

Health and Safety

# RESOURCE

Oregon OSHA • June – July 2022 • Volume 78 – online

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# Resource

Oregon Health and Safety Resource is published every other month by the Oregon Occupational Safety and Health Division of the Department of Consumer and Business Services.

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# Don't miss.....

## Education:

Workshop classes will be held virtually until further notice.

A minimum of five registrants is needed to hold a virtual workshop.

Registered participants will receive an email if a cancellation is necessary.

## Register and attend

Using the [secure online registration portal](#), you can find classes. The workshop schedule changes every three months.

For more information, visit the [classroom workshops page](#).

Find more information about education resources by visiting Oregon OSHA's [education and training page](#).

Mark your calendar for these workplace safety and health conferences:

### Central Oregon Occupational Safety & Health Conference

Sept. 19-20, 2022 • Bend

### Southern Oregon Occupational Safety & Health Conference

Oct. 18, 2022 • Ashland

Oct. 19-20, 2022 • Virtual

### Seguridad, salud y sus derechos en el trabajo

8 Noviembre 2022 • Salem

### Western Pulp, Paper, and Forest Products Safety & Health Conference

Nov. 29-Dec. 2, 2022 • Portland

### Mid-Oregon Construction Safety Summit

Jan. 30-31, 2023 • Bend

### Oregon GOSH Conference

March 6-9, 2023 • Portland

To receive conference registration materials, exhibitor information, or sponsorship information, contact the Conference Section: [oregon.conferences@dcbs.oregon.gov](mailto:oregon.conferences@dcbs.oregon.gov) | 503-947-7411 | [osha.oregon.gov/conferences](https://osha.oregon.gov/conferences)

# CONFERENCIA EN ESPAÑOL DE OREGON OSHA

dirigida a los trabajadores  
y sus necesidades

**¡Reserve la fecha!**

# OREGON OSHA'S SPANISH- LANGUAGE CONFERENCE

addressing workers and  
their needs

**Terrenos de la feria estatal  
Salem, OR**



**NOV.  
2022**

8:30 a.m.-  
4:30 p.m.

**Oregon State Fairgrounds  
Salem, OR**

## Seguridad y salud en:

- Agricultura
- Construcción
- Procesamiento de alimentos
- Manufactura
- Hospitalidad
- Proveedor de cuidados

**La inscripción se abre  
en Septiembre.**

¿Preguntas? Llamar o correo electrónico  
[oregon.conferences@dcbs.oregon.gov](mailto:oregon.conferences@dcbs.oregon.gov)

**Save the date!**

## Safety and health in:

- Agriculture
- Construction
- Food processing
- Manufacturing
- Hospitality
- Caregivers

**Registration opens  
in September.**

Questions? Email:  
[oregon.conferences@dcbs.oregon.gov](mailto:oregon.conferences@dcbs.oregon.gov)



# SAVE THE DATE



MARCH  
**6-9**  
2023

Oregon Convention Center  
Portland, OR

OREGON GOVERNOR'S  
**OCCUPATIONAL  
SAFETY & HEALTH  
CONFERENCE**

- Nominate the unsung heroes of job safety and health
- See and be seen by registering to exhibit

[oregongosh.com](http://oregongosh.com)

## Did you know?

Oregon OSHA maintains programs that empower employers to go beyond compliance with their workplace health and safety programs. Those programs are the [Safety and Health Achievement Recognition Program \(SHARP\)](#) and the [Voluntary Protection Program \(VPP\)](#).

Primarily set up to help small- and mid-sized businesses, SHARP coaches companies on how to effectively manage workplace safety and health.

VPP encourages companies to effectively protect workers by going well beyond minimum safety requirements. VPP companies provide ongoing, systematic protection of workers.

The benefits of both programs include everything from strengthened protections for workers and reduced injury and illnesses to lower workers' compensation costs and recognition in the community.

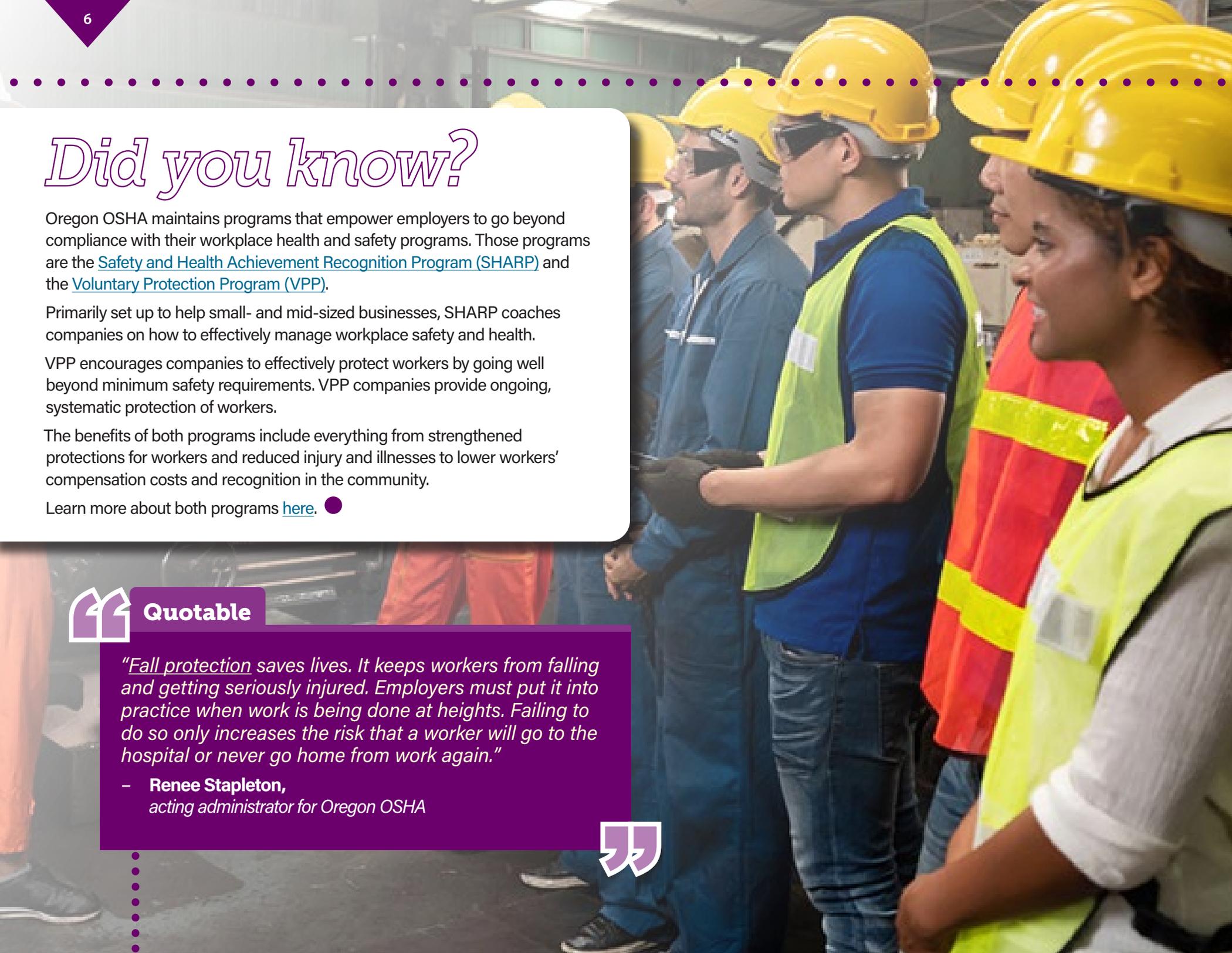
Learn more about both programs [here](#). ●



### Quotable

*"Fall protection saves lives. It keeps workers from falling and getting seriously injured. Employers must put it into practice when work is being done at heights. Failing to do so only increases the risk that a worker will go to the hospital or never go home from work again."*

– **Renee Stapleton,**  
acting administrator for Oregon OSHA



# What you need to know about Oregon OSHA rules that have taken effect – or soon will

By Ellis Brasch

Oregon OSHA's adoption of rules protecting workers from heat stress and wildfire smoke has garnered plenty of attention. But did you know the division has adopted rules – slated to take effect in September – that strengthen protections for workers against potential manganese exposures, which are primarily associated with welding tasks?

Here is what you need to know about these rules, including free resources to help you achieve compliance:

## Protecting employees from heat illness

Oregon OSHA's new [heat illness prevention rules](#) – 437-002-0156 and 437-004-1131 – became effective June 15, 2022, and apply to outdoor and indoor (when there is no mechanical ventilation) work activities. The two rules have the same requirements, but apply to different groups of employers. The former covers general industry, construction, and forest activities employers; the latter covers agricultural employers.

There is an excellent summary of the requirements in Oregon OSHA's [Permanent rules for heat illness prevention fact sheet](#). A second fact sheet, [Rest Break Schedule Options for Heat Illness Prevention](#), provides an overview of the requirements for rest break schedules.

It's important to remember that the heat illness prevention requirements are triggered when the [heat index](#) equals or exceeds two temperature thresholds: 80 degrees F and 90 degrees F. The "heat index" is a number that takes both temperature and humidity into account. The higher the heat index, the hotter the temperature feels; that number is critical in determining a person's risk of developing heat illness.



Most of the requirements kick in when the heat index equals or exceeds 80 degrees F. These requirements include providing employees with access to shade and drinking water, and supervisor and employee training. More requirements take effect when the heat index equals or exceeds 90 degrees F. These include high heat practices, a written emergency medical plan, and acclimatization practices.

**Want more information?** Learn more about preventing heat illness on Oregon OSHA's [Heat Stress webpage](#).

**Need heat illness prevention training?** [Oregon OSHA's Heat Illness Prevention online course](#) covers five of the seven training requirements in the heat illness prevention rules. The course also covers heat-related illnesses and risk factors, and describes how the heat index is measured.

**Need help developing your heat illness prevention program?** Schedule an appointment with an Oregon OSHA consultant. Oregon OSHA consultation services are free and confidential. [Request a consultation now](#).





## Protecting employees from wildfire smoke

Oregon OSHA's new rules to protect employees from [unhealthy levels of wildfire smoke](#) – 437-002-1081 and 437-004-9791 – became effective July 1, 2022. Like the heat illness prevention rules, these two rules have identical requirements, but cover different groups of employers: 437-002-1081 covers general industry, construction, and forest activities employers; 437-004-9791 covers agricultural employers.

The rules apply to all employers whose employees could be exposed to unhealthy levels of wildfire smoke, but offer exemptions in certain situations, including employees working in enclosed buildings in which the air is filtered by a mechanical ventilation system, and in vehicles with cabin air filter systems. Wildland firefighting, emergency operations, and “intermittent exposures” (defined in the rules) are partially exempt.

An index also determines which requirements are triggered to protect employees from unhealthy levels of wildfire smoke. But, in this case, the index measures air quality; it's called the Air Quality Index (AQI). The U.S. Environmental Protection Agency developed the AQI to describe potential health impacts of air pollution. The AQI is calculated from air pollutant concentrations on a 0-500 scale.

Oregon OSHA's rules to protect employees from unhealthy levels of wildfire smoke use the AQI to set the following requirements:

- Employers must make filtering facepiece respirators – approved by the National Institute for Occupational Safety & Health (NIOSH), such as N95s – to all exposed employees for voluntary use when the AQI reaches 101.
- When the AQI is at or above 251, employers must ensure that employees

wear NIOSH-approved filtering facepiece respirators and follow Appendix A in the rules. Appendix A does not require a respiratory protection program, medical evaluations, or fit testing.

- When the AQI equals or exceeds 501, employers must ensure that employees wear NIOSH-approved respirators and implement a complete respiratory protection program, that complies with 1910.134 Respiratory Protection (for general industry, construction, and forest activities employers) or 437-004-1041 Respiratory Protection (for agricultural employers).

**Want more information?** Learn more about protecting employees from wildfire smoke on Oregon OSHA's Wildfires webpage.

**Need wildfire smoke training?** Oregon OSHA's online wildfire smoke course addresses six of the 10 training requirements in the wildfire smoke rule.

**Need help complying with the wildfire smoke rules?** Schedule an appointment with an Oregon OSHA consultant. Oregon OSHA consultation services are free and confidential. Request a consultation now.

### Coming soon: A lower PEL and a new rule for manganese exposures

In [early 2020](#), Oregon OSHA proposed three new rules and several changes to its existing [Subdivision 2/Q](#) welding, cutting, and brazing rules. The proposal resulted from the work of two [advisory committees](#) charged with determining an appropriate permissible exposure limit (PEL) for manganese exposures, which are primarily associated with welding tasks.

Due to continuing pandemic and the necessary time to come into compliance with the new rule requirements, Oregon OSHA delayed the effective date until Sept. 1, 2022.

#### The new PEL for manganese exposures

Before Oregon OSHA proposed the new PEL, a “Ceiling Limit” of 5 mg/m<sup>3</sup> was the only exposure threshold for manganese. On Sept. 1, the new [permissible exposure limit](#) (PEL) for manganese compounds and fume lowers the threshold to a more protective 0.1 mg/m<sup>3</sup>, as an 8-hour time-weighted average. The current ceiling limit, however, remains at 5.0 mg/m<sup>3</sup>. The new PEL is listed as “Manganese Compounds and Fume” in the “Substance” column of Table Z-1 in Oregon’s Rules for Air Contaminants: 437-002-0382 (General industry), 437-003-1000 (Construction), and 437-004-9000 (Agriculture).

#### The new rule for manganese exposures

Also on Sept. 1, [437-002-0281, Manganese](#) becomes effective. The new rule introduces Table OR Q-2, which gives employers an option to use one of two different levels of respiratory protection based on assigned protective factors (APF) to protect employees who do certain welding, cutting, and grinding tasks.

Table OR Q-2 identifies the eligible tasks and sets an APF of 10 or 25 for each task. The appropriate APF is determined by the time necessary for an employee to complete a task during a single work shift. Employers who choose to use Table OR Q-2 are not required to do air monitoring to ensure that manganese exposures remain at or below the PEL. However, they must ensure that employees use respirators in accordance with [1910.134, Respiratory Protection](#). ●



# Ask OSHA

Oregon OSHA  
Department of Consumer and Business Services

**The scope and application paragraph in Oregon OSHA's new Heat Illness Prevention rule says, "This standard applies whenever an employee performs work activities, whether in indoor or outdoor environments, where the heat index (apparent temperature) equals or exceeds 80 degrees Fahrenheit." Is the "apparent temperature" the same as the temperature indicated on a thermometer?**

No. The temperature indicated on a thermometer is simply a measure of the hotness or coldness of the air around it, assuming the thermometer is shielded from the direct rays of the sun. (A thermometer in sunlight will show the heat energy of the sunlight, not the true air temperature.)

Apparent temperature is what the temperature feels like, taking into account air temperature and relative humidity (a measure of the water vapor content of air). The best measure of the apparent temperature – and the effect of air temperature and humidity on the human body – is the heat index. The OSHA-NIOSH Heat Safety Tool is an excellent resource for monitoring real-time heat index forecasts specific to your location, as well as safety and health recommendations from OSHA and NIOSH. ●



## Short take

# Employers, workers across Oregon gather to celebrate Safety Break

By Aaron Corvin

More than 50 employers participated in Safety Break for Oregon on May 11, promoting the value of keeping people safe and healthy while on the job.

During the 19th year of the event, employers engaged in a variety of workplace health and safety activities while following the appropriate COVID-19 safety guidance.

The activities included everything from presentations on prevention of distracted driving and “spot the hazard” contests to the use of an obstacle course to increase forklift safety and fire extinguisher training for employees.

Participating employers were entered to win one of three \$100 checks, to be used for a luncheon of their choice. The [Oregon SHARP Alliance](#) sponsored the contest, which involved a random drawing. This year’s prize winners were the Oregon Department of Transportation in Salem; Anderson Poolworks in Wilsonville; and Salem Housing Authority.

Oregon OSHA coordinates the one-day [Safety Break event](#), designed to help employers renew and celebrate their commitment to on-the-job safety. The stand-down is flexible to meet an employer’s needs, and health and safety activities are determined by employers. ●



THANK YOU TO ALL 2022  
SAFETY BREAK  
PARTICIPANTS



# Incident Alert! .....

**Company ....**A commercial construction contractor providing civil construction, mechanical, and site development services.

**Hazard.....**Unsecured underground piping connection.

**Employee ...**Laborer and equipment operator.

## How the incident happened

A 49-year-old laborer and equipment operator was scheduled to work with his crew superintendent and another employee to perform a hydrostatic pressure test of a 12-inch pipe that connected two side-by-side fire suppression tank pads.

The pipe ran horizontally underground, north to south, and had a 6-foot-high riser at each end. The pressure test involved adding water under pressure to the pipe, then venting the remaining air until there was only water in the system. (This prevented any compressed air from causing an explosion if the pipe ruptured.) The south riser was capped after the pipe was filled with water and the north riser's cap

had a threaded port that was connected to a hydrostatic pump.

After all the air was vented from the system, the superintendent cycled the pump on and off as the water pressure increased toward the target of 200 pounds per square inch (PSI). However, the water pressure would approach the 200 psi mark, but not stay there.

The crew looked for leaks on the exposed pipe flanges and noticed a small amount of water on the south riser flange cap. The victim used an electric-powered impact driver to tighten the 12 flange bolts around flange cap while the superintendent continued to cycle the

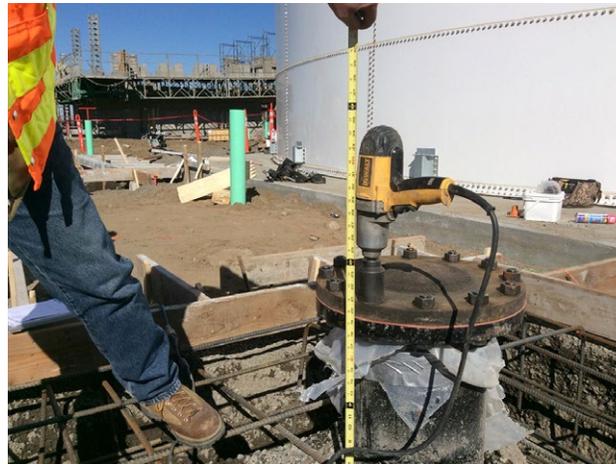
hydrostatic pump on and off.

The water pressure in the pipe was between 175 and 190 psi as the victim worked his way around the 12 flange bolts, tightening each one to stop a possible leak – then, something gave way. The riser suddenly thrust upward and struck him in his chest. The force of the impact knocked him backward to the ground.

Several employees ran over to help him, then called 911 and the on-site safety manager. An employee started chest compressions because the victim had no pulse, but quickly stopped after discovering his ribs were broken. The employee performed rescue breaths until the



*The position of the victim when the riser thrust upward and struck him in the chest.*



*The electric-powered impact driver on one of the bolts.*



*The riser resting in the gland. Note that the blue hex heads are still intact.*



A close-up view of the gland with the plastic removed. Oregon OSHA's investigation found that the stainless steel bolts were only finger tight and the blue torque shear bolts were not tightened.

on-site safety manager arrived with an AED, but the AED did not revive the victim; the employees continued rescue breaths until emergency responders arrived, but they were also unable to revive him.

## Why it happened

In an underground piping connection such as this one, a mechanical joint “retaining gland” is typically bolted to a pipe flange to keep the joint at the flange from separating; then, a riser is inserted into the gland and torque shear bolts are tightened on the gland. The bolts turn inward and dig into the side of the riser; when they are at the proper torque, the hex-heads break off as an indicator that the connection is secure. The connection is then inspected, wrapped in plastic, and backfilled.

In this case, however, Oregon OSHA's investigation of the incident revealed that the torque shear bolts had not been tightened because the hex-heads were still intact – the riser had never been secured. Why? A series of seemingly unrelated contributing factors were responsible:

- **Design plan errors:** The pipes were not installed according to the original design plan and the company had to remove, relocate, and reinstall them – including the placement of the risers.

- **Pressure to stay on schedule.** The company's foreman reminded crews that the torque shear bolts on the mechanical joint restraining gland needed to be tightened, but he said it was the crew superintendent's responsibility to make sure that happened. The crew superintendent said, “Things were crazy with changes and schedules. I normally keep track of these things in my head, but I overlooked this with all the stuff going on.”
- **Incorrect assumptions.** Company employees saw the connection wrapped in plastic before it was backfilled and assumed that the torque shear bolts had been secured and the hydrostatic test had been completed.
- **Cursory inspections.** Pre-backfill visual inspections failed to discover that the torque shear bolts were not tightened. After those inspections, the general contractor authorized the superintendent to backfill the south riser pipe.
- **Lack of documentation.** Documentation of the company's daily activities did not include any details about inspections or approvals of the pipe installation. There were no records that torque shear bolts needed to be tightened, even though the company foreman had warned about the condition.
- **Failure to follow “Codes of practice – Pressure Testing” document.** The document, created by the company, prohibited working on a pressurized pipe and listed action items to be followed for all pressure tests; required items included written test procedures, establishing lines of authority, pre-test inspections, equipment checks, and documented tests. The company's upper management and project managers knew about the document, but the superintendent and foreman did not.

## Citations

437-001-0760(1)(a); Rules for all workplaces, Employers' responsibilities. The employer must see that workers are properly instructed and supervised in the safe operation of any machinery, tools, equipment, process, or practice that they are authorized to use or apply. ●

# Going the Distance

## City of Keizer

*the 14th largest city in Oregon.*

**Human resources director and safety administrator:** Machell DePina

**Employees:** 98

## Operations/facilities/workforce

The City of Keizer is the 14th largest city in Oregon. Its workforce comprises 98 people. Located in Marion County, it is bordered on the western edge by the Willamette River, southern edge by the City of Salem, eastern edge by Interstate 5, and the northern edge by rural portions of Marion County.

## Interview

Resource reached out to Machell DePina, human resources director and safety administrator, to discuss the City of Keizer's achievement of third-year certification as part of Oregon OSHA's Safety and Health Achievement Recognition Program (SHARP).

SHARP coaches employers on how to effectively manage workplace safety and health. The program encourages Oregon employers to work with their employees to identify and correct hazards and to continuously improve. An employer may graduate from SHARP after five years of participation.

The benefits include lower injury and illness rates, decreased workers' compensation costs, increased employee morale, lower product losses, and community recognition.

## Question:

Although departments of other city governments have achieved SHARP certification, the City of Keizer is the first city in Oregon to earn the designation on a citywide – not just department-level – basis. During the City of Keizer's SHARP journey – formally started in 2018 – the city has engaged in numerous project and process improvements designed to strengthen on-the-job



*Keizer City Hall provides municipal services for residents of the city. The building houses city government offices and services.*



*City of Keizer staff gather to celebrate the city's achievement of third-year certification as part of Oregon OSHA's Safety and Health Achievement Recognition Program (SHARP).*

protections for its workers. What prompted your decision to pursue SHARP?

**Answer:**

The city's interest in the SHARP program began when we completed a year-long project to develop and implement our safety manual. Our safety committee wanted to ensure a continued focus on safety, not just a binder that is put on a shelf. This led to reaching out to Bryan Annis (a senior occupational safety consultant for Oregon OSHA). With Bryan's ongoing support and encouragement, as well as assistance from Jennifer Ek Dahl (a senior occupational health consultant for Oregon OSHA) – and the tireless efforts of our safety committee, a good number of other city employees and the support and commitment of our leadership team – we decided to go for what hasn't been done before: certification of a municipality in the SHARP program.

**Question:**

Some employers may question whether SHARP is the right fit for them or may not be aware of the potential benefits. Why was it worth it for the City of Keizer to pursue the program?

**Answer:**

For those who wonder if it's worth it, we would say absolutely, yes! We believe our focus on safety through the program has made it clear to our employees that we are serious about proactively addressing issues and concerns.

Yes, some of the things we've put in place cost money, but it costs less to address prevention than to pay for incidents. We also believe we have the potential to achieve lower insurance rates, given the anticipated lower number of incidents and time loss that we believe will come with being a SHARP participant.

Also, we have had a number of job candidates for open city positions tell us that our SHARP certification confirmed to them that we're an employer that takes employee safety seriously.

This was important to them after working for employers where that was not the priority. SHARP is hard, but important, work. Our employees are our most valuable asset, and we need to do what we can to ensure they go home as well or better than when they arrived.

**Question:**

What is something that you always remind employees about on-the-job safety and health, and how do you deliver that reminder?

**Answer:**

There are a few things employees can count on hearing, not only from Human Resources, but also from their supervisors. The first is simple to say but has to be constantly communicated, especially with a strong work-ethic group of employees: If you're ill, stay home! You are not impressing anyone by showing up and spreading your germs. This was true before the pandemic and remains so today.

The second is that there is no safety concern or idea that is too small or too big. We want employees to speak up and tell us what they see, what they're thinking, what they're worried about, and when they do, we take action to explore options and implement the best solutions we can identify – sometimes even more than what was originally requested. Both of these messages are shared in annual reminders, monthly meetings and one-on-one via our safety committee members and supervisors.

Last, but not least, employees are reminded they are responsible not only for their own safety but for each other. Co-workers have the best chance of protecting each other when they are brave enough to speak up when they see something that causes concern. We work hard to get that message through, especially in our positions where employees are regularly put in situations where taking a short cut might save time but raises the risk of injury. Our employees not only hear the message that safety is our No. 1 priority, I believe they see it in our actions, and that makes a real difference. ●



*The City of Keizer has invested in public improvements, including a new playground at Claggett Creek Park.*