enhancing well design; or
3. Enhancing real-time monitoring on rig and onshore.

### 22.1 Measures Taken to Comply

On September 20, 2013, the first Pilot Plan, entitled "BOP Health Monitoring," was submitted to the Bureau of Safety and Environmental Enforcement (BSEE) for approval. On February 17, 2014, BPXP submitted plans to BSEE for two further Other Safety Technology Pilot Projects. These Pilot Projects are described below. These technologies are designed to enhance operational safety with respect to deepwater drilling.

**Pilot Project Plan 22.1: Blowout Preventer (BOP) Health Monitoring** aims to provide real-time information diagnostics on the availability of various BOP functions and BOP positions.

**Pilot Project Plan 22.2: Cement Placement Monitoring** aims to integrate real-time data, BP global practices, and process to assure well barrier placement.

**Pilot Project Plan 22.3: Early Kick Detection** aims to leverage mathematical- and physics-based modeling techniques for the purposes of detecting influx occurrences more quickly than current oil industry technologies.

On May 30, 2014, BSEE formally approved all three proposed Pilot Plans for Other Safety Technology Projects. In 2014, BPXP submitted a Request for Proposal (RFP) to five universities with Petroleum Engineering programs to conduct the independent feasibility testing and economic analysis for these projects. In late 2014, BPXP selected a proposal from a major university to discuss contract terms.

The 2014 status of the three Pilot Project Plans are:

#### **Pilot Project Plan 22.1: BOP Health Monitoring**

- a. Built the Dashboard and developed processes and training activities.
- b. The pilot training is developed, and the pilot has commenced. Use of the Dashboard and processes is currently being monitored.

#### **Pilot Project Plan 22.2: Cement Placement Monitoring**

- a. Development of the software for an early version of the console has commenced.
- b. Training has been developed, and an initial Pilot was completed in the North Sea.
- c. The remaining functionality was commissioned for development and is planned to commence its Field Trial in 2015.

#### **Pilot Project Plan 22.3: Early Kick Detection**

- a. The methodology was proven for early kick detection from historical data in drilling ahead scenarios.
- b. The initial algorithm was improved through the inclusion of additional data feeds to further increase confidence in the detection event.

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- c. The reliability of the initial model has been tested through the use of several blind tests using historical data with positive results.
  - d. Additional testing of the feasibility of extending the approach to swab induced kicks, and during periods when mud pumps are off, was initiated in 2014 and will be completed in early 2015.
  - e. Further work was done to enhance the reliability of the extended models using blind data sets and to rule out false positive events. This work will continue into 2015.



# **BPXP Plea Agreement**

**2014**

**Annual Progress Report  
Transparency  
(Paragraph 23)**

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## Transparency

BPXP has created and maintains a public website where the following information is communicated:

- Lessons learned from the Deepwater Horizon incident;
- Annual progress reports summarizing BPXP's compliance with Paragraphs 5 through 31 of the Remedial Order;
- Annual summaries of recordable safety incidents, days away from work, hydrocarbon spills and the volume thereof; and
- An annual list of all incidents of non-compliance (INC) with the Bureau of Safety and Environmental Enforcement (BSEE) or the Bureau of Ocean Energy Management (BOEM) regulations, or with probation for which BPXP is cited, including corrective actions taken and penalties assessed.

The BPXP public website is found at the following link:

<http://www.bpxpcompliancereports.com>

The website was active and available on April 22, 2013. In 2014, there were 24,354 total hits to the BPXP public website. The public website contains the following documents:

- a. *Deepwater Horizon Containment and Response: Harnessing Capabilities and Lessons Learned*;
- b. *Deepwater Horizon Accident Investigation Report*; and
- c. Presentation slides on *Advancing Global Deepwater Capabilities*.

The presentation slides on *Advancing Global Deepwater Capabilities* were updated and revised in 2014. The current version of the presentation was posted on the public website on March 27, 2014. The other documents were not revised or updated in 2014. Updates will be posted when available.

The Annual Progress Reports, incident and spill summaries, and the lists of incidents are posted annually for the previous calendar year no later than March 31 of the following year (except for the 2017 Annual Report, which is due on or before January 28, 2018). Through the end of calendar year 2014, the BPXP Gulf of Mexico operations identified and tracked the following safety and performance metrics for 2014:

- 14 Recordable injuries (no fatalities);
- 13 Days away from work or restricted work cases;
- 8 Hydrocarbon spill reports of sheen of unknown origin;
- 97 Hydrocarbon spills less than one barrel that totaled approximately three barrels in volume;
- No hydrocarbon spills greater than one barrel in volume;
- 8 Incidents of Non-Compliance with BSEE regulations;
- No Incidents of Non-Compliance with BOEM regulations;
- No Incidents of Non-Compliance with Probation;
- No civil penalties assessed by BSEE for 2014 Incidents of Non Compliance; and
- \$65,000 in civil penalties paid in 2014 for Incidents of Non-Compliance issued by BSEE in 2013.

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## 23.1 Measures Taken to Comply

### 23.1.1 BPXP Public Website

The BPXP Public Website was made available on April 22, 2013. The website is located at the following address:

<http://www.bpxpcompliancereports.com>

### 23.1.2 BPXP Annual Summaries/Lists

#### BPXP Annual Summary of Recordable Safety Incidents

In 2014, BPXP had 14 safety incidents resulting in injuries that were required to be reported to BSEE under 30 CFR § 250.188(a)(1) or (a)(2). Of the reported safety incidents, none were fatalities. Of these incidents, 13 resulted in days away from work or restricted work cases according to 30 CFR § 250.188 (b)(1). A summary of the recordable safety incidents is provided on the BPXP Public Website at the following address:

<http://www.bpxpcompliancereports.com/go/doctype/5617/151485/>

The most common types of injuries were to fingers and knees. An analysis of these injuries resulted in improvements to equipment design, and new or revised work procedures.

#### BPXP Annual Summary of Hydrocarbon Spills and the Volume Thereof

In 2014, BPXP reported to the National Response Center (NRC) and/or to BSEE hydrocarbon spills (including contractor reported spills) that were required to be reported under 30 CFR § 254.46(a) or (b). Eight of the spills were reported as sheens of unknown origin in accordance with 30 CFR § 254.46(a)(3). No volume amount has been allocated for sheens of unknown origin. There were a total of 97 hydrocarbon spill incidents in 2014 and each of the spills were under one barrel in volume. The total volume of all reported hydrocarbon spill incidents combined was less than three barrels. A summary of the hydrocarbon spills and volume thereof is provided on the BPXP Public Website at the following address:

<http://www.bpxpcompliancereports.com/go/doctype/5617/151485/>

#### BPXP Annual List of Incidents of Non-Compliance

In 2014, BPXP had no Incidents of Non-Compliance with Probation, no Incidents of Non-Compliance with BOEM regulations, and eight Incidents of Non-Compliance with BSEE regulations. For the INCs issued in 2014 by BSEE, no civil penalties have been assessed to BPXP as of December 31, 2014. BPXP is awaiting a response from BSEE regarding a request for rescission of one of the 2014 INCs. BPXP paid \$65,000 in civil penalties in 2014 for INCs received in 2013. A list of the eight INCs issued to BPXP from BSEE in 2014 along with the associated corrective actions and penalties assessed are provided on the BPXP Public Website at the following address:

<http://www.bpxpcompliancereports.com/go/doctype/5617/151489/>



# **BPXP Plea Agreement**

**2014**

## **Annual Progress Report Rig Equipment - Two Blind Shear Rams (Paragraph 24)**

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## **Rig Equipment - Two Blind Shear Rams**

BPXP has ensured that all applicable rigs are equipped with the appropriate blind shear ram (BSR) configuration. All dynamically positioned Drilling Rigs with subsea blowout preventers (BOPs) are equipped with no fewer than two blind shear rams and a casing shear ram. In addition, all moored Drilling Rigs with subsea BOPs are equipped with two shear rams, including at least one blind shear ram and either an additional blind shear ram or a casing shear ram.

### **24.1 Measures Taken to Comply**

The subsea shear ram configuration identified above for all such Drilling Rigs was verified throughout 2014, during the third party BOP verification process and recorded. Additionally, throughout 2014, each Application for Permit to Drill (APD) submitted to the Bureau of Safety and Environmental Enforcement (BSEE) for Deepwater Drilling Operations included the appropriate shear ram commitment.

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# **BPXP Plea Agreement**

**2014**

**Annual Progress Report  
Safety Organization  
(Paragraph 25)**

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## Safety Organization

The “Safety Organization” is defined as the Global Wells and the Gulf of Mexico (GoM) Region teams within BP’s Global Safety and Operational Risk (S&OR) organization. These teams have responsibilities within GoM drilling operations.

BPXP has maintained the Safety Organization that has the authority to intervene or stop any operation that it deems unsafe. The Safety Organization also has the formal authority to agree to certain operational decisions and to intervene and escalate to cause corrective action. While accountability for safe, compliant, and reliable operations remains with drilling, operations, and project teams, the Safety Organization provides an independent view on the implementation of requirements and operating risk at BP businesses. A majority of the Safety Organization interfaces regularly with the operating teams for drilling, operations, and projects. Many members of the Safety Organization come from the operating teams and have deep knowledge and understanding of the drilling, operations and projects businesses and risks. The Safety Organization can also provide guidance and coaching to the operating teams to improve the health of the operations. At the end of 2014, the Safety Organization was comprised of 37 individuals in the following areas:

- Engineering technical experts;
- Operations experts; and
- Health, safety, environmental, and regulatory compliance experts.

### 25.1 Measures Taken to Comply

In 2014, BPXP initiated a phased reorganization of the Safety and Operational Risk (S&OR) health, safety, environmental, and engineering teams. The objective of the reorganization was to provide clear accountability for the delivery of safe and compliant operations, while maintaining an independent Safety Organization focused on its assurance role. The individuals responsible for day to day regulatory delivery were placed in the operating line to directly support the delivery of safe, compliant, and reliable operations. The Safety Organization retained their independence from the operating line via an unchanged reporting relationship. The transition of staff and services was managed through BP’s management of change process.

In 2014, the Safety Organization continued to maintain registers, tools, and processes for gathering, documenting, monitoring, and improving the communication of intervened or stopped operation events and any major new safety-related requirements published by the Safety Organization. BPXP used stop work events to make procedural improvements and safer engineering designs that have been implemented and communicated to the organization.

BPXP updated a document describing its reorganized Safety Organization for Deepwater Drilling Operations which includes:

- A discussion of its authority to intervene or stop any operation that it deems unsafe.
- A description of the qualifications of the professionals and specialists working in the organization.
- How BPXP encourages its employees and contractors to, where appropriate, exercise “stop work” authority and to seek assistance from the organization.
- A description of how the organization sets, maintains, or supports the setting of clear requirements, including developing and updating management system standards.

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# **BPXP Plea Agreement**

**2014**

**Annual Progress Report  
Third Party Auditor  
(Paragraphs 26-31)**

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## **Third Party Auditor**

As part of the BXP Remedial Order, Paragraphs 26 through 31 require BXP to hire an independent Third Party Auditor to report to the Department of Justice (DOJ) and the Probation Officer every year on BXP's compliance with Paragraphs 5 through 25 of the Remedial Order. The Annual Audit Report is due to the DOJ, Probation Officer, and BXP on or before August 31 each year during the term of the Plea Agreement.

### **26-31.1 Measures Taken to Comply**

After following a tender and selection process, Grant Thornton LLP (Grant Thornton) was approved by the DOJ in December 2013. Early in 2014, Grant Thornton was contracted by BXP as the Third Party Auditor. In April 2014, Grant Thornton began its formal review process of BXP's 2013 compliance with Paragraphs 5 through 25 of the Remedial Order. Grant Thornton performed 196 independent inquiry and inspection procedures as part of its compliance audit and BXP was found to have satisfactorily completed each requirement.

Grant Thornton stated in its report for the 2013 calendar year that "The results of Grant Thornton's test procedures demonstrate compliance with paragraphs 5 through 25 of the Plea Agreement and the related Implementation Plan." There were no instances of non-compliance identified by Grant Thornton in its August 2014 report.

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