

## Scope of Accreditation for Testing

**Laboratory Name :** Chevron Thailand Laboratory  
Chevron Thailand Exploration and Production Company Limited

**Premises :** Rajamagala University of Technology Srivijaya, Southern Campus,  
1 Rajadamneon Nok Road, Bor Yang, Muang, Songkhla

**Accreditation No. :** TESTING 0193

**Laboratory Status :**  Permanent  Site  Temporary  Mobile

Item/Product Tested	Specific Test/ Range of Measurement	Standard/Test Method/ Technique Used
1. Natural gas	<ul style="list-style-type: none"><li>- Gas compositions<ul style="list-style-type: none"><li>• Nitrogen 0.02 to 10.00 mole%</li><li>• Carbon dioxide 0.02 to 50.00 mole%</li><li>• Methane 0.02 to 100.00 mole%</li><li>• Ethane 0.02 to 10.00 mole%</li><li>• Propane 0.02 to 10.00 mole%</li></ul></li></ul>	<ul style="list-style-type: none"><li>- In-house method : TP.120 based on ASTM D 1945-03</li></ul>

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1. Natural gas (cont.)	- Gas compositions (cont.) <ul style="list-style-type: none"> <li>• Isobutane 0.02 to 10.00 mole%</li> <li>• n-Butane 0.02 to 10.00 mole%</li> <li>• Isopentane 0.02 to 2.00 mole%</li> <li>• n-Pentane 0.02 to 2.00 mole%</li> <li>• Hexanes 0.02 to 2.00 mole%</li> </ul>	- In-house method : TP.120 based on ASTM D 1945-03

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1. Natural gas (cont.)	- Gas compositions (cont.) <ul style="list-style-type: none"> <li>• Heptane plus 0.02 to 1.00 mole%</li> </ul> - Calculation of physical properties : <ul style="list-style-type: none"> <li>• Compressibility factor (Z)</li> <li>• Real gas relative density (SG)</li> <li>• Gas molecular weight (MW)</li> <li>• Heating value</li> </ul>	- In-house method : TP.120 based on ASTM D 1945-03  - In-house method : WP.044 based on AGA-8, 1992, AGA-3, 1992 Remark : supplementary to TP.120

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1. Natural gas (cont.)	- Mercury 0.50 - 1 000 $\mu\text{g}/\text{m}^3$	- In-house method : TP.110.01 based on instruction manual of mercury analyzer, Nippon Instruments Corperation, model SP-3D
2. Condensate, crude oil	- Total mercury Detection limit 15.0 $\mu\text{g}/\text{kg}$	- In-house method : TP.210 based on UOP method 938-00
3. Discharge water from petroleum production	- Total mercury Detection limit 0.10 $\mu\text{g}/\text{l}$	- In-house method : TP.301 based on EPA method 245.7, draft January 2001

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3. Discharge water from petroleum production (cont.)	- Total mercury Detection limit 0.10 µg/l	- In-house method : TP.301.02 based on EPA method 245.7, draft January 2001
	- Total petroleum hydrocarbon Detection limit 2.0 mg/l	- In-house method : TP.302 based on ASTM D 3921-96 (Reapproved 2003) <sup>€1</sup>
	- Arsenic Detection limit 6.0 µg/l	- In-house method : TP.320 based on ASTM D 2972-03 method C
4. Lube oil	- Kinematic viscosity at 40 °C 20 to 210 mm <sup>2</sup> /s	- ASTM D 445-06

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4. Lube oil (cont.)	- Total acid number 0.05 to 5.00 mg KOH/g  - Total base number 0.50 to 15.00 mg KOH/g	- In-house method : TP.407 based on ASTM D 664-04 <sup>ε1</sup>  - In-house method : TP.408 based on ASTM D 4739-06

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Signature :

(Issra Shoatburakarn)  
Deputy Permanent Secretary for Industry  
Chairman, Ministerial Cluster  
for Industrial and Entrepreneurial Promotion  
Chairman of Industrial Product Standards Council

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