PTTEP SIAM LTD.

Environmental Impact Assessment Report

PTTEP

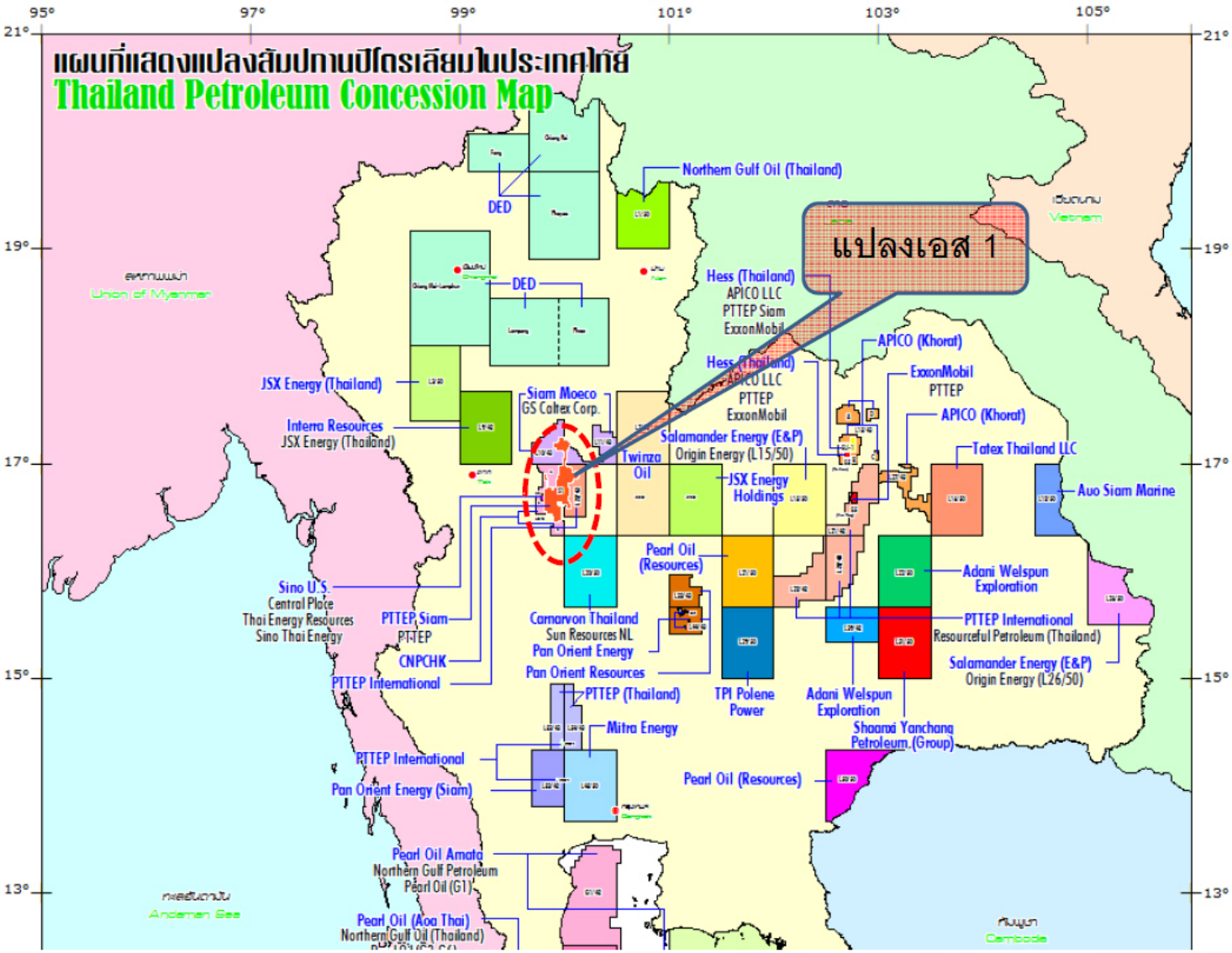
Onshore Petroleum Production of Pradu Tao, Sam Phaya and Wat Mae in Block S1

Introduction

- PTTEPS, a concessionaire in Block S1, has an obligation to develop Thailand's energy resources to support the increasing of energy consumption.

- In 2013, PTTEPS is planning to develop wells in Pradu Tao and Sao Tien field. The project is called "Onshore Petroleum Production of Pradu Tao, Sam Phaya and Wat Mae in Block S1"

Project Description



Project Description

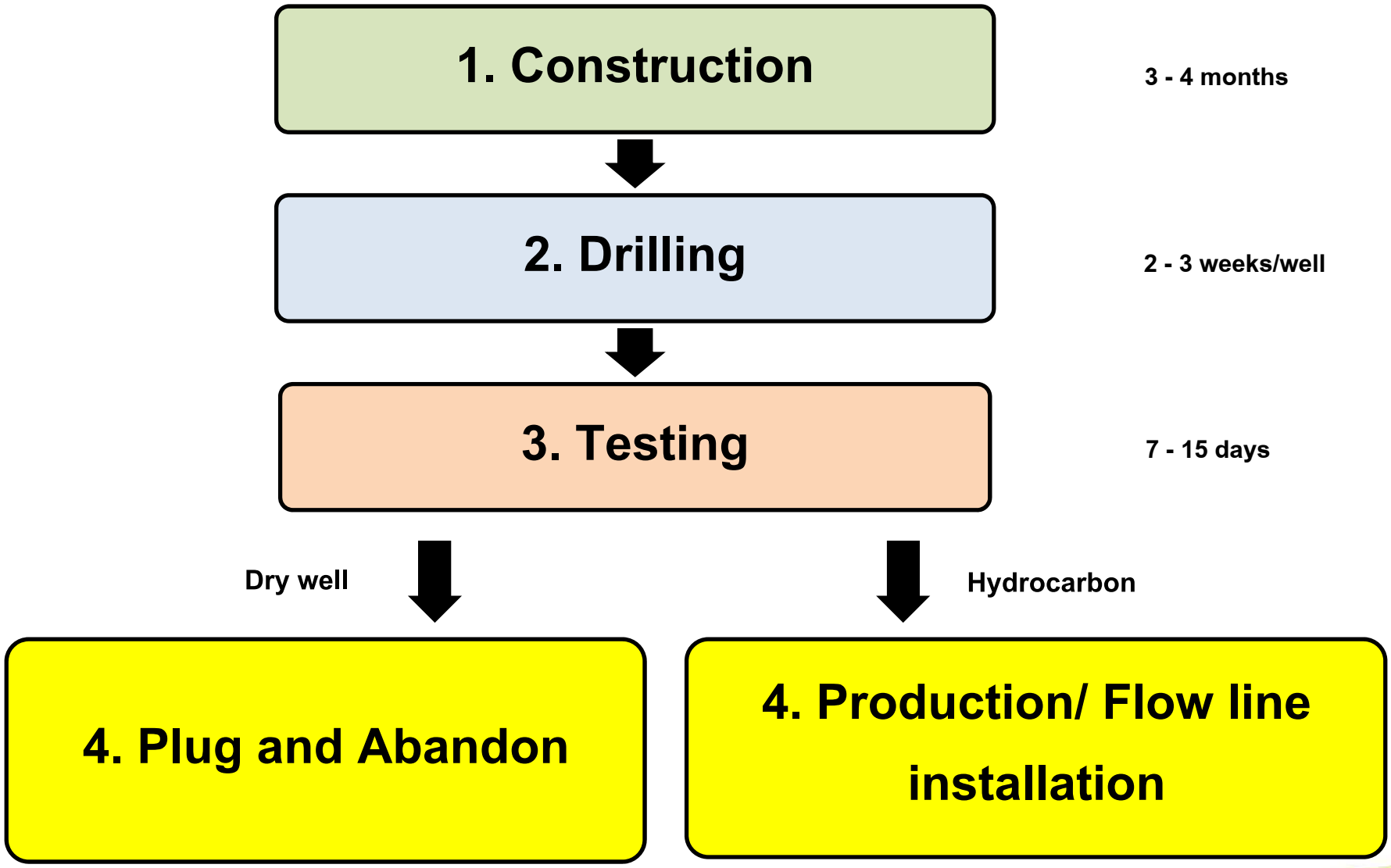
Consist of:

- Construction, drilling, well testing and MPF production (39 well sites)
- Flow line installation and production(6 routes)

Province	District	Sub-district	Wellsite	
			Existing	New
Phitsanulok	Mueang	Ban Klang	2	-
	Prom Piram	Ta Chang	1	-
	Bang Ra Kum	Kui Muang	11	1
		Chum Sang Song Klam	3	2
		Ni Kom Pattana	1	-
Sukhothai	Kongkrailat	Krai Nok	3	1
		Dong Duiy	3	2
		Ban Klang	1	-
		Kong	3	1
		Ban Mai Sook Ka Sem	-	2
		Nongtum	-	2
Total			28	11

New Wellsite
Existing Wellsite
Pipeline Route
Boundary of District
Boundary of Sub-district

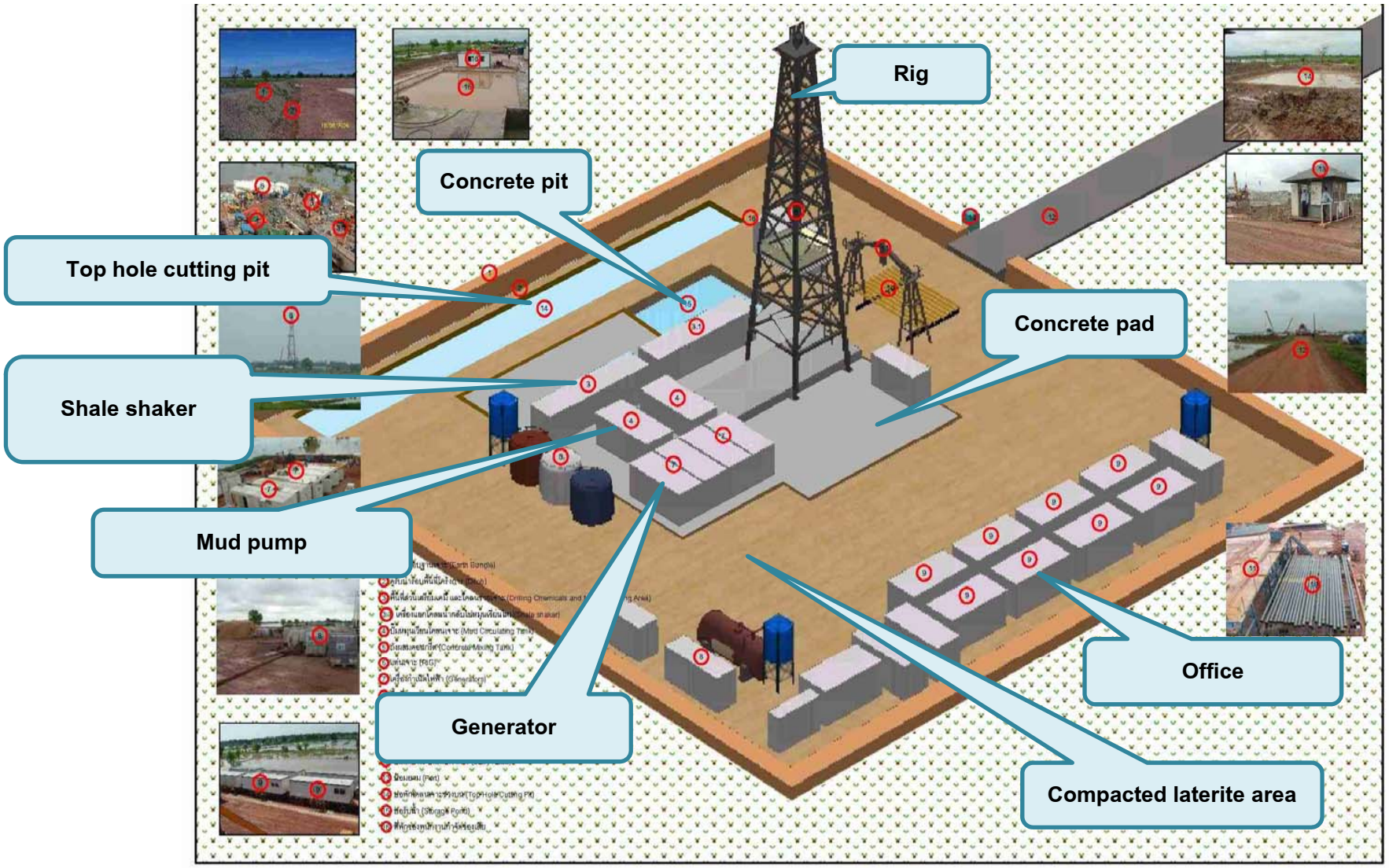
Project Description



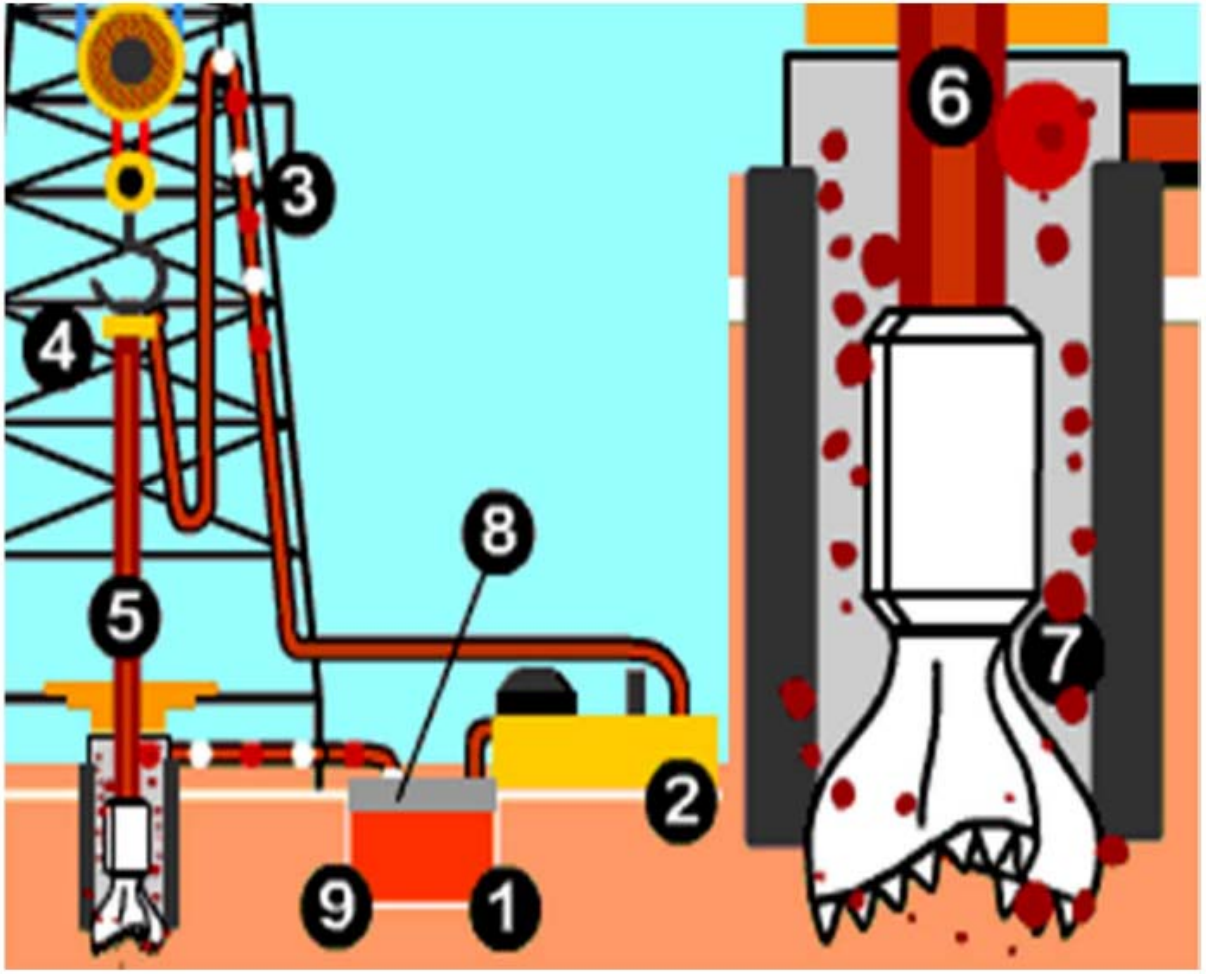
Construction Phase

- Well site area is approximately 30 rais (150 meters width and 317 meters length)
- Access road is 7-10 meters width
- Well site is compacted with soil and laterite at 0.5 meters height over the highest flooding level

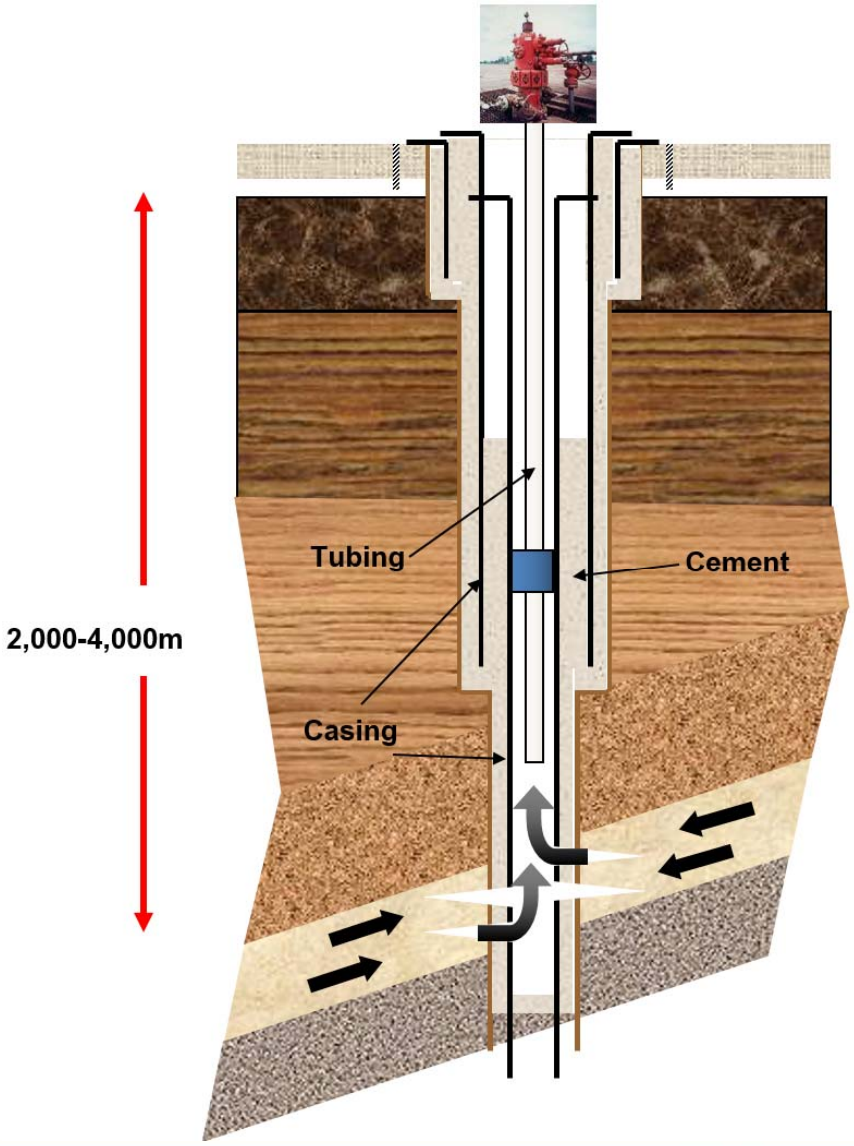
Drilling Phase



Drilling Phase



Drilling Phase

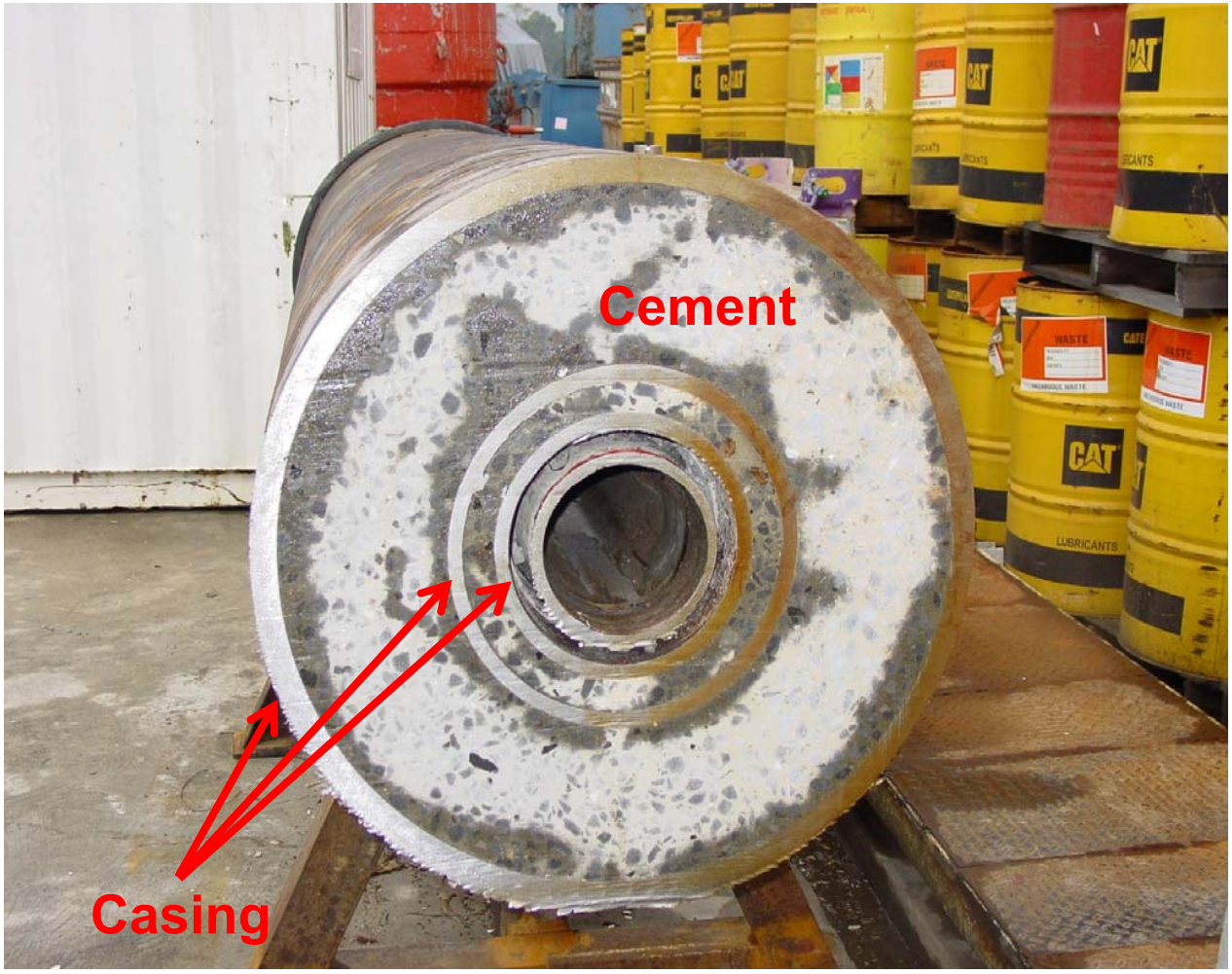


Well structure

1. Well design
2. Install conductor pipe
3. Drill at top section
4. Install casing and cementing
5. Drill at intermediate section
6. Install casing and cementing
7. Drill at reservoir section
8. Install casing and cementing
9. Install tubing and packer
10. Install Christmas Tree
11. Perforation
12. Hydrocarbon flow

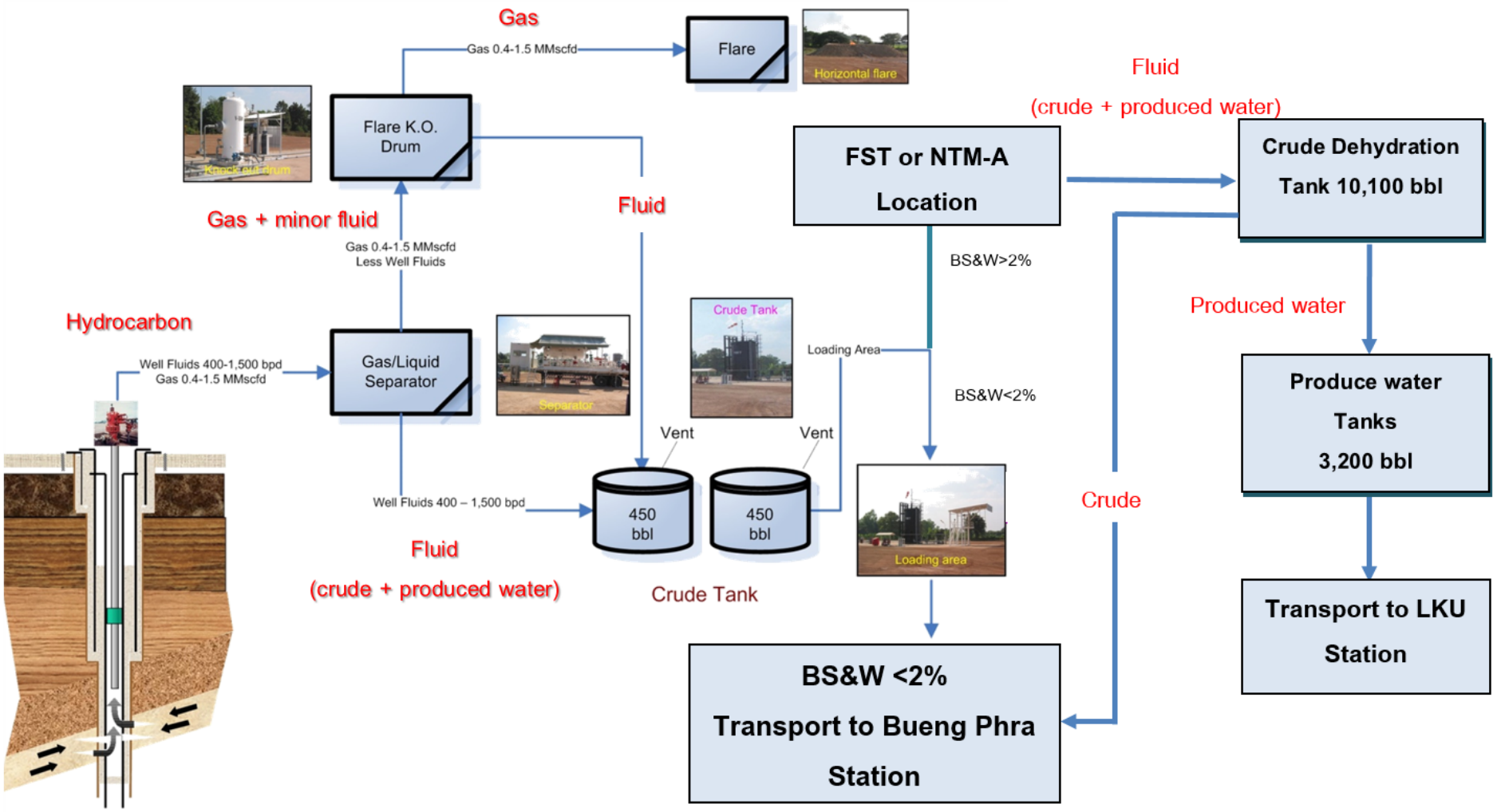
Drilling Phase

Casing



Well Testing Phase

Production Phase (MPF)



Production Phase (Flowline)

Flow line will be installed once proving the reserve is economic for long term production.

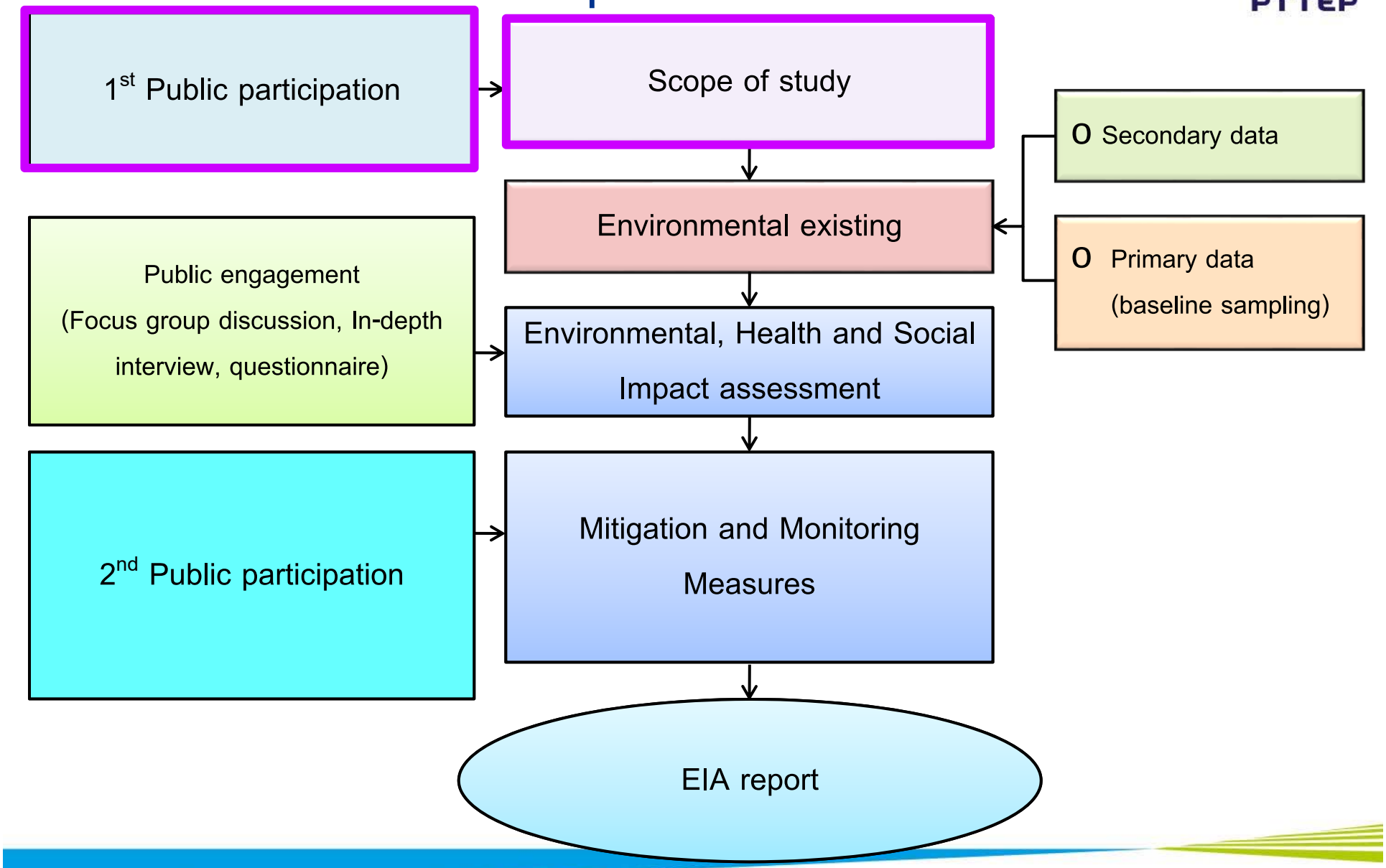
Manifold

Bridge

Flow line route

Plug and Abandon Phase

EIA Preparation Process



Study Area

- Existing Wellsite
- New Wellsite
- Pipeline Route
- Boundary of District
- Boundary of Sub-district
- Study Area

* Remark: Wellsite location

Scope of EIA Study

Physical

- Topography/ Climate
- Geology
- Air quality
- Noise level
- Surface water quality
- Groundwater quality
- Soil quality

Biological

- Flora & Fauna
- Aquatic

Human Use Values

- Land use
- transportation
- Infrastructure
- Water run-off/ Flooding
- Agriculture
- Waste management
- Recreation
- Tourism

Quality of Life

- Socio-Economic
- Health
- Archaeology
- Aesthetic

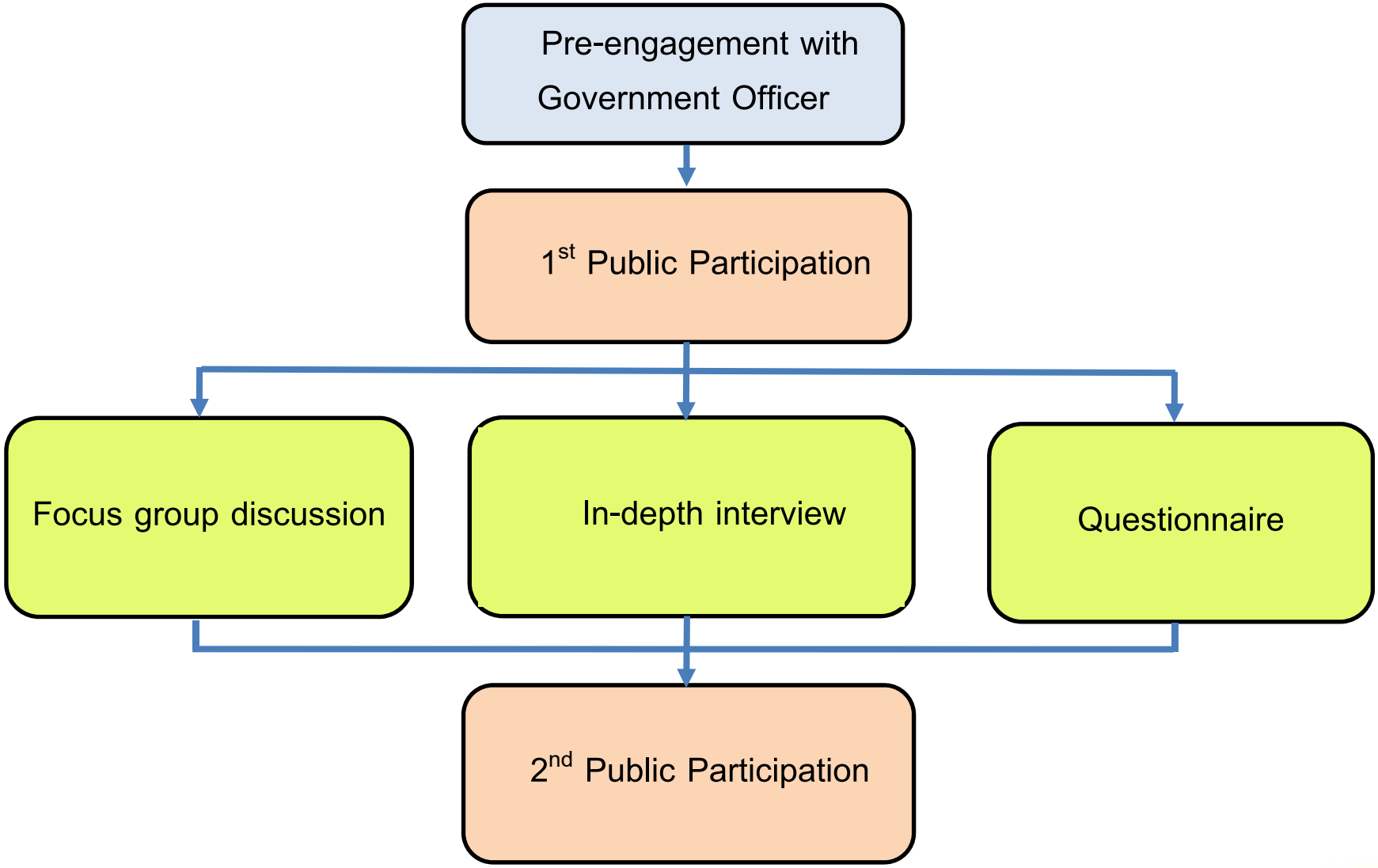
Public Engagement

- To present the project description for stakeholder's understanding and perception.
- Stakeholders can ask and come up with recommendation.

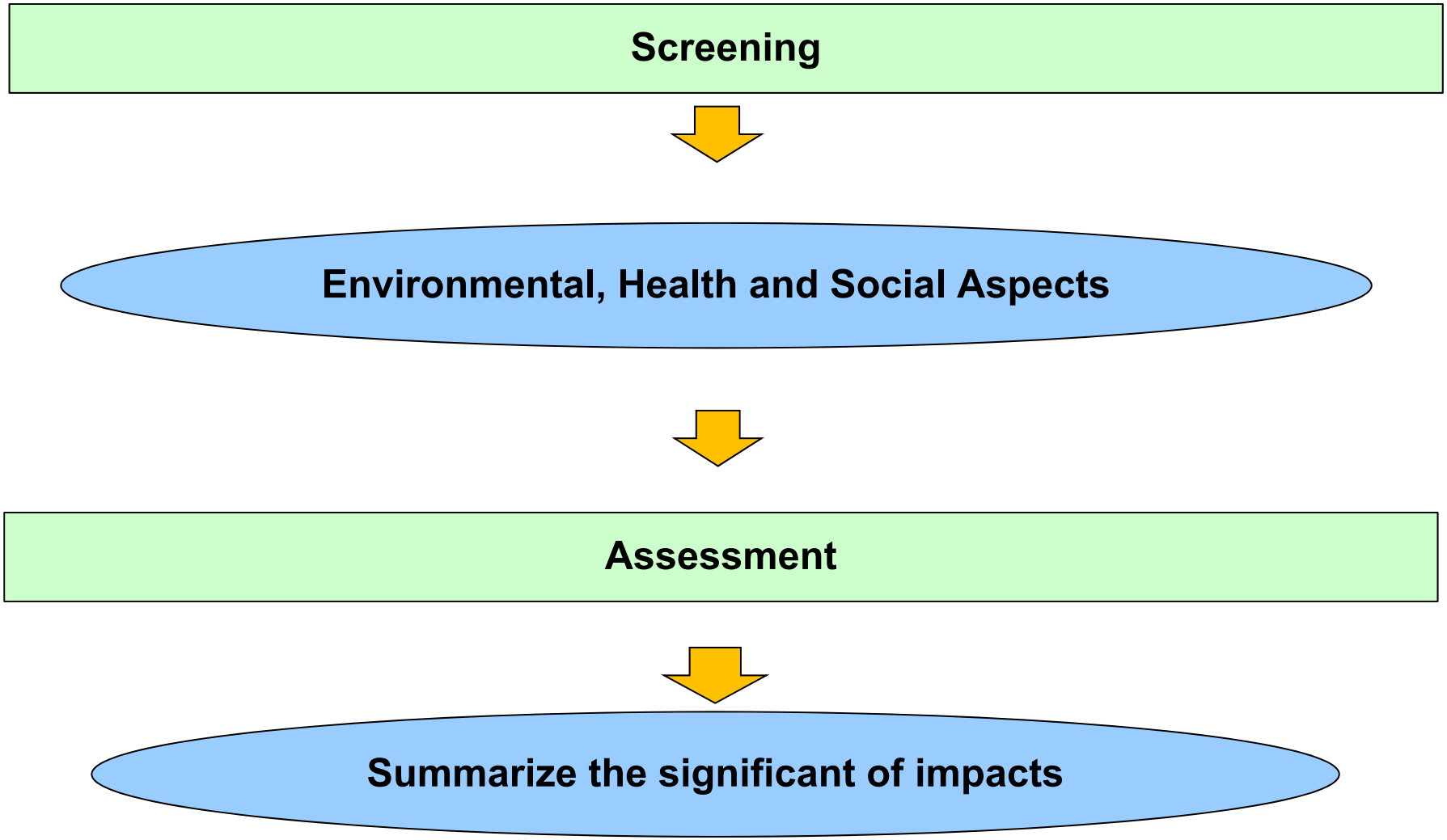
Stakeholders

Stakeholders	Description
Group 1	Direct sensitive receptors
Group 2	Project owner, Environmental consultant
Group 3	Authorities i.e. ONEP, DMF
Group 4	Government agencies
Group 5	NGO, Teacher
Group 6	Media
Group 7	People who interested in the project

Public Engagement Process



Impact Assessment



Summarize the Significant of Impacts

Major Impacts	Significant Level			
	Construction Phase	Drilling Phase	Well Testing/ Production Phase (MPF)	Production Phase (Flowline)
1. Air quality	Low	Low	Low	Low
2. Noise level	Low	Low	Low	Low
3. Light from flaring	Low	Low	Low	Low
4. Water Drainage/ Flooding	Low	Low	Low	Low
5. Surface water/ Groundwater quality	Low	Low	Low	Low
6. Transportation	Low	Low	Moderate	Low
7. Public health & Occupational health	Low	Moderate	Moderate	Low

Air quality

Major Impact	Mitigation & Monitoring measures	Construction	Drilling	Testing	MPF Production	FL Production
1) Particulate matters from construction activity 2) Exhaust gas from flaring	**Mitigation Measures**					
	• Spray water on construction site and laterite road at least twice a day	✓	✓	✓	✓	✓
	• Truck speed limit at 30 Km/h in wellsite and community area	✓	✓	✓	✓	✓
	• Installation of flare knock-out drum	-	-	✓	✓	-
	• Always check up the efficiency of equipment and vehicle as per preventive maintenance plan	✓	✓	✓	✓	✓
	• Support government offices or environmental NGOs or local communities for reforestation project	-	-	✓	✓	-
	Monitoring Measures					
	• Air quality monitoring at sensitive receptors	✓	-	✓	✓	✓

Noise level

Major Impact	Mitigation & Monitoring measures	Construction	Drilling	Testing	MPF Production	FL Production
1) Noise level increasing from construction activity 2) Noise level increasing from drilling activity	**Mitigation Measures**					
	• Operate in normal working hour only (08.00-17.00 hrs.)	✓	✓	✓	✓	✓
	• Always check up the efficiency of equipment and vehicle as per preventive maintenance plan	✓	✓	✓	✓	✓
	• Repair machine/equipment for noise reduction	✓	✓	✓	✓	✓
	• In case of noise complaint, complained site shall immediately stop operation then hurry up for investigation and correction	✓	✓	✓	✓	✓
	Monitoring Measures					
	• Noise level monitoring at sensitive receptors	✓	✓	✓	✓	✓

Light from Flaring

Major Impact	Mitigation & Monitoring measures	Construction	Drilling	Testing	MPF Production	FL Production
Light from flaring impacts to plant photosynthesize and damages to agricultural product	**Mitigation Measures**					
	• Install horizontal flare system surrounding with 2 m height bund and 2 m height steel sheet barrier on the top of bund	-	-	✓	✓	-
	• Install water spray equipment and/or air blower at the horizontal flare stack	-	-	✓	✓	-
	• Fair compensation if proving the damage to agricultural is caused from flaring	-	-	✓	✓	-
	Monitoring Measures					
	• Not applicable	-	-	-	-	-

Water Drainage/Flooding

Major Impact	Mitigation & Monitoring measures	Construction	Drilling	Testing	MPF Production	FL Production
Construction of wellsite and access road is obstructed water drainage and caused flooding	**Mitigation Measures** • Avoid the wellsite and access road construction where blocking the water drainage	✓	-	-	-	-
	• Discuss with land owner to agree on location of pipe convert.	✓	-	-	-	-
	Monitoring Measures • Not applicable	-	-	-	-	-

Surface water/ Groundwater quality

Major Impact	Mitigation & Monitoring measures	Construction	Drilling	Testing	MPF Production	FL Production
Improper of cuttings and waste management may be contaminated to surface water and groundwater	**Mitigation Measures**					
	• Discharge of used lube oil or waste to water is prohibited	✓	✓	✓	✓	✓
	• Strictly comply with Chemical Management Standard	-	✓	-	✓	✓
	• Potentially contaminated area shall be paved by concrete pad and surrounding with drainage system into concrete pit	-	✓	-	✓	✓
	• Top hole cuttings can be reused or landfilled within wellsite	-	✓	-	-	-
	• Bottom hole cuttings shall be disposed by incineration at legally cement kiln	-	✓	-	-	-
	Monitoring Measures					
	• Surface water quality at sensitive water sources	-	✓	-	✓	✓

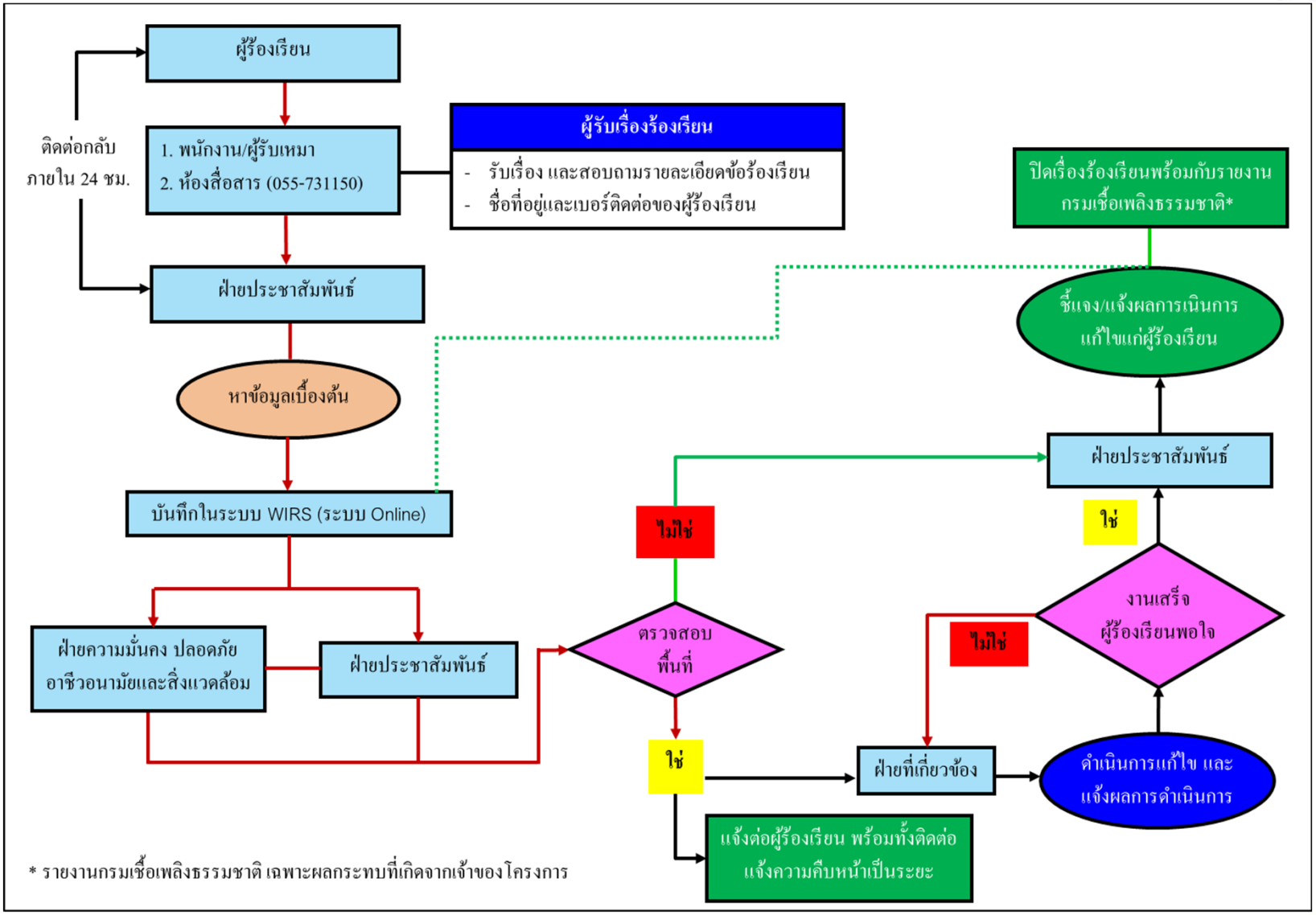
Transportation

Major Impact	Mitigation & Monitoring measures	Construction	Drilling	Testing	MPF Production	FL Production
Road traffic, accident from transportation and road damage	**Mitigation Measures**					
	• Avoid transportation of heavy equipment during peak time	✓	✓	✓	✓	✓
	• Limit the transportation weight not over than the regulation of Department of Land transport	✓	✓	✓	✓	✓
	• Install clearly caution sign and traffic light in the project area	✓	✓	✓	✓	✓
	• Install GPS system on crude truck	-	-	-	✓	-
	• Defensive driving training to all crude truck driver and refresh twice a year	-	-	-	✓	-
	Monitoring Measures					
	• Recording incident/accident to pipe routes	-	-	-	-	✓

Public Health & Occupational Health

Major Impact	Mitigation & Monitoring measures	Construction	Drilling	Testing	MPF Production	FL Production
Unsafe acts and unsafe conditions may be caused of incident /accident to operator and people in local communities	**Mitigation Measures**					
	• Provide fire fighting equipment and emergency response plan, on site. Emergency drill shall be conducted annually.	✓	✓	✓	✓	✓
	• All operation shall strictly comply with the PTTEP SSHE Management System	✓	✓	✓	✓	✓
	• Provide good conditions in workplace as usual	✓	✓	✓	✓	✓
	• Provide health service to on site operator including ➢ First aid kits ➢ Coordinate with nearby hospital in case of medical evacuation	✓	✓	✓	✓	✓
	Monitoring Measures					
	• Risk-based health check up	✓	✓	✓	✓	✓
	• Incident/accident recording and investigation	✓	✓	✓	✓	✓

Complaint Management



Corporate Social Responsibilities

การสนับสนุนทุนการศึกษา

โครงการศูนย์หัตถกรรม
ดอกไม้ประดิษฐ์จากผ้าใยบัว

โครงการฟาร์มขนาดเล็ก

การรับนักศึกษาในพื้นที่ฝึกงาน
ที่สถานีผลิตลานกระบือ

โครงการค่ายวิทยาศาสตร์

การประชุมในโครงการ
ปตท.สผ.พบชุมชน

Sustainability Projects

โครงการผลิตไฟฟ้า
จากก๊าซธรรมชาติเหลือทิ้ง

15 กันยายน 2551 พลโทหญิง ฐนภิรมย์ สิปคพัลลภ
รัฐมนตรีว่าการกระทรวงพลังงานเป็นประธานในพิธีเปิดศูนย์
แปรรูปผลผลิตการเกษตรตำบลหนองตูม

12 ธันวาคม 2551 นายเพทย์วรรณรัตน์ ชาญนุกูล
รัฐมนตรีว่าการกระทรวงพลังงาน ร่วมเป็นสักขีพยานในพิธี
ลงนามสัญญาซื้อขายก๊าซธรรมชาติ ระหว่างปตท.สผ. กับ
องค์การบริหารส่วนตำบลหนองตูม จำกัด

โครงการก๊าซธรรมชาติเพื่อเกษตรชุมชน
และสิ่งแวดล้อม บ้านหนองตูม

โครงการปลูกป่า ปตท.สผ.

ช่องทางการติดต่อ

ทีมงานชุมชนสัมพันธ์ ปตท.สผ. โครงการเอส 1

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