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Report to Congressional Requesters

January 2014

OIL AND GAS

Interior Has Begun to Address Hiring and Retention Challenges but Needs to Do More

GAO-14-205

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GAO Highlights

Highlights of GAO-14-205, a report to congressional requesters

Why GAO Did This Study

Interior employs a wide range of highly-trained specialists and scientists with key skills to oversee oil and gas operations on leased federal lands and waters. GAO and others have reported that Interior has faced challenges hiring and retaining sufficient staff to carry out these responsibilities. In February 2011, GAO added Interior's management of federal oil and gas resources to its list of programs at high risk of fraud, waste, abuse, and mismanagement in part because of Interior's long-standing and continued human capital challenges.

GAO was asked to update the status of Interior's human capital challenges. This report examines: (1) the extent to which Interior continues to face challenges hiring and retaining key oil and gas staff and the causes of these challenges; (2) Interior's efforts to address its hiring and retention challenges; and (3) the effects of hiring and retention challenges on Interior's oversight of oil and gas activities. GAO surveyed 44 Interior offices that oversee oil and gas operations of which 40 responded; analyzed offshore inspection records and other documents; and interviewed agency officials.

What GAO Recommends

GAO recommends that the Department of the Interior explore the bureaus' expanded use of recruitment, relocation, retention, and other incentives and systematically collect and analyze hiring data. In commenting on a draft of this report, Interior generally agreed with GAO's recommendations.

View GAO-14-205. For more information, contact Frank Rusco at (202) 512-3841 or ruscof@gao.gov.

What GAO Found

The Department of the Interior (Interior) continues to face challenges hiring and retaining staff with key skills needed to manage and oversee oil and gas operations on federal leases. Interior officials noted two major factors that contribute to challenges in hiring and retaining staff: lower salaries and a slow hiring process compared with similar positions in industry. In response to GAO's survey, officials from a majority of the offices in the three Interior bureaus that manage oil and gas activities—the Bureau of Land Management (BLM), the Bureau of Ocean Energy Management (BOEM), and the Bureau of Safety and Environmental Enforcement (BSEE)—reported ongoing difficulties filling vacancies, particularly for petroleum engineers and geologists. Many of these officials also reported that retention is an ongoing concern as staff leave for positions in industry. Bureau of Labor Statistics data confirm a wide gap between industry and federal salaries for petroleum engineers and geologists. According to Office of Personnel Management (OPM) data, the fiscal year 2012 attrition rate for petroleum engineers at BLM was over 20 percent, or more than double the average federal attrition rate of 9.1 percent. However, the attrition rate for other key oil and gas staff during fiscal year 2012 was lower than the federal average. Nonetheless, field office officials stated that attrition is of concern because some field offices have only a few employees in any given position, and a single separation can significantly affect operations. Additionally, Interior records show that the average time required to hire petroleum engineers and inspectors in recent months generally exceeded 120 calendar days—much longer than OPM's target of 80 calendar days.

Interior and the three bureaus—BLM, BOEM, and BSEE—have taken some actions to address their hiring and retention challenges but have not fully used their existing authorities to supplement salaries or collect and analyze hiring data to identify the causes of delays in the hiring process. For instance, BLM, BOEM, and BSEE officials said that recruitment, relocation, and retention incentives are key options to help hire and retain staff, but use of these incentives to attract and retain petroleum engineers and inspectors has been limited. Moreover, the department and bureaus have taken some steps to reduce hiring times, but they do not have complete and accurate data on hiring times. For instance, while BSEE and BOEM collect hiring data on a biweekly basis, the data are used primarily to track the progress of individual applicants as they move through the hiring process. Likewise, a BLM official stated that the bureau does not systematically analyze data on hiring times. Without reliable data on hiring times, Interior's bureaus cannot identify how long it takes to complete individual stages in the hiring process or effectively implement changes to expedite the hiring process.

According to BLM, BOEM, and BSEE officials, hiring and retention challenges have made it more difficult to carry out oversight activities in some field offices. For example, many BLM and BSEE officials GAO surveyed reported that vacancies have resulted in a reduction in the number of inspections conducted. As a result of these challenges, bureau officials cited steps they have taken to address vacancies in key positions, such as borrowing staff from other offices or using overtime, but these solutions are not sustainable.

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Abbreviations

APD	application for permit to drill
BOEM	Bureau of Ocean Energy Management
BOEMRE	Bureau of Ocean Energy Management, Regulation, and Enforcement
BLM	Bureau of Land Management
BSEE	Bureau of Safety and Environmental Enforcement
EHRI	Enterprise Human Resources Integration
FTE	full-time equivalent
Interior	Department of the Interior
MMS	Minerals Management Service
OCSLA	Outer Continental Shelf Lands Act
OIG	Office of Inspector General
OMB	Office of Management and Budget
OPM	Office of Personnel Management
TIMS	Technical Information Management System

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January 31, 2014

The Honorable Doc Hastings
Chairman
The Honorable Peter A. DeFazio
Ranking Member
Committee on Natural Resources
House of Representatives

The Honorable Doug Lamborn
Chairman
Subcommittee on Energy and Mineral Resources
Committee on Natural Resources
House of Representatives

Production of oil and natural gas on federal lands and waters is an important part of the nation's energy portfolio and one of the largest sources of nontax revenue for the federal government. The Department of the Interior (Interior), which oversees the development of federal oil and gas resources, collecting nearly $10 billion in fiscal year 2012 in royalties and other payments from oil and gas companies. Onshore, Interior oversees about 700 million subsurface acres, including minerals beneath more than 245 million federally managed surface acres. Offshore, Interior oversees more than 1.7 billion acres in the waters of the Outer Continental Shelf, which includes submerged lands in federal waters off the coast of Alaska, the Gulf of Mexico, and the Atlantic and Pacific coasts.[1] Interior's responsibilities include administering leases; reviewing and approving oil and gas companies' (operators) plans, and applications for permit to drill (APD); inspecting oil and gas operations, such as drilling rigs and production platforms, to ensure compliance with safety and environmental regulations; and determining how much oil and gas is produced from federal lands and waters to calculate royalties and other revenues due to the federal government.

[1]The Outer Continental Shelf refers to the submerged lands outside the territorial jurisdiction of all 50 states but within U.S. jurisdiction and control, and consists of submerged federal lands, generally extending seaward from 3 geographical miles to 200 nautical miles off the coastline.

Three bureaus within Interior provide oversight of oil and gas activities on federal lands and waters: (1) the Bureau of Land Management (BLM), which oversees onshore federal oil and gas activities; (2) the Bureau of Ocean Energy Management (BOEM), which oversees offshore oil and gas leasing; and (3) the Bureau of Safety and Environmental Enforcement (BSEE), which reviews applications from operators and conducts inspections of offshore oil and gas activities. In addition, a fourth office, the Office of Natural Resources Revenue, is responsible for collecting revenues owed to the federal government by operators producing oil and gas on federal leases, both onshore and offshore. To do this work, Interior employs highly trained specialists and scientists such as archeologists, geologists, biologists, environmental protection specialists, inspectors, and petroleum engineers. In March 2010, we reported that Interior faced various human capital challenges, including hiring and retaining staff and, as a result, had difficulty meeting its responsibilities to oversee oil and gas activities on offshore federal leases.[2]

The April 2010 explosion and fire onboard the Deepwater Horizon drilling rig—which resulted in 11 deaths, serious injuries, and the largest marine oil spill in the history of the United States—highlighted the importance of effective oversight of oil and gas activities on federal lands and waters. Since that event, Interior's management of federal oil and gas resources has faced additional scrutiny by us and others. In light of the problems that we and others have identified—including Interior's ongoing human capital challenges—in February 2011, we added Interior's management of federal oil and gas resources to our list of U.S. government programs at high risk of waste, fraud, abuse, and mismanagement or in need of broad reform.[3] In July 2012, we reported, among other things, that BOEM and BSEE continued to face challenges hiring and retaining staff for oversight of oil and gas activities in the Gulf of Mexico and did not have a

[2]GAO, *Oil and Gas Management: Interior's Oil and Gas Production Verification Efforts Do Not Provide Reasonable Assurance of Accurate Measurement of Production Volumes*, GAO-10-313 (Washington, D.C.: Mar. 15, 2010).

[3]GAO, *High-Risk Series: An Update*, GAO-11-278 (Washington, D.C.: February 2011).

strategic workforce plan in place to outline strategies to address its human capital challenges.[4]

Furthermore, increasing oil prices, along with advances in technologies, such as hydraulic fracturing and horizontal drilling in shale formations onshore and deepwater drilling offshore, have made it possible to develop substantially more oil and gas resources than ever before. These technological advances make it imperative that Interior be able to hire and retain sufficient staff with the skills and experience needed to oversee the changing oil and gas industry in an efficient and effective way. This report responds to your request that we review the current status of Interior's human capital challenges. Accordingly, this report examines: (1) the extent to which Interior continues to face challenges hiring and retaining key oil and gas staff and the causes of these challenges; (2) Interior's efforts to address its hiring and retention challenges; and (3) the effects, if any, of hiring and retention challenges on Interior's oversight of oil and gas activities.

To conduct this work, we reviewed relevant laws and Interior's guidance, as well as independent studies by Interior's Office of Inspector General and others. We also interviewed officials from BLM, BOEM, and BSEE. Specifically, we interviewed BLM field office officials in Bakersfield, California, which oversees some of the highest producing federal onshore leases in the country, and Dickinson, North Dakota, which has experienced a rapid increase in industry activity in recent years. We interviewed BOEM and BSEE officials in the Gulf of Mexico, Alaska, and Pacific regional offices; and BSEE officials in all five Gulf of Mexico district offices. In addition, to determine the extent to which Interior continues to face hiring and retention challenges across the department and the possible effects of these challenges, we surveyed management officials representing all of Interior's offices responsible for oil and gas oversight—3 BOEM regional offices, 5 BSEE district offices and 3 BSEE regional offices, and 33 BLM field offices and one BLM state office. We received responses from 40 of the 44 field offices (i.e., 30 of the 34 BLM offices, 7 of the 7 BSEE offices, and 3 of the 3 BOEM offices) for an overall response rate of 91 percent.

[4]GAO, *Oil and Gas Management: Interior's Reorganization Complete, but Challenges Remain in Implementing New Requirements*, GAO-12-423 (Washington, D.C.: July 30, 2012).

To examine the extent to which Interior continues to face challenges hiring and retaining key oil and gas personnel and the causes of these challenges, we analyzed statistical data on attrition and retirement eligibility from the Office of Personnel Management's (OPM) Enterprise Human Resources Integration (EHRI) database of federal civilian employees and reviewed and analyzed Interior data on vacancies and hiring times.[5] We also analyzed Bureau of Labor Statistics data to compare industry and federal government salaries for oil and gas positions. To identify key Interior oil and gas oversight positions, we interviewed Interior officials and reviewed Interior staffing data. We determined the following are the key BLM oil and gas oversight positions: petroleum engineers, petroleum engineering technicians (inspectors),[6] natural resource specialists, environmental protection specialists, and geologists. Similarly, we determined that the key BOEM and BSEE oil and gas oversight positions are petroleum engineers, inspectors, biologists (natural resource specialists),[7] geophysicists, and geologists. To examine Interior's efforts to address its hiring and retention challenges, we reviewed documents such as strategic workforce plans and other documents outlining steps Interior has taken with regard to hiring and retention and spoke with officials responsible for their implementation. We also discussed special salary rates for specific positions with officials from OPM, as well as BOEM, BSEE, and BLM. To examine the effects, if any, of hiring and retention challenges on Interior's oversight of federal oil and gas activities, we surveyed BLM, BOEM, and BSEE field offices about the factors affecting their ability to hire and retain key oil and gas oversight staff and how vacancies of key positions have affected day-to-day operations. We also analyzed BSEE inspection data from the Gulf of Mexico and Pacific Regions—where nearly all federal offshore drilling has occurred—for fiscal years 2010 through 2012. Appendix I presents a more detailed description of our objectives, scope, and methodology, appendix II presents more information about our survey, and appendix III presents more information about our analysis of BSEE inspection data.

[5]The EHRI database was formerly known as the Central Personnel Data File.

[6]For the purposes of this report, we refer to petroleum engineering technicians as "inspectors" because one of their primary duties is to conduct inspections for BLM.

[7]For the purposes of this report, we refer to BOEM and BSEE biologists as "natural resource specialists" because BLM, BOEM, and BSEE use the same OPM occupational series designation for these positions.

We conducted this performance audit from May 2012 to January 2014 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Three Interior bureaus—BLM, BOEM, and BSEE—are responsible for regulating the processes that operators must follow when leasing, drilling, and producing oil and gas from federal lands and waters. BLM manages onshore oil and gas activities, and BOEM and BSEE manage offshore oil and gas activities.[8]

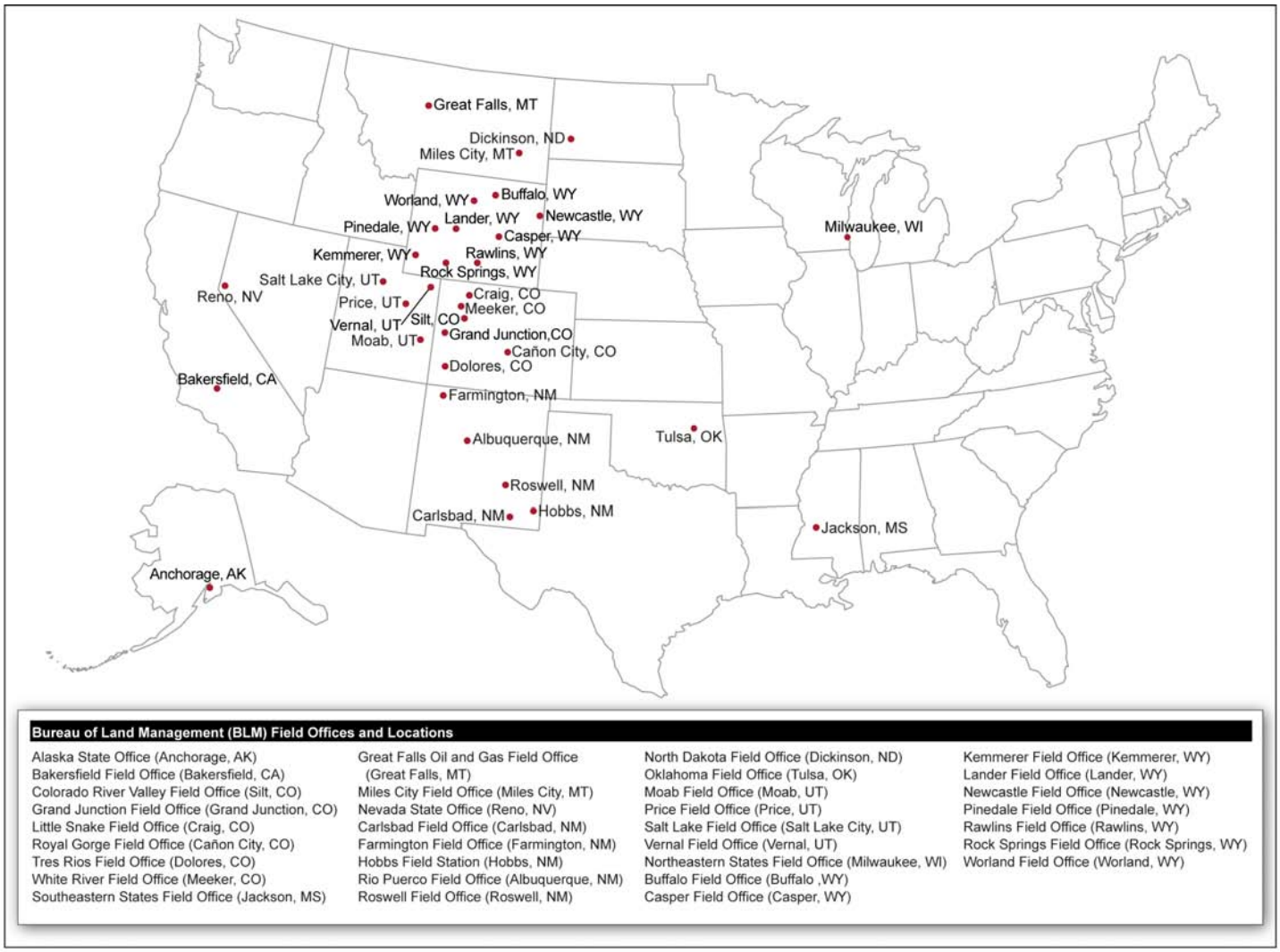
Onshore. BLM manages more than 245 million surface acres of federal land for multiple uses, including recreation; range; timber; minerals; watershed; wildlife and fish; natural scenic, scientific, and historical values; and for the sustained yield of renewable resources. BLM oversees onshore oil and gas development on and under BLM-managed federal lands, under other federal agencies' lands, and under private lands for which the federal government has retained mineral rights—totaling about 700 million subsurface acres.[9] BLM manages these responsibilities through its headquarters office in Washington, D.C.; 12 state offices; 38 district offices; and 127 field offices. BLM's headquarters office develops guidance and regulations for the bureau, and the state, district, and field offices manage and implement the bureau's programs. BLM's oil and gas development oversight efforts are led by 33 field offices located primarily in the Mountain West—the center of much of Interior's onshore oil and gas development and production—although some BLM

[8]In May 2010, shortly after the *Deepwater Horizon* incident, in an effort to separate major functions of offshore oil and gas management, Interior announced the reorganization of the Minerals Management Service (MMS) into the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE), responsible for offshore oil and gas management, and the Office of Natural Resources Revenue, responsible for revenue collections. Subsequently, on October 1, 2011, BOEMRE was separated into two bureaus—BOEM, which is responsible for leasing and resource management, and BSEE, which is responsible for permitting and inspections. For more information on Interior's reorganization see GAO-12-423.

[9]Leasing of oil, gas, and other applicable minerals is generally governed by the Mineral Leasing Act of 1920 as amended. Pub. L. No. 66-146, 41 Stat. 437 (1920).

offices in other locations have small oil and gas programs that are administered with the assistance of these 33 offices (see fig. 1). Across these offices, BLM employs petroleum engineers, natural resource specialists, geologists, and other scientists to carry out land-use planning efforts and review and approve APDs before operators can begin to drill any new oil or gas wells. Operators that obtain leases for oil and gas development are required to submit to BLM (onshore) or BSEE (offshore) an APD for approval before beginning to drill any new oil or gas wells. The APD contains a detailed set of forms and documents that specify requirements that the operator must follow when drilling. In addition, other specialists, including petroleum engineering technicians, carry out a variety of oil and gas inspections, including drilling inspections, production inspections, and environmental compliance inspections.

Figure 1: Location of BLM Oil and Gas Field Offices



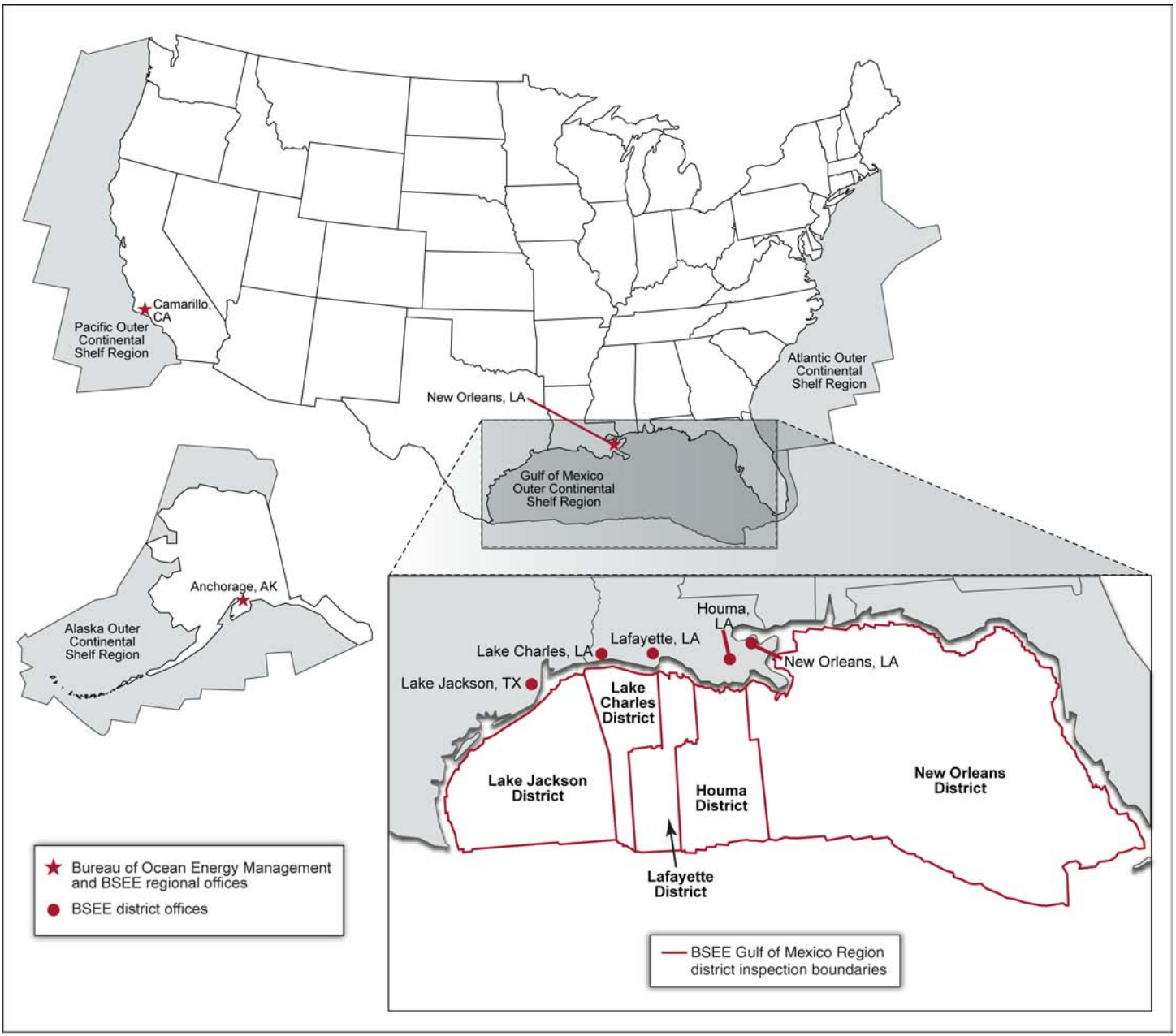
Sources: GAO analysis of BLM data; Map Resources (map).

Offshore. BOEM and BSEE oversee all offshore oil and gas activities on federal leases in the United States.[10] Through its three regional offices—in Alaska, the Gulf of Mexico, and the Pacific—Interior manages more than 1.7 billion offshore acres. The vast majority of Interior's offshore oil and gas development and production occurs in the Gulf of Mexico; accordingly, the majority of BOEM's and BSEE's workforces are located in the Gulf of Mexico Outer Continental Shelf Region.[11] BOEM and BSEE also have offices in the Pacific and Alaska Outer Continental Shelf Regions (see fig. 2). BOEM employs petroleum engineers, geoscientists, and other specialists who are responsible for leasing and resource management, and BSEE employs petroleum and other engineers, inspectors, and other specialists who are responsible for reviewing and approving APDs and conducting drilling and production inspections to ensure that operators comply with all regulatory requirements.

[10]Under the Outer Continental Shelf Lands Act (OCSLA) of 1953, as amended, Interior is responsible for management and oversight of oil and gas development in federal waters on the outer continental shelf. Pub. L. No. 83-212, 67 Stat. 462 (May 22, 1953), (codified as amended at 43 U.S.C. §§1301-1356a).

[11]BOEM and BSEE manage the Atlantic Outer Continental Shelf Region through their respective Gulf of Mexico Regional Offices. There is currently no oil and gas development in the Atlantic Outer Continental Shelf Region.

Figure 2: Location of BOEM and BSEE Regional and District Offices



Sources: Bureau of Safety and Environmental Enforcement (BSEE) and Map Resources (map).

Over the last decade, we have reported on Interior's persistent challenges hiring and retaining sufficient staff to provide efficient and effective oversight of oil and gas activities on federal lands and waters, and we have made a number of recommendations to Interior to address these challenges.

Hiring

- In June 2005, we reported that BLM did not have sufficient staff to manage the increasing demand for onshore oil and gas drilling permits while fulfilling its environmental protection responsibilities.[12] We recommended that BLM ensure that its staffing needs are accurately reflected in its workforce plans. In response to this recommendation, BLM analyzed the staffing levels needed to process drilling permits and used this analysis to fill additional inspection and environmental monitoring positions.
- In March 2010, among other things, we reported that BLM field offices were unable to hire and retain sufficient numbers of staff to complete all required inspections.[13] We reported that, according to BLM officials, low pay when compared with industry salaries and the high housing costs in energy boom towns were major factors affecting their ability to hire sufficient numbers of staff. We recommended that Interior determine what additional policies or incentives were necessary, if any, to attract and retain staff. Interior agreed with our recommendation, and we are evaluating the actions they have taken, including developing a workforce strategy and issuing guidance for the use of recruitment and retention incentives.
- In June 2012, we reported that salaries for some key oil and gas oversight positions—which are generally set by the federal salary schedule[14]—were significantly lower than salaries offered by industry for candidates with similar skills, and that top applicants are typically

[12]GAO, *Oil and Gas Development: Increased Permitting Activity Has Lessened BLM's Ability to Meet Its Environmental Protection Responsibilities*, GAO-05-418 (Washington, D.C.: June 17, 2005).

[13]GAO-10-313.

[14]OPM administers the federal salary schedule for the majority of the approximately 1.5 million federal employees in professional, technical, and administrative positions. Agencies establish a grade level for each job based on the level of difficulty, responsibility, and qualifications required, and each grade corresponds to a specific pay level. Unless otherwise authorized by law, agencies do not have the authority to set standard pay levels above that established by the federal salary schedule except, in rare cases, as approved by OPM.

hired by the petroleum industry, leaving Interior with less-skilled applicants.[15] To improve Interior's oversight of oil and gas activities in the Gulf of Mexico, we recommended that Interior assess how the number of inspectors affects the agency's ability to conduct monthly inspections and whether the monthly inspection goals were appropriate. Interior agreed with our recommendation but has not fully taken action to address it.

Retention

- In August 2013, we reported that BLM also faces challenges in retaining its oil and gas staff and in hiring new employees, including staff responsible for environmental inspections and enforcement. BLM officials told us that some environmental protection positions were unfilled for long periods, and new hires were often inexperienced and required greater supervision, limiting their effectiveness.[16] We did not make any recommendations that directly addressed this concern.
- In March 2010,[17] we reported that BLM had experienced high turnover rates in key oil and gas inspection and engineering positions from 2004 through 2008, and that this high turnover resulted in a greater reliance on less-trained and less-experienced staff.
- In July 2012, we reported that Interior continued to face workforce planning challenges following a reorganization effort to improve its oversight of oil and gas activities in the wake of the April 2010 oil spill in the Gulf of Mexico.[18] In particular, we found that Interior had not developed a strategic workforce plan that outlined specific strategies to help address recruitment and retention challenges. We recommended that BOEM and BSEE develop a strategic workforce plan that would determine the critical skills and competencies needed to achieve current and future programmatic results and develop strategies to address critical skills gaps. In response to this recommendation, BSEE completed its workforce plan in September 2013, and BOEM officials told us that they will complete their plan in fiscal year 2014.

[15]GAO-12-423.

[16]GAO, *Oil and Gas Development: BLM Needs Better Data to Track Permit Processing Times and Prioritize Inspections,* GAO-13-572 (Washington, D.C.: Aug. 23, 2013).

[17]GAO-10-313.

[18]GAO-12-423.

In addition to our work, Interior's Office of Inspector General (OIG) and others have reported on Interior's challenges related to hiring and retention of key oil and gas oversight staff. With respect to hiring, in September 2010, Interior's Outer Continental Shelf Safety Oversight Board reported that Interior did not have a formal program for recruiting the best candidates or well-defined career advancement and promotion opportunities for inspectors.[19] A December 2010 report from Interior's Inspector General echoed that finding and concluded that the Pacific Region faced considerable hiring challenges because of increased hiring by the oil and gas industry, citing the industry's significant salary advantage over federal service.[20] With respect to retention, the Outer Continental Shelf Safety Board also reported that Interior lacked a formal program for retaining the most-qualified inspectors. Moreover, the report found that in the Pacific Region, 8 out of 10 staff responsible for permitting were eligible for retirement within the next 3 years. In December 2010, Interior's Inspector General reported that, in spite of the considerable investment in both time and money for inspector training, BLM's inspection and enforcement program risked losing its inspectors once they were trained because trained inspectors were highly sought by industry.[21] Interior's Inspector General reported that oil and gas operators commonly recruit petroleum engineering technicians by offering high salaries during successful business periods, and recommended, among other things, that BLM consider developing and implementing a continued service agreement requiring newly certified inspectors to stay with the bureau for a specified period of time following certification. In February 2013, BLM issued guidance that requires the use of a mandatory service agreement for inspectors as a condition of employment. According to the guidance, if an inspector voluntarily separates from BLM within 2 years of certification, the inspector will have to reimburse BLM the full cost of the training, which is estimated at $48,000 per certification.

[19]Interior, Outer Continental Shelf Safety Oversight Board Report to Secretary of the Interior Ken Salazar (Sept. 1, 2010).

[20]U.S. Department of the Interior Office of Inspector General, *A New Horizon: Looking to the Future of the Bureau of Ocean Energy Management, Regulation, and Enforcement*, CR-EV-MMS-0015-2010 (Dec. 7, 2010).

[21]U.S. Department of the Interior Office of Inspector General, *Bureau of Land Management's Oil and Gas inspection and Enforcement Program,* CR-EV-BLM-0001-2009 (Washington, D.C.: Dec. 2, 2010).

In 2011, we added Interior's management of federal oil and gas resources to our list of programs at high risk for waste, fraud, abuse, and mismanagement in part because Interior continued to experience problems hiring and retaining sufficient staff to provide oversight and management of oil gas operations on federal lands and waters.[22] More broadly, in 2001 we added strategic human capital management across the federal government to our high-risk list. At that time, we highlighted various challenges the federal government faces, including strategic human capital planning, succession planning, and acquiring and developing staff sufficient to meet agencies' needs. We concluded that these challenges may leave agencies unable to effectively, efficiently, and economically perform their missions.[23] In addition, we have issued a series of reports highlighting human capital challenges at individual federal agencies—including the Department of Housing and Urban Development,[24] the U.S. Patent and Trademark Office,[25] the Food and Drug Administration,[26] and the Department of State[27]—and these reports highlight problems similar to the problems at Interior.

The federal government has made substantial progress addressing its human capital challenges over the past 12 years. As we noted in September 2012, both Congress and OPM have taken several actions in this regard.[28] For example, in 2002, Congress created a chief human capital officer position in 24 agencies to advise and assist the head of these agencies and other agency officials in their strategic human capital

[22]GAO-11-278.

[23]GAO, *High-Risk Series: An Update,* GAO-01-263 (Washington, D.C.: January 2001).

[24]GAO, *Housing and Urban Development: Strategic Human Capital and Workforce Planning Should be an Ongoing Priority,* GAO-13-282 (Washington, D.C.: Mar. 15, 2013).

[25]GAO, *U.S. Patent and Trademark Office: Hiring Efforts Are Not Sufficient to Reduce the Patent Application Backlog,* GAO-07-1102 (Washington, D.C.: Sept. 4, 2007).

[26]GAO, *Human Capital: Continued Opportunities Exist for FDA and OPM to Improve Oversight of Recruitment, Relocation, and Retention Incentives,* GAO-10-226 (Washington, D.C.: Jan. 22, 2010).

[27]GAO, *Department of State: Foreign Service Midlevel Staffing Gaps Persist Despite Significant Increases in Hiring,* GAO-12-721 (Washington, D.C.: June 14, 2012).

[28]GAO, *Human Capital Management: Effectively Implementing Reforms and Closing Critical Skills Gaps Are Key to Addressing Federal Workforce Challenges*, GAO-12-1023T (Washington, D.C.: Sept. 19, 2012).

efforts.[29] In addition, in 2002 and 2004, Congress provided agencies with additional authorities and flexibilities to manage the federal workforce, such as the authority to offer recruitment bonuses. In 2005, and again in 2008, OPM issued guidance on the use of hiring authorities and flexibilities. In 2008, OPM launched an 80-day hiring model to help speed the hiring process. In 2012, OPM launched the Pathways Programs to recruit and hire students and recent graduates.[30]

Interior Continues to Face Challenges Hiring and Retaining Key Oil and Gas Staff Primarily Because of Higher Industry Salaries and the Lengthy Federal Hiring Process

Interior continues to face challenges hiring and retaining key oil and gas staff—particularly petroleum engineers, inspectors, and geologists. Interior officials told us that a number of factors affected their ability to hire and retain staff but cited two key factors—higher salaries in industry and the lengthy federal hiring process—and said that difficulties were especially prevalent at offices with an active industry presence that competes with Interior for employees.

Interior Continues to Face Challenges Hiring and Retaining Key Oil and Gas Staff

BLM, BOEM, and BSEE offices continue to find it difficult to fill vacancies for key oil and gas oversight positions, including petroleum engineers, inspectors, geologists, natural resource specialists, and geophysicists. In responding to our survey, officials from a majority of BLM, BOEM, and BSEE offices that had vacancies in these key oversight positions reported that filling these vacancies was either somewhat or very difficult, with petroleum engineers and geologists identified as the most difficult to

[29]Chief Human Capital Officers Act of 2002, Title XIII of the Homeland Security Act of 2002. Pub. L. No. 107-296 (Nov. 25, 2002).

[30]77 Fed. Reg. 28194 (May 11, 2012). The Pathways Programs were established by the President under Exec. Order No. 13562, Recruiting and Hiring Students and Recent Graduates, 75 Fed. Reg. 82585 (Dec. 27, 2010). Under the executive order, OPM was tasked with issuing implementing regulations.

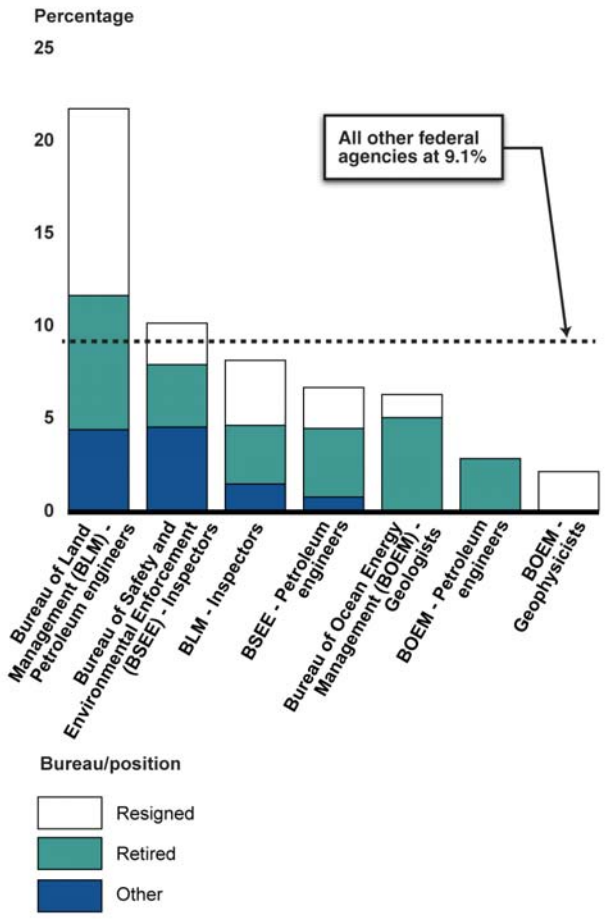
hire.[31] In addition, many field offices reported difficulties retaining key oil and gas staff, and officials told us that they are concerned that key staff will leave for industry.[32] (See app. II for information regarding survey responses.) With the exception of BLM's petroleum engineers (21.7 percent attrition) and BSEE inspectors (10.1 percent attrition), however, the attrition rate for other key oil and gas staff for fiscal year 2012 was less than the rest of the federal government, which had an average 9.1 percent attrition rate for all federal positions.[33] Nonetheless, field office officials told us that attrition raises concerns because it is not unusual for some field offices to have only one or two employees in any given position, meaning that a single retirement or resignation can significantly affect office operations. At BLM, the fiscal year 2012 attrition rate for petroleum engineers was over 20 percent, or more than double the average federal attrition (see fig. 3). Significantly, resignations rather than retirements, accounted for nearly half of BLM's petroleum engineer attrition rate, suggesting that petroleum engineers sought employment opportunities outside the bureau.

[31]Specifically, 11 of the 14 BLM offices, 2 of the 3 BOEM offices, and 6 of the 7 BSEE offices reporting petroleum engineer vacancies said that filling those vacancies were either somewhat or very difficult.

[32]For instance, 11 of 30 BLM offices, 3 of 3 BOEM offices, and 3 of 7 BSEE offices reported finding it somewhat or very difficult to retain petroleum engineers.

[33]We calculated the attrition rates used in this report by dividing the number of separations during a particular fiscal year (which includes retirement, voluntary separations, transfers out of the agency or reassignments, involuntary separations, and deaths) by the average number of staff onboard at the beginning and end of the fiscal year.

Figure 3: Attrition Rates for Key Interior Oil and Gas Oversight Positions, Fiscal Year 2012



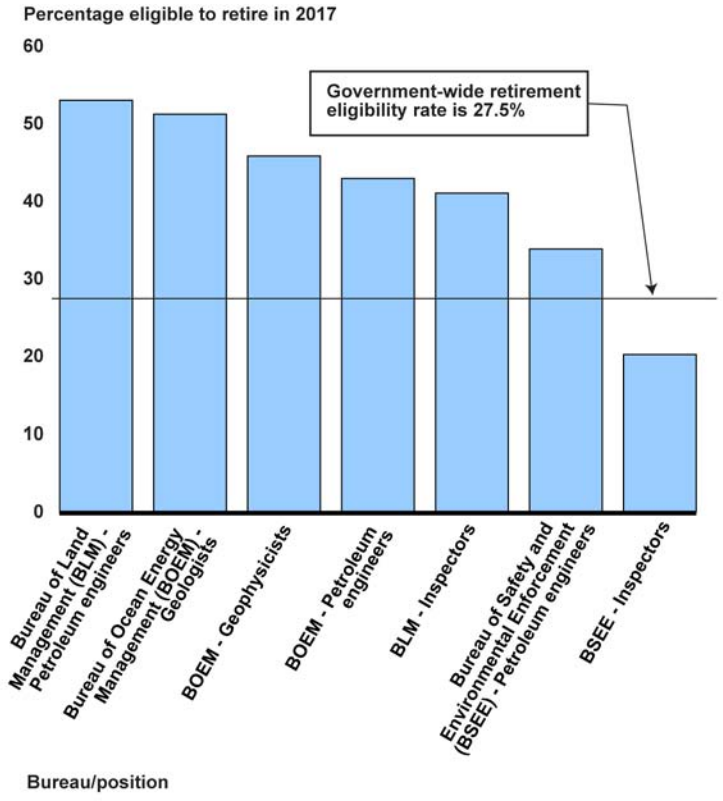
Source: GAO analysis of Enterprise Human Resources Integration data.

Hiring and retention problems appear to be more acute at offices where industry activity is greatest. For example, attrition rates for BLM oil and gas oversight positions—especially petroleum engineers—appeared to be higher at field offices where industry submitted the highest number of APDs in recent years. From 2010 to 2012, at the five BLM field offices that received the highest number of APDs, the average attrition rate for petroleum engineers was 21.2 percent annually, while the average attrition rate for petroleum engineers at all other BLM field offices was 11.4 percent. At a BLM field office in North Dakota, which has experienced significant new industry activity in recent years, APDs have increased from 84 in fiscal year 2007 to 287 in fiscal year 2012. Office managers from this field office told us that they have been understaffed

for the past few years and struggled to hire sufficient numbers of staff to meet the increased APD and inspection workload. Officials at BOEM's Alaska Regional Office, where both BOEM and industry are preparing for potential development of offshore oil and gas, stated that they face challenges hiring and retaining staff because they are competing with industry for the same small group of geologists, geophysicists, and petroleum engineers.

Adding to Interior's retention difficulties is the high proportion of staff in key oil and gas positions that will be eligible to retire within a few years (see fig. 4). For example, according to our analysis of OPM data on federal civilian personnel, more than half of BLM petroleum engineers and BOEM geologists will be eligible to retire by 2017 compared with a government-wide average of about 27.5 percent for all federal employees during the same period.

Figure 4: Retirement Eligibility by 2017 for Selected Key Interior Oil and Gas Positions



Source: GAO analysis of Enterprise Human Resources Integration data.

Two Major Factors Affect Hiring and Retention of Key Oil and Gas Staff

Interior officials widely agreed that two major factors contribute to difficulties in hiring and retention of oil and gas oversight staff—higher salaries in industry and the lengthy federal hiring process—but cited other factors as well, including not having qualified applicants in some areas and limited opportunities for career advancement and promotion.

Higher Industry Salaries

BLM, BOEM, and BSEE officials overwhelmingly cited the difference between federal and industry salaries as a major factor contributing to difficulties in hiring and retaining staff. In response to our survey and in interviews with field offices, officials from all three bureaus reported that they have lost potential applicants and staff to industry because industry can pay higher salaries than Interior is able to pay under the federal salary schedule. In responding to our survey, a majority of the BLM, BOEM, and BSEE offices that reported vacant positions for petroleum engineers, inspectors, or geologists indicated that the difference in salaries between Interior and industry somewhat or greatly hindered their ability to hire qualified applicants in one or more of these positions.[34]

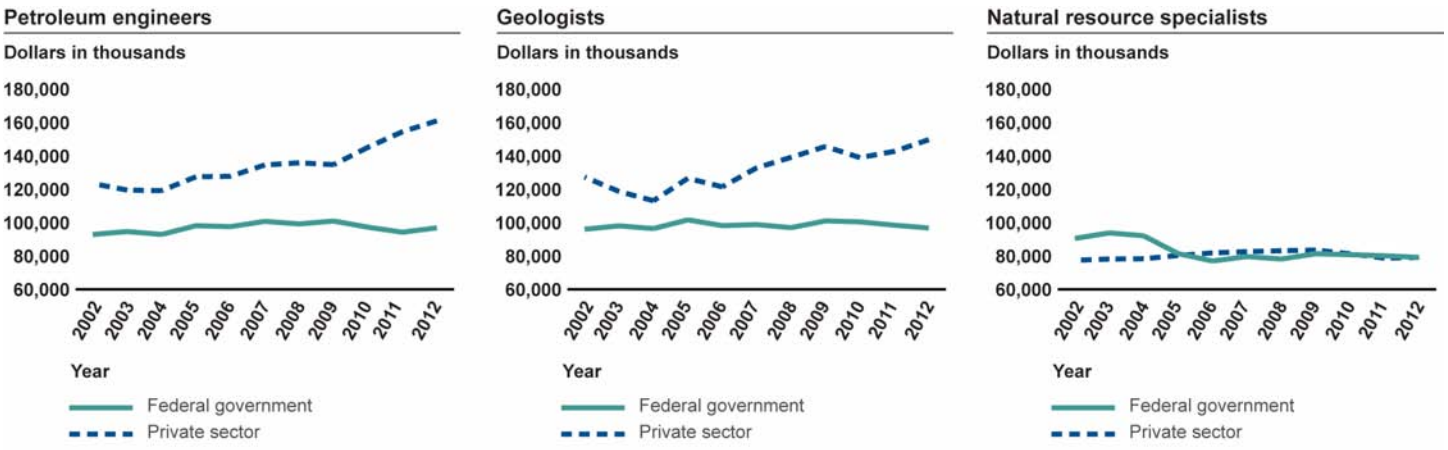
Bureau of Labor Statistics data on industry salaries confirm that there is a wide and growing gap between industry and federal government salaries for petroleum engineers and geologists (see fig. 5).[35] Salaries for natural resource specialists were an exception. Bureau of Labor Statistics salary data for natural resource specialists do not show a significant difference between industry and federal government salaries. According to BLM officials, industry does not have a position equivalent to Interior's natural resource specialist and has had less demand for staff with these skills and background. Consistent with this exception, our survey results showed that most BLM, BOEM, and BSEE oil and gas offices reported that salary differences did not hinder their ability to hire or retain natural resource specialists.[36]

[34]For instance, 25 of the 30 BLM offices, 3 of the 3 BOEM offices, and 6 of the 7 of the BSEE offices reported that salary differences greatly hindered their ability hire petroleum engineers.

[35]The data do not account for differences in nonsalary compensation or other benefits.

[36]Specifically, 12 of the 30 BLM offices, 0 of the 3 BOEM offices, and 0 of 7 BSEE offices reported that salary differences greatly hindered their ability hire natural resource specialists.

Figure 5: Mean Industry and Federal Government Salaries for Petroleum Engineers, Geologists, and Natural Resource Specialists from 2002 through 2012 (2012 Dollars)



Source: GAO analysis of Bureau of Labor Statistics data.

The difference in salaries between Interior and industry appears to be greater in areas with more oil and gas development. According to field office officials, in regions where both Interior and industry are hiring, the pool of eligible applicants is smaller, industry salaries are higher, and the difference in salaries is wider. BSEE officials told us that recent increases in oil and gas exploration and development in the Gulf of Mexico have increased industry salaries and signing bonuses for new hires. Officials from a BLM field office in North Dakota, where industry is actively developing shale oil, told us that starting salaries for engineers in industry are at least twice that of BLM midlevel engineers, and that applicants for inspector positions at BLM can earn 60 to 70 percent more if they work for industry.

Lengthy Federal Hiring Process

Interior officials frequently cited the lengthy federal hiring process as a key factor contributing to difficulties hiring staff. Officials we interviewed from all three bureaus told us that the federal hiring process hurt their ability to fill key oil and gas positions. Similarly, for almost 90 percent of the vacancies in 2012, as reported by BLM, BOEM, and BSEE officials in response to our survey, the federal hiring process somewhat hindered or greatly hindered their ability to hire qualified candidates.[37] BLM, BOEM,

[37]For example, 22 of the 30 BLM offices, 2 of the 3 BOEM offices, and 7 of the 7 BSEE offices reported that the speed of the hiring process greatly hindered or slightly hindered their ability hire petroleum engineers.

and BSEE officials we interviewed told us that the federal hiring process is lengthy because there are a number of required steps—including the preparation of a job description, formally announcing the vacancy, creating a list of qualified candidates, conducting interviews, and performing background and security checks. BLM, BOEM, and BSEE officials told us that this process often means that contacting qualified applicants is delayed by weeks or months, and by the time that they contact the applicant, the applicant has found other work.

According to our analysis of Interior hiring data, the average hiring time for petroleum engineers and inspectors at BOEM and BSEE in recent months exceeded 180 calendar days (see table 1), and the average hiring times for these positions at BLM in fiscal year 2012 exceeded 120 days (see table 2).[38] These hiring times are much longer than OPM's target of 80 calendar days. For other key positions, such as natural resource specialists and geologists, bureau officials responding to our survey reported fewer overall vacancies—in part because there are fewer staff in these positions—but still reported lengthy hiring times.

Table 1: Hiring Times for Petroleum Engineers and Inspectors at BOEM and BSEE Offices for Employees Reporting for Duty from October 1, 2012 to March 31, 2013

Position	Total hired	Number of hires taking more than 6 months	Average hiring time (in days)
Petroleum engineer (BOEM/BSEE)	23	9	197
Inspector (BSEE)	35	16	182

Sources: GAO analysis of BOEM and BSEE hiring data.

[38]Interior uses OPM's definition of hiring times, which is the elapsed calendar time from the date the responsible manager identifies a need to the date when the employee reports for duty. In our survey, we asked officials about the time elapsed from the date the opening was announced—defined as when the job was posted as open to applicants—and the date the employee reported for duty.

Table 2: Hiring Times for Petroleum Engineers and Inspectors at BLM Field Offices for Employees Reporting for Duty from October 1, 2011 to September 30, 2012

Position	Total hired	Number of hires taking more than 6 months	Average hiring time (in days)
Petroleum engineer (BLM)	11	3	126
Inspector (BLM)	17	5	149

Source: GAO analysis of BLM hiring data.

Other Factors

Interior officials also identified other factors that contribute to difficulties in hiring and retention of oil and gas oversight staff, including not having qualified applicants in some areas and a limited career path or opportunities for advancement for some positions.

Not having qualified candidates in some areas. In responding to our survey about the availability of qualified candidates to fill vacancies, almost 70 percent of those who responded indicated that a lack of available applicants was a factor that somewhat or greatly hindered their ability to fill those vacancies. In particular, field offices located in remote areas or extreme climates often reported that it was difficult to fill oil and gas oversight positions. For example, an official from a BLM field office in rural Colorado reported that the office was located in an area where winter temperatures can fall to -40 degrees Fahrenheit, making it difficult to attract qualified applicants and fill positions. In addition, the high cost of living in many areas limited the pool of qualified applicants, according to officials. At one BLM field office in Wyoming, for instance, an official reported that local housing options were limited and expensive, reducing the number of potential qualified applicants willing to move to the area.

Limited career path. Officials from all three bureaus told us that limited opportunities for advancement, promotion, or changing responsibilities and activities over time, caused some staff to leave and take industry positions or other positions within Interior. Several Interior officials cited limited opportunities for growth, advancement, and promotion as factors that affected retention. For example, we have reported that, according to BLM field office officials, natural resource specialists assigned to oil and gas tasks such as reviewing APDs have left BLM to work at other federal agencies where they can make greater use of their education and areas

of specialization, such as biology.[39] A 2012 BLM report on BLM's oil and gas inspection and enforcement workforce strategy recognized that the lack of a career ladder for petroleum engineering technicians could contribute to these employees leaving and said that the bureau is working on a strategy to create a career ladder for these employees. Overall, almost 60 percent of survey responses to our question regarding opportunities for advancement and promotion indicated that the limited nature of such opportunities somewhat or greatly hindered retention for these positions.

Interior Has Taken Some Actions to Address Hiring and Retention Challenges

Interior and the three bureaus—BLM, BOEM, and BSEE—have taken some actions to address their hiring and retention challenges, such as actions to increase or supplement salaries to reduce the salary gap and streamline the hiring process to reduce hiring times. However, they have made limited use of their existing authorities to supplement salaries for key oil and gas oversight staff. Although the department has taken some steps to reduce hiring times, it does not have complete and accurate data on hiring times to identify the causes of delays in the hiring process and help identify further opportunities for reducing them. Also, Interior has taken some actions to improve recruiting. For example, Interior and its bureaus are working on workforce plans to, in part, help coordinate hiring and retention efforts, but these efforts are ongoing, and the extent to which these plans will help these efforts is uncertain.

Interior Has Taken Some Actions to Increase or Supplement Salaries and Benefits but Has Not Fully Used Existing Authorities

Interior and the three bureaus have taken some actions to obtain special salary rates for key oil and gas positions and have used their existing authorities to supplement salaries; however, they have not fully used these funding authorities.

Interior Obtained Special Salary Rates for Some Employees

Interior obtained special salary rates from Congress for key oil and gas positions at BOEM and BSEE for fiscal years 2012 and 2013. Agencies may receive special salary rates by request to OPM or through the congressional appropriations process. In February 2011, Interior submitted a request to OPM for special salary rates for petroleum

[39]GAO-13-572.

engineers, geologists, and geophysicists in the Gulf of Mexico Region.[40] OPM initially declined the request, citing the federal salary freeze that limited special salary rates only to agencies experiencing extraordinary circumstances.[41] However, OPM noted that Interior's need to quickly fill new positions created by the reorganization of MMS, which was replaced first by the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE) and then by BOEM and BSEE,[42] could be considered an extraordinary circumstance and suggested that Interior suspend its request until Congress provides funding for the additional positions. Interior did not resubmit its request, however, because in its fiscal year 2012 appropriation, Congress provided a special 25 percent base pay increase for geologists, geophysicists, and petroleum engineers in the Gulf of Mexico applicable to fiscal years 2012 and 2013.[43] BOEM and BSEE officials in the Gulf of Mexico Region noted that the actual pay increase is lower than 25 percent because it does not include locality pay.[44] For example, staff in BSEE's Lake Jackson District office in Texas

[40]OPM may establish higher rates of pay for an occupation or group of occupations nationwide, worldwide, or in a local area when it finds the federal government's recruitment or retention efforts are, or would likely become, significantly handicapped without those higher rates. A special rate request must be submitted to OPM by an agency's headquarters and must be coordinated with other federal agencies with employees in the same occupational group and geographic area. (5 U.S.C. §5305; 5 CFR part 530, subpart C).

[41]Section 147 of the Continuing Appropriations Act, 2011 (Pub. L. No. 111-242, 124 Stat. 2607 (2010)), as amended by section 1(a) of the Continuing Appropriations and Surface Transportation Extensions Act, 2011 (Pub. L. No. 111-322, 124 Stat. 3518 (2010)) prohibited statutory pay adjustments for most Federal civilian employees beginning on January 1, 2011, and ending on December 31, 2012. Section 1112 of the Consolidated and Further Continuing Appropriations Act, 2013 (Pub. L. No. 113-6, 127 Stat. 198, 414 (2013)), continued the freeze on statutory pay adjustments through December 31, 2013.

[42]Interior renamed MMS to BOEMRE as an interim step before eventually restructuring it into three separate bureaus—BOEM, responsible for leasing and resource management; BSEE, responsible for issuing oil and natural gas drilling permits and conducting inspections; and the Office of Natural Resources Revenue, responsible for revenue collection. This report focuses on BOEM and BSEE; it does not examine the Office of Natural Resources Revenue.

[43]Pub. L. No. 112-74, div. E, title I, § 121(c), 125 Stat. 786, 1012 (2011).

[44]The Federal Employees Pay Comparability Act of 1990 created annual locality-based pay adjustments for federal workers under the General Schedule (the pay system that covers most federal employees) to reduce reported gaps between federal and nonfederal pay in metropolitan areas. Pub. L. No. 101-509, title V, § 529, 104 Stat. 1389, 1427-1469 (Nov. 5, 1990).

did not receive a pay increase because their locality rate is higher than the 25 percent provided by Congress. Nonetheless, BOEM and BSEE officials in the Gulf of Mexico Region stated that this special pay authority appears to have helped in the near term to retain some geologists, geophysicists, and petroleum engineers. BOEM and BSEE have requested an extension of this special pay authority though fiscal year 2014 in their fiscal year 2014 budget request. According to Interior, all three bureaus are actively working to develop a department-wide request for special salary rates. Once complete, Interior will submit the request to OPM.[45]

BLM officials said that their bureau is considering applying for special salary rates for some BLM oil and gas positions. BLM officials met with OPM in April 2012 to discuss special salary rates for petroleum engineers and petroleum engineering technicians in western North Dakota and eastern Montana, where a BLM official said disparities between federal and industry salaries are most acute. A BLM official told us that OPM requested that BLM provide more data to support its request and that BLM is currently compiling and analyzing human capital data to support a request to OPM in the near future. At the same time, according to this official, BLM recently submitted draft language to Congress requesting special salary rates through the congressional appropriations process.

Interior's Use of Existing Authorities to Supplement Salaries Has Been Limited

Interior has not fully used its existing authorities to offer recruitment, relocation, and retention incentives to supplement salaries for key oil and gas positions. Interior's bureaus have discretionary authority to pay incentives in the form of recruitment, relocation, and retention awards of up to 25 percent of basic pay in most circumstances and for as long as the use of these incentives is justified, in accordance with OPM guidance, such as in the event an employee is likely to leave federal service. OPM officials told us that use of these incentives was a factor they consider when evaluating agency requests for special salary rates. Although BLM, BOEM, and BSEE officials told us that the use of these recruitment, retention, and relocation awards were key options to address salary differences with industry, our review of OPM and Interior data indicated that they were not widely used by the three bureaus. For instance, our assessment of Interior data indicates that Interior's use of recruitment,

[45]This special salary increase went into effect on April 22, 2012, for BOEM and BSEE's offices in the Gulf of Mexico Region.

relocation, and retention awards for petroleum engineers and inspectors—critical positions that the bureaus have had difficulty hiring and retaining in recent years—has been limited (see tables 3 and 4).

Table 3: Interior's Use of Recruitment, Relocation, and Retention Awards to Hire and Retain Petroleum Engineers, Fiscal Years 2010 through 2012

Bureau	Year	Number of petroleum engineers onboard[a]	Number of petroleum engineers hired	Number of recruitment incentives awarded	Number of relocation incentives awarded	Number of retention incentives awarded
BLM	2010	79.0	2	1	1	1
	2011	74.5	8	0	0	0
	2012	69.0	6	1	2	3
MMS/BOEMRE/ BOEM-BSEE	2010	152.5	11	1	0	0
	2011	159.0	18	1	0	0
	2012	42 (BOEM) 136 (BSEE)	5 (BOEM) 16 (BSEE)	0	1 (BOEM) 1 (BSEE)	0

Sources: GAO analysis of Enterprise Human Resources Integration and Interior data.

[a]The number of staff on board is the average number of staff in the current and past fiscal year.

Table 4: Interior's Use of Recruitment, Relocation, and Retention Awards to Hire and Retain Inspectors, Fiscal Years 2010 through 2012

Bureau	Year	Number of inspectors onboard[a]	Number of inspectors hired	Number of recruitment incentives awarded	Number of relocation incentives awarded	Number of retention incentives awarded
BLM	2010	n/a	37	1	2	0
	2011	n/a	36	0	0	0
	2012	About 170[b]	32	0	1	6
MMS/BOEMRE/ BSEE	2010	66.5	6	0	0	0
	2011	74.5	28	0	0	0
	2012	89.0	21	1	0	0

Sources: GAO analysis of Enterprise Human Resources Integration and Interior data.

[a]The number of staff on board is the average number of staff in the current and past fiscal year.

[b]We could not determine the number of BLM oil and gas facility inspectors from the EHRI data. BLM provided an approximate number of oil and gas facility inspectors as of August 2012.

BLM officials cited fiscal constraints as the primary reason why they did not use these incentives more often. A July 2011 memorandum from

OPM and the Office of Management and Budget (OMB) directed federal agencies to limit the use of recruitment, retention, and relocation incentive awards to fiscal year 2010 levels. Our review of OPM data shows, however, that in 2011Interior paid about one-third less in such awards than it did in 2010. Specifically, in 2010, Interior paid just over $3 million for 401 recruiting, retention, and relocation incentive awards as opposed to 2011, when the department paid just under $2 million. As such, Interior had the discretion to spend another $1 million on these incentive awards in 2011 but chose not to do so even as it faced difficulty hiring and retaining key oil and gas oversight positions.

Other factors may have also contributed to the limited use of recruitment, retention, and relocation incentive awards. Specifically, a BLM official stated that there was confusion about OPM and OMB's requirement to limit incentive awards to 2010 levels, and that some field office managers were uncertain about the extent to which they were allowed to use these incentive awards. A 2012 BLM report on BLM's oil and gas inspection and enforcement workforce strategy reported that the process to request use of these incentive awards required the development of a justification on a case-by-case basis for each award. Therefore, it recommended developing a "bureau-wide blanket authorization" for a 25 percent recruitment and retention incentive for all petroleum engineers and inspectors. BSEE officials, however, also described situations where potential employees declined job offers even though they were offered these incentive awards. Without clear guidance outlining when these incentives are to be used and a means to measure their effectiveness, however, Interior will not be able to demonstrate that it has fully used its existing authorities to offer recruitment, relocation, and retention incentives to supplement salaries for key oil and gas positions.

Interior Has Taken Some Steps to Reduce Hiring Times but Does Not Have Complete and Accurate Data to Help Identify Further Opportunities

To help reduce hiring times, Interior participated in an OPM-led, government-wide initiative to streamline the federal hiring process and has taken other actions. Specifically, under the OPM-led effort, an Interior official stated that, in 2009, Interior formed a team composed of hiring managers and human resources specialists representing all of Interior's bureaus to examine the department's hiring process. The team compared Interior's hiring processes to OPM's 80-day hiring model and identified 27 action items to reduce hiring times, including standardizing position descriptions and reducing the number of managers involved in the hiring approval process. Interior and its bureaus have addressed many of these action items over the past few years and, according to Interior officials and agency records, made significant progress in reducing hiring times.

For example, in 2010, BLM developed and distributed guidance to streamline its hiring processes, including the use of standardized position descriptions and vacancy announcements. According to Interior officials, these steps reduced hiring times at Interior as a whole from an average of 190 days in fiscal year 2009 to 80 days in fiscal year 2012, although, as discussed above, hiring times for some key oil and gas positions averaged over 120 days.

In addition, BLM, BOEM, and BSEE have taken other steps to expedite the hiring process. To respond to the hiring needs of BOEM and BSEE following the reorganization of BOEMRE in October 2011,[46] BSEE hired additional human resources staff in the Gulf of Mexico Region. In August 2012, BSEE implemented a new process that reduced the number of days from 90 to 30 for managers to select eligible applicants. Although this new guidance still exceeds OPM's 80-day hiring model, which allocates 15 days for a manager to review and select eligible candidates. BSEE's analysis of its hiring data shows that this guidance has reduced hiring times at BSEE headquarters and two of the three BSEE regional offices.[47] A BLM official told us that the bureau is working on additional initiatives to improve the efficiency of the hiring process such as automating vacancy announcements and streamlining administrative processes.

However, neither the department nor the three bureaus have complete and accurate data on hiring times that could help them identify and address the causes of delays in the hiring process. In 2011, Interior began reporting data on hiring times to OPM on a quarterly basis. A senior Interior official explained that the department calculates hiring times based on a combination of dates from Interior's personnel and payroll databases. However, we identified instances where these data appear to be inaccurate—for example, in some cases, hiring times were recorded as 0 days or 1 day. An official from BLM stated that the bureau does not have a systematic approach to analyzing data on hiring times, and neither BOEM nor BSEE collects comprehensive data that could be used to identify delays in the hiring process so that problems can be

[46]Since the reorganization of BOEMRE in October 2011 into BOEM and BSEE, BSEE provides human resources support for BOEM under terms of a reimbursable service agreement.

[47]BSEE did not have hiring data from its Alaska Regional Office.

systematically addressed. BSEE has begun taking some informal actions to identify the causes of delays. For example, BSEE human resources officials said that, in August 2012, they began collecting hiring data on a biweekly basis in a spreadsheet and tracking the status of each BOEM and BSEE job announcement to help track the progress of individual applicants as they move through the hiring process. To use these data to evaluate hiring times at various stages of the hiring process, however, BOEM and BSEE would have to manually sum how long it takes each applicant to complete each stage of the hiring process. Without reliable data on hiring times, Interior's bureaus cannot identify how long it takes to complete individual stages in the hiring process, identify delays, and implement changes to expedite the hiring process.

Interior's Bureaus Have Taken Some Actions to Improve Recruiting

Interior's bureaus have taken the following actions to improve their recruiting efforts:

Developing a marketing strategy. In 2012, BOEM and BSEE contracted with a media strategy firm to study the competitive marketplace for qualified applicants and draft a strategy to attract and retain staff for key technical positions. BOEM and BSEE officials cited various advantages to employment at Interior as compared with industry, including more flexible work hours, better job satisfaction, and more employment security. For example, according to BSEE officials, many industry oil and gas jobs require staff to spend up to 2 consecutive weeks offshore, whereas BSEE inspectors or engineers rarely spend more than 2 to 5 nights offshore. One BSEE manager stated that some of its new hires are former industry employees who do not want to be away from their families for extended periods. A BLM planning document indicates that BLM is also considering contracting with a media strategy firm to review its recruiting strategy.

Broadening recruiting efforts. Some BLM and BSEE officials told us that they are making an effort to visit college campuses to recruit oil and gas staff. In addition, BSEE officials told us that, in late 2013, they plan to visit 27 colleges and universities, as well as attend conferences, such as those sponsored by the Society of Petroleum Engineers and the American Association of Petroleum Geologists. The BSEE officials also described planning joint hiring activities with BLM and Interior. BOEM has sent staff to universities and conferences to recruit geoscientists. Officials from BLM's Bakersfield Field Office told that they have a long-standing relationship with California State University, Bakersfield, and have hired students from that school.

Offering internships. BLM, BOEM, and BSEE have had some success offering positions to student interns and converting them to full-time positions. Currently, Interior conducts its internship program under the Pathways Program, which recently replaced the Student Career Experience Program and the Student Temporary Employment Programs.[48] In summer 2013, BSEE hired 24 interns through the Pathways Program.

Interior and Its Bureaus Have Undertaken Various Workforce Planning Efforts

Interior and the three bureaus—BLM, BOEM, and BSEE—are participating in several workforce planning efforts, including government-wide, department-wide, and bureau-level initiatives. Because these efforts are ongoing, however, it is too early to evaluate how they will affect hiring and retention challenges across BLM, BOEM, and BSEE. As we have previously reported,[49] strategic workforce planning helps an organization align its human capital program with its current and emerging mission and programmatic goals, as well as develop long-term strategies for acquiring, developing, and retaining staff to achieve programmatic goals. We also previously reported on the importance of workforce planning to ensure that programs are implemented consistently across the department.

At the department level, Interior is currently participating in two efforts to improve its workforce planning. First, Interior is participating in a government-wide initiative led by OPM to identify and mitigate critical skills gaps across the federal government. Specifically, this effort aims to develop strategies to hire and retain staff possessing targeted skills to help address government-wide and department-specific mission-critical occupations and skill gaps. Second, in response to an OMB request, Interior issued *Managing People and Programs – Department of the Interior Strategic Workforce Management Plan* in March 2012*,* which provided an overview of workforce planning strategies that Interior can use to manage workforce levels in consideration of emerging needs, skills

[48]The Student Temporary Employment Program and the Student Career Experience Program were both programs that provided federal employment opportunities to students who were enrolled or accepted for enrollment as students seeking degrees taking at least a half-time academic, technical, or vocational course load in an accredited high school, technical, vocational, 2- or 4-year college or university, graduate, or professional school. Both of these programs were replaced by the Pathways Program in June 2012.

[49]GAO, *Human Capital: Key Principles for Effective Strategic Workforce Planning*, GAO-04-39 (Washington, D.C.: Dec. 11, 2003).

gaps, and constrained budgets. As part of the next phase of this effort, Interior has asked its bureaus and offices to begin developing detailed workforce plans using a standardized model based on best practices used at Interior. According to the March 2012 plan, these bureau-level plans are to include a risk assessment of funding, workload, personnel, and positions; an analysis of workforce demand and supply; a skills gap analysis; and an action plan to mitigate risks and address skills gaps. Because both of these initiatives are ongoing, however, it is too early to assess the effect of these efforts on Interior's hiring and retention challenges for key oil and gas positions.

BLM, BOEM, and BSEE are also developing or implementing workforce plans, which are in various stages of completion. As previously mentioned, in July 2012, we reported that BOEM and BSEE did not have strategic workforce plans in place and recommended that each bureau develop such a plan.[50] BSEE recently issued its Human Capital Strategic Plan, 2013-2018, in September 2013. BOEM officials told us that they expect to complete their strategic workforce plan in 2014. In March 2012, BLM issued its *Workforce Planning Strategy, 2011 to 2015*, which outlines broad, strategic objectives that addressed some key human capital challenges but leaves the development of implementation strategies to BLM managers at other organizational levels, including the state office level.[51] In addition, BLM's plan did not address challenges with the hiring process or outline mechanisms to monitor, evaluate, or improve the hiring process. Although BLM's plan discusses the use of relocation and other incentive awards, it does not indicate when the use of these incentive awards is warranted, how the effectiveness of their use will be assessed, or how BLM will balance priorities to budget for these incentives. It remains unclear whether these efforts will help BLM address its human capital challenges. In addition, BLM and BSEE have a number of planning teams working on various aspects of recruitment and retention. In particular, these teams make recommendations for bureau initiatives, including actions to improve the hiring process or to increase the use of recruitment and retention incentives. These efforts, however, do not appear to have been conducted as part of a workforce plan.

[50]GAO-12-423.

[51]BLM generally has four organizational levels: national, state, district, and field offices. BLM's state offices generally oversee district and field offices that are within its jurisdiction.

Therefore, these efforts do not appear to have been conducted in a coordinated and consistent manner across the bureaus or offices, and officials do not have a basis to assess the success of these efforts or determine whether and how these efforts should be adjusted over time.

Hiring and Retention Challenges Have Made It More Difficult to Carry Out Some Oversight Activities

Officials from BLM, BOEM, and BSEE reported that hiring and retention challenges have had numerous effects on some field offices' operations, including making it more difficult for some field offices to carry out oversight activities because of position vacancies.

Officials we interviewed and surveyed at the three bureaus reported that their hiring and retention challenges have generally resulted in less time available for oversight activities. These officials stated that vacancies directly affect the number of oversight activities they can carry out—including the number of inspections they can conduct and the amount of time they can spend processing APDs. Officials at some BLM field offices reported that they have not been able to meet their annual inspection and enforcement goals because of vacancies. Compounding these problems is the fact that new staff are less experienced and, thus, less efficient in carrying out oversight activities, according to BLM, BOEM, and BSEE officials. In addition, officials said that experienced staff are expected to help train and mentor new staff, which reduces the amount of time they can spend on their own oversight work. Interior officials also told us that retention challenges in particular have led to a loss of institutional knowledge and fewer staff available to mentor the less-experienced newcomers. For instance, a BOEM official in Alaska stated that the primary effect of hiring difficulties in Alaska is the lost mentoring opportunities for senior geologists and engineers to train new staff. He said the work BOEM does is highly specialized and technical and that the bureau is often not able to hire candidates with related experience, which exacerbates the lost mentoring opportunities. In response to our survey, officials from 13 of the 20 BLM and BSEE offices with inspector vacancies reported that they somewhat or greatly reduced the number of inspections conducted in 2012 compared with what they would have done if fully staffed,[52] and officials from 9 of the 20 offices with inspector vacancies indicated that the thoroughness of inspections was somewhat

[52]Specifically, 10 of the 13 BLM offices and 3 of the 7 BSEE offices reporting inspector vacancies said they somewhat or greatly reduced the number of inspections conducted in 2012 compared with what they would have done if fully staffed.

or greatly reduced because of these vacancies.[53] In addition, officials from 8 of the 21 BLM and BSEE offices with petroleum engineer vacancies indicated that vacancies somewhat or greatly reduced the number of APDs reviewed in 2012 compared with what they would have done if fully staffed.[54]

The effects of vacancies can be difficult to quantify because so much depends on the circumstances of the office, including the type and scale of local industry activity, as well as the field office's overall staffing levels and ability to adjust to vacancies. BSEE officials said, however, that fewer or less-thorough inspections may mean that some offices are less able to ensure operator compliance with applicable laws and regulations and, as a result, there is an increased risk to human health and safety due to a spill or accident. According to a BSEE official, the longer federal inspectors are away from a site, the more likely operators are to deviate from operating in accordance with laws and regulations. In responding to our survey, a few BLM field offices noted that hiring and retention difficulties have hindered the development of oil and gas resources in some cases. In particular, the survey respondents reported experiencing delays in conducting leasing reviews, conducting resource management plan amendment reviews, or approving seismic studies to locate oil and gas reservoirs. For instance, in May 2013, a BLM field office postponed all remaining oil and gas leasing activities in California for the remainder of the fiscal year due, in part, to the need to shift staff to permitting and inspections. In addition, according to some BSEE officials we interviewed, field offices are not always able to reassign staff to make up for staffing shortfalls as some positions are highly specialized.

Officials at the three bureaus cited steps they have taken to address vacancies in key oil and gas positions, including reassigning staff from lower-priority to higher-priority tasks, borrowing staff from other offices, or increasing overtime. However, each of these steps comes at a cost to the agency and are not sustainable solutions. Interior officials stated, for instance, that shifting staff from lower to higher priority work means that

[53]Specifically, 6 of the 13 BLM offices and 3 of the 7 BSEE offices reporting inspector vacancies said that the thoroughness of inspections was somewhat or greatly reduced because of these vacancies.

[54]Specifically, 6 of the 14 BLM offices and 2 of the 7 BSEE offices reporting petroleum engineer vacancies said that vacancies somewhat or greatly reduced the number of APDs reviewed in 2012 compared with what they would have done if fully staffed.

the lower priority tasks—many of which are critical to the bureaus' mission—are deferred or not conducted. For example, a BLM office in Utah reported in our survey that, while it was able to conduct all high-priority inspections, doing so delayed other priorities, such as processing APDs and planning for an oil or gas lease sale. Similarly, offices that borrow staff from other offices gain the ability to carry out their activities, but this comes at a cost to the office that loaned the staff. For example, officials from a BLM field office in North Dakota described how they borrowed staff from a field office in Montana to help process APDs and carry out inspections. As a result, the BLM officials in the North Dakota field office told us they were able to make some progress to address a backlog of APDs and complete required inspections; however, according to BLM survey respondents, the field office work in Montana has suffered. With regard to overtime, offices from BOEM reported in our survey that a heavy reliance on overtime was exhausting their staff.

Further, both BLM and BSEE are developing and implementing risk-based inspection strategies—long recommended by us and others—as they work to ensure their oversight resources are efficiently and effectively allocated; however, staffing shortfalls and turnover may adversely affect the bureaus' ability to carry out these new strategies. Specifically, in 2010, we found that BLM routinely did not meet its goals for conducting key oil and gas facility inspections and recommended that the bureau consider an alternative inspection strategy that allows it to inspect all wells within a reasonable time frame, given available resources.[55] In response to this recommendation, in fiscal year 2011, BLM implemented a risk-based inspection strategy whereby each field office inspects the highest risk wells first. Similarly, BSEE officials told us that they have contracted with Argonne National Laboratory to help develop a risk-based inspection strategy.

As part of this review, we analyzed the effect of staffing shortages on oversight of offshore oil and gas activities in the Gulf of Mexico Region and found that continued hiring difficulties could hinder implementation of a risk-based inspection strategy. Specifically, we estimated the number of inspections that could have been conducted in the Gulf of Mexico under three staffing scenarios: (1) a scenario where BSEE was unable to hire additional inspectors between fiscal years 2010 and 2012; (2) a scenario

[55]GAO-10-313.

approximating the actual number of inspectors in fiscal year 2012; and (3) a scenario where BSEE was able to hire double the number of inspectors it hired between fiscal years 2010 and 2012. Based on our analysis, increasing the number of production inspectors by 14 provided the capacity to conduct annual inspections at all or almost all Gulf of Mexico production facilities in fiscal year 2012. If BSEE had increased the number of production inspectors by 28 before fiscal year 2012, our analysis indicates that it would have been able to conduct annual inspections at all production facilities and conduct additional inspections at some production facilities considered high risk. Even with these additional staff, however, BSEE would not have had the capacity to conduct additional inspections at every facility considered high risk. See appendix III for details on our analysis.

Conclusions

In recent years, Interior has navigated major challenges in its oversight of oil and gas activities on federal lands and waters—including a major reorganization of its oil and gas oversight activities amid a dramatic increase in domestic oil and gas development. These changes notwithstanding, effective oversight of oil and gas development on federal lands and waters is a challenging endeavor requiring experienced staff with highly specialized training and skills. Interior has faced long-standing challenges hiring and retaining these staff and, with the current energy boom and increased industry competition for skilled workers, these problems have been exacerbated.

Interior and its bureaus have made some progress to address the two major factors affecting hiring and retention of key oil and gas staff—higher salaries in industry and the lengthy federal hiring process—but difficulties persist. While federal salaries for key oil and gas positions may not match salaries in industry—particularly in periods and locations of rapid industry growth—Interior is not doing all that it can to bridge this gap. Interior has obtained special salary rates in certain regions, such as in the Gulf of Mexico, and for certain positions, such as petroleum engineers and geologists, but it has not made full use of its existing authorities to offer recruitment, retention, and relocation incentives. We recognize that the use of these incentives comes at a cost to other programmatic efforts, and Interior must balance these needs as it develops its workforce plans. However, in the event that Interior applies for special salary rates for key oil and gas positions in the future, whether from OPM or Congress, demonstrating that it has fully utilized its existing authorities can help support its request for such salary rates. Similarly, Interior's hiring times for key oil and gas positions continue to lag behind hiring times for other

positions at Interior and lag behind the federal government more broadly. However, because Interior does not systematically collect and analyze data on its hiring process, it cannot readily identify delays in the process or the causes of such delays. Without reliable data on hiring times, Interior's bureaus cannot identify how long it takes to complete individual stages in the hiring process, identify delays, and implement changes to expedite the hiring process.

Recommendations for Executive Action

To ensure a consistent and comprehensive approach to addressing BLM's, BOEM's, and BSEE's ongoing hiring and retention challenges, we recommend the Secretary of the Interior direct the following two actions:

- Explore the expanded use of existing authorities, including recruitment, relocation, and retention incentives to help bridge the salary gap for key oil and gas oversight positions such as petroleum engineers, geologists, and geophysicists, and develop clear guidance for when the use of these incentives are warranted and how the effectiveness of their use will be assessed.
- Systematically collect data on hiring times for key oil and gas positions, ensure the accuracy of the data, analyze the data to identify the causes of delays and expedite the hiring process.

Agency Comments and Our Evaluation

We provided a draft of this report to the Department of the Interior for review and comment. Interior generally agreed with our findings and concurred with both recommendations. In its written comments, Interior agreed that its long-term human capital challenges will require the full use of available hiring and retention incentives to the extent that they can be supported by each bureau's budget. Interior also stated that the bureaus have begun a more systematic collection and analysis of hiring data to identify the causes of delays and help expedite the hiring process. Interior noted, as described in our report, that it has taken a number of actions to address its hiring and retention challenges. Interior noted that the continuing resolutions and sequester in fiscal years 2013 and 2014 reduced funds available for bureaus' staffing. This required a hiring freeze as well as a reduction to the bureaus' budget allocations for oil and gas activities. Interior also noted that, beginning in fiscal year 2012, the agency requested the authority to collect fees for BLM's onshore inspection program. Interior stated that this would increase the certainty of available funding for staffing and help adequately fund the inspection program. In its written comments, Interior stated that it believed it has implemented one of our recommendations from GAO-12-423, *Oil and*

Gas Management: Interior's Reorganization Complete, but Challenges Remain in Implementing New Requirements, that BOEM and BSEE need to prepare strategic workforce plans. However, as discussed in this report, BSEE completed its plan in September 2013 and BOEM officials told us that they will complete their plan in fiscal year 2014. Finally, Interior stated that BSEE continues to be concerned that the analysis presented in appendix III is limited. We agree that our model, like all empirical models, has certain limitations. While these limitations affect our ability to make precise predictions about the effect of BSEE's hiring difficulties, they do not, however, change our finding that these difficulties could hinder implementation of a risk-based inspection strategy. In its response, Interior noted that it will consider our model, along with other factors, as it develops a new risk-based inspection strategy. Interior provided written technical comments, which we incorporated into the report, as appropriate. Appendix IV reproduces Interior's comments.

As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies of this report to the Secretary of the Department of the Interior, the appropriate congressional committees, and other interested parties. In addition, this report will be available at no charge on the GAO website at http://www.gao.gov.

If you or your staff members have any questions about this report, please contact me at (202) 512-3841 or ruscof@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix V.

Frank Rusco
Director, Natural Resources and Environment

Appendix I: Objectives, Scope, and Methodology

This report examines (1) the extent to which Interior continues to face challenges hiring and retaining key oil and gas staff and the causes of these challenges; (2) Interior's efforts to address its hiring and retention challenges; and (3) the effects, if any, of hiring and retention challenges on Interior's oversight of oil and gas activities.

To conduct this work, we reviewed relevant laws and Interior guidance, as well as independent studies of Interior's oil and gas oversight conducted by Interior's Office of Inspector General and others. In addition, we reviewed reports evaluating Interior's oil and gas oversight that were conducted in response to the BP *Deepwater Horizon* incident. We also interviewed officials from Interior's bureaus responsible for oil and gas oversight—the Bureau of Land Management (BLM), the Bureau of Ocean Energy Management (BOEM), and the Bureau of Safety and Environmental Enforcement (BSEE). Specifically, we interviewed BLM headquarters officials as well as BLM officials in the Bakersfield, California, field office and Dickinson, North Dakota, field office; BOEM and BSEE headquarters officials, as well as BOEM and BSEE officials in the Gulf of Mexico, Alaska, and Pacific regional offices; and BSEE officials in all five Gulf of Mexico district offices—Houma District Office, Lafayette District Office, Lake Charles District Office, Lake Jackson District Office, and New Orleans District Office. In addition, we surveyed management officials from 3 BOEM regional offices, 7 BSEE district offices, and 33 BLM field offices, and one BLM state office with oil and gas responsibilities (collectively referred to as field offices for the purposes of this report) to ask about the extent to which field offices experienced problems hiring and retaining oil and gas management and oversight staff, the factors that contribute to success or difficulty hiring and retaining staff, and the effects of staffing difficulties, if any, on the ability of the field offices to oversee oil and gas operations. Our survey had a 91 percent response rate. Appendix II presents more information about our survey.

To examine the extent to which Interior continues to face challenges hiring and retaining key oil and gas personal and the causes of these challenges, we analyzed statistical data from the Office of Personnel Management's (OPM) Enterprise Human Resources Integration (EHRI) data on attrition and retirement eligibility and reviewed and analyzed Interior data on vacancies and hiring times.[1] We compared attrition rates

[1]The EHRI database was formerly known as the Central Personnel Data File.

for key oil and gas oversight positions with vacancy and attrition rates for Interior bureaus, Interior, other federal agencies, and the federal government. We also reviewed Interior and federal government data on retirement eligibility, and compared retirement eligibility for Interior oil and gas positions with positions at other federal agencies. We also analyzed Bureau of Labor Statistics data on federal and industry salary rates and compared the rates for key oil and gas oversight positions with analogous positions in industry. In addition, we reviewed OPM's hiring reform initiative for the federal government, including standards for hiring time frames for federal employees and analyzed Interior's data on hiring times for key oil and gas oversight positions.

To examine Interior's efforts to address its hiring and retention challenges, we reviewed documents from Interior, BSEE, and BLM such as strategic workforce plans, implementation plans, guidance, and other documents outlining steps Interior has taken, or plans to take, to address hiring and retention problems, and we spoke with officials responsible for their implementation. We also discussed special salary rates for specific positions with officials from OPM and officials from BSEE and BLM who were responsible for working with OPM on these special pay rate issues. We reviewed bureaus' use incentives such as recruitment, retention, and relocation payments data provided by Interior. We focused on the challenges reported by agency officials during interviews and in our survey.

To examine the effects, if any, of hiring and retention challenges on Interior's oversight of oil and gas activities, we surveyed BLM, BOEM, and BSEE about the factors affecting their abilities to hire and retain oil and gas oversight staff and how vacancies in these positions have affected day-to-day operations. Based on interviews with Interior officials, reviews of Interior workforce planning reports, and a review of staffing data, we identified the following key BLM oil and gas oversight positions: petroleum engineers, petroleum engineering technicians (inspectors), natural resource specialists, environmental protection specialists, and geologists. Similarly, we identified petroleum engineers, inspectors, biologists (natural resource specialists), geophysicists, and geologists as key BOEM and BSEE oil and gas oversight positions. We also analyzed BSEE inspection data from the Gulf of Mexico and Pacific regions—where nearly all federal offshore drilling has occurred—for fiscal years 2010 through 2012. This data is held in Interior's Technical Information Management System (TIMS) database. TIMS provides the foundational data for BOEM and BSEE, including data on lease sales, lease adjudication, wells and platforms, pipelines, and inspection records,

among other things. We obtained TIMS data on offshore facilities, including facility characteristics; inspectors; and inspection records, including inspection duration and inspection results. We analyzed data from fiscal year 2010 through fiscal year 2012. We assessed the reliability of these data by (1) reviewing the data for obvious errors in accuracy and completeness; (2) reviewing existing documentation about the data and the TIMS database; (3) interviewing Interior officials knowledgeable about the data; and (4) verifying with agency officials a limited sample of some of our results. On the basis of our assessment, we determined that the data were sufficiently reliable for our purposes. Appendix III presents more information about our analysis of BSEE inspection data.

We conducted this performance audit from May 2012 to January 2014 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Survey of Interior's Field Offices on the Challenges to Hire and Retain Staff to Oversee Oil and Gas Activities

As part of our assessment of the challenges that Interior's field offices continue to face hiring and retaining key oil and gas oversight staff and the effects of these challenges on oversight, we surveyed officials from 44 field offices that have oil and gas management responsibilities on (1) the extent of these challenges, (2) the factors affecting hiring and retention, and (3) the effects of hiring and retention challenges on oil and gas oversight. We received responses from 40 of the 44 field offices—including 30 of the 33 Bureau of Land Management (BLM) field offices, 1 BLM state office with oil and gas oversight responsibilities, 7 of the 7 Bureau of Safety and Environmental Enforcement (BSEE) district offices, and 3 of the 3 Bureau of Ocean Energy Management (BOEM) regional offices—for a response rate of 88 percent from BLM and 100 percent from BSEE and BOEM, or a total response rate of 91 percent. We statistically analyzed the survey responses and found that officials reported almost 200 vacancies in 2012 in the six oil and gas occupations we asked about—petroleum engineers, inspectors, natural resource specialists, environmental protection specialists, geologists, and geophysicists—and officials indicated that almost 90 percent of these vacancies took more than three months to fill. Our analysis shows that the vacancies resulted in varied effects on field offices. Some field offices reported carrying out fewer inspections, or doing less-thorough inspections or delaying application for permit to drill (APD) approvals, and other field offices also reported delaying or forgoing tasks other than conducting inspections or reviewing APDs and increasing the amount of overtime staff worked. Survey respondents identified several factors that contributed to difficulties hiring and retaining staff, including differences in salaries between Interior and industry, the slow federal hiring process, and limited promotion opportunities. By contrast, survey respondents indicated more positive effects on hiring because of working conditions and benefits, which were identified as helping field offices hire and retain staff more often than other factors. However, based on our analysis, these factors did not prevent the agency from experiencing significant vacancies. Details about the survey methodology, results of our analysis, and detailed survey data are presented below.

Survey Design

We designed our survey to quantify the perceptions of field office managers regarding the extent of Interior's vacancies in oil and gas oversight positions and the causes and effects of those vacancies. We asked respondents: (1) how many authorized staff and how many vacancies they had in selected positions; (2) whether they had difficulty hiring and retaining oil and gas oversight staff in 2012; (3) what factors contributed to any difficulty hiring and retaining these staff; and (4) how

hiring and retention difficulties, if any, affected oil and gas oversight activities at their field offices. To identify the potential causes and effects of oil and gas staff vacancies, we conducted one focus group with field office managers, interviewed bureau officials, and reviewed reports on Interior's oil and gas oversight, including our reports and Interior's Inspector General reports.

Based on our interviews and focus group, we identified: (1) potential factors affecting the agency's ability to fill vacancies, including salaries, benefits, working conditions, and speed of the hiring process; (2) potential effects on oil and gas oversight, including reductions in the number of facilities inspected, reductions in the thoroughness of these inspections, and reductions in the number of APDs reviewed; and (3) potential effects on staff, including increases in the amount of overtime worked and increases in the number of other tasks left undone. We used this information to develop survey questions for completion by field office managers, which were simple enough to yield valid responses, and we designed our survey to maximize the reliability of our survey data.

To limit the scope of our survey to the most pertinent information, we asked questions about these topics for a small number of specific oil and gas oversight positions that were identified as critical to oil and gas oversight or as likely problematic to hire and retain, or both. To determine which oil and gas oversight positions to include in our survey, we interviewed agency officials, reviewed GAO and Inspector General reports on hiring and retention, reviewed Interior's staffing data covering fiscal year 2009 through fiscal year 2012, and reviewed Interior's list of mission-critical occupations as identified as part of its human capital high-risk initiative. From these inputs, we chose six occupations to include in our survey: petroleum engineers, inspectors, natural resource specialists, environmental protection specialists, geologists, and geophysicists. For BLM, we asked about petroleum engineers, petroleum engineering technicians, natural resource specialists, environmental protection specialists, and geologists. For BOEM and BSEE, we asked about petroleum engineers, inspectors, natural resource specialists, geologists, and geophysicists. To help ensure that survey respondents were able to recall the information, we asked about experiences with these staff in calendar year 2012. Our survey was sent to respondents in January 2013.

Our survey was divided into five sections. In the first section, we asked field offices how many staff were authorized for each position and the number of vacancies during 2012. In the second section, we asked

general questions about the factors we identified as affecting hiring and retention. In the third section, we asked about the extent to which the field offices had difficulty hiring staff followed by a series of questions linking the factors to those hiring difficulties. In the fourth section, we asked about the extent to which the field offices had difficulty retaining staff followed by a series of questions linking the factors to retention difficulties. In the fifth section, we asked about the effect of vacancies on the ability of the field offices to carry out oil and gas oversight activities. In addition, we included a number of open-ended questions in the survey to allow respondents to elaborate on these topics. To view the survey as sent to field offices, see the end of this appendix.

To minimize the potential for errors in responses, we conducted three cognitive pretests with field office managers. During these pretests, we assessed whether the questions were clear, could be answered with available information, and did not pose an undue burden on field office managers. We modified the survey questions in response to these pretests, as appropriate.

Survey Population

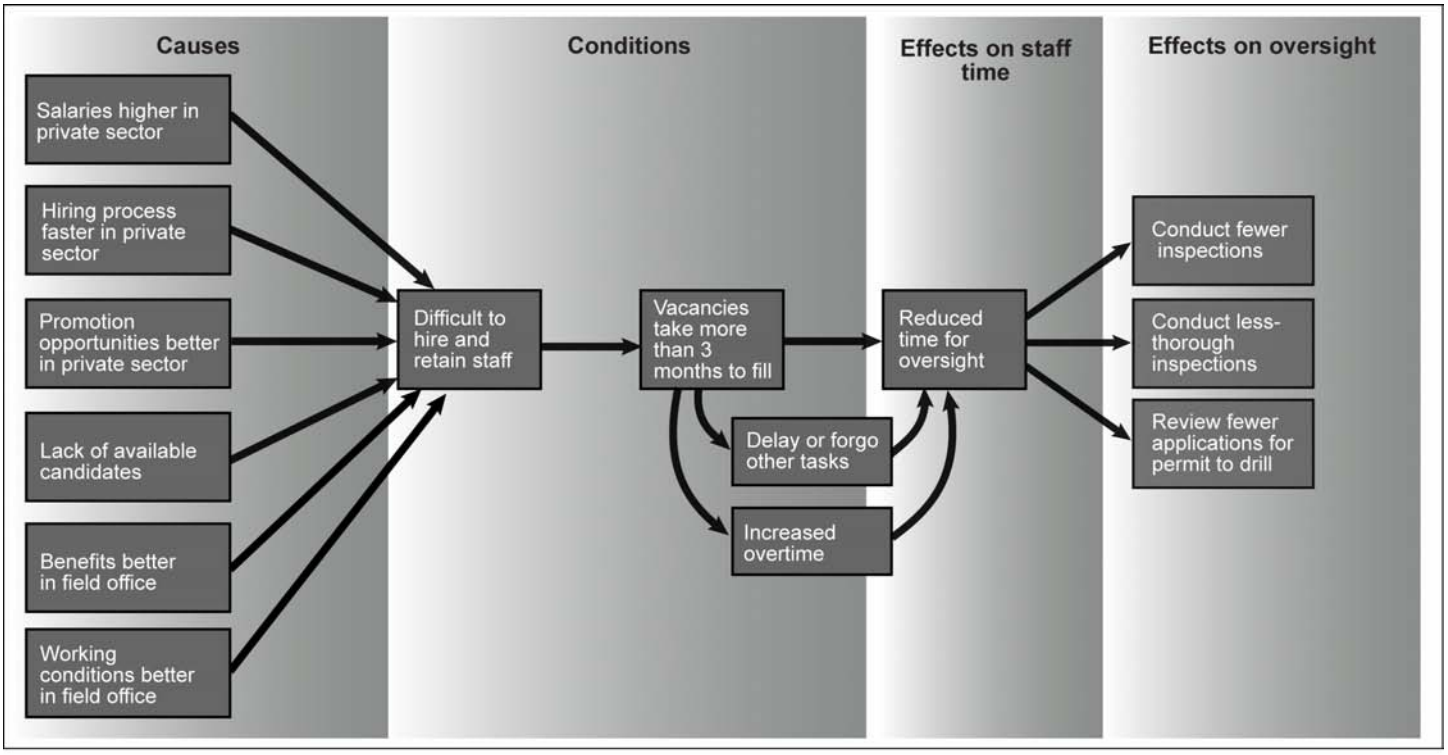
We administered the survey to the managers of 44 field offices; specifically, 33 BLM field offices and 1 BLM state office, 3 BOEM regional offices, and 7 BSEE district offices. We implemented our survey as a Microsoft Word document that was disseminated to field offices via e-mail. We sent the survey to senior field office officials, with instructions on how to open, complete, and save it, on January 10, 2013. We sent two reminders via e-mail in the following weeks before closing the survey in February 2013. We received responses from 30 of the 34 BLM field offices, and from each of the 3 BOEM regional offices and the 7 BSEE district offices, for an overall response rate of 91 percent.

Data Analysis

To understand how the factors in our survey relate to vacancies and Interior's ability to oversee oil and gas facilities, we arranged the survey data into a cause-and-effect diagram (see fig. 6). This diagram outlines the relationships between responses to questions about factors affecting hiring and retention, the level of difficulty respondents reported in hiring and retaining staff, and the reported effects of the resultant vacancies on staff time and oil and gas oversight. We first analyzed the factors affecting hiring and retention based on the extent to which they helped or hindered hiring and retention. We then analyzed the relationship between reported vacancies and the responses to our questions regarding effects on staff

time and, ultimately, on the ability of Interior to manage oil and gas activities on federal leases.

Figure 6: Cause and Effect Diagram



Source: GAO analysis of survey data.

Results

Four factors generally contribute to difficulties hiring and retaining staff and two factors generally help, according to our analysis. Complete survey results are presented in tables 5-11.

For each of the six positions we asked about in our survey, managers first indicated how many staff were authorized for each position at their field office and how many vacancies they had in calendar year 2012 for each position (see table 5). Managers also indicated the level of difficulty they had hiring and retaining staff during calendar year 2012. We found that a significant number of field offices indicated that it was somewhat or very difficult to hire and retain staff (see table 6).

Table 5: Authorized Positions and Vacancies

(a) Approximately how many oil and gas management staff does your field office (include satellite locations) currently have authorized in each of the following positions?

(b) In calendar year 2012, approximately how many vacancy announcements did your field office post for each of the following positions?

Position	Number of offices with that position	Total number of allocated staff	Total reported vacancy announcements in 2012
Petroleum engineer	36	177	66
Inspector	33	328	70
Natural resource specialist	31	199	34
Environmental protection specialist	12	22	7
Geologist	27	122	15
Geophysicist	4	52	6

Source: GAO analysis of survey results.

Table 6: Ease or Difficulty in Hiring and Retaining Staff for Those Offices with Vacancies

In calendar year 2012, how easy or difficult was it for your field office to fill vacancies in each of the following positions?

Position	Somewhat easy	Very easy	Neither easy nor difficult	Somewhat difficult	Very difficult
Petroleum engineer	1	1	3	4	16
Inspector	1	1	3	9	10
Natural resource specialist	1	4	4	4	4
Environmental protection specialist	1	0	1	1	1
Geologist	1	0	1	3	6
Geophysicist	0	0	0	0	3

In calendar year 2012, how easy or difficult was it to retain staff in your field office for each of the following positions?

Position	Somewhat easy	Very easy	Neither easy nor difficult	Somewhat difficult	Very difficult
Petroleum engineer	2	5	9	11	5
Inspector	2	5	11	6	7
Natural resource specialist	1	8	7	5	6
Environmental protection specialist	2	2	5	1	1
Geologist	3	3	10	5	2
Geophysicist	0	1	1	1	1

Source: GAO analysis of survey results.

Subsequently, we asked about factors that help or hinder hiring and retention, and we found that a majority of managers cited the following factors as generally hindering their ability to hire and retain staff: higher

salaries in industry, the slower speed of the federal hiring process, the lack of qualified applicants in some areas, and greater opportunities for promotion in industry (see tables 7 and 8). By contrast, far fewer than half of the managers cited two factors—employment benefits and working conditions at field offices—as hindering their ability to hire and retain staff (see tables 7 and 8).

Table 7: Extent to Which Factors Help or Hinder Ability to Hire Oil and Gas Oversight Staff for Those Offices with Vacancies

Based on your experience hiring for each of the following positions, do you think that the difference in salaries (not including benefits) between your field office and the private sector helps or hinders your field office's ability to hire qualified candidates?

Position	Greatly helps	Somewhat helps	Neither helps nor hinders	Somewhat hinders	Greatly hinders
Petroleum engineer	0	0	0	2	22
Inspector	0	0	0	7	13
Natural resource specialist	0	3	7	3	2
Environmental protection specialist	0	0	0	1	2
Geologist	0	0	0	3	5
Geophysicist	0	0	0	1	2

Based on your experience hiring for each of the following positions, do you think the speed of the hiring process helps or hinders your ability to hire qualified candidates?

Position	Greatly helps	Somewhat helps	Neither helps nor hinders	Somewhat hinders	Greatly hinders
Petroleum engineer	0	0	2	5	17
Inspector	0	0	0	8	12
Natural resource specialist	0	0	5	4	6
Environmental protection specialist	0	0	0	2	1
Geologist	0	0	2	2	4
Geophysicist	0	0	0	1	2

Based on your experience hiring for each of the following positions, to what extent does the availability of qualified candidates in your geographical area help or hinder your ability to hire for each of the following positions?

Position	Greatly helps	Somewhat helps	Neither helps nor hinders	Somewhat hinders	Greatly hinders
Petroleum engineer	1	1	2	8	12
Inspector	2	2	5	7	4
Natural resource specialist	0	3	3	5	4
Environmental protection specialist	0	0	1	1	1
Geologist	0	0	2	3	3
Geophysicist	0	0	0	3	0

Based on your experience hiring for each of the following positions, do you think that differences in opportunities for career advancement and promotion between your field office and the private sector help or hinder your ability to hire qualified candidates for each of the following positions?

Position	Greatly helps	Somewhat helps	Neither helps nor hinders	Somewhat hinders	Greatly hinders
Petroleum engineer	0	2	3	7	8
Inspector	0	1	5	8	4
Natural resource specialist	0	2	7	4	1
Environmental protection specialist	0	0	2	1	0
Geologist	0	0	3	2	3
Geophysicist	0	0	2	0	1

Based on your experience hiring for each of the following positions, do you think that the difference in benefits (vacation time, sick leave, health insurance, retirement plan, student loan repayments, etc.) between your field office and the private sector helps or hinders your ability to hire qualified candidates?

Position	Greatly helps	Somewhat helps	Neither helps nor hinders	Somewhat hinders	Greatly hinders
Petroleum engineer	0	5	11	2	5
Inspector	0	5	8	2	2
Natural resource specialist	0	6	7	2	0
Environmental protection specialist	0	1	0	1	0
Geologist	0	1	1	4	2
Geophysicist	0	1	1	0	1

Based on your experience hiring for each of the following positions, do the differences in working conditions (including the types of tasks performed, the total hours worked, and flexibility in schedule) between your field office and the private sector help or hinder your ability to hire qualified candidates?

Position	Greatly helps	Somewhat helps	Neither helps nor hinders	Somewhat hinders	Greatly hinders
Petroleum engineer	1	14	6	1	1
Inspector	0	14	5	0	0
Natural resource specialist	1	8	5	1	0
Environmental protection specialist	1	2	0	0	0
Geologist	1	4	0	2	0
Geophysicist	0	2	0	1	0

Source: GAO analysis of survey results.

Table 8: Extent to Which Factors Help or Hinder Ability to Retain Oil and Gas Oversight Staff

Based on your experience, do you think the difference in salaries (excluding benefits) between the agency and the private sector helps or hinders your field office's ability to retain staff in the following positions?

Position	Greatly helps	Somewhat helps	Neither helps nor hinders	Somewhat hinders	Greatly hinders
Petroleum engineer	0	0	3	12	18
Inspector	0	0	6	12	13
Natural resource specialist	0	1	14	4	7
Environmental protection specialist	0	0	6	2	2
Geologist	0	0	6	7	10
Geophysicist	0	0	1	2	1

Based on your experience, do you think that differences in opportunities for career advancement and promotion between your bureau and the private sector help or hinder your field office's ability to retain staff in the following positions

Position	Greatly helps	Somewhat helps	Neither helps nor hinders	Somewhat hinders	Greatly hinders
Petroleum engineer	0	1	5	14	8
Inspector	0	3	4	10	8
Natural resource specialist	0	7	9	3	2
Environmental protection specialist	0	2	4	2	0
Geologist	0	1	6	11	2
Geophysicist	0	0	2	1	0

Based on your experience, do you think that the difference in benefits (vacation time, sick leave, health insurance, retirement plan, student loan repayments, etc.) between your field office and the private sector helps or hinders your field office's ability to retain staff in each of the following positions?

Position	Greatly helps	Somewhat helps	Neither helps nor hinders	Somewhat hinders	Greatly hinders
Petroleum engineer	0	14	7	8	4
Inspector	1	13	11	4	1
Natural resource specialist	0	11	11	3	0
Environmental protection specialist	0	4	4	1	0
Geologist	0	10	7	4	2
Geophysicist	0	0	3	0	1

Based on your experience, do you think the differences in working conditions (including the types of tasks performed, the total hours worked, and flexibility in schedule) between your field office and the private sector help or hinder your field office's ability to retain staff in each of the following positions?

Position	Greatly helps	Somewhat helps	Neither helps nor hinders	Somewhat hinders	Greatly hinders
Petroleum engineer	2	20	7	3	2
Inspector	2	18	7	2	1
Natural resource specialist	3	11	8	2	2

Environmental protection specialist	2	4	3	1	0
Geologist	2	13	5	2	2
Geophysicist	0	2	1	1	0

Source: GAO analysis of survey results.

The majority of field offices that reported vacancies in these six positions reported that those vacancies were unfilled for 3 months or more (see table 9). These vacancies caused field offices to delay or forego tasks or require staff to work overtime (see table 10). Vacancies also led field offices to reduce the number of inspections conducted, the thoroughness of inspections, or the number of APDs reviewed than what they would have done if they were fully staffed (see table 10).

Table 9: Average Reported Length of Vacancies, Calendar Year 2012

On average, about how many months (from announcement to entrance-on-duty date) did it take to fill these vacancies?			
Position	**Less than three months**	**3 months to 6 months**	**More than 6 months**
Petroleum engineer	3	6	16
Inspector	0	16	6
Natural resource specialist	3	8	4
Environmental protection specialist	1	2	0
Geologist	1	4	4
Geophysicist	0	0	3

Source: GAO analysis of survey results.

Table 10: Effects of Vacancies on Oil and Gas Oversight

In calendar year 2012, did vacancies in the following positions, if any, increase the amount of overtime worked by oil and gas management staff at your field office?			
Position	**Greatly increased**	**Somewhat increased**	**Did not increase**
Petroleum engineer	4	12	7
Inspector	6	9	5
Natural resource specialist	1	7	5
Environmental protection specialist	0	2	1
Geologist	1	4	2
Geophysicist	0	3	0
In calendar year 2012, did vacancies in the following positions, if any, cause oil and gas management staff to delay or forgo other tasks at your field office?			
Position	**Regularly**	**Occasionally**	**Never**
Petroleum engineer	5	14	5
Inspector	5	7	8

Natural resource specialist	3	8	4
Environmental protection specialist	1	1	1
Geologist	2	4	1
Geophysicist	1	1	1

In calendar year 2012, did vacancies in the following positions, if any, reduce the number of inspections of oil and gas facilities conducted by your field office?

Position	Greatly reduced	Somewhat reduced	Did not reduce
Petroleum engineer	1	5	11
Inspector	6	7	6
Natural resource specialist	0	7	5
Environmental protection specialist	0	3	0
Geologist	0	0	4
Geophysicist	0	0	1

In calendar year 2012, did vacancies in the following positions, if any, reduce the thoroughness of inspections of oil and gas facilities by your field office?

Position	Greatly reduced	Somewhat reduced	Did not reduce
Petroleum engineer	0	4	14
Inspector	2	7	10
Natural resource specialist	0	4	8
Environmental protection specialist	0	1	2
Geologist	0	2	2
Geophysicist	0	1	0

In calendar year 2012, did vacancies in the following positions, if any, reduce the number of applications for permit to drill (APDs) reviewed by your field office?

Position	Greatly reduced	Somewhat reduced	Did not reduce
Petroleum engineer	1	7	12
Inspector	0	2	8
Natural resource specialist	3	5	4
Environmental protection specialist	0	1	1
Geologist	1	2	2
Geophysicist	0	0	1

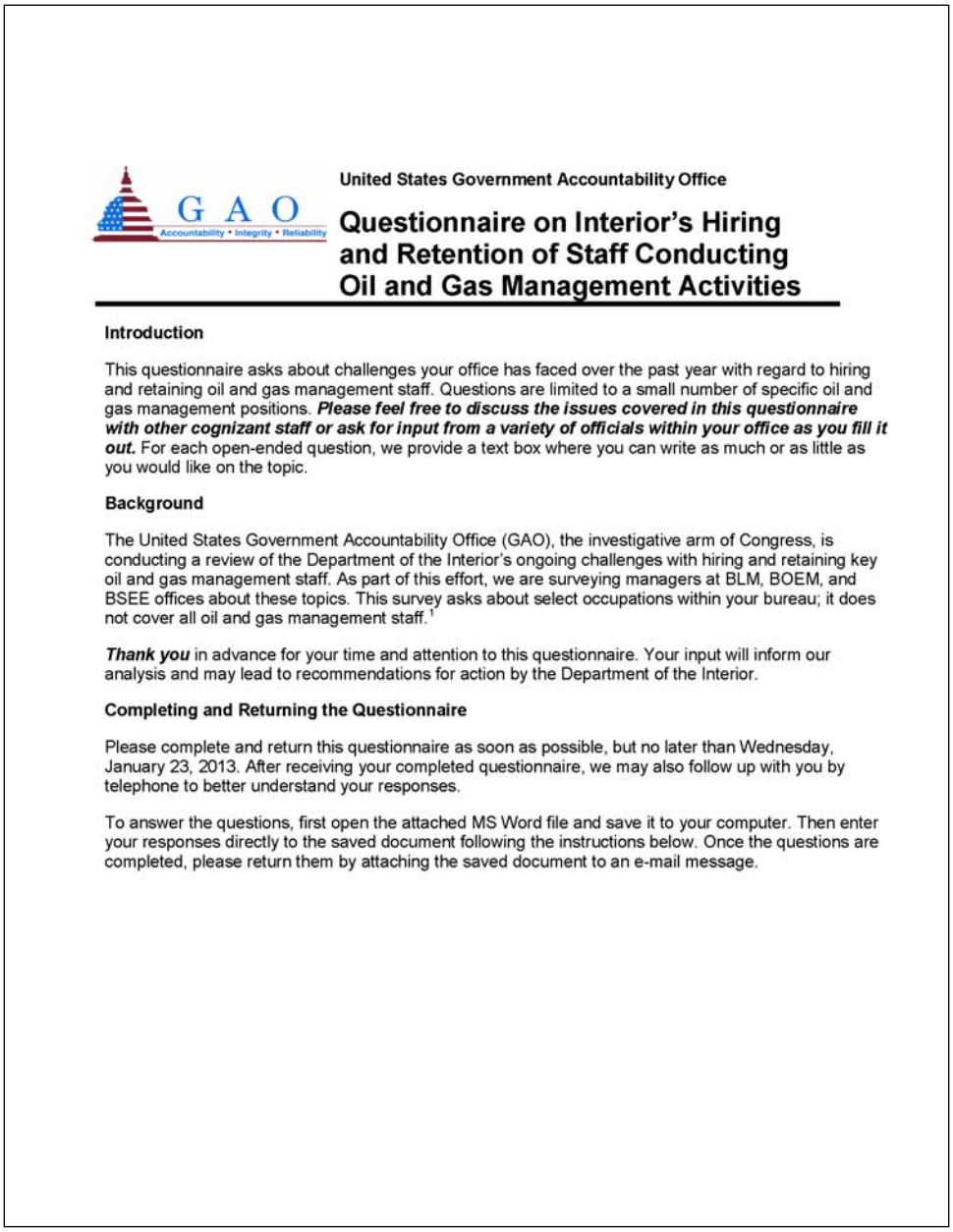
Source: GAO analysis of survey results.

Limitations

Although we believe the results of our analysis characterize the staffing challenges faced by Interior, our analysis is subject to certain limitations that prevent us from making precise quantitative estimates or causal statements. In particular, our survey data are based on the perceptions of field office managers. An analysis using data for conditions at field offices, vacancies for specific positions, and oil and gas oversight activities

conducted might produce different results. In addition, our analysis was based on frequency counts of survey data, rather than on a statistical model or a research design that would isolate cause and effect. Therefore, although we believe that field office managers are in the best position to assess the effect of Interior's staffing challenges, our results must be characterized as their perceptions.

Survey as Sent to Interior Field Offices



United States Government Accountability Office

Questionnaire on Interior's Hiring and Retention of Staff Conducting Oil and Gas Management Activities

Introduction

This questionnaire asks about challenges your office has faced over the past year with regard to hiring and retaining oil and gas management staff. Questions are limited to a small number of specific oil and gas management positions. ***Please feel free to discuss the issues covered in this questionnaire with other cognizant staff or ask for input from a variety of officials within your office as you fill it out.*** For each open-ended question, we provide a text box where you can write as much or as little as you would like on the topic.

Background

The United States Government Accountability Office (GAO), the investigative arm of Congress, is conducting a review of the Department of the Interior's ongoing challenges with hiring and retaining key oil and gas management staff. As part of this effort, we are surveying managers at BLM, BOEM, and BSEE offices about these topics. This survey asks about select occupations within your bureau; it does not cover all oil and gas management staff.[1]

Thank you in advance for your time and attention to this questionnaire. Your input will inform our analysis and may lead to recommendations for action by the Department of the Interior.

Completing and Returning the Questionnaire

Please complete and return this questionnaire as soon as possible, but no later than Wednesday, January 23, 2013. After receiving your completed questionnaire, we may also follow up with you by telephone to better understand your responses.

To answer the questions, first open the attached MS Word file and save it to your computer. Then enter your responses directly to the saved document following the instructions below. Once the questions are completed, please return them by attaching the saved document to an e-mail message.

[1]The survey sent to BLM field offices asked about petroleum engineering technicians while the survey sent to BOEM and BSEE field offices instead asked about inspectors. The survey sent to BLM field offices asked about environmental protection specialists while the survey sent to BOEM and BSEE field offices instead asked about geophysicists.

Instructions for Completing the Questions Onscreen

- Please use your mouse to navigate, clicking on the field or check box ☐ you wish to answer.
- To select a check box or a button, click on the center of the box.
- To change or deselect a check box response, click on the check box and the 'X' will disappear.
- To answer a question that requires that you write a comment, click on the answer box and begin typing. The box will expand to accommodate your answer. You are not limited to the amount of space you see on the screen.
- If you have additional clarifications or comments on any of the questions, please include those in the comment box at the end of this document or in a separate document.

START HERE

Your Contact Information:

Name:	
Title:	
Field Office:	
Email:	
Phone:	

SECTION A. VACANCIES

1. **Approximately how many oil and gas management staff does your field office (include satellite locations) currently have authorized in each of the following positions?** *If you don't have staff in a particular position, please enter "0."*

a. Petroleum Engineers _____

b. Petroleum Engineering Technicians / Inspectors _____

c. Natural Resource Specialists _____

d. Environmental Protection Specialists _____

e. Geologists _____

f. Geophysicists _____

2. **In calendar year 2012, approximately how many vacancy announcements did your field office post for each of the following positions?** *If you do not have this position in your office please enter "NA."*

a. Petroleum Engineers _____

b. Petroleum Engineering Technicians / Inspectors _____

c. Natural Resource Specialists _____

d. Environmental Protection Specialists _____

e. Geologists _____

f. Geophysicists _____

3. **On average, about how many months (from announcement to EOD) did it take to fill these vacancies?** *If you do not have this position in your office please choose "not applicable."*

	Less than three months	Three to six months	More than six months	Not applicable	Don't know
a. Petroleum Engineers	☐	☐	☐	☐	☐
b. Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐
c. Natural Resource Specialists	☐	☐	☐	☐	☐
d. Environmental Protection Specialists	☐	☐	☐	☐	☐
e. Geologists	☐	☐	☐	☐	☐
f. Geophysicists	☐	☐	☐	☐	☐

SECTION B. FACTORS AFFECTING HIRING AND RETENTION

4. **Based on your experience hiring for each of the following positions, do you think salaries (not including benefits) are higher in your field office or higher in the private sector in your geographical area?** Please choose one answer for each of the following positions.

	Salaries are higher in the private sector	Salaries are similar in private sector and field office	Salaries are higher in the field office	Not applicable	Don't know
a. Petroleum Engineers	☐	☐	☐	☐	☐
b. Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐
c. Natural Resource Specialists	☐	☐	☐	☐	☐
d. Environmental Protection Specialists	☐	☐	☐	☐	☐
e. Geologists	☐	☐	☐	☐	☐
f. Geophysicists	☐	☐	☐	☐	☐

5. **Based on your experience hiring for each of the following positions, do you think <u>benefits</u> (vacation time, sick leave, health insurance, retirement plan, student loan repayments, etc.) are better in your field office or better in the private sector in your geographical area?** *Please choose one answer for each of the following positions.*

	Benefits are better in the private sector	Benefits are similar in private sector and field office	Benefits are better in the field office	Not applicable	Don't know
a. Petroleum Engineers	☐	☐	☐	☐	☐
b. Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐
c. Natural Resource Specialists	☐	☐	☐	☐	☐
d. Environmental Protection Specialists	☐	☐	☐	☐	☐
e. Geologists	☐	☐	☐	☐	☐
f. Geophysicists	☐	☐	☐	☐	☐

6. **Based on your experience hiring for each of the following positions, do you think that <u>working conditions</u> (including the types of tasks performed, the total hours worked, and flexibility in schedule) are better in your field office or better in the private sector in your geographical area?** *Please choose one answer for each of the following positions.*

	Working conditions are better in the private sector	Working conditions are similar in private sector and field office	Working conditions are better in the field office	Not applicable	Don't know
a. Petroleum Engineers	☐	☐	☐	☐	☐
b. Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐
c. Natural Resource Specialists	☐	☐	☐	☐	☐
d. Environmental Protection Specialists	☐	☐	☐	☐	☐
e. Geologists	☐	☐	☐	☐	☐
f. Geophysicists	☐	☐	☐	☐	☐

7. **Based on your experience hiring for each of the following positions, do you think the opportunities for career advancement and promotion are better in your field office or better in the private sector in your geographical area?** *Please choose one answer for each of the following positions.*

	Opportunities for career advancement are better in private sector	Opportunities for career advancement are similar in private sector and field office	Opportunities for career advancement are better in field office	Not applicable	Don't know
a. Petroleum Engineers	☐	☐	☐	☐	☐
b. Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐
c. Natural Resource Specialists	☐	☐	☐	☐	☐
d. Environmental Protection Specialists	☐	☐	☐	☐	☐
e. Geologists	☐	☐	☐	☐	☐
f. Geophysicists	☐	☐	☐	☐	☐

8. **Based on your experience hiring for each of the following positions, do you think the speed of the hiring process (the time between the announcement date and EOD) is faster in your agency or faster in the private sector in your geographical area?** *Please choose one answer for each of the following positions.*

	Hiring process is faster in the private sector	Hiring process is similar in the field office and private sector	Hiring process is faster in the field office	Not applicable	Don't know
a. Petroleum Engineers	☐	☐	☐	☐	☐
b. Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐
c. Natural Resource Specialists	☐	☐	☐	☐	☐
d. Environmental Protection Specialists	☐	☐	☐	☐	☐
e. Geologists	☐	☐	☐	☐	☐
f. Geophysicists	☐	☐	☐	☐	☐

SECTION C. FACTORS AFFECTING HIRING AND RETENTION

9. **In calendar year 2012, how easy or difficult was it for your field office to fill vacancies in each of the following positions?** *For each row, please choose one answer. If your office has not hired any of the following positions in 2012 please select "not applicable."*

	Very easy	Somewh at easy	Neither easy nor difficult	Somewhat difficult	Very difficult	Not applicable	Don't know
a. Petroleum Engineers	☐	☐	☐	☐	☐	☐	☐
b. Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐	☐	☐
c. Natural Resource Specialists	☐	☐	☐	☐	☐	☐	☐
d. Environmental Protection Specialists	☐	☐	☐	☐	☐	☐	☐
e. Geologists	☐	☐	☐	☐	☐	☐	☐
f. Geophysicists	☐	☐	☐	☐	☐	☐	☐

10. **Based on your experience hiring for each of the following positions, do you think that the difference in salaries (not including benefits) between your field office and the private sector helps or hinders your field office's ability to hire qualified candidates?** *For each row, please choose one answer. If there is no difference in salaries please select "not applicable."*

	Greatly helps	Somewhat helps	Neither helps nor hinders	Somewhat hinders	Greatly hinders	Not applicable	Don't know
Petroleum Engineers	☐	☐	☐	☐	☐	☐	☐
Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐	☐	☐
Natural Resource Specialists	☐	☐	☐	☐	☐	☐	☐
Environmental Protection Specialists	☐	☐	☐	☐	☐	☐	☐
Geologists	☐	☐	☐	☐	☐	☐	☐
Geophysicists	☐	☐	☐	☐	☐	☐	☐

11. **Based on your experience hiring for each of the following positions, do you think that the difference in benefits (vacation time, sick leave, health insurance, retirement plan, student loan repayments, etc.) between your field office and the private sector helps or hinders your ability to hire qualified candidates?** *For each row, please choose one answer. If there is no difference in benefits, please select "not applicable."*

	Greatly helps	Some what helps	Neither helps nor hinders	Somewhat hinders	Greatly hinders	Not applicable	Don't know
a. Petroleum Engineers	☐	☐	☐	☐	☐	☐	☐
b. Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐	☐	☐
c. Natural Resource Specialists	☐	☐	☐	☐	☐	☐	☐
d. Environmental Protection Specialists	☐	☐	☐	☐	☐	☐	☐
e. Geologists	☐	☐	☐	☐	☐	☐	☐
f. Geophysicists	☐	☐	☐	☐	☐	☐	☐

12. **Based on your experience hiring for each of the following positions, do the differences in working conditions (including the types of tasks performed, the total hours worked, and flexibility in schedule) between your field office and the private sector help or hinder your ability to hire qualified candidates?** *For each row, please choose one answer. If there is no difference in working conditions, please select "not applicable."*

	Greatly help	Somewhat help	Neither help nor hinder	Somewhat hinder	Greatly hinder	Not applicable	Don't know
a. Petroleum Engineers	☐	☐	☐	☐	☐	☐	☐
b. Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐	☐	☐
c. Natural Resource Specialists	☐	☐	☐	☐	☐	☐	☐
d. Environmental Protection Specialists	☐	☐	☐	☐	☐	☐	☐
e. Geologists	☐	☐	☐	☐	☐	☐	☐
f. Geophysicists	☐	☐	☐	☐	☐	☐	☐

13. **Based on your experience hiring for each of the following positions, do you think that differences in opportunities for career advancement and promotion between your field office and the private sector help or hinder your ability to hire qualified candidates for each of the following positions?** *For each row, please choose one answer. If there are no differences in opportunities, please select "not applicable."*

	Greatly help	Somewhat help	Neither help nor hinder	Somewhat hinder	Greatly hinder	Not applicable	Don't know
a. Petroleum Engineers	☐	☐	☐	☐	☐	☐	☐
b. Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐	☐	☐
c. Natural Resource Specialists	☐	☐	☐	☐	☐	☐	☐
d. Environmental Protection Specialists	☐	☐	☐	☐	☐	☐	☐
e. Geologists	☐	☐	☐	☐	☐	☐	☐
f. Geophysicists	☐	☐	☐	☐	☐	☐	☐

14. **Based on your experience hiring for each of the following positions, do you think the speed of the hiring process helps or hinders your ability to hire qualified candidates?** *For each row, please choose one answer. If there is no difference in the speed of the hiring process, please choose "not applicable."*

	Greatly helps	Somewhat helps	Neither helps nor hinders	Somewhat hinders	Greatly hinders	Not applicable	Don't know
a. Petroleum Engineers	☐	☐	☐	☐	☐	☐	☐
b. Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐	☐	☐
c. Natural Resource Specialists	☐	☐	☐	☐	☐	☐	☐
d. Environmental Protection Specialists	☐	☐	☐	☐	☐	☐	☐
e. Geologists	☐	☐	☐	☐	☐	☐	☐
f. Geophysicists	☐	☐	☐	☐	☐	☐	☐

15. **Based on your experience hiring for each of the following positions, to what extent does the availability of qualified candidates in your geographical area help or hinder your ability to hire for each of the following positions?** *For each row, please choose one answer.*

	Greatly helps	Somewhat helps	Neither helps nor hinders	Somewhat hinders	Greatly hinders	Not applicable	Don't know
a. Petroleum Engineers	☐	☐	☐	☐	☐	☐	☐
b. Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐	☐	☐
c. Natural Resource Specialists	☐	☐	☐	☐	☐	☐	☐
d. Environmental Protection Specialists	☐	☐	☐	☐	☐	☐	☐
e. Geologists	☐	☐	☐	☐	☐	☐	☐
f. Geophysicists	☐	☐	☐	☐	☐	☐	☐

16. **If you have any comments about hiring oil and gas management staff, or if there are there other factors that have affected your ability to do so, please describe them below.** *The box will expand to fit your answer.*

☐

SECTION D. RETENTION

17. **In calendar year 2012, how easy or difficult was it to retain staff in your field office for each of the following positions?** *For each row, please choose one answer.*

	Very easy	Somewhat easy	Neither easy nor difficult	Somewhat difficult	Very difficult	Not applicable	Don't know
a. Petroleum Engineers	☐	☐	☐	☐	☐	☐	☐
b. Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐	☐	☐
c. Natural Resource Specialists	☐	☐	☐	☐	☐	☐	☐
d. Environmental Protection Specialists	☐	☐	☐	☐	☐	☐	☐
e. Geologists	☐	☐	☐	☐	☐	☐	☐
f. Geophysicists	☐	☐	☐	☐	☐	☐	☐

18. **Based on your experience, do you think the difference in salaries (excluding benefits) between the agency and the private sector helps or hinders your field office's ability to retain staff in the following positions?** *For each row, please choose one answer. If there is no difference in salaries please select "not applicable."*

	Greatly helps	Somewhat helps	Neither helps nor hinders	Somewhat hinders	Greatly hinders	Not applicable	Don't know
a. Petroleum Engineers	☐	☐	☐	☐	☐	☐	☐
b. Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐	☐	☐
c. Natural Resource Specialists	☐	☐	☐	☐	☐	☐	☐
d. Environmental Protection Specialists	☐	☐	☐	☐	☐	☐	☐
e. Geologists	☐	☐	☐	☐	☐	☐	☐
f. Geophysicists	☐	☐	☐	☐	☐	☐	☐

19. **Based on your experience, do you think that the difference in benefits (vacation time, sick leave, health insurance, retirement plan, student loan repayments, etc.) between your field office and the private sector helps or hinders your field office's ability to retain staff in each of the following positions?** *For each row, please choose one answer. If there is no difference in benefits please select "not applicable."*

	Greatly helps	Somewhat helps	Neither helps nor hinders	Somewhat hinders	Greatly hinders	Not applicable	Don't know
a. Petroleum Engineers	☐	☐	☐	☐	☐	☐	☐
b. Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐	☐	☐
c. Natural Resource Specialists	☐	☐	☐	☐	☐	☐	☐
d. Environmental Protection Specialists	☐	☐	☐	☐	☐	☐	☐
e. Geologists	☐	☐	☐	☐	☐	☐	☐
f. Geophysicists	☐	☐	☐	☐	☐	☐	☐

20. **Based on your experience, do you think the differences in working conditions (including the types of tasks performed, the total hours worked, and flexibility in schedule) between your field office and the private sector help or hinder your field office's ability to retain staff in each of the following positions?** *For each row, please choose one answer. If there are no differences in working conditions please select "not applicable."*

	Greatly help	Somewhat help	Neither help nor hinder	Somewhat hinder	Greatly hinder	Not applicable	Don't know
a. Petroleum Engineers	☐	☐	☐	☐	☐	☐	☐
b. Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐	☐	☐
c. Natural Resource Specialists	☐	☐	☐	☐	☐	☐	☐
d. Environmental Protection Specialists	☐	☐	☐	☐	☐	☐	☐
e. Geologists	☐	☐	☐	☐	☐	☐	☐
f. Geophysicists	☐	☐	☐	☐	☐	☐	☐

21. **Based on your experience, do you think that differences in opportunities for career advancement and promotion between your bureau and the private sector help or hinder your field office's ability to retain staff in the following positions?** *For each row, please choose one answer. If there is no difference in opportunities please select "not applicable."*

	Greatly help	Somewhat help	Neither help nor hinder	Somewhat hinder	Greatly hinder	Not applicable	Don't know
a. Petroleum Engineers	☐	☐	☐	☐	☐	☐	☐
b. Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐	☐	☐
c. Natural Resource Specialists	☐	☐	☐	☐	☐	☐	☐
d. Environmental Protection Specialists	☐	☐	☐	☐	☐	☐	☐
e. Geologists	☐	☐	☐	☐	☐	☐	☐
f. Geophysicists	☐	☐	☐	☐	☐	☐	☐

22. If you have any additional comments, or if there are other factors that affect your field office's ability to retain oil and gas management staff, please describe them below. *The box will expand to fit your answer.*

SECTION E. EFFECT OF VACANCIES

23. **In calendar year 2012, did vacancies in the following positions, if any, reduce the number of inspections of oil and gas facilities conducted by your field office?** *If your office did not conduct inspections in 2012 or did not have any vacancies in the listed positions, please select "not applicable." For each row, please choose one answer.*

	Greatly reduced the number of inspections	Somewhat reduced the number of inspections	Did not reduce the number of inspections	Not applicable	Don't know
a. Petroleum Engineers	☐	☐	☐	☐	☐
b. Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐
c. Natural Resource Specialists	☐	☐	☐	☐	☐
d. Environmental Protection Specialists	☐	☐	☐	☐	☐
e. Geologists	☐	☐	☐	☐	☐
f. Geophysicists	☐	☐	☐	☐	☐

24. **In calendar year 2012, did vacancies in the following positions, if any, reduce the thoroughness of inspections of oil and gas facilities by your field office?** *If your office did not conduct inspections in 2012 or did not have any vacancies in the listed positions, please select "not applicable." For each row, please choose one answer.*

	Greatly reduced the thoroughness of inspections	Somewhat reduced the thoroughness of inspections	Did not reduce the thoroughness of inspections	Not applicable	Don't know
a. Petroleum Engineers	☐	☐	☐	☐	☐
b. Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐
c. Natural Resource Specialists	☐	☐	☐	☐	☐
d. Environmental Protection Specialists	☐	☐	☐	☐	☐
e. Geologists	☐	☐	☐	☐	☐
f. Geophysicists	☐	☐	☐	☐	☐

25. **In calendar year 2012, did vacancies in the following positions, if any, reduce the number of applications for permit to drill (APDs) reviewed by your field office?** *If your office did not review any APDs in 2012 or did not have any vacancies in the listed positions, please select "not applicable." If a given position does not play a role in the review of APDs, please select "not applicable." For each row, please choose one answer.*

	Greatly reduced the number of APDs approved	Somewhat reduced the number of APDs approved	Did not reduce the number of APDs approved	Not applicable	Don't know
a. Petroleum Engineers	☐	☐	☐	☐	☐
b. Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐
c. Natural Resource Specialists	☐	☐	☐	☐	☐
d. Environmental Protection Specialists	☐	☐	☐	☐	☐
e. Geologists	☐	☐	☐	☐	☐
f. Geophysicists	☐	☐	☐	☐	☐

26. **In calendar year 2012, did vacancies in the following positions, if any, increase the amount of overtime worked by oil and gas management staff at your field office?** I*f your office had no vacancies in 2012 in the listed positions, please select "not applicable." For each row, please choose one answer.*

	Greatly increased amount of overtime	Somewhat increased the amount of overtime	Did not increase the amount of overtime	Not applicable	Don't know
a. Petroleum Engineers	☐	☐	☐	☐	☐
b. Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐
c. Natural Resource Specialists	☐	☐	☐	☐	☐
d. Environmental Protection Specialists	☐	☐	☐	☐	☐
e. Geologists	☐	☐	☐	☐	☐
f. Geophysicists	☐	☐	☐	☐	☐

27. **In calendar year 2012, did vacancies in the following positions, if any, cause oil and gas management staff to delay or forgo other tasks at your field office?** *If your office had no vacancies in 2012 in the listed positions, please select "not applicable." For each row, please choose one answer.*

	Caused staff to regularly delay or forgo other tasks	Caused staff to occasionally delay or forgo other tasks	Did not cause staff to delay or forgo other tasks	Not applicable	Don't know
Petroleum Engineers	☐	☐	☐	☐	☐
Petroleum Engineering Technicians / Inspectors	☐	☐	☐	☐	☐
Natural Resource Specialists	☐	☐	☐	☐	☐
Environmental Protection Specialists	☐	☐	☐	☐	☐
Geologists	☐	☐	☐	☐	☐
Geophysicists	☐	☐	☐	☐	☐

28. **If, in question 27, staff have had to delay or forgo other tasks, please describe those tasks below.** *The box will expand to fit your answer.*

29. **If there are other effects of vacancies on your field office's ability to carry out its oil and gas oversight responsibilities, please describe them below.** *The box will expand to fit your answer.*

30. **What actions, if any, has your field office taken to address hiring and retention issues with oil and gas management positions in your office? How successful have they been?** *The box will expand to fit your answer.*

Thank you very much for your participation!

Appendix III: Analysis of Effects of Inspector Vacancies in the Gulf of Mexico

Overview of Analysis

Following the *Deepwater Horizon* incident in April 2010, Congress increased funding to the Bureau of Safety and Environmental Enforcement (BSEE), which allowed the bureau to more than double the number of oil and gas inspector positions allocated to the Gulf of Mexico Region, from 52 nonsupervisory inspectors to 129 nonsupervisory inspectors. Since then, BSEE has had difficulty filling these allocated positions because of problems with both hiring and retention. As of October 2012, BSEE had filled about one-quarter of the new inspector positions, bringing the total number of nonsupervisory inspectors in the bureau's Gulf of Mexico Region to 71.

To determine the effect of the remaining vacancies on the bureau's capacity to oversee oil and gas operations in the Gulf of Mexico, we modeled the bureau's capacity for conducting production facility inspections under three staffing scenarios. Specifically, we estimated the number of production inspections that the bureau could have conducted in fiscal year 2012 on the 2,498 production facilities in the Gulf of Mexico Region under three staffing scenarios. Based on our analysis, we found that the additional inspectors hired by BSEE in the past few years have given it the capacity to conduct annual inspections at all or nearly all of the production facilities in the Gulf of Mexico in fiscal year 2012, something it had not otherwise been able to do. However, at the 2012 staffing levels, our model shows that the bureau did not have the capacity to conduct additional inspections at more than a small number of the 1,409 facilities it had designated as high risk. Bureau officials told us that such a risk-based inspection strategy is critical to effectively managing the risks of oil and gas production. However, our analysis shows that Interior's continued hiring difficulties may hinder the implementation of this strategy.

Staffing Scenarios

Our model estimated the bureau's capacity to inspect oil and gas production facilities in the Gulf of Mexico in fiscal year 2012 under three staffing scenarios. Because the bureau did not formally distinguish production inspectors from other types of inspectors until fiscal year 2012,

we approximated the number of production inspectors for each of these scenarios for the purpose of our model as follows:[1]

- *Scenario 1.* In this scenario, we assumed that the bureau had 34 full-time equivalent (FTE) production inspectors—the approximate number of production inspectors employed at the end of fiscal year 2010 before the bureau was able to hire additional staff.
- *Scenario 2.* In this scenario, we assumed that the bureau had 48 FTE production inspectors—the approximate number of production inspectors employed during fiscal year 2012.
- *Scenario 3.* In this scenario, we assumed that the bureau hired double the number of production inspectors than it actually did between fiscal years 2010 and 2012, for a total of 62 FTE production inspectors—significantly more inspectors than it actually hired, but fewer than its allocation.

For each of the three staffing scenarios, our model estimates the number of annual inspections and additional risk-based inspections that could have been conducted. We compared the first set of estimates with the total number of annual inspections that the bureau was required to perform in fiscal year 2012 under the Outer Continental Shelf Lands Act (OCSLA), which requires Interior to provide for the inspection of every outer continental shelf facility at least once annually, as well as periodic on-site inspections without advance notice.[2] We compared the second set of estimates with the number of facilities that the bureau identified as high risk in fiscal year 2012. Our model operates in two stages. The first stage assumes that the bureau would conduct an annual inspection of each offshore facility as provided for by OCSLA. The second stage assumes, after annual inspections are completed, that inspectors would use the remaining time to conduct additional inspections at high-risk facilities. These additional inspections are not required by statute, but bureau officials told us they are necessary to more fully ensure compliance with regulations, and that additional staff hired prior to fiscal year 2012 would

[1]In 2012, BSEE began dividing its inspectors by technical specialization, including production facility inspectors and drilling rig inspectors. Therefore, to approximate the number of FTE production inspectors in fiscal year 2012, we analyzed agency data for each of the inspectors that bureau officials told us were classified as production inspectors. To approximate the number of production inspectors in fiscal year 2010, we extrapolated the ratio of production inspectors to drilling inspectors from 2012 onto the 2010 staff data.

[2]OCSLA, as amended (43 U.S.C. §1331 et seq.).

likely have been used to carry out these additional inspections. High-risk facilities include those that produce a lot of oil and gas, are staffed around the clock, or had poor inspection results or significant incidents in the past, among other characteristics. BSEE is currently developing a risk-based inspection methodology that BSEE officials told us will likely include reinspections of high-risk facilities, as well as more emphasis on important inspections that are currently not being carried out—such as inspections of construction activities and certain critical components.

Results

According to our analysis of BSEE inspection records, by hiring new inspectors between fiscal years 2010 and 2012, the bureau gained the capacity to conduct annual inspections at all or nearly all of the production facilities in the Gulf of Mexico Region. Even with these additional inspectors, however, the bureau did not have the capacity in fiscal year 2012 to conduct additional, risk-based inspections at more than a small number of high-risk facilities. Because every inspection takes a differing amount of time, and because each inspector spends a different amount of time each year conducting inspections, there is some uncertainty in predicting the number of inspections that would be conducted with a given number of staff. We account for this uncertainty by presenting ranges of estimates for each scenario. Our results are described below, presented in table 11, and illustrated in figure 7.

- *Scenario 1.* If the bureau had not hired additional inspectors with funds received from its fiscal year 2012 appropriations, it would not have been able to conduct the required annual inspections of all production facilities in fiscal year 2012, according to our estimates. Under its fiscal year 2010 staffing level of approximately 34 production inspectors, we estimate that the bureau had the capacity to inspect between 1,575 and 2,061 production facilities out of a total of 2,498 existing production facilities in fiscal year 2012—enough to conduct the required annual inspections at between 63 percent and 83 percent of production facilities in that year. Because the bureau would not have been able to complete 100 percent of the required annual inspections under this scenario, we conclude that it would have not have had the capacity to conduct any additional risk-based inspections in fiscal year 2012.
- *Scenario 2.* By hiring enough staff to have a net increase of 14 production inspectors, the bureau gained the capacity to conduct the required annual inspections at all or almost all of the production facilities in fiscal year 2012. Specifically, we estimate that the bureau had the capacity to conduct between 2,263 and 2,788 production

inspections in fiscal year 2012—enough to complete required annual inspections at between 91 percent and 100 percent of production facilities in fiscal year 2012. In addition, our model estimates that the bureau could have conducted additional risk-based inspections at between 0 and 290 facilities, or as few as zero or as many as 21 percent of the high-risk production facilities in fiscal year 2012. This staffing level gave the bureau the capacity to typically conduct the required annual production inspections at approximately all production facilities but would not have given the bureau the capacity to consistently conduct a significant amount of additional risk-based inspections in fiscal year 2012.

- *Scenario 3.* If the bureau had been able to hire enough staff to have a net increase of 28 production inspectors—14 more inspectors than it actually hired but still significantly short of its allocation—it would have had the capacity to conduct annual inspections at all production facilities, as well as significantly more risk-based inspections. Under this scenario, the bureau would have had the capacity to conduct between 2,785 and 3,386 production inspections—enough to conduct the required annual inspections at 100 percent of production facilities in fiscal year 2012. In addition, this staffing level would have given the bureau the capacity to conduct additional, risk-based inspections at between 287 and 888 production facilities—approximately 20 to 63 percent of the high-risk facilities in fiscal year 2012. Even with these additional staff, however, the bureau would still not have had the capacity to conduct additional inspections at all high-risk facilities. Without filling its additional vacancies, its ability to fully implement a risk-based inspection strategy could be hindered.

Table 11: Estimated Number of Production Facility Inspections Conducted under Three Staffing Scenarios

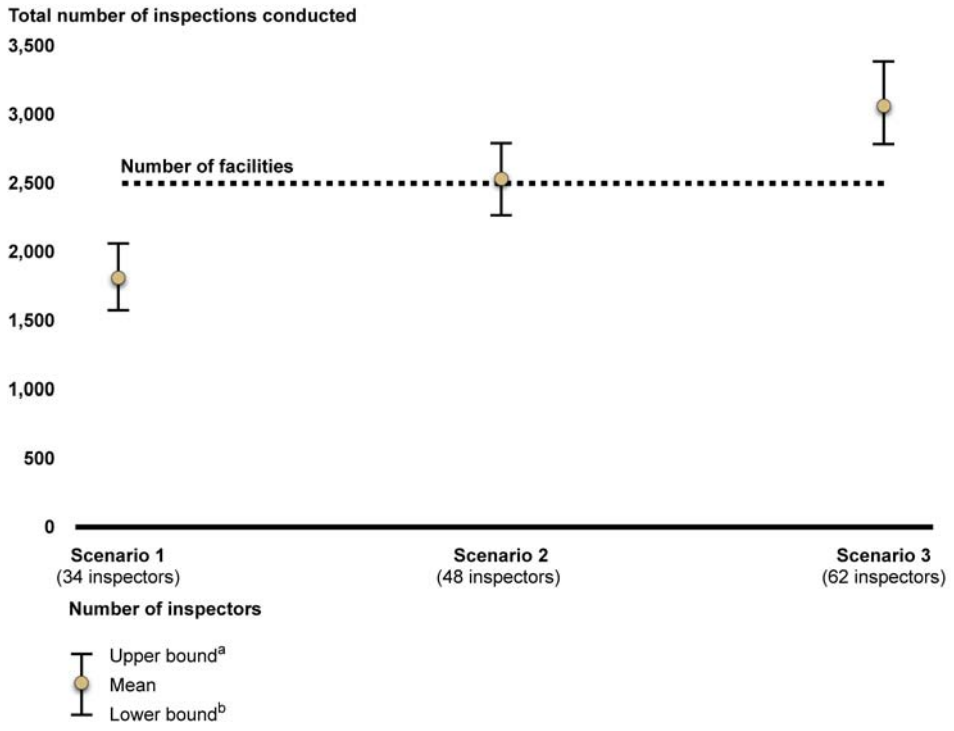
	Number of annual inspections conducted			Number of additional inspections conducted			Total number of inspections conducted		
Scenario	Lower bound[a]	Mean	Upper bound[b]	Lower bound[a]	Mean	Upper bound[b]	Lower bound[a]	Mean	Upper bound[b]
Scenario 1 (34 inspectors)	1,575	1,813	2,061	0	0	0	1,575	1,813	2,061
Scenario 2 (48 inspectors)	2,263	2,457	2,498	0	74	290	2,263	2,531	2,788
Scenario 3 (62 inspectors)	2,498	2,498	2,498	287	568	888	2,785	3,066	3,386

Source: Estimates are based on GAO's simulation model of oil and gas production facilities in the Gulf of Mexico during fiscal year 2012.

[a]This is the lower bound of the 95 percent confidence interval.

[b]This is the upper bound of the 95 percent confidence interval.

Figure 7: Estimated Number of Production Facility Inspections Conducted under Three Staffing Scenarios



Source: GAO analysis of BSEE data.

[a]This is the lower bound of the 95 percent confidence interval.

[b]This is the upper bound of the 95 percent confidence interval.

Data

In conducting our analysis, we used data from Interior's Technical Information Management System (TIMS) database. We focused our analysis on production facilities inspected by production operations inspectors in the Gulf of Mexico in fiscal year 2012. These facilities account for nearly 30 percent of the nation's domestic oil production and nearly 11 percent of domestic natural gas production. We limited our analysis to sample inspections, in which BSEE inspects a random subset of safety devices on a facility, and to complete inspections, in which it completes a full inspection of all paperwork, safety devices, and physical condition of the facility. These are the two types of scheduled inspections BSEE uses to fulfill its annual production facility inspection requirement.

In fiscal year 2012, the nonsupervisory inspectors conducted approximately the same number of sample and complete production inspections as there were production facilities. In particular, there were 2,498 production facilities in the Gulf of Mexico that were eligible for inspection, and nonsupervisory inspectors conducted 2,511 production inspections, including both sample inspections and complete inspections during this period. Some of the facilities were inspected more than once in this time period, while others were inspected not at all.

We examined the accuracy of Interior's TIMS data and determined the data were sufficiently reliable for the purpose of estimating the effect of broad policy scenarios, although we detected some inaccuracies. In particular, data on the number of hours spent on an inspection are based on estimates made by individual inspectors when completing inspections. These data are subject to the ability of individual inspectors to properly estimate time spent on various inspection tasks. For example, if an inspector visits two facilities on a single day, the inspector would need to determine how to allocate travel time, waiting time, inspection time, and paperwork time to allot to multiple facilities.

Multiple Regression Model Estimating Time Required to Conduct an Inspection

Using the TIMS data described above, we developed a multiple regression model to estimate the number of staff hours required to conduct an inspection based on the characteristics of the facilities. We defined staff hours to include the total number of hours recorded by all nonsupervisory production inspectors on a given inspection. We tallied the time for all aspects of an inspection, including travel time, paperwork time, and waiting time, in addition to the time to conduct the inspection. Because the number of hours did not follow a normal statistical distribution, we transformed the variable into its natural logarithm for our analysis. In conducting our regression analysis, we used data for a random sample of 1,239 inspections that the bureau conducted in fiscal year 2012. To double-check the predictive accuracy of the model, we used data for an additional 1,238 inspections as a testing sample and calculated goodness of fit statistics.[3]

[3]An additional 34 inspections were missing data for inspection time, risk classification, or status as a major or minor facility. These inspections could not be included in our calculations.

Our multiple regression model estimates the amount of time required to conduct an inspection based on two characteristics of a facility: (1) whether BSEE classifies the facility as major or minor and (2) whether it classifies the facility as high risk or low risk. BSEE defines a major facility as one that has at least six wells or more, as well as more than two pieces of production equipment, which are components that process oil, gas, or water, such as a separator. BSEE defines a high-risk facility by a number of characteristics, such as the amount of oil or gas the facility produces, whether the facility is staffed or unstaffed, and the history of the operator's compliance with regulations. Of the inspections conducted in fiscal year 2012, 36.9 percent were classified as major and higher-risk, 10.9 percent were classified as major and low-risk, 19.4 percent were classified as minor and high-risk, and 31.5 percent were classified as minor and low-risk. We included these variables in our analysis based on the premise that larger, riskier facilities would require more time to inspect.

The results of the multiple regression model are presented in table 12. Both variables were statistically significant predictors of the time required to inspect a facility and, correspondingly, we found that the time required to conduct an inspection varies widely by facility type. As expected, major and high-risk facilities require the most time to inspect. On average, inspections of such facilities require approximately 22.4 staff hours, according to our model. By contrast, minor, low-risk facilities require the least amount of time to inspect. On average, inspections of such facilities require approximately 4.0 staff hours, according to our model. Other types of facilities require a more moderate amount of time, with minor, high-risk facilities requiring an average of 5.8 hours to inspect and major, low-risk facilities requiring an average of 8.6 hours to inspect. To make these predictions, we transformed the estimates from the regression equation, which are on a logarithmic scale, to a linear scale.

Table 12: Multiple Regression Model Estimating the Time Required to Inspect Production Facilities, Fiscal Year 2012

Parameter	Parameter estimate	Standard error[a]	Z Value	Pr > |Z|
Intercept	0.925	0.077	12.09	<.0001
Whether facility is defined by the bureau as major	0.758	0.133	5.68	<.0001
Whether facility is defined by the bureau as high risk	0.365	0.073	4.97	<.0001
Whether the facility defined by the agency as both major and high risk	0.590	0.148	4.00	<.0001

Source: GAO analysis of BSEE's TIMS data.

Note: This model estimates the natural logarithm of the number of hours required to inspect oil and gas production facilities in the Gulf of Mexico in fiscal year 2012 based on a random sample of 1,239 inspections.

[a]These are robust standard errors that account for facilities being clustered within operators.

The model has a good fit based on the F statistic ($p<.001$) and predicts 37 percent of the variance in the time required to conduct an inspection (adjusted $R^2=0.37$). We checked to ensure that the residuals, which represent the difference between the predicted value and the actual value for a given facility, were normally distributed and on average, zero. We estimated robust standard errors accounting for the fact that facilities are clustered within operators.

Monte Carlo Simulation Estimating the Number of Inspections That Can Be Conducted

To estimate the number of inspections that the bureau would be able to conduct under each staffing scenario, we incorporated the results of our multiple regression analysis into a Monte Carlo simulation. A Monte Carlo simulation is a type of numerical analysis that produces a range of estimates to account for the random variability among inspections and the statistical uncertainty in the model's equations. In this case, we used a Monte Carlo simulation to account for the variability in the number of hours necessary to inspect each facility and the number of inspections conducted by each inspector. For instance, BSEE officials told us that some facilities may take longer to inspect than others because of factors that are difficult to account for, such as the availability and ability of the operator's onboard personnel on offshore facilities being inspected. Similarly, not all inspectors spend the same amount of time conducting inspections each year, so there is some variability in the total amount of time that a given number of inspectors would spend on production inspections.

The Monte Carlo simulation entailed several key steps. For each staffing scenario, the model estimates the amount of time that a given number of inspectors has available for conducting production inspections, taking into account the variation we found in our analysis of BSEE's fiscal year 2012 inspection records. On average, production inspectors spent 627 hours conducting production inspections, though some inspectors spent considerably more time, and others spent considerably less time. The model also estimates the number of hours required to inspect each facility for each staffing scenario, taking into account the variability in inspection times we found in the multiple regression model described above. The model then simulates facility inspections until the total number of hours available for inspections is reached. If all facilities are able to be inspected within the total number of available hours, the model uses the

remaining time to simulate additional inspections beginning with the high-risk facilities. When the total number of available hours is reached, the model stops simulating inspections and calculates the total number of facilities inspected. The model repeats each of these steps 1,000 times to produce 1,000 estimates of the total number of facilities inspected for a given number of inspectors. Collectively, these 1,000 estimates characterize the range of uncertainty in the bureau's capacity to conduct inspections for each of the staffing scenarios. To further assess the accuracy of the model, we compared the number of inspections estimated by our model with the number of inspections conducted by BSEE in fiscal year 2012. The actual number of inspections—2,511—was within 1 percent of our mean estimate of 2,531 and within the 95 percent confidence interval as shown in table 11.

Limitations

To estimate the effect of various staffing scenarios, our analysis makes some simplifying assumptions. First, we assume that the time required to conduct annual inspections is a valid approximation of the time required to conduct additional, risk-based inspections. Because the bureau has seldom conducted such inspections, we did not have sufficient data to test this assumption. Second, because of the natural variability in inspections—such as variations in the amount of time that inspectors spend inspecting production facilities during a year and the number of hours required to inspect a given facility—it is difficult to make precise predictions about the outcomes of any given staffing scenario. Third, because our estimates are based on data from fiscal year 2012, our results may not apply to future years if future years differ significantly. For example, if weather conditions are more favorable in future years, inspectors may be able to fly to facilities on more days, leading to more inspections being conducted by the same number of inspectors. By contrast, if production inspectors are diverted to perform duties other than inspections of production facilities, the same number of inspectors may be able to conduct fewer inspections. Even with this difference, we believe our model is a valid approximation of the relative effects among different staffing scenarios.

Appendix IV: Comments from the Department of the Interior

United States Department of the Interior
OFFICE OF THE SECRETARY
Washington, DC 20240

JAN 22 2014

Mr. Frank Rusco
Director
Natural Resources and Environment
Government Accountability Office
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Rusco:

Thank you for the opportunity to review and comment on the Government Accountability Office (GAO) draft report entitled *OIL AND GAS – Interior Has Begun to Address Hiring and Retention Challenges but Needs to Do More* (GAO-14-205). We appreciate GAO's efforts to capture the important and ongoing progress made by the Bureau of Ocean Energy Management (BOEM), the Bureau of Safety and Environmental Enforcement (BSEE), the Bureau of Land Management (BLM) and the Department of the Interior (Interior) as a whole in addressing the hiring and retention challenges raised in the report. We agree that these long-term challenges will continue to require the full use of the available hiring and retention incentives that are currently available to the extent that these incentives can be supported by each bureau's budget. The bureaus have begun a more systematic collection and analysis of hiring data to identify causes for delays, thereby enabling them to expedite the hiring process.

As GAO acknowledges, Interior has taken a number of actions to address the hiring and retention challenges we face in competing with private industry for oil and gas management staff, including petroleum engineers, geologists, and geophysicists. During Fiscal Years (FY) 2012 and 2013, BOEM and BSEE offered a special salary rate to geologists, geophysicists, and petroleum engineers in the Gulf of Mexico Region to attract and retain key oil and gas oversight staff. It should be noted that BOEM and BSEE have implemented the recommendation concerning strategic workforce planning in GAO's July 2012 report entitled *Oil and Gas Management – Interior's Reorganization Complete, but Challenges Remain in Implementing New Requirements* (GAO-12-423).

Operations in FY 2013 and 2014 under continuing resolutions and the sequester of five percent adversely impacted funding available for bureau staffing, requiring a hiring freeze, and caused bureaus to reduce budget allocations for oil and gas activities. These disruptions have impacts that were not explicitly addressed in this review. Additionally, beginning in FY 2012, the Department has requested authority to collect fees for the BLM's onshore inspection program in order to increase the certainty and predictability of funding available for staffing and to adequately fund the inspection program. These factors are key issues influencing staffing for the Department's oil and gas programs.

Interior generally agrees with the findings and concurs with both recommendations. In addition, we offer several specific comments in the Enclosure. BSEE also continues to be concerned that the analysis presented in Appendix III has significant limitations, which GAO notes in the report. BSEE will consider the GAO model together with many other factors as it develops a new risk-based inspection strategy to meet its safety and environmental protection mandates.

If you have any questions about this response, please contact Andrea Nygren, BOEM Audit Liaison Officer, at (202) 208-4343, Linh Luu, BSEE Audit Liaison Officer, at (202) 208-4120, or LaVanna Stevenson, BLM Audit Liaison Officer, at (202) 912-7077.

Sincerely,

Tommy P. Beaudreau
Principal Deputy Assistant Secretary
Land and Minerals Management

Enclosure

Appendix V: GAO Contact and Staff Acknowledgments

GAO Contact

Frank Rusco, (202) 512-3841 or ruscof@gao.gov

Staff Acknowledgments

In addition to the individual named above, Christine Kehr, Assistant Director; Mark Braza; Mitchell B. Karpman; Michael Kendix; Michael Krafve; Armetha Liles; Steven Lozano; Alison O'Neill; Kelly Rubin; Jerome T. Sandau; Rebecca Shea; Jeff Tessin; Kiki Theodoropoulos; Barbara Timmerman; and Arvin Wu made key contributions to this report.