



United States of America
OCCUPATIONAL SAFETY AND HEALTH REVIEW COMMISSION
1120 20th Street, N.W., Ninth Floor
Washington, DC 20036-3457

SECRETARY OF LABOR,

Complainant,

v.

MISSOURI BASIN WELL SERVICE, INC.,

Respondent.

OSHRC Docket No. 13-1817

ON BRIEFS:

Ronald J. Gottlieb, Attorney; Charles F. James, Counsel for Appellate Litigation; Heather R. Phillips, Counsel for Appellate Litigation; Ann Rosenthal, Associate Solicitor of Labor for Occupational Safety and Health; M. Patricia Smith, Solicitor of Labor; U.S. Department of Labor, Washington, DC

For the Complainant

David E. Jones; Shontell Powell; Ogletree, Deakins, Nash, Smoak & Stewart, P.C., Washington, DC and Atlanta, GA

For the Respondent

DECISION

Before: MACDOUGALL, Chairman; ATTWOOD and SULLIVAN, Commissioners.

BY THE COMMISSION:

Missouri Basin Well Service, Inc. (MBI) is an oil and gas well-servicing company based in Belfield, North Dakota. After a fire at an MBI worksite injured an employee and the Occupational Safety and Health Administration conducted an inspection, OSHA issued MBI a citation alleging a violation of the general duty clause of the Occupational Safety and Health Act, 29 U.S.C. § 654(a)(1), for exposing its employees to fire and explosion hazards.¹ Administrative

¹ The general duty clause provides that “[e]ach employer . . . shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees.” 29 U.S.C. § 654(a)(1).

Law Judge Brian Duncan vacated the citation, finding that the Secretary failed to prove two elements of the alleged general duty clause violation: recognition of the hazard and the existence of a feasible and effective means to abate the hazard. For the reasons discussed below, the citation is vacated.

BACKGROUND

On April 2, 2013, MBI was servicing an oil well owned by Abraxas Petroleum Corporation when a fire occurred. Specifically, MBI was “circulating the well,” a process which involved pumping large amounts of water into the well and back out to remove debris, such as leftover drilling mud and sand. MBI’s supervisor on the project was Mike Fifer. The day before the fire, Fifer had his crew set up a 500-barrel, enclosed tank to serve as the water “supply tank,”² a 120-barrel, open-top “discharge tank” to receive the water discharged from the well, and a diesel-powered “mud pump” to circulate the water from the tank into the well and out again (by drawing water out of the supply tank, pushing it down the well, and out into the discharge tank). Fifer testified that he followed his usual practice and separated the discharge tank approximately 75 feet from the mud pump in order to address his concern that combustible fumes or vapors might emanate from the discharge tank and migrate to the mud pump, which is a potential ignition source. Fifer selected an open-top tank to hold the discharge water to encourage the dissipation of any combustible vapors. The supply tank, discharge tank, and mud pump were each placed at least 100 feet from the wellhead.

The next day, the day of the fire, an Abraxas official instructed Fifer to move the mud pump closer to the discharge tank—from approximately 75 feet away to less than 30 feet away—and also to use a 500-barrel, enclosed discharge tank, known as a “frac tank,” instead of the 120-barrel, open-top tank.³ Fifer testified that he was concerned about moving the mud pump closer to the discharge tank. He agreed to do so, however, thinking that it “would be good enough” so long as the enclosed tank’s “top hatch” remained closed, forcing any vapors to be released through a 3-inch vent opening on the back of the 50-foot long discharge tank so that any gas would emanate

² The supply tank and the water were supplied by Abraxas. MBI presumed the water was saltwater. Neither freshwater nor saltwater are combustible or flammable.

³ The Abraxas representative indicated he wanted to use 500-barrel tanks for both the supply and discharge so that the discharge tank did not need to be emptied during the circulation process; thus, saving Abraxas money.

from the tank at about 80 feet from the mud pump. Fifer testified that he instructed all members of his crew to keep the hatch on the discharge tank closed.

With this new set-up in place, the crew began “circulating the well.” After they had been doing so for one to two hours, a fire broke out near the pump, which engulfed an MBI employee who sustained second-degree burns to his face. The fire then migrated from the mud pump to the hatch of the discharge tank, which was now open, and continued to burn through the open hatch for fifteen to twenty minutes until it was extinguished by the fire department.

DISCUSSION

To prove a violation of the general duty clause, the Secretary must establish the following: (1) a condition or activity in the workplace presented a hazard; (2) the employer or its industry recognized the hazard; (3) the hazard was causing or likely to cause death or serious physical harm; and (4) a feasible and effective means existed to eliminate or materially reduce the hazard. *Arcadian Corp.*, 20 BNA OSHC 2001, 2007 (No. 93-0628, 2004). Here, the judge found that the Secretary established the presence of the alleged hazard at the worksite, but he failed to establish the hazard recognition and abatement elements of the violation. As to the recognition element, the judge framed the issue as a question of whether MBI or its industry recognized that the Secretary’s proposed abatement measures were required and concluded that the Secretary had not made this showing. As to the abatement element, the judge found that MBI already had adequate safety measures in place to address the risk of a fire at the worksite and that there was insufficient evidence to show the Secretary’s proposed abatement measures would have materially reduced the hazard. Each of these issues are addressed in turn below.

Hazard

In a general duty clause case, “[the] hazard must be defined in a way that apprises the employer of its obligations, and identifies conditions and practices over which the employer can reasonably be expected to exercise control.” *Arcadian Corp.*, 20 BNA OSHC at 2007. The hazard must be defined “in terms of the physical agents that could injure employees rather than the means of abatement.” *Chevron Oil Co.*, 11 BNA OSHC 1329, 1331 n.6 (No. 10799, 1983); *see Morrison-Knudsen Co./Yonkers Contracting Co.*, 16 BNA OSHC 1105, 1121 (No. 88-572, 1993) (hazard is not absence of abatement method). In his amended complaint, the Secretary describes the allegedly hazardous condition as an unsafe distance between the mud pump and discharges of oil

and gas from the discharge tank.⁴ On review, MBI challenges the Secretary’s definition, arguing the Secretary inappropriately defined the hazard in terms of an abatement method.

This argument lacks merit.⁵ MBI is correct that the alleged hazard and the Secretary’s main proposed abatement method overlap to some extent in that both implicate the spacing between the discharge tank and the mud pump. But the hazard allegation itself does not specify an abatement method, it only references an *insufficient* amount of spacing. Thus, the Secretary has not, as MBI contends, defined the hazard in terms of the distance or space that must be maintained to *abate* the hazard. *See Morrison-Knudsen*, 16 BNA OSHC at 1122 (distinguishing

⁴ The judge found that the alleged hazard was present but redefined it as “the existence of possible ignition sources on oil well worksites where flammable hydrocarbons are typically present in some quantity.”

⁵ Since Chairman MacDougall joins Commissioner Sullivan in concluding that the Secretary failed to meet his burden to prove that MBI should have implemented the proposed abatement measures he advocated, there is agreement to vacate the citation regardless of how the hazard at issue is defined or whether the hazard was recognized by MBI. *See, e.g., Inland Steel Corp.*, 12 BNA OSHC 1968, 1970 (No. 79-3286, 1986) (“Since the Secretary has not established that [the respondent] should have implemented the abatement measure he advocates—the use of handbrakes—the citation allegation must be vacated regardless of how the recognized hazard in issue is defined.”) (citing *Pelron*, 12 BNA OSHC at 1835)). Thus, Chairman MacDougall does not join her colleagues’ discussion on either of these issues.

However, Chairman MacDougall notes that her colleagues overstate the record evidence that flammable vapors were released from the discharge tank—particularly given the evidence that MBI reasonably presumed the tank contained “pure water” and the compliance officer’s acknowledgement that a discharge tank containing water with an ignition source nearby “doesn’t raise any red flags.” Chairman MacDougall notes, as did the judge, that the Secretary’s theories of how flammable vapors could have been generated from the discharge tank were too speculative. As stated by the judge, the “key facts, as well as the precise cause of the fire, are still undetermined.”

In addition, Chairman MacDougall notes the Secretary’s difficulty in defining the alleged hazard and is concerned that the Secretary’s definition is too broad. As the Commission observed in *Pelron*, an employer cannot reasonably be expected to free its workplace of inherent risks that are incident to its normal operation. *See Pelron Corp.*, 12 BNA OSHC 1833, 1835 (No. 82-388, 1986) (“[d]efining the hazard as a ‘possibility’ that a condition will occur defines not a hazard but a potential hazard”). Therefore, to respect Congress’s intent, hazards must be defined in a way that gives an employer fair notice of its obligations under the Act by identifying the conditions or practices over which the employer can reasonably be expected to exercise control. *See The Ruhlin Co.*, 21 BNA OSHC 1779, 1784-85 (No. 04-2049, 2006) (employer did not have fair notice that it had an obligation under section 5(a)(1) to require employees to wear high-visibility vests); *FMC Corp.*, 12 BNA OSHC 2008, 2009-2010 (No. 83-488, 1986) (consolidated) (defining the hazard as those practices, procedures or conditions that increase the likelihood of an explosion).

hazard—“excessive levels of airborne lead”—from abatement method—use of protective clothing). Moreover, the Secretary’s definition is consistent with the Commission’s requirement that it identify “the physical agents that could injure employees”—the tank (a source of hydrocarbon vapors) and the mud pump (an ignition source). *See Chevron Oil Co.*, 11 BNA OSHC at 1331 n. 6; *see also Pelron Corp.*, 12 BNA OSHC 1833, 1835 (No. 82-388, 1986) (“To respect Congress’ intent, hazards must be defined in a way that apprises the employer of its obligations, and identifies conditions or practices over which the employer can reasonably be expected to exercise control.”).

The evidence also establishes that this hazard was present at the worksite. There is no dispute that the mud pump was an ignition source and that it was less than thirty feet from the discharge tank. In addition, four MBI employees identified the open hatch of the discharge tank as the source of the combustible vapors that were ignited, and Fifer testified that he saw flames coming through the open hatch. In a post-accident investigation, MBI’s vice-president of health, safety, and environment, Tim Brown, determined that the discharge tank emitted flammable vapors. MBI’s expert witness, Ron Britton, agreed that the fire resulted from flammable vapors that escaped from the discharge tank and were ignited. Although the source of the flammable vapors was never determined, there was near unanimity among the witnesses, including Britton, that the source was either the water or the discharge tank provided by Abraxas. Thus, the record shows that discharges of flammable vapors were released from the discharge tank at an unsafe distance from the mud pump, posing a fire hazard.

Hazard Recognition

To establish hazard recognition, the Secretary must show that MBI or its industry recognized that locating the mud pump—an undisputed ignition source—an unsafe distance (less than thirty feet) from discharges of gas from a tank presented a fire or explosion hazard. *Kokosing Constr. Co.*, 17 BNA OSHC 1869, 1873 (No. 92-2596, 1996) (“Hazard recognition may be shown by either the actual knowledge of the employer or the standard of knowledge in the employer’s industry—an objective test.”). Whether a work condition is recognized as a hazard is a question of fact. *See, e.g., Waste Mgmt. of Palm Beach*, 17 BNA OSHC 1308 (No. 93-128, 1995); *SeaWorld of Florida, LLC v. Perez*, 748 F.3d 1202, 1208 (D.C. Cir. 2014).

Based on Fifer’s testimony, it is clear MBI recognized that allowing discharges of gas vapors to emanate from a tank located less than thirty feet away from a pump presented a fire

hazard.⁶ Fifer, who had worked in the oil and gas industry for 45 years, testified that he understood there was a risk the pump would ignite flammable vapors emanating from the tank, and for this reason, he decided to use an open-top tank to better disperse such vapors and placed the tank at least 75 feet away from the pump:

Q: Your practice is to try to keep the discharge tank 75 feet—at least 75 feet from the engine of the mud pumping unit?

A: Yes.

Q: . . . And you did that because you know that vapors could come from the discharge tank?

A: Yes.

Q: Combustible vapors? You did that because of combustible vapors?

A: Yes.

. . .

Q: And you . . . prefer [open-top tanks] because open tanks disperse whatever combustible vapors might be in the tank better . . . ?

A: Well, there's always a possibility that it can, yes.

Q: But that's the purpose . . . ?

A: Yes.

Although Fifer consented when Abraxas directed him to move the mud pump to a location less than 30 feet from the tank, he testified that he “still really didn’t like it.” As a supervisor, Fifer’s recognition that the distance between the pump and the discharges of gas vapors from the tank posed a fire hazard is imputed to MBI. *Peter Cooper Corp.*, 10 BNA OSHC 1203, 1210 (No. 76-596, 1981) (finding general manager’s knowledge of hazard was imputable to employer and sufficient to establish employer recognition of hazard); *Caterpillar, Inc.*, 17 BNA OSHC 1731, 1732 (No. 93-373, 1996) (applying agency law’s long-standing principle that corporation is charged with knowledge of its agents), *aff’d*, 122 F.3d 437 (7th Cir. 1997).

Although the judge acknowledged Fifer’s attempt to maintain a 75-foot distance between the tank and the pump, he found this only reflected Fifer’s “personal practice and preference” and did not show MBI recognized that such spacing was required under the Act. Fifer made clear, however, that this practice was not just his personal preference. Indeed, he had been taught the

⁶ Because the Secretary established that MBI recognized the hazard, there is no need to address whether MBI’s industry also recognized it.

75-foot rule by two of the oil and gas servicing companies for whom he had previously worked and carried that practice with him to MBI. MBI's vice-president Brown testified that MBI "trusts [its supervisory] personnel" to make these types of judgments. The judge's requirement that the Secretary show that MBI recognized that the 75-foot abatement method was required by the Act is erroneous. *Litton Sys. Inc.*, 10 BNA OSHC 1179, 1182 (No. 76-900, 1981) (citation omitted) ("The means of abatement, unlike the hazard itself, does not have to be recognized by an employer or the employer's industry.").

The judge also cited to Commission precedent noting a reluctance to rely solely on an employer's safety precaution to find hazard recognition. See *Pepperidge Farm, Inc.*, 17 BNA OSHC 1993, 2006 (No. 89-265, 1997). Here, however, Fifer clearly understood that the conditions at the worksite posed a fire risk. He "didn't like" Abraxas' decision to move the pump to within 30 feet of the tank and discussed his reasons for keeping the two pieces of equipment farther apart. "We talked about it and decided that it would work if—if that hatch was closed, it would vent out the back of the tank if there was any gas coming off of it." Fifer testified that ultimately "I went along with his thinking . . . thinking that that would be good enough, you know, if you would vent out the back." See *id* at 2007 (finding no need to rely solely on the existence of an employer safety practice to establish recognition when there was evidence the employer was "actually aware" of the hazard); cf. *Cotter & Co v. OSHRC*, 598 F.2d 911, 914-15 (5th Cir. 1979) (employer's optional payroll deduction for steel-toed shoes, which employer established "merely to accommodate the preferences of the employees," did not establish that it recognized a hazard was present). Accordingly, the record establishes that MBI recognized the condition posed a fire hazard.⁷

⁷ Chairman MacDougall does not believe it is necessary to join her colleagues' discussion on this issue since she agrees that the citation must be vacated regardless of whether there was a recognized hazard. Chairman MacDougall notes, however, that her colleagues' characterization of the record evidence regarding Fifer's practice of spacing a mud pump at least 75 feet from a tank is overstated. It is the Secretary who in questioning called it a "rule," while Fifer characterized it as "more or less a preventative measure."

In addition, in her view, her colleagues' finding that a supervisor's voluntary safety measure should be imputed to his employer as its recognition of the hazard—particularly where MBI's expert witness, Britton, testified that Fifer's measure was merely a cautious approach not based on any recognized practice in the industry—creates a new standard; one that may have the undesired consequence of discouraging voluntary safety practices. Chairman MacDougall notes that longstanding precedent holds that voluntary safety measures an employer offers do not establish

Feasibility of Abatement

To establish the feasibility of a proposed abatement measure, the Secretary must “demonstrate both that the measure[] [is] capable of being put into effect and that [it] would be effective in materially reducing the incidence of the hazard.” *Arcadian*, 20 BNA OSHC at 2011 (citing *Beverly Enters. Inc.*, 19 BNA OSHC 1161, 1190 (No. 91-3344, 2000) (consolidated)). The Secretary need only show that the abatement method would materially reduce the hazard, not that it would eliminate the hazard. *Id.* (citing *Morrison-Knudsen*, 16 BNA OSHC at 1122). Where an employer has undertaken measures to address the hazard, the Secretary must show that such measures were inadequate. *U.S. Postal Serv.*, 21 BNA OSHC 1767, 1773-74 (No. 04-0316, 2006).

Here, the judge found that MBI had already instituted a number of safety precautions to address the risk of a fire or explosion at the worksite and the Secretary failed to establish that these measures were inadequate. Specifically, the judge cited evidence that MBI, among other things,

the employer’s recognition of the hazard. *See Pepperidge Farm, Inc.*, 17 BNA OSHC 1993, 2006 (No. 89-265, 1997), and cases cited therein.

In her view, if the Commission is to rely on Fifer’s spacing practice, there should be either: (i) corroborating independent evidence of hazard recognition, *see, e.g., Diebold v. Marshall*, 585 F.2d 1327, 1338 (6th Cir. 1978):

[A]n employer’s attempts to render . . . working premises more safe, without anything more, cannot reasonably support an inference that the attempts were made because the employer believed them to be legally required. Further, the drawing of such an inference would be repugnant to the purposes of the Act. Congress expected that safety in the nation’s workplaces would be achieved as much by the voluntary efforts of employers as by the enforcement programs of the government. If employers are not to be dissuaded from taking precautions beyond the minimum regulatory requirements, they must be able to do so without concern that their efforts will later provide the sole evidentiary basis for an adverse finding of the sort urged here. (citations omitted)

or (ii) a framework that allows for the Secretary’s prima facie showing to be rebutted with evidence that MBI took reasonable measures to prevent the occurrence of the alleged violation. *See, e.g., Aquatek Sys.*, 21 BNA OSHC 1400, 1401 (No. 03-1351, 2006) (“An employer may rebut the Secretary’s prima facie showing of knowledge with evidence that it took reasonable measures to prevent the occurrence of the violation.”). Chairman MacDougall notes that her colleagues find no corroborating independent evidence of hazard recognition. As to MBI’s reasonable measures to prevent the occurrence of fire hazards from flammable hydrocarbon liquids and gases, Britton stated that the company’s safety practices were “outstanding” and that it did everything that a safe well servicing company should have done at this worksite to mitigate, and attempt to eliminate, this hazard. Even the compliance officer acknowledged that MBI had installed “prudent safety measures to . . . mitigate vapor explosions or fires”

used a diesel pump with spark arresters and a kill switch, required employees to wear fire resistant clothing that protect the body (but not the face), prohibited smoking and cell phone use, banned open flames on location, made fire extinguishers readily available, and trained employees on fire prevention and control. While these general fire-related safety measures are commendable, they fell short of abating the specific fire hazard at issue here. As demonstrated by the facts of this case, spark arresters and the prohibition of cell phone use, smoking, and open flames are insufficient to prevent the ignition of the flammable vapors. As for the other measures cited by the judge, they can only reduce the extent of a fire and/or its consequent injuries after it has occurred—these measures would not prevent the ignition of such flammable vapors in the first place.

The judge correctly found, however, that the Secretary failed to prove his proposed abatement measure would materially reduce the risk of a fire.⁸ The Secretary’s method involves ensuring that “[d]ischarges of oil and gas to the atmosphere” are “to a safe area, preferably on the downwind side of the well and a minimum of 100 feet (30.5 m) from the wellhead, open flame, or other sources of ignition,” as “described in Section 12 of the America[n] Petroleum Institute Recommended Practice 54, ‘Occupational Safety for Oil and Gas Well Drilling and Servicing Operations.’ ”⁹ In support of this measure, the Secretary relies heavily on testimony from the OSHA compliance officer who inspected the worksite. The compliance officer testified that, in his opinion, maintaining a 100-foot distance between the tank and the pump would materially reduce the likelihood of a vapor cloud migrating to the pump.

Whether increasing the spacing between the pump and tank from 30 feet to 100 feet would materially reduce the chances of a fire occurring is a technical/scientific question that requires expertise to answer. As the compliance officer was never proffered as an expert with the

⁸ As explained in her dissent below, Commissioner Attwood departs from her colleagues on this finding.

⁹ At the hearing, the Secretary also proposed the use of gas meters to protect employees from the fire hazard. However, the evidence fails to establish that gas meters would materially reduce the alleged hazard. Britton, MBI’s expert witness, testified that gas meters might be useful for initial monitoring prior to initiating “hot work,” but he did not say whether they would be effective for continuous monitoring while an ignition source is operational. Additionally, there is unrebutted testimony from MBI vice-president Brown that the company had experienced problems with using gas meters because they would continually alarm and then need to be recalibrated, which could only be done by leaving the area. As a result, MBI’s contention that it lacked sufficient notice of this alternative abatement theory need not be addressed.

qualifications necessary to opine on this question under Federal Rule of Evidence 702, his opinion on this question is given no weight.¹⁰ See *Doddy v. Ocy USA, Inc.*, 101 F.3d 448, 460 (5th Cir. 1996) (lay witness not permitted to give opinion testimony about toxicity of chemicals such as benzene under Federal Rule of Evidence 701); *S. Pan Servs. Co.*, 21 BNA OSHC 1274, 1276-77 (No. 99-0933, 2005) (relying on structural engineer's expert testimony on feasibility of fall protection).

The Secretary also contends that testimony from MBI's expert witness, Britton, supports the efficacy of the proposed measure. According to the Secretary, Britton's opinion is that the accident would not have occurred if the vapors had discharged 75 feet from the pump. This ignores, however, that Britton's testimony on this point was predicated on the tank being completely sealed, with no fumes escaping it.¹¹ As Fifer testified, the tank used here had a vent

¹⁰ The compliance officer admitted during the hearing that he obtained some of the information he relied on during his investigation, such as the fact that a mud pump can act as an ignition source, from his own internet research. This indicates that the compliance officer lacked expertise regarding the technical/scientific question of whether a mud pump may ignite flammable vapors emanating from a tank 100 feet away. Apart from the compliance officer, no witness could say with any confidence that the abatement method would substantially reduce the hazard, and even the compliance officer could not say that the method would reduce the hazard by 50 percent:

Q. [Y]ou can't say whether spacing the mud pump and frac tank 75 to 100 feet apart would have materially reduced the hazard by, say, 50%, could you?

A. In this condition, without knowing what's in the tank, I cannot.

¹¹ Britton's understanding that fumes would not escape if the tank's hatch was kept closed is reflected in his testimony that "[when] you start pumping into the frac return tank, as you pump more fluid in, you're going to try to *compress whatever vapors are in there; air, whatever's in there, it will be compressed up against the [hatch] of the frac tank . . .*" (Emphasis added.) Indeed, he made clear that, in his opinion, a 75-foot separation would be ineffective if fumes did escape the tank—as they would if the hatch was open:

Q. And would that 75-foot distance, if the hatches were open, would that eliminate or substantially reduce—the 75 feet eliminate or substantially reduce the hazard?

A. No. Because again, you've got the same problem, where's your wind coming from, what direction it's coming from. Is it early morning? You have these wide swings in temperature, and that affects it tremendously. You have 60 below zero up here.

Q. How about 100 feet spacing?

A. Same thing.

line at the back, and the Secretary’s proposed abatement measure does not mention ensuring that no vapors escape the tank. In addition, Britton denied that a 100-foot separation would eliminate or substantially reduce the hazard. Further, while the Secretary argues that generally increasing the distance decreases the risk of explosion, he makes no attempt to quantify the rate at which the risk decreases as the amount of distance increases.

Finally, the Secretary cites the American Petroleum Institute (API) safety recommendation, on which the wording of his proposed abatement measure is based, as evidence that a 100-foot separation would be effective.¹² The API standard, however, does not appear to have been intended to address the circumstances at issue here. The standard’s 100-foot provision is located within a section titled “Special Services,” which is defined as “[t]hose operations utilizing specialized equipment and personnel to perform work processes to support well drilling and servicing operations.” Both Britton and the compliance officer testified that MBI’s well circulation did not involve any specialized equipment or personnel.¹³ The API standard contains a separate section titled, “Fire Prevention and Protection,” which does not have a similar scope

In her dissent, Commissioner Attwood contends that Britton was not responding to the question that was asked—whether 75 or 100-foot separations would eliminate *or* substantially reduce the hazard—and was instead only answering whether it would *eliminate* the hazard. There is nothing in his response that provides a basis for her conclusion or that otherwise indicates Britton was not in fact responding to the entire question that was asked.

¹² The API recommendation states:

Discharges of oil or gas to the atmosphere should be to a safe area, preferably on the downwind side of the well and a minimum of 100 ft (30.5 m) from the wellhead, open flame, or other source of ignition. At locations where this recommendation may be impractical, appropriate safety measures should be implemented.

Section 12.1.8 of API Recommended Practice 54.

¹³ In her dissent, Commissioner Attwood relies heavily on the API standard as evidence that the abatement measure would be effective but does not point to any expert testimony explaining the standard’s relevance to the circumstances in this case. When considering the efficacy of an abatement method, the Commission looks to industry standards *and* testimony by experts in the industry. *See Pepperidge Farm, Inc.*, 17 BNA OSHC at 2034 (noting “successful use of a similar approach elsewhere, industry standards *and* expert testimony” as integrated elements of an effective abatement method) (emphasis added). In this case, the Secretary failed to produce an expert witness to address whether the 100-foot separation would be sufficient to substantially reduce the hazard. Without such testimony, the API standard—which is inapplicable to the instant facts (and whose meaning, given the unanswered questions about whether the standard treats the wellhead as a source of ignition, is unclear)—is insufficient standing alone to establish that this method would have materially reduced the hazard in this case.

limitation. Since the 100-foot provision is located within the “Special Services” section, rather than the generally applicable “Fire Prevention and Protection” section, the standard’s structure shows that the provision was intended to apply only to the activities specifically defined as “Special Services.”¹⁴ Moreover, the 100-foot spacing recommendation contained in this API standard is in reference to spacing equipment from the wellhead, spacing with which MBI complied; it does not state that equipment should be placed 100 feet from a mud pump. In sum, the API recommendation is insufficient to establish that the Secretary’s proposed abatement measure would be effective.

As the Secretary has thus failed to prove that materially effective means existed to abate the hazard, he has failed to establish a general duty clause violation. Accordingly, the citation is vacated.

SO ORDERED.

/s/ _____
Heather L. MacDougall
Chairman

/s/ _____
Cynthia L. Attwood
Commissioner

Dated: March 1, 2018

/s/ _____
James J. Sullivan, Jr.
Commissioner

¹⁴ The Secretary also argues that, irrespective of whether the API standard applies here, the logic of its provision for separation from a wellhead demonstrates that the same separation would be effective here, since the wellhead, the Secretary asserts, is “the main source of combustible vapors at an oil field,” and a tank would emit fewer vapors. The Secretary, though, cites no evidence to support this assertion and there is no evidence as to the manner or extent to which combustible vapors at the wellhead are controlled. In addition, the API provision treats the wellhead as an *ignition* source rather than a source of hydrocarbon vapors: “Discharges of oil or gas to the atmosphere should be to a safe area, preferably . . . a minimum of 100 ft (30.5m) from *the wellhead, open flame, or other sources of ignition,*” which none of the witnesses explained. (Emphasis added.)

ATTWOOD, Commissioner, dissenting in part:

Because I find that it is more likely than not that the Secretary's proposed abatement measure would materially reduce the incidence of the proven hazard, I dissent.

First, as the following colloquy between MBI's attorney and its expert, Ron Britton, establishes, there is no room for debate on this record regarding the cause of the flash fire:

Q. It's apparent, is it not, that when the hatch for . . . the discharge frac tank was open, vapors escaped from that discharge frac tank, went over into the area around the first [sic] pump, and ended up being ignited; is that correct?

A. That's correct.

Second, Britton, the CO, and Tim Brown, MBI's vice president for safety, health, and environment, all acknowledged, as the judge put it, "the general principle that longer distances create greater opportunities for flammable vapors to dissipate." Indeed, Britton testified that:

[T]he whole idea of distance is to dilute the fumes to where they won't be explosive. That's the whole purpose of distance. That's the only reason you put something farther away.

In all [the] . . . rules on [hydrogen disulfide] exposure, on radius of exposure, they're all done in distances from the well bore, and the farther you get away from the well bore, the easier it is to dissipate the fumes because you're mixing it with more air.

The CO's testimony was based on the same general principle:

[A]s a vapor cloud or gas cloud were to migrate, it would dissipate and expand. Again, that would be based on pressure, temperature, humidity. But the farther the distance, the less – the less likely it is to ignite.

Finally, Brown and the Secretary's counsel engaged in the following exchange:

Q. To prevent a recurrence of the accident, your report describes measures to ensure proper spacing of frac tanks – and discharge tanks and mud pumping unit.

A. Yes, sir.

Q. And for you, proper spacing is *as far away as possible*?

A. Yes, it is, sir.

(Emphasis added). Thus, there is clear unanimity among three witnesses, including an expert in the oil and gas servicing industry, that increasing the distance between an ignition source and a source of flammable vapors will decrease the likelihood of a fire or explosion.

In an exchange with MBI's attorney, Britton applied this common-sense principle to the facts of this case:

Q. Do you have an opinion on whether or not this incident would've been prevented had the hatch on top of the discharge frac tank been kept closed—

* * * *

A. My answer was – let's see. Your question was: If the hatch had been closed, would the accident have happened, and my answer is: No, it would not.

In addressing this testimony my colleagues claim that Britton's response "on this point was predicated on the tank being completely sealed, with no fumes escaping it." This ignores, however, that Britton, an industry expert with an in-depth familiarity with frac tanks, had already heard Fifer's earlier testimony that the discharge tank had one hatch on top and *a vent at the back of the tank*, and that Fifer's plan had been to keep the hatch closed so that the fumes would escape out of that vent almost 50 feet farther away from the pump than the hatch. Thus, it is unreasonable to conclude that Britton, in responding to this question, was assuming that with the hatch closed, the tank would have somehow been "completely sealed."

Moreover, my colleagues misinterpret the meaning of the second quoted passage from Britton's testimony—MBI's counsel asked Britton the following: "would that 75-foot distance, if the hatches [sic] were open, would that *eliminate or substantially reduce* the hazard?" And Britton's response reflects that he is only answering whether such an abatement method would *eliminate* the hazard:

A. No. Because again, you've got the same problem, where's your wind coming from, what direction it's coming from. Is it early morning? You have these wide swings in temperature, and that affects it tremendously. You have 60 below up here.

Q. How about 100 feet spacing?

A. Same thing.

Elsewhere in his testimony Britton brings this point into focus by acknowledging that there are factors, such as wind and temperature, that can also play a role in the behavior of a flammable vapor cloud:

[N]obody's talked about the wind direction. What direction is the wind coming from? Are you putting the tank in a direct line where it would blow back over the frac tank, or is it going to be the opposite, is the frac tank blowing directly towards the reverse unit?

If the pump and the motor is 100 feet away downwind from the frac tank, then you're going to blow the fumes right over it. Even if it's 100 feet away, you'll probably have an accident there.

So you've got to look at the wind and stuff.

The fact that several variables may affect the behavior of a vapor cloud appears to be at the heart of Britton's conclusion that even a 100-foot distance between the frac tank and the pump may not eliminate the hazard. However, he never claims that—holding those other variables constant—increasing the distance between the pump and the discharge tank would not have materially reduced the incidence of the hazard. And his emphatic declaration that “the whole idea of distance is to dilute the fumes to where they won't be explosive” leads to the exact opposite conclusion.

Of course, only two of the variables mentioned by Britton are actually subject to employer control: distance and wind direction vis-a-vis the vapor cloud and the ignition source. Presumably it is for that very reason that the Secretary based the wording of his proposed abatement measure on Section 12.1.8 of the American Petroleum Institute's Recommended Practice 54, “Occupational Safety for Oil and Gas Well Drilling and Servicing Operations,” which only recommends controls for distance and wind direction:

Discharges of oil or gas to the atmosphere should be to a safe area, preferably on the downwind side of the well and a minimum of 100 ft . . . from the wellhead, open flame, *or other source of ignition*

(emphasis added).¹ My colleagues seek to minimize the significance of this API provision, noting that it is contained in a section dealing with “Special Services,” which are not implicated in this case, and that the “Fire Prevention and Protection” section of the API standard does not contain such a provision. But the Secretary does not argue that this API provision is directly applicable (or establishes feasibility); rather he relies on the common-sense logic supporting it, *along with Britton's expert testimony that the accident would not have occurred*,² to establish that a 100-foot

¹ My colleagues' discussion of the API recommendation is misleading. The only API provision on which the Secretary relies to prove *efficacy* is contained in the “Special Services” section and is quoted above. Thus, it is irrelevant that MBI complied with a separate API provision that recommends a mud pump be placed at least 100 feet from the wellhead.

² My colleagues argue that there is no “expert testimony explaining the [API] standard's relevance to the circumstances in this case.” This is plainly erroneous. As I emphasize above, Britton testified that “[i]f the hatch had been closed,” the accident “would not” have happened. And, of course, Britton, an expert in the industry, must have known that with the hatch closed any discharge of gases would occur from the frac tank's rear vent line approximately 75 feet from the mud pump. Thus, this testimony establishes the relevance and efficacy of the API “Special Services” provision—if Britton believed a 75-foot distance would have prevented the accident, it is obvious that the API's 100-foot requirement would also be effective.

downwind distance between a discharge of oil or gas and an ignition source is materially safer.³ See *ACME Energy Servs.*, 23 BNA OSHC 2121, 2128 (No. 08-0088, 2012), *aff'd*, 542 F. App'x 356 (5th Cir. 2013) (finding that being farther away from a falling object was an obvious means of materially reducing the hazard the object posed). I find this evidence more than sufficient to establish that the Secretary's proposed abatement method would materially reduce the hazard.

Accordingly, because I find the Secretary established a feasible and effective means of abatement, I dissent.

Dated: March 1, 2018

/s/

Cynthia L. Attwood
Commissioner

³ At the hearing, Britton testified to the veracity of the API recommendation, stating that the API is “the only group that has credibility” and that “everybody believes in them.”

**UNITED STATES OF AMERICA
OCCUPATIONAL SAFETY AND HEALTH REVIEW COMMISSION**

SECRETARY OF LABOR,

Complainant,

v.

MISSOURI BASIN WELL SERVICE, INC.
and its successors,

Respondent.

DOCKET NO. 13-1817

Appearances:

Ronald Gottlieb, Esq., Office of the Solicitor, U.S. Dept. of Labor, Denver, CO/Washington, DC
For Complainant

David E. Jones, Esq., Ogletree, Deakins, Nash, Smoak & Stuart, P.C., Atlanta, GA
For Respondent

Before: Administrative Law Judge Brian A. Duncan

DECISION AND ORDER

Procedural History

This matter is before the United States Occupational Safety and Health Review Commission (“Commission”) pursuant to Section 10(c) of the Occupational Safety and Health Act of 1970, 29 U.S.C. § 651 *et seq.* (“the Act”). On April 2, 2013, the Occupational Safety and Health Administration (“OSHA”) investigated a flash fire that occurred the previous day at Well Site Ravin 26-35-3H in Watford City, North Dakota (“worksite”). (Tr. 48–50; Ex. C-1). As a result of that inspection, OSHA issued a *Citation and Notification of Penalty* (“Citation”) to Respondent. The Citation alleges a single, serious violation of Section 5(a)(1) of the Act (also known as the “General Duty Clause”), with a proposed penalty of \$7,000.00. Respondent timely contested the

Citation. A trial was conducted in Bismarck, North Dakota on September 9–10, 2014. The parties each submitted post-trial briefs for consideration.

Six witnesses testified at trial: (1) John Young, OSHA Compliance Safety and Health Officer (“CSHO”); (2) Mike Fifer, Respondent’s worksite foreman, also known as a “tool pusher”; (3) Tim Brown, Respondent’s Vice President of Health, Safety, and Environment; (4) Ron Britton, a Petroleum Engineer and Registered Professional Engineer called by Respondent as an expert witness; (5) Brian Bosch, Respondent’s Health, Safety, and Environment Manager for the Workover Rig Division; and (6) Mitchell McGowan, a former employee of Respondent.

Jurisdiction

The parties stipulated that the Commission has jurisdiction over this proceeding pursuant to Section 10(c) of the Act. (Tr. 35). The parties also stipulated that, at all times relevant to this proceeding, Respondent was an employer engaged in a business and industry affecting interstate commerce within the meaning of Sections 3(3) and 3(5) of the Act, 29 U.S.C. § 652(5). (Tr. 35). *Slingluff v. OSHRC*, 425 F.3d 861 (10th Cir. 2005).

Background

Respondent is an oil and gas well-servicing company based in Belfield, North Dakota. (Tr. 458). As is relevant to this case, Respondent operates pulling units, also known as workover units or rigs. (Tr. 379, 398). These rigs are mounted onto 18-wheel trucks, which travel to a customer’s well site. (Tr. 379). Typically, the customer, also known as the “operator”, owns the well and is represented on site by a “company man”. (Tr. 399–400). The company man provides direction to the well-servicing company regarding the job it has been hired to perform. (Tr. 299, 401). In this instance, Respondent was hired by Abraxas Petroleum Corp. to perform well servicing operations at the Ravin Well. (Tr. 248). On April 1, 2013, Respondent’s crew was performing a well

circulation, which uses water to clean out impediments inside upper well piping, such as leftover drilling mud and sand. (Tr. 276, 318, 420, 423, 513).

Prior to discussing the specific incident and conditions at issue, it is important to discuss some general oil/gas drilling principles applicable to this case. According to Ron Britton, Respondent's expert, oil wells generally go through four stages: (1) Exploration, negotiation, and preparation of the site for drilling; (2) Drilling, wherein a drilling rig and derrick are moved onto the well site, a hole is drilled from the surface of the earth, and pipe is run into the hole in various lengths and directions; (3) Well servicing, wherein workover units are brought on site to handle smaller pipes, fracking (if implemented), well completion, and other service-type work; and (4) Production, wherein oil and gas are extracted from the earth, separated, and stored. (Tr. 378–380).

The Ravin well is known as a directional well. (Tr. 404). It was first developed by drilling straight down roughly 10,000 feet (nearly 2 miles). (*Id.*). Using a series of attachments, the drill was slowly turned until the hole ran horizontal (parallel with the earth's surface) at a distance of approximately 11,270 feet below the ground. (Tr. 405). The well then continues laterally (parallel to the surface) for approximately 10,000 additional feet, for a total well bore length of 21,350 feet. (Tr. 405; Exs. R-3, R-4). The end product was an L-shaped hole running from the surface of the well site for approximately 4 miles underground. (Tr. 405).

The well contains a series of progressively smaller pipes, including a seven-inch string that stretches from the surface down to the turn at 11,270 feet. (Tr. 408; Ex. R-3). Cement was pumped into the well through the seven-inch pipe, which then flowed out of that pipe and back up toward the surface to a depth of 4,200 feet, in what is known as the "annular space". (*Id.*). The annular space is the gap between the outside of the seven-inch pipe and the walls of the drilled hole. (Exs.

R-3, R-4). Once that was completed, the remaining horizontal portion of the hole was drilled, and four-and-a-half-inch pipe was inserted all the way to the end of the hole. (Tr. 409).

The horizontal section of pipe in the Ravin well, known as the “pay zone”, is where hydraulic fracturing or “fracking” had recently occurred. (Tr. 410–411). Fracking was described during the trial as the forcing of sand and water down into a well, then out perforations in well piping, to over-pressurize and expand cracks in the earth around the pipe, then reducing that pressure so that oil/gas will flow back into the pipe and out of the well. (Tr. 158–159, 220–221, 379-380). The pay zone piping is typically divided into 1,000-foot sections, which are fracked in succession. (Tr. 412). Once the flowback of oil/gas ends, typically 2–3 months after the fracking process, the operator calls out a well servicing company like Respondent to circulate the well, which involves flushing water through the upper piping. (Tr. 411-413). It’s the circulation of the well which led to the events that are at issue in this case.

On the morning of April 1, 2013, Abraxas called in Respondent to circulate the well. The first step was to run a “bridge plug” down the four-and-a-half-inch pipe. (Tr. 414). The bridge plug was designed to expand inside the pipe and seal off the pay zone to prevent hydrocarbons (oil/gas) from escaping from the well during the circulation process. (Tr. 415; Ex. R-4). Once the plug was set, it was tested with several thousand pounds of pressure to ensure a proper seal. (*Id.*). A perforating gun was then sent down the four-and-a-half inch pipe to punch an 18-inch diameter hole in the pipe just above the bridge plug. (Tr. 417; Ex. R-4). This hole would allow water to be circulated down through the four-and-a-half-inch pipe and then back up to the surface through the annular space between the four-and-a-half-inch pipe and the seven-inch pipe. (Tr. 319, 416).

Wells are typically circulated to either improve production or to prepare for the removal of the frack string (the pay zone piping). (Tr. 420). In this particular case, Respondent circulated the

well in order to prepare for the removal of the frack string. (Tr. 301). In order to accomplish this, Respondent's crew, led by tool pusher Mike Fifer, set up the circulation equipment the day before the accident. (Tr. 303). The initial set-up included a diesel pump (which pulls water out of a supply tank, forces it down the well, and back out into a receiving tank); a 500-barrel enclosed frack tank (which was supplied by Abraxas and contained the source water that was to be pumped down into the well); and a 120-barrel, open-top tank (which was intended to receive the circulated water after it came back out of the well). (Tr. 302–305, 320).

There is no dispute that the diesel pump, the 500-barrel tank, and the 120-barrel tank were each placed at least 100 feet from the wellhead. (Tr. 80, 306-307). According to Mr. Fifer, the 120-barrel receiving tank was also placed approximately 75 feet away from the diesel pump as a preventative measure to address the possibility that fumes or vapors from the tank might travel toward the diesel pump motor, which is a potential ignition source.¹ (Tr. 252, 306).

The next day, however, Mr. Fifer's original equipment configuration was overridden by Abraxas' company man, Scott Hutzenbiler.² (Tr. 264). Mr. Hutzenbiler wanted to use 500-barrel frack tanks for both the water supply tank and the circulated water receiving tank, because the 120-barrel open top tank would have to be emptied two or three times during this process, which would cost Abraxas more money. (Tr. 310, 431). The water in the 500-barrel supply tank had been delivered by trucks at the direction and control of Abraxas. (Tr. 250-251).

Mr. Hutzenbiler also instructed Mr. Fifer and his crew to move the diesel pump closer to the tanks. (Tr. 264–265; Ex. C-1(c), (j), (p)). Mr. Fifer expressed reservations about these instructions, because of his 75-foot spacing preference. However, he consented because he could

1. Mr. Fifer testified that he had learned this practice during his time with two previous well-servicing companies, but that Respondent did not have such a spacing requirement with respect to the frack tank and mud pump. (Tr. 262-263, 305, 468).

2. Mr. Hutzenbiler was not called as a witness by either party.

keep the top hatch of the receiving tank closed, and allow any possible gases or vapors to escape through the vent line at the back of the frack tank, which, in his estimation, was still 75 feet away from the diesel pump. (Tr. 264–266, 308–309, 311; Ex. C-1(k), (l), and (p)). As an added precaution, Mr. Fifer directed his crew to keep the top hatch of the receiving tank closed during the circulation process. (Tr. 265-266). This was confirmed by crew member Mitchell McGowan, who testified that Mr. Fifer told the crew to “stay away from that hatch.” (Tr. 526). According to Mr. Fifer, the top hatch of the receiving tank was closed when they began to circulate the well. (Tr. 268).

The well circulation process began by “topping off” the well with 60 barrels of water, which came from the 500-barrel water supply tank. (Tr. 279). Once the diesel pump was in operation and water was being forced into the well, Mr. Fifer went to sit in his work truck. After approximately one hour, Mr. Fifer got out of his truck and began walking back toward the pump. (Tr. 270-271). As he was walking, he observed “sparkly things” in the air above the diesel pump. (Tr. 271, 280-281). Almost immediately afterward, “it just flashed up into a big ball of fire.” (*Id.*).

Unfortunately, one of Respondent’s crew members, D.B., was standing next to the pump and experienced second degree burns on his head and neck from the flash fire.³ (Tr. 271–272). The fire quickly dissipated, and co-workers helped D.B., but he missed 33 days of work as a result of his injuries. D.B. has since returned to full time employment with Respondent. (Tr. 85, 272). After the accident, Mr. Fifer observed a “lazy flame” hovering over the top hatch of the circulated water receiving tank, which was open at that point. (Tr. 65, 272, 333).

The accident was reported to OSHA, and CSHO John Young traveled to the worksite the next day: April 2, 2013. (Tr. 48). CSHO Young met with both Respondent and Abraxas

3. D.B.’s full name is not being used due to privacy concerns.

representatives, interviewed employees, and took photographs of the worksite, which illustrate the layout of the pump, wellhead, and frack tanks as they were on the day of the accident. (Tr. 49; Ex. C-1). After completing his investigation, CSHO Young recommended the issuance of the violation at issue in this case:

Citation 1, Item 1

Section 5(a)(1): The employer did not furnish employment and a place of employment which were free from recognized hazards that were causing or likely to cause death or serious physical harm to employees in that employees were exposed to fire and explosion hazards:

- (a) On or about April 1, 2013, an employee received hand and face burns from a vapor explosion during a down hole well cleaning operation at Well Site 26-35-3H, Watford City, ND. The employer did not ensure that an ignition source, the generator pumping unit it used during the down hole well cleaning operation, was located a safe distance from discharges of oil and gas to the atmosphere from the frack tank used for the cleaning operation. The generating pump unit was less than thirty feet from the frack tank.⁴

Abatement Note: Among other methods, on feasible and acceptable method to abate this hazard would be to ensure that: “Discharges of oil and gas to the atmosphere should be to a safe area, preferably on the downwind side of the well and a minimum of 100 feet (30.5 m) from the wellhead, open flame, or other sources of ignition.”, [sic] as described in Section 12 of the America Petroleum Institute Recommended Practice 54, “Occupational Safety for Oil and Gas Well Drilling and Servicing Operations”.

The cited provision in the Act provides:

Each employer shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees

29 U.S.C. § 654(a)(2).

Applicable Law

To establish violation of the general duty clause, Complainant bears the burden of proving, by a preponderance of the evidence, that: (1) a condition or activity in the workplace presented a hazard; (2) the employer or industry recognized that hazard; (3) the hazard was likely to cause

4. As amended by *Order* dated July 1, 2014.

death or serious physical harm; and (4) a feasible and effective means existed to eliminate or materially reduce the hazard. *Pelron Corp.*, 12 BNA OSHC 1833, 1835 (No. 82-388, 1986); 29 U.S.C. § 654(a)(1); *see also Fabi Constr. Co. v. Sec’y of Labor*, 508 F.3d 1077, 1081 (D.C. Cir. 2007) (“In other words, ‘the *Secretary* must prove that a reasonably prudent employer familiar with the circumstances of the industry would have protected against the hazard in the manner specified by the Secretary’s citation.’” (quoting *L.R. Willson & Sons, Inc. v. OSHRC*, 598 F.2d 507, 513 (D.C. Cir. 1983))). Complainant must also prove that Respondent knew, or with the exercise of reasonable diligence, could have known, of the violative condition. *Tampa Shipyards*, 15 BNA OSHC 1533, 1535 (Nos. 86-360, 86-469, 1992).

A violation is “serious” if there was a substantial probability that death or serious physical harm could have resulted from the violative condition. 29 U.S.C. § 666(k). Complainant need not show that there was a substantial probability that an accident would actually occur; he need only show that if an accident occurred, serious physical harm could result. *Phelps Dodge Corp. v. OSHRC*, 725 F.2d 1237, 1240 (9th Cir. 1984).

Discussion

The focus of the violation alleged in this case is on the physical placement of the 500-barrel circulated water receiving tank less than 100 feet from the diesel pump.⁵ To be clear, the issue is *not* the distance of any piece of equipment from the wellhead itself. It is undisputed that the pump and tanks were all at least 100 feet from the wellhead. (Tr. 307; Ex. R-25 at 17). In addition, as with most OSHA cases, the actual cause of the accident is not the issue to be decided, it is whether the working conditions and practices in place prior to accident were violated the requirements of the Act.

5. This is best illustrated by the amended Citation language described in Complainant’s June 16, 2014 *Motion to Amend Complaint*: “The generator pumping unit was less than thirty feet from the frack tank.”

The decision in this case was a difficult one. On one hand, Complainant has demonstrated legitimate concerns about the safety and health of employees in an industry that both parties agree, is inherently dangerous due to the ever-present risks associated with flammable liquids and gaseous hydrocarbons. Complainant advocates for practices and procedures which might minimize or even eliminate fires and employee injuries in this industry. On the other hand, Respondent established that it is an employer who recognizes and works diligently to address all of the possible hazards associated with oil and gas field work; has worked to be an industry leader in safety and health by hiring over 100 health, safety, and environment (HSE) employees and managers; was already in the process of building an 80-acre accident prevention training facility to avoid work-related accidents; and had implemented the use of fire-resistant clothing (FRC) at its well sites *prior to* OSHA issuing a memorandum mandating the same. (Tr. 196, 441, 469-473, 481; Exs. R-7 through R-14, R-20A).

A Condition in the Workplace Presented a Hazard which was Recognized by the Employer

“A safety hazard at the worksite is a condition that creates or contributes to an increased risk that an event causing death or serious bodily harm to employees will occur.” *Baroid Div. of NL Indust., Inc.*, 660 F.2d 439, 444 (10th Cir. 1981); *Otis Elevator Co.*, 21 BNA OSHC 2204 (No. 03-1344, 2007). Although an employer may not foresee the precise circumstances of a specific accident, the focus is on whether the employer knew the potential dangers associated with the location where its employees were working. *Id.*; *Associated Underwater Svcs.*, 24 BNA OSHC 1248 (No. 07-1851, 2012) (finding that, in an underwater diving accident, the hazard was that a piling could fall, not that the jaws of a vibratory hammer were too small for the pad-eye to hold the piling). However, “[h]azards must be defined in a way that apprises the employer of its obligations, and identifies conditions or practices over which the employer can reasonably be

expected to exercise control.” *Pelron Corp.*, 12 BNA OSHC 1833 (No. 82-388, 1986) (citing *Davey Tree*, 11 BNA OSHC 1898, 1899 (No. 77-2350, 1984)).

On a basic level, and stripped of context in this case, the general hazard identified in the Citation is one that is very familiar to OSHA and the oil and gas industry—the existence of possible ignition sources on oil well worksites where flammable hydrocarbon vapors are typically present in some quantity. (Tr. 212; Ex. C-23). Both parties agree that fire and explosion hazards from hydrocarbon vapors are always a primary safety concern for employees working at oil well sites and can never be completely eliminated. (Tr. 206, 448; Ex. C-23; *Resp’t Br.* at 7, 10, 27). Unfortunately, the constant presence of this hazard on oil well sites was illustrated by the flash fire and employee injury which occurred on April 1, 2013.⁶

Respondent Implemented Numerous Protective Measures to Address the Hazard

The Court accords the testimony of Ronald Britton, an expert witness called by Respondent, significant weight. Mr. Britton has over 50 years of experience in the oil and gas industry; holds numerous oil and gas industry certifications; is a board-certified forensic examiner in oil and gas technology; serves on two American Petroleum Institute subcommittees; and has consulted and testified on behalf of both industry employers and OSHA in proceedings before the Commission. (Tr. 374–387, 395). In summary, Mr. Britton testified that Respondent did everything that a safe oil well servicing company should have done at this worksite to mitigate, and attempt to eliminate, fire hazards from flammable hydrocarbon liquids and gases. (Tr. 442).

6. Respondent also argues, as a general challenge to the legal sufficiency of the Citation, that 5(a)(1) violations cannot be based on non-mandatory industry standards. This argument is rejected, as “[i]t is well established that voluntary industry standards are admissible and probative evidence of industry recognition of hazards.” *Cargill*, 10 BNA OSHC 1398 (No. 78-5707, 1982). The Court does recognize, however, that under certain circumstances, the fair notice doctrine may prevent non-mandatory industry standards from being enforced under Section 5(a)(1). *The Ruhlin Co.*, 2006 WL 6936753 at *6–7 (No. 04-2049, 2006).

More specifically, before the accident, Respondent had implemented the following measures, programs, and actions in an attempt to protect employees from a variety of oil well worksite hazards, including fire and explosion hazards:

- 1) Locating the water supply tank, the circulated water receiving tank, and the diesel pump at least 100 feet from the wellhead, pursuant to multiple industry guidelines (Tr. 307; Ex. R-25 at 17);
- 2) Training employees on fire prevention and control (Tr. 204–205, 321);
- 3) Ensuring the use of blowout preventers on the well to keep sudden, uncontrolled hydrocarbon emissions from coming up the well and affecting the entire well site (Tr. 198, 321);
- 4) Using a diesel pump equipped with spark arresters, to keep sparks from escaping the muffler (Tr. 195, 320, 509–510; Exs. C-24 at § 9.15, C-25, R-24);
- 5) Requiring all employees on the work site to wear Fire Resistant Clothing (FRC) (Tr. 205-206);
- 6) Using a diesel pump equipped with a kill switch, immediately shuts down the engine upon activation (Tr. 195, 320; Exs. C-24 at § 9.15, C-25);
- 7) Implementing and enforcing work rules prohibiting smoking, except in certain designated safe areas (199–200, 301);
- 8) Banning open flames on location (Tr. 201, 322);
- 9) Prohibiting cell phone use (Tr. 202, 322);
- 10) Training employees on well control issues (Tr. 197, 321);
- 11) Ensuring that fire extinguishers were available and accessible on location (which were immediately used in this case to extinguish the flames on D.B.) (Tr. 203, 323);

- 12) Establishing emergency action plans (Tr. 203, 320; Ex. R-12);
- 13) Conducting a Job Safety Analysis for the well circulation operation (Tr. 300-301, 320);
- 14) Constructing and training its employees at an 80-acre accident prevention training center, which Mr. Britton testified, was the only one of its kind to his knowledge (Tr. 441).

CSHO Young even acknowledged Respondent's overall implementation of safety measures to protect employees from hydrocarbon gas vapor fires: "They had installed prudent measures to—what was your term—mitigate vapor explosions or fires, yes." (Tr. 205). Complainant, however, argues that Respondent's implemented safety measures were not enough. Complainant argues that, in addition to the actions above, the circulated water receiving tank should have been placed at least 100 feet from the diesel pump.

The Additional Protective Measure Argued by Complainant in the Citation was not Recognized by the Employer or the Industry

None of the witnesses called by either party at trial had knowledge of this specific type of accident ever occurring before. (Tr. 141). While the occurrence or non-occurrence of an accident does not prove or disprove a violation, the fact that no witness from either side had ever heard of this type of accident occurring is relevant to a determination of whether this configuration of diesel pump and circulated water receiving tank was a prohibited practice under the Act.

Both parties agreed that fire hazards are extremely difficult, if not impossible, to completely eliminate from oil well worksites. In a memorandum issued in March of 2010 regarding the use of FRC, OSHA stated that "[i]nherent flash fire hazards are associated with oil and gas well drilling, servicing, and production-related operations." (Ex. C-23). Further, in stressing the importance of FRC, OSHA also noted, "Engineering and administrative controls serve to reduce, but do not eliminate, the potential for flash fires occurring during...well

servicing...Flammable liquids or gas could be released and migrate to ignition sources because of an inadequacy or failure in these engineering and administrative controls.” (*Id.*).

According to Mr. Britton, Respondent engaged in normal tank and pump placement for well circulation, with several other protective measures implemented to minimize fire hazards to employees. The additional protective measure Complainant advocates for in this case was simply not industry practice. (Tr. 438-440). “To permit the normal activities in such an industry to be defined as a “recognized hazard” within the meaning of section 5(a)(1) is to eliminate an element of the Secretary’s burden of proof and, in fact, almost to prove the Secretary’s case by definition, since under such a formula the employer can never free the workplace of inherent risks incident to the business. To respect Congress’ intent, hazards must be defined in a way that apprises the employer of its obligations, and identifies conditions or practices over which the employer can reasonably be expected to exercise control.” *See Pelron, citing Davey Tree*, 11 BNA OSHC at 1899.

Complainant cites to several published guidelines from the Association of Energy Service Companies (“AESC”) and the American Petroleum Institute (“API”) to support its position. These references are problematic for several reasons. First, the Court finds that none of the referenced provisions from either of these industry publications specifically deal with the factual conditions alleged to violate the Act in this case: failure to separate a diesel pump (as a possible ignition source) and a circulated water receiving tank (as a possible source of oil/gas vapors) by a distance of 100 feet.

For example, the Citation itself references Section 12 of the America Petroleum Institute Recommended Practice 54, “Occupational Safety for Oil and Gas Well Drilling and Servicing

Operations”. Specifically, CSHO Young discussed Section 12.1.8 during his testimony, which states:

Discharges of oil or gas to the atmosphere should be to a safe area, preferably on the downwind side of the well and a minimum of 100 ft (30.5 m) from the wellhead, open flame, or other sources of ignition. At locations where this recommendation may be impractical, appropriate safety measures should be implemented.

(Ex. C-24, API Recommended Practice 54, “Occupational Safety for Oil and Gas Well Drilling and Servicing Operations § 12.1.8).

The Court agrees with Respondent that this and other API and AESC references address discrete hazards—discharges of oil and gas into the atmosphere, and storage or circulation of flammable hydrocarbons—and provide guidelines for abating those hazards, including, amongst other things, adequate spacing from the wellhead. (Exs. C-24, C-25). The two tanks used in the well circulation process by Respondent, which were delivered to the site by Abraxas, were supposed to contain water (supply tank) and receive water (discharge tank). There was no evidence of any intentional, or known, “discharge of oil and gas into the atmosphere” as discussed by industry standards referenced by Complainant. (Exs. C-24, C-25).

Mr. Britton further explained that well servicing operations, such as those performed by Respondent in this case, do not fall under the rubric of “special services”, under which API 12.1.8 falls. (Tr. 419; Ex. C-24). Mr. Britton said this particular standard is directed towards a discrete hazard; namely, the use of flare lines during the flowback stage. (Tr. 438). During flowback, oil and gas run through a separator, with oil intentionally directed into to a battery of receiving tanks while the separated gas vapors are burned off. (Tr. 438–439).

The Court notes that the spacing recommendations referenced in the API and AESC publications referenced by Complainant are all based on a 100-foot distance *from the wellhead*,

which represents the primary source of hydrocarbons at a well site.⁷ (Tr. 440; Exs. C-24, C-25). Complainant's position seems to be that the wellhead as a source of oil/gas is no different from any other possible source of oil/gas at a worksite. Mr. Britton agreed that there are several industry-recognized practices which recommend 100-foot spacing *from the wellhead*; however, he also testified that there is no published rule or recommendation requiring an additional 100 feet of lateral spacing between a circulated water receiving tank and an ignition source such as a diesel-powered pump.⁸ (Tr. 440). Although Complainant continues to reference various API and AESC standards in its argument, it stopped just short of acknowledging the lack of a specific, on-point, industry standard for the configuration at issue in this case: "It is thus immaterial that, as Mr. Britton testified, the industry does not have a mandatory 100-foot spacing rule for discharge tanks and mud pumps." *Compl't Br. at 30*.

Complainant offered several speculative theories during the trial of how flammable vapors could have been generated in this case. *Compl't Br. at 12*. Complainant's initial contention was that the well circulation process must have caused oil and gas contaminants to be flushed out of the well and into the receiving tank. (Tr. 70). Mr. Britton testified, however, that the bridge plug, installed before the circulation process began, completely prevented the release of hydrocarbon vapors during well circulation and any amount of fugitive oil and gas remaining in the section of pipe being circulated would have been too small to measure considering the 365 barrels of water pumped in. (Tr. 161, 421–426, 428, 457). Mr. Britton reiterated this point multiple times throughout the course of his testimony. Complainant now appears to have abandoned this theory.

7. CSHO Young also discussed API Recommended Practice 54 § 9.11.1, which similarly refers to distances of equipment *from the wellhead*.

8. Neither party disputes that the diesel pump, even with spark arresters and a kill switch, was a possible ignition source. (Tr. 86–95, 455–456; Exs. C-24, C-25).

Complainant's alternative theories are that: (1) the receiving tank itself was contaminated with hydrocarbon residue from previous use; or (2) that the water supply tank was contaminated with hydrocarbon residue from previous use; or (3) that the delivered water was already infused with hydrocarbons when it was delivered by Abraxas. (Tr. 71–73, 96–98; *Compl't Br.* at 14, 27). However, these key facts, as well as the precise cause of the fire, are still undetermined. The Court notes that during OSHA's investigation: (1) neither the supply water or the discharge water were ever sampled or tested; (2) the tank interiors were not examined or tested; (3) no documentation concerning prior worksite uses for either tank was introduced; (4) no invoices concerning the source of the delivered water was introduced; (5) it was never conclusively determined how, when, or why the top hatch of the receiving tank was opened; and (6) no witnesses from Abraxas were called to testify by either party. (Tr. 268–270, 443, 497–498, 526; *Compl't Br.* at 18, Nos. 76 & 78).

In an effort to connect the referenced industry standards, which deal with discharge of oil and gas to the atmosphere, Complainant argues that “[R]egardless of whether discharge tanks are always classified as tanks used to circulate flammable liquids, the record—including Mr. Britton's testimony—show that the industry views discharge tanks as potential sources of discharges of combustible vapors” *Compl't Br.* at 29. In other words, when a tank of water is received at an oil well worksite, and an empty tank is set up to receive circulated water, Complainant urges that both should be *presumed* to contain flammable liquids because there is always the possibility they were used to hold hydrocarbons previously. This argument runs afoul of the holding in *Pelron*, wherein the Commission held that “defin[ing] the alleged hazard as the ‘possibility’ of accumulations of unreacted [flammable] is to define it in a way that it can never be prevented, since the ‘possibility’ would always exist unless there were absolutely no chance at all that

unreacted vapors could accumulate. Defining the hazard as the ‘possibility’ that a condition will occur defines not a hazard, but a potential hazard.” *Pelron*, 12 BNA OSHC 1833.

Tim Brown, Respondent’s Vice President of Safety, Health, and Environment, testified that such a presumption would be inappropriate, as there is an industry practice of maintaining tanks in the same line of service, such as well circulation. (Tr. 482). According to Mr. Brown, this is standard practice because it’s “incredibly difficult to change services in anything whenever you pollute or contaminate it.” (*Id.*). Mr. Brown’s testimony was supported by Mr. Britton, who stated that he, and others in the industry, would have assumed that Abraxas provided pure water. (Tr. 252, 428-430). In other words, based on industry practice, when an operator provides a well servicing company with delivered water, and tanks to supply and receive that water, it reasonable to assume that it is water they are getting. (Tr. 482–483). CSHO Young acknowledged that a frack tank containing water, with an ignition source nearby, “doesn’t raise any red flags.” (Tr. 194).

In addition, though not dispositive, Respondent is correct that the AESC and API publication references are couched in aspirational language—“*Recommended* Safe Procedures and Guidelines” and “API *Recommended* Practice 54”. Section 12.1.8 of the API Recommended Practices indicates what *should* be done with respect to discharges of oil and gas to the atmosphere, while further indicating that alternative measures are sometimes acceptable if the recommended practice is “impractical.” (Ex. C-24 § 12.1.8); *see also id.*, Foreword (defining “should” as a “recommended practice: (1) where a safe comparable alternative practice is available; (2) that may be impractical under the circumstances; or (3) that may be unnecessary for personnel safety under certain circumstances”). Likewise, the AESC publication also states that “mud pits and tanks *should* be set a minimum distance of 100 ft (30 m) *from the well*”, but also states that “[e]quivalent safety measures should be taken where . . . conditions do not permit maintaining

such distance.” (Ex. C-25 at 95); *see also id.* (defining “shall” as “not optional” and should as “recommended”).

Complainant also argues that, even if the industry does not mandate the abatement method in the Citation, Respondent specifically recognized a 75-foot spacing requirement between tanks and pumps, through the actions and testimony of Mr. Fifer, the toolpusher and crew supervisor. (Tr. 261). Because Mr. Fifer was a supervisory employee at the time, Complainant asserts that his knowledge and recognition of the hazards associated with this pump/tank configuration should be imputed to Respondent. *See St. Joe Minerals Corp. v. OSHRC*, 647 F.2d 840, (8th Cir. 1980); *Peter Cooper Corps.*, 10 BNA OSHC 1203 (No. 76-596, 1981); *but see Deep South Crane & Rigging Co.*, 535 Fed. Appx. 386, 24 BNA OSHC 1089 (5th Cir. 2013).

Mr. Fifer testified that his preference, derived from two past employers during his 45 years working in this field,⁹ was to space discharge tanks at least 75 feet away from a pump engine. (Tr. 247, 284). He stated that his practice was a preventative measure because he believes there is always a possibility that flammable vapors could come from tanks. (Tr. 261-262). Mr. Fifer also testified, however, that “I did not know we were going to get gas like that.” (Tr. 252, 262). The Court’s conclusion from Mr. Fifer’s testimony is that he was discussing a personal practice and preference that he believed made his worksites safer. There was no industry standard or Respondent-specific work rule upon which it was based. While he is to be commended for his cautious approach, the question is whether or not his practice and preference should be legally interpreted as a recognized standard to which this employer is held in an OSHA enforcement proceeding.

9. There were no details about when he learned that practice, or how that practice was conveyed to him. Complainant also refers to Respondent’s reference to a 75 foot rule in its post-accident investigation report, but the Court is convinced that reference came from Mr. Brown’s conversations with CSHO Young. (Tr. 347, 466-467; Ex. C-3).

Mr. Britton strongly disputed Mr. Fifer's personal practice and preference as being any type of recognized practice in the industry:

They put them all distances. Some of them [pumps] are put up right next to it [frack tank], 4 and 5 feet away, some put it 30 or 40. I don't know anybody that strings 100 foot of iron to get it 100 foot away, because they'd have to put it 100 foot away from the frack tank as well as 100 foot away from the well, and so they don't do that. (Tr. 438).

Now, when you're talking about from the frack tank to the reverse unit [pump], that's what I'm telling you, that there's no standard that I'm aware of in 60 years in the oil business that says you have to do that. There are people, like the tool pusher, who says, well, he uses 75 feet. It's his rule. Some people use 50. Some use other figures, but there really isn't a rule that I'm aware of that is mandatory for us to use. (Tr. 440).

The Commission and courts have been reluctant to rely solely on voluntary safety efforts by employers, or their employees, to find that an employer recognized a hazardous condition. *Pepperidge Farm, Inc.*, 17 BNA OSHC 1993 (No. 89-265) (citing *General Motors, Corp., GM Parts Div.*, 11 BNA OSHC 2062, 2065–66 (No. 78-1443, 1984), *aff'd*, 764 F.2d 32 (1st Cir. 1985); *Cotter & Co. v. OSHRC*, 598 F.2d 911, 914–15 (5th Cir. 1979); *Diebold, Inc. v. Marshall*, 585 F.2d 1327, 1337–38 (6th Cir. 1978)). The Sixth Circuit explained its rationale in *Diebold* as follows:

Considered simply in terms of probative value, an employer's attempts to render machinery or working premises more safe, without anything more, cannot reasonably support an inference that the attempts were made because the employer believed them to be legally required. Further, the drawing of such an inference would be repugnant to the purposes of the Act. Congress expected that safety in the nation's workplaces would be achieved as much by the voluntary efforts of employers as by the enforcement programs of the government. *See Dunlop v. Rockwell International*, 540 F.2d 1283, 1292 (6th Cir. 1976). If employers are not to be dissuaded from taking precautions beyond the minimum regulatory requirements, they must be able to do so without concern that their efforts will later provide the sole evidentiary basis for an adverse finding of the sort urged here.

See Cape and Vineyard Div'n of New Bedford Gas Co. v. OSHRC, 512 F.2d 1148, 1154 (1st Cir. 1975).

The Commission has applied the same rationale to analyses of general duty clause violations. *See Pepperidge Farm*, 17 BNA OSHC 1993. In the present case, unlike many of those cited above, there was no evidence of prior accidents or injuries from this pump/tank configuration; no memoranda or warnings regarding this configuration; and no independent sources indicating that the industry or specialists in the field recognized this configuration as a prohibited practice. In fact, during his deposition, CSHO Young testified, “Hindsight is 20/20. They realized it immediately, but at the time I don’t think it was a cognitive thought.” (Tr. 135–137).

Complainant failed to introduce sufficient evidence justifying the imputation of Mr. Fifer’s personal practice and preference in this situation to Respondent as a recognized industry, or employer, practice. Accordingly, the Court finds that Complainant failed to prove that Respondent, or its industry, recognized a requirement to space water well circulation receiving tanks at least 100 feet away from possible ignition sources, as an additional protective measure required beyond the fourteen measures (listed above) already implemented by Respondent.

**Complainant Failed to Prove that the Abatement Method in the Citation
Would have Eliminated or Materially Reduced the Hazard**

In order to establish a violation of the general duty clause, Complainant must “‘specify the proposed abatement measures and demonstrate both that the measures are capable of being put into effect and that they would be effective in materially reducing the incidence of the hazard.’” *Arcadian Corp.*, 20 BNA OSHC 2001 (quoting *Beverly Enters., Inc.*, 19 BNA OSHC 1161 (No. 91-3144 *et al.*, 2000)). “Feasible means of abatement are established if ‘conscientious experts, familiar with the industry’ would prescribe those means and methods to eliminate or materially reduce the recognized hazard.” *Id.* (quoting *Pepperidge Farm, Inc.*, 17 BNA OSHC 1993)). Where an employer has taken steps to abate the recognized hazard, Complainant must show those

measures are inadequate. *Alabama Power Co.*, 13 BNA OSHC 1240 (citing *Cerro Metal Prods. Div., Marmon Grp., Inc.*, 12 BNA OSHC 1821, 1822 (No. 78-5159, 1986)). Complainant submits that the measures Respondent took to protect employees from fire hazards associated with hydrocarbon vapors and ignition sources were inadequate, and alleges in the Citation that Respondent should have also maintained a 100-foot distance between the diesel pump and the tanks.¹⁰

CSHO Young acknowledged, however, that Respondent took significant measures to protect employees from vapor fires and explosions: “They had installed prudent measures to—what was your term—mitigate vapor explosions or fires, yes.” (Tr. 205). CSHO Young also said that he believes the hazard would have been materially reduced had the top hatch of the circulated water receiving tank remained closed and the gases vented only out the back, as intended and ordered by Mr. Fifer. (Tr. 121–122; 179–180). The Court notes that the approximate distance from the rear vent of the circulated water receiving tank to the diesel pump was 75–80 feet, only 20–25 feet closer than the abatement method identified in the Citation. (Tr. 116–117, 121–122; *Compl’t Br.* at 16; *Resp’t. Br.* at 14).

At least with respect to the facts of this case, there was little dispute that maintaining a 100-foot distance between the pump engine and the receiving tank is both technologically and economically feasible.¹¹ Additionally, both sides acknowledged the general principle that longer

10. Respondent also added at trial (though not in the Citation), that four-gas meters or an intrinsically safe pump engine would also abate the condition. Complainant did not pursue the intrinsically safe pump engine abatement method in post-trial argument. With regard to the four-gas meter, the Court accepts Mr. Britton’s and Mr. Brown’s testimony about the multitude of problems inherent in using them as an additional preventative measure for this type of work. (Tr. 446-447, 464-465, 515).

11. Even with that in mind, both the AESC and API publications indicate that, in certain circumstances, the 100-foot spacing guidelines may not be practicable. (Ex. C-24, C-25). In those instances, industry guidelines indicate that

distances create greater opportunities for flammable vapors to dissipate. (Tr. 116, 347, 448). That does not mean, however, that Complainant proved that spacing the equipment 100 feet apart would have materially reduced the hazard in this case.

CSHO Young testified that, regardless of whether the spacing was 75, 100, or 150 feet, he could not conclusively determine whether the hazard could have been avoided. (Tr. 179–180, 234). When asked whether such distances would have abated the hazard, or even reduced the risk of a fire by fifty percent, CSHO Young stated, “Conclusively, no...in this condition, without knowing what’s in the tank, I cannot.” (Tr. 180, 234). The Court is very concerned with these responses, and other unanswered investigative questions discussed above. As Mr. Britton pointed out, “I think [CSHO Young] just didn’t go far enough. I think he should have done samples, more measurements. I commend him for what he did. I just think that we could have had a lot of answers had we gone a little bit further in the inspection of the site.” (Tr. 443).

In response to similar questions regarding whether spacing of 75, 100, or 150 feet would have materially reduced the hazard, Mr. Britton stated:

Maybe. That’s a possibility, but I don’t deal in possibilities in safety on oil fields. To me—nobody’s talked about the wind direction. What direction is the wind coming from? Are you putting the tank in a direct line where it would blow back over the frack tank, or is it going to be the opposite, is the frack tank blowing directly towards the reverse unit?

If the pump and the motor is 100 feet away downwind from the frack tank, then you’re going to blow the fumes right over it. Even if it’s 100 feet away, you’ll probably have an accident there.

(Tr. 442-443). Mr. Britton also noted that wide swings in temperature impact the dissipation and transmission of flammable vapors. (Tr. 447). Again, even Respondent’s expert, with extensive experience in the oil and gas field, including certification as a forensic examiner in oil and gas,

alternative, equivalent measures to abate the hazard should be used. (*Id.*). The Court points this out only to note that the 100-foot spacing rule for intentional discharge of oil/gas (as opposed to circulated water) is not a panacea.

could do no more than speculate as to the efficacy of the spacing requirement espoused by Complainant.

Considering the totality of circumstances and evidence presented in this record, the Court finds that Complainant failed to prove that a 100-foot spacing requirement would have eliminated or materially reduced the hazard of a hydrocarbon vapor flash fire during this well circulation operation.

Conclusion

The Court is not convinced that Respondent failed to implement reasonably prudent measures to protect its employees from recognized fire and explosion hazards during the well circulation process performed on April 1, 2013, or that the recommended abatement measure of 100-foot spacing between the diesel pump and the circulated water receiving tank would have eliminated or materially reduced the hazard.

ORDER

Based upon the foregoing Findings of Fact and Conclusions of Law, it is ORDERED that Citation 1, Item 1 is hereby VACATED.

/s/ Brian A. Duncan

Date: March 23, 2015
Denver, Colorado

Judge Brian A. Duncan
U.S. Occupational Safety and Health Review Commission