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6 **IN THE UNITED STATES DISTRICT COURT**
7 **FOR THE DISTRICT OF ARIZONA**

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9 Ahmad Alsadi and Youssra Lahlou,
10 husband and wife,

11 Plaintiffs,

12 vs.

13 Intel Corporation, a Delaware corporation,

14 Defendant.

No. CV-16-03738-PHX-DGC

**FINDINGS OF FACT,
CONCLUSIONS OF LAW,
AND FINAL JUDGMENT**

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17 The Court held a bench trial by remote teleconferencing on January 25 through
18 February 1, 2021. This order will set forth the Court’s findings of fact and conclusions of
19 law under Federal Rule of Civil Procedure 52(a). The headings of each section of this
20 order will specify which portions are findings, conclusions, or mixed findings and
21 conclusions. The Court will also rule on Defendant’s post-trial motions.

22 This is a close case, but after applying the preponderance of the evidence standard,
23 the Court finds that Plaintiffs are entitled to recover from Intel, although not in the amount
24 of damages they requested at trial.

25 **I. Background (Facts).**

26 Defendant Intel Corporation owns an industrial wastewater system (“IWS”) housed
27 in the CH8 building of its technology development campus in Chandler, Arizona. The IWS
28 is located on the first floor of CH8, referred to as the “subfab,” with a fabrication operation

1 on the second floor that produces wastewater. The IWS removes metals and other harmful
2 substances from the wastewater before discharging it into the Chandler sewer system.

3 Intel contracts with Jones Lange LaSalle (“JLL”) to operate the IWS and perform
4 other technical work on the Chandler campus, including heating and air conditioning
5 (“HVAC”) and electrical work. Plaintiff Ahmad Alsadi worked for JLL as a HVAC
6 technician at the Chandler campus.

7 Plaintiff Alsadi and his wife, Youssra Lahlou, bring negligence claims against Intel
8 to recover damages for inhalation injuries allegedly suffered by Alsadi on the evening of
9 February 28, 2016. Due to an error by a JLL technician, the IWS system emitted hydrogen
10 sulfide (“H2S”) into the air within and outside the CH8 building that evening. Alsadi was
11 working in the CN3 building immediately south of CH8 and was exposed to H2S.
12 Plaintiffs allege that this exposure caused chronic and debilitating impairments that have
13 eliminated Alsadi’s ability to work and engage in normal life activities.¹

14 **II. Negligence Elements (Law).**

15 The parties agree that this diversity case is governed by Arizona law. To establish
16 Intel’s liability for negligence, Plaintiffs must prove (1) a duty requiring Intel to conform
17 to a certain standard of care, (2) breach of that duty by Intel, (3) a causal connection
18 between Intel’s breach and Alsadi’s injuries, and (4) actual damages. *See Gipson v. Kasey*,
19 150 P.3d 228, 230 (Ariz. 2007); *Torres v. Jai Dining Servs. (Phoenix) Inc.*, 476 P.3d 327,
20 331 (Ariz. Ct. App. 2020). The Court will address each of these elements in the sections
21 that follow.

22 **A. Duty (Law).**

23 Duty is an “obligation, recognized by law, which requires the defendant to conform
24 to a particular standard of conduct in order to protect others against unreasonable risks of
25 harm.” *Gipson*, 150 P.3d at 230 (citation omitted). Intel correctly notes that an Arizona

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27 ¹ Plaintiffs assert that the IWS also emitted sulfur dioxide (“SO2”) on the night in
28 question, but the Court finds that Plaintiffs have not proved this emission by a
preponderance of the evidence. The Court therefore will focus its discussion on H2S.

1 landowner generally “owes no non-delegable duty to the injured employee of a contractor
2 . . . to provide a safe work place.” *Rause v. Paperchine, Inc.*, 743 F. Supp. 2d 1114, 1122
3 (D. Ariz. 2010); *see Lee v. M & H Enters., Inc.*, 347 P.3d 1153, 1159 (Ariz. Ct. App. 2015).
4 Plaintiffs argue that Intel owed Alsadi various duties under Restatement § 414 because
5 Intel retained some control over JLL’s work.

6 Section 414 addresses the liability of a landowner based on a theory of retained
7 control:

8 One who entrusts work to an independent contractor, but who retains the
9 control of any part of the work, is subject to liability for physical harm to
10 others for whose safety the [landowner] owes a duty to exercise reasonable
11 care, which is caused by his failure to exercise his control with reasonable
12 care.

13 Restatement (Second) of Torts § 414 (1965). “To trigger liability under Restatement § 414,
14 a landowner ‘must have retained some measure of control not over the premises of the
15 work site, but over the actual work performed.’” *Lee*, 347 P.3d at 1159 (quoting *Lewis v.*
16 *N.J. Riebe Enters., Inc.*, 825 P.2d 5, 11 (Ariz. 1992)).²

17 Arizona courts have provided guidance on the level of control a landowner must
18 exercise to be subject to a duty under § 414. Day-to-day control over the details of the
19 work is not required. *Lewis*, 825 P.2d at 11. Arizona courts instead look to comment (a)
20 in § 414, which states that a landowner:

21 may retain only the power to direct the order in which the work shall be done,
22 or to forbid its being done in a manner likely to be dangerous to . . . others.
23 Such a supervisory control may not subject him to liability under the
24 principles of Agency, but he may be liable under the rule stated in [§ 414]
25 unless he exercises his supervisory control with reasonable care so as to
26 prevent the work which he has ordered to be done from causing injury to
27 others.

28 Restatement § 414, cmt. a.

² Section 414 is phrased in terms of an independent contractor, but the Court has substituted “landowner” in its text because Arizona courts have applied it to landowners. *See, e.g., Lee*, 347 P.3d at 1159; *Lewis*, 825 P.2d 5 at 11.

1 Thus, a landowner will be subject to a duty of due care under § 414 if it retains
2 “supervisory control” over the work, such as “the power to direct the order in which the
3 work shall be done” or to “forbid its being done” in an unsafe manner. *Id.* Plaintiffs argue
4 that Intel retained such control over IWS-related operations at the Chandler campus. The
5 Court agrees.³

6 **1. Duty Regarding the IWS (Fact).**

7 Intel originally contracted with an outside company to pick up the Chandler
8 facility’s wastewater and transport it offsite for treatment, but later decided to construct
9 and operate the IWS. Although Intel employed JLL to operate the IWS, it designated its
10 own employee, Dr. Thomas Abia, as the system “owner.” Dr. Abia was responsible for
11 engineering, operation, and failure of the IWS, for system up-time, and for solving system
12 problems. Intel made all decisions on chemicals used in the system and how they were to
13 be mixed.

14 Michael Torbert, a JLL employee, testified that Intel provided JLL with operating
15 parameters for the system. JLL applied those parameters and could not change them
16 without Intel’s approval. Dr. Abia established all set points for equipment within the IWS,
17 and JLL could not change set points without his approval. Dr. Abia agreed during his
18 testimony that ultimately it was Intel’s responsibility to make sure the IWS was working
19 properly.

20 Jennifer Francis, an industrial hygienist within Intel’s Environmental Health and
21 Safety (“EHS”) unit, testified that Intel monitored emissions from the IWS to determine if
22 they were exceeding health and safety limits, that Intel established exposure controls for
23 the system, and that JLL did not have an industrial hygienist. Intel made the decision to
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25 ³ The Court will cite to testimony and exhibits in some parts of this order, and not
26 others. Where the Court chooses to provide citations, they should not be viewed as
27 exhaustive. The Court has relied on the entire record in making its findings. Citations to
28 the record appear in the following format: “[Docket No.] at [Page Number].” When the
trial transcript is cited, page numbers are to the numbers in the transcript, not the numbers
placed at the top of each page by the Court’s electronic filing system.

1 disable hydrogen cyanide monitors that were alerting to the presence of H₂S and not to
2 replace them with H₂S monitors. Torbert testified that JLL had no authority to install
3 monitors in CH8 without Intel’s approval. John MacDonald, Intel’s Emergency Response
4 Team (“ERT”) leader for shift 4 – the shift when Alsadi was injured – testified that Intel
5 decided when to declare an emergency due to off-gassing from the IWS system.

6 The Court finds that Intel retained supervisory control over the operation,
7 maintenance, and safety of the IWS system. It retained “the power to direct the order in
8 which the work shall be done” and to “forbid its being done” in an unsafe manner. *Lewis*,
9 825 P.2d at 12. It further retained control over the monitoring of emissions from the IWS
10 and the health and safety of workers in the vicinity of the IWS.

11 Intel had a duty to exercise these controls with reasonable care.

12 **2. Duty Regarding the Ventilation System in CH8 (Fact).**

13 Intel does not dispute that it retained control over the ventilation system in CH8.
14 *See* Doc. 300 at 14, ¶ 7. Intel employee Scott Graunke testified that Intel owns the
15 ventilation system. Doc. 356-3. He further testified that the system must be robust to
16 remove contaminants generated by the IWS, and that Intel seeks to ensure that it does. *Id.*
17 Dr. Abia testified that box fans belonging to Intel were mounted in the south wall of CH8
18 and blew exhaust from the building in the direction of CN3. Doc. 368 at 75.

19 Francis, Intel’s industrial hygienist, testified that she recommended that some
20 portions of the IWS use a direct exhaust system to capture emissions from the IWS
21 (Doc. 370 at 221-22), and the evidence demonstrated that Intel was responsible for making
22 the decision on whether and when to install exhaust systems. The evidence further
23 demonstrated that Intel monitored emissions from the IWS to determine if they were
24 exceeding health and safety limits, and established exposure controls for the system.

25 The Court finds that Intel retained supervisory control over the operation, design,
26 and maintenance of the CH8 ventilation system. Intel had a duty to exercise this control
27 with reasonable care.

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3. Duty Regarding Emergency Evacuations (Fact).

Intel does not dispute that it retained control over emergency evacuations on the Chandler campus. See Doc. 300 at 14, ¶ 9. Intel designated evacuation routes and locations, marked them with green arrows on the ground and signs at gathering points, trained its employees on evacuation procedures, and required JLL to train JLL employees on those procedures. Intel also retained the authority to declare an emergency and order the evacuation of buildings at the facility. When an emergency occurred, Intel’s ERT was responsible for controlling the situation. Ex. 66 at 5. MacDonald, the ERT leader for shift 4, testified that he or other members of the ERT had authority to control emergency situations, including ordering evacuations and giving directions to contract employees. Doc. 370 at 293-96. The Court finds that Intel retained supervisory control over evacuation procedures and therefore had a duty to exercise this control with reasonable care.⁴

B. Breach of Duty (Law).

Restatement § 414 provides that a landowner who retains duties by virtue of its control over a subcontractor’s work “is subject to liability for physical harm to others for whose safety the [landowner] owes a duty to exercise reasonable care, which is caused by his failure to *exercise his control* with reasonable care.” Restatement § 414 (emphasis added). Thus, having established that Intel exercised sufficient control over the areas identified above to possess duties under § 414, Plaintiffs must next show that Intel failed to use reasonable care in its exercise of that control.⁵

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⁴ Citing *Ft. Lowell-NSS Ltd. P’ship v. Kelly*, 800 P.2d 962 (Ariz. 1990), Plaintiffs also argue that Intel possessed a duty to Alsadi because the IWS constituted an ultrahazardous activity. Because the Court finds a duty on the basis of Restatement § 414, it need not address this argument.

⁵ The parties have not argued that the Court should apply the standard of care applicable to members of a trade or profession. See *Chambers v. W. Ariz. CATV*, 638 P.2d 219, 221 (Ariz. 1981); *Powder Horn Nursery, Inc. v. Soil & Plant Lab., Inc.*, 579 P.2d 582, 586 (Ariz. Ct. App. 1978); Restatement (Second) of Torts § 299A (1965). The Court notes, however, that it would reach the same result in this case if it applied that standard.

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1. The Alsadi Incident (Fact).

The cause of the H₂S release on February 28, 2016 is not disputed. While conducting routine maintenance on two probes in the IWS system, a JLL employee took the probes off line for maintenance and failed to put them back on line when he was finished. This happened on February 27, 2016. As the IWS added the chemical Thio-Red to the wastewater, the system was unable to detect the Thio-Red's effect because the probes were off line. This resulted in excess dosing of Thio-Red and raised the pH of the wastewater, triggering the automatic addition of sulfuric acid to lower the pH. Doc. 376 at 964-65. This continued for hours, into February 28, 2016, and was unknown to Alsadi and others who arrived for the night shift on the evening of February 28, 2016. The combination of Thio-Red and sulfuric acid created H₂S, which was emitted from the IWS. *Id.*; *see also* Ex. 24.

The emissions occurred in two locations: within the CH8 subfab where sulfuric acid was added to the system in response to the significant Thio-Red dosing, and in the tank farm outside CH8 and immediately west of CN3, where additional sulfuric acid was added to lower the pH caused by high levels of Thio-Red. Doc. 368 at 76; Doc. 373 at 684; Doc. 376 at 964. This finding of two emission locations comports with the opinion of JLL employee Torbert, who discovered the JLL error on the night of the Alsadi event and corrected it. Doc. 376 at 979, 984. Intel's workplace safety expert also identified these two sources. Doc. 379 at 1326.

2. IWS Breach (Fact).

The Court finds that Intel breached the standard of care with respect to the operation and safety of the IWS. This finding is based on Intel's failure to install fixed monitors or direct ventilation in CH8 that would have detected or prevented the H₂S release.⁶

⁶ The Court does not find that Intel breached the standard of care with respect to the JLL employee's error in leaving the probes off line. The evidence demonstrated that Intel's procedures for the probe maintenance were correct and, if followed by the employee, would have avoided the problem.

1 H2S is recognized as a hazardous workplace chemical and is the second leading
2 cause of death from toxic inhalation in the United States. Doc. 375 at 826. Plaintiffs’
3 workplace safety expert, Greg Gerganoff, described H2S as an “exceedingly toxic gas.”
4 Doc. 376 at 950. The primary route of exposure for H2S is inhalation. Doc. 375 at 833.

5 Dr. Abia testified that he reviewed the material safety data sheet for Thio-Red while
6 at Intel, including its caution that Thio-Red should not be mixed with mineral acid.
7 Doc. 368 at 58-60; Ex. 28 § 10. Sulfuric acid is a mineral acid, and Dr. Abia knew that the
8 IWS operation called for Thio-Red to be mixed with it. *Id.* While Dr. Abia believed that
9 normal IWS operations would not produce H2S, he acknowledged that operator error could
10 result in H2S emissions that would be extremely dangerous to workers in the vicinity of
11 the off-gassing event. *Id.* at 61-63. Despite this knowledge, he did no research to determine
12 how much acid could be added to the IWS mixture containing Thio-Red, and, as far as he
13 knows, nobody else at Intel did the research either. *Id.* at 64. Intel did not design the
14 system to stop automatically if Thio-Red levels got too high or H2S off-gassing occurred.
15 *Id.* at 85.

16 H2S has a sulfur-like smell, sometimes compared to the odor of rotten eggs. SO₂,
17 which is another deadly gas that can be produced from the combination of Thio-Red and
18 sulfuric acid, has a similar sulfur-like odor. Doc. 368 at 55. After the IWS system was
19 operational, workers in CH8 frequently reported sulfur odors. In one email response, Dr.
20 Abia stated that there were 11 such incidents in 2015 and five in the first five months of
21 2016. *See* Ex. 69 at 2. He testified at trial that there were “many” incidents of Thio-Red
22 off-gassing before the Alsadi event. Doc. 369 at 125. A JLL document stated that IWS
23 off-gassing resulted in a full evacuation of CH8 on April 28, 2015 and a partial evacuation
24 of the CH8 subfab on July 2, 2015. Ex. 143 at 3. It further stated that the “[o]dor was
25 described as having a sulfur smell. In at least one instance personnel also reported burning
26 eyes and trouble breathing.” *Id.* The Court finds that H2S off-gassing events occurred
27 often in the year before the Alsadi exposure, and in some instances resulted in the partial
28 or full evacuation of CH8 and adverse exposure effects for some employees.

1 were being triggered by H₂S or SO₂, Francis is not aware of anyone from Intel who
2 investigated the levels at which the HCN monitors would alarm to these chemicals, even
3 though that information could have been obtained from the monitors' manufacturer,
4 Honeywell. Doc. 369 at 169-71; *see also* Doc. 375 at 854-55 (Gerganoff testimony that
5 Intel easily could have learned the levels at which the HCN monitors alerted to H₂S).

6 The monitoring by Francis found that H₂S was being emitted by the IWS, but all
7 samples were below the Intel threshold limit ("ITL") of 0.76 ppm for H₂S, based on a 10.5-
8 hour shift, with the exception of one reading on top of an effluent tank which was 702% of
9 the ITL. Doc. 369 at 159, 177; Ex. 56 at 8. Francis found the tank reading concerning (*id.*
10 at 179), and Intel instructed workers not to climb on top of tanks while the IWS system
11 was running. *Id.* at 188-89.

12 Francis's memorandum on the 2015 sampling concluded:

13 The sulfur dioxide and hydrogen sulfide emissions migrating from the
14 exhausted Cu Waste Treatment System components are triggering the
15 Hydrogen Cyanide Alarm and odor concerns in the area. Controls currently
16 in place to reduce migration of emissions from the treatment system are
17 considered to be sufficiently maintaining work conditions under which it is
believed nearly all workers may be repeatedly exposed without adverse
health effects.

18 Ex. 56 at 6.

19 The memorandum also concluded, however, that additional controls were
20 needed to minimize health hazards from the IWS:

21 Administrative and PPE controls are required to minimize the health hazard
22 risk potential. Operations and preventative maintenance procedures must be
23 followed to protect employee health and safety. *Modification of the indirect
24 exhaust connection to more robust direct exhaust connections has been
25 recommended as a facilities system upgrade.*

26 *Id.* (emphasis added); *see also id.* at 1 ("Facility exhaust modifications were recommended
27 to further control the migration of emissions from the Cu Waste Treatment System and
28 maintain acceptable workplace conditions.").

1 The exhaust modification recommended by Francis was to install a direct rather than
2 indirect exhaust system in the IWS. She explained the significance at trial: “So if it is
3 direct exhaust, it’s directly tied to something, so there are no emissions escaping, even if
4 they are below the health and safety limits.” Doc. 370 at 234.

5 Thus, as a result of the 2015 monitoring in response to repeated H2S emissions in
6 CH8, Intel’s industrial hygienist – the one who was charged with controlling workplace
7 conditions that may cause worker injury or illness – recommended that a direct exhaust
8 system be installed to control the H2S and SO2 emissions. *Id.* This was more than five
9 months before Alsadi’s H2S exposure, but the direct exhaust was not installed before that
10 event. Doc. 368 at 68.

11 Plaintiffs’ workplace safety expert, Gerganoff, addressed Francis’s suggestion of a
12 direct exhaust system. He testified that OSHA imposes a hierarchy of controls for
13 hazardous substances, and that part of that hierarchy calls for employers to eliminate
14 hazards by engineering. Doc. 375 at 869-71. He opined that Intel fell below the standard
15 of care when it failed to apply an engineering control to H2S by following Francis’s direct-
16 exhaust recommendation. *Id.* at 871.

17 Francis attempted during trial to suggest that her exhaust recommendation was not
18 important (Doc. 370 at 235-36), but the Court did not find this testimony credible. She
19 was evasive in her answers and adopted a defensive posture. *Id.* at 234-38. She also
20 suggested that her recommendations concerned only the BCP and BCPC systems within
21 IWS, not the CCPT system that produced the exposure in the Alsadi incident. But her
22 memorandum states that the “exhaust modifications were recommended to further control
23 the migration of emissions from the *Cu Waste Treatment System* and maintain acceptable
24 workplace conditions.” Ex. 56 p. 4 (emphasis added). Francis herself testified that the Cu
25 Waste Treatment System includes the BCP, BCPC, *and* CCPT. *Id.* at 241. The Court finds
26 that her recommendation of direct exhaust was for the entire IWS. This finding comports
27 with a 2016 email from Dr. Abia who explained, after the Alsadi event involving the CCPT,
28 that conversion of the system to direct exhaust had not yet occurred. *See* Ex. 69 at 2.

1 **b. Fixed Monitors (Fact).**

2 As already mentioned, Dr. Abia recommended that fixed monitors be installed in
3 CH8 to detect H2S and SO2. Doc. 368 at 53-54. He did so in part because H2S and SO2
4 emissions from the IWS presented a safety issue. *Id.* at 54. Intel did not install the fixed
5 monitors. *Id.* at 65.⁷

6 Francis testified that her monitoring in 2015 did not justify the installation of fixed
7 H2S monitors (Doc. 370 at 226), but she also testified that H2S monitors would not be
8 needed in CH8 if the IWS had a direct exhaust system (Doc. 369 at 143). As noted, her
9 suggestion of direct exhaust was not implemented before Alsadi’s exposure.

10 Francis also testified that she looked at instruments on the market and could not find
11 any that would detect the low levels of H2S she detected in CH8 in 2015. Doc. 370 at 226.
12 The Court does not find this testimony credible. Francis obviously had instrumentation
13 that would detect the low levels – she detected them in the 2015 monitoring. Intel’s health
14 and safety expert testified that the monitor used by Intel on the night of the Alsadi event
15 had a low-end detection limit of 0.1 parts per million. Doc. 379 at 1330-31. And
16 MacDonald, Intel’s shift 4 ERT leader, testified that chemical gas monitors in other Intel
17 facilities can detect up to 72 different gasses. Doc. 371 at 341. What is more, the purpose
18 of fixed monitors would not be to detect the lowest levels of H2S in the facility – it would
19 be to warn employees when H2S was approaching hazardous levels. Finally, it is
20 undisputed that the HCN fixed monitors were capable of detecting common levels of H2S
21 in CH8 because they repeatedly alarmed in response to H2S emissions.

22 Because there were no monitors in place to detect such emissions at the time of the
23 Alsadi event, the JLL error went undetected for hours. Doc. 369 at 124. Dr. Abia testified:

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26 ⁷ Dr. Abia noted that some H2S monitors were installed on top of tanks, and he
27 explained their purpose: “They were placed on top of the batch copper precipitation
28 systems that they had the reactors. There were monitors there that were there to take
samples to help calculate the emissions during system operations.” Doc. 368 at 65. He
distinguished these monitors from permanent H2S monitors in the CH8 subfab, which were
not installed. *Id.*

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Q. And it's fair to say that's because no one knew that there was a problem until the whole thing blew up and suddenly there was sulfur smell all over that part of the campus; isn't that true?

A. Yes.

Q. Yeah, JLL people didn't realize it either because there was no mechanism for them to have noticed it. True?

A. Mechanism to notice that there was something wrong with the system? Correct.

Id. at 123.

Scott Graunke, Intel's EHS director at the Chandler campus, testified that Intel knew H2S and SO2 were byproducts of the IWS. Doc. 356-3 at 2. He also testified that at the time of the Alsadi event Intel had no active monitoring system for H2S or SO2. *Id.* at 3.

Without any form of fixed monitoring in the CH8 subfab, the only method for detecting H2S releases was the workers' sense of smell. As JLL employee Torbert testified: "[W]e had no protections. They told us basically to trust our nose." Doc. 376 at 62. Indeed, a JLL briefing document created after the 2015 monitoring stated that the "[n]atural human defense mechanism" of a "sense of smell" was a "good early warning to keep us safe." Ex. 143 at 6.

Francis testified, however, that industrial hygienists do not base worker safety on odors. Doc. 369 at 189. She testified that smells are not an indicator of chemicals or the lack of chemicals. *Id.* In fact, she said this basic principle is taught in the hazardous chemicals class at Intel. *Id.* at 190. Clearly, it was improper for Intel to rely solely on workers' sense of smell to detect the H2S which had been released repeatedly from the IWS. Plaintiffs' workplace safety expert Gerganoff agreed, opining that it was absolutely inappropriate for Intel to use the workers' noses as the alarm system for H2S gas. Doc. 375 at 871. He observed that Intel effectively made the workers the "canary in the mine shaft." *Id.* at 872.

1 MacDonald, Intel's ERT leader during Alsadi's shift, confirmed that a fixed
2 monitoring system would have produced a faster alarm than the system Intel had in place
3 – detecting H2S by smell, followed by hand-held device monitoring when an ERT member
4 arrived at the scene. Doc. 371 at 384-85.

5 Gerganoff testified that OSHA requires personal sampling of workers and fixed
6 monitoring for H2S emissions in spaces where H2S may be released. Doc. 375 at 849-50,
7 855-56. He opined that Intel violated the standard of care by failing to provide H2S
8 monitors inside CH8. Doc. 376 at 944, 948-51. He cited an OSHA website titled Hydrogen
9 Sulfide, Evaluating and Controlling Exposure, as stating that, due to the toxicity of H2S,
10 regular air sampling is required to determine the presence of H2S in the workplace. *Id.*
11 at 944-45. He stated that OSHA method 1008 requires personal air sampling for workers
12 where H2S may be present. *Id.* He further testified that the OSHA website cites National
13 Institute for Occupational Safety and Health method 6103 as requiring personal gas
14 sampling for H2S. *Id.* at 945. Gerganoff noted that Intel was having ongoing off-gassing
15 incidents in CH8 related to H2S before the Alsadi event, and this regulatory guidance
16 required Intel to monitor its workers' employment space for the presence of H2S. *Id.*
17 at 949.

18 Intel's workplace safety expert, Michael Krotenberg, acknowledged that Intel's
19 first-line defense against H2S exposure was the workers' sense of smell. Doc. 379 at 1341.
20 He testified that this "definitely" was appropriate because "your nose is a better detector
21 than any instrument, direct reading instrument, so it's far more sensitive. It's a great
22 indicator of a problem." *Id.* He responded to relevant questions as follows:

23 Q. And the point that your nose is indicating the problem, the problem is all
24 around you. Isn't that true, sir?

25 A. No. I mean, it would be around your nose I guess. I don't know what
26 you mean by "around you."

27 Q. I mean you're inhaling it, if you're smelling it, you're inhaling it; isn't
28 that correct?

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A. Absolutely.

Q. And you think that's a good work safety procedure when you know that you have known off-gassing incidents of hydrogen sulfide and sulfur dioxide; correct?

A. I believe it's absolutely a reasonable measure, yes.

Id.

The Court does not find this opinion credible. It was contradicted by Intel's own industrial hygienist, Francis, by the testimony of Gerganoff, and by common sense. The Court further finds that Krotenberg's opinion lacks credibility in light of the repeated instances of H2S detection that occurred in CH8 before the Alsadi incident. This is particularly so given Krotenberg's admission that repeated low-dose exposures to H2S can reduce a person's ability to smell it. *Id.* at 1345.⁸

c. IWS Breach Conclusion (Fact).

The Court finds that the standard of care required Intel to install a direct exhaust system as recommended by Francis or to install fixed H2S monitors as recommended by Dr. Abia. Because Intel did neither in the face of multiple instances of H2S off-gassing and its knowledge that H2S is extremely hazardous for workers, the Court finds that Intel breached its duty with respect to operation of the IWS system.⁹

⁸ In support of his opinion that smell is an appropriate first-line defense to H2S gas, Krotenberg cited 29 C.F.R. § 1910.1200(h)(2), but that section says nothing on the subject. He also cited § 1910.1200(h)(3)(i), but that section simply says that employees should be trained on “[m]ethods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.)” The fact that employees should be trained to recognize the smell of a dangerous gas does not suggest, however, that smell should be adopted as the sole protection against the gas, particularly in a setting like the CH8 subfab where H2S releases were known to occur.

⁹ In reaching this conclusion, the Court has given due consideration to the testimony of Dr. Abia that the CCPT system was running satisfactorily before the incident and the testimony of Ms. Francis that CH8 was a safe workplace.

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3. Ventilation System Breach (Fact).

The Court finds that Intel breached the relevant standard of care with respect to the ventilation system in the CH8 subfab. This finding is based on Intel’s failure to implement Francis’s recommendation for direct venting of the IWS, as discussed above, and on the fact that the box fans blew the contents of the building directly toward CN3 and the Energy Center – buildings where Intel knew its own and JLL employees worked. Gerganoff testified as a workplace safety expert that exhaust systems should be designed to vent hazardous chemicals safely away from people. Doc. 375 at 865-66.

4. Evacuation Breach (Fact).

Plaintiffs have not proved by a preponderance of the evidence that Intel breached its duty of care with respect to evacuation. Intel established fixed evacuation routes and safe gathering points at the Chandler campus, marked them with green arrows painted on the ground and signs at the gathering areas, and posted them on maps in the Chandler campus buildings. After detecting H2S on the night in question, MacDonald retreated to a point where the monitor detected no H2S and set up a taped perimeter. He later moved the perimeter farther away from CH8 at the suggestion of other Intel ERT personnel. He ordered the evacuation of CH8, and, upon learning that there was a strong sulfur smell in CN3, he confirmed with JLL shift leader Damon Frisbie that the JLL personnel had left CN3. MacDonald asked whether anyone was having any adverse effects from the odors and arranged medical evaluations for the three who reported symptoms, including Alsadi. Finally, Alsadi testified that he reported to the location where MacDonald and others were assembled at the direction of Frisbie, not at the direction of MacDonald or another Intel employee.

C. Causation.

1. The Court’s Previous Causation Rulings (Law).

The Court has already entered several orders on the issue of causation in this case. Because Plaintiffs failed to present a timely medical causation expert who could withstand a challenge under Rule 702, the Court precluded Plaintiffs from asserting that Alsadi

1 suffers from reactive airway dysfunction syndrome (“RADS”). *See* Docs. 204, 216, 279.
2 Intel sought summary judgment on all other alleged injuries, arguing that Plaintiffs could
3 not prove causation of any injury without an expert. The Court disagreed. After reviewing
4 the evidence of Alsadi’s immediate symptoms on the night of February 28, 2016, the Court
5 held:

6 [A] jury reasonably could find, without the benefit of expert medical
7 testimony, that Alsadi was exposed to H₂S and the exposure caused a toxic
8 inhalation injury. . . . The Court will deny summary judgment to the extent
9 Intel argues that the evidence does not support a finding that Intel caused
Alsadi any injury.

10 Doc. 204 at 32 (footnote omitted).

11 After reviewing supplemental briefing on the question of what damages Plaintiffs
12 could seek at trial, the Court entered the following order:

13 This is an unusual case. Plaintiffs have failed to disclose timely or admissible
14 expert testimony that Alsadi’s exposure caused the little-known illness of
15 RADs, and therefore they are precluded from seeking to recover for RADs.
16 But the facts of his exposure — as discussed in the Court’s previous order —
17 seem clearly to suggest that Alsadi suffered an inhalation injury on the night
18 in question that has persisted for some time thereafter. Docs. 204 at 31-32,
19 206 at 4-5. Thus, although Plaintiff now lacks evidence to show that he
20 suffers from RADs, he is not precluded under Arizona law from presenting
21 evidence that he suffered an inhalation injury on the night in question, that
22 has persisted. *See Heck v. City of Lake Havasu*, No. CV 04–1810–PCT–
23 NVW, 2006 WL 2460917, at *11-12 (D. Ariz. Aug. 24, 2006) (denying
24 summary judgment where the jury could infer from circumstantial evidence
25 that carbon monoxide contributed to a drowning death); *Patania v.*
26 *Silverstone*, 415 P.2d 139, 144 (Ariz. 1966) (“Whether the injury is
27 permanent need not be proven by medical testimony, nor is the jury bound
28 by the testimony of a medical expert who testifies as to the lack of
permanency of the injury, if there is controverting evidence or testimony
from which it may be inferred that the injury is in fact permanent.”) (citation
omitted); *Ball v. Prentice*, 781 P.2d 628, 630 (Ariz. Ct. App. 1989)
 (“Whether Ball’s emotional problems, nausea, sleeplessness, tension and
headaches are causally connected to the accident and the extent and duration
of those injuries is a matter for jury determination.”); *Bradford*, 237 So. 3d
at 674-75 (affirming award of damages based in part on each plaintiff’s

1 testimony as to how long he or she continued to have symptoms from the
2 chemical exposure and noting that “the last medical visit is not a magic bullet
3 that suddenly remedies a plaintiff’s symptoms and makes him whole again”).

4 And if Plaintiffs are permitted under Arizona law to show that Alsadi
5 suffered immediate inhalation injury symptoms that have persisted, the Court
6 can see no legal basis for holding that they cannot seek future damages for
7 the same symptoms, provided they can present evidence that the symptoms
8 are likely to continue into the future. “Where there is conflicting evidence
9 as to the extent of the plaintiff’s injuries, it is a question for the jury. It is not
10 the function of the trial court . . . to determine the amount which would
11 compensate the plaintiff.” *Hardy v. S. Pac. Emp. Ass’n*, 459 P.2d 743, 748
12 (Ariz. Ct. App. 1969); *see Lloyd v. State Farm Mut. Auto. Ins.*, 860 P.2d
13 1300, 1304 (Ariz. Ct. App. 1992) (noting that “[t]he extent of damages is a
14 jury question”); *Merch. Transaction Sys., Inc. v. Nelcela, Inc.*, No. CV02-
15 1954-PHX-MHM, 2010 WL 1336956, at *2 (D. Ariz. Mar. 31, 2010) (citing
16 *Lloyd* for the proposition that “damages must be awarded by a jury based on
17 evidence presented at trial”).

18 * * *

19 The Court’s intention will be to permit Plaintiffs to present evidence, if
20 offered in admissible form, that Alsadi’s symptoms which developed
21 immediately upon exposure (and which the jury therefore could properly
22 conclude were caused by the exposure) have continued and likely will
23 continue into the future, but not to permit them to present evidence of new
24 or different symptoms that were not immediately apparent upon exposure.
25 The Court will engage in this line-drawing as the evidence is presented at
26 trial.

27 Doc. 216 at 6-7.

28 The Court will now undertake this line-drawing.

29 **2. Alsadi’s Medical Records (Fact).**

30 Alsadi and his wife credibly testified that Alsadi was a healthy 24-year-old before
31 the night of his H2S exposure and did not suffer from the chronic coughing he has
32 experienced for the last five years. His cough developed immediately upon exposure to
33 H2S on the night of February 28, 2016. Medical records made that night by Intel and
34 Concentra, the JLL medical provider, reflect a “small cough,” headache, burning throat,
35 and “some difficulty breathing.” Ex. 11 at 4-5; Ex. 150 at 1.

1 Alsadi was seen the next day at Concentra and reported “a continuing cough and
2 coughing fits,” and “a headache that comes and goes.” Ex. 150 at 9. Alsadi described his
3 symptoms as mild and unchanged, and said he had no shortness of breath or chest pain. *Id.*

4 On March 5, 2016 – six days after his H2S exposure – Alsadi had “intermittent
5 severe coughing” and “sternal burning chest pain.” Ex. 150 at 26. Concentra’s assessment
6 of his condition included “Cough,” “Bronchospasm,” and “Costochondritis,” which is
7 chest pain. *Id.* at 27.¹⁰

8 Alsadi returned to Concentra on March 7, 2016 – eight days after the exposure –
9 with a “severe cough” and headache. Ex. 11 at 11. He reported “continuing cough,
10 headache, and CP with coughing fits.” Ex. 150 at 33. He was again assessed with
11 “Bronchospasm,” “Costochondritis, acute,” and “Cough.” *Id.* at 34.

12 On March 12, 2016, Alsadi reported he was “doing much better. Still has mild
13 cough, but chest pain is resolved.” Ex. 150 at 42. Concentra again assessed him with
14 “Bronchospasm” and “Cough.” *Id.* at 43.

15 On March 20, 2016, Alsadi reported to Concentra that he was still having “coughing
16 fits.” Ex. 150 at 48. He stated that “two night[s] ago he awoke in bed at 3 am and couldn’t
17 breath[e].” *Id.* His exam revealed “shallow breaths using expiratory muscles,” and
18 Concentra concluded that he needed to see a pulmonologist. *Id.* at 49. He again was
19 assessed with “Bronchospasm” and “Cough.” *Id.* at 51.

20 On March 21, 2016 – three weeks after the H2S exposure – an Intel emergency
21 medical record reflects that Alsadi experienced “shortness of breath” and coughing. Ex.
22 11 at 2. Alsadi reported to the Chandler Regional Medical Center emergency room the
23 same day and reported that he had been experiencing a cough since his exposure, and that
24 the cough was becoming “quite bothersome to him.” Ex. 151 at 2.

25
26
27
28 ¹⁰ A bronchospasm occurs when the bronchial tubes squeeze down, affecting
breathing and causing coughing. Doc. 372 at 471-72, 475, 503, 611.

1 Alsadi first saw his current pulmonologist, Dr. Anselmo Garcia, on March 24, 2016.
2 He reported a persistent cough that had caused him to go to the hospital several times.
3 Ex. 152 at 1. Dr. Garcia’s notes described Alsadi’s condition as “acute bronchospasm”
4 and stated that on occasion he “has had severe cough” and “post tussive emesis,” which is
5 coughing-induced vomiting. *Id.* Dr. Garcia also noted that Alsadi had “persistent cough
6 and SOB,” meaning shortness of breath. *Id.* at 2.

7 When Alsadi saw Dr. Garcia two weeks later on April 6, 2016, he had a “cough,
8 bronchospasm, dyspnea” – the latter being difficult or labored breathing. Ex. 152 at 9. Dr.
9 Garcia observed that Alsadi had “ongoing SOB and cough,” but noted that he did “not have
10 symptoms of acute SOB as often.” *Id.* 9-10. Dr. Garcia further reported that Alsadi was
11 “having persistent cough while in the office with persistent bronchospasm,” and was “not
12 having significant improvement.” *Id.* at 9.¹¹

13 Alsadi had a CT scan of his lungs on April 13, 2016. The results were reported to
14 be normal. Ex. 152 at 13.

15 Alsadi saw Dr Garcia again on April 20, 2016. His cough was ongoing and had
16 increased when he tapered off steroids, there was evidence of inflammation and wheezing,
17 and he was experiencing post-tussive emesis. Ex. 152 at 15. Dr. Garcia’s review of the
18 CT scan caused him to conclude that Alsadi had “evidence of diffuse ground glass opacity
19 concerning for persistent inflammatory changes.” *Id.* at 16.

20 Alsadi’s coughing, coughing fits, bronchospasms, and post-tussive emesis have
21 continued since April 2016. *See, e.g.,* Ex. 153 at 6, 8; Ex. 155 at 1, 5-6; Ex. 156 at 1;
22 Ex. 157 at 1, 3, 5. At trial, Dr. Garcia gave this diagnosis of Alsadi’s current condition:

23 He has persistent bronchospasm. He has episodes of persistent cough post-
24 tussive emesis, which means he could have episodes of nausea and vomiting
25 because he’s coughing. He has post-tussive syncope, which means he gets
26 lightheaded and can pass out and has passed out in the past from coughing.

27 ¹¹ Elsewhere, this medical note indicates that Alsadi’s cough had improved. Ex. 151
28 at 9.

1 And then he has ongoing reflux and then he's – he has obesity from a lot of
2 the medications he's taken and then depression.

3 Doc. 372 at 472.

4 On the basis of the medical records and testimony, the Court makes the following
5 findings:

6 (1) Alsadi developed a cough immediately upon exposure to H₂S, caused by his
7 exposure to H₂S. The cough has been continuous since February 28, 2016. Alsadi
8 continues to suffer from it today.

9 (2) Alsadi experienced “coughing fits” within 24 hours of his exposure. Although
10 sometimes intermittent, they too continue to the present.

11 (3) Alsadi had bronchospasms within six days of his exposure. The bronchospasms
12 have continued to this day, and are in fact central to Alsadi's current diagnosis by Dr.
13 Garcia.

14 (4) Alsadi reported post-tussive emesis on March 24, 2016, and shortness of breath
15 on March 21, 2016. His chest pain has appeared and disappeared from time to time and
16 does not seem to have been continuous since the exposure, and his body mass index has
17 qualified as obese since before his initial exposure to H₂S.

18 The question that must be answered is whether this chain of events is enough to
19 prove causation under Arizona law. Before addressing that question, the Court will
20 consider the testimony of Intel's medical causation expert, Dr. Pike.

21 **3. Dr. Pike Testimony (Fact)**

22 Dr. Pike began his testimony by opining that Alsadi was exposed to no more than
23 1 ppm H₂S on the night in question, an opinion the Court finds not credible. The opinion
24 is based entirely on Dr. Pike's assumption that 11.7 ppm constituted the highest
25 concentration of H₂S in CH8 that night, but this assumption cannot be supported by the
26 testimony of MacDonald, who took the reading. MacDonald testified that he entered CH8,
27 walked in about 50 feet, took one reading, and immediately left. He agreed, as did Francis,
28 that his 11.7 ppm reading cannot be relied upon as the highest concentration in the CH8

1 subfab that night. MacDonald did not walk around CH8 checking likely sources until he
2 found the highest reading, as Dr. Pike assumed. The Court therefore will disregard Dr.
3 Pike’s exposure opinion. Although Plaintiffs have not presented an expert to opine on the
4 level of Alsadi’s concentration, Intel concedes that it was high enough to cause Alsadi’s
5 initial symptoms that night. Doc. 302 at 1; Doc. 379 at 1418.

6 Dr. Pike agrees that Alsadi was exposed to H2S on the night in question and suffered
7 an inhalation injury. Doc. 378 at 1230-31. He testified, however, that the medical literature
8 includes no reported cases of chronic respiratory problems from H2S exposure, even with
9 high-dose exposures that cause the patient to pass out. Studies of H2S exposure include
10 the voluntary exposure of participants to 10 ppm of H2S, which produced no adverse health
11 effects. Dr. Pike further noted that H2S is used in many industries and, if it did cause health
12 effects like those Alsadi has experienced, he would expect to see widespread pulmonary
13 disease, including disease registries related to the industries in which it is used, none of
14 which exists.

15 Dr. Pike applied the Bradford-Hill criteria for medical causation. *See Davis v.*
16 *McKesson Corp.*, No. CV-18-1157-PHX-DGC, 2019 WL 3532179, at *27 (D. Ariz.
17 Aug. 2, 2019) (“the Bradford Hill criteria provide a well-recognized method for evaluating
18 general causation”). He found that the criteria’s 10 factors strongly suggest that Alsadi’s
19 H2S exposure did not cause his claimed symptoms.

20 **4. Causation Conclusion (Mixed Law and Fact).**

21 In Arizona, “[a]ctual” or “but for” cause “exists if the defendant’s act helped cause
22 the final result and if that result would not have happened without the defendant’s act.”
23 *Ontiveros v. Borak*, 667 P.2d 200, 205 (Ariz. 1983). The defendant’s act “need not have
24 been a large or abundant cause of the final result” – liability exists “even if that conduct
25 contributed only a little to plaintiff’s injuries.” *Id.* (internal quotation marks omitted);
26 *Stearney v. United States*, 392 F. Supp. 3d 1037, 1053 (D. Ariz. 2019); *Dupray v. JAI*
27 *Dining Servs., Inc.*, 432 P.3d 937, 942-43 (Ariz. Ct. App. 2018).

28

1 “The proximate cause of an injury is that which, in a natural and continuous
2 sequence, unbroken by any efficient intervening cause, produces an injury, and without
3 which the injury would not have occurred.” *Torres*, 476 P.3d at 332; *see also Robertson*
4 *v. Sixpence Inns of Am., Inc.*, 789 P.2d 1040, 1047 (Ariz. 1990). A plaintiff ““must show
5 some reasonable connection between defendant’s act or omission and plaintiff’s damages
6 or injuries.”” *Garrett v. Woodle*, No. CV-17-08085-PCT-BSB, 2018 WL 6110924, at *6
7 (D. Ariz. Nov. 21, 2018) (quoting *Robertson*, 789 P.2d at 1047).

8 As noted above, Arizona courts have held that medical expert testimony is not
9 always needed to prove causation in a bodily injury case. *See Heck*, 2006 WL 2460917,
10 at *11; *Patania*, 415 P.2d at 144. But this is true only when the connection between the
11 defendant’s actions and the alleged injury is readily apparent to a lay person. *See*
12 *Benkendorf v. Advanced Cardiac Specialists Chartered*, 269 P.3d 704, 706 (Ariz. Ct. App.
13 2012) (“Ordinarily, a plaintiff in a medical malpractice lawsuit must prove the causal
14 connection between an act or omission and the ultimate injury through expert medical
15 testimony, *unless the connection is readily apparent to the trier of fact.*”) (emphasis added)
16 (quoting *Barrett v. Harris*, 86 P.3d 954, 958 (Ariz. Ct. App. 2004)); *Gentry v. Daugherty*,
17 No. CV-13-02136-PHX-ESW, 2015 WL 1346097, at *3 (D. Ariz. Mar. 24, 2015) (“*Unless*
18 *an injury is obvious to the jury*, expert medical testimony is required to establish the nature
19 and extent of the injury as well as its relationship to the accident.”) (emphasis added).

20 In this case, the connection between Alsadi’s exposure to H2S and the coughing,
21 tingly throat, and watery eyes he developed on the night of February 28, 2016 is readily
22 apparent. Indeed, Intel concedes that the exposure caused his symptoms that night.
23 Doc. 302 at 1; Doc. 379 at 1418.

24 The more difficult question is whether Plaintiffs have proved that Alsadi’s later-
25 developing symptoms of bronchospasms, coughing fits, post-tussive emesis, shortness of
26 breath, chest pain, incontinence, inability to climb stairs or play with his child, obesity,
27 hypersensitivity to odors, and depression were caused by the H2S exposure. One is
28 tempted to conclude that they were because they appeared after the exposure and, with the

1 exception of obesity, Alsadi had not experienced any of them before that night. But such
2 reasoning – *post hoc ergo propter hoc* – has long been recognized as a logical and legal
3 fallacy. As Judge Sheldon explained in *Lofgren v. Motorola, Inc.*, No. CV 93-05521, 1998
4 WL 299925 (Ariz. Super. Ct. June 1, 1998):

5 Scientists are very careful, generally, to avoid concluding that because one
6 thing occurs after another, it implies causal effect. Such erroneous
7 conclusions are generally referred to in writing and logic as coincidental
8 correlation or “post-hoc ergo propter hoc.” The name, in Latin, means “after
9 this therefore because of this.” . . . A person commits the fallacy when it is
10 assumed that because one thing follows another that the one thing was caused
11 by the other. Scientists use “causation” to describe the association between
12 two events when one event is a necessary link in a chain of events that results
in the effect. Generally, scientists recognize that there are a number of
factors which must be considered before an association between an agent and
a disease may be suggested to be “causal.”

13 *Id.* at *10 (citation omitted).

14 Viewing all of the evidence in this case, the Court finds that some of Alsadi’s
15 ongoing symptoms – specifically, his persistent cough, coughing fits, bronchospasms, and
16 post-tussive emesis – were caused by his exposure to H₂S on February 28, 2016. The
17 Court reaches this conclusion without relying on the logical fallacy described above.
18 Although it is true that these symptoms followed his exposure, there is more than a mere
19 temporal relationship.

20 First, Intel and Dr. Pike concede that the H₂S exposure caused Alsadi’s cough and
21 other reported symptoms on the night of February 28, 2016. Medical causation is not
22 disputed for these initial symptoms. Doc. 302 at 13; Doc. 379 at 1418.

23 Second, Alsadi’s “coughing fits” and “bronchospasms” appeared within 24 hours
24 of his exposure (Ex. 150 at 9-10), and he developed “severe coughing” within a week (*id.*
25 at 26; Ex. 11 at 11). If Intel concedes that Alsadi’s coughing on the night of February 28
26 was caused by the H₂S, the Court can see no reason to think that his coughing fits and
27 bronchospasms the next day were caused by anything else. Indeed, Intel argued in this
28

1 case that Plaintiffs should be permitted to seek damages for up to a week after the exposure.
2 *See* Doc. 205 at 8. And Dr. Pike testified that symptoms from Alsadi’s exposure could last
3 up to a week. Doc. 378 at 1230-31.

4 Third, Alsadi’s post-tussive emesis clearly is linked to the coughing that developed
5 on and continued after the night in question. Alsadi’s coughing fits and bronchospasms,
6 which appeared within 24 hours of exposure (Ex. 150 at 9-10), were still occurring three
7 weeks later on March 20, 2016. *Id.* at 48-49. They would push his pulse up to 105-115
8 bpm. *Id.* By March 24, 2016, Alsadi was experiencing post-tussive emesis. This condition
9 indisputably is related to his severe coughing: as Dr. Garcia testified, the condition is
10 “essentially where you cough so much, it makes you vomit.” Doc. 372 at 474.

11 Fourth, Alsadi’s coughing, coughing fits, bronchospasms, and post-tussive emesis
12 have continued to the present. Doc. 372 at 612.

13 It is true that Plaintiffs have not proved the specific level of H2S exposure that
14 Alsadi received on the night of the incident. But Intel concedes that it was enough to cause
15 Alsadi’s immediate symptoms, and, as noted above, Arizona cases have declined to require
16 expert causation opinions when causation can be proved by other facts. *Benkendorf*, 269
17 P.3d at 706; *Barrett*, 86 P.3d at 958; *Gentry*, 2015 WL 1346097 at *3; *see also* Doc. 366
18 at 13-14 (citing cases). Additionally, Plaintiffs have proved that H2S exposure was
19 widespread and ongoing on the night in question. The box fans in CH8 blew the contents
20 of the subfab, including H2S that was being released within CH8, toward CN3 and the
21 Energy Center. MacDonald originally took an H2S reading by the tank farm that went into
22 “high alarm” (Ex. 23 at 5), but did not note the precise amount from the meter, and later
23 measured 11.7 ppm inside CH8 during his one brief effort to confirm the presence of H2S.
24 Doc. 371 at 363; Doc. 378 at 1237; Ex. 61 at 5. The sulfurous odor of H2S was detected
25 “all over the campus” and as far away as the CH2 cafeteria where Alsadi was taken for a
26 medical evaluation. Ex. 34 at 2; Doc. 376 at 1010-11. Several Intel witnesses testified that
27 the 11.7 ppm reading did not necessarily reflect the maximum release of H2S that night,
28

1 including MacDonald (Doc. 371 at 361-65, 377), Francis (Doc. 369 at 198-99), and
2 Krotenberg (Doc. 379 at 1344).

3 The Court finds by a preponderance of the evidence that Alsadi's exposure to H2S
4 on February 28, 2016 caused his persistent cough, coughing fits, bronchospasms, and post-
5 tussive emesis. The link between these conditions and his H2S exposure is readily apparent
6 to a lay person from the facts in this case, and therefore need not be supported by expert
7 testimony. In a continuous sequence, unbroken by any efficient intervening cause, Alsadi's
8 exposure produced an injury that would not have occurred without the exposure. *Torres*,
9 476 P.3d at 332.¹²

10 The Court also finds by a preponderance of the evidence that these conditions are
11 likely to continue throughout Alsadi's life. They have persisted for the last five years
12 despite extensive and regular medical treatment, and show no signs of abating. Dr. Garcia
13 testified credibly that Alsadi's symptoms likely will continue throughout his life. Doc. 372
14 at 490.¹³

15 For the same reasons, the Court finds that Intel's breach of duty caused Plaintiff
16 Youssra Lahlou a loss of consortium in her marriage to Plaintiff Ahmad Alsadi.

17 The Court cannot find causation for Alsadi's other long-term symptoms, including
18 shortness of breath, incontinence, inability to climb stairs or play with his child, a

19
20 ¹² The Court is not persuaded by Intel's argument that Alsadi's symptoms are caused
21 by his obesity or gastroesophageal reflux disease ("GERDS"). The Court finds by a
22 preponderance of the evidence that Alsadi did not have his symptoms before the night of
23 exposure, despite the fact that he was clinically obese, and the Court cannot conclude from
24 the evidence that GERDS appeared and became the cause of his ongoing symptoms a week
25 or two after his exposure, as Intel seems to suggest.

26 ¹³ The Court recognizes that this finding is contrary to the opinion of Dr. Pike that
27 Alsadi's long-term symptoms could not have been caused by H2S exposure. But Dr. Pike
28 agreed that Alsadi's immediate symptoms were caused by H2S, and they included – within
24 hours – a persistent cough, coughing fits, and bronchospasms. They have continued
without abatement since the exposure. Further, post-tussive emesis is a natural result of
Alsadi's coughing fits. The Court also places less weight on Dr. Pike's testimony for two
reasons. As already mentioned, he adamantly stuck to his opinion that Alsadi could not
have been exposed to more than 11.7 ppm, a clearly unsupported position in light of how
the measurement was taken. And Dr. Pike is an emergency room physician who does not
provide long-term care to patients he sees with inhalation injuries.

1 hypersensitivity to odors, obesity, depression, or chest pain. These are less clearly
2 connected to his initial injuries, and no expert testified that they were caused by his
3 exposure to H2S.¹⁴

4 **D. Damages (Fact).**

5 The Court must determine what damages should be awarded for Alsadi's persistent
6 cough, coughing fits, bronchospasms, and post-tussive emesis, all of which will last
7 throughout his life. The Court finds that these conditions caused Alsadi to lose his position
8 as an HVAC technician with JLL. He attempted to work for several weeks after his initial
9 injury, but eventually was unable to do so.

10 The Court does not find, however, that these conditions render Alsadi completely
11 unable to work. Since the exposure, he has travelled several times to San Francisco, twice
12 to Mexico with friends, and once to Utah. Before the Covid pandemic, he remained active
13 in his mosque, serving as secretary to the board and handling the mosque's social media.
14 He attended four- to five-hour real estate classes every-other-day for six weeks, and
15 obtained his real estate licenses in Arizona and California. He was hired as an agent by
16 West USA Realty in Arizona and Homesmart Realty in San Francisco. He obtained an
17 associate's degree from Paradise Valley Community College and a bachelor's degree from
18 Northern Arizona University, and his wife obtained her degree from the same university.

19 The Court is also persuaded, however, that Alsadi's persistent cough, coughing fits,
20 bronchospasms, and post-tussive emesis will have a somewhat limiting effect on his work
21 ability throughout the remainder of his life. Intel's damages expert assumed Alsadi could
22 earn the income of a fully engaged real estate agent through the remainder of his life and
23 therefore would suffer no damages. The Court does not find this opinion persuasive.

24
25
26 ¹⁴ Dr. Garcia testified that he was never able to determine what caused Alsadi's chest
27 pain. Doc. 372 at 481-82. Dr. Garcia attributed Alsadi's weight gain to the steroids
28 prescribed for his chronic cough, but the Court cannot conclude that his obesity is caused
by his H2S exposure. Alsadi was obese before the incident, and his weight has fluctuated
while under Dr. Garcia's care, including dropping or holding level at times when Alsadi
was on steroids.

1 Plaintiffs' experts developed and valued scenarios for part-time work that produced
2 a present value loss of \$1,121,525, but this calculation was based on an unreasonably
3 limited assessment of Alsadi's working abilities. As noted above, Alsadi has been able to
4 accomplish much since his injury, including completing two college degrees, becoming
5 certified as a real estate agent in two states, travelling with friends, and supporting his
6 mosque's social media site. Despite these accomplishments, Intel's economics expert
7 noted that the work level assumed by Alsadi's experts included only a sixth grade reading
8 level, a fifth grade math level, and a third grade spelling level, and that he was in the lowest
9 levels for mechanical, assembly, and manual dexterity skills even though he worked
10 successfully for two years as an HVAC technician at Intel's high-tech manufacturing
11 facility. The Court finds that Alsadi will be able to do more and earn more than Plaintiff's
12 expert assumed, and therefore will reduce his claimed lost wages for a partial inability to
13 work from the \$1,121,525 proposed by his experts to \$400,000, present value.

14 Plaintiffs presented expert testimony on future costs Alsadi will incur due to his
15 injuries, but the Court found the testimony largely unpersuasive. Intel's lifecare expert,
16 Nora White, persuasively demonstrated that the diagnostic testing, therapeutic modalities,
17 durable medical equipment, and home and facility care claimed by Plaintiffs are not likely
18 to be needed. The Court does conclude, however, that some future medical costs will be
19 required, including quarterly doctor appointments (\$33,400 per demonstrative Ex. 14A)
20 and medication checks (\$312 per demonstrative Ex. 14A). In addition, the Court finds that
21 Alsadi will require future medications totaling \$138,442. These are the medications
22 included in Plaintiffs' demonstrative Exhibit 14A, less the Protonix (which Ms. White
23 testified was prescribed for reflux disease) and Singulair (which she testified was no longer
24 a first-line treatment). Total future medical costs, therefore, will be \$172,154. Using the
25 1.6% discount rate applied by Plaintiffs' expert (Doc. 374 at 709) and Alsadi's life
26 expectancy to 2067 (*id.* at 704), the present value of this total is \$121,188. When this
27 amount is added to Alsadi's lost earnings of \$400,000, the total is \$521,188.

1 The Court also concludes Alsadi should recover \$400,000 for the permanent
2 persistent cough, coughing fits, bronchospasms, and post-tussive emesis caused by Intel,
3 and that his wife, Youssra Lahlou, should recover \$250,000 for the loss of consortium
4 resulting from the limitations imposed on her husband and her life by Intel's negligence in
5 this case. The Court accordingly will award Alsadi a total of \$921,188, and Ms. Lahlou
6 \$250,000, as damages in this case.

7 **III. Other Issues.**

8 **A. Alsadi's Fault.**

9 The Court does not find that any fault should be assigned to Alsadi for his injury.
10 Intel suggests that Alsadi should be assigned fault for failing to follow the Intel evacuation
11 plan to the assembly point in the parking lot east of CH8. The Court disagrees for several
12 reasons. First, Alsadi testified that he was directed by Damon Frisbee, his JLL team leader
13 on the night in question, to report to the area where MacDonald and others were gathered
14 southwest of CH8. Following his manager's direction cannot be characterized as fault on
15 Alsadi's part. Second, Intel insists that MacDonald's gathering point southwest of CH8
16 was safe because MacDonald's hand-held meter showed no H2S readings. Alsadi's
17 reporting to that location therefore would not have worsened his condition. Third, Alsadi
18 testified that he smelled H2S upon leaving CN3 and again upon leaving the Energy Center.
19 Thus, his exposure likely occurred before he reported to the southwest of CH8, and likely
20 would have occurred upon his exit from CN3 even if he went to the gathering area east of
21 CH8.

22 **B. Intel's Motion to Dismiss for Lack of Subject Matter Jurisdiction.**

23 Following trial, Intel moved to dismiss Plaintiffs' claims for lack of jurisdiction,
24 arguing that if Plaintiffs succeed in showing that Intel retained sufficient control over JLL's
25 work to be subject to liability, then Intel was a statutory employer under Arizona law and
26 entitled to immunity from Plaintiffs' claims. Doc. 357. This argument relies on Arizona's
27 workers compensation scheme, which immunizes employers from tort liability in exchange
28

1 for their providing workers compensation insurance coverage for their employees. Intel
2 specifically relies on the following statutory provision:

3 When an employer procures work to be done for the employer by a contractor
4 over whose work the employer retains supervision or control, and the work
5 is a part or process in the trade or business of the employer, then the
6 contractor[] and the contractor’s employees, and any subcontractor and the
7 subcontractor’s employees, are, within the meaning of this section,
8 employees of the original employer. For the purposes of this subsection,
9 “part or process in the trade or business of the employer” means a particular
work activity that in the context of an ongoing and integral business process
is regular, ordinary or routine in the operation of the business or is routinely
done through the business’ own employees.

10 A.R.S. § 23-902(B).

11 The primary Arizona case interpreting this provision is *Young v. Env’tl. Air Prod.,*
12 *Inc.*, 665 P.2d 40 (Ariz. 1983). *Young* explains that an employer covered by this provision
13 is known as a “statutory employer,” defined as “one compelled by law to pay workmen’s
14 compensation benefits to remote employees – *i.e.*, employees of another.” *Id.* at 42 n.1.
15 Two elements must be satisfied for Intel to qualify as a statutory employer:

16 The first is that the employer against whom the tort action is brought must
17 retain “supervision or control” over the work which he procures to be done
18 by a contractor. . . . The second element . . . is that the work which was
19 entrusted to the subcontractor must be a “part or process in the trade or
20 business” of the employer against whom the third party tort action is asserted.

21 *Id.* at 45-46.

22 Before addressing these two elements, the Court notes that the statute must be
23 construed strictly in this case. Intel invokes the statute to immunize itself from Plaintiffs’
24 tort claims, and the Arizona Supreme Court explained in *Young* “that the legislative
25 objectives are furthered if the statute is . . . strictly interpreted when loss of the worker’s
26 common law rights is the object for which the statute is invoked.” *Id.* at 45.

27 For two reasons, the Court concludes that the statute is not satisfied in this case.
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1 First, the statute applies “[w]hen an employer procures *work* to be done for the
2 employer by a contractor,” but specifies that it applies to work of a particular kind: “and
3 the work is a part or process in the trade or business of the employer[.]” A.R.S. § 23-
4 902(B) (emphasis added). The statute becomes even more specific, stating that “[f]or the
5 purposes of this subsection, ‘part or process in the trade or business of the employer’ means
6 *a particular work activity* that in the context of an ongoing and integral business process is
7 regular, ordinary or routine in the operation of the business or is routinely done through the
8 business’ own employees.” *Id.* (emphasis added). Thus, the statute applies only when the
9 contractor does “a particular work activity” that is part of the regular, ordinary, or routine
10 operation of the employer or is routinely done through the employer’s own employees.

11 JLL performs electrical and HVAC work at the Chandler campus, but no HVAC
12 work in CH8. Doc. 377 at 1125. As a result, Alsadi did not work in CH8. *Id.* No evidence
13 presented at trial established that the “particular work activity” of JLL in the HVAC
14 systems outside of CH8 was regular, ordinary, or routine in the operation of the Intel
15 business or was routinely done through Intel’s own employees. The evidence was silent
16 on this point. Nor did the evidence show that Intel exercised any level of control over the
17 non-CH8 HVAC work on the Chandler campus. The evidence was silent on this point as
18 well. The Court therefore cannot conclude that JLL’s HVAC work outside of CH8 – the
19 area in which Alsadi worked – falls within § 23-902(B). And Intel cites no authority for
20 the proposition that if some other kind of work done by JLL falls within the statutory
21 definition, and is subject to the requisite level of Intel control, then all JLL employees are
22 deemed statutory employees of Intel. Such a broad reading would be inconsistent with the
23 strict construction to be given the statute in this case. *Young*, 665 P.2d at 45.

24 Second, even if Intel’s control over the IWS or the CH8 ventilation system could be
25 viewed as extending the tort litigation bar in § 23-902(B) to all JLL employees, the Court
26 cannot conclude that the IWS and CH8 ventilation systems are part of the regular, ordinary,
27 or routine operation of Intel or are routinely done through Intel’s own employees. *Young*
28 makes clear that even work that is “a necessary and expected part” of a business may not

1 be “a part of the regular, ordinary and routine operations” of that business within the
2 meaning of the statute. 665 P.2d at 47. The “general rule of thumb,” according to a treatise
3 cited favorably throughout *Young*, is “that the statute covers all the situations in which
4 work is accomplished which this employer, or employers in a similar business, would
5 ordinarily do through employees.” *Id.* (citing I.C Larson, *Workmen’s Compensation Law*
6 § 49.12 (1982)) (emphasis in *Young*).

7 There was no evidence presented during trial that operation of the IWS or the
8 ventilation system in CH8 is ordinarily handled by employees of Intel or employees of
9 similar businesses. In fact, the only evidence on this issue was that Intel employees do not
10 do the wastewater work performed by JLL. Before the construction of CH8, Intel’s
11 wastewater was picked up by outside contractors and hauled away from the Chandler
12 campus for processing by other companies. And there was no evidence that the ventilation
13 and exhaust system within CH8 was ordinarily operated by employees of Intel or
14 employees of similar businesses.¹⁵

15 The Court has other difficulties with Intel’s arguments. Plaintiffs assert that the
16 level of control required to satisfy § 23-902(B) is different from the level of control
17 required to satisfy Restatement § 414. Intel emphatically agrees. Doc. 383 at 6 (“In fact,
18 Intel *agrees* with Plaintiffs that under the Arizona Supreme Court’s decision in *Lewis v.*
19 *N.J. Riebe Enterprises, Inc.*, 170 Ariz. 384, 391, (1992), the two tests require different
20 measures of control – and that § 414 does not require ‘a right of control commensurate
21 with that required to show a statutory employer-employee relationship.’”) (emphasis in
22 original). And yet Intel never specifies the level of control required for the statutory
23 employer provision to apply, and never explains why findings based on the evidence
24 presented at trial satisfy that standard. Intel argues only that the proposed findings put

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26 ¹⁵ As Plaintiffs note in their response, at least one other court, interpreting Oregon’s
27 version of this statute, reached a similar conclusion in a case also involving Intel. *See*
28 *Schmidt v. Intel Corp.*, 112 P.3d 428, 433 (2005) (“Here, [plaintiff’s] work was the
installation of the electrical systems in an Intel facility. That work is not a regular part of
Intel’s business—the manufacture of computer microprocessors.”).

1 forth by Plaintiffs before trial – not all of which have been adopted by the Court – would
2 be enough to satisfy whatever standard the statute establishes. *Id.* This imprecise argument
3 does not persuade the Court that subject matter jurisdiction is lacking, particularly in a case
4 where the statute is to be construed strictly.

5 What is more, Intel’s motion does not address a relevant issue left open in *Young*:
6 “there is a split of authority on the question of statutory employer immunity when the
7 alleged statutory employer is not subject to liability for benefits because the direct
8 employer carries insurance.” 665 P.2d at 44 n.6. That appears to be the situation here.
9 Alsadi obtained workers compensation benefits through JLL’s workers compensation
10 carrier. *Young* expressly declined to decide whether statutory employer immunity could
11 apply to Intel in such a situation (*id.*), and Intel cites no Arizona authority that has resolved
12 the question.

13 The Court concludes that § 23-902(B) does not apply in this case and does not
14 deprive the Court of subject matter jurisdiction.¹⁶

15 **C. Intel’s Motion for Judgment on Partial Findings.**

16 Intel moves for specific findings based on evidence presented during Plaintiffs’
17 case-in-chief. Doc. 359. The motion is denied for reasons set forth above in the Court’s
18 findings. The Court concludes that the evidence presented during Plaintiffs’ case-in-chief
19 supports all of the findings made above, and does not require the findings sought in Intel’s
20 motion.

21 **IT IS ORDERED:**

22 1. Judgment is entered in favor of Ahmad Alsadi in the amount of \$921,188,
23 and in favor of Youssra Lahlou in the amount of \$250,000, with interest at the statutory
24 rate from the date of this judgment.

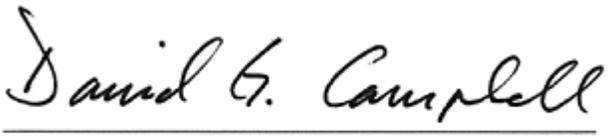
25 _____
26 ¹⁶ The Court recognizes that some points addressed in this section were not argued
27 in Plaintiffs’ response, but when determining subject matter jurisdiction, the Court is
28 obligated to consider the issue in full, including addressing issues *sua sponte*. *Snell v. Cleveland, Inc.*, 316 F.3d 822, 826 (9th Cir. 2002) (noting that district courts may “raise the question of subject matter jurisdiction[] sua sponte”).

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- 2. Intel’s motion to dismiss (Doc. 357) is **denied**.
- 3. Intel’s motion for partial findings (Doc. 359) is **denied**.
- 4. Plaintiffs’ request to admit Exhibit 4 (Doc. 380) is **denied** as moot. Dr.

Garcia testified on the meaning of bronchospasm.

Dated this 16th day of February, 2021.



David G. Campbell
Senior United States District Judge