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# *Report of Chemical Health Risk Assessment*

(Ref No: HQ/11/ASS/00/296-2022/34)

**WELLGAS SDN. BHD.  
2A, LORONG IKS SIMPANG AMPAT L,  
TAMAN IKS SIMPANG AMPAT,  
14100 SIMPANG AMPAT,  
PULAU PINANG**

**(DOSH Reg. No.: PP/18/01/126665)**

*Assessor* : **ROZALINI BINTI AHMAD**

*DOSH Registration No.* : **HQ/11/ASS/00/296**

*Assessment Date* : **26 OCTOBER 2022**

FOR BUSINESS ENQUIRY, PLEASE CONTACT THE BELOW:

156 (2<sup>ND</sup> Floor), Jalan Machang Bubok, Taman Machang Bubok, 14020 Bukit Mertajam, Penang

Phone: 017-417 7028

Email: [sales@advhsesol.com](mailto:sales@advhsesol.com)

# **CHEMICAL HEALTH RISK ASSESSMENT (CHRA) REPORT**

## **FOR**

**WELLGAS SDN. BHD.  
2A, LORONG IKS SIMPANG AMPAT L,  
TAMAN IKS SIMPANG AMPAT,  
14100 SIMPANG AMPAT,  
PULAU PINANG**

<b>ASSESSOR'S NAME</b>	<b>ROZALINI BINTI AHMAD</b>
<b>ASSESSOR'S REG. NO.</b>	<b>HQ/11/ASS/00/296</b>
<b>CHRA REPORT NO.</b>	<b>HQ/11/ASS/00/296-2022/34</b>
<b>DATE OF ASSESSMENT</b>	<b>26 OCTOBER 2022</b>
<b>DOSH REGISTRATION NO.</b>	<b>PP/18/01/126665</b>

# EXECUTIVE SUMMARY

The Chemical Health Risk Assessment (CHRA) as required under the *Occupational Safety and Health (Use and Standards of Exposure of Chemical Hazardous to Health) Regulations 2000* was conducted on **26 OCTOBER 2022** for **WELLGAS SDN. BHD.**

This CHRA is conducted to assess the risk to health of the employees and personnel working in WELLGAS from exposure to chemicals hazardous to health. The existing control measures, training and retraining of employees, monitoring program and health surveillance conducted to protect the employees are also assessed and looked into.

Objectives: -

- a) To ensure chemical register of all chemicals used, handled, stored in WELLGAS that is defined under *USECHH 2000* and *CLASS 2013* as chemicals hazardous to health are updated.
- b) To identify the work areas and work units in WELLGAS where chemicals listed in regulation need CHRA.
- c) To evaluate the degree of exposure of employee to chemicals hazardous to health used in various work areas.
- d) To evaluate the existing control measures and recommend further appropriate measures to reduce exposure as and when required.
- e) To conclude on the significance of the risk posed by the chemicals hazardous to health using chemicals in various work areas and recommend further mitigating measures as necessary.

The *CHRA Manual 3<sup>RD</sup> Edition 2018 (First Reprint 2018)* issued by DOSH is used as a reference and guideline for this assessment.

Main Activities

WELLGAS Sdn Bhd. is an Industrial Gas Supplier located in Taman IKS Simpang Ampat.

The summary of work unit conducted is highlighted as follows:

The summary of findings is as per **Table A** below:

No.	Work Unit	No. of chemicals	Inhalation risk	Dermal Risk	Ingestion	Adequacy of control measure	Recommendation	Action Priority (AP)
1.	Production Operator	5	Nil	Nil	Nil	Adequate	Maintain safety procedure while handling gases.	Nil

Notes:

Inhalation risk

1-4 (low risk)

5-12 (moderate risk)

15-25 (high risk)

Dermal risk

L (low risk)

M1 & M2 (Moderate risk)

H1 & H2 (high risk)

Ingestion

Y=Yes

N=No

**Action Priority (AP)**

*AP 1: Immediate measure is required to rectify the action to be taken as recommended.*

*AP 2: Lower priority compared to AP1; however remedial actions need to be taken.*

*AP 3: Maintain existing technical measure/ control.*

From the assessment that has been carried out, it was found that there are 1 **work unit with 5** chemicals has been assessed and all chemicals are not classified as hazardous.

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## **1.0 INTRODUCTION**

### **1.1 Name and address of the company:**

**WELLGAS SDN. BHD.  
2A, LORONG IKS SIMPANG AMPAT L,  
TAMAN IKS SIMPANG AMPAT,  
14100 SIMPANG AMPAT,  
PULAU PINANG.**

### **1.2 Assessment team**

The assessment was carried out by a team led by ROZALINI BINTI AHMAD registration no. HQ/11/ASS/00/296 with the assistance from WELLGAS's Personnel.

<b>Name</b>	<b>Designation</b>
Mr. Lee Cheng Kuang	Director

### **1.3 Assessment method**

The assessment covers all normal activities carried out during working time at WELLGAS and at each work site. The assessment only covers those work units where there are potential exposures to chemicals. The results of the assessment were based on the observations made and information available during the time of the assessment.

### **1.4 Previous assessment**

This is a new assessment for this premise therefore no summary of previous assessment to be addressed.

## **2.0 PROCESS AND WORK UNIT DESCRIPTIONS**

### **2.1 General Process Description of WELLGAS**

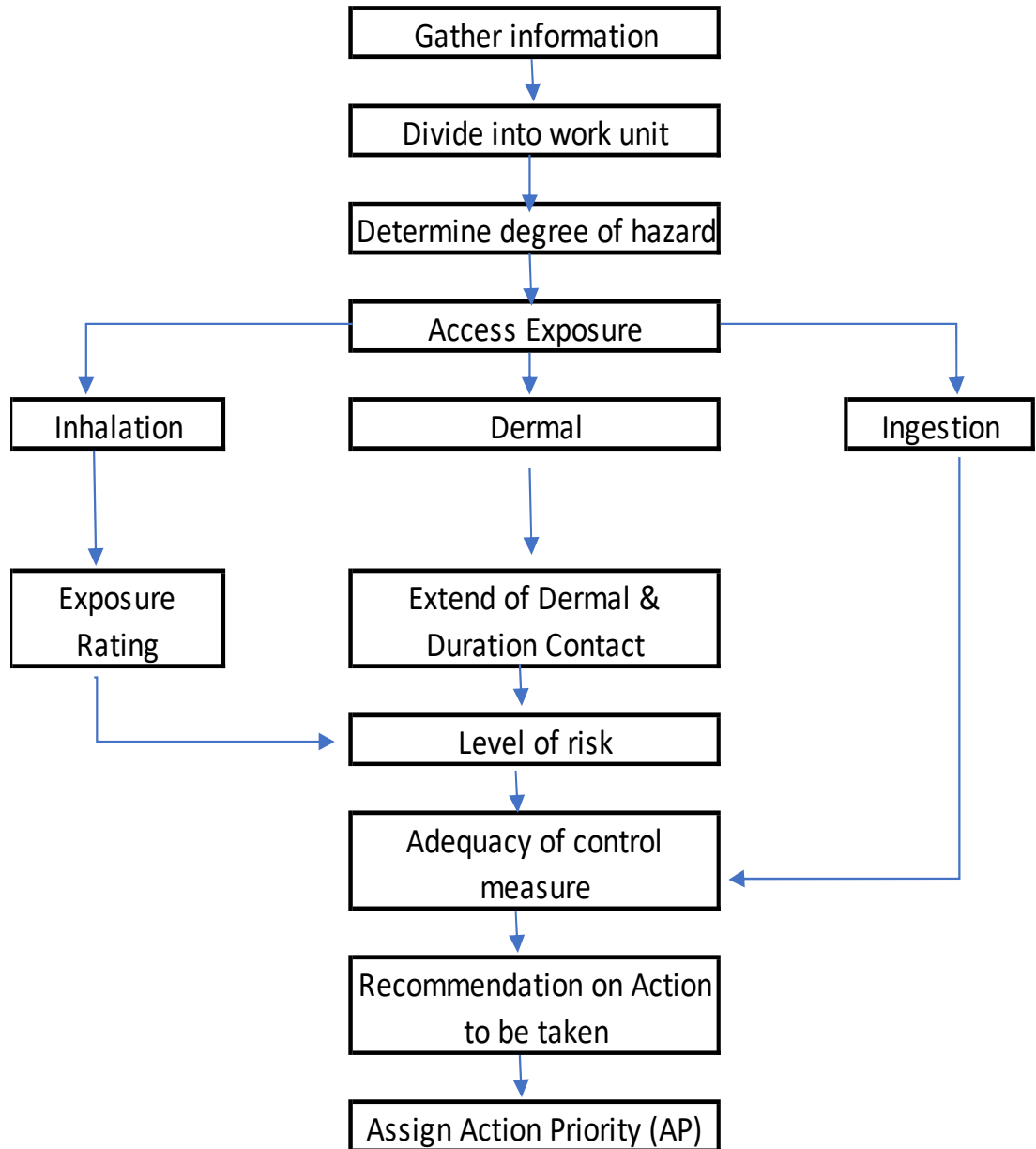
Summary of process description and work units are as per **Table B** below: -

<b>No.</b>	<b>Work unit</b>	<b>No. of workers</b>	<b>Working hours</b>	<b>Process Description</b>
1.	Production Operator	4	Monday – Saturday  8.00am-5.00am	Tanker fill liquid into gas canister, fill empty canister at refilling station. Fix up hose and on cooling pump. Check all valves. Start pumping until the pressure build up. Waiting until refilling complete. Stop pump and transfer canister to storage bank A/B. Open refiling hose and move all filled canister to storage and use cap as seal.

Location plan and process flow are not available during site assessment.

### 3.0 METHODOLOGY

#### 3.1 Flowchart on CHRA Conducted





### **3.2 Qualitative Assessment**

CHRA is conducted either qualitative or quantitative assessment which includes:

1. Walk through site assessment.
2. Observation on each task performed of each work unit.
3. Interview session to relevant personnel.
4. Reviewing data available at site including chemical register, Safety Data Sheet (SDS), previous CHRA reports, chemical monitoring reports, Local Exhaust Ventilation (LEV) reports, reviewing any modifying factors, layout and process involved.
5. Determination of Hazard Rating (HR), Exposure Rating (ER), Magnitude Rating (MR), Duration Rating (DR), Frequency Rating (FR) and Risk Rating (RR) are based on the observations of task and process, relevant documents following Manual of Recommended Practice on Assessment of the Health Risks Arising from the Use of the Chemicals Hazardous to Health at the Workplace 3<sup>rd</sup> Edition First Reprint 2018.
6. Observed personal protective equipment (PPE) provided and the usage of each PPE by the workers.
7. Provide recommendations and assigned action to be taken and action priority.

### **3.3 Quantitative Assessment**

In this assessment, all parameters are following qualitative assessment as the data from air-borne measurements in not available.

## **4.0 FINDINGS OF ASSESSMENT**

CHRA assessment only covers chemicals which are listed in:

1. Schedule I and II of USECHH Regulations.
2. Classified as any hazard specified under Health Hazard of First Schedule of CLASS Regulations.
3. a pesticide defined under Pesticides Act 1974.
4. a scheduled waste listed in First Schedule to Environment Quality (Scheduled Wastes) Regulations 2005.

### **4.1 Not classified as hazardous chemicals**

There are few chemicals found to be “not classified as hazardous” therefore, these chemicals are not listed in the **4.2 Summary of findings**

<b>No.</b>	<b>Chemical Name</b>	<b>Department</b>
1	Argon, compressed	Production
2	Carbon Dioxide	Production
3	Medical Compressed Air, Purified Air, Synthetic Air, Breathing Air	Production
4	Nitrogen, compressed	Production
5	Compressed Oxygen / Purified Oxygen	Production

**All gases produced in this premise are not classified as hazardous, therefore the risk of this chemicals to health is not highlighted.**

## **5.0 DISCUSSION**

### **5. Existing technical control**

At production area, chemicals are placed in open air section and once the canister is filled with gases, they will be transferred to storage area waiting to be transported to end client.

It was observed that workstation, workers hands (with short fingernails) and clothing are found to be cleaned. The workers are not allowed to eat, drink or smoking while working especially when handling flammable chemical.

Personal protective equipment (PPE) provided to all related personnel at production area are safety shoes and covid-19 prevention facemask.

### **5.3 Existing organization control**

#### **(a) Adoption of safe work systems and practices**

- 1) Only authorised personnel are allowed to enter production area
- 2) Workers are not allowed to eat, drink and smoking while working especially with flammable gas.
- 3) Chemicals containers are kept closed at all times at all times to avoid accidental release of these gases.

#### **(b) Providing information, instruction and training to workers**

- 1) Current information/ instruction provided to personnel:
  - On job training is conducted by the production head highlighting the Standard Operating Procedure while working including safety while working with gases.

#### **(c) Personal hygiene**

Workers are only allowed to eat and drinks at pantry area. No risk or ingestion hazard observed.

#### **5.4 Existing emergency response preparedness**

Emergency procedure is observed in the production area.

- Fire emergency route is available and displayed at production area.
- Fire extinguisher is also observed and checked for the inspection's expiry date.

#### **5.5 Existing Exposure monitoring and medical surveillance**

Chemical exposure monitoring record is **NOT** available for this work unit.

### **6.0 RECOMMENDATION ON ACTION TO BE TAKEN**

#### **6.1 Action to be taken on technical control.**

Control measures are all the steps taken to prevent or minimize risks.

##### **6.1.1 Isolation and enclosure**

Gases transferred from tanker and refilled inside canister using nozzle. No release of gases is observed, therefore no further recommendation in this section.

##### **6.1.2 Engineering control and ventilation**

The production area is located in open air area and similarly goes to the storage area. Therefore, there's no engineering control required.

##### **6.1.3 Personal Protection Equipment, PPE**

No PPE required while handling this process, thus no recommendation of PPE to be highlighted.

**Table C** below summarizes the recommendation and Action Priority (AP) assigned for each work unit.

No.	Work unit	Recommendation	Action Priority
1.	Production Operator	To maintain current safety practice in the workplace	NIL

**Table D: Action Priority Determination**

Level of risk	Adequacy of control	Action Priority (AP)
High	Inadequate	1
HR or ER could not be determined	-	1
Moderate low	Inadequate	2
High/Moderate/Low	Adequate	3

**Notes:**

AP 1: Immediate measure is required to rectify the action to be taken as recommended.

AP 2: Lower priority compared to AP1; however remedial actions need to be taken.

AP 3: Maintain existing technical measure/ control.

**6.2 Action to be taken on organization control. Summary of organization control is as per**

**Table E** below:

No.	Work unit	RECOMMENDATION
1.	All work units	<ol style="list-style-type: none"> <li>1. To make available and update chemical register according to work units of chemicals used (USECHH Regulation Section 5 (1) (2) (a)(b)(c)(d)(e)</li> <li>2. To continue to conduct chemical safety training as per USECHH Regulation Section 22 (1) (a) (b), (2) (a) (b), (3) (a) (b) (c).</li> </ol>

		3. All chemicals should have latest SDS according to <i>Classification Labeling and Safety Data Sheet (CLASS) Regulation 2013</i> which is no longer than 5 years (latest version should be from year 2014 and above). It also has to be written in National Language and English.
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**6.3 Action to be taken on emergency response preparedness.**

To have first aid box and maintain the supplies of the items for emergency purposes.

**6.4 Action to be taken for exposure monitoring and medical surveillance.**

**Chemical exposure monitoring.**

Chemical exposure monitoring will be necessary when:

- i) the level of inhalation risk is moderate to high.
- ii) to ensure effectiveness and maintenance of control measure.
- iii) availability of valid method and existence of PEL/OEL.

Action to be taken is highlighted as per below:

No	Work Unit	Action to be taken
1	Production Operator	Not required as the chemicals used in this work unit is not hazardous gas.

**Medical surveillance.**

Medical surveillance is considered to be necessary when:

- i. the results of air monitoring at or above 8hrs TWA.
- ii. the results of biological monitoring exceed ceiling limit (CL), MEL or STEL.
- iii. the results of biological monitoring exceed biological exposure limit (BEI).
- iv. the chemical pose potential systemic effects through dermal absorption which indicated as (skin) in Schedule I or USECHH regulations and the task likely to expose to dermal contact.

- v. the worker is exposed to chemicals listed in Schedule II of USECHH regulations and likely to have identifiable disease result to the exposure.
- vi. case of ill-health or workers feedback related to chemical hazardous to health at workplace.

Action to be taken is highlighted as per below:

Work Units	Action to be taken
CPP Operator, Metalizing Operator and Maintenance Technician.	The operators are not required to undergo the medical surveillance due the workers are not exposed to chemicals listed in Schedule II of USECHH Regulations.

## **7. CONCLUSION**

Based on the assessment that has been conducted it can be concluded that:

No	Work Unit	Total chemicals	Level of risk	Inhalation	Dermal	Ingestion	Action to control exposure	Action Priority
1	Production Operator	5	Chemicals are not classified as hazardous					

### ***Duty of employer after CHRA conducted: -***

1. The employer to maintain current safety practice while handling gases especially the flammable once.
2. Compliance to all recommendation listed in **6.0** which also highlighted in CHRA Forms C and D.

It is recommended to continue current best practice to minimize further as far as practicable. The assessor shall be informed of the any changes carried out that may affect the risk levels and the CHRA report.

The report shall be maintained in good order for a period not less than **thirty (30) years** by the employer and make available for examination upon request by the Director General or by any employee exposed or likely to be exposed to chemicals hazardous to health.

Reassessment is to be carried out in any of the following condition:

- a) There has been significant change in the work that could affect the outcome of the assessment.
- b) New or improved control measure
- c) More than 5 years have elapse since the last assessment (**next assessment October 2027**).
- d) Directed by Director General, Deputy Director General or the Director of Occupational Safety and Health.

Significant change

- **Changes of chemicals**
- **Increase or decrease the utilization of chemicals hazardous to health used**
- **Changes in method of work**
- **Deterioration in the efficiency of control equipment**
- **Plant failure or process failure**
- **New information on the hazards of the chemical becomes available.**



# REFERENCES

1. Assessment of The Health Risks Arising from the Use of Chemicals Hazardous to Health at Workplace 3<sup>rd</sup> Edition 2018.
2. Industrial Code of Practice on Chemicals Classification and Hazard Communication 2014
3. Use and Standard of Exposure of Chemicals Hazardous to Health (USECHH) 2000.
4. NIOSH [cdc.gov.my](https://www.cdc.gov/niosh)
5. Lecture Notes of 3<sup>rd</sup> Edition Manual of CHRA – OSHCHEM Consultancy

# APPENDICES

# ASSESSMENT FORMS A TO D OF WORKPLACE

# FORMS A TO D OF WORKPLACE

## 1. PRODUCTION OPERATOR

**FORM A: WORK UNIT DESCRIPTION**

<b>1. Work unit</b>	Production Operator	<b>2. Date of assessment</b>	26 October 2022			
<b>3. Work area</b>	Production Area	<b>4. Number of worker</b>	<b>Male:</b>	4	<b>Female:</b>	-
<b>5. Working hours</b>	Working Arrangement: Normal Monday to Saturday 8.00am-5.00pm Shift Monday to Saturday 6.00am-6.00pm					
<b>6. Worker health feedbacks</b>			<b>9. Possibility of abnormal exposures</b>			
Based on interview session no health feedback			Not possible, gases are transferred according using pump system. Not abnormal exposure observed.			
<b>7. Report on health effects</b>			<b>10. Possibility of mixed exposures</b>			
No cases of health effect reported. No issuance of JKKP 7 recorded			Not possible as the insertion of gas inside cylinder is conducted by gas pipe, minimum contact to workers observed.			
<b>8. Susceptible conditions related to chemical(s) in use</b>			<b>11. Possibility of ingestion</b>			
Unlikely, based on current usage and storage			Unlikely as no food and drinks allowed at work area, ingestion is unlikely to occur			
<b>12. Other information</b>						
None						

**FORM B: LIST OF CHEMICALS HAZARDOUS TO HEALTH ASSESSED**

**WORK UNIT:**

Production Operator

**DATE OF ASSESSMENT:**

26 October 2022

**Table B1: Chemicals Used in Work Unit**

No.	Name of chemical	CAS #	Hazardous ingredient	Physical form	Hazard classification	H-code	Source of information	HR	Dermal (Y/N)	Ingestion (Y/N)
1	Argon, compressed	7440-37-1	NONE	Gas	Not classified as hazardous	NA	SDS 02/3/2022	NA	NA	NA
2	Carbon Dioxide	124-38-9	NONE	Gas	Not classified as hazardous	NA	SDS 02/3/2022	NA	NA	NA
3	Medical Compressed Air, Purified Air, Synthetic Air, Breathing Air	132259-10-0	NONE	Gas	Not classified as hazardous	NA	SDS 02/3/2022	NA	NA	NA
4	Nitrogen, compressed	7727-37-9	NONE	Gas	Not classified as hazardous	NA	SDS 02/3/2022	NA	NA	NA
5	Compressed Oxygen / Purified Oxygen	7782-44-7	NONE	Gas	Not classified as hazardous	NA	SDS 02/3/2022	NA	NA	NA

Table B2: Chemicals Released by the Processes or Work Activities

No.	Name of chemical	Hazardous ingredient	Physical form	Hazard classification	H-code	Source of information	HR	Dermal (Y/N)	Ingestion (Y/N)
		NONE							





Table C2: Dermal Assessment

No.	Job or task	Name of chemical	Hazardous properties	Extent of dermal contact	Duration of exposure		Level of risk
					Short term (<15min/shift)	Long term (≥15min/shift)	
1		NONE					

**FORM D: CONTROL MEASURES AND RECOMMENDATIONS**

**WORK UNIT:** Production Operator

**DATE OF ASSESSMENT:**  
26 October 2022

**Table D1: Technical Controls (TC)**

No.	Job or task	Name of chemical	ROE	Existing technical controls (TC)						Overall adequacy (Y/N)	Recommendation on Technical Control	AP
				Isolation or enclosure		Engineering control & ventilation		PPE				
				Specify	Adequacy (Y/N/NA)	Specify	Adequacy (Y/N/NA)	Specify	Adequacy (Y/N/NA)			
1	Transfer chemical from tanker into cylinder gas	Argon, compressed	NIL	Gas stored inside tanker connected to cylinder using hose	Y	Natural ventilation	Y	NIL	NA	Adequate	Maintain current practice	NIL
2	Transfer chemical from tanker into cylinder gas	Carbon Dioxide	NIL	Gas stored inside tanker connected to cylinder using hose	Y	Natural ventilation	Y	NIL	NA	Adequate	Maintain current practice	NIL
3	Transfer chemical from tanker into cylinder gas	Medical Compressed Air, Purified Air, Synthetic Air, Breathing Air	NIL	Gas stored inside tanker connected to cylinder using hose	Y	Natural ventilation	Y	NIL	NA	Adequate	Maintain current practice	NIL
4	Transfer chemical from tanker into cylinder gas	Nitrogen, compressed	NIL	Gas stored inside tanker connected to cylinder using hose	Y	Natural ventilation	Y	NIL	NA	Adequate	Maintain current practice	NIL
5	Transfer chemical from tanker into cylinder gas	Compressed Oxygen / Purified Oxygen	NIL	Gas stored inside tanker connected to cylinder using hose	Y	Natural ventilation	Y	NIL	NA	Adequate	Maintain current practice	NIL

Table D2: Organisational Control (OC)

Existing organisational control (OC)	Adequacy (Y/N/NA)	Recommendation
<p><b><u>(a) Adoption of safe work systems and practices</u></b></p> <p>1) Only authorised personnel is allowed to enter production area</p> <p>2) No open flame allowed in this production area</p> <p>3) Workers are not allowed to eat, drink and smoke while working</p> <p>4) Chemicals containers are kept closed at all time when not in used</p>	<p>Y</p> <p>Y</p> <p>Y</p> <p>Y</p>	<p><b>Maintain current practice</b></p>
<p><b><u>(b) Providing information, instruction and training to workers</u></b></p> <p>Provide tool box training every beginning of the shift</p> <p>On job training on worker's safety is conducted by top management</p>	<p>Y</p>	<p><b>Maintain current practice</b></p>
<p><b><u>(c) Personal hygiene</u></b></p> <p>Workers are only allowed to eat and drinks at pantry area</p>	<p>Y</p>	<p><b>Maintain current practice</b></p>

**Table D3: Emergency Response Preparedness**

Emergency response preparedness	Adequacy (Y/N/NA)	Recommendation
<p><b><u>Emergency procedure observed at production area.</u></b></p> <p>'- Fire extinguisher is also observed and checked for the inspection's expiry date (19-12-2021)</p>	Y	To ensure all fire extinguisher kept at production area are updated

**Table D4: Exposure Monitoring & Medical Surveillance**

Existing Programme	Recommendation (indicate necessary)
<p>(a) Monitoring of personal exposures and general air levels:</p> <p>No chemical exposure monitoring record available during site assessment</p>	<p><b>Not required as the chemicals used in this work unit is not hazardous gas</b></p>
<p>(b) Medical surveillance :</p> <p>No medical surveillance report available during site assessment</p>	<p><b>The operators are not required to undergo the medical surveillance : a) the workers are not exposed to chemicals listed in Schedule II of USECHH Regulations.</b></p>

**Table D5: Specific Action to be Taken**

Specific action to be taken	
Name of chemical	Recommendation
NONE	

# LAYOUT PLAN OF WORKPLACE

# PROCESS WORKFLOW OF WORKPLACE

# ASSESSOR'S CERTIFICATE AND SUPPORTING DOCUMENTS

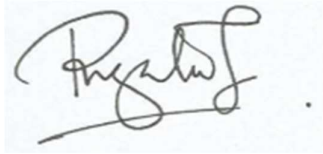
## CHRA NOTIFICATION FORM

**Date** : 24 FEBRUARY 2023  
**Workplace** : WELLGAS SDN. BHD.  
2A, LORONG IKS SIMPANG AMPAT L,  
TAMAN IKS SIMPANG AMPAT,  
14100 SIMPANG AMPAT,  
PULAU PINANG.  
**Contact Person** : MR. LEE CHENG KUANG

**Ref: CHEMICAL HEALTH RISK ASSESSMENT REPORT**

This is to certify that I have conducted CHRA for the above workplace on **26 OCTOBER 2022.**

2. In compliance to Occupational Safety and Health (Use and Standard of Exposure of Chemicals Hazardous to Health) Regulations 2000, the CHRA report has been submitted, presented and explained to the employer on **24 FEBRUARY 2023.**
3. The employer has been informed to take action to control exposure of workers to chemicals hazardous to health as indicated in the CHRA report within one month after receiving the report.



.....  
**Rozalini binti Ahmad**

DOSH Registration No: HQ/11/ASS/00/296

Date of Assessment : 26 OCTOBER 2022

Date of Report Finalization: 30 OCTOBER 2022

**CHRA Report Received by:**

Name : .....

Designation : .....

Date of receipt report : .....

Signature : .....