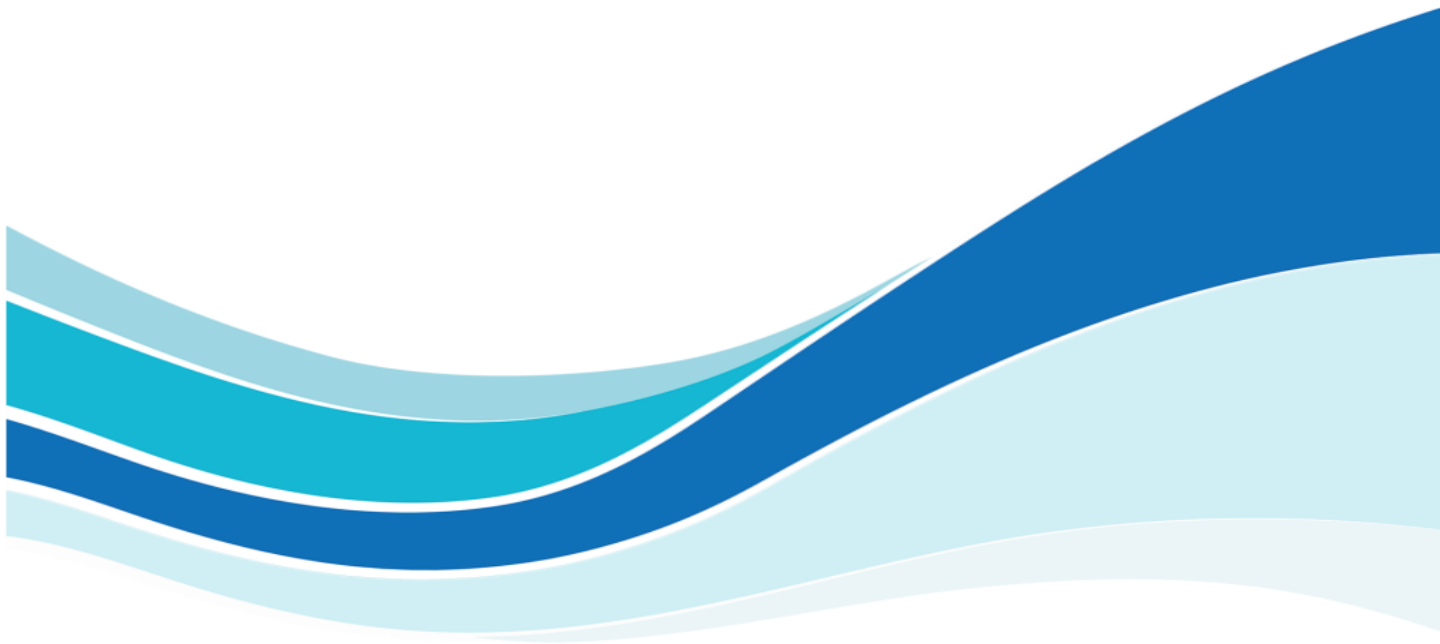


**ภาคผนวกที่ 21**  
**เอกสารแสดงเบอร์ดัตตอสถานพยาบาลและ**  
**หน่วยงานที่เกี่ยวข้อง**

---



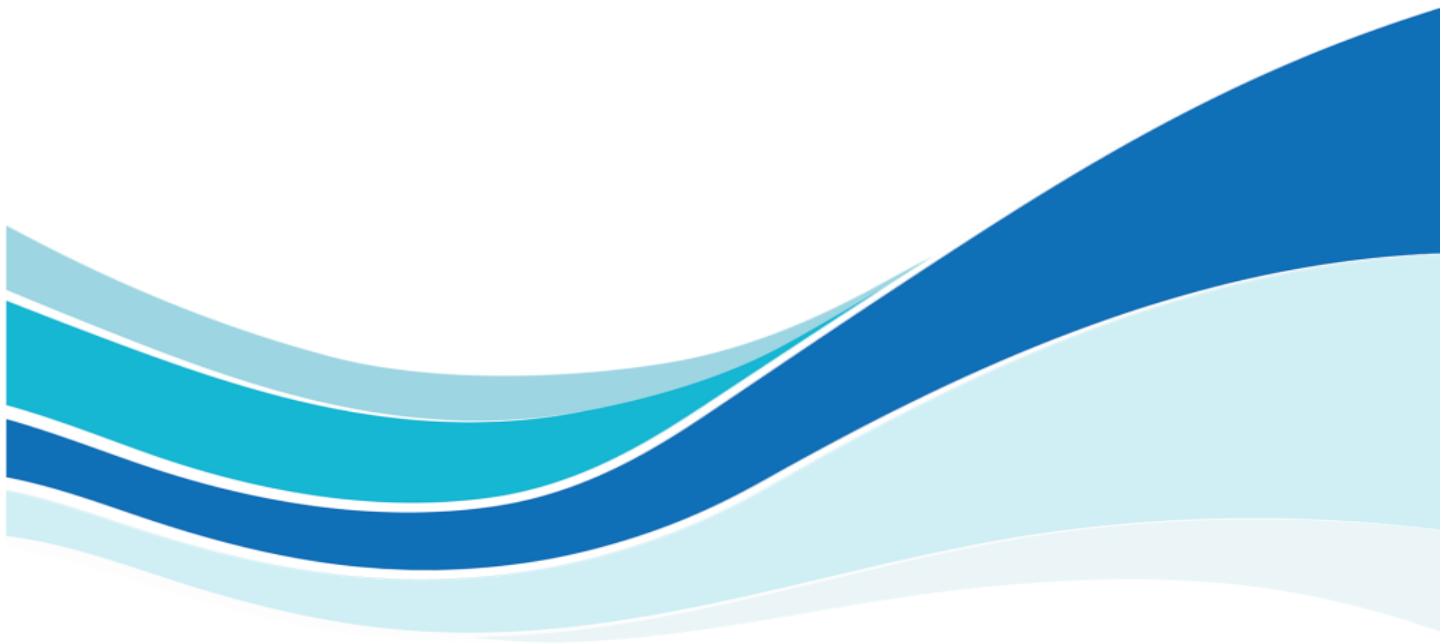
เบอร์โทรศัพท์ติดต่อหน่วยงานราชการ					
No.	ชื่อสำนักงาน	ตำแหน่ง/ฝ่าย	เบอร์ติดต่อสำนักงาน	รายชื่อ	เบอร์มือถือ
1	กฟภ.อำเภอ กำแพงแสน	เบอร์กลาง/ห้องเวรแก่ไฟ			
2	กฟภ.อำเภอ กำแพงแสน	ห้องผู้จัดการ			
3	กฟภ.อำเภอ กำแพงแสน	ห้องการเงินและบัญชี			
4	กฟภ.อำเภอ กำแพงแสน	แผนกบริการ			
5	กฟภ.อำเภอ กำแพงแสน	เบอร์แฟกซ์			
6	สถานีดับเพลิงกำแพงแสน	เบอร์กลาง			
7	กฟภ.อำเภออุททอง	แจ้งไฟฟ้าขัดข้อง			
8	กฟภ.อำเภออุททอง	ผู้จัดการ กฟภ.อ.อุททอง			
9	กฟภ.อำเภออุททอง	เบอร์กลาง/หัวหน้าแผนกบริการผู้ใช้ไฟ			
10	กฟภ.อำเภออุททอง	แผนกธุรการ(เบอร์กลาง)			
11	กฟภ.อำเภออุททอง	แผนกบัญชีและการเงิน(เบอร์กลาง)			
12	กฟภ.ตำบลสวนแตง	เบอร์กลาง			
13	กฟภ.ตำบลสวนแตง	หัวหน้า กฟภ.ต.สวนแตง			
14	กฟภ.ตำบลสวนแตง	เบอร์แฟกซ์			
15	กฟภ.ตำบลมะขามล้ม	Hotline 1129			
16	กฟภ.อำเภอบางปลาม้า	เบอร์กลาง			
17	สถานีดับเพลิงสวนแตง	เบอร์กลาง			
18	สถานีตำรวจภูธรเมืองสุพรรณบุรี	ผกก.สภ.เมืองสุพรรณบุรี			
19	สถานีตำรวจภูธรอุททอง	ผกก.สภ.อุททอง			
20	สภ. สระแก้ว	เบอร์กลาง			
21	สภ. บางปลาม้า	เบอร์กลาง			
22	สถานีตำรวจภูธรบางปลาม้า	เบอร์กลาง			
23	สถานีตำรวจชุมชน อุททอง	เบอร์กลาง			
24	สถานีตำรวจชุมชน สังฆายเถร	คุณอภิชัย			
25	ศูนย์บริการประชาชน ต.บางกุ้ง	เบอร์กลาง			
26	ศูนย์บริการประชาชน ต.ดอนโพธิ์ทอง	คุณประเสริฐ รัตนจันทร์			
27	ศูนย์บริการประชาชน ต.วังน้ำเย็น	คุณนิสสรณ์ สายนุช			
28	ผู้ใหญ่บ้านหมู่ 8 ต.ศาลาขาว				
29	องค์การบริหารส่วน ต.ทุ่งลูกนก	เบอร์กลาง			
30	เทศบาล ต.กำแพงแสน	หัวหน้า ป้องกันและบรรเทาสาธารณภัย			
31	องค์การบริหารส่วน ต.กำแพงแสน	เบอร์กลาง			
32	เทศบาล ต.เจดีย์	สำนักปลัด			
33	เทศบาล ต.เจดีย์	คุณมอส (นายก)			
34	องค์การบริหารส่วน ต.สวนแตง	เบอร์กลาง			
35	เทศบาลสวนแตง	คุณวสันต์			
36	เทศบาล ต.บางกุ้ง	ห้องป้องกันภัย			
37	เทศบาล ต.ท่าเสด็จ	สำนักงาน			
38	องค์การบริหารส่วน ต.ศาลาขาว	นายก อบต.ศาลาขาว			
39	องค์การบริหารส่วน ต.วังน้ำเย็น	เบอร์กลาง			
41	องค์การบริหารส่วน ต.ดอนโพธิ์ทอง	เบอร์กลาง			
42	ศูนย์กู้ภัยเถรแก้ว	เบอร์กลาง			
43	ศูนย์กู้ภัยร่วมใจสวนแตง	เบอร์กลาง			
44	กสท.สุพรรณบุรี				
45	กสท.สุพรรณบุรี				
46	กสท.สุพรรณบุรี				
47	พลังงานจังหวัดสุพรรณบุรี	เบอร์กลาง			
48	หน้าห้องนายอำเภอเมืองสุพรรณบุรี				
49	สำนักงานป้องกันและบรรเทาสาธารณภัยจ.สุพรรณบุรี				

เบอร์โทรศัพท์ติดต่อโรงพยาบาล			
No.	ชื่อโรงพยาบาล	รายชื่อ	เบอร์ติดต่อสำนักงาน
1	คลินิก กำแพงแสน		
2	รพ.จันทบุรีเวช		
3	รพ.ธนบุรีคูทอง		
4	รพ.กำแพงแสน		
5	รพ.บางปลาม้า		
6	รพ.สต.สังขมาเยน		
7	รพ.สต.ดอนโพธิ์ทอง		
8	รพ.สต.วังน้ำเย็น		
9	รพ.เจ้าพระยายมราช		
เบอร์โทรศัพท์ติดต่อพนักงานบริษัท SBP (Helper wellsite KS)			
No.	รายชื่อ	เบอร์ติดต่อสำนักงาน	เบอร์ติดต่อ
1	คุณ ณรงค์ สังข์ทุ่งขวาง		
2	คุณ หัสดง บุญเทียน		
3	คุณ บุญยืน นักวิฟ้า		
เบอร์โทรศัพท์ติดต่อพนักงานบริษัท BRK INTERTRANSPORT			
No.	รายชื่อ	ตำแหน่ง	เบอร์ติดต่อ
1		ผู้จัดการ	
2		Safety	
3		ธุรการขนส่ง	

ภาคผนวกที่ 22

เอกสารการตรวจสอบสุขภาพก่อนเข้าทำงานของพนักงาน

---







PTTEP Medical Fitness Certificate

Form no. 13373-SUP-SSHE-FRM-017-R00

Personal & Confidential

PTTEP Medical Fitness Certificate

To be filled out by PTTEP Approved Doctor (PAD) only

19/2/66 10:51

about:blank



โรงพยาบาล  
พิษณุเวช  
PITSANUVEJ HOSPITAL  
IN PERSONAL HEALTHCARE SERVICE

211 ถนนพหลโยธิน แขวงจันทบุรี กรุงเทพฯ 10110  
Tel. 055-909000 Fax. 055-909005, 055-909015

ใบรับรองแพทย์

วันที่ 19 ก.พ. 2566 เวลา 10.47 น.

บริษัท พิษณุเวช จำกัด

แพทย์ผู้ตรวจและรักษา

FM-MDV-001 แก้ไขครั้งที่ 3 จัดทำเมื่อ 1 ต.ค. 2562 วันที่ใช้บังคับ 1 ต.ค. 2562 (HIS)

about:blank

1/1

19/2/66 10:49

about:blank



โรงพยาบาล  
พิษณุเวช  
PITSANUVEJ HOSPITAL  
IN PERSONAL HEALTHCARE SERVICE

211 ถนนพหลโยธิน แขวงจันทบุรี กรุงเทพฯ 10110  
Tel. 055-909000 Fax. 055-909005, 055-909015

ใบรับรองแพทย์



PTTEP

ใบรับรองแพทย์สำหรับการปฏิบัติงานในพื้นที่อับอากาศ

MEDICAL CERTIFICATE FOR WORKING IN CONFINED SPACE

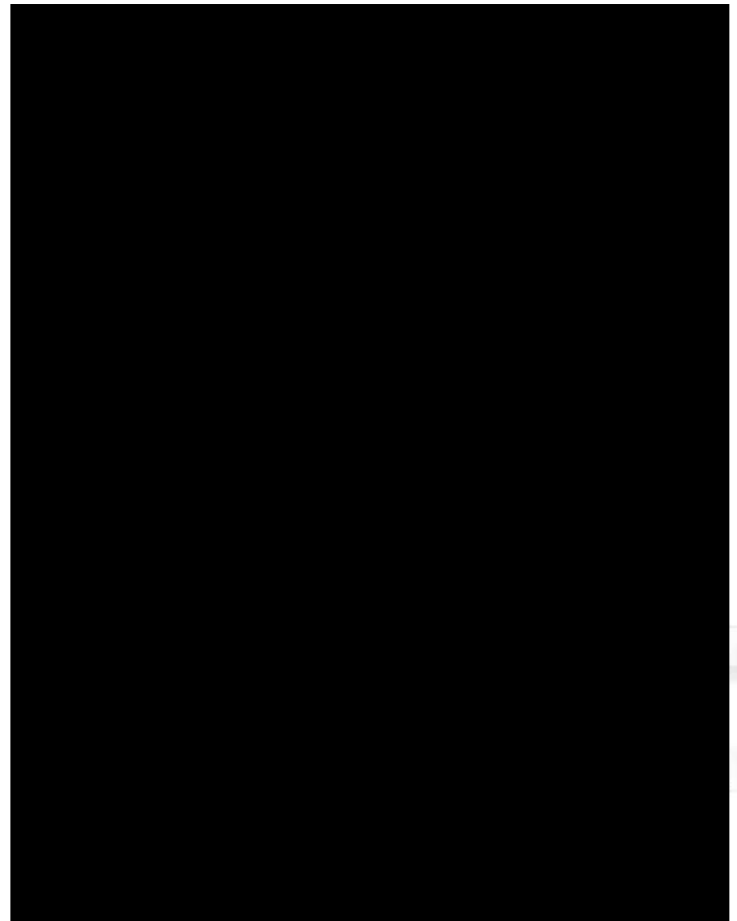
about:blank

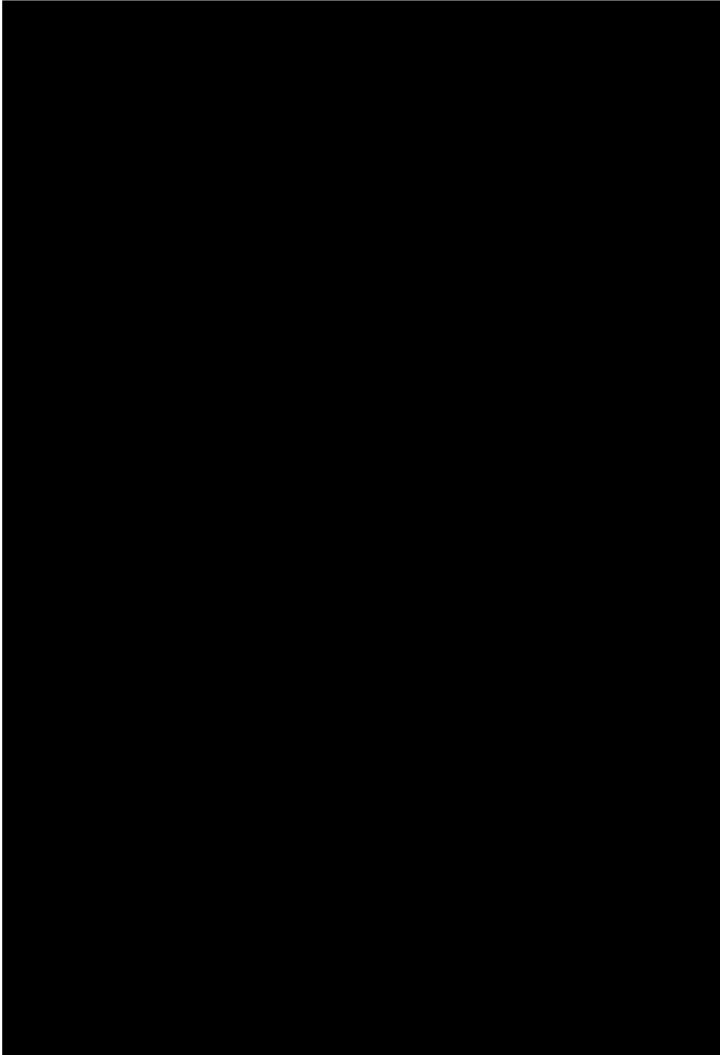
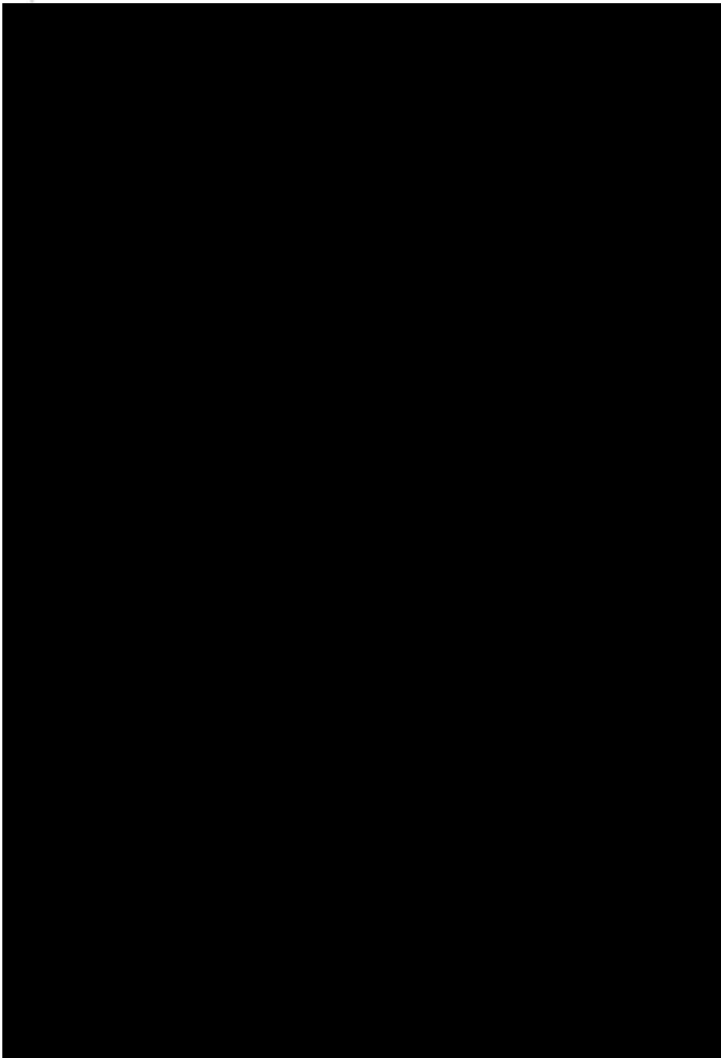
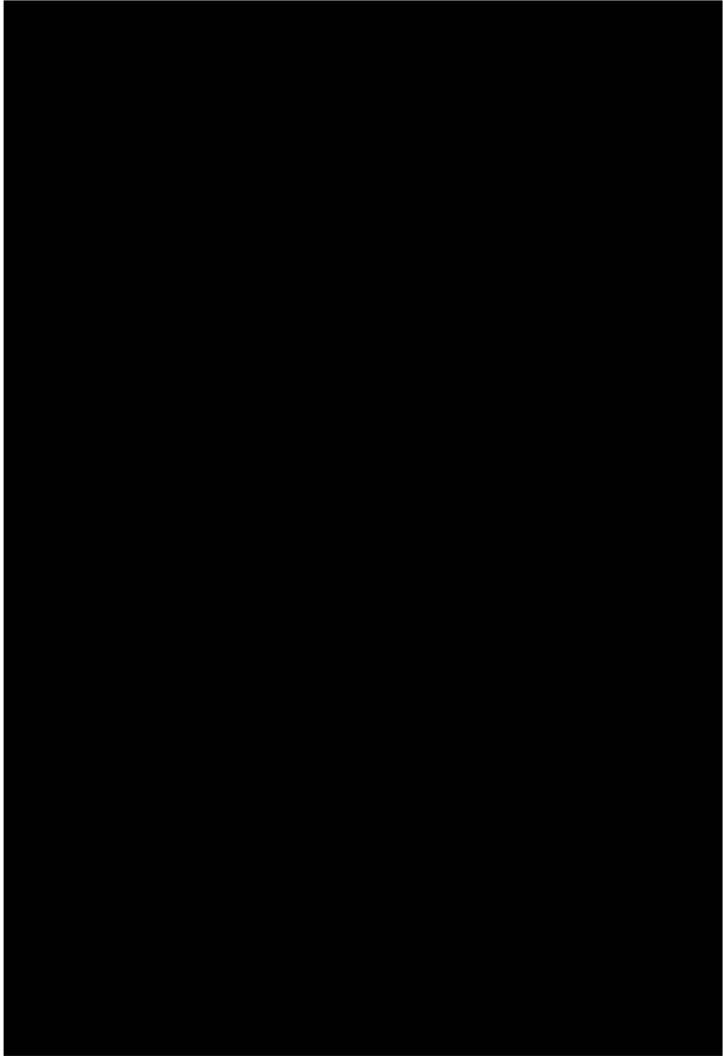
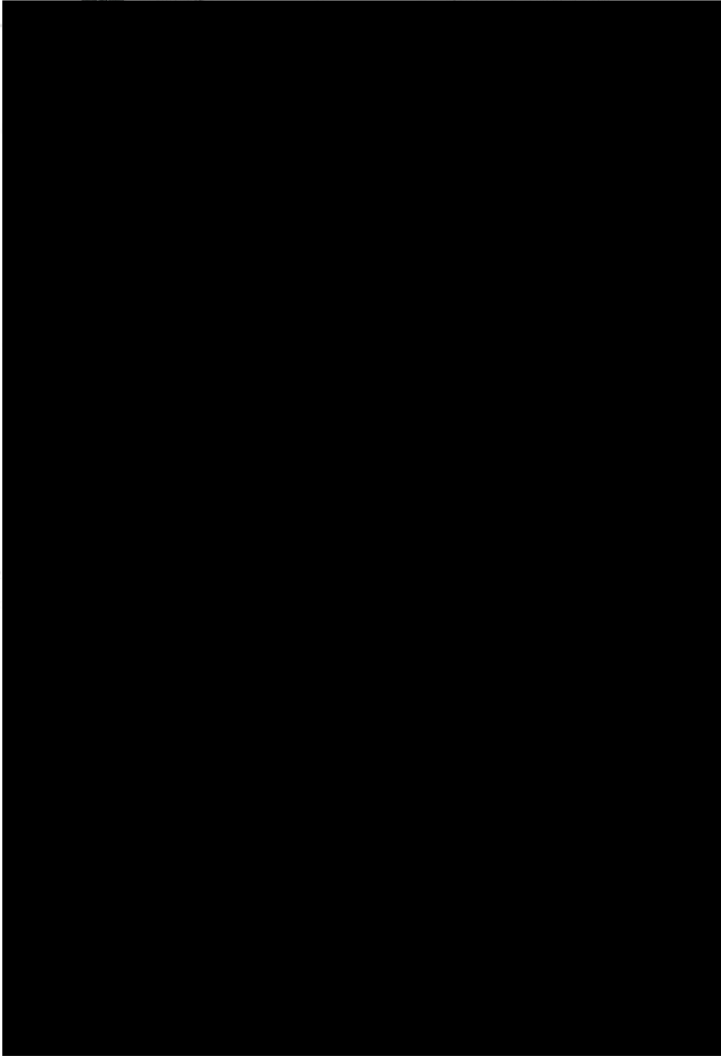
1/1

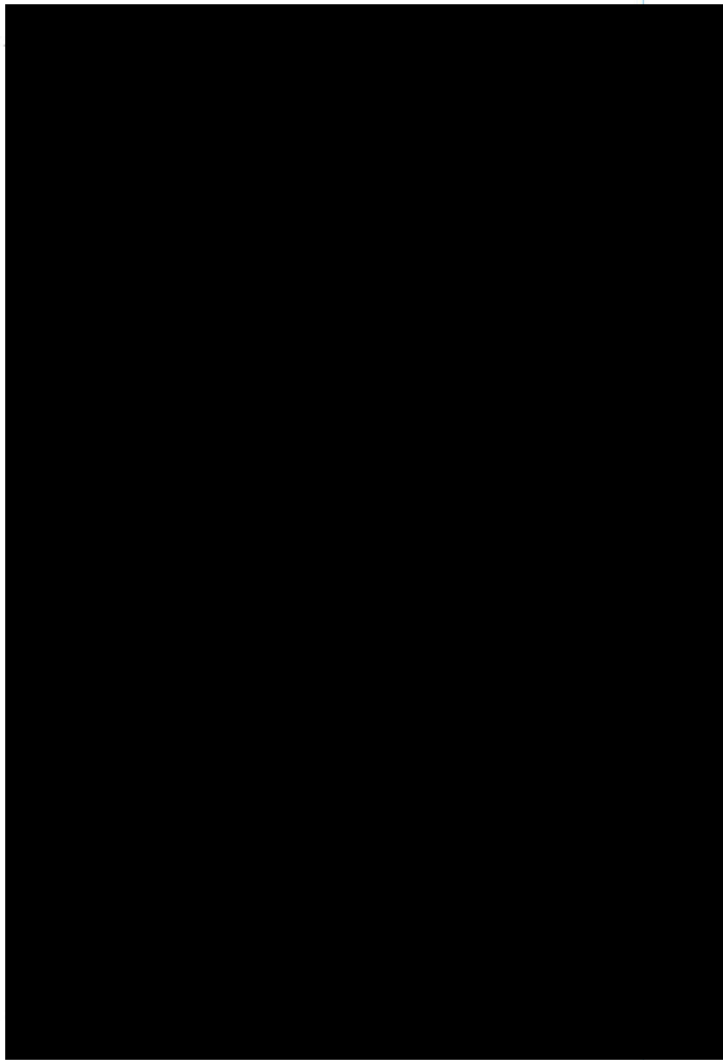
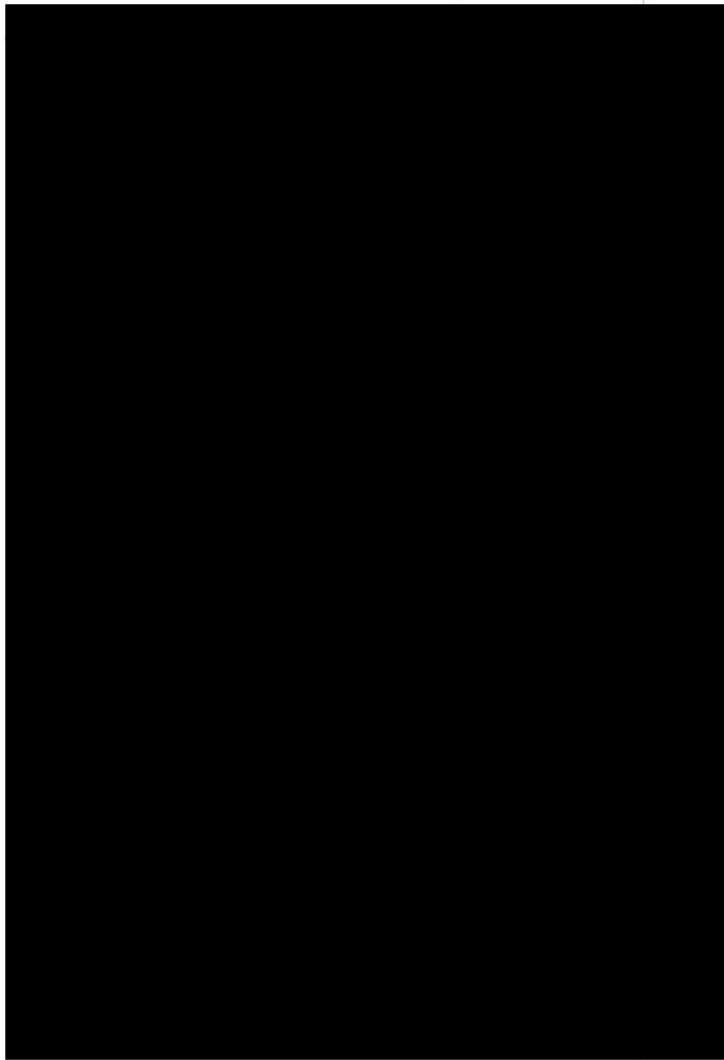
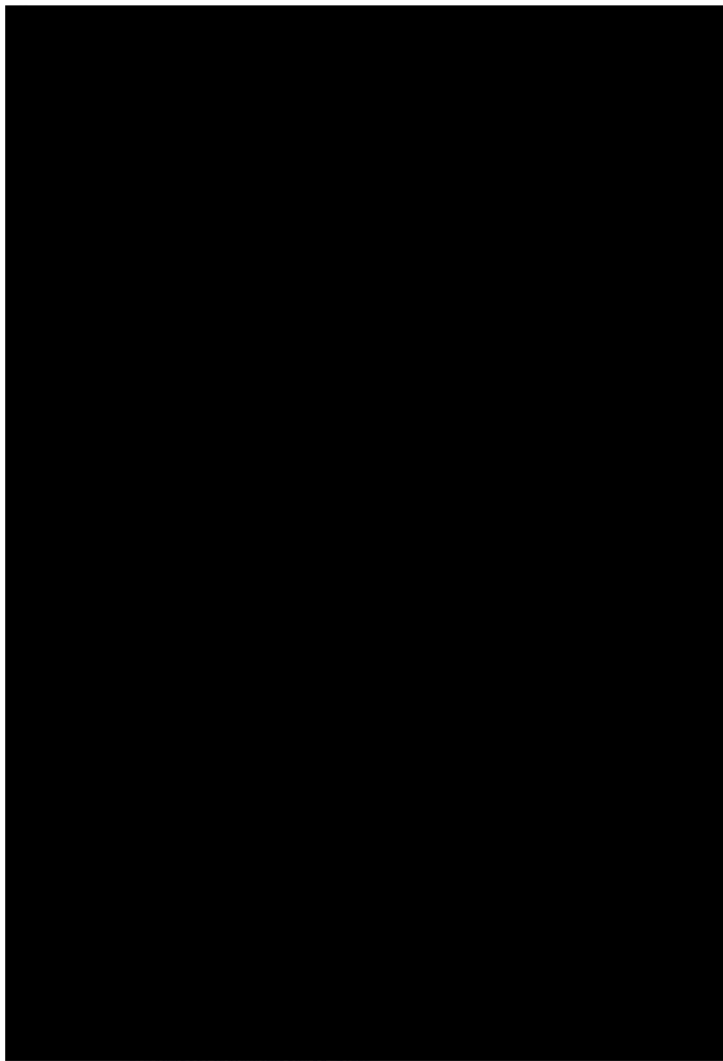
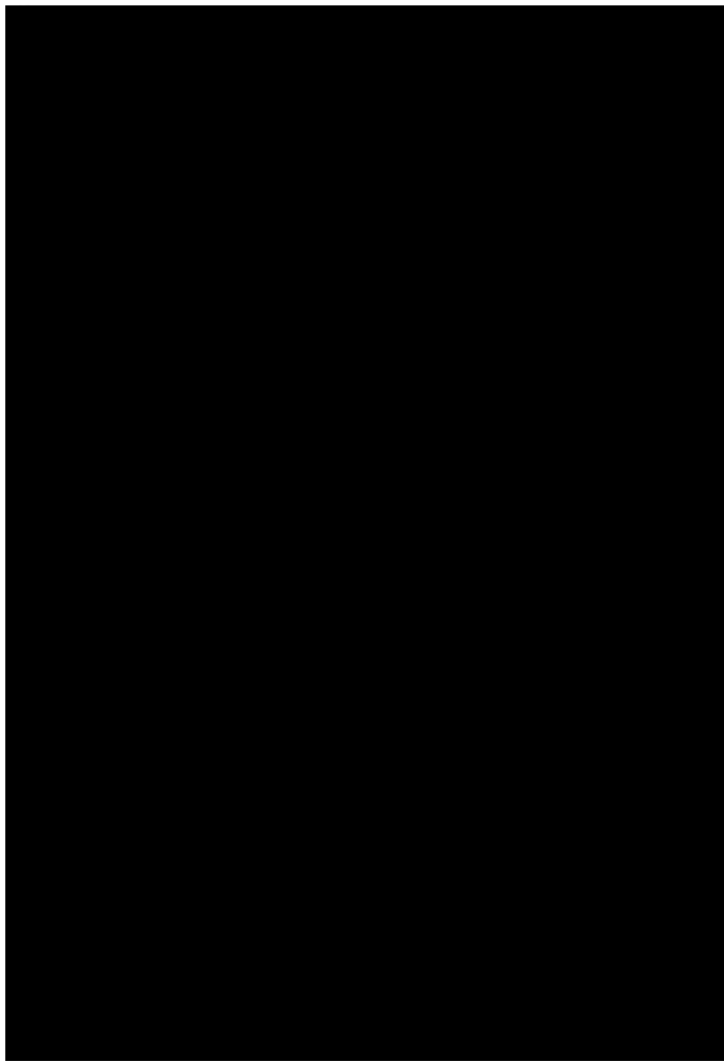
ประวัติส่วนตัว (Personal History)

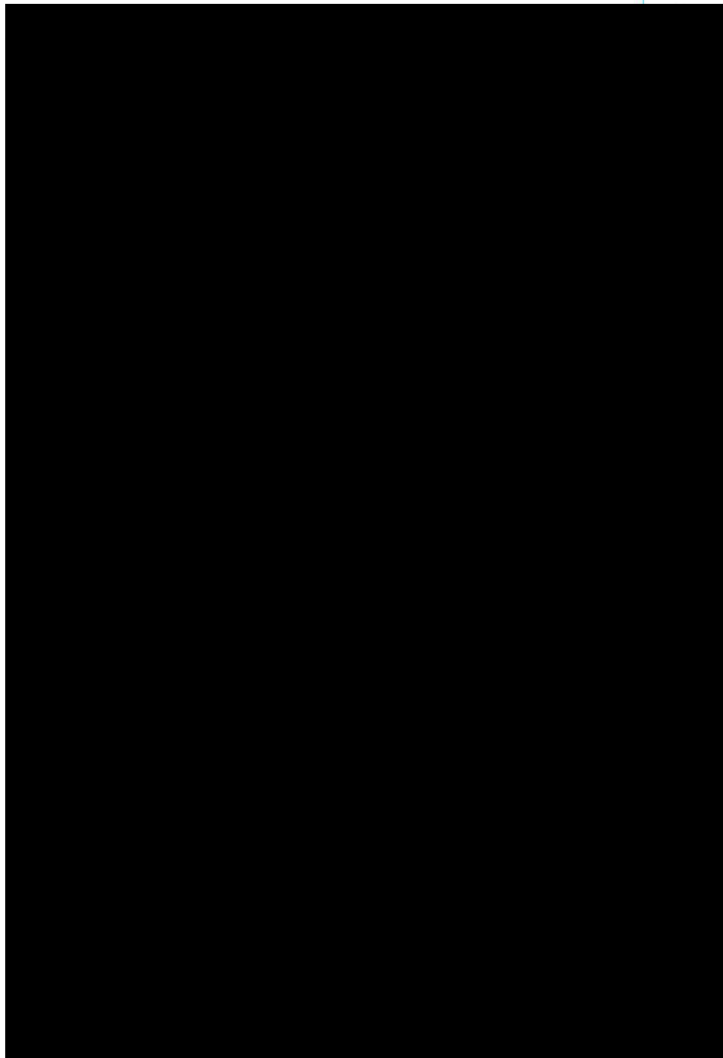
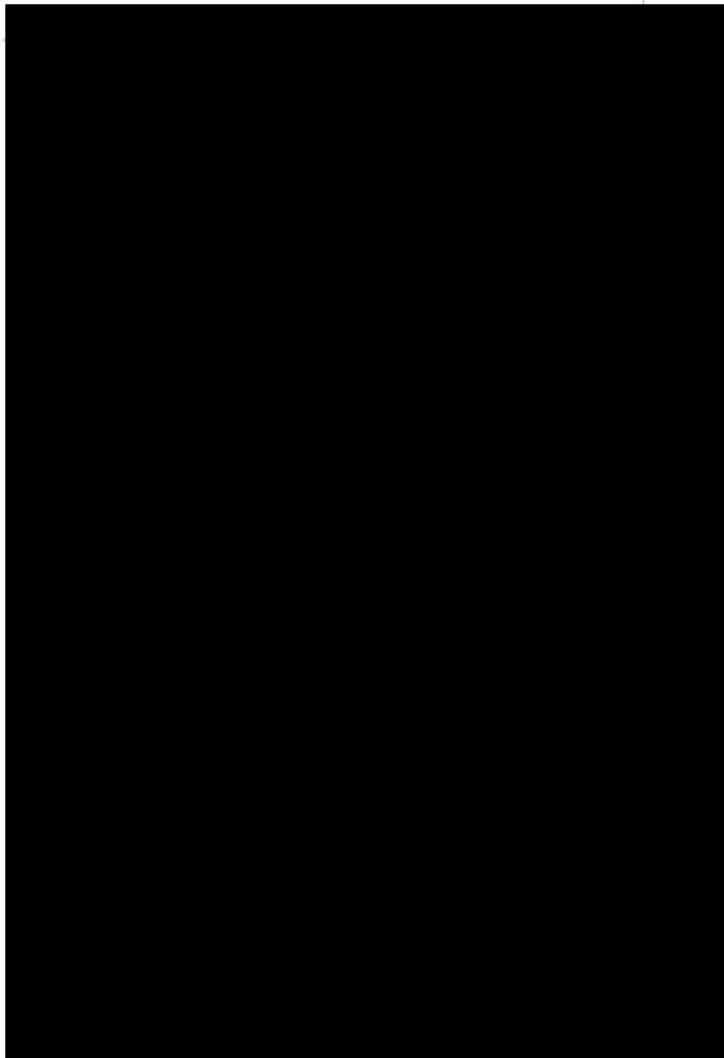
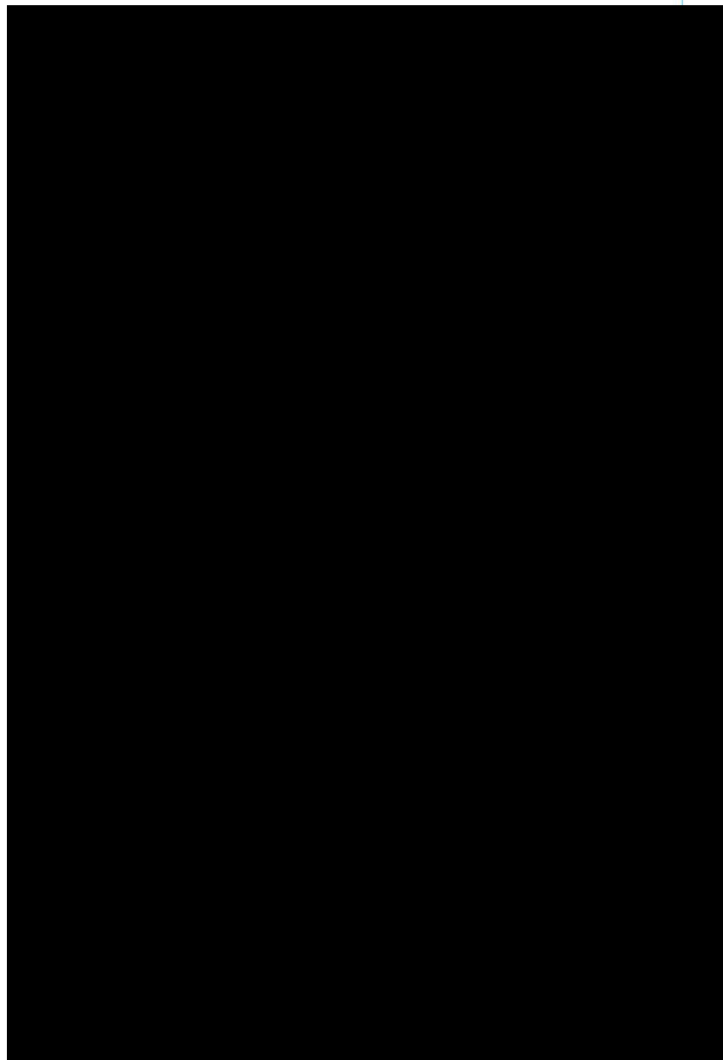
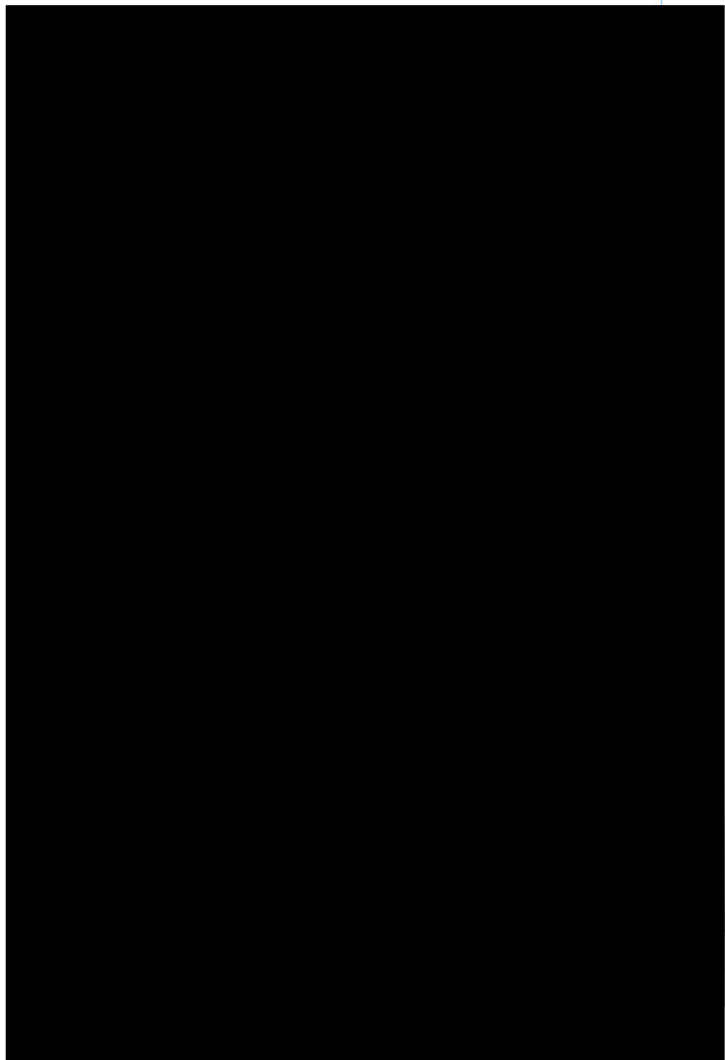


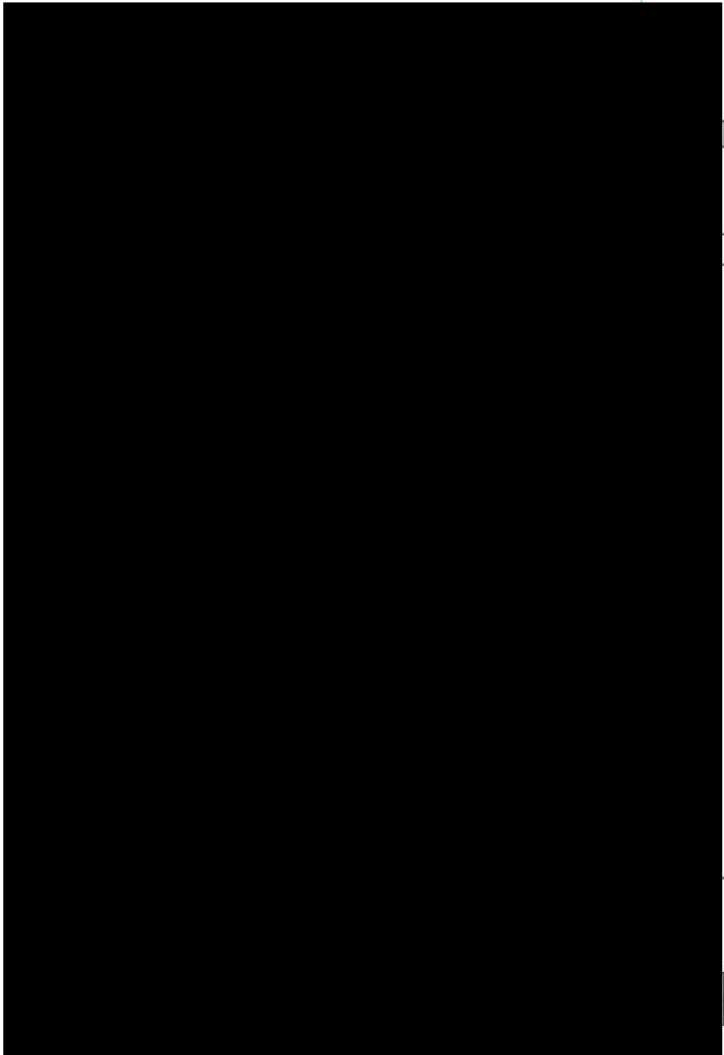
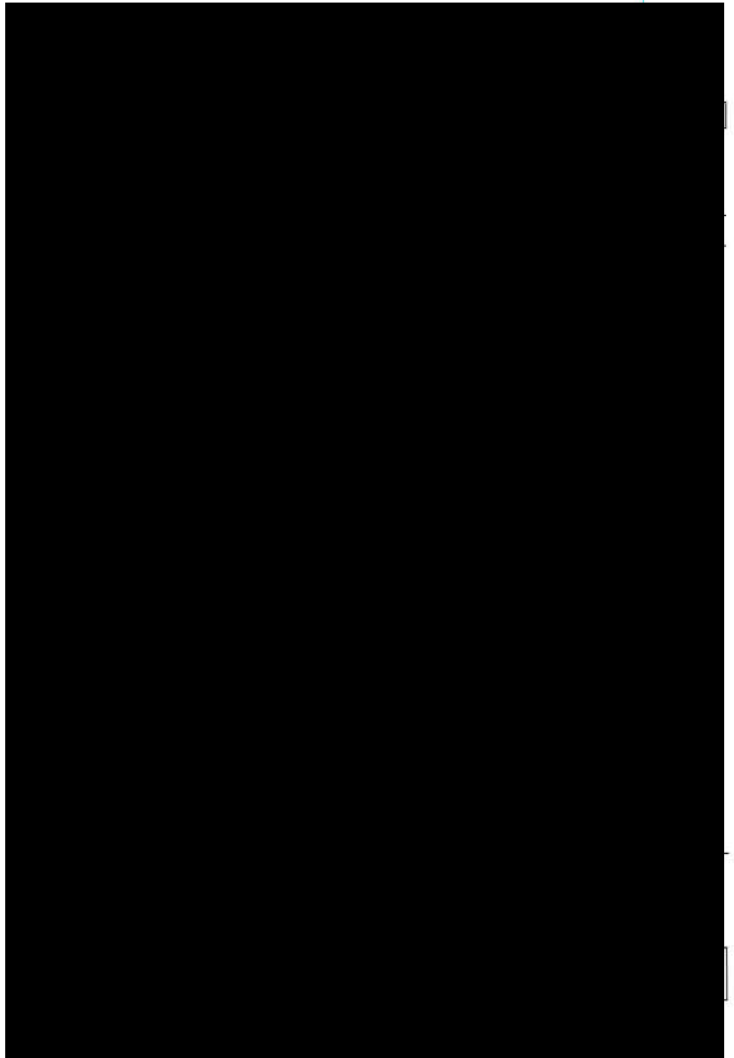
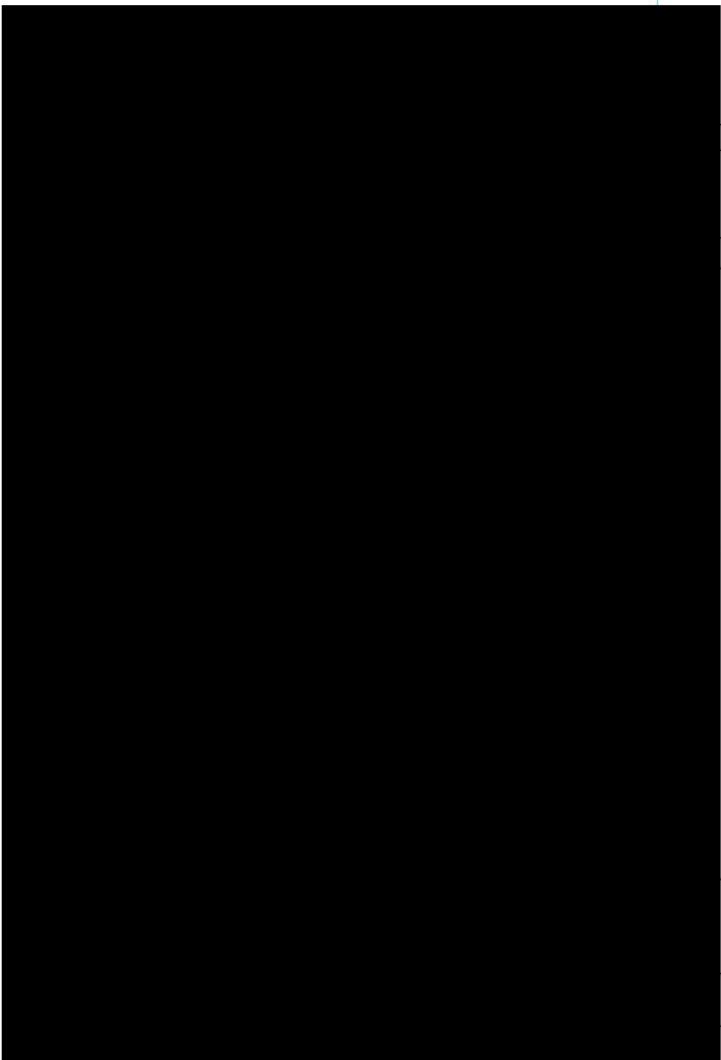
ตรวจสุขภาพตา











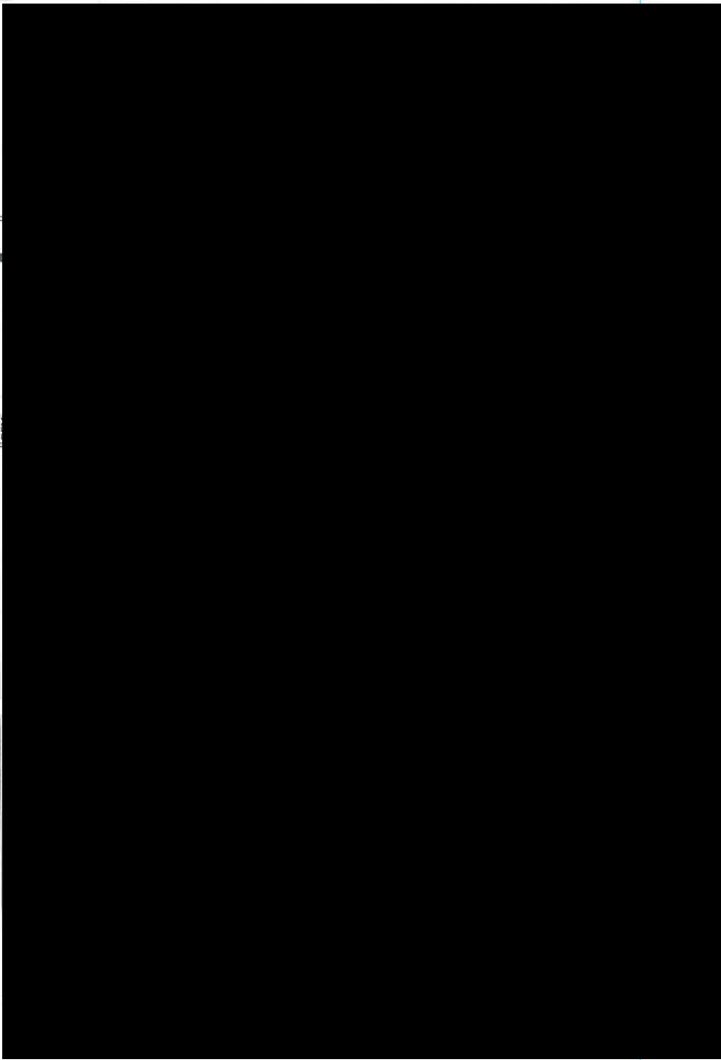
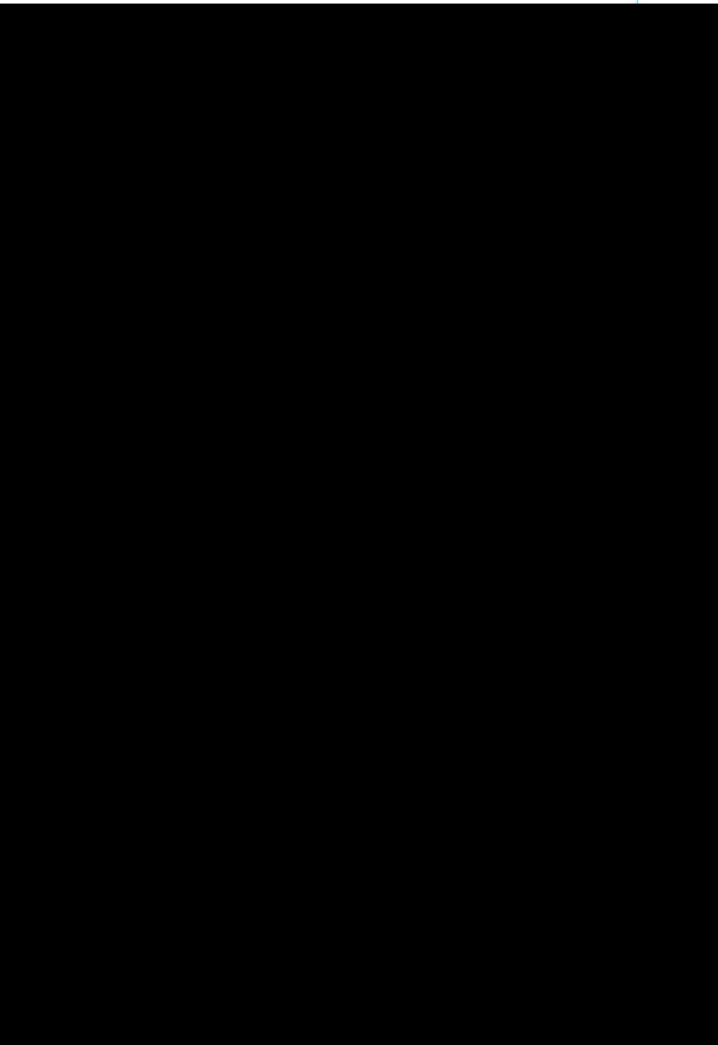
HN  
Name  
DOB  
Depart

CXR (P

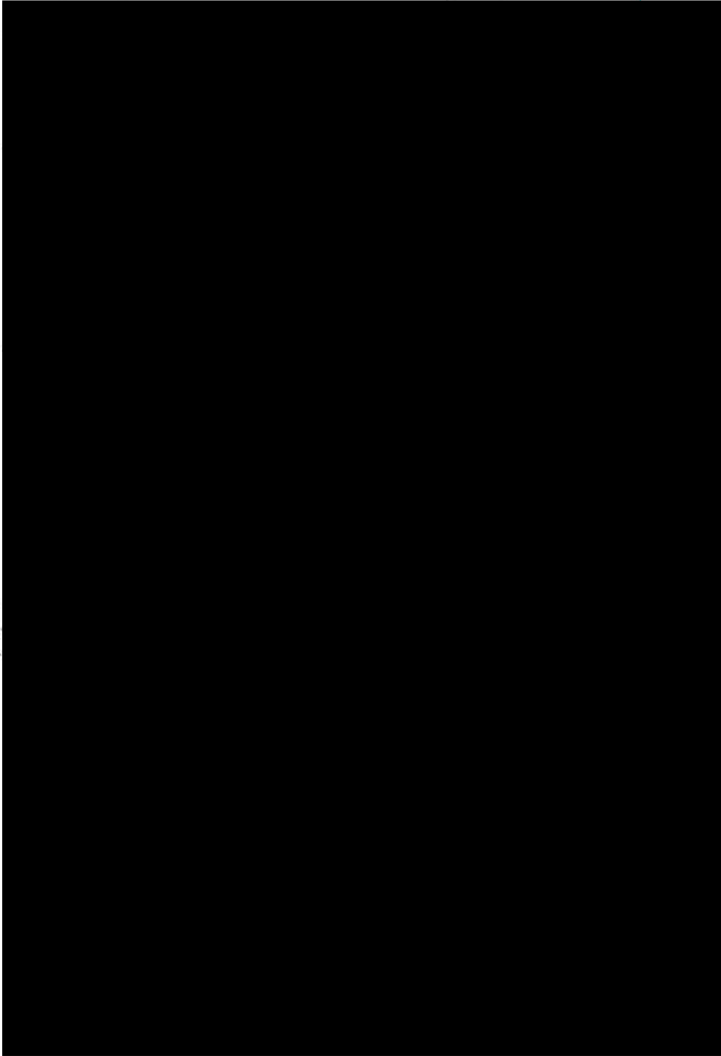
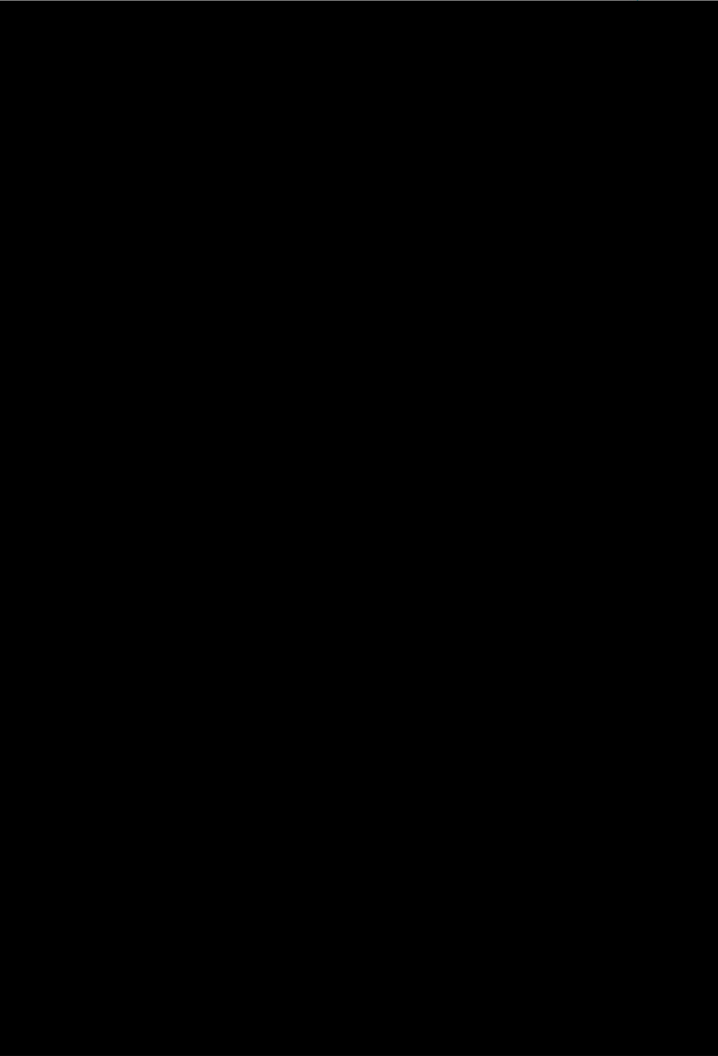
Histon  
Findin

Impres

Reque  
Reque  
Print

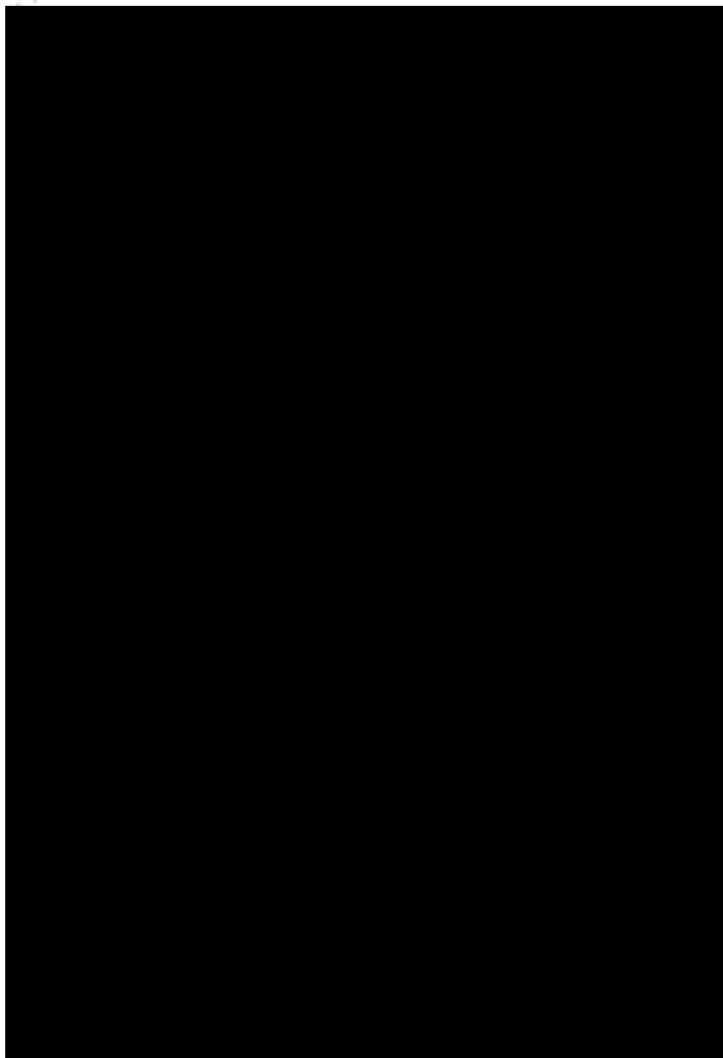
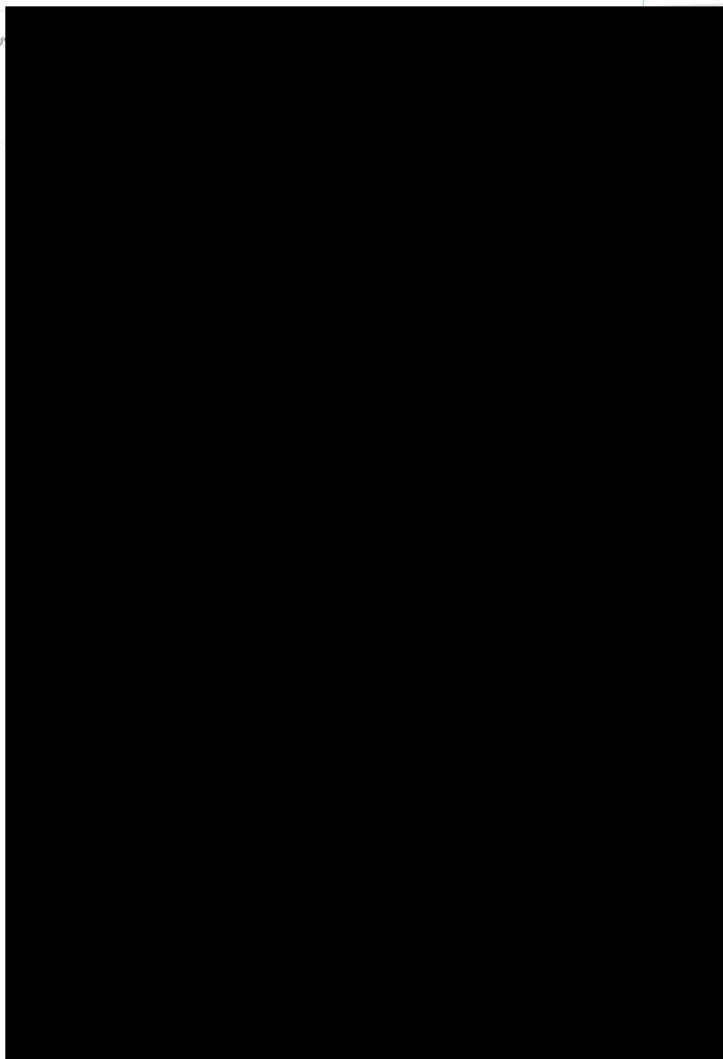
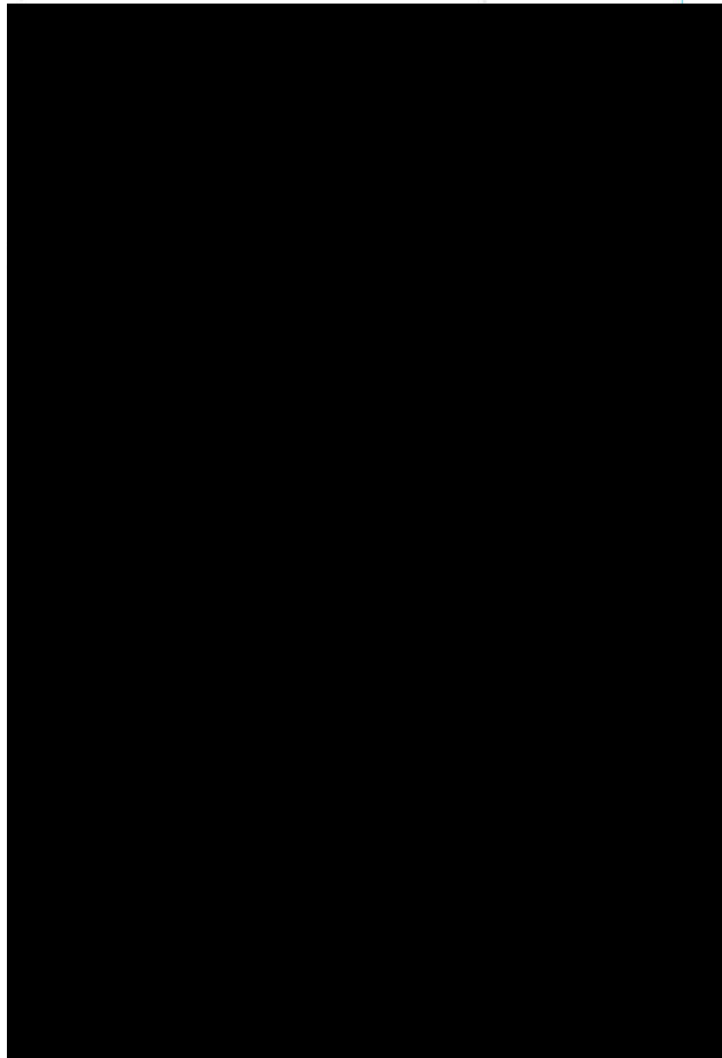
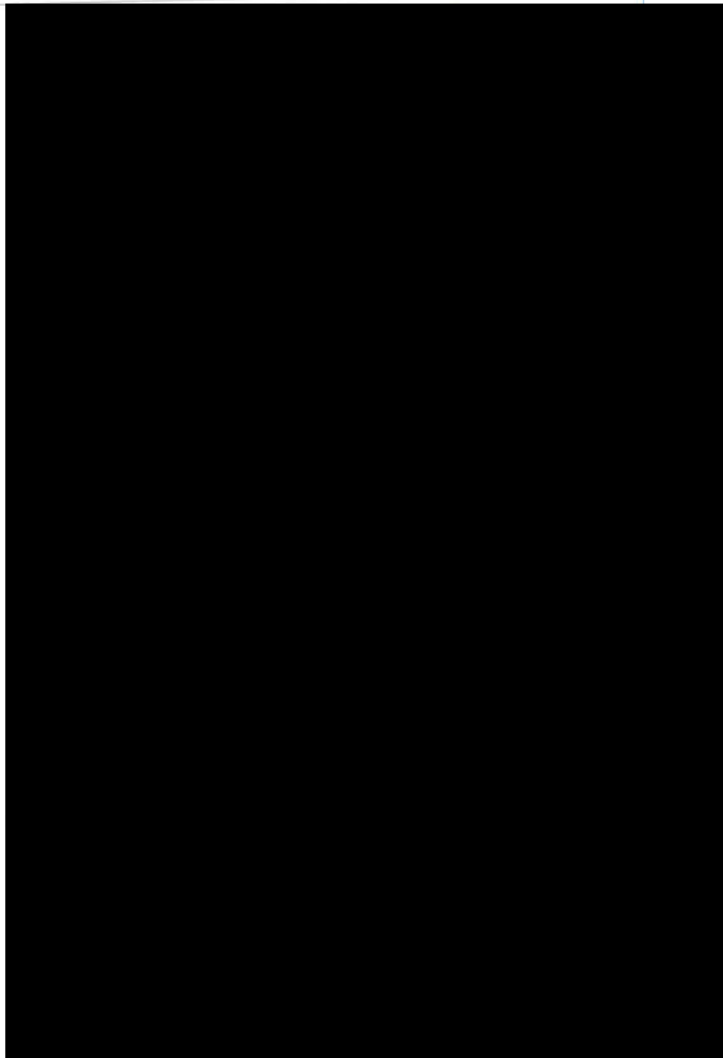


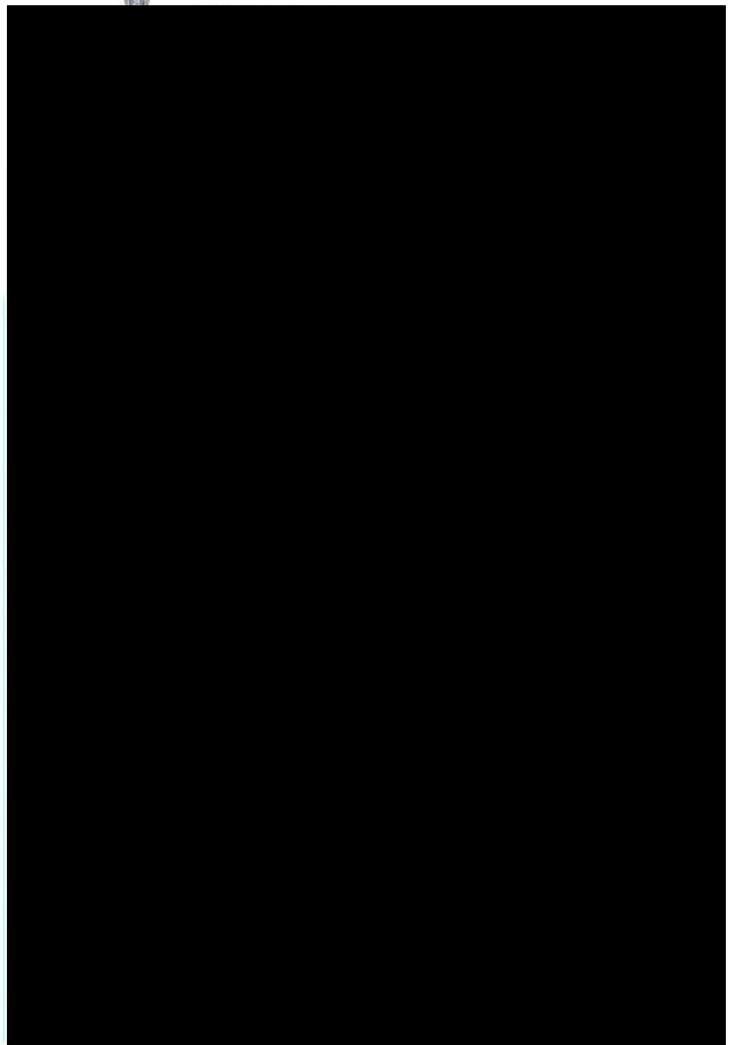
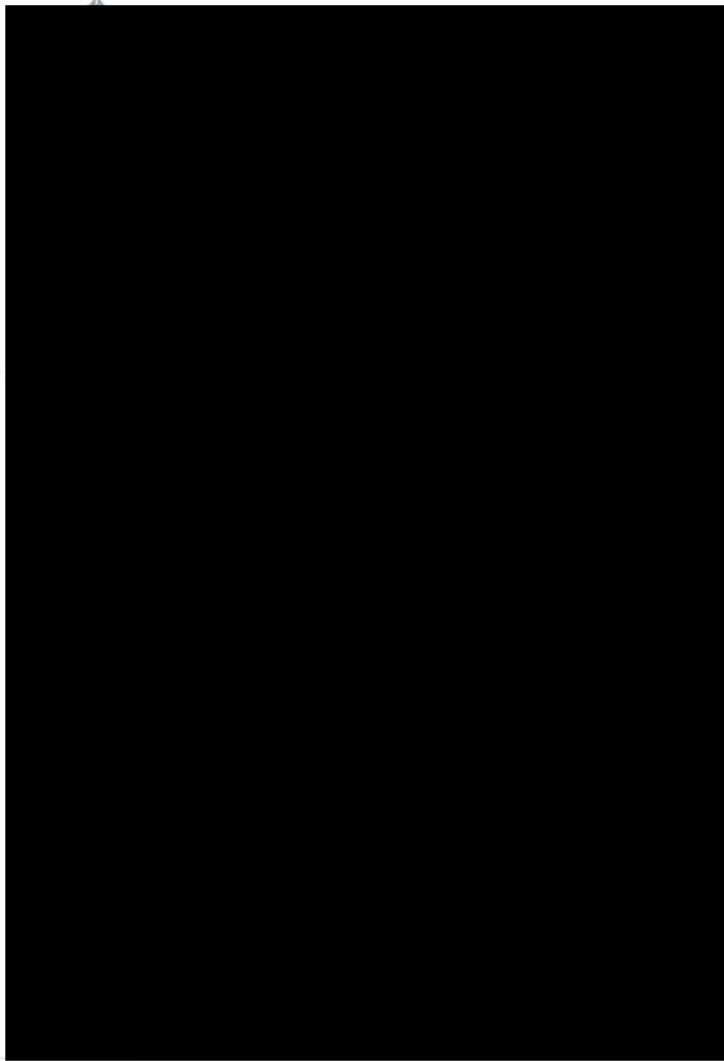
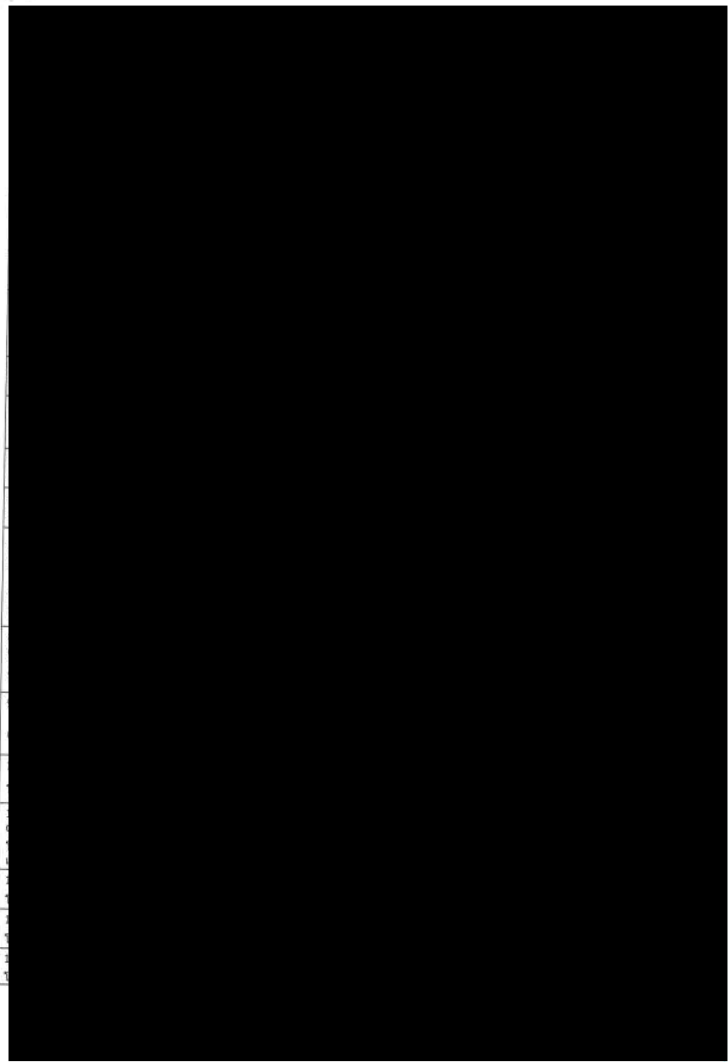
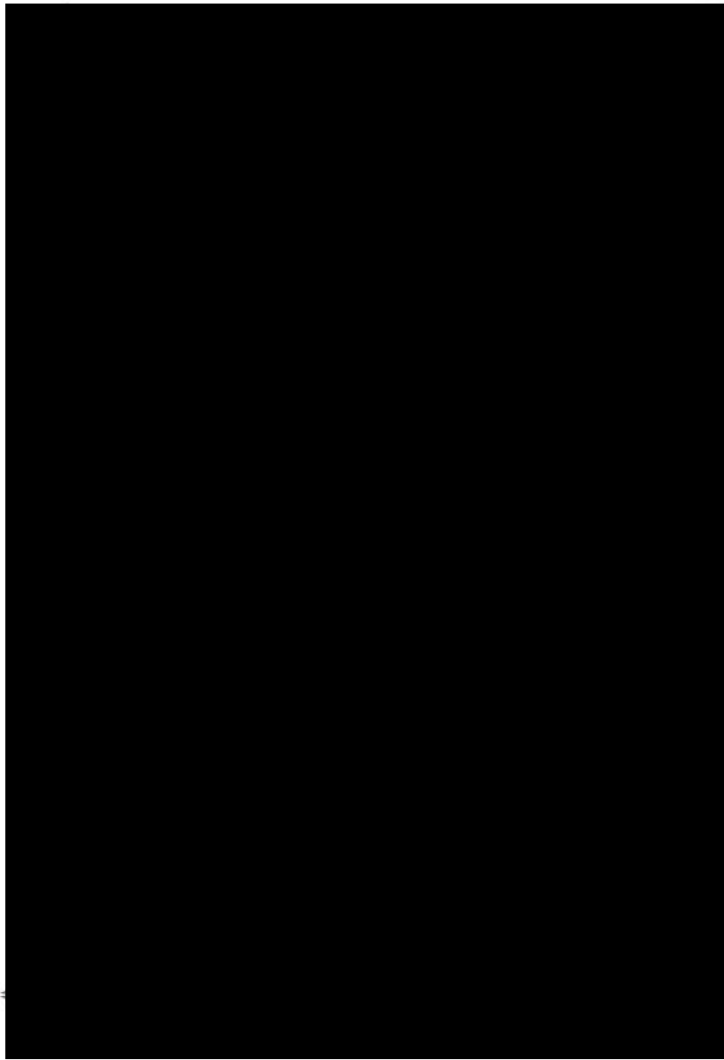
BTL CentralPort 2.32.30495.0, DIAG 3.1.1.0, ECG BTL, Plead 72 ECG HW 1.12.0, SMC 010000000037 ECG 10s  
Pitsanuj Pritanukul Hospital

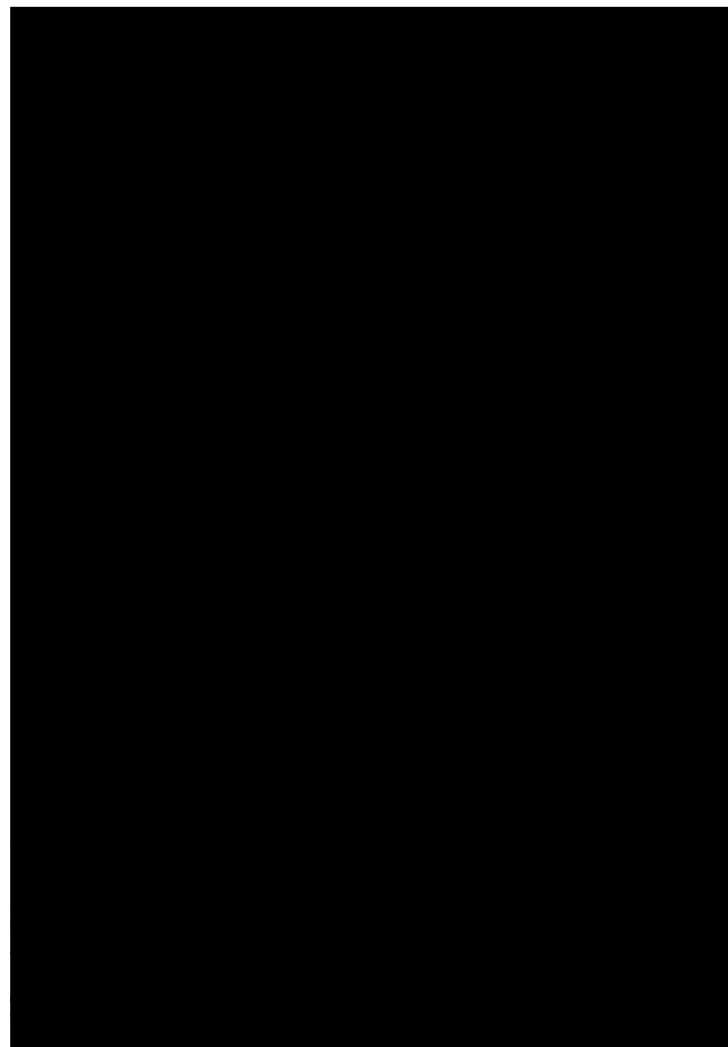
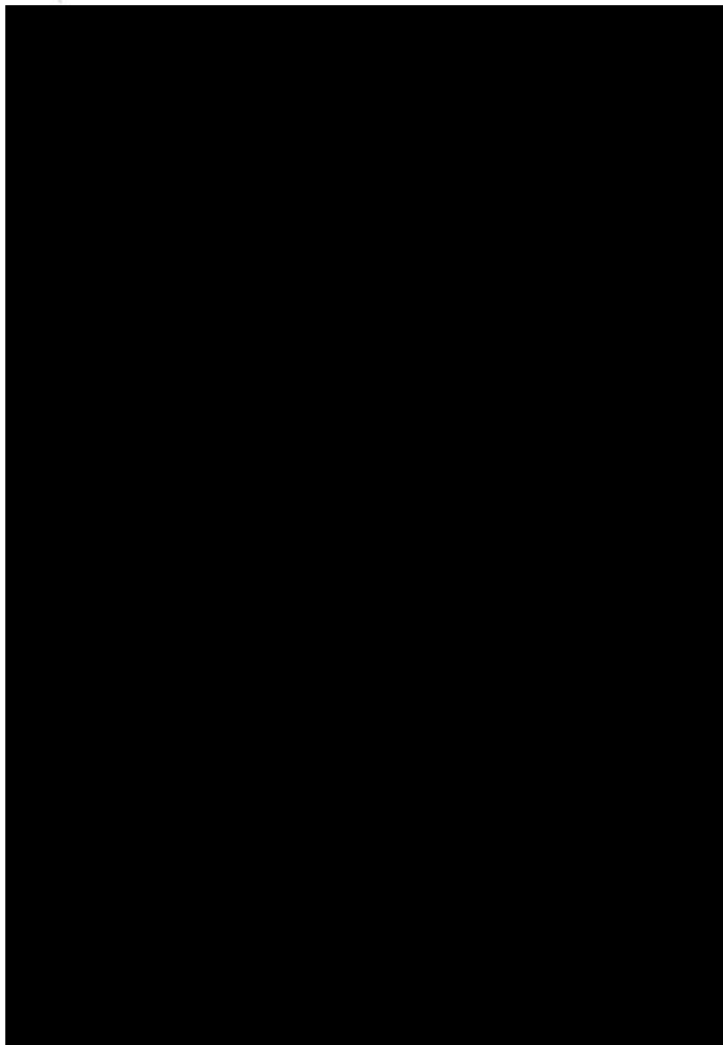
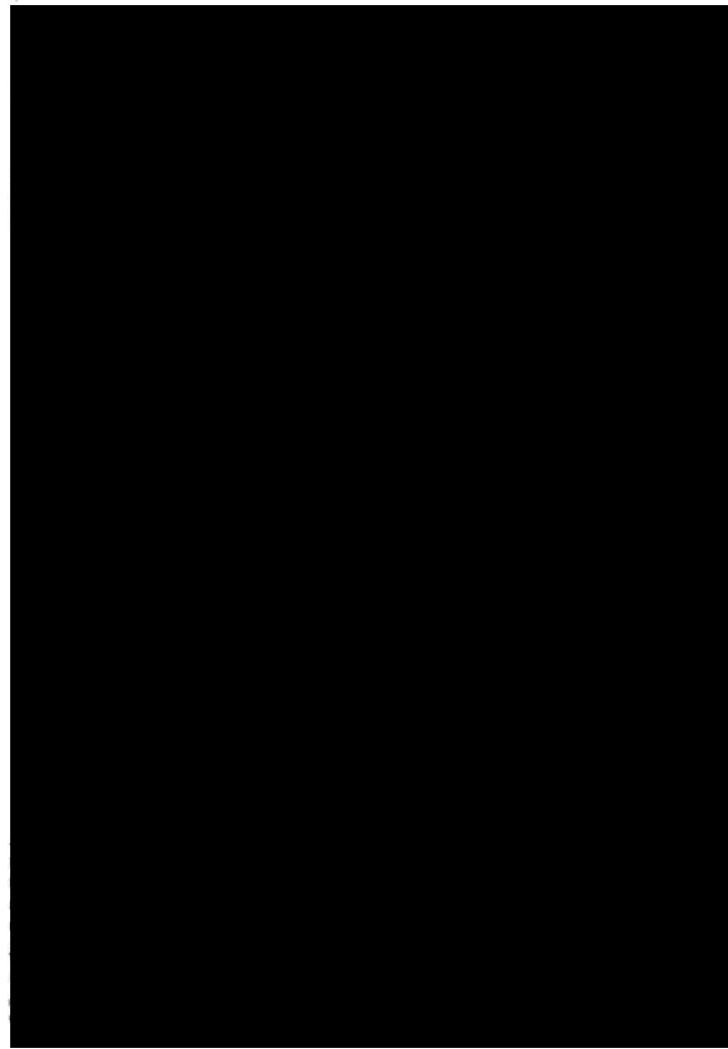
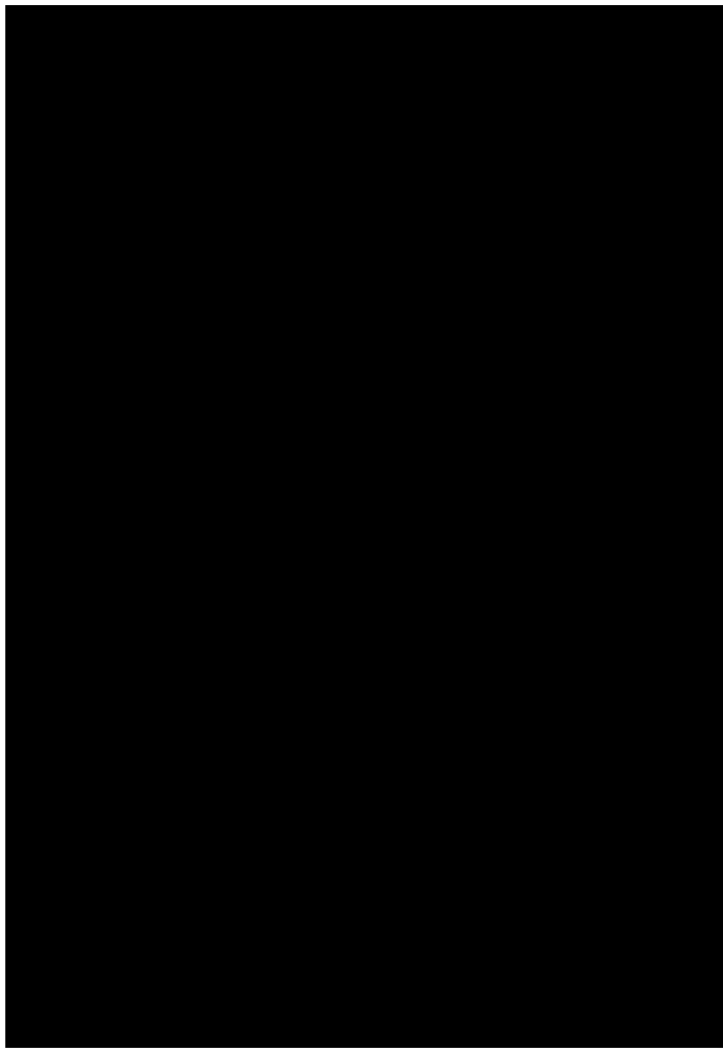


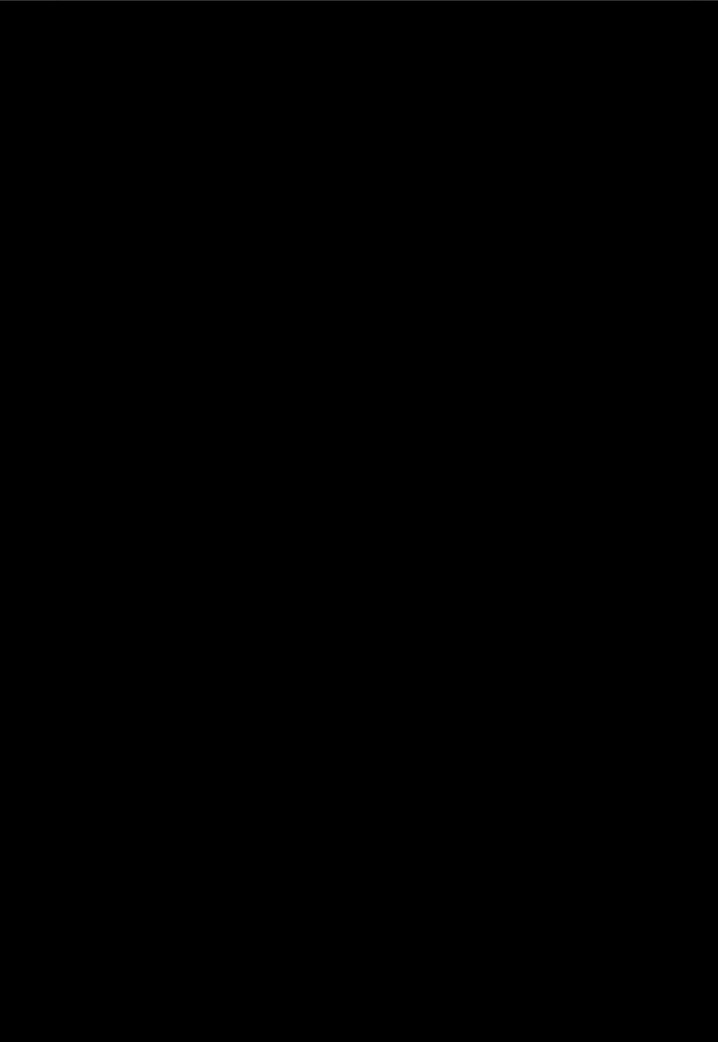
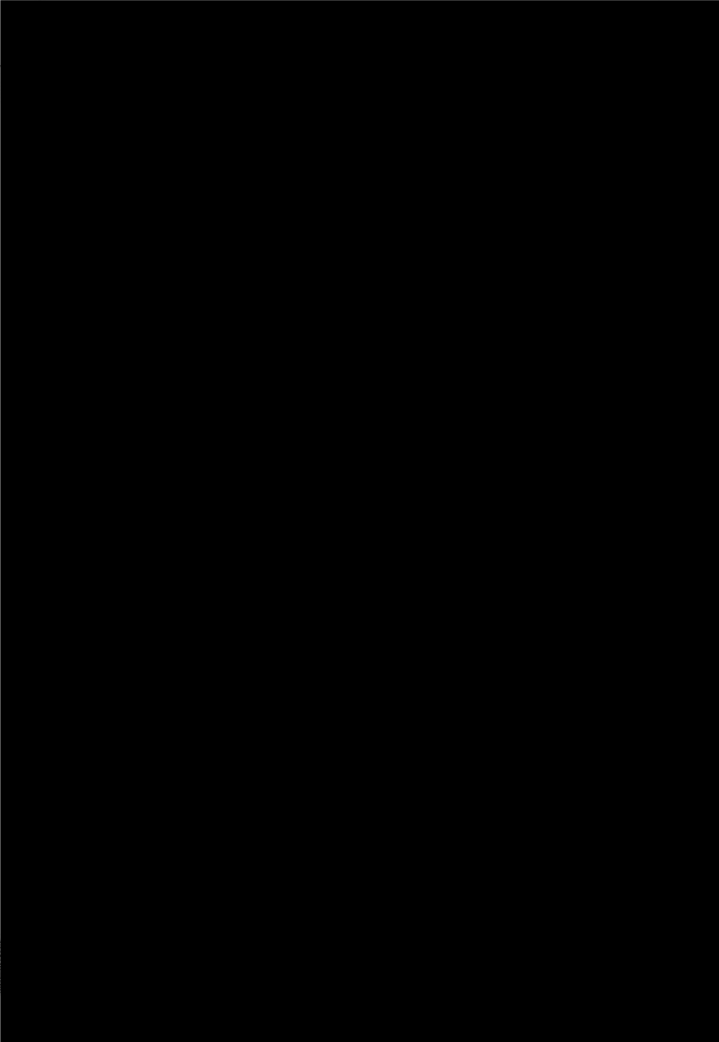
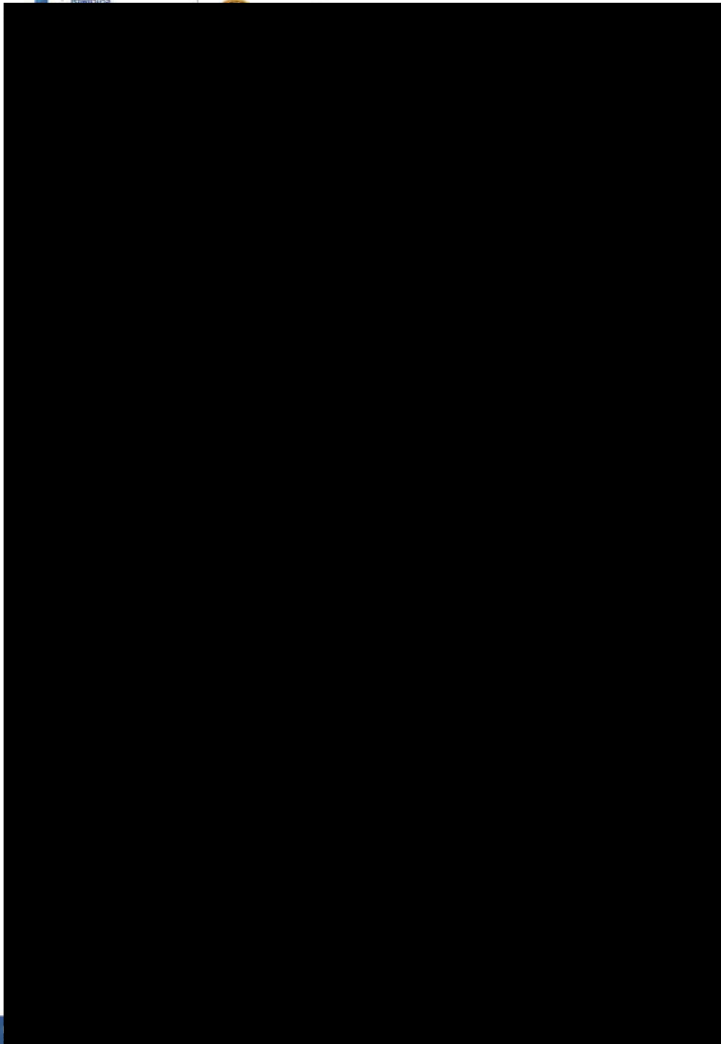
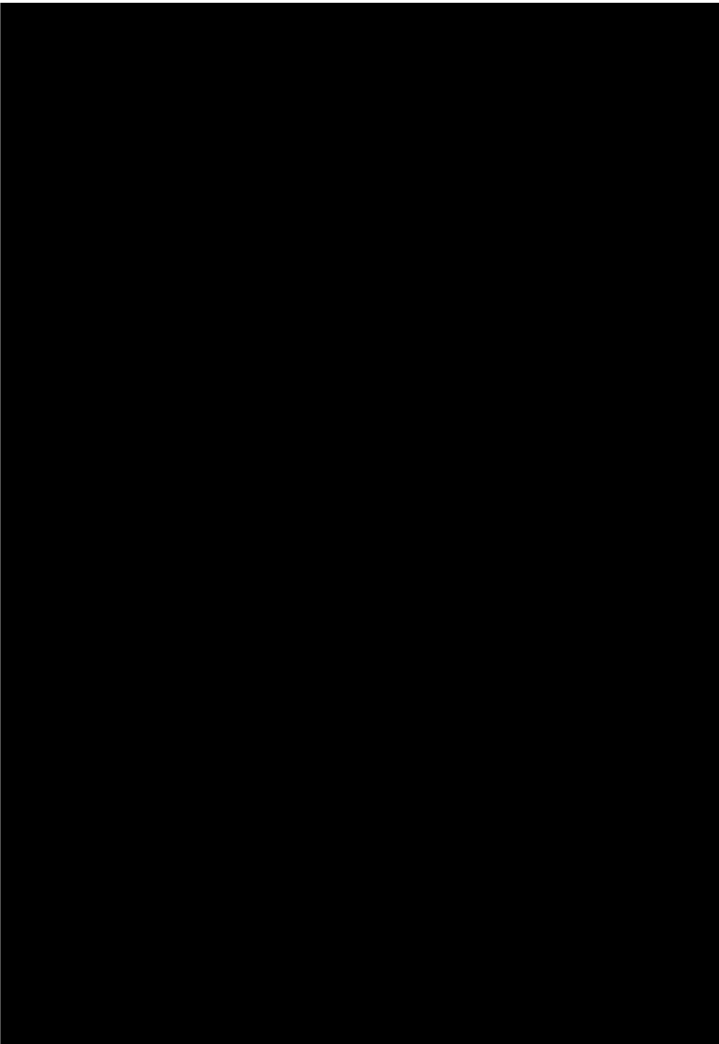
\_KHz  
\_KHz  
\_KHz  
\_KHz  
\_KHz  
\_KHz











KHz

KHz

KHz

KHz

KHz

KHz

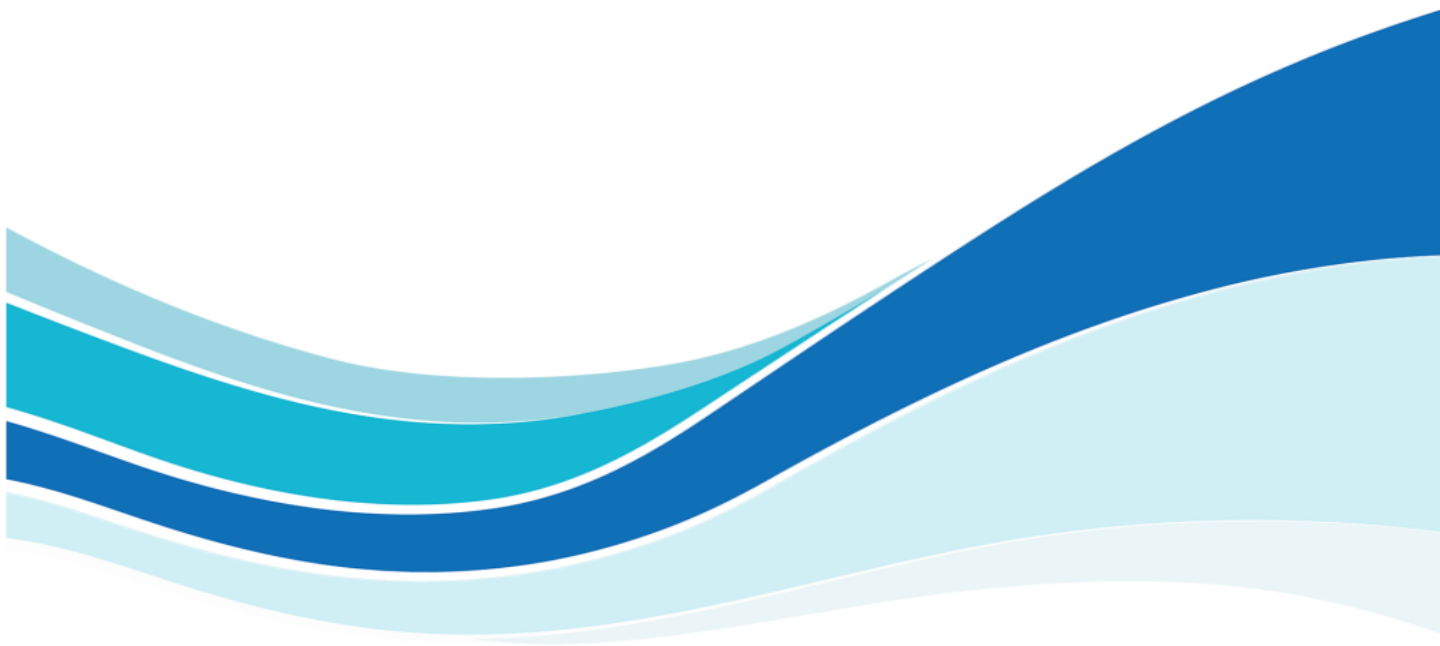
11/12/65 13:01

F

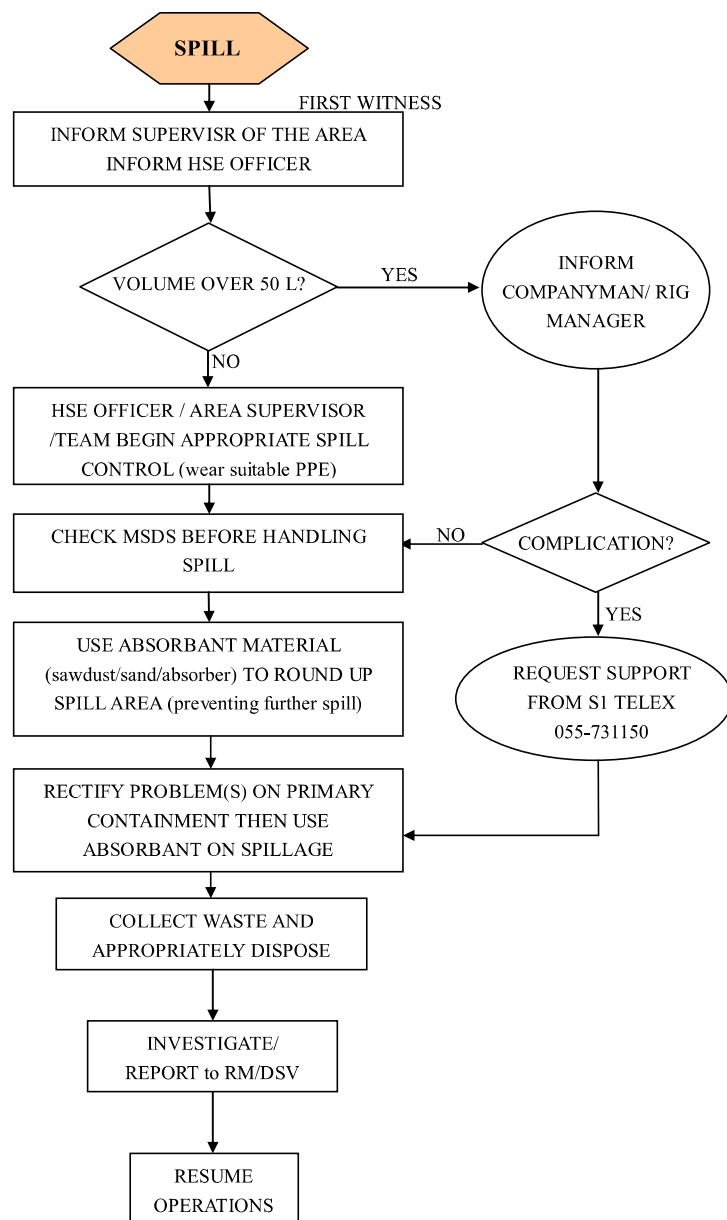
**ภาคผนวกที่ 23**

***Chemical Management Procedure  
และ Waste Disposal Handling Procedure***

---



**GW80 Flow chart when spill happen**





## Great Wall Drilling Company Ltd.

Doc. Title:	OIL, CHEMICAL HANDLING AND EMERGENCY PLAN PROCEDURE	Page:	2 of 12
		Rev.:	06
Doc. No.:	HSE-03-009	Date:	15.07.2020

### REVISION SHEET

Rev. N°	Reason For Revision	Date	Prepared By	Checked By	Approved By
01	Issued for comments	06.12.2001	LD/SD/XH		
02	Issued for approval	18.01.2002	LD/SD/XH		
03	Issued for comments	25.10.2010			
04	Issued for comments	19.06.2012			
05	Issued for comments	29.09.2019	NC		Bai Dongping
05	Issued for comments	15.07.2020	NC		Bai Dongping

### CONTROL OF THIS MANUAL

The HSE Department is responsible for the development and maintenance of this procedure.  
All subsequent revisions of the procedure shall be approved by the HSE Manager.

### REGISTRATION AND DISTRIBUTION

The procedure is issued as follows:

<u>Controlled copies</u>	<i>The controlled copies are distributed to personnel for regular use and shall be systematically updated. Controlled copies are issued to the GWDC library, clients (upon request), all sites/units and major subcontractors.</i>
<u>Uncontrolled copies</u>	<i>Uncontrolled copies are distributed for information and information purposes. Such manuals shall be properly marked, and are <b>NOT</b> subject to revisions.</i>

The HSE Department shall keep the track of the registration and distribution of the HSE Procedures. All controlled copies shall be registered and stamped as “CONTROLLED COPY” before delivery to the end user. The end user shall sign upon receipt of the controlled copy of the HSE Procedures. Every controlled copy shall be returned back to the HSE Department if the end user has no any further need for it. The HSE Department is responsible to send updates for all the controlled copies after revisions. This shall be achieved as replacement of the particular pages subjected to the revisions or as a replacement of the whole Procedure. Uncontrolled copy stamped as “CONTROLLED COPY” before delivery and is not subject to update upon revisions.



## Great Wall Drilling Company Ltd.

Doc. Title:	OIL, CHEMICAL HANDLING AND EMERGENCY PLAN PROCEDURE	Page:	3 of 12
		Rev.:	06
Doc. No.:	HSE-03-009	Date:	15.07.2020

### CONTENT

<b>1</b>	<b>GENERAL .....</b>	<b>4</b>
1.1	PURPOSE AND SCOPE .....	4
1.2	RESPONSIBILITY .....	4
1.3	NON CONFORMANCE TREATMENT.....	4
<b>2</b>	<b>DEFINITIONS.....</b>	<b>5</b>
<b>3</b>	<b>FLUID TRANSFER GUIDELINES.....</b>	<b>6</b>
<b>4</b>	<b>LINER USE PROCEDURE .....</b>	<b>7</b>
4.1	OFF THE PAD.....	7
4.2	ON THE PAD .....	7
4.3	PARKING AREAS .....	8
<b>5</b>	<b>SECONDARY CONTAINMENT .....</b>	<b>8</b>
<b>6</b>	<b>NOTIFICATION AND REPORTING .....</b>	<b>9</b>
<b>7</b>	<b>RESPONSE .....</b>	<b>10</b>
7.1	REPORTING PROCEDURE.....	10
7.2	MINOR SPILLS WHICH DO NOT ENTER THE ENVIRONMENT .....	11
7.3	MINOR SPILLS WHICH ENTER THE ENVIRONMENT .....	11
7.4	MAJOR SPILL WHICH ENTER THE ENVIRONMENT .....	11





## Great Wall Drilling Company Ltd.

Doc. Title:	OIL, CHEMICAL HANDLING AND EMERGENCY PLAN PROCEDURE	Page:	4 of 12
		Rev.:	06
Doc. No.:	HSE-03-009	Date:	15.07.2020

## 1 GENERAL

### 1.1 PURPOSE AND SCOPE

This Procedure details oil and chemical handling procedures for oil and chemicals to proper handling and management spill situations arising out of any Greatwall Drilling Company drilling operation activity.

The “Oil, Chemicals handling and Emergency plan Procedure” is part of the Greatwall Drilling Company Emergency Response Documentation (ref. HSE-03-007).

Response capabilities and times (if applicable) are outlined in the well specific environmental risk analysis, which are usually provided by the Client. These analyses include details of the means to comply with, or exceed, the minimum requirements for oil spill recovery capability.

### 1.2 RESPONSIBILITY

HSE Manager is responsible that this procedure is updated after the organizational or operational changes, if necessary.

### 1.3 NON CONFORMANCE TREATMENT

All deviations from the guidelines given in this procedure shall be treated in accordance with HSE-03-014 “Non-Conformance and Corrective Action procedure”.



## Great Wall Drilling Company Ltd.

Doc. Title:	OIL, CHEMICAL HANDLING AND EMERGENCY PLAN PROCEDURE	Page:	5 of 12
		Rev.:	06
Doc. No.:	HSE-03-009	Date:	15.07.2020

## 2 DEFINITIONS

For the purpose of response planning, Greatwall Drilling Company will recognize two categories of oil spill:

### 1. Minor

Spill can be handled by Rig site and/or area resources or it will disperse naturally and rapidly without posing any threat to sensitive areas or vulnerable resources.

### 2. Major

This category includes large incidents or ongoing spills (e.g. blowout) which have the potential to cause significant pollution impact. Spills which cannot be immediately dealt with using unit and/or area resources and require the mobilization of external equipment and personnel to facilitate clean-up and recovery. The term oil spill includes accidental or deliberate discharge of diesel, refined oils, crude, condensate, water with an oil content above statutory discharge limits, drilling mud base oils and oil based mud, drop-out from flares, chemicals etc.

### 3. Acute pollution

Acute pollution means significant pollution that occurs suddenly and that is not permitted. A spill greater than 1 m<sup>3</sup> (35 cf.) must always be considered as acute pollution.

### 4. Oil

Oil includes crude and refined hydrocarbons such as diesel, hydraulic fluid, and lube oil. It can also include oily sludge, oil refuse, or other petroleum-related products or by-products.

### 5. Hazardous substances

Hazardous substances include glycol, methanol, drilling mud, seawater, corrosion inhibitors, and produced water, essentially anything other than potable water. All chemical spills should be reported so that potential exposure hazards can be evaluated, and disposal can be managed safely.

### 6. On pad

On pad includes gravel pads and roads, well houses and unlined well cellars. Depending on the type of construction, some cellars are considered secondary containment.

### 7. Secondary containment

Secondary containment means built-in pits, dikes, berms, portable drip pans, liners, metal skids, or other impermeable devices. Reporting is required to ensure proper cleanup and disposal, but spills in secondary containment are not necessarily reportable to the local government.



## Great Wall Drilling Company Ltd.

Doc. Title:	OIL, CHEMICAL HANDLING AND EMERGENCY PLAN PROCEDURE	Page:	6 of 12
		Rev.:	06
Doc. No.:	HSE-03-009	Date:	15.07.2020

### 3 OIL AND CHEMICAL HANDLING GUIDELINES

Any incident that releases a contaminant into the environment can be considered a spill, and will be taken very seriously by Greatwall Drilling Company. The regulations that apply to spill prevention, reporting, and response are complex, and the penalties for noncompliance are severe.

Most of spills are small drips and leaks onto gravel pads, from vehicles and equipment, but preparation must be made to respond to the most catastrophic event. All spills in operating areas must be cleaned up to the satisfaction and the appropriate regulatory agencies.

Prevention shall be the first and most effective line of defense against spills and it is everyone's responsibility.

Many spills occur during routine fueling, pumping, and other fluid transfer operations. Most of these spills can be avoided by paying attention and taking simple precautions. Greatwall Drilling Company has established field-wide fluid transfer guidelines, which are summarized below.

1. Check all vehicles and equipment. If a leak is apparent, or there are other obvious problems with the equipment stop the job and have repairs done.
2. Surface liners may be used to contain leaks for a short time during critical operations; however, liners are not an acceptable substitute for maintenance.
3. Park vehicles and equipment away from water bodies, forest and wildlife habitat. Do not park on the edges of pads.
4. Position equipment so that valves, piping, tanks, etc are protected from damage by other vehicles or equipment.
5. Verify that adequate surface liners and sorbents are on hand.
6. Inspect hoses, connections, valves, etc., before starting any fluid transfers. Be sure that valves are in the proper on/off position and each connection is tightened properly.
7. Before starting, check all tank and container levels, valves, and vents to prevent overfilling or accidental releases.
8. Surface liners are required under all potential spill points.
9. Maintain a constant line-of-sight with critical components throughout the transfer procedure. Be prepared to stop the transfer immediately if you notice any leak. Do not attempt to fix a leak while fluid is being transferred.
10. Never leave fluid transfer operations unattended.
11. After the transfer is complete, continue to take these precautions while breaking connections.
12. When finished, check the area for spills. Report all spills immediately to the appropriate number in your operating area.



## Great Wall Drilling Company Ltd.

Doc. Title:	OIL, CHEMICAL HANDLING AND EMERGENCY PLAN PROCEDURE	Page:	7 of 12
		Rev.:	06
Doc. No.:	HSE-03-009	Date:	15.07.2020

### 4 LINER AND CHEMICAL BUNDLING USE PROCEDURE

Operating procedure for liner use and chemical bund must be followed at all Rig sites.

Each operating area can add site-specific requirements to the requirements for liners use.

Liners are not a substitute for good maintenance. Any unit that is dripping or leaking must be repaired as soon as possible.

#### 4.1 OFF THE PAD

Maximum protection of the soil and surface waters is the primary objective. Appropriately sized liners must be placed under the radiator, engine, or other areas of potential leakage whenever equipment is operating, or parked and running. Liners should be used as needed to prevent drips and small spills under parked and non-operating equipment. Equipment with known leaks must be immediately released from the job.

Liners are specifically required as follows:

- Under all support equipment (heaters, compressors, generators, etc.)
- Under heavy and light duty parked equipment (dozers, loaders, cranes, trucks, etc.)
- During all fluid transfers, at all connection points, from the beginning of hook-up through disconnection
- Under fuel/fluid storage containers
- Chemical sack and fluid containment out of concrete pad with temporary bundling.

#### 4.2 ON THE PAD

Gravel protection, good housekeeping, and spill prevention are the primary objectives. Equipment with known leaks must be immediately released from the job if liners are not available and properly used.

Surface liners or drip pans should only be used as a temporary measure until the equipment is repaired. "Known leakers" that are not repaired promptly will be removed from the job.

Appropriately sized liners must be placed under the radiator, engine, or other areas of potential spills/leaks as follows:

- Under well service equipment (wireline, slickline, coil tubing, etc.)
- Under all support equipment without built-in containment systems (heaters, compressors, bleed tanks, etc.)
- Under all stationary heavy equipment (loaders, cranes, etc.)



## Great Wall Drilling Company Ltd.

Doc. Title:	OIL, CHEMICAL HANDLING AND EMERGENCY PLAN PROCEDURE	Page:	8 of 12
		Rev.:	06
Doc. No.:	HSE-03-009	Date:	15.07.2020

- During all fluid transfers, at all connection points, from the beginning of hook-up through disconnection
- Under all drums used as primary containment for waste fluids (bleed backs, pressure relief, temporary storage)

### 4.3 PARKING AREAS

Appropriately sized surface liners or drip pans are required under any parked vehicle or equipment, whether it is running or not, if it is dripping engine oil or other fluids.

## 5 SECONDARY CONTAINMENT

Secondary containment is required by law around many above ground storage tanks. In general, containment must be able to hold 110% of the volume of the largest tank.

All oil storage tanks larger than 660 gallons require impermeable containment (e.g., dikes or catchment basins) sized for the largest single compartment or tank. These tanks should be located to ensure that oil will not reach navigable water. All tanks larger than 10,000 gallons, including portable tanks, which contain petroleum-based products must have 110% containment.

#### Well cellars and well houses

Most new wells are equipped with steel- or concrete-lined cellars that effectively contain fluid. However, many older wells have unlined cellars that are not considered secondary containment. Well houses are not considered secondary containment either.

#### Temporary containment

Surface liners and drip pans provide portable protection under leaking equipment or connections. Secondary containment that is damaged, collapsed, or full of water cannot do its job.



## Great Wall Drilling Company Ltd.

Doc. Title:	OIL, CHEMICAL HANDLING AND EMERGENCY PLAN PROCEDURE	Page:	9 of 12
		Rev.:	06
Doc. No.:	HSE-03-009	Date:	15.07.2020

## 6 NOTIFICATION AND REPORTING

Anytime when the observer who observed any oil or solutions material are being to spill or spreading are any matter of the volume of material have to responsibility to reporting to Client representative, Rig Manager or HSE officer to acknowledge in charging the situation. And if the situations a spill greater than 1 m<sup>3</sup> (35 cf.) has a duty to provide immediate notification in accordance with the applicable regulations.

Responsible for notification and reporting during activities is the Project manager. Normally it will be agreed with the Client that the Rig Manager will be delegated the responsibility for these activities.

Details of responsibility definition for notification and who should be notified, are given in the flow sheet in Appendix 1.

The following documentation contains information on notification and reporting of accidents/incidents in general:

1. Blowout Emergency Response procedure (HSE-03-019)
2. Emergency drill procedure (HSE-03-008)
3. Reporting, Handling and Documenting Accidents/Incidents procedure (HSE-03-013)
4. Investigation of the Major Accidents (HSE-03-025)

All serious accidents and near misses including spills during drilling activities shall be notified to the Authorities.



## Great Wall Drilling Company Ltd.

Doc. Title:	OIL, CHEMICAL HANDLING AND EMERGENCY PLAN PROCEDURE	Page:	10 of 12
		Rev.:	06
Doc. No.:	HSE-03-009	Date:	15.07.2020

## 7 RESPONSE

The appropriate response to a spill will depend on a number of factors and is situation specific.

### 7.1 REPORTING PROCEDURE

To report a spill, call the appropriate number and provide the following information:

- Person responsible
- Contact phone number
- Substance spilled
- Location of spill
- Approximate amount spilled
- Possible cause of the spill
- Cleanup activities under way

A follow-up written report may be required. Documentation procedures vary between Projects depending on the law requirements and contract/Client requirements.

Greatwall Drilling Company requires reporting within 30 minutes of all spills, discharges, and releases of oil and hazardous substances in our operating areas. This ensures proper response, cleanup, disposal, and timely agency reporting. ADEC interprets "immediate" to mean.

Minor spills are not reportable to regulatory agencies, and some will not be counted as recordable incidents.

Spills that are on the pad, contained, under control, small in volume, and can be cleaned up by the spiller or the Greatwall Drilling Company site personnel, must be reported to the following Rig Manager, HSE Supervisor or Project Manager.

Spills involving injuries, fires or safety hazards, uncontrollable or continuously releasing material, blowouts, or spills into waterways must be reported to the following emergency number by Rig Manager/HSE Supervisor:

Position	Phone No:
Government Agency	
Client representative	
HSE dept.	



## Great Wall Drilling Company Ltd.

Doc. Title:	OIL, CHEMICAL HANDLING AND EMERGENCY PLAN PROCEDURE	Page:	11 of 12
		Rev.:	06
Doc. No.:	HSE-03-009	Date:	15.07.2020

### 7.2 MINOR SPILLS WHICH DO NOT ENTER THE ENVIRONMENT

The "spiller" may be able to take care of the minor spill cleanup, but Rig Manager and HSE supervisor should always be consulted.

Cleanup workers must be equipped with the correct personal protective equipment, such as rubber gloves, overall and boots. Spill may be collected mechanically in to the waste container bins or may be washed down with appropriate detergents and spilled by clean water, or recovered by using absorbents and steam cleaners. Use of detergents shall be minimized as much as possible.

Report to the Rig Manager and fill the form in accordance to HSE-03-013 Reporting, handling & documenting of accidents and incidents procedure.

### 7.3 MINOR SPILLS WHICH ENTER THE ENVIRONMENT

#### Response at Rig site

Access the rate of oil dispersion due to wind and wave action. If the spill threatens flora and fauna, the Rig manager will notify Project manager.

Maintain observation of spill status. Log events and keep the Client manager advised. Take corrective action to minimize further spill risk from similar sources.

### 7.4 MAJOR SPILL WHICH ENTER THE ENVIRONMENT

#### Response

In the case of spills greater than 1 m<sup>3</sup> (35 cf.) wind and weather conditions, the type of oil spilled, characteristics and location will determine the most appropriate response to the situation.

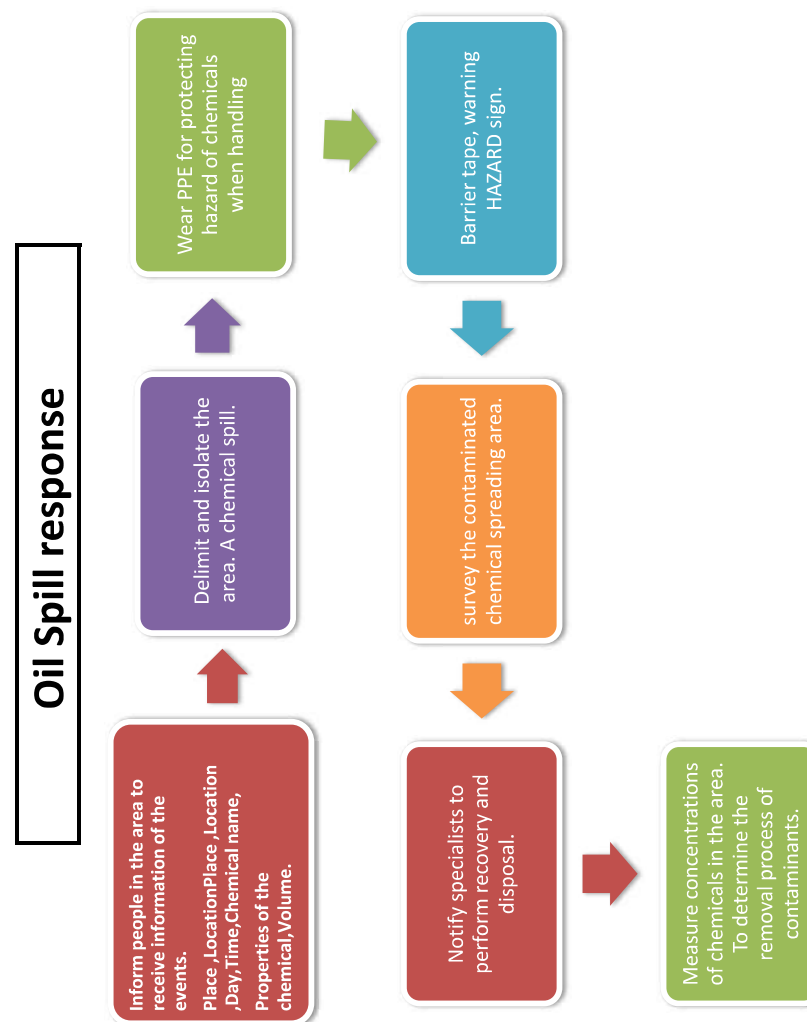
It will be the responsibility of the Project Manager, after consideration of all the facts, and following discussions with the Client representative, to initiate the appropriate response.

#### Response at Rig site

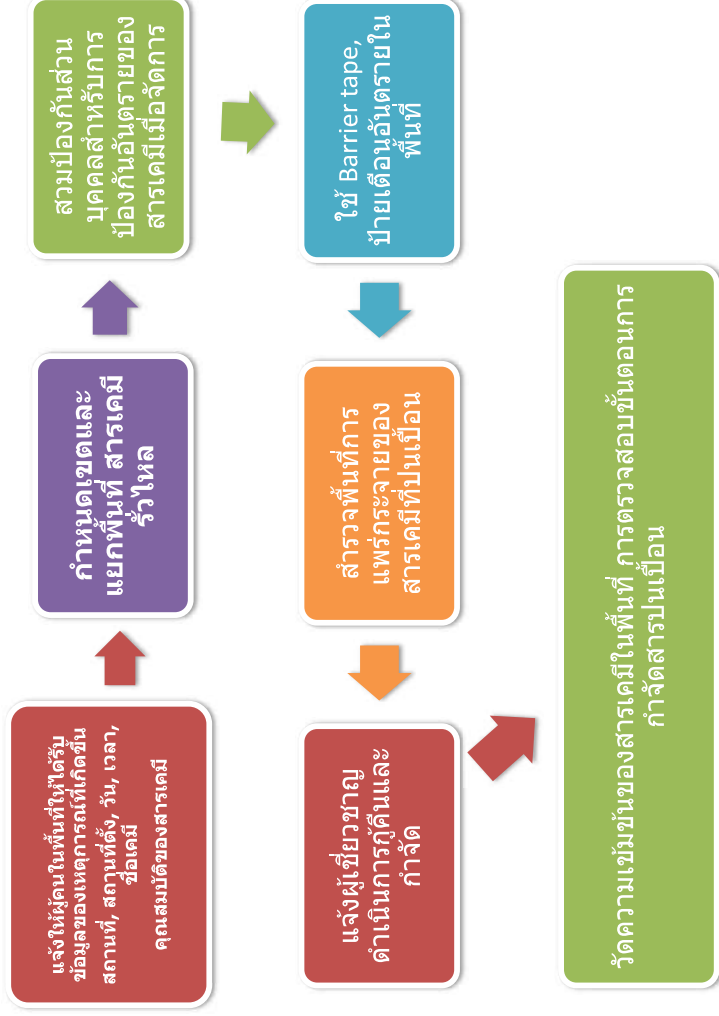
Issue notification and assess the rate of spill dispersion due to wind and weather action. Advise with the Project Manager about the spill status and the requirement to mobilize oil spill clean-up equipment. If clean-up equipment is available at Rig site, commence deployment. Maintain observation of spill status. Log events.

#### Response in Head office in Bangkok

Notify Authorities and mobilize the appropriate Emergency Response Team. Review the spill status and plan the most appropriate course of action. Mobilize resources as required. Establish the necessary support organization. On completion of the spill clearance operations, investigate and fully report the incident in accordance to HSE-03-013 *Reporting, handling & documenting of accidents and incidents procedure*.



## Oil Spill response



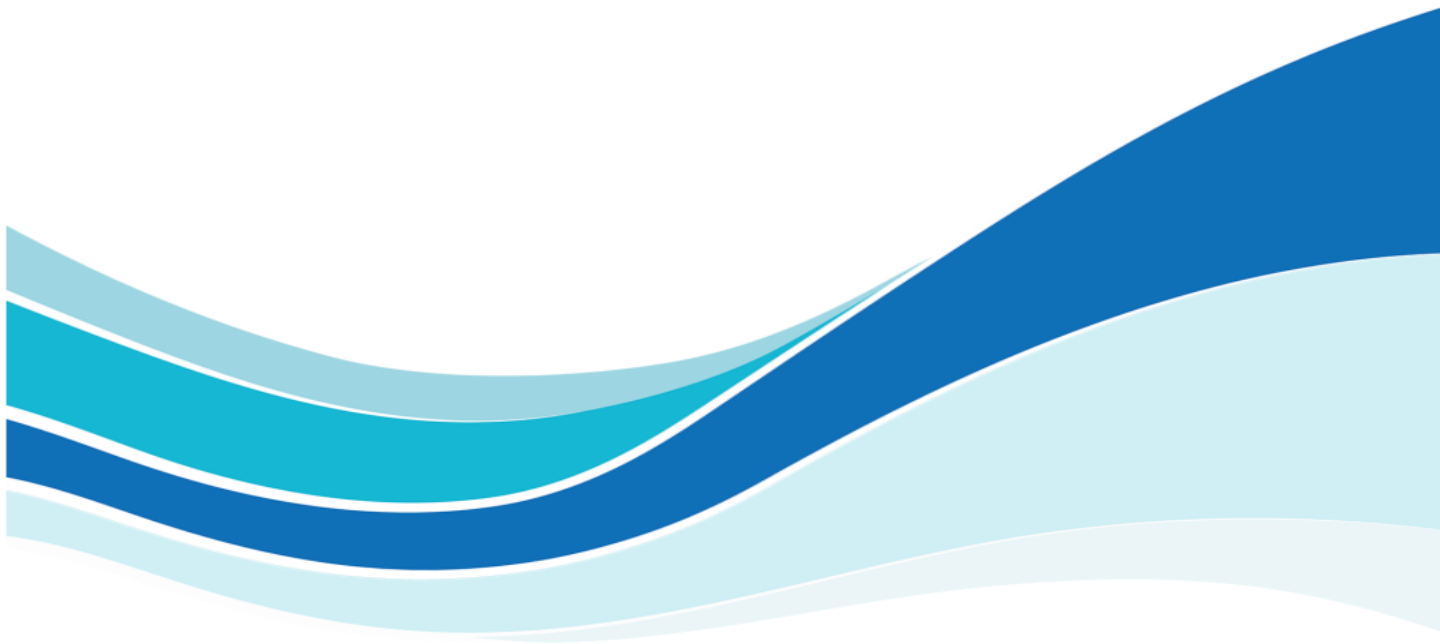
**ภาคผนวกที่ 24**

***Chemical Spill Response Plan For Suphanburi***

***Asset Procedure และ***

***Oil Spill Contingency Procedure***

---





PTT Exploration and Production Public Company Limited

# CHEMICAL SPILL RESPONSE PLAN FOR SUPHANBURI ASSET PROCEDURE

Document Code: 13250-PDR-SSHE-501/03-R02

November 2018



CHEMICAL SPILL RESPONSE PLAN FOR  
SUPHANBURI ASSET PROCEDURE

13250-PDR-SSHE-501/03-R02  
November 2018

Approval Register	
Document Subject	CHEMICAL SPILL RESPONSE PLAN FOR SUPHANBURI ASSET PROCEDURE
Document Code	13250-PDR-SSHE-501/03-R02
Document Owner	
Prepared by	

Document Custodian			
Name	Title	Signature	Date
			21-11-18
			21-11-18

Technical Review			
Name	Title	Signature	Date
			21-11-18
			21/11/18
			21/11/18





Approval		
Name	Signature	Date
Document Owner	Kiattikul Roumsuk (Supervisor, Operations)	21/11/18
	Nopphorn Plodchinda (Supervisor, Operations)	21-11-18
Document Authority	Tawee Limsoontorn (VP., Sinphuhorm & Suphan Prod Oper Dept.)	04 12 18

THIS DOCUMENT WILL BE REVIEWED EVERY **5 YEARS** FROM DATE OF APPROVAL OR  
REVISED EARLIER IF NECESSARY.



Revision History			
Rev.	Description of Revision	Authorized by	Date
0	New Insure	DSS	July 2014
1	Extended the scope of document to cover all chemical in Suphanburi Asset	PSR/F	Sep 2015
2	Changes from previous version are as follows: <ul style="list-style-type: none"><li>- Added block area and communication hazardous area</li><li>- Update to new template</li><li>- APPENDIX 1: LIST OF CHEMICAL SPILL KIT.</li><li>- APPENDIX 2: DISTANCE HAZARDOUS AREA BLOCKED.</li></ul>	PSR/F	Oct 2018



## TABLE OF CONTENTS

1. PURPOSE.....	1
2. SCOPE.....	1
3. REFERENCES.....	1
4. DEFINITIONS .....	2
5. ROLES AND RESPONSIBILITIES .....	3
6. DESCRIPTION OF FACILITIES .....	4
APPENDIX A: COMPLEMENTARY PERMIT FOR A CONFINED SPACE .....	12
APPENDIX B: GUIDANCE FOR WORK LOAD AND REST TIME .....	13



## 1. PURPOSE

To provide spill response protocol and communication for Suphanburi asset to manage spill risks arising from their operations that have the potential to impact the environment.

## 2. SCOPE

This plan covers all spills during operations and transportation of Suphanburi Asset. Spill encompass petroleum hydrocarbons which are identified either as products from PTTEP or liquid hydrocarbon used as fuel. In addition, other petroleum hydrocarbon materials/chemicals shall comply with the requirements of this document as well.

## 3. REFERENCES

### 3.1 PTTEP SSHE CONTROLLING DOCUMENTS

Document Number	Document Title
SSHE-13250-PDR-500	- SUPHANBURI ASSET EMERGENCY AND CRISIS MANAGEMENT
	- APPENDIX Suphanburi Emergency Responses Plan
12002-PDR-SSHE-503-005-R01	- Corporate Spill Contingency Plan, Dec 2016
SSHE-106-GDL-431	- Loss of Primary Containment (LOPC) Reporting and Reduction Guideline
02-22-2018	- สารเคมีอันตรายในสถานประกอบการณ์ (สอ. 1)

### 3.2 OTHER REFERENCE DOCUMENTS

Document Number	Document Title
-	คู่มือการระงับอุบัติเหตุเบื้องต้นจากอุบัติการณ์อันตราย 2012 กรมควบคุมมลพิษ

## 4. DEFINITIONS

### 4.1 GENERAL DEFINITIONS

Terminology	Description
Corporate	Refers to the PTTEP business groups hierarchically above asset level, and located in the PTTEP headquarters, Bangkok.
Function Group	Refers to a corporate level business group. These may have associated divisions, departments, or operational assets within their hierarchy.
Division	A business group may have one or more distinct groups within its hierarchy. These are referred to as divisions.
Asset	Refers to an operational asset, site, or location within a respective business group.
Department	A subgroup within a business group, division or asset.
Chemical	Include all chemicals Using at Suphanburi asset.

### 4.2 ORGANISATION AND DEPARTMENTS

Terminology	Description
Corporate	Refers to the PTTEP business groups hierarchically above asset level, and located in the PTTEP headquarters, Bangkok.
Function Group	Refers to a corporate level business group. These may have associated divisions, departments, or operational assets within their hierarchy.
Division	A business group may have one or more distinct groups within its hierarchy. These are referred to as divisions.
Asset	Refers to an operational asset, site, or location within a respective business group.
Department	A subgroup within a business group, division or asset.

## 4.3 LANGUAGE

May	Indicates a possible course of action
Should	Indicates a preferred course of action
Shall	Indicates a course of action with a mandatory status

## 4.4 COMMON ACRONYMS

bbl.	Barrel
ERT	Emergency Response Team
CMT	Crisis Management Team

## 5. ROLES AND RESPONSIBILITIES

### 5.1 OWNERSHIP OF THE DOCUMENTS

The owner of this document is VP., Sinphuhorm & Suphan Prod Oper Dept. with responsibilities for:

- Issuing this document and its revisions
- Ensuring effective implementation of document

### 5.2 CUSTODIAN OF THE DOCUMENT

The custodian of this document is Suphanburi asset, Supervisor operations with responsibilities for:

- Identifying deficiencies or potential improvements
- Initiating periodic revision
- Maintaining revision history and document status register

### 5.3 KEY PERSONNEL ROLES AND RESPONSIBILITIES

To ensure the work are occurred in chemical spill response is effective and safe all individuals involved must clearly understand and take an active role in requirement with specific responsibilities as follows:

**VP., Sinphuhorm & Suphan Prod Oper Dept.:** responsible for ensuring that oil spills are prevented by good engineering and procedural controls, and that staff are competent and have been trained. He is also responsible for pre-planning contingency arrangement (both human and material resources and procedures) should oil be spilled. Three areas must be considered:

- Suphanburi asset's own arrangements
- Transportation contractor's arrangements
- Co-operation with Local Authority Emergency Department

**Operation Supervisor:** responsible for ensuring operation procedures and plant integrity are maintained to prevent loss of containment. Responsible, also, for training and supervising operators and contractors to both operate and maintain the plant effectively and to deal with emergency incidents such as chemical spill response. Operators must be trained in the emergency plan so they recognize when outside notification and assistance is required. He is also responsible for the maintenance of stock of Pollution Control Equipment as defined in this plan and perform exercise as Suphanburi Emergency Responses Plan.

**SSHE:** Responsible for monitoring that the requirements of Plan are met in practice a formal annual audit and in ad hoc spot checks.

## 6. DESCRIPTION OF FACILITIES.

Suphanburi Asset consists of 3 concession areas, where petroleum is produced from 9 well sites as per details below.

1. PTTEP1 area has 4 production well sites, consists of well site UT1-3, well site UT1-7, well site SKJ and well site KS1
2. L53/43 area has 2 production well sites, consists of well site BKM-A and well site BDN-C
3. L54/43 area has 3 production well sites, consists of well site NPI-A, NPI-B and NPI-C

Petroleum in the well will be pumped out by beam pump and put in the tanks for water separation and storage before transport petroleum to refinery in BKK by road tankers. Produced water will be injected back into formation. There are 5 water injection wells in 3 well sites. Well site UT1-7, UT1-3 and KS1 got 3, 1, 1 water injection wells respectively

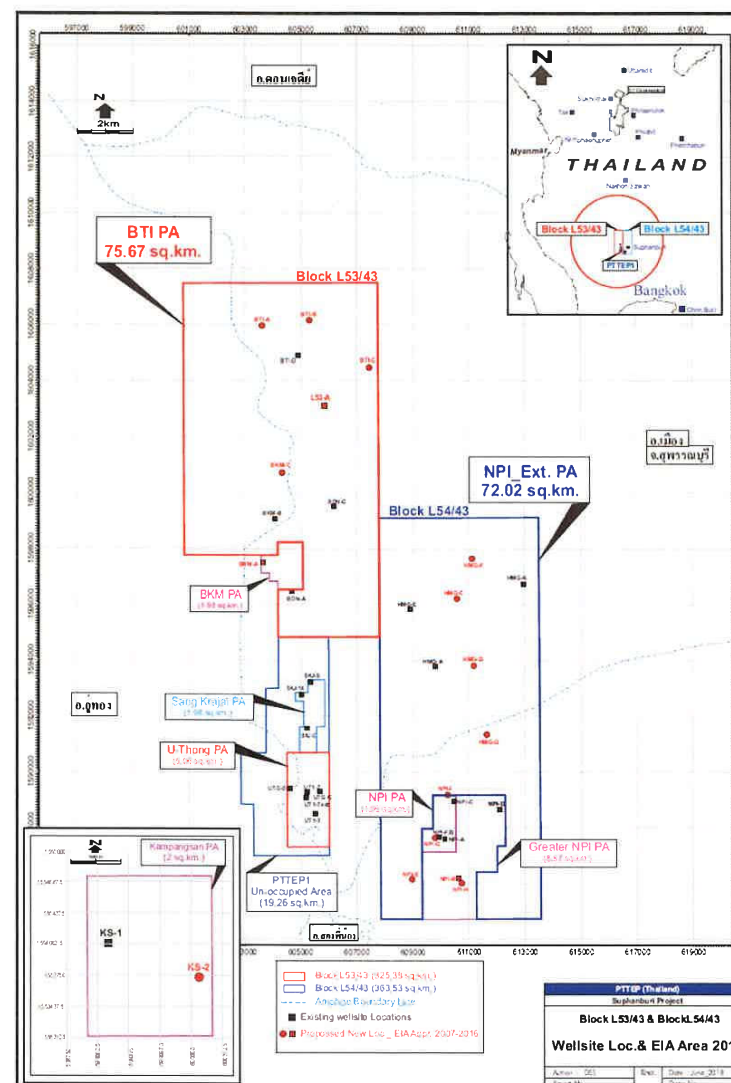


Figure 6: Site location in Suphanburi asset

## 6.1 THE RISK

### 6.1.1 PRODUCTION SITES

There is negligible risk of blow-out and uncontrollable continuous flow to ground because of low reservoir pressure. The maximum chemical spill potential is therefore the unlikely loss of containment of the plant inventory, coupled with the failure of instrumentation and procedures to stop the flow of oil should:

- Equipment (e.g. a flange) fails
- High level shut-down fail to stop production

Because sites are continuously production, the risk of a continuous flow of oil to ground is minor. Spills during the transfer of oil to road tankers and transfer chemical in site will occur. The frequency and size of spill will be controlled by the enforcement of good operating procedures and close supervision during the loading process. Spills are likely to be small.

### 6.1.2 TRANSPORTATION

The risk of chemical spill response during transportation in 200 bbl. per trip to Bangcak Refinery. Road tanker is limited to any that are the result of road traffic accidents. The unlikely but maximum spill will be 200 bbl. of hot (60o C) oil. However if an accident and spill occurs it could be in a highly sensitive area, with potential impact on the environment and local community.

## 6.2 CATEGORIES OF SPILL

- Category 1: Those that can be contained within the Site and cleaned up without resource to External agencies. Spills of: <10 Barrels of Chemical spill
- Category 2: Those that cannot totally contained within the Site and will require the assistance of External Agencies. Spill of:>10 Barrels of Chemical spill
- Category 3: chemical spill during transportation of the Oil between the Sites and Bangcak Refinery (will always require the support of External Agencies)

## 6.3 SPILL RESPONSE PROCESS

The first priority in chemical spill response is to deal with any Safety Hazards. Because of the spill substance can be fired and affected to persons and environment. Thus, the first response should ensure that source of ignition are removed from (or not allowed access to) the area of the spill and persons must be prevented from making contact with the chemical.

The basic methods of response as below:

- I. Safety (Safety of People/Threat of Fire)
- II. Shut off source of Spill

- III. Prevent the spill entering drains and water sources
- IV. Contain the spill in a small an area as possible
- V. Use spill kit at site (detail equipment as appendix1.) (<1 bbl. spill) or vacuum pump to recover
- VI. Remove all contaminated soil or other permeable foundation to a safe and environmentally acceptable disposal (Well-site pits and temporary pits must be plastic lined before dumping contaminated soil into them.)
- VII. Block area and communication hazardous area by traffic control detail distance follow appendix 2.



Figure 6.3: Sign blocked area

Note: If chemical enters to drains or water sources, evert attempt must be made to prevent it from flowing into sensitive environmental areas by the use of bunds, booms, etc.

### 6.3.1 Category 1

Likely to be all site spills of up to 10 bbl. and all larger spills that are contained in primary containment, well head cellars etc.

#### Chemical spill <1 bbl.:

1. Site operation/Guard or worker informs Operation Supervisor
2. Operator follow above basic methods of response
3. Using chemical spills kit equipment which is available at well site detail as APPENDIX 1 and disposal follow Waste Management Plan in PTTEP1 document database

#### Chemical spill Up to 10 bbl.:

1. As basic methods of response for<1 bbl.
2. Operation informs Operation Supervisor and attends site of spill



3. Operation Supervisor decides if External Resources are needed (e.g. mechanical digger)

#### Chemical spill contained in Bund/Cellar

1. As' up to 10 bbl. spill.
2. Obtain vacuum pump to pump oil back into tank (or road tanker) as soon as possible before chemical becomes too viscous or vapor to pump.

#### 6.3.2 Category 2

**Chemical spill >10 bbl. Spill on open ground** Uncontrollable. Requires External agency support.

Emergency/Crisis notification and team activation follow APPENDIX Suphanburi Emergency Responses Plan detail as below

1. ERT calls Local Fire Brigade to 'Stand-by' in case of fire.
2. ERT calls in external resources as needed to dig bunds etc. to contain spill.
3. CMT in Bangkok monitors Site controls and actions and supports the Production Supervisor. It is probable that the Operation Superintendent will delegate a person to travel to the site of the spill.

#### 6.3.3 Category 2

Transportation spills will be notified to the Transportation Contractor by the Driver or by the Local Authorities.

It will be the responsibility of transportation contractor to have contingency plans and organization to deal with all transportation emergencies including chemical spills. They must also have material resources necessary for dealing with all transportation incidents. Suphanburi asset will audit these plans and organization.

Contractor plans must include the timely notification of an emergency to Suphanburi asset. For a serious incident the Emergency Plan will be activated. It is the responsibility of the Emergency Controller (VP) to monitor and if necessary take control of the incident.

### 6.4 REPORTING

All spills must be reported to Incident Management System in SSHE Intranet and Report Monthly SSHE KPI & Performance to SSHE Corporate.

All Spills of > 1 barrel must be reported immediately to the VP, who will inform Main Office (See the Emergency and crisis management: SSHE-202-PDR-500)



### APPENDIX 1: LIST OF CHEMICAL SPILL KIT.

The list of chemical spills kit equipment which is available at well site as below.

Description	Total
Sorbent	1 Meter
Gloves	10 ea.
Rag	30 ea.
Chemical Protective Clothing (Class C)	5 ea.
Access tape	2 ea.
Sack	10 ea.
Safety vest	1 ea.
Clay	4 ea.

The list of chemical spills kit equipment which is available at road tanker as below.

Description	Total
Fire extinguisher	2 ea.
Sorbent	1 ea.
Rubber hammer	1 ea.
Wedge	1 set
Clay	1 ea.
Sand (5 kg.)	1 ea.





APPENDIX 2: DISTANCE HAZARDOUS AREA BLOCKED

สารเคมีอันตราย (สอ.1) โครงการสุพรรณบุรี	รายชื่อวัตถุอันตราย	การกักรั่วไหล LOPC Tier1,2 (Meter)			กรณีเกิดเหตุเพลิงไหม้ (Meter)		
		Hot Zone	Warm Zone	Cold zone	Hot Zone	Cold zone	Warm Zone
1. MrMUSCLE Windex (Propylene Glycol N-Butyl Ether)	Isopropyl Alcohol	50	70	90	800	850	900
2. BigC Glass Cleaner	Isopropyl Alcohol	50	70	90	800	850	900
3. Bathroom Cleaner VIXOL White	Hydrochloric Acid	50	70	90	800	850	900
4. Bathroom Cleaner VIXOL POWER	Hydrochloric Acid	50	70	90	800	850	900
5. Corrosion- inhibitor	- Tall Oil, - Thioglycolic Acid - Benzyl Ammonium Chloride	50	70	90	800	850	900
6. Thinner	Xylene	50	70	90	800	850	900
7. Sodium Hypochlorite	Sodium Hypochlorite	50	70	90	800	850	900
8. Philips Degreaser Cleaner Spray	- Pentane - Methyl - Propane	100	110	120	1,600	1,650	1,700
9. Phase treat	2-Butoxythanol	100	110	120	1,600	1,650	1,700
10. Oxygen	Oxygen liquid	100	110	120	800	850	900
11. API-MODIFIED	- Petroleum oil - Nonhazardous Blend - Metallic Lead - Metallic Zinc - Metallic Copper	50	70	90	800	850	900



สารเคมีอันตราย (สอ.1) โครงการสุพรรณบุรี	รายชื่อวัตถุอันตราย	การกักรั่วไหล LOPC Tier1,2 (Meter)			กรณีเกิดเหตุเพลิงไหม้ (Meter)		
		Hot Zone	Warm Zone	Cold zone	Hot Zone	Cold zone	Warm Zone
12. LPG	Propane	100	110	120	1,600	1,650	1,700
13. Crude oil	- Hexane - Propane - Butane - Pentane - Benzene - Toluene - Xylene - Hydrogen Sulfide(H2S)	100	110	120	1,600	1,650	1,700
14. Acetylene	Acetylene	100	110	120	1,600	1,650	1,700
15. CHEMets Ampoules	N-propanol	50	70	90	800	850	900
16. Double-Tipped Ampoules for Filming Amines	- Methyl orange - Hydrochloric acid - Sodium acetate, trihydrate - Sodium chloride - Acetic acid glacial	50	70	90	800	850	900
17. Organic Mixture WD-40	- Aliphatic Hydrocarbon - Petroleum Base Oil - Carbon Dioxide - Non-Hazardous ingredients	100	110	120	800	850	900
18. CO CONTACT CLEANER (AEROSOL)	- Hydrocarbons - Carbon dioxide - COZOL 404	100	110	120	1,600	1,650	1,700



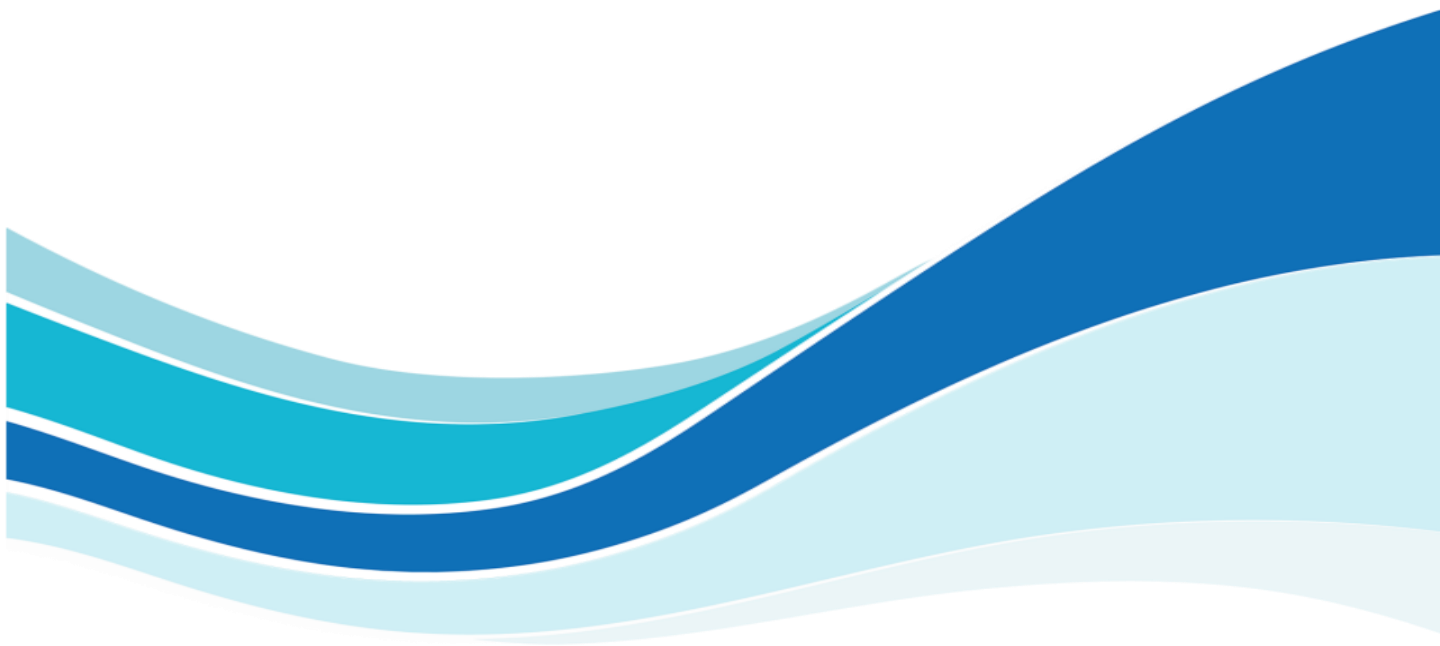
สารเคมีอันตราย (สอ.1) โครงการสุพรรณบุรี	รายชื่อวัตถุอันตราย	การรั่วไหล LOPC Tier1,2 (Meter)			กรณีเกิดเหตุเพลิงไหม้ (Meter)		
		Hot Zone	Warm Zone	Cold zone	Hot Zone	Cold zone	Warm Zone
19. Methanol	Methyl alcohol	50	70	90	800	850	900
20. OR-10 Oxygen Scavenger	Ammonium bisulfite	100	110	120	1,600	1,650	1,700
21. Valve Lubricant 602	-	50	70	90	800	850	900



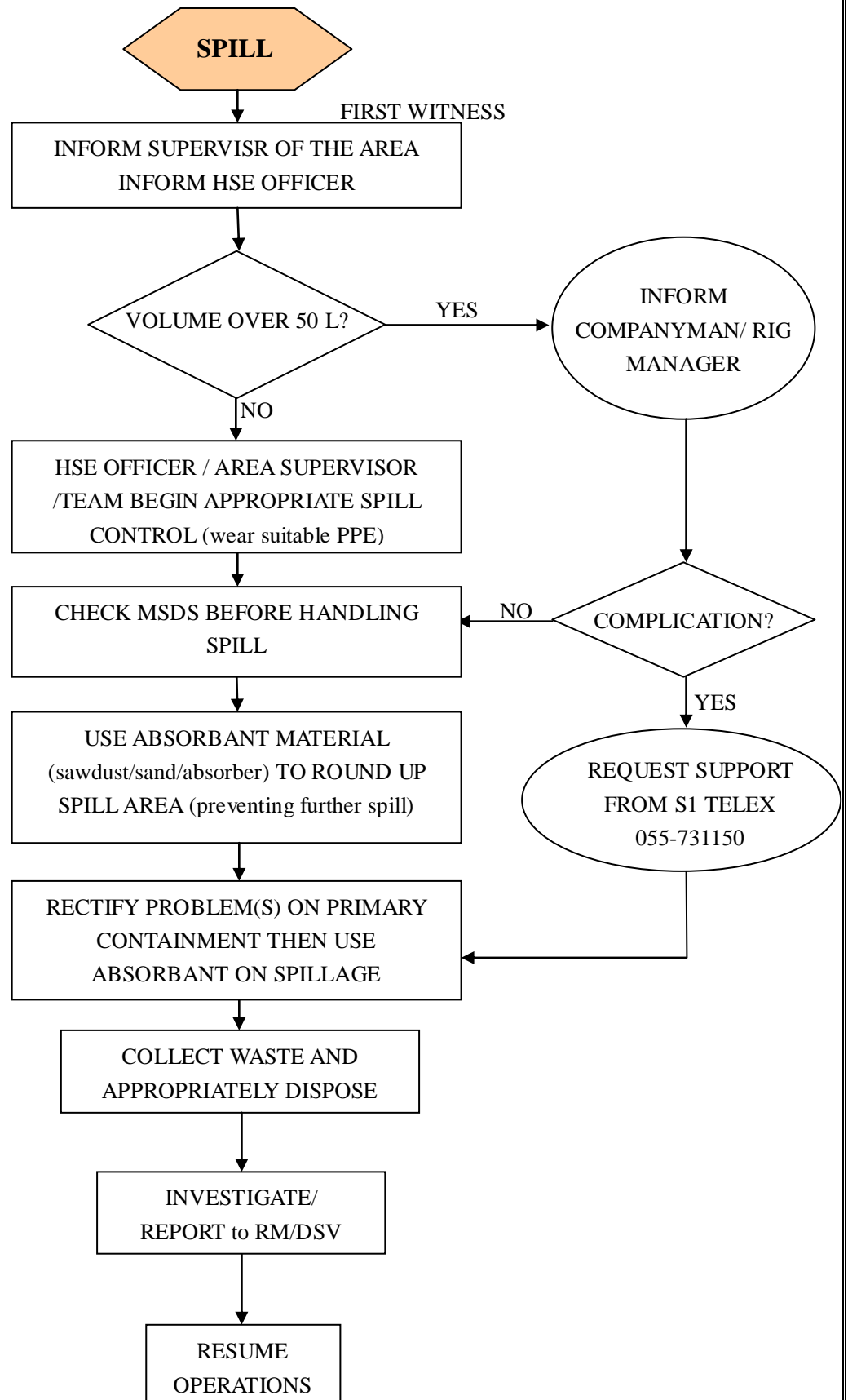
**ภาคผนวกที่ 25**

***Flow chart when spill happen***

---



### **GW80 Flow chart when spill happen**



## Oil Spill response

Inform people in the area to receive information of the events.

Place ,Location  
Place ,Location  
,Day,Time,Chemical name,  
Properties of the  
chemical,Volume.

Delimit and isolate the area. A chemical spill.

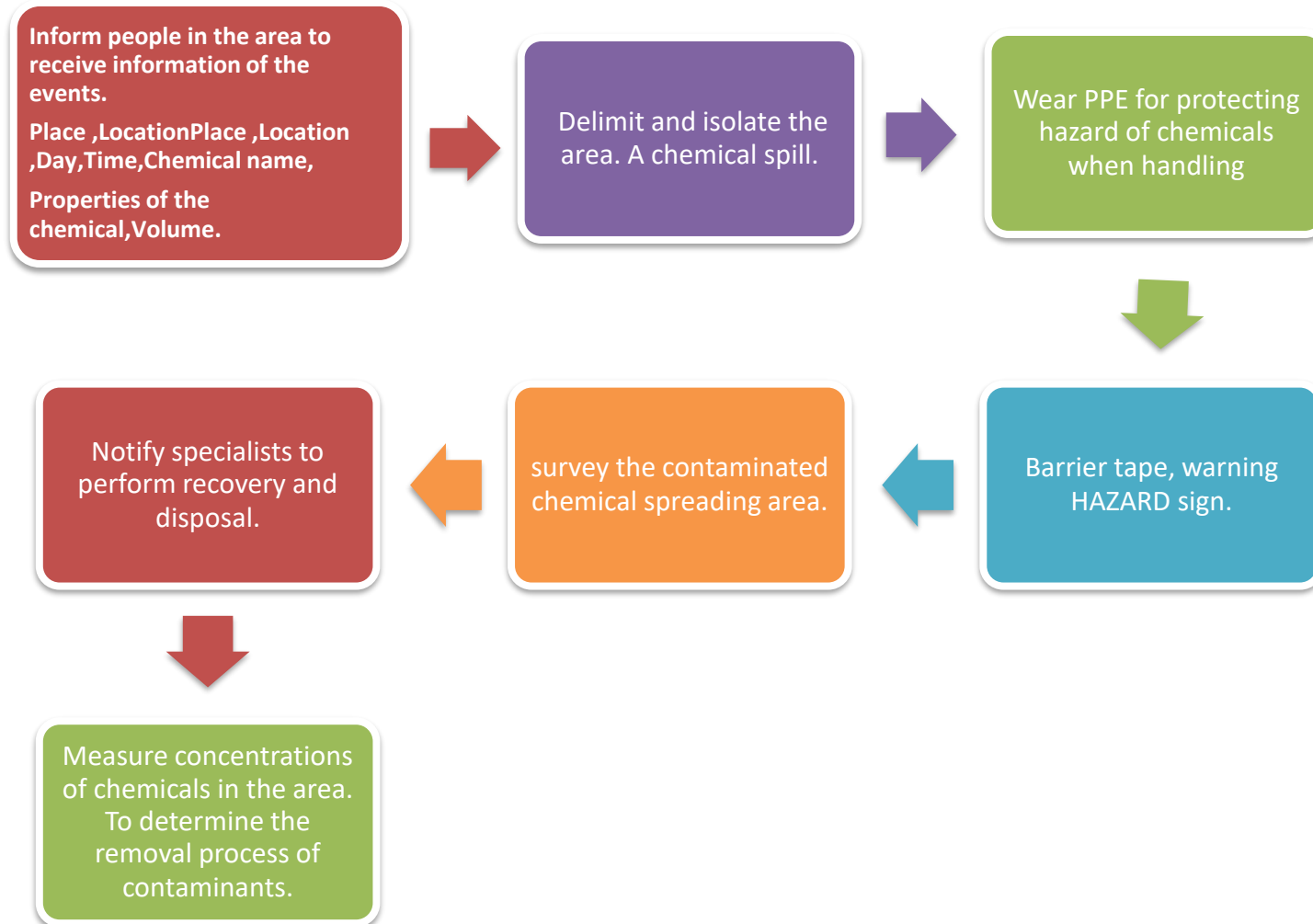
Wear PPE for protecting hazard of chemicals when handling

Notify specialists to perform recovery and disposal.

survey the contaminated chemical spreading area.

Barrier tape, warning HAZARD sign.

Measure concentrations of chemicals in the area.  
To determine the removal process of contaminants.



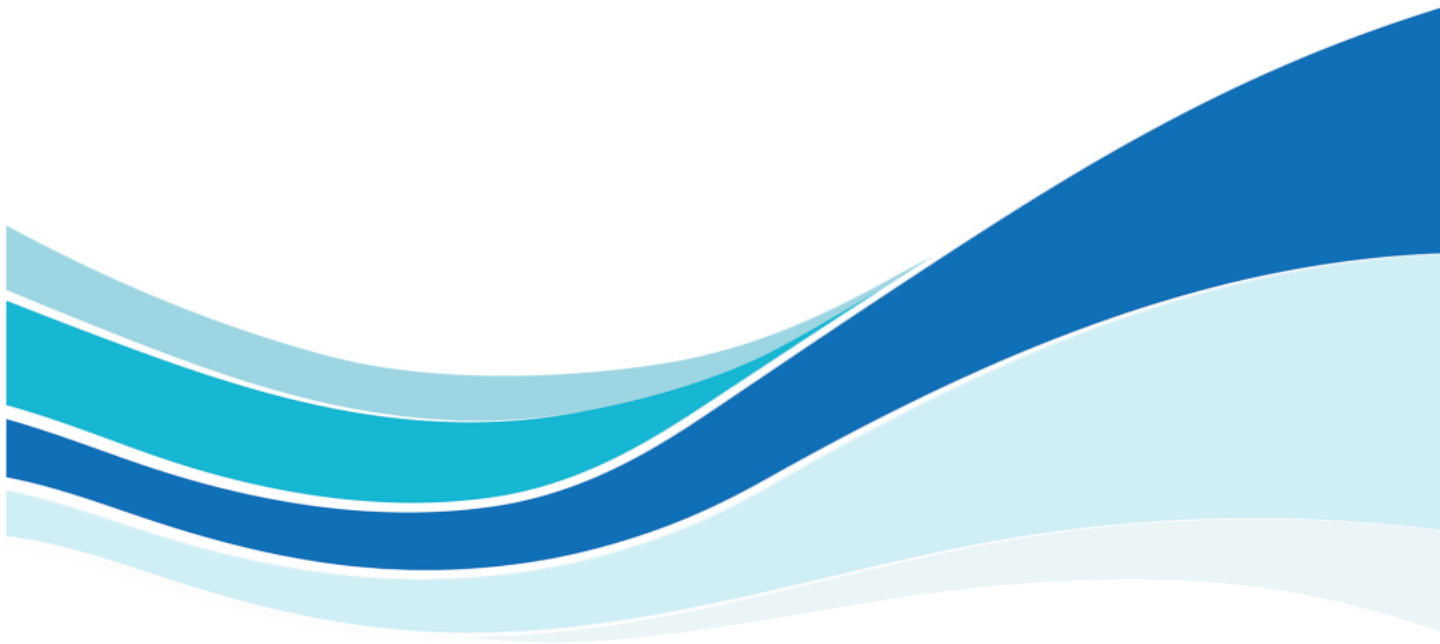
## Oil Spill response



**ภาคผนวกที่ 26**

***Suphanburi Emergency Responses Plan***

---





PTT Exploration and Production Public Company Limited

## SUPHANBURI EMERGENCY RESPONSE PLAN

Document Code: 13250-PDR-SSHE-501/08-R03

November 2021



SUPHANBURI EMERGENCY RESPONSE PLAN 13250-PDR-SSHE-501/08-R03

### Approval Register

Document Subject	SUPHANBURI EMERGENCY RESPONSE PLAN
Document Code	13250-PDR-SSHE-501/08-R03
Document Owner	Suphanburi Asset (PSR/F)
Prepared by	
Effective Date	November 2021

### Review and Approve

Name	Signature	Date
Technical Reviewer	Digitally signed by	
Document Custodian , Owner		
Approval Authority		

THIS DOCUMENT WILL BE REVIEWED EVERY 5 YEARS FROM DATE OF APPROVAL OR REVISED EARLIER IF NECESSARY.



## TABLE OF CONTENTS

1. PURPOSE.....	1
2. SCOPE.....	1
3. EMERGENCY MANAGEMENT.....	2
3.1 EMERGENCY CLASSIFICATION .....	2
3.2 FIRE AND EMERGENCY RESPONSE .....	3
3.3 EMERGENCY NOTIFICATIONS AND COMMUNICATION .....	11
3.4 ROLES AND RESPONSIBILITIES .....	13
3.5 MEDICAL EVACUATION DEFINITION .....	16
3.6 PREVENTING PLAN .....	17
3.7 MONITORING PLAN .....	20
3.8 FIRE EVACUATION PLAN .....	21
3.9 EMERGENCY CAMPAIGN.....	23
3.10 TRAINING & EXERCISES PLAN .....	23
ROLES AND RESPONSIBILITIES.....	24
DEFINITION AND ACRONYMS.....	24
REFERENCES.....	27
REVISION HISTORY .....	28



## INTRODUCTION

### 1. PURPOSE

The purpose of this plan is to establish procedures to deal with any emergency event that may occur during Suphanburi Asset oil production operations.

- To define the overall emergency organization with roles & responsibilities.
- To define the actions to be taken by the Suphanburi Asset's Emergency Response Team (ERT).
- To define the actions to be taken by Suphanburi Asset Support Team to support the ERT.
- To define interface between Suphanburi Asset's teams and PTTEP Corporate.

Objectives of the Emergency Response in the following order of priority:

- Protection of People
- Protection of Environment
- Protection of Property
- Protection of the Business and Reputation

### 2. SCOPE

The scope of this EMP is to cover the roles, responsibilities and process that the EMT will follow when responding to an actual or potential incident. Suphanburi Asset that may become of significant concern to the company business.

This plan covers all operations and activities Suphanburi Asset including incidents of (but not limited to) the following nature:

- Suphanburi Asset Operational Incidents
- Environmental incidents
- Security Incidents
- Logistics Incidents
- Health Incidents
- Suphanburi Asset Personnel Incidents
- Drilling Locations (where Suphanburi Asset team provides support to Drilling)

## REQUIREMENTS

### 3. EMERGENCY MANAGEMENT

#### 3.1 EMERGENCY CLASSIFICATION

During Emergency case will effects of different depend on the severity of the emergency, Potential of equipment, Emergency management, knowledge and skill by impact level Refer to 11038-STD-SSHE-501-R05: Emergency and Crisis Management Standard.

Impact Rating	Project Cost + Schedule	Legal / Compliance	Property Damage	Financial	People	Environment	Image/Reputation	Rare (A)	Unlikely (B)	Possible (C)	Likely (D)	Almost Certain (E)
								Event occurred in remote area and/or never heard of in the EP industry	Event has occurred a few times in the EP industry or is unlikely to occur in PTTEP	Event has occurred several times in the EP industry or occurred once in PTTEP or may occur in PTTEP	Event has occurred several times per year in the EP industry or more than once per year in PTTEP or is expected to occur in PTTEP	Event has occurred frequently in the EP industry or occurred more than once per year at the same location or is expected to occur in PTTEP
<b>Critical (1)</b>	Impact on cost or schedule > 50%	Shutdown of Plant + Management Escalation of any Remedial actions Requirement > 12 months Process/Competition: The future > 50% TMR, foreign loss > 2M USD	Loss > 1,000M	> 10% of NPV/VSAT	Multiple fatalities	Sign > 1,000 MGD Tier 3 International assistance, major financial consequences, persistent severe environmental damage	International media coverage Global public attention Personal authority	None 1	None 1			
<b>Severe (2)</b>	Impact on cost or schedule 30-50%	Shutdown of Plant + Management Escalation of Remedial actions Requirement 6-12 months Process/Competition: The future 30-50% TMR, foreign loss 200K-1M USD	Loss between 500M-1M	> 5% of NPV/VSAT	Multiple VLOC One permanent disability One fatality	Sign > 100 MGD Tier 2 Regional assistance, severe environmental damage, some persistent environmental damage	National media coverage Local community protest with national influence					
<b>Significant (3)</b>	Impact on cost or schedule 2-50%	Requirement 4-6 months Process/Competition: The future 2-50% TMR, foreign loss 50K-200K USD	Loss between 100M-500M	0.5-5% of NPV/VSAT	Multiple VLOC	Sign > 1,000 MGD Tier 1 Local assistance, some impact on local community	Regional media coverage Local media spread Local community protest with local influence					
<b>Moderate (4)</b>	Impact on cost or schedule 1-20-30%	Process/Competition: The future 1-20% TMR, foreign loss < 50K USD	Loss between 10M-100M	0.05-1% of NPV/VSAT	WTC Single VLOC	Sign < 1 MGD Tier 1 Local assistance, some impact on local community	Local media interest Influence on local media and local community aggregation					
<b>Minor (5)</b>	Impact on cost or schedule < 1-20%	No penalty Breach that can be resolved without any external assistance	Loss < 10M	< 0.05% of NPV/VSAT	Minor injury with first aid	Sign < 1 MGD Tier 1 Local assistance, some impact on local community	No news coverage Non-flashed online media post Local community complaint				None 2	None 1

1, 2, 3, 4, 5: Refer to qualitative explanation on next page.  
 (1) Frequent risk as in A.1 or A.2 due to focus on reducing consequences.  
 (2) Frequent risk as in B.1 or B.2 due to focus on reducing frequency of occurrence.  
 Consequences Lines 6 and 7 are high Potential Incidents (HPIs) for purposes of incident reporting and investigation.

Figure 1 - PTTEP Risk Assessment Matrix

#### Tier 1.

- Involves a serious problem which has limited impact and minimal potential for escalating, poses a serious threat to safety and the environment, poses no threat to the general public
- Can be handled by Emergency Response Team (ERT) within a reasonable time frame

#### Tier 2.

- Involves an emergency with greater magnitude and major severity in nature or has the potential to escalate and continue for a significant period of time and raise concern among public.
- May involve damage to PTTEP Facilities/ Assets/Project and/ or impact to third parties and may pose a significant threat to safety, the environment and its Facilities/ Assets/Project

- May request an external assistant from local authorities in the impact area, i.e. Oil Industry Environment Safety Group Association of Thailand (IESG), Royal Thai Navy (RTN) for Thailand operations, local fire brigade or the nearby oil and gas operating asset, and etc.
- Results in activation of Emergency Management Team (EMT)

#### Tier 3.

- Involves a catastrophic scenario resulted in the multiple injuries, fatalities, major fires, environmental damage, toxic gas release, significant business interruption and poses a significant threat to the environment or damage to PTTEP Assets and finally bring in significant media attention
- Requests an external assistant from abroad or international resources i.e., the Oil Spill Response Limited (OSRL), etc.
- Activates Crisis Response Team (CRT) and assigns CRT Leader to prepare/review a CRP and monitor situations for Crisis Management Team (CMT)'s decision.
- Results in activation of the Corporate CMT and Asset CMT if it occurs in an International Asset.

### 3.2 FIRE AND EMERGENCY RESPONSE

The risks for small fires to develop into major destructive fires are:

- Fires occurring from Process area**
  - Fires occurring during loading operations
  - Fires occurring gas fire
  - Fires occurring in the well-head area
  - Fires resulting from leaks near the heaters/pumps
  - Fires occurring from Chemicals leak.
- Fires occurring from the tank bund area**
  - Fires resulting from leaks and spills inside the tank bund area
  - Fires on the tank vents.
- Fires occurring from warehouse, workshop, office.**
  - Fires occurring the warehouse
  - Fires occurring in maintenance workshop.
  - Fires occurring the office.
  - Fires occurring from Electrical.
  - Fires occurring in chemical storage & Hazardous waste storage.
- Fire occurring during crude transportation External**
  - Fires occurring during transportation operations.



- **Fire occurring during transportation Internal**
  - Fires on the loading arm
  - Hit by vehicle
- **Pre fire plan reference to [PRE FIRE PLAN](#)**
- **Other:**
  - Search and Rescue.
  - Generated Waste Handling.
  - Site Re-entry
  - Emergency Contact Number reference to Support Documents : Contact Number [PSR/F, Contractor , Suphanburi asset emergency flow chart](#)
  - Site layout reference to : [Drawing and site layout](#)

#### **Guide-lines for dealing with the above categories of fire as below**

### **3.2.1 FIRES OCCURRING FROM PROCESS AREA**

#### **a. Fires occurring during loading operations**

- Fires in the tank

Fires in the tank should be extinguished by pouring in foam mix through the loading hatch.

It is possible that if a fire is started at the start of loading when the tank is empty, it could be accompanied by a soft explosion, which may lead to an injury to the operator on the tank top. The first priority is to ensure the safety of the operator. If the fire is still alight when the Brigade arrives they should use foam mix into the tank to extinguish the fire, or let it burn out. Water should not be allowed to enter the tank.

- Fires as a result of spills

If practicable and provided there is no risk of personnel injury the tanker should be driven out of the spill. The spill fire should be extinguished with foam extinguisher, mobile fire pump and fire pump with foam mixer (or a small one with Dry Powder). If the extinguishers do not extinguish the fire it may be allowed to burn out, while ensuring that adjacent equipment does not become involved, if possible.

The ERT and Fire Brigade should concentrate on ensuring that adjacent equipment does not become involved by the use of foam initially to extinguish the fire, and subsequently water to cool nearby equipment taking care that the water run-off does not escalate the spill and fire.

#### **b. Fires occurring gas fire**

If Gas leaks during operation (leaks from pipeline, flange leaks, separators or other) gas detector will sound an alarm. The operator must be isolate equipment gas leakage systems from other devices. To minimize the impact on other devices and reduce the severity of GAS LEAKS. Then Check equipment that was damaged and inform by the Follow the Emergency & Crisis Response and Management Standard.

If isolate equipment gas leakage systems from other devices completed but Unable to stop gas leakage. Operator must to press ESD and inform by the Follow the Emergency & Crisis Response and Management Standard.

Fires occurring gas fire Operator must to press ESC and. Consider ability to fire fighting. And fight fire if cannot fight fire Operator must inform by the Follow the Emergency & Crisis Response and Management Standard.

#### **c. Fires occurring in the wellhead area**

Flange fires occurring on the well-head or flowlines will immediately be reduced when the ESD is activated or the well is manually isolated and can be tackled with the available extinguishers.

Housekeeping in this area is particularly important because accumulated oil in the cellar or generally in the well-bay, if ignited, could cause a major loss because of damage to the well-head or beam pump. If a fire should occur as a result of a spill, it should be tackled with foam extinguisher or/and mobile fire pump, fire pump and fire truck with foam mixer as effectively as possible. The Brigade should be asked to deploy foam mix over the spill.

#### **d. Fires resulting from leaks near the heaters/pumps**

The ESD will immediately reduce the size of the fire and operators should then deal with the fire using foam, dry powder extinguisher or fire pump any spill should be dealt with as in 2 above

#### **e. Fires occurring from Chemicals leak.**

Refer to [12146-PDR-SSHE-501/03-R02: Spill Management Plan](#) and [13250-PDR-SSHE-501/03-R02: CHEMICAL SPILL PLAN FOR PRODUCTION SITE.](#)

### **3.2.2 FIRES OCCURRING FROM THE TANK BUND AREA**

#### **a. Fires resulting from leaks and spills inside the tank bund area**

If housekeeping is good the potential for this type of spill is small. Operators should attempt to extinguish pressure fed fires by first shutting down the operation which should immediately reduce the flame size and then attack the fire with Dry Powder extinguisher. For pool fires in the bund, foam extinguishers, mobile fire pump, fire truck and fire pump with foam mixer should be used.

If the operator is unable to extinguish the fire, the Site Emergency Response Team (ERT) and Local Brigade will attend in 30-40 minutes after being called. The operator should brief the Suphanburi Asset Fire chief or Senior Officer on arrival and advise him on how to deal with the situation.

If a tank is breached and there is a major fire, the ERT and Fire Brigade may not be able to extinguish it with the resources available. The ERT and Fire Brigade should therefore concentrate on the use of sprayed water or fog to keep adjacent plant cool, until the fire subsides as a result of lack of fuel.

If the fire is prolonged and the bund contains burning crude oil, care is needed to ensure that the bund does not get filled with fire water. If water spray is being used to keep tanks cool, the bund should be drained, if practicable, to maintain as little water in the bund as possible. However, care is needed to



ensure that the draining do not contain oil which can escalate the size of the fire by transferring it to a pit.

If the adjacent tanks are low level, there is a danger they could catastrophically rupture if overheated in a fire. This danger must be pointed out to the ERT and Fire Brigade to ensure the firemen are not put into positions of undue risk, particularly if cooling effectiveness is low.

If there is a water level below the oil in any tank, and there is a major bund fire this is the most hazardous situation because of the risk of boil-over when the water reaches boiling point. Water levels should always be minimized in normal operations, but if this situation occurs then firemen should be aware of the danger that a sudden and potentially massive escalation could occur.

If there is any doubt about the ability of the ERT and Fire Brigade to deploy sufficient resources to deal with a tank fire, then the tanks should be allowed to burn out.

#### **b. Fires on the tank vents**

Tank vent fires may be common during electric storms. The size of the fire will be reduced soon after the ESD has been activated but attempts to extinguish the flame should be made with a 'snuffer' device, e.g. a cone on a pole, which can be put over the vent thus extinguishing the flame. If unsuccessful, the vent fire can be allowed to burn itself out.

### **3.2.3 FIRES OCCURRING FROM WORKSHOP, WEARHOUSE AND OFFICE.**

#### **a. Fires occurring in maintenance workshop.**

Storage, equipment, classification of chemicals and planning to do a good job this reduces Accidents from fire, can control the situation and the fire properly will Reduced damage

If a fire caused by OXYGEN used in activities such as welding, cutting steel. It should be tackled by Dry Powder extinguisher. Do not let the water clearance by liquid Oxygen It will make a serious blow. Stop leak if you can do it. OXYGEN Store in an area with adequate ventilation, away from flammable materials such as oil, grease, asphalt, Hydrocarbon, alcohol, acetone, ether and aldehyde at least 20 feet.

If a fire caused by ACETYLENE used in activities such as welding, cutting steel. It should be tackled by Dry Powder extinguisher, Carbon dioxide, Water spray, cooling container at fires, Store ACETYLENE in a well-ventilated, distance from the source of heat and ignition should matter in a cool and dry.

If a fire caused by API-MODIFIED It should be tackled by Dry Powder extinguisher, Carbon dioxide, water and don't store API- MODIFIED in an area with a high temperature. If a fire caused by Dynamic Ultra Plus: SAE 15W-40 It should be tackled by Dry Powder extinguisher, Foam extinguisher and spray water used to maintain the temperature of the container. Store Dynamic Ultra Plus: SAE 15W-40 in a well-ventilated don't store in a place near to the flame.



If a fire caused by THINNER it should be tackled by Foam extinguisher and Dry Powder extinguisher, Store THINNER in a well-ventilated don't store in a place near to the flame, it in a cool, dry place.

If a fire caused by Philips Degreaser Cleaner Spray It should be tackled by Dry Powder extinguisher, Carbon dioxide and spray water. Store Philips Degreaser Cleaner Spray in a well-ventilated don't store in a place near to the flame.

If a fire caused by GREASE It should be tackled by Foam extinguisher and Dry Powder extinguisher, Sand or sawdust to extinguisher. Store GREASE With lid

If a fire caused by CONTACT CLENER It should be tackled by Foam extinguisher and Dry Powder extinguisher, Carbon dioxide, water, Store CONTACT CLENER in a well-ventilated don't store in a place near to the flame

If a fire caused by Organic Mixture WD-40 It should be tackled by dry chemical, carbon dioxide or foam; use water fog, don't use water jet or flooding amounts of water. Burning product will float on the surface and spread fire. Store Organic Mixture WD-40 in a cool, well-ventilated area, away from incompatible materials Do not store in direct sunlight.

If a fire caused by CO CONTACT CLEANER (AEROSOL) It should be tackled by Dry Powder extinguisher, Carbon dioxide and Foam extinguisher. Store Organic Mixture CO CONTACT CLEANER (AEROSOL) in a well-ventilated don't store in a place near to the flame and food store.

In case of large fires or unable to control the situation. Refer to Emergency & Crisis Response and Management Structure

#### **b. Fires occurring in warehouse**

If a fire caused by equipment it should be tackled by Dry Powder extinguisher preliminary.

In case of fire, the warehouse can't be controlled will be use pull handle fuse Out of electricity Main for shutting electric current

#### **c. Fires occurring the office.**

If a fire caused by Electronics equipment or documents, it should be tackled by Carbon dioxide preliminary.

In case of fire, the container can't be controlled. Will be cut off the power at the Control room.

In case of Control room was on fire Will be use pull handle fuse Out of electricity Main for shutting electric current.

#### **d. Fires occurring from Electrical.**

Electricity is one of the most common sources of ignition to create a fire. There are two primary electrical conditions that start fires, overloaded and short circuits.



- Overloaded Circuits

Overloaded circuits (wires) result from connecting larger or more loads than the circuit is sized for. A dangerous situation is created and overloaded wires will occur if circuit breakers or fuses with a larger rating are substituted for those properly sized originally. This substitution allows wires and devices to slowly build up heat inside the electrical equipment. The build-up of heat eventually causes the flammable material to burst into flame.

- Short Circuits

A short circuit causes a high energy spark and occurs when poor or damaged insulation touches another circuit, wire or grounded metal surface. Working on live electrical equipment and having a screwdriver touch the metal box is a good example of a short circuit. A defective or worn switch or wire is an example of where a short circuit can start a fire when no one is present.

If the fire is confined to electrical equipment, shutting the power off and using CO<sub>2</sub> to put the fire. But if other materials are involved, then an alternative extinguishing agent may be necessary after the power is switched off.

Since most electrical equipment is located in enclosed spaces, the use of fireman's equipment and breathing apparatus must always be considered when responding fires.

#### e. Fires occurring in chemical storage & Hazardous waste storage.

The incompatibility of chemicals may be posing a fire if not correctly stored / classification, it allows extinguisher rapidly and cause reduction damage, reduction loss.

If a fire caused by PHASETREAT It should be tackled by Foam extinguisher Dry Powder extinguisher, Carbon dioxide and water spray. Store PHASETREAT in a well-ventilated

If a fire caused by Corrosion inhibitor (EC1304A) It should be tackled by Foam extinguisher, Dry Powder extinguisher, Carbon dioxide and If a large fire occurs, use a water spray to lower the temperature of the container

If a fire caused by CHEMets Ampoules for Filming Amines CHEMets Kit&Refill (R-1001 and for Detergents CHEMets Kit&Refill (R-9401) It should be tackled by Dry Powder extinguisher, Carbon dioxide and water spray

If a fire caused by Double-Tipped Ampoules It should be tackled by Foam extinguisher, Dry Powder extinguisher, Carbon dioxide and water spray. Store Double-Tipped Ampoules in a well-ventilated

If a fire caused by Methanol It should be tackled by Foam extinguisher, Dry Powder extinguisher, Carbon dioxide and use water spray to cool the container. Store Methanol in a well-ventilated don't store in a place near to the flame.



If a fire caused by OR-10 It should be tackled by Dry Powder extinguisher. Store OR-10 in a well-ventilated, keep in a sealed container, dry and cool place.

If a fire caused by OILER-1 It should be tackled by Dry Powder extinguisher. Store OILER-1 in a well-ventilated

If a fire caused by Hazardous Waste such as Oil-soaked rags, Gloves contaminated with oil, Paint cans, etc. It should be tackled by Dry Powder extinguisher, Water spray and Foam extinguisher.

### 3.2.4 FIRE OCCURRING DURING CRUDE TRANSPORTATION EXTERNAL

#### a. Fires occurring during transportation operations

Fires occurring to the tanker during transportation to Bang-chak Refinery are the responsibility of the Fire Brigades along the route. Suphanburi asset must ensure that the Transportation Contractor and Suphanburi asset emergency plans cover the liaison needed to control these emergencies. The Brigades should use foam mix to deal with all hydrocarbon fires.

In the event of a road tanker emergency Suphanburi assets will be advised by the contractor as soon as possible. Suphanburi Asset representative immediately will be sent to the scene of the emergency to

- assess the situation
- coordinate support with the Suphanburi assets Emergency Response Team in the office and the contractor
- liaison with the local authority.

The contractor has a set of transportation emergency procedures which define his immediate action and emergency procedure at Emergency Control Centre

### 3.2.5 FIRE OCCURRING DURING TRANSPORTATION INTERNAL

#### a. Fires on the loading arm

Fires on the loading arm and pipe work will be extinguished when the ESD is activated.

#### b. Hit by vehicle

Comply with 11017-PDR-LOG-4301-R00 Land Transport Management Procedure for Vehicle users. If an accident must follow Emergency & Crisis Response and Management Structure

### 3.2.6 OTHER

#### a. Search and Rescue

After all personnel evacuated to the muster point, The Team Leader or Production Operator must check for missing personnel from Visitor Record and Contractor Entry Permit logs to ensure there is no personnel missing in the site. Upon discovery of missing personnel, follow as guideline:



1. Inform VP, Suphanburi assets (PSR/F)
2. Request assistance if necessary.
3. At least two persons in a team for search and rescue with radio and mobile first aid kit.
4. One site staff standby at the muster point with radio and keep on communication to search and rescue team to ensure search and rescue team still safe.
5. Never search after dark unless searching by the professional team
6. Notify people who standbys at the muster point for help or ambulance if required when the missing personnel are discovered.

**b. Generated Waste Handling.**

Waste from Emergency situation or response shall be managed regarding to SSHE-106-PDR-521 Waste Management Procedure and Waste Management plan Suphanburi asset.

**c. Site Re-entry**

In case of the site condition has been in unsafe condition to operate; for example, the plant is caught on fire and all personnel are evacuated off the site. Until the site has been declared by the VP, Suphanburi assets (PSR/F) after thoroughly investigated inspected that the site is safe to enter and operate, no one will enter the site for any reason except being justified and permitted by the VP, Suphanburi assets (PSR/F) to enter the site.

**d. Recover Plan**

In case of can be controlled or Tier 1, which the incident affect the people, environment and social practice in short term as follows.

- People: Victim helping and injury person helping program.
- Environment (cover: air, water, soil, waste): Decontamination and Monitoring.
- Community: investigate of damage, Preliminary support and compensatory damages,

OSC inform to ERT, Support team in ERT by each team is responsible for the following.

**Recover Team during emergency:**

Responsibility	Executor
Coordinate with government	Mutual Aid Coordinators
Damage Surveying	Operation Supervisor / Site Duty Roster Maintenance / Isolation Team
Helping and searching victim and dead people.	Intervention Team / Fire Fighting Team
Victim or injury person transportation and estate transportation of dead people.	Medical Team



Damage estimation and reporting of fire situation	Operation Supervisor / Site Duty Roster/ Maintenance
Immediate correction of fire situation to safe company and able to run company operation.	Maintenance / Isolation Team
Help for Emergency Relief and Includes the monitoring Assistance to Fire Victims.	Suphanburi asset / CSR
Waste Management, all of which occur in the event of an emergency.	Support Team

In case of long term, cannot be controlled or Tier 2,3 Emergency events Affect Environmental and Social such as Multiple LWDC or one more Permanent Disability or 1 Fatality, Loss between \$5M-\$50M, Spill >10,000 bbl. or Regional assistance etc. Activate Crisis Management Team (CMT) by EVP will report the CEO and consider activating

**3.3 EMERGENCY NOTIFICATIONS AND COMMUNICATION**

The communication channels

During an emergency, communications in Suphanburi asset shall be by following methods.

- Radio communication
- Telephone
- Mobile Phone
- E-mail
- Online application

**3.3.1 TIER1.**

Can be handled by onsite Emergency Response Team (ERT) within a reasonable time frame

**Observer** informs OPR on-duty.

- Site / Asset.
- Area in site.
- What events?
- Controlled / uncontrolled.
- The name and condition of the injured and need your help Direction wind.
- Used Extinguishing equipment?

**OPR on-duty** informs Supervisor.

- Site / Asset
- Area in site

- What events?
- Controlled / uncontrolled
- The name and condition of the injured and need your help Direction wind
- Preliminary damage

In case of can be response or Tier 1 Supervisor Informs 2 way as

**Frist way: Supervisor.** Informs ERT team

- Mutual Aid
- Event logger
- Fire Fighting Team.
- Logistic / Transport Team.
- Medical Team.
- Maintenance / Isolation Team.
- Mass communication.
- Supporting Team.

**Second way: Supervisor.**

- Site / Asset
- Area in site
- What events?
- Worth of damage covers People, Environment, Property and the Business and Reputation
- VP or Person authorized acknowledged and command to incident investigation  
Diagram the emergency respond plan In case of can be response or Tier 1 reference to [Suphanburi asset emergency flow chart](#)

### 3.3.2 TIER2,3

Involves a catastrophic scenario resulted in the multiple injuries, fatalities, major fires, environmental damage, toxic gas release, significant business interruption and poses a significant threat to the environment or damage to PTTEP Assets and finally bring in significant media attention

The emergency situation may not be significant initially and may expand to require the additional resources.

The structure also establishes, coordination and communication from Asset and finally to the Corporate Head Office Level.

In case of can't be response or Tier 2, 3 [Refer to 5.1 Emergency /crisis notification and team activation](#)

**Supervisor** Informs VP or Person authorized for acknowledge for evaluation situation and command

- Site / Asset
- Area in site
- What events?
- Controlled / uncontrolled
- Who Injured? If there, inform describe injuries, number of Injured.
- The reporter numbers
- Number of equipment (Water, Foam extinguisher, Fire hose, Fire Truck etc.), for support firefighting
- Number of External Intervention Team
- Worth of damage covers People, Environment, Property and the Business and Reputation

**VP** Informs SVP-PTN

- Site / Asset
- Area in site
- What events?
- Worth of damage covers People, Environment, Property and the Business and Reputation
- Who Injured? If there, inform describe injuries, number of Injured.
- Number of External Intervention Team
- Request Activate Crisis Management Team (CMT) for Prepare support.

**SVP** Informs Crisis Management Team (CMT) shall be Activate Crisis Management Team Refer to 11038-STD-SSHE-501-R05: Emergency and Crisis Management Standard.

## 3.4 ROLES AND RESPONSIBILITIES

### 3.4.1 ASSET VP OR AUTHORIZED PERSON AT SITE/FIELD

Asset VP or authorized person at site/field are responsible for acting as a Leader of Onsite Emergency Response Team (ERT), so called Incident Commander (IC) whenever emergency occurs of their respective divisions (PSR/F) / Asset. Is the Emergency Controller has full delegated financial authority, calls in staff as required

### 3.4.2 OPERATION SUPERVISOR / SITE DUTY ROSTER

Operation Supervisor is assigned by the Asset VP to be in charge of the response to the emergency/crisis at the site or so called On Scene Commander (OSC). He will lead the on-site Emergency Response Team(s), coordinate with all support teams at the site, communicate the emergency/crisis situation and coordinate with the IC for additional supports as required.

- Site Duty Roster is the site incident controller when Operation Supervisor is absent.

- Site Duty Roster sees the safety broad and Email.

#### 3.4.3 EVENT LOGGER / OSC ASSISTANCE

- Record all events accurately and clearly including incident type, location, date and times.
- Ensure that all events are accurately recorded in the logbook / whiteboard as they occur.
- Liaise with the radio operator to ensure that all information is recorded.
- Keep the Duty Team informed of any significant events or changes in the status of the emergency.
- Inform the OSC of significant events or changes in the status of the emergency

#### 3.4.4 MUTUAL AID COORDINATORS

- To provide advice to OSC on all Emergency Response aspects.
- Assist OSC on control activities at the scene.
- Provide messengers as required by Incident Commander / On scene Commander.
- Provide guides for outside agencies arriving at the plant.
- Assist with traffic control at the main gate and approach roads, as requested by security.
- Advise on using all firefighting equipment.
- Takes care of the injured until medical support arrives.
- Coordinate with Mutual Aid Teams.
- Inform local fire bridge to support for fighting of fire.

#### 3.4.5 INTERVENTION TEAM / FIRE FIGHTING TEAM

Intervention Team Leader is assigned by the OSC to be in charge of the response to the emergency/crisis at the site. He will lead the on-site Emergency Response Team(s), coordinate with all support teams at the site, communicate the emergency/crisis situation and coordinate with the OSC for additional supports as required, Implement tactical incident plan as directed response to the incident directly with OSC.

#### 3.4.6 LOGISTIC / TRANSPORT TEAM

- Provide support on all logistics related.
- Co-ordinate all transport movements.
- Control person to pass in – out wellsite and prevent person who are not participate entrance to wellsite. Operate manual silent to inform all staff when fire occurred.
- Stand by at gate of wellsite and control traffic system in gate area and roadway which entrance to production area or fire location.
- Provide and organize vehicles and transportation.

- Arrange transport for personnel and equipment to go to the incident scene.
- Provide transport assistance.
- Keep the incident area free of all non-emergency vehicles and personnel.
- Close the road, which related to the incident and take care of traffic.

#### 3.4.7 MAINTENANCE / ISOLATION TEAM

- Provide personnel to the Emergency maintenance team in every field such as mechanical, electrical, civil, as requested by OSC.
- Online fire pumps and stands by to control fire pump engine.
- To coordinate and direct mechanical / I&E maintenance to support operations in event of emergency.

#### 3.4.8 MEDICAL TEAM

- Evacuate injured personnel to safety area.
- Provide first aid as requested by the OSC.
- Perform first aid for victim or injury person and inform hospital to support

#### 3.4.9 CSR

- Provide Emergency information for journalist, locals, etc.

#### 3.4.10 SUPPORTING TEAM

- Inform local fire bridge to support for fighting of fire.
- Firefighting team.
- Clean up area when firefighting was completed.
- Pump used water in tank's bund for injection to water injection well.
- Takes care of the injured until medical support arrives
- Raise the alarm 5 minute inform all staff, contractor and visitor
- Provide food and drinks for Fire Extinguishing Personnel and Personnel at the Assembly point
- Stand by at gate of wellsite and control traffic system in gate area and roadway which entrance to production area or fire location.
- Control person to pass in – out wellsite and prevent person who are not participate entrance to wellsite.



### Responsibility

Team	Responsibility
Incident Commander	VP, Suphanburi asset
Operation Supervisor / Site Duty Roster (OSC)	Supervisor Operation / Site Duty Roster
Mutual Aid Coordinator Event logger/Fire command Assistance	SSHE Team
Intervention / Fire Fighting Team	Team 1, 2 and 3
Team 1	• Day Shift
Team 2	• Night Shift + Day Off
Team 3	• Night Shift + Day Off
Maintenance / Isolation Team	Maintenance
Logistic / Transport Team	Driver and Supporting
Medical Team	Office / Maid / Gardener
Supporting Team	Helper well site & Other staff
CSR	CSR

### 3.5 MEDICAL EVACUATION DEFINITION

A MEDIVAC procedure is initiated when an employee's (either Suphanburi Asset staff or Contractor) medical, conditions require immediate evacuation to hospital, due to accident or serious illness.

**Procedure (Well Site);** If Site Staff (Production Operator) think that patient cannot be treated on site and should be sent urgently to hospital by site pick up or call out the nearest ambulance. Supervisor will make decision to evacuate the patient by site pick up or to call out the ambulance. In case of serious injury or illness, the patient must be evacuated to the hospital immediately then Supervisor report to (PSR/F) VP, Suphanburi Asset later. Relative of the patient (state in next of kin contact) will be contacted by Suphanburi Asset Assistance Admin Officer.

The patient normally sent to Air Force Hospital (Chantarubegsa) and Thonburi U-thong Hospital for Kampangsean and U-thong Location respectively. Decided by Supervisor and Assigned for Mutual Aid Coordinators contact the hospital in Bangkok for evacuation the patient to Bangkok due to the local hospital cannot treat the patient. And report to (PNJ) VP, Suphanburi Asset later.

### MEDICAL EMERGENCY

- Comply with 13250-PDR-MAIN-WIS-200-003-R01 Work at high If an accident must follow Emergency & Crisis Response and Management Standard.
- Confined space Comply with 12148-PDR-SSHE-505/42-R00 Permit to work Procedure if an accident must follow Emergency & Crisis Response and Management Standard.

Snake snatch. If remember snake style and call Operator on duty to inform what's happening and a took all poisonous snake serum in office go to the hospital.

### 3.6 PREVENTING PLAN

Incident may be occurred by natural or people error, but fire case may be occurred every time if lacking of maintenance or inspection for firefighting equipment or system. So those fact are important may be fire occurred.

For life and all company estates have safety without fire that should be prepared preventing fire plan

#### 3.6.1 VP

- When notified of an emergency tier 2 or 3, proceed to the EMR.

#### 3.6.2 SUPERVISOR OPERATIONS

- When establishment or work system were installed and improved that should be concerned of fire
- Control production area, operation, tool and facility may be conducted of fire.
- Specification of working standard to safe from fire.
- Controlling and inspecting of activities to conducted ignition, heating and electrical static such as welding, cutting and heating who is approval person is supervisor or authorizer.
- Assignment for safety committee and safety officer to prepare preventing system and suspending fire plan such as training plan, inspection and improvement of work.
- Follow up and monitor other activities as involve preventing of fire.
- Prepare fire preventing plan as long term such as flammable material installation, emergency alarm system.

### 3.6.3 PROVIDE SSHE STANDARD AND CONTROL WORK SYSTEM OF CONTRACTOR FOR WORKING.

#### 3.6.4 EMPLOYEE

All employees must follow up safety rule.

- Do not ignition in restricted area or establishment area before approval from responsible person.
- No smoking in flammable material area or the location is not provided.
- Do not repair machine or equipment in flammable area before approval or Issued repair card by maintenance and safety officer
- In necessary case to use fire or ignition in flammable area must be worked under safety practice and monitored with close up by safety officer.
- To safe workplace and working practice with fire
  - Prevent fuel leakage or nearly leakage status may be occurred of high hazard that should be immediately improved by responsible person
  - Waste deposited or flammable waste management should be controlled by responsible person
  - Preventing electrical hazard, cable, fluorescent lamp, switch, machine with electrical system which was continuously monitored to prevent short circuit of electrical system. Preventing fire from welding operation
  - Repairing is to immediately action which found tool or facilities were damaged.
- Continuously monitor of pipe and valve leaking.
- Gas container and fuel container should be kept away from heat source minimum 7 meter.
- Do not forget off switch of welding machine after stopped uses.
- Welding operation must beware the scale of fire may be blown to flammable material area.

#### 3.6.1 PROFESSIONAL SAFETY

- Inspection at high risk area for hazard of fire. Prepare details of preventing and Suspending fire plan and continuously provide training course of firefighting.
- Providing, maintenance and inspection of fire firefighting equipment is good Condition.
- Control contractor when they work in establishment for preventing fire.
- Issued permit to work about working of fire.

### 3.6.2 SECURITY GUARD

- Control visitor who are pass in – out of wellsite.
- Be careful of casualty in wellsite area.
- When emergency fire was occurred that immediately inform to responsible person.
- Raise the alarm 5 minute inform all staff, contractor and visitor

### 3.6.3 PREVENTING SYSTEM AND SUSPENDING FIRE PLAN OF SUPHANBURI ASSET

For life and all company estate have safety without fire. There are plans and control system as follow;

1. Provide preventing system and suspending system of fire such as providing of firefighting equipment , controlling of explosive materials or flammable materials, Disposal of flammable waste ,lightning protection , Installation of fire alarm system , creating a fire escape and building construction with fire protection system, etc.
2. Provide preventing and suspending plan of fire. Including with training, fire preventing promotion, firefighting, fire suspending, relief and recovery plan.
3. Provide route line to exit way as standard requirement.
4. For operation area or obstruction area should be provided route line to exit way as standard requirement.
5. Provide route line to exit way minimum 2 points to able moving out for all staff from working area within 5 minutes.
6. The fire exit is route line to safety area such as road, yard, etc.
7. The fire exit is to provide and visible seeing without obstruction.
8. The fire exit is to open – close as one or two way.
9. The fire exit is route line to outside without locking.
10. Separated material can be able ignition.
11. Provide mobile firefighting equipment and water supply.
12. Provide reserve water supply.
13. The hydrant or water supply pipe as standard requirement.
14. Fire hose is to provide enough supporting.
15. Water supply system, water reserved area and pumping should be checked and certified by civil engineer. Preventing damage system is to prepare for decreasing of fire
16. Provide mobile CO2, dry power or chemical foam are used for fire as type A, B, C and D.
17. Provide maintenance system and chemical for firefighting as standard requirement.
18. Provide checking and maintenance system for firefighting equipment and facilities minimum 1 time per month



19. Provide firefighting equipment at visible seeing and convenience using without obstruction.
20. Provide firefighting training course for staff.
21. Provide fire man or ERT to stand by all working time.
22. Provide PPE for firefighting emission enough such as uniform, shoe, sock , hat , mask , etc.
23. Prevent radiation, conduction or convection of heat from heat source to Flammable materials such as provides insulation material.
24. Separation flammable material and levying in safety area.
25. Prevention of leaking or vaporization of flammable material or explosive material are fact of ignition.
26. Provide no smoking sign in smoking area.
27. Provide earthing and grounding system at office building and process facilities.
28. Provide silent of fire alarm.
29. Monitor and test performance of fire alarm system minimum 1 time per month
30. Prepare emergency response team to prevent and response when emergency fire was occurred.
31. Provide emergency fire drill minimum 1 time per year

### 3.7 MONITORING PLAN

Monitoring plans have objective to prevent fire with inspection for high risk area, firefighting equipment reviewing of emergency response plan for preventing fire emergency case.

#### Preparation

1. Assign person to continuously monitor and maintain firefighting equipment for good condition
2. Specification objective to monitor such as high risk area, tool or equipment to prevent Fire and firefighting equipment. There is inspection report or monitoring report to easy and convenience for reporting.
3. Specification monitoring and inspection and presentation for management.
4. Monitoring and inspection of firefighting equipment or facilities relation at all area to Confirm that preventing fire system is good condition minimum 1 time per month

### INSPECTION PLAN

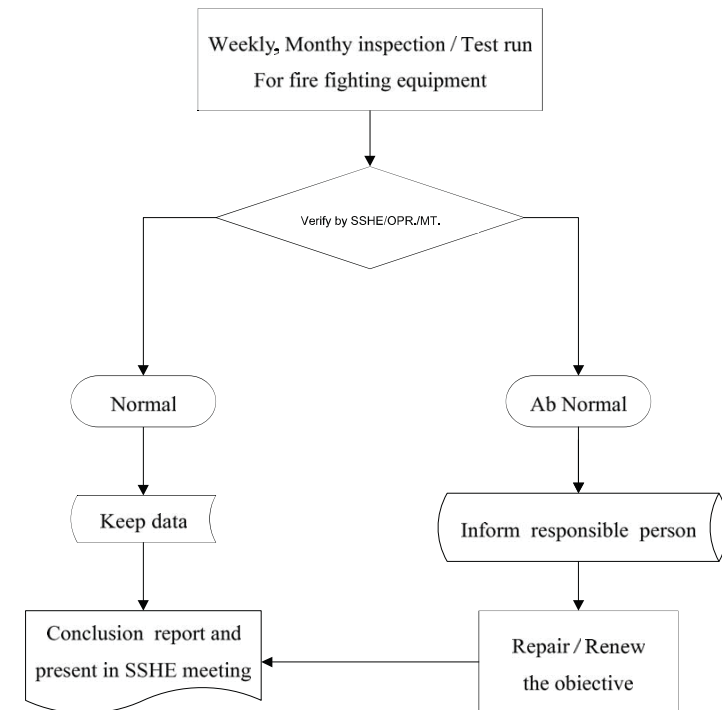


Figure 3 - INSPECTION PLAN

### 3.8 FIRE EVACUATION PLAN

Fire Evacuation Plan is prepared to safe staff life and all company estate while fire occurring and conclude many factors such as evacuation leader, muster point, first aid team, vehicle,etc. and should be prepared as responsibility person under commanding of fire command.

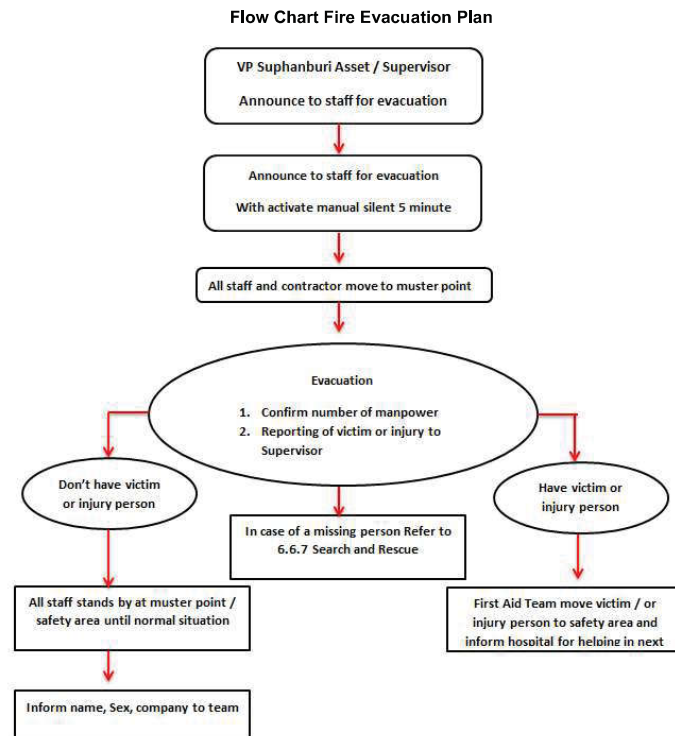
Fire commander is Operation Supervisor

Fire commander assistance is Skilled Operator

For this plan will specific about

1. Manpower recorder is to check amount of staff and contractor.

2. Manual Alarm Siren activator (Security guard) is to activate manual Alarm Siren to inform all Manpower 5 Minutes, or until All employee turns out to Muster Point.
3. Muster Point is safety area or evacuation point to stand by, prepare supporting of fire Fighting.
1. First aid and vehicle is to help victim or injury person and contract hospital for supporting.
2. In the case of a missing person Refer to 6.6.7 Search and Rescue



**Figure 4 - Fire Evacuation Plan**

### 3.9 EMERGENCY CAMPAIGN

Emergency campaign is prepared document from hazard report, lesson learn, Pre- fire plan and other objective would be improved and providing of project to support reorganization plan such as

1. Promotion of fire prevention
  - Fire elements
  - Flammable material storage
  - No smoking campaigns
  - Big Cleaning Day Campaigns
  - First aid training
  - SSHE awareness: Competition, Poster/board and Exhibition
  - Training
2. Victim helping and injury person helping program

Improvement firefighting system and firefighting facility

### 3.10 TRAINING & EXERCISES PLAN

#### 3.10.1 TRAINING

Training plan is prepared for prevent fire in establishment and required for staff to attend such as basic firefighting, advance firefighting and evacuation, etc.

Providing of training course follow 6.0 Training Programs and Training needs in 11038-STD-SSHE-305-R06 SSHE Training and Competency Standard

#### 3.10.2 EXERCISES

1. Bimonthly Drill / Exercises
  - Fires occurring from Process area
  - Fires occurring from the tank bund area
  - Fires occurring from workshop, office.
  - Fire occurring during crude transportation External
  - Fire occurring during transportation Internal
  - Medical Emergency (Casualty Evacuation, Rescue with SCBA, etc.)
2. Annual Fire Drill Tier 1/2/3.

Records of drills, exercises, inspection and all documents etc. in Procedure follow as Control of 13250-SPD-SSHE-330-002-R02 Document Control Which will details: Storage Method, Storage, Retention Time and Responsible.

## ROLES AND RESPONSIBILITIES

### ROLES AND RESPONSIBILITIES

Roles	Responsibilities
OWNERSHIP OF THE DOCUMENT	<p>The owner of this document is VP, Suphanburi asset with responsibilities for:</p> <ul style="list-style-type: none"> <li>■ Issuing this document and its revisions</li> <li>■ Ensuring effective implementation of the document</li> </ul>
CUSTODIAN OF THE DOCUMENT	<p>The custodian of SUPPHANBURI EMERGENCY RESPONSE PLAN is Supervisor, SSHE, with responsibilities for:</p> <ul style="list-style-type: none"> <li>■ Identifying deficiencies or potential improvements</li> <li>■ Initiating periodic revision</li> <li>■ Maintaining revision history and document status register</li> </ul>

## DEFINITION AND ACRONYMS

### DEFINITION AND ACRONYMS

Set out below are common specific terms presented in alphabetical order:

Terminology	Description
Normal Operation:	All activities of Suphanburi asset cover construction phase, drilling phase, well test phase, operation phase for example, Unloading crude and water for Re-processing, Preventive Maintenance, Overrides control, site inspection etc. which all activities are not an accident, incident, near miss or unusual events happen.
Abnormal operation:	All activities of abnormal events cover construction phase, drilling phase, well test phase, operation phase but can be evaluated and treated, can be prevented Emergency case for example; operator observe Leaks at flange area but Inform the maintenance department for Stop leak repair reduce the impact and prevent cause emergency situations and back to Normal Operation .
Emergency:	Is an occurrence or event, natural or human caused, that requires an emergency response under determination of affected Vice President (VP) to protect life, property and environment The external assistance may or may not be needed to supplement the company efforts and capabilities to save lives and to protect property

Terminology	Description
	<p>and public health and safety, or to lessen or avert the threat of a major or catastrophe in any part of the Suphanburi Asset premises. Emergency situations can, for example, include major disasters, emergencies, terrorist attacks, terrorist threats, fires, floods, oil and hazardous material spills, earthquakes, tropical storms, war-related disasters, outbreak of diseases and medical emergencies, and etc.</p> <p>In Suphanburi Asset emergency situations can be evaluated and treated and Can be handled by Emergency Response Team (ERT) within a reasonable time frame by using a tier 1 – 2 response level.</p>
Incident Commander (IC):	Affected Asset's authorized person, who has overall authority and responsibility for supporting and providing tactical activities and action plans to the On Scene Commander (OSC), including the development of strategic objectives. Incident Commander also sets priorities and defines organization of the EMT and the overall action plans for the particular response. He/she has to work closely with Asset EMT.
On Scene Commander (OSC):	An individual responsible for all onsite responses, especially providing direction and onsite tactical operations and always retains the authority to determine the appropriate course of response actions. Suphanburi asset shall be a Supervisor the top authorized person at that site and authority to activate the onsite Emergency Response Team (ERT)

In this document, the words may, should, and shall have the following meanings:

Terminology	Description
May	Indicates a possible course of action
Should	Indicates a preferred course of action
Shall	Indicates a course of action with a mandatory status

In this document, the organization terms have the following meanings:

Terminology	Description
Corporate	Refers to the PTTEP Business Groups hierarchically above Asset level, and located in the PTTEP headquarters, Bangkok.
Group	Refers to a corporate level Business Group. These may have associated Divisions, Departments, or operational Assets within their hierarchy.

Terminology	Description
Division	A Business Group may have one or more distinct groups within its hierarchy. These are referred to as Divisions, for example; within the POS Group, there is the International Asset Division (PIN) which also has associated Departments within their hierarchy.
Asset	Refers to an operational Asset, site, or location within a respective Business Group

Set out below are common specific terms presented in alphabetical order:

Acronyms	Description
CEO	President & Chief Executive Officer
CMT	Crisis Management Team
CRT	Crisis Response Team
EMP	Emergency Management Plan
ERT	Emergency Response Team
EMT	Emergency Management Team
ESD	Emergency shut down
EVP	Executive Vice President
IC	Incident Commander
IESG	Oil Industrial Environmental Safety Group Association (Thailand)
OPR	Operator
OSC	On Scene Commander
OSRL	Oil Spill Response Limited
PSR/F	Suphanburi Asset) PTTEP1, L53/43 and L54/43)
PTTEP	PTT Exploration and Production Public Company Limited
RTN	Royal Thai Navy
SSHE	Safety, Security, Health and Environment
SVP	Senior Vice President
VP	Vice President

## REFERENCES

### REFERENCES

Document Code	Document Title
<b>PTTEP SSHE Controlling Documents</b>	
11038-STD-SSHE-501-R05	Emergency and Crisis Management Standard
13250-GDL-PROD-100-001-R00	Suphanburi Asset Fire Fighting Philosophy Guideline
12146-PDR-SSHE-501/03-R02	Spill Management Plan
SSHE-106-PDR-521	Waste Management Procedure
13250-PDR-SSHE-501/03-R02	Chemical spill plan for production site
12148-PDR-SSHE-505/42-R00	Permit to Work procedure
13250-PDR-MAIN-WIS-200-003-R01	Work at high
-	Waste management plan
11017-PDR-LOG-4301-R00:	Land Transport Management
11038-STD-SSHE-305-R06	SSHE Training and Competency Standard
13250-STD-SSHE-SPD-330-002-R02	Document Control



## REVISION HISTORY

### REVISION HISTORY

Rev.	Description of Revision
------	-------------------------

0	<b>Authorized by: PSR/F, Date: July 2014</b>
---	--

- New issue.

1	<b>Authorized by: PSR/F, Date: July 2016</b>
---	--

Changes from previous version are as follows:

- Change the title Suphanburi emergency responses plan
- Revised Sequence.
- Revised 4.0 Definition
- Revised 5.0 Emergency Management
- Revised Appendix

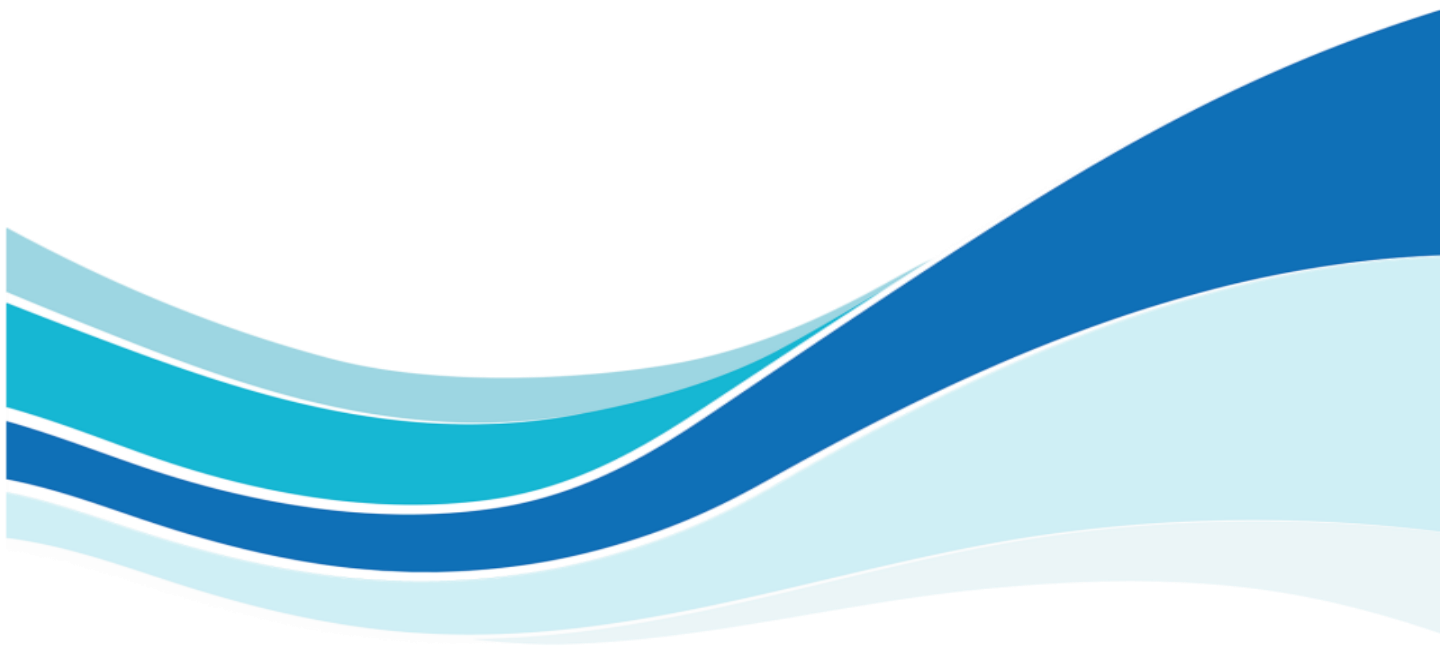
2	<b>Authorized by: PSR/F, Date: November 2021</b>
---	--

Changes from previous version are as follows:

- Revised formed every 5 years for Suphanburi emergency responses plan.

ภาคผนวกที่ 27  
บันทึกปริมาณการขนส่งมูลฝอยอันตราย

---





## Waste Transfer sheet



Waste transfer record on

March (NPI-D)

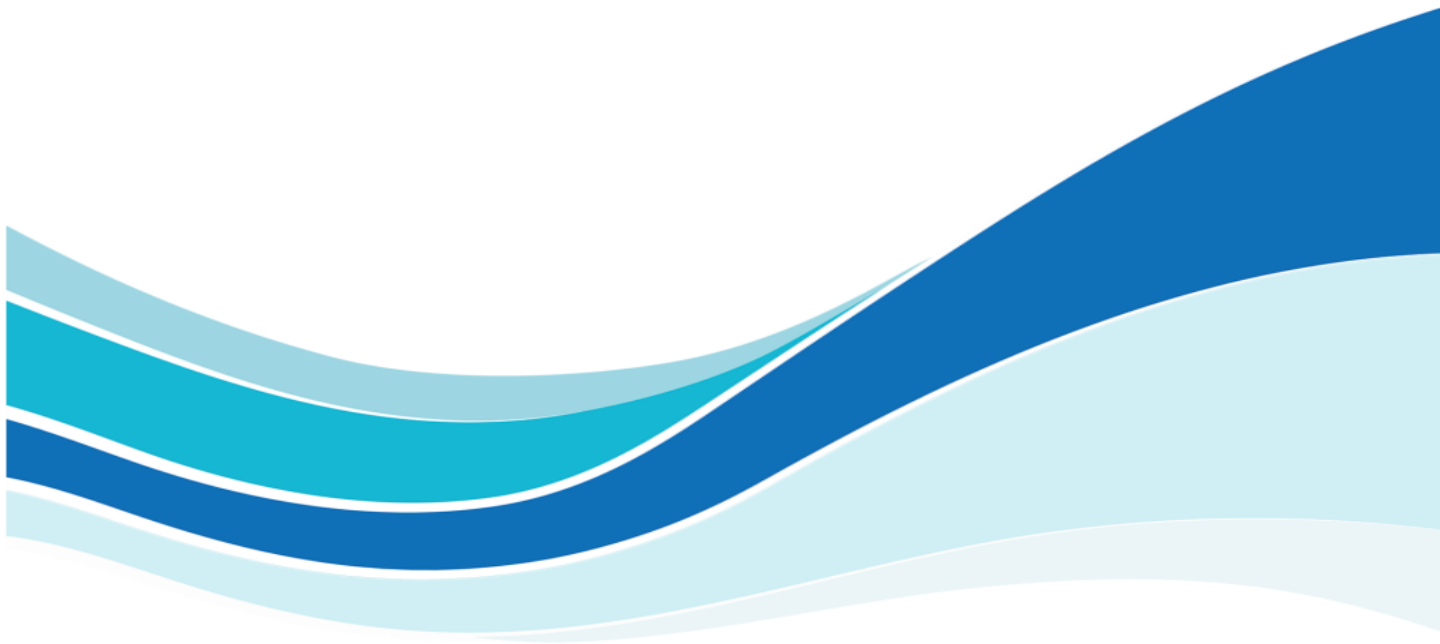
บันทึกการนำส่งของเสีย/ขยะ ประจำเดือน 12 มีนาคม 2566

[illegible]



ภาคผนวกที่ 28  
ใบเสร็จรับเงินการกำจัดขยะทั่วไป  
โดยเทศบาลเมืองสุพรรณบุรี

---





## Waste Transfer sheet



March (NPI-D)

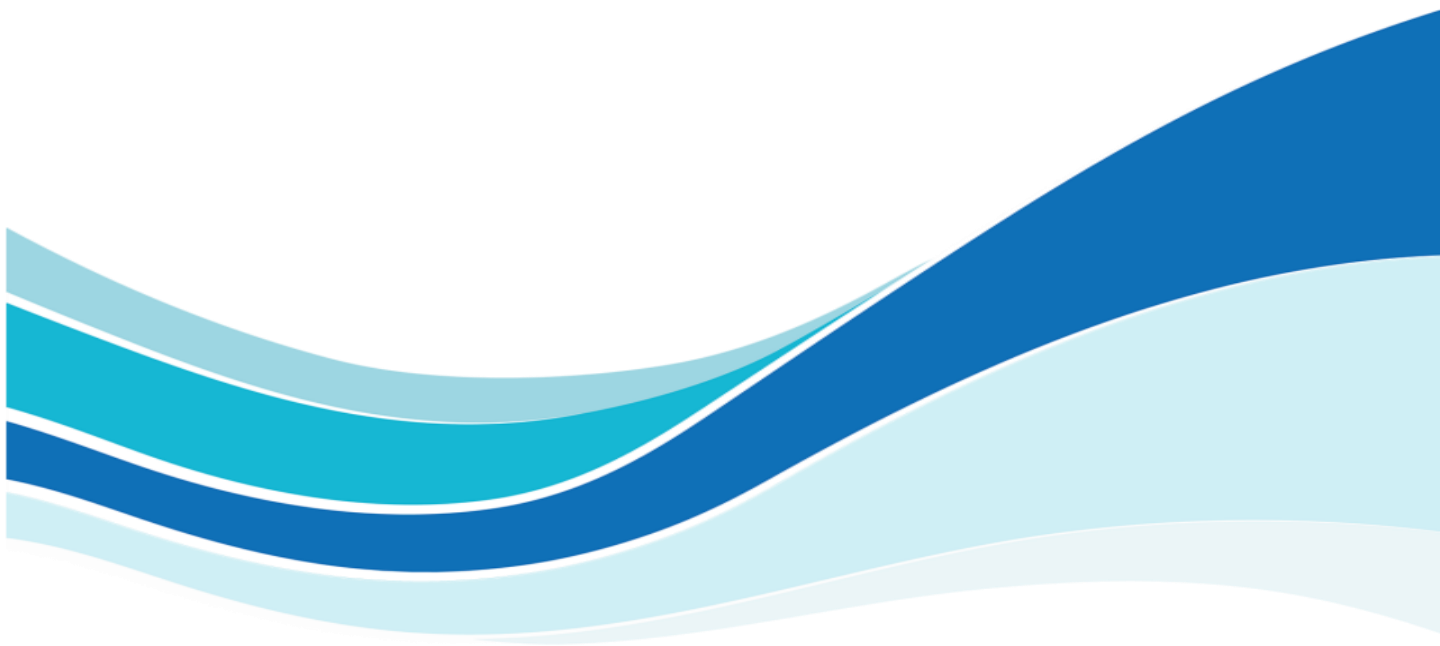
บันทึกการปาส่งของเสีย/ขยะ ประจำเดือน 12 มีนาคม 2566

[illegible]



ภาคผนวกที่ 29  
ใบเสร็จรับเงินการซื้อสินค้าท้องถิ่น

---



ผู้รับเงิน 收貨人  
COLLECTOR

เลขที่  
BILL NO.

現兌單

วันที่ 10-3-66  
DATE

เลขประจำตัวประชาชน  
IDENTIFICATION NO. \_\_\_\_\_

เลขประจำตัวผู้เสียภาษีอากร  
TAX IDENTIFICATION NO.

(กรอกเฉพาะกรณีเป็นผู้ไม่มีเลขประจำตัวประชาชน)

ผู้รับเงิน 收貨人  
COLLECTOR





เล่มที่  
BOOK NO.

น้ำดื่มตราแม่สาย

95/2 ม.5 ต.สวนหลวง  
อ.เมือง จ.สุพรรณบุรี 72210  
099-217-7218

เลขที่  
BILL NO.

## CASH SALE

บิลเงินสด

# 現兑單

NAME

GW 80

วันที่ 日期 12-3-66  
DATE

ที่อยู่ 住址  
ADDRESS

เลขประจำตัวประชาชน  
IDENTIFICATION NO. \_\_\_\_\_

เลขประจำตัวผู้เสียภาษีอากร  
TAX IDENTIFICATION NO.

(กรอกเฉพาะกรณีเป็นผู้ไม่มีเลขประจำตัวประชาชน)

TAX IDENTIFICATION NO.					
(กรอกเฉพาะกรณีเป็นผู้มีเลขประจำตัวประชาชน)					
จำนวน QUANTITY 数量	รายการ DESCRIPTION 貨名	หน่วยละ UNIT PRICE 單價	จำนวนเงิน AMOUNT 金額		
8	ผ้าขาว ๑๓๐๐๑	45	360		
บาท BAHT 銖	สามร้อยหกสิบ บาทถ้วน	รวมเงิน TOTAL 共銀	360		

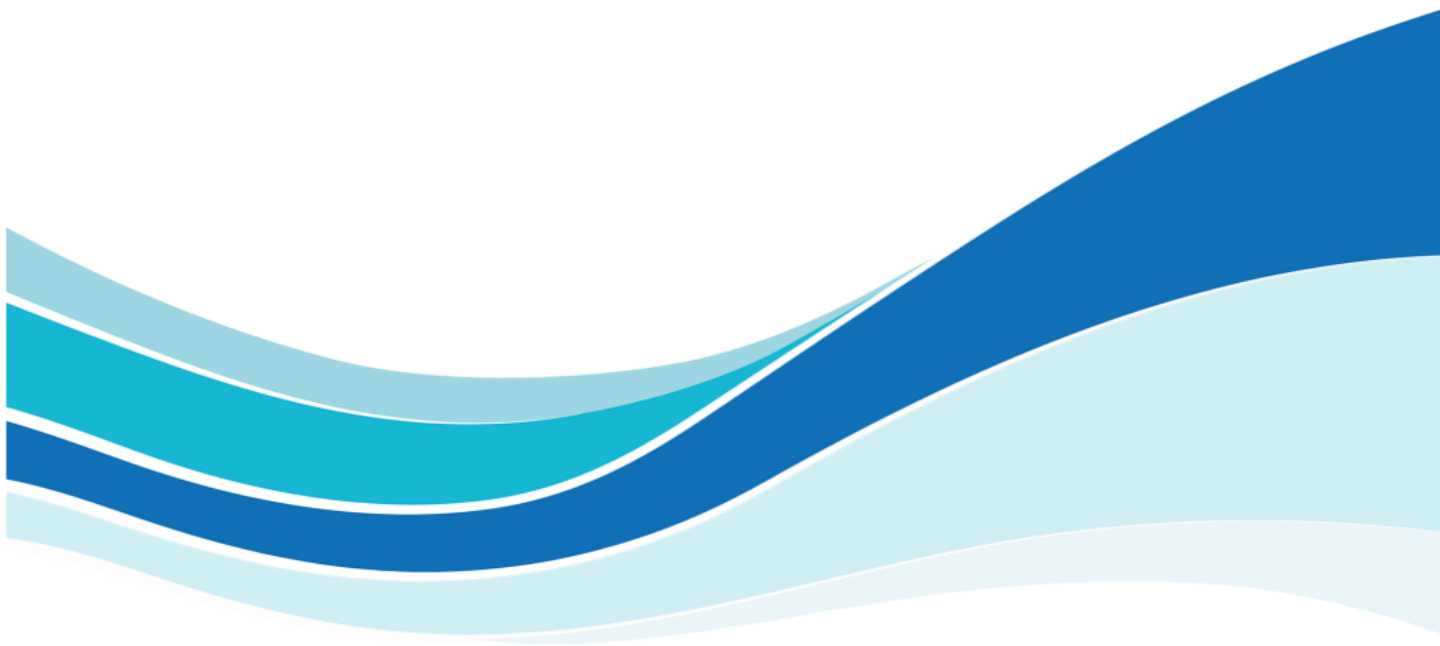
ผู้รับเงิน 收貨人  
COLLECTOR

ผู้รับเงิน 收貨人  
COLLECTOR

ภาคผนวกที่ 30

เอกสารรายละเอียดของ **BOP** และการตรวจสอบ **BOP**

---







Time 检查时间	Organized by 组织人	Inspected by 检查人	Monitored by 监督人
Weekly	Toolpusher	Driller	Rig manager

## WELL CONTROL WEEKLY CHECKLIST 井控周检表

Well 井号: NPI-006 (DF)

Rig 队号: GW80

Date 日期: 12-May-2023

BOP Closing Unit (3000 psi working pressure) BOP 地面控制系统 (3000psi 工作压力)			
Manifold pressure 1400 -1500 psi 管汇压力	1500 PSI	Driller's gauge manifold pressure 司钻台显示管汇压力 1400 -1500 psi	1500 PSI
Accumulator pressure 2700 -3000psi 蓄能器压力	3000 PSI	Driller's gauge accumulator pressure 司钻台显示蓄能器压力 2700 - 3000 psi	3000 PSI
Annular closing pressure(≤ 1500 psi) 环空关闭压力	1200 PSI	Driller's gauge annular pressure 司钻台显示环形压力 1400 -1500 psi	1200 PSI
Accumulator fluid volume 蓄能器充液量 (单瓶公称容积: 80L)	640 Ltr	Number of pre-charge bottles 预充氮气钢瓶数量	16 pcs
Volume to overflow accumulator tank 蓄能器油箱储油量(FKQ800-7E, >750L)	1290 Ltr	Last pre-charge on accumulator unit 蓄能器氮气预充压力 (950 -1100psi)	1000 PSI
Air supply pressure 95 to115 psi 气源压力	110 PSI	pneumatic pump switches in "on" position 气泵是否已打	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Air pump tested 气泵是否已经测试	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Electric hydraulic pump tested 电泵是否已经测试	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Accumulator isolation valve(s) open 蓄能器截止阀是否处于开位	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	electrical pump switches in "AUTO" position 电泵开关是否处于“自动”位	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Discharge / Suction pump valves open 电泵/气泵进油阀是否打开	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Shear/Blind ram covers in place 剪切/全封闸板手柄是否有保护罩	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Annular in-line valves open 液压管线上的截止阀是否打开	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	By pass valve open pressure test all manifold pressure to 3,000 psi. 管汇旁通阀打开, 液控管汇试压至 3000Psi (21MPa)	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
BOP stack 防喷器组			
BOP hand wheel available BOP 是否安装手轮	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N		
Choke / Kill Lines and Manifold 节流/压井管线与管汇	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Bad		
Last choke panel gauge certification 最近的节流控制台仪表检测合格证日期	July 2, 2018	Air supply pressure to choke panel 节流控制台的气源压力 (0.6-1.0MPa)	1.0 MPa
Choke panel manifold manual gauge pressure 节流控制台油压表显示压力 (1.4-2.0 MPa)	1.8 MPa	Choke panel manifold pressure 节流控制台面板显示套管压力	0 MPa
Choke panel standpipe pressure 节流控制台面板显示立管压力	0 Psi	Driller's gauge standpipe pressure 司钻控制台显示立管压力	0 Psi
Choke panel clean & inspected for leaks 节流控制台是否清洁, 是否检查漏失	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Manual pump on choke panel tested daily 节流控制台手动泵是否每日测试	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Inner choke & Inner kill line valves open 内侧节流和内侧压井管线上阀门是否开位	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Outer choke & Outer kill line valves closed 外侧节流和外侧压井管线上阀门是否关位	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Choke manifold lined up for hard shut-in with super choke in closed position 节流管汇上用于硬关井的液动节流阀是否处于关位	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N		





Hydraulic choke type: 液动节流阀的类型	JLKY 65/35		
<b>Rig Floor</b> 钻台			
Full Opening Safety Valve (FOSV), required XO, and handle with lifting cap on rig floor 全开式安全阀、符合要求的转换接头和带手柄的空心提丝是否在钻台上配备			<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
IBOP & FOSV valve function tested hourly IBOP 和 FOSV 是否进行功能测试	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Super choke function tested hourly 节流阀是否进行功能测试	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Gray Inside BOP & FOSV valve open IBOP 和全开式安全阀是否处于开位	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	FOSV & IBOP threads in good condition FOSV 和 IBOP 丝扣是否完好	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Pop-off settings on pumps 泵上是否安装泄压装置	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N		
Flow alarm set for gain /loss (%) 溢流或漏失报警设置各为百分之多少	5% / 5%	PVT alarm set for gain / loss (bbls) PVT 增减量报警设置各为多少 bbls	5% / 5%
<b>General</b> 基本数据			
Cold start air compressor 是否有冷启动空气压缩机	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Annular rubbers on location 环形胶芯现场是否有配备	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Last BOP test date 上次 BOP 测试时间	11/3/23	Next BOP test date 下次 BOP 测试时间	11/4/2023
FIT depth MD/TVD FIT 测试 MD/TVD	450 1052 / 788	Last FIT date 上次 FIT 测试日期	13/3/2023
FIT test MW 地层完整性测试时泥浆密度	1.30 SG	FIT Equivalent MW 地层完整性测试的当量泥浆密度	1.62 SG
Annular intermediate SICP 关井套管压力	- PSI	Max allowable casing pressure 最大允许关井套压	359 PSI
Kick tolerance 井涌允许极限 (25 BBL)	- BBL	Barite on location 井场重晶石量	2,400 SKS
Mud system volume 泥浆量	640 BBL	All equipment has H <sub>2</sub> S trim 所有井控设备是否抗硫化氢	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Barite to weight up mud system 0.12sg 加重当前泥浆增加比重 0.12sg 所需的重晶石量	740 SKS		
Walked well control lines to ensure no concerns with line up? 检查井控管线确保没有问题了吗?			<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Are we in compliance with GWDC Standards on all well control equipment? 所有井控设备符合长城公司的标准要求吗?			<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Annular intermediate SICP reported on Drilling Rigs every Monday? 关井套压在每周一报告了吗?			<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Person in charge of checking sign-in roster in case of well control situation: 一旦发生井控, 责任人名单			
What are you going to do if we have to shut in the safety rams? 如果我们需要关闭安全闸板, 你将做什么? How are you going to get pressure and how will you equalize the pressure across the BOP? 关井后你怎样获得相关压力? 你将如何获得通过 BOP 平衡这个压力? *Note: All rigs need 1000 psi gauge to record pressure if we have to shut in the safety rams. 注意: 如果我们不得不关闭安全闸板, 对于所有钻机都需要配备 1000psi 仪表来记录压力。			



HOW ARE YOU GOING TO SHUT IN THE WELL IF YOU LOSE ELECTRIC POWER & AIR TO THE RIG?  
如果没有电力和气源的供给，你将如何关井？

Use handle to close the rams.

Equipment Ratings  
设备额定值

Component 名称	Size 尺寸	Pressure Rating (PSI) 压力等级
Kill line 压井管线	2"	5000
Choke line 节流管线	3 1/8"	5000
Choke manifold 节流管汇	3 1/8"	5000
Annular 环空	13 5/8"	5000
Pipe rams 半封闸板	5"	5000
Blind/Shear rams 全封/剪切闸板	13 5/8"	5000
Wellhead 套管头/井口	11"	5000
Casing 套管	9 5/8"	3523

Driller 司钻 (签名):

Toolpusher 带班队长 (签名):

Rig manager 平台经理 (签名):