



## What is Industrial Hygiene?

By Ahmad Dwairi

### HSE Department

Industrial hygiene is the science of anticipating, recognizing, evaluating, and controlling workplace conditions that may cause workers' injury or illness. Industrial hygienists use environmental monitoring and analytical methods to detect the extent of worker exposure and employ engineering, work practice controls, and other methods to control potential health hazards.

### History:

There has been an awareness of industrial hygiene since antiquity. The environment and its relation to worker health were recognized as early as the fourth century BC when Hippocrates noted lead toxicity in the mining industry. In the first century AD, Pliny the Elder, a Roman scholar, perceived health risks to those working with zinc and sulfur. He devised a face mask made from an animal bladder to protect workers from exposure to dust and lead fumes. In the second century AD, the Greek physician, Galen, accurately described the pathology of lead poisoning and also recognized the hazardous exposures of copper miners to acid mists.

**OSHA Act of 1970** The purpose of the OSH Act is to "assure so far as possible every working, man and woman in the nation safe and healthful working conditions and to preserve our human resources

## Environmental Factors or Stresses

**Chemical hazards:** gases, vapors, dusts, fumes, mists, and smoke

**Physical hazards:** non-ionizing and ionizing radiation, noise, vibration, extreme temperatures and pressures

**Ergonomic hazards:** workstation design, repetitive motion, improper lifting/reaching, poor visual conditions

**Biological hazards:** insects, mold, yeast, fungi, bacteria, and viruses.

### OSHA Hierarchy of Control

1. Engineering controls
2. Work practice controls
3. Administrative controls
4. Personal protective equipment (PPE)

### Types of Exposure

**Acute:** Short term period between exposure and onset of symptoms

**Chronic:** Long time period between exposure to an agent and the onset of symptoms

### Types of Air Contaminants:

**Fumes:** volatilized solids condenses in cool air < 1.0 mm in diameter

**Mists:** Suspended solid droplets generated by a condensation of liquids from a vapors to a liquid state.

**Fibers:** solid, slender, elongated structures length several times the diameter

**Gases:** formless fluids that expand to occupy a space

**Vapors:** liquid changed to vapor

### Units of Concentration

**ppm** : parts per million

**mg/m<sup>3</sup>** : milligrams per cubic meter

**mppcf** : millions or a particle per cubic foot

**f/cc:** fibers per cubic centimeter

### Exposure Limits Air Contaminants

**OSHA:** Occupational Safety and Health Administration

**PEL:** permissible exposure limit

**NIOSH:** National Institute of Occupational Safety and Health

**REL:** recommended exposure level

**ACGIH:** American Conference of Governmental Industrial Hygienists

TLV: threshold limit value

**TWA:** takes into account variable exposure through a full shift, 8 hour work day

**STEL:** limit of exposure during a short period, 15 minutes

**CEILING:** absolute maximum level of exposure not to be exceeded.

### Industrial Hygiene Plan in JBC

Jordan Bromine Company started implementing Industrial Hygiene (IH) program in 2010 .

The Program consists of a risk assessment of each task based on toxicity hazard and exposure potential.

An initial hazard assessment of the affected area(s) shall be conducted appropriately to

Toxicity	1	2	3
Exposure			
1	1	1/2	2/3
2	1/2	2	3
3	2/3	3	3

determine the extent of any physical/chemical exposures. The results of the initial exposure assessment will determine if and to what extent personal monitoring will be conducted.

Two types of industrial hygiene sampling may be performed: 1) routine (campaign monitoring), and 2) investigative monitoring (usually requested to assist with operational problems or to evaluate suspected exposures). IH will work closely with the site management on defining PPE requirements and on work practices to reduce potential exposure.

The IH group will ensure that all required programs (such as HazCom, Respiratory Protection, Lead, etc.) are in place at each Albemarle site and that these programs meet the minimum criteria outlined in the respective Corporate policy, as it is developed. Formal audits for compliance with regulatory requirements and Albemarle policies will be conducted as part of periodic (maximum 3 year interval) scheduled SIHS audits.

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# JBC Times

## JBC events :

Congratulations for our fire brigade team members for their Safe return from USA two weeks ago ,after completion of fire brigade training course in Texas A&M university.

Mr. Ahmad Qawasmeh -  
Operations team

Mr. Ahmad Bzour -MTC team

Mr. Hekmat Marie - Operations  
team



Looking forward to send  
the 2nd Group early 2013.



## This issue

Industrial Hygiene P.1

Fire Brigade Team Training P.2

Employee of the Month P.3

P.4

## Employees Feed Back on Fire Brigade Training in Texas Academy

By Ahmad Qawasmeh Area 2 Operation Supervisor

### Incident Commander

I'm so glad to inform you that we have successfully completed the firefighting training course which conducted in cooperation with Albemarle Fire Fighting team and Texas A&M university - College Station and we gained the basics of fire fighting techniques. This program introduced comprehensive training courses under direct supervision. Methods of instruction were included presentation for two hours in first day as well as skill oriented drill sessions with different scenarios. Performance and progress has been evaluated by the instructor throughout the training and at the end of each practical training; to have target of this training .

Texas A&M University has been provided unsurpassed training for emergency responders since 1929, and selected as the site for a permanent firefighter training school. The Fire Training Field in College Station is the largest in the United States and includes full-scale buildings, towers, tanks, industrial, plant structures and life-like training simulations. Other training aids are used for classes in high-rise rescue, structural collapse/heavy rescue ... EMT ,HAZMAT ...etc. The site also contains "Disaster City," a mock city with numerous full-scale training props and the Emergency Operations Training Center.

Therefore and honestly , this training program was exceed our expectation and we are looking forward to give this opportunity to our colleagues in "JBC Firefighting Emergency Response Teams" to obtain the knowledge and perfection in firefighting which will reflect positively in emergency respond.



# Common Causes of Accidents



By Manhal Suwi

**1-Taking Shortcuts**  
**2-Being overconfident**  
 Confidence is a good thing. Overconfidence to the point of arrogance is too much of a good thing. Also, the old adage of "it can't happen to me," is an attitude that can lead to improper methods of doing your work, using incorrect procedures or sometimes the wrong tools. Any one of these items can cause an injury to you or to a fellow worker.

**3-Ignoring Safety Procedures**  
 Ignoring safety procedures, intentionally or unintentionally, can endanger you or other employees. There are established safety policies in place and we are supposed to observe them. Casual attitudes about safety can result in a "casualty."

**4-Starting a Job with Incomplete Instructions**  
 We know in order to do a job safely and to do it right the first time, we need a complete set of instructions. We've all seen situations where an employee made a mess of a task or assignment because he didn't have sufficient instructions or the instructions weren't clear. When you are working on a job, don't ever be afraid to ask questions or get explanations for what is unclear to you. How many times have you heard, "I'm afraid to ask questions?" "It's not dumb to ask, but dumb not to ask."

**5-Poor Housekeeping**  
 Anytime that guests, friends, colleagues or safety professionals come through your work site, whether it is the maintenance shops, storage areas, offices, etc. the first impression they get is sometimes the lasting one. If the office is unorganized or dirty, the maintenance shops are cluttered and unorganized; it portrays a sense of looseness and a lack of pride in the work site. On the other side of the coin, if they enter and see it neat and orderly, a sense of pride and quality of purpose is the attitude that they are most likely to leave with.

**6-Mental Distractions from Work**  
 Bringing outside problems to work can keep you from focusing on your job. If this happens, it can be a hazard. Friends coming by while you are at work can cause a distraction and can keep you from focusing on the task at hand. Both of these incidents can put you into a hazardous situation. Don't become a statistic; stay focused on the task at hand

**7-Failure to Pre-Plan your Work**  
 In the office, or at home, it is important to pre-plan your work. First of all, it will uncover unforeseen problems and give you the opportunity to solve it and continue to work. Secondly, it will make the job go faster and more efficiently because you thought out the processes in advance of the start up.

**Conclusion**

- Following are lessons learned that we must always bear in mind so that we are safe always whether at work, on the road or at home.
- More than 90% of safety related incidents are not caused by unsafe conditions, rather by unsafe acts.
- Our attitude towards safety influences our choices of certain actions which in turn may lead to catastrophes.
- Every time one of the seven common causes of accidents is taken and no one gets hurt, it reinforces our unsafe behavior, which encourages us to continue doing more unsafe acts or create new ones.
- What we do not realize is that every time a safety shortcut is taken and no one gets hurt, it increases the chance of getting hurt the next time. For at the end, it all comes down to probability.
- We have to believe that a shortcut is in fact the fastest way...the fastest way to an accident.

Thanks to the followings Employees for their Great contribution in Site Improvement :

Ibrahim Hasanien  
 Baker Al Shaar  
 Hamzeh Adaileh  
 Husam Azmi



**Employee Of The Month**  
**William Ajaleen**  
 Utilities Operator  
 TBBPA Plant

William Ajaleen is one of the success stories in Jordan bromine company . He joined his work in JBC as office assistant in 2002 and promoted to Utilities operator in Sep-2002. Now he is one of the experience utilities operators and participating in other voluntary activities like Fire brigade and safety captain . He is one of the local community activist . He is doing extra ordinary environmental contributions within his own village Ghor Mazraa . Mr.Ajaleen was recognized by many articles in newsletters for his environmental initiatives and contribution. Miss Arwa Aburawa has wrote the following about William work in Green Prophet Newsletter: " William Alajalian, who was born and raised in the Dead Sea area of Ghor Mazraa, may be new to environmentalism but he is more passionate and proactive than most campaigners. Around three years ago, his passion to build a garden and host visitors staying in Jordan collided in new ways. "Through hosting different people from different cultures I became more open minded and educated in sustainable solutions and projects," he explains to Green Prophet. "Every new person gave me a new idea and more energy to keep going." Three years on and with the support of locals from his neighborhood, he has set up an flourishing eco-centre which showcases green methods of growing and water conservation . Coming from a conservative community I did not have much support in my ideas," admits Alajalian (who is pictured above on the right). "Most people thought it was useless and unnecessary. But what I realised is that to reach the community I had to set an example of my own first. Now we have become a group of people, working together to create an example, a platform with minimum expenses." Over the last year, Alajalian and his growing team of volunteers have planted a permaculture garden with a fully-functioning grey-water system which saves at least 50% on water consumption. Plants, flowers, trees and vegetables have been planted and are now growing stronger and faster than ever before."



A barren landscape is transformed.

**JBC Ping-Pong Champion ship**



**Mr.Jopseph Hamlin Coronate Sameh Maradat** from Chlorine plant for winning the Ping pong Champion . Mr.Joseph thanks everyone whom participated and worked to have these functions for JBC employees which show companionship and team work which is of the utmost importance for JBC .  
**Special Thanks to Mr. Kifah Abu Khalaf** for arranging such champions



**Responding to HAZMAT Drill At ACT ( Aqaba Container Terminal )**  
 On 26th Nov-12 , Br2 DCS operator have received emergency Phone call from ACT control room informing that they have Br2 release from one of Br2 ISO tanks at their facility . DCS operator immediately informed Area1 SS , after informing top Management in JBC .



**5S in Area 3**  
 By Raed Al Yasin  
**5S:Sort, Set in Order, Shine, Standardize, Sustain**

This month Area 3 succeed in the second step of implementing the 5S in the area by preparing 2 new check lists for two areas: warehouse, Cells room and started applying those two check list in reality which will improve the work in

the area as the 5S help us to work easily and safely without wasting our team time. In this stage we thank all operators who participate to improve this process in our area like Mohammad Jarrar, Othman Mardat, Khldoun Nasser, Ameen Moqdadi, Husam Azmi, Adnan Ayad, and Mohammad Abu Sagar ...  
 Our plan to make three teams from the area operators and each team have a leader and this leader will keep tracking and implementing the area plan for 5S in the area. In the next issue of operation magazine we will see the next step of Area 3 plan for 5S.

Management assigned Eng. Faisal as Incident Commander to deal with the situation .Faisal assigned Hazmat team members ( hasan Qatamesh ,Mohammad Jarrar,Mahmoud Abu Zaied ) from the 3 areas to respond to the incident scene. The team was ready with the HAZMAT car within 15 minutes from initial notification.

Meanwhile , top Management ( Joseph Hamlin , Ahmad Mahameed , Samer Sader , Thabet Khasawneh, Nahed Abu Baker ) activated SEMP call with USA & Europe and gave them updates on the status of the drill

At the same time management was on line with ACT incident Commander Mr.Gaith Khlaifat to have latest update on the situation and confirmed that all required actions were in place .

Finally SEMP call was conducted again with USA and Europe informing that the drill was successfully completed .

Management collected all notes and defined all improvement action items .

The drill was planned by JBC as part of Emergency preparedness Plan . Mr.Ahmad Dawiri was in the incident SCENE supervising the drill and collect drill post critique notes .



## Employees Feed Back Corner

**JBC Times has received the following feed backs on 1st issue :**  
 FB1: Very nice indeed. Appreciate all efforts to make that happen. Just one comment maybe to consider in the upcoming releases; it has several spilling and grammar mistakes, needs further auditing. Thanks for sharing it.  
 We appreciate the above feed back and we promise to consider the above notes in the upcoming releases .  
 FB2 : Nice work Nahed I have some suggestions/ changes if you wish let us discuss, we might need to publish this on our web site .  
 FB3:Great job Nahed! Well done. Very impressed!  
 FB4: Excellent thanks

FB5: Thanks for the excellent job. It looks made with huge efforts.  
 FB6: Beautiful Idea  
 FB7:Nahed We need to Add field regarding culture and civilization , to be tool give us opportunity to introduce our culture , civilization and religion  
 What do you think , ? I can prepare some simple articles .  
 Appreciate all comments and . Most welcome for any social , technical , safety , Jordanian people culture topics .FB8: it could be a good idea to have the next issues Translated in Arabic , to have more input from most of our employees .  
 FB9:Great Effort .... Very Great ☺

