GAS ROYALTY CALCULATION
INFORMATION BULLETIN
September 2003

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PLEASE ENSURE YOUR PRODUCTION ACCOUNTANTS RECEIVE A COPY OF THIS DOCUMENT.

Internet Address:  www.energy.gov.ab.ca
A. PRICING RATES AND TRANSPORTATION INFORMATION

For Pricing, Royalty Rates and Transportation Information for July 2003, refer to Attachments 1, 1A, 2, 2A, and 3.

B. NOTICES

**Calculation of Royalty for Reporting Production Without Hours**

Well production information submitted with missing hours will be considered as incomplete, and is not eligible for the low productivity rate adjustment. Should there be well production submitted without reported hours, please amend in order to determine if the stream qualifies for the low productivity rate.

For further information, please contact your Gas Royalty Client Services Help Desk Team, please refer to the Points of Contact provided in Section G of this Bulletin.

**Clarification on Royalty and Related Information Review (RRIR) Initiative for the Proposed Operating Cost Regime Change Update in August 2003**

Gas Royalty Calculation Information Bulletin

In July 2003, the department commenced an operating cost survey and royalty impact study on the proposed operating cost regime change initiative specified in the May 2003 Gas Royalty Calculation Information Bulletin. If your company was selected to participate in the operating cost survey, this notice is a reminder that the reporting deadline is October 31, 2003. As the requested information is vital towards advancing royalty regime change recommendations, operators who fail to comply with the survey requirements by the reporting deadline may, pursuant to section 63(1) of the Mines and Minerals Act, become subject to a fine.

The August 2003 Gas Royalty Calculation Information Bulletin identified a listing of facility cost centres (FCC) currently linked to EUB gathering systems with no royalty liable volumes. This listing is found in the Alberta Department of Energy, Royalty and Related Information Review Updates Internet web site:

www.energy.gov.ab.ca

Operators were advised to review the current EUB facility links for these FCCs and make any necessary changes to properly match costs to royalties. However, it was incorrectly suggested that amending the AC1 made a change to the EUB facility link. We wish to clarify that the FCC operator must terminate the existing FCC with one AC1 and set up a new FCC at the appropriate EUB facility with another AC1. In addition, the terminated FCC code should be identified as a previous FCC in field 2.9 of the AC1 in order to carry forward remaining capital.

If the FCC should be tied to one of the surveyed EUB facilities, the associated costs may still be included in the operating cost survey for the production years 2001 and 2002 without retroactive changes to the existing EUB facility link.
Notice on Training and Information Session

Further to our notice in the August 2003 Information Bulletin regarding the training session on October 22, 2003, in Calgary at the McDougall Centre, please note this session is now fully booked. We anticipate having a similar session in November. You may continue to e-mail your registration, for the subsequent session. Registration should be forwarded by e-mail to Chris.Nixon@gov.ab.ca or by contacting your Operational Analyst for your client ID.

C. MONTHLY INFORMATION

July 2003 Royalty Due October 31

- Royalty clients are to remit the total amount payable shown on the October 2003 Statement of Account by October 31, 2003. If the amount payable includes accrued current period interest, the interest has only been accrued to the statement issue date. Clients must also include the additional interest that has accrued from the statement issue date to the date of payment, using the per diem amount provided.

- The October 2003 Statement of Account shows your amount payable as of the Statement issue date. It includes any outstanding balances from your previous statement, your July 2003 Invoice amount and any applicable current period interest charges. It also identifies refunds resulting from overpayments.

- Current period interest will not be charged on current invoice charges for the production month of July 2003 if it is paid in full by October 31, 2003.

- Current period interest will accrue on any overdue charges commencing the first day after the due-date until it is paid in full.

  Note: If the due date falls on a non-business day, payments will be accepted on the next business day.

- Cheques are payable to the Minister of Finance, Province of Alberta.

August 2003 VA4 Due October 15

The VA4 documents for the production month of August 2003 are due in the Department offices by October 15, 2003.

NOTE:

- If the due date (15th) falls on a non-business day, the next business day will apply as the due date for VA4 documents.

August 2003 Production Reporting

August 2003 production reporting is submitted through the Registry. The deadline for submission of SAF, OAF, and Volumetrics is posted in the Registry Reporting Calendar at:

   http://www.petroleumregistry.gov.ab.ca

Changes to this calendar will be posted on the Registry website home page in “Broadcast Messages.”
**Interest Rate September 2003**

The Department of Energy’s interest rate for September 2003 is 5.75%.

**June Provisional Assessment Charge**

The net Provisional Assessment Charge for the June 2003 billing period was $1,647,968.52. This includes $35,094,485.69 in first time provisional assessments and ($33,446,517.17) in reversals of provisional assessments for all production periods.

**June Penalty Charges**

The following are the Penalty Charges by form type for the June 2003 billing period:

<table>
<thead>
<tr>
<th>FORM</th>
<th>Penalties Charged</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC2</td>
<td>$14,500</td>
</tr>
<tr>
<td>AC4</td>
<td>$2,200</td>
</tr>
<tr>
<td>AC5</td>
<td>$30,600</td>
</tr>
<tr>
<td>GR2</td>
<td>$0</td>
</tr>
<tr>
<td>NGL1</td>
<td>$0</td>
</tr>
<tr>
<td>VA2</td>
<td>$0</td>
</tr>
<tr>
<td>VA3</td>
<td>$0</td>
</tr>
<tr>
<td>VA4</td>
<td>$0</td>
</tr>
<tr>
<td>Total Charged</td>
<td>$47,300</td>
</tr>
<tr>
<td>Total Reversed</td>
<td>($4,400)</td>
</tr>
<tr>
<td>Net Penalties Charged for 2003/06</td>
<td>$42,900</td>
</tr>
</tbody>
</table>

**Alberta Royalty Tax Credit Program Quarterly Rate**

For the third quarter of 2003, the Alberta Royalty Tax Credit rate will be .2500. This rate is based on a royalty tax credit reference price of $520.03 per cubic metre. The Alberta Royalty Tax Credit rates for the past year were:

- Second Quarter, 2003: .2500
- First Quarter, 2003: .2500
- Fourth Quarter, 2002: .2500
- Third Quarter, 2002: .2500

If you have any questions, please contact Kent Nelson of Tax Services at (780) 427-9425, ext. 44066.

**D. INFRASTRUCTURE DATA CHANGES**

**Client ID Listing**

The Client ID listing can be found on the Internet at the following address:

www.energy.gov.ab.ca

The listing, which is updated monthly for active clients, also includes clients who are inactive, struck, or terminated since January 1998.
Please note the Client ID listing (Post Registry) corresponds with the implementation of the Registry. For effective dates of active and amalgamated clients prior to September 1, 2002, please refer to the Client ID listing (Pre Registry).

If you require information before January 1998 regarding the status of a Client ID, please call Gas Royalty Client Services using the phone numbers as described in Section G. The Department would like to remind those browsing the site to note the effective and termination dates of the Client IDs.

**Projects/Blocks**

If information is required on any Projects or Blocks, please contact Isabelle Warwa at (780) 427-8952.

**Struck Clients**

Clients must ensure that all royalty documents are completed using only valid client names and IDs. It is critical that royalty clients use current legal client names and their appropriate IDs on all documents to ensure accurate royalty calculation and to prevent provisional assessment and penalties. Rejects will occur when invalid IDs are used.

If you require information regarding client names or IDs, please contact Client Registry at (780) 422-1395.

The following is a list of struck clients:

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Client ID</th>
<th>Struck Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duke Energy Canada Pipeline Ltd.</td>
<td>0ZK2</td>
<td>August 2, 2003</td>
</tr>
<tr>
<td>Lamrock Resources Ltd.</td>
<td>0A7E</td>
<td>August 2, 2003</td>
</tr>
<tr>
<td>Nu-Sky Energy Inc.</td>
<td>0JG3</td>
<td>August 1, 2003</td>
</tr>
<tr>
<td>Legal Oil &amp; Gas Ltd.</td>
<td>0036</td>
<td>August 2, 2003</td>
</tr>
<tr>
<td>Torino Oil &amp; Gas Limited</td>
<td>0GN7</td>
<td>August 2, 2003</td>
</tr>
<tr>
<td>344194 Alberta Ltd.</td>
<td>0HX9</td>
<td>August 2, 2003</td>
</tr>
<tr>
<td>Viper Drilling (1984) Ltd.</td>
<td>0ZF3</td>
<td>August 2, 2003</td>
</tr>
<tr>
<td>Petrol Energy Corporation</td>
<td>0L0H</td>
<td>August 2, 2003</td>
</tr>
<tr>
<td>Meraw &amp; McGee Holdings Ltd.</td>
<td>0X83</td>
<td>August 2, 2003</td>
</tr>
<tr>
<td>Pratt Consulting &amp; Oilfield Services Ltd.</td>
<td>0YG9</td>
<td>September 2, 2003</td>
</tr>
<tr>
<td>Seabird Oil Limited</td>
<td>0M2W</td>
<td>September 2, 2003</td>
</tr>
<tr>
<td>Sylva Resources Ltd.</td>
<td>0M9J</td>
<td>September 2, 2003</td>
</tr>
<tr>
<td>March Holdings Ltd.</td>
<td>0XP8</td>
<td>September 2, 2003</td>
</tr>
<tr>
<td>Baytex Exploration Ltd.</td>
<td>0CR2</td>
<td>September 2, 2003</td>
</tr>
<tr>
<td>Wellmasters Engineering Technology Corp.</td>
<td>0XC5</td>
<td>September 2, 2003</td>
</tr>
<tr>
<td>Buck Oil Investments Ltd.</td>
<td>0P3X</td>
<td>September 2, 2003</td>
</tr>
<tr>
<td>Terradyne Energy Corporation</td>
<td>0XF1</td>
<td>September 2, 2003</td>
</tr>
<tr>
<td>McGinnis Codd &amp; Associates Inc.</td>
<td>0A8W</td>
<td>September 2, 2003</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Client ID</th>
<th>Revived Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Forty Drilling &amp; Exploration Ltd.</td>
<td>0T6W</td>
<td>September 11, 2003</td>
</tr>
</tbody>
</table>
Operator Changes

Facility Operator changes are listed in Attachment 4.

New EUB Plants

New EUB plants and corresponding plant types and transportation regions are listed in Attachment 5.

Nova Tolls - Multiple Gas Reference Prices

Royalty information related to the implementation of the Factor Model negotiated with industry for determining Multiple Gas Valuation Prices is provided on the Department Internet site at:

www.energy.gov.ab.ca

E. REMINDERS

Update on Royalty and Related Information Review (RRIR) Initiative for the Proposed Operating Cost Regime Change

Please refer to Section B of this Bulletin for clarification on this update.

Further to the proposed operating cost regime change announced in the May 2003 Gas Royalty Calculation Information Bulletin, Attachment 6 is a summary listing of the Alberta Energy and Utilities Board (EUB) facilities that have been selected for the operating cost survey. A detailed listing of the survey sample, specifying the EUB facilities and their corresponding facility cost centres (FCC) and operators, is available in the following Alberta Department of Energy, Royalty and Related Information Review (RRIR) Updates Internet web site:

www.energy.gov.ab.ca

The Department has now contacted the FCC operators that are required to provide their 2001 and 2002 allowable operating cost information for the operating cost survey. Letters were sent to these operators in July 2003. The reporting deadline for the survey information is October 31, 2003. The survey results will be used by the Department to establish an estimate of the potential royalty impact of the proposed changes to the Unit Operating Cost Rate (UOCR) process for non-designated EUB facilities.

The Department has also identified a listing of FCCs that are currently associated with EUB gathering systems that have no royalty liable volumes at those facilities. The operators of these FCCs should review the EUB facility links and amend the AC1 to tie the FCC to the appropriate EUB facility in order to properly match costs to royalties. The listing of FCCs is available in the Alberta Department of Energy, Royalty and Related Information Review (RRIR) Updates Internet web site (referenced above). If the FCC should actually be tied to one of the surveyed EUB facilities, the FCC should then be part of the operating cost survey. The operator of the FCC should be including the operating costs of this FCC in the operating cost survey.
If your company is the FCC operator that is associated with one of the surveyed EUB facilities (see Attachment 6) but you have not been notified to participate in the operating cost survey, please contact Edith Villarica at (780) 422-9211, Edith.Villarica@gov.ab.ca for the letter and operating cost survey reporting template. It is important that the operating costs of all of the FCCs that are linked to the surveyed EUB facilities be included in the survey in order for the survey data to be representative.

**Royalty and Related Information Review (RRIR) Updates Web Site**

Industry clients interested in knowing recent developments on RRIR can access the RRIR Updates web site for information:

www.energy.gov.ab.ca

Recent updates include:
- July 2003 Royalty and Related Information Review Updates
- Listing of FCCs tied to EUB gathering systems that have no royalty liable volumes
- Operating Cost Survey Sample Population
- July 15, 2003 Operating Cost Reporting Survey Letter
- May 2003 Gas Royalty Calculation Information Bulletin RRIR Update

**Alberta Natural Gas Principles and Procedures - June 2003 Edition Now Available**

The latest edition of the Alberta Natural Gas Royalty Principles and Procedures manual, the June 2003 edition, with current updates for major changes in legislation and policy is now available.

The Department updates the Alberta Natural Gas Royalty Principles and Procedures manual when there is a major change in relevant policy or legislation, and regularly to incorporate information published in Information Letters and Information Bulletins.


The Guidelines may be printed from the Department's Internet site located at:

www.energy.gov.ab.ca

A paper copy may also be picked up at:

Alberta Department of Energy
Calgary Information Centre
3rd Floor, Monenco Place
801-6th Avenue SW
Calgary, Alberta
**SECAP Reporting Guide**

A complete Sulphur Emission Control Assistance Program (SECAP) reporting guide is available on the Department of Energy web site at:

www.energy.gov.ab.ca

The reporting procedures are also included in the June 2003 edition of the Alberta Natural Gas Royalty Principles and Procedures.

**F. PRINCIPLES AND PROCEDURES**

**Updates**

Please replace the following pages within your copy of the June 2003 issue of the Gas Royalty Principles and Procedures (Post Registry) with the enclosed updates:

<table>
<thead>
<tr>
<th>Chapter II, Section 1</th>
<th>Alberta’s Royalty Share of Gas and Gas Products</th>
<th>p. 2, 6, 9-19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter II, Section 3</td>
<td>Valuation</td>
<td>p. 2, 7, 8</td>
</tr>
<tr>
<td>Chapter III, Section 1</td>
<td>Valuing Raw Gas, and Residue Gas (Pricing Calculation)</td>
<td>p. 1</td>
</tr>
<tr>
<td>Chapter III, Section 2</td>
<td>Valuing Gas Products</td>
<td>p. 1</td>
</tr>
<tr>
<td>Chapter IV, Section 2</td>
<td>Volumetric Reporting of Mineral Activity</td>
<td>p. 8</td>
</tr>
<tr>
<td>Appendix D</td>
<td>Calculation of the Gas and ISC Reference Prices</td>
<td>p. D-6, D-7</td>
</tr>
<tr>
<td>Appendix N</td>
<td>Glossary and Definitions</td>
<td>p. N-5</td>
</tr>
</tbody>
</table>

**G. POINTS OF CONTACT**

**Petroleum Registry of Alberta**

The Petroleum Registry of Alberta Service Desk is the focal point for communications with the Registry regarding preparations for, access to, or utilization of the Registry. To contact the Petroleum Registry of Alberta Service Desk call: 1-800-992-1144.

**Department of Energy Hotline & Internet**

Prices, Royalty Rates, and Transportation Information are available on the Department of Energy Internet address or hotline: (403) 297-5430. In addition, both the Gas Royalty Calculation Information Bulletin and Information Letter are also available on the Internet address:

www.energy.gov.ab.ca
Note: To access the sulphur price call the Department of Energy hotline at (403) 297-5430. Wait to hear the recorded list of options, then press #1 on your touch-tone phone for Natural Gas Information. Again, wait for the recorded list of options, then press #3 for Gas Royalty Rates.

**Gas Royalty Client Services**

Effective March 1, 2003, the Gas Royalty Client Services Help Desk changed to a Business Associate client portfolio system. Listed below is the portfolio breakdown along with Help Desk team leads and new phone numbers. Please note that the portfolios are divided by company name and not by BA ID.

Example: If your company name is “The Gas Company” you would call C – G team at (780) 644-1202.

<table>
<thead>
<tr>
<th>Portfolio</th>
<th>Phone Number</th>
<th>Team Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numbered companies, A, B &amp; L</td>
<td>(780) 644-1201</td>
<td>Mary Carrie</td>
</tr>
<tr>
<td>C – G</td>
<td>(780) 644-1202</td>
<td>Matilda Rideout</td>
</tr>
<tr>
<td>H – P (excluding L)</td>
<td>(780) 644-1203</td>
<td>Chris Nixon</td>
</tr>
<tr>
<td>Q – Z</td>
<td>(780) 644-1204</td>
<td>Kamal Rajendra</td>
</tr>
</tbody>
</table>

Gas Royalty Reception: (780) 427-2962  
Fax: (780) 427-3334 or (780) 422-8732  
Alberta Toll Free: (780) 310-0000

Hours of operation are 8:15 a.m. to 4:30 p.m.  
Voice messages left after 4:30 p.m. will be answered the next business day.

**Calgary Information Centre**

3rd Floor, 801 – 6th Avenue S.W.  
Calgary, Alberta T2P 3W2  
Telephone (403) 297-6324  
Fax (403) 297-8954
**Alberta Royalty Tax Credit Information**

Alberta Tax and Revenue Administration  
Tax Services  
Telephone: (780) 427-3044  
Alberta Toll Free: (780) 310-0000  
Fax: (780) 427-5074  
For further information, please contact Tax Services at (780) 427-9425.

Deen Khan  
Acting Director, Gas Royalty Calculation  
Gas and Markets Development

Attachments
# 2003 GAS AND ISC PRICES

## Natural Gas and NGLs Select Prices for 2003

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Post-October 2002 Production</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Methane</td>
<td>1.252 $/GJ</td>
<td>1.290 $/GJ</td>
</tr>
<tr>
<td>Old Methane</td>
<td>0.372 $/GJ</td>
<td>0.379 $/GJ</td>
</tr>
<tr>
<td>New Ethane</td>
<td>1.267 $/GJ</td>
<td>1.290 $/GJ</td>
</tr>
<tr>
<td>Old Ethane</td>
<td>0.372 $/GJ</td>
<td>0.379 $/GJ</td>
</tr>
<tr>
<td>Propane</td>
<td>1.267 $/GJ</td>
<td>1.290 $/GJ</td>
</tr>
<tr>
<td>Butanes</td>
<td>1.267 $/GJ</td>
<td>1.290 $/GJ</td>
</tr>
<tr>
<td>Pentanes plus</td>
<td>45.30 $/m3</td>
<td>46.11 $/m3</td>
</tr>
</tbody>
</table>

## Royalty Factors for Pentanes plus

<table>
<thead>
<tr>
<th></th>
<th>Base</th>
<th>Marginal</th>
<th>Base</th>
<th>Marginal</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Pentanes</td>
<td>22</td>
<td>35</td>
<td>22</td>
<td>35</td>
</tr>
<tr>
<td>Old Pentanes</td>
<td>22</td>
<td>50</td>
<td>22</td>
<td>50</td>
</tr>
</tbody>
</table>

## Detail of the July 2003 Gas and ISC Reference Prices

<table>
<thead>
<tr>
<th></th>
<th>Gas</th>
<th>Methane</th>
<th>C2-IC</th>
<th>C3-IC</th>
<th>C4-IC</th>
<th>C5-IC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighted Average Price of Alberta</td>
<td>5.941</td>
<td>5.914</td>
<td>6.094</td>
<td>6.156</td>
<td>6.169</td>
<td>6.177</td>
</tr>
<tr>
<td>Deductions: Intra – Alberta Transportation</td>
<td>0.266</td>
<td>0.283</td>
<td>0.161</td>
<td>0.113</td>
<td>0.088</td>
<td>0.067</td>
</tr>
<tr>
<td>Marketing Allowance</td>
<td>0.032</td>
<td>0.032</td>
<td>0.032</td>
<td>0.032</td>
<td>0.032</td>
<td>0.032</td>
</tr>
<tr>
<td>Price Before Pipeline Factor</td>
<td>5.643</td>
<td>5.599</td>
<td>5.901</td>
<td>6.011</td>
<td>6.049</td>
<td>6.078</td>
</tr>
<tr>
<td>Pipeline Fuel/Loss Factor</td>
<td>0.990</td>
<td>0.990</td>
<td>0.990</td>
<td>0.990</td>
<td>0.990</td>
<td>0.990</td>
</tr>
<tr>
<td>Price before Special Adjustment</td>
<td>5.587</td>
<td>5.544</td>
<td>5.843</td>
<td>5.952</td>
<td>5.990</td>
<td>6.018</td>
</tr>
<tr>
<td>Special Adjustment</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Price before 2% amendment limitation or rounding</td>
<td>5.587</td>
<td>5.544</td>
<td>5.843</td>
<td>5.952</td>
<td>5.990</td>
<td>6.018</td>
</tr>
<tr>
<td>Amendments: Carry forward (from previous RP month)</td>
<td>0.002</td>
<td>-0.004</td>
<td>0.004</td>
<td>-0.003</td>
<td>0.003</td>
<td>-0.004</td>
</tr>
<tr>
<td>Prior Period Amendment Adjustment (current RP month)</td>
<td>-0.012</td>
<td>-0.014</td>
<td>-0.002</td>
<td>-0.002</td>
<td>-0.004</td>
<td>-0.004</td>
</tr>
<tr>
<td>Calculated RP after Amendments</td>
<td>5.577</td>
<td>5.526</td>
<td>5.845</td>
<td>5.947</td>
<td>5.989</td>
<td>6.010</td>
</tr>
<tr>
<td>JULY 2003 Reference Price</td>
<td>5.58</td>
<td>5.53</td>
<td>5.84</td>
<td>5.95</td>
<td>5.99</td>
<td>6.01</td>
</tr>
<tr>
<td>Difference = value carried forward to next RP month</td>
<td>-0.003</td>
<td>-0.004</td>
<td>0.005</td>
<td>-0.003</td>
<td>-0.001</td>
<td>0.000</td>
</tr>
<tr>
<td>Adjusted IATD (before Prior Period Amendments)</td>
<td>n/a</td>
<td>0.280</td>
<td>0.160</td>
<td>0.112</td>
<td>0.087</td>
<td>0.066</td>
</tr>
<tr>
<td>Adjusted IATD (after Prior Period Amendments)</td>
<td>n/a</td>
<td>0.280</td>
<td>0.160</td>
<td>0.112</td>
<td>0.087</td>
<td>0.066</td>
</tr>
</tbody>
</table>

## Royalty Factors for Pentanes plus

<table>
<thead>
<tr>
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## Natural Gas and NGLs Select Prices for 2003

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<td>1.290 $/GJ</td>
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<td>0.379 $/GJ</td>
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<tr>
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<td>1.290 $/GJ</td>
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<td>0.379 $/GJ</td>
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### 2003

#### NATURAL GAS LIQUIDS PRICES

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<th>Ethane Reference Price ($/GJ)</th>
<th>Ethane Par Price ($/GJ)</th>
<th>Propane Reference Price ($/m3)</th>
<th>Propane Par Price ($/GJ)</th>
<th>Propane Floor Price ($/m3)</th>
<th>Butanes Reference Price ($/m3)</th>
<th>Butanes Par Price ($/GJ)</th>
<th>Butanes Floor Price ($/m3)</th>
<th>Pentanes plus Reference Price ($/m3)</th>
<th>Pentanes plus Par Price ($/m3)</th>
<th>Sulphur Default Price ($ per tonne)</th>
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#### ANNUAL SULPHUR DEFAULT PRICE

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# 2003

## NGL TRANSPORTATION ALLOWANCE AND DEDUCTIONS

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<th>PENTANES PLUS (a)</th>
<th>PROPANE AND BUTANES (b)</th>
<th>PENTANES PLUS, PROPANE &amp; BUTANE (c)</th>
<th>FRAC. ALLOW. (per m³)</th>
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(a) Pentanes Plus obtained as a specification gas product,
(b) Propane and Butanes obtained as specification products, and
(c) Pentanes Plus, Propane and Butane contained in a natural gas liquids mix.

* Current month calculated allowance is based on an estimate.

**Note:** For details on “Prior Period Amendment Effects”, see Attachment 2A.
### PRIOR PERIOD AMENDMENT EFFECTS

#### NGL REFERENCE PRICES

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#### TRANSPORTATION ALLOWANCES

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<th>Region 4</th>
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*Any estimates represented by (*) are calculated as the weighted average of the other regions for the same spec product transportation allowance, since the region is zero. The weightings are based on the previous year's production.
# 2003 ROYALTY RATES

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<th>METHANE-NEW (% per GJ)</th>
<th>ETHANE - OLD (% per GJ)</th>
<th>ETHANE - NEW (% per GJ)</th>
<th>PROPANE (% per m³)</th>
<th>BUTANES (% per m³)</th>
<th>PENTANES – OLD (POL) (% per m³)</th>
<th>PENTANES - NEW (PNE) (% per m³)</th>
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RRIR - Summary of statistical audit sample for survey

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**PRINCIPLES AND PROCEDURES**

**Updates**

Please replace the following pages within your copy of the June 2003 issue of the Gas Royalty Principles and Procedures (Post Registry) with the enclosed updates:

**Chapter II  Section 1  Alberta’s Royalty Share of Gas and Gas Products**
Page 2, updates references in Section 1.2.2.
Page 6, updates to references in Section 1.7.
Pages 9 – 19, add ISC for Methane.

**Chapter II  Section 3  Valuation**
Page 2 - replaces Facility Average Reference Price with Facility Average Price in Section 3.2.1.
Page 7 - removes reference to Intra-Alberta storage cost in Section 3.5.2.
Page 8 - removes reference to Intra-Alberta storage cost and updates references.

**Chapter III  Section 1  Valuing Raw Gas, and Residue Gas (Pricing Calculation)**
Page 1 – changes the heading of Section 1.2 to Facility Average Price (FAP).

**Chapter III  Section 2  Valuing Gas Products**
Page 1 – changes the heading of Section 2.1 to Valuing Crown Share of Ethane.

**Chapter IV  Section 2  Volumetric Reporting of Mineral Activity**
Page 8 – revises date examples used in Field 2.7.

**Appendix D  Calculation of the Gas and ISC Reference Prices**
Page D-6 – Adds ISC Reference Price Calculation Details.
Page D-7 – Adds reference in first paragraph.

**Appendix N  Glossary and Definitions**
Page N-5 – changes the word deduction to allowance for the definition of Facility Average Price (FAP).
1. **Alberta's Royalty Share of Gas and Gas Products**

1.1 **Crown Ownership of Natural Gas**

The Crown owns the mineral rights underlying Crown lands. The Crown’s right to an owner’s share (the Crown royalty share) of the minerals produced from lands under lease is established in the Crown lease agreement and in the Mines and Minerals Act*. The Crown royalty on natural gas or any of the constituent products of natural gas is established in the Natural Gas Royalty Regulation, 220/2002.

In the legislation, Crown ownership of natural gas is referenced to the well event and Crown lease agreement from which natural gas is produced.

In practice, the raw gas stream from a well event is processed at a facility together with the raw gas from other well events. The Crown, freehold mineral owner, and other lessees* may or may not have common ownership of the raw gas stream(s) processed in a facility. The ownership of the gas and gas products recovered through processing in a facility is determined through allocating the gas and gas products to the raw gas stream(s) (Well/Well Group/Unit/Injection Scheme) from which they are produced.

The proportion of allocated gas and gas products under Crown lease (the Crown interest share) is the same as the proportion of the raw gas produced from the source well event under lease. However, the Crown interest share of gas and gas products for each working interest owner can be different from the Crown interest share portion of gas and gas products at the well event level.

The Crown interest share of gas and gas products is generally determined for the month in which it is produced at the plant gate* of the facility where the gas and gas products are recovered.

1.2 **Crown Royalty Share of Natural Gas**

1.2.1 **Point of Determination**

A.R. 220/2002 S. 11

The point at which the Department assesses a Crown royalty share of gas and gas products depends on whether or not the gas has been processed or reprocessed (refer to Appendix A for description of the Royalty Triggers*).

- If the gas is disposed of* before it is processed at a gas processing plant*, the Department will assess a Crown royalty share at the last point of measurement before the gas is delivered to the processing plant or disposed of to a pipeline if no processing is required.
• If the gas is delivered to an ex-Alberta destination, the Department will assess a Crown royalty share at the last point of measurement before the gas is delivered to the ex-Alberta destination.

• If the gas is processed at a gas processing plant and the resulting gas and gas products are not reprocessed before they are disposed of, the Department will assess a Crown royalty share at the plant gate of the gas processing plant.

• If the gas is processed at a gas processing plant and the resulting gas or gas products are reprocessed (at other than a mainline straddle plant* or a field straddle plant*) before they are disposed of, then:
  • For gas, the Department will assess a Crown royalty share at the plant gate of the reprocessing plant*; and
  • For gas products, the Department will assess a Crown royalty share at the plant gate of the first gas processing plant. Residue gas that results from the processing of royalty paid gas products will not be assessed further royalties.

• If unprocessed gas upon approval by the Minister is delivered to a field straddle plant for processing before being disposed of, the Department will assess a Crown royalty share of gas and gas products at the plant gate of the field straddle plant.

• If unprocessed gas is delivered to a mainline straddle plant for processing before being disposed of, the Department will assess a Crown royalty share of gas and gas products at the last point of measurement before delivering to the mainline straddle plant.

• If the gas is processed at a gas processing plant and the resulting gas and gas products are reprocessed at a straddle plant*, the Department will assess a Crown royalty share at the plant gate of the first gas processing plant. (Refer to Ch. II, Sec. 2.2 for the royalty treatment of raw and residue gas consumed.)

1.2.2 Crown's Royalty Share

The Crown's royalty share of gas and gas products is calculated as:

\[
\text{the quantity of raw gas at the point of disposition or the quantity of processed gas, and}
\]

\[
\text{gas products at the plant gate}
\]

\[
\ldots \text{multiplied by...}
\]

\[
\text{the Crown interest percentage}
\]

\[
\ldots \text{multiplied by...}
\]

\[
\text{the applicable Crown royalty rate*}
\]

Crown royalty rates are described in Ch. II, Sec. 1.9 through 1.16.
Ch. II, Sec. 1.1, the Crown interest share is determined by the ownership of the minerals at the well event from which the natural gas is recovered. The accounting for the Crown interest share is done on the basis of logical groupings of individual well events. For Crown royalty purposes, these groupings are categorized as follows:

- Well—a single well event;
- Well Group:
  - Non-Consolidated Single Well Group—production entity* type such as PROJ (Project), BLOCK (Oil Block), NUSPC (Non-Unit Spacing), NUGAS (Non-Unit Gas), NBLOCK (Non-Block), and NUOIL (Non-Unit Oil);
- Unit—well events subject to a unit agreement; or
- Injection Scheme.

An Injection Scheme must:

- Be an approved Injection Scheme for the purpose of Crown royalty;
- Encompass all of the well events through which gas and gas products are injected into the approved Injection Scheme;
- Encompass all well events through which injected gas and gas products may be subsequently reproduced from the approved Injection Scheme (mandatory for Enhanced Oil Recovery* (EOR) and Commercial Storage Schemes*);
- Have the same vintage for all the wells; and
- Have the same Crown interest for all the wells (except commercial storage schemes).

1.6 Responsibility to Register Well/Well Group/Unit/Injection Scheme and Facilities

1.6.1 Well/Well Group/Unit/Injection Scheme

A.R. 220/2002 S22 (1)

Unless the Minister directs otherwise, Facility Operators are to apply to the Department to establish Well/Well Group/Unit/Injection Scheme for the purpose of Crown royalty reporting and determination. The requirement to register Well/Well Group/Unit/Injection Scheme is as follows:

- A Well must be registered if the Crown interest share is greater than 0% but less than 100%, and if all the working interest owners' Crown interest share is not the same as the well's Crown interest or;
- Need not be registered if the Crown interest is either 0% or 100% (refer to Ch. IV, Sec. 2.3).

- A Non-Consolidated Single Well Group must be registered if the Crown interest share is greater than 0% but less than 100%, and if all the working interest owners' Crown interest is not the same as the well’s Crown interest (refer to Ch. IV, Sec. 2.3);
- The Department executes a Unit and the Exhibit A of the Unit Agreement is registered for calculating Crown royalty.
- An Injection Scheme must be registered (refer to Ch. IV, Sec. 2.3).
NOTE: To ensure that the correct Crown interest is used to calculate royalty, the single well, injection scheme, and unit agreement Exhibit A registry information must be updated after working interest ownership changes. Exhibit A of the unit agreement becomes the source document for ownership information. Since all changes contained in the revised Exhibit A become effective from the latest revision date of Exhibit A, it is not practical to prepare revisions containing several changes with different effective dates within each Exhibit A. If this occurs, then the latest revision date will be used as the effective date for all changes. Therefore, all changes must be registered promptly with the Department to ensure that correct effective dates are used. The Department will only accept changes made through the submission of a revised Exhibit A and will not accept changes in any other manner (i.e. by phone or letter). If the registries are not updated, then for the purpose of Crown royalty calculation, the Crown interest will default to 100%. For the purpose of injection credit calculation, the Crown interest will default to 0%, to establish the Crown's share of the volumes of the royalty client whose Crown interest is not indicated in such registries.

1.6.2 Facility Operator Changes

Facility Operators must notify the Department immediately, through the Registry of any Facility Operator changes to all facilities.

1.6.3 Out of Province Facilities

Clients are to report Out of Province Facilities or Streams on their Volumetric / SAF / OAF / RGA submissions. The ID for out of province facilities or streams must be Registry acceptable. MRIS (Mineral Revenues Information System) will create an out of province facility when it is reported on any of the above submissions.

1.7 Transactions Which Trigger Crown Royalty

Activities on the Volumetric submissions* and (SAF/OAF) submissions are used by industry to report gas and gas product allocations to the Department. Volumetric/SAF/OAF are designed to fulfil the requirements of industry-to-industry reporting and industry-to-government reporting. The Volumetric/SAF/OAF procedures and reporting transactions that will trigger the calculation of Crown royalty share are described in Ch. IV, Sec. 2.4 and 2.5. For volumetric details that are royalty triggers, SAF and OAF submissions must be reported to allocate the volumes to streams and owners for royalty calculations.
There are separate Crown royalty rates for "old" or "new" vintage. (For information on how to calculate the Crown royalty rate, please refer to Ch. III, Sec. 7.5).

1.9.2 Vintage

A.R. 220/2002 Sch. 7

The vintage of gas is determined by the date of discovery, or first production from the pool*. Generally speaking:

- New gas is gas obtained from a pool;
- Discovered on or after January 1, 1974; or
- Discovered before January 1, 1974, if no gas or other gas products from that pool had been sold or consumed for some useful purpose before January 1, 1974;
- Old gas is gas that does not qualify as new gas.

The Minister may determine that gas obtained from a well event or unit is only partly new gas and may assign a vintage between 0% new and 100% new if:

- Production from a single well event is obtained from more than one pool; and
- One or more of the pools were known to exist before January 1, 1974

1.10 Crown Royalty Rate for Methane ISC (C1-IC)

The Crown royalty rates for Methane ISC are calculated each month according to the prescribed formula that provides price sensitivity (Methane ISC Par Price*) and distinguishes between old Methane ISC* and new Methane ISC* (Vintage and Select Prices*). (For information on how to calculate the Crown royalty rate, please refer to Ch. III, Sec. 7.5).

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<td>0.2057</td>
<td>149.363</td>
</tr>
<tr>
<td>SUL</td>
<td>0.7375</td>
<td>23.784</td>
</tr>
</tbody>
</table>

Product Gas Conversion Heat Conversion
1.10.1 Methane ISC Par Price and Select Prices

The Methane ISC Par Price for a production month is the Methane ISC Reference Price for the preceding production month. An Old Methane ISC Select Price* and a New Methane ISC Select Price* is determined by the Minister for each year. The Select Prices apply to all production months in that year. (For further information on Select Prices, please refer to the Department’s website at www.energy.gov.ab.ca).

The Department will publish the Methane ISC Par Price, the Old Methane ISC Select Price and the New Methane ISC Select Price in an Information Letter on the 15th day of the second month following the production month to which they will apply. If this day falls on a weekend or a holiday, the next business day will apply.

The Methane ISC Par Price, Old Methane ISC Select Price and New Methane ISC Select Price that are established for a production month will not be changed retroactively.

Calculation of the Methane ISC Par Price (the previous month's Methane ISC Reference Price) is subject to an independent audit conducted on behalf of the petroleum and natural gas industry.

1.10.2 Methane ISC Vintage

Unless the Minister determines otherwise, the vintage of Methane is the same as the gas with which it is produced and from which it is recovered.

1.10.3 Old Methane ISC Royalty Rate (C1-IC)

A.R. 220/2002 Sch.1 - S. (1)(2)

The Crown royalty rate for old Methane ISC in a month, expressed as a percentage of the Crown interest share, is calculated as:

\[ RR\% = \frac{15(MSP) + 40(MPP - MSP)}{MPP} \]

WHERE:

RR\% = the Crown royalty rate for old Methane ISC.
MSP = the old Methane ISC select price prescribed by the Minister for the production month.
MPP = the Methane ISC par price prescribed by the Minister for the production month.

The minimum Crown royalty rate for old Methane ISC is 15%. The maximum Crown royalty rate for old Methane ISC is 35%.
1.10.4 New Methane ISC Royalty Rate (C1-IC)

A.R. 220/2002 Sch.1-S. (1)(2)

The Crown royalty rate for new Methane ISC in a month, expressed as a percentage of the Crown interest share, is calculated as:

$$RR\% = \frac{15(MSP) + 40(MPP - MSP)}{MPP}$$

WHERE:

RR% = the Crown royalty rate for new Methane ISC.
MSP = the new Methane ISC select price prescribed by the Minister for the production month.
MPP = the Methane ISC par price prescribed by the Minister for the production month.

The minimum Crown royalty rate for new Methane ISC is 15%.
The maximum Crown royalty rate for new Methane ISC is 30%

1.10.5 Low Productivity Well Allowance*

A.R. 220/2002 Sch. 1 – S. 3(1)

The Crown royalty rates for both old and new Methane will be reduced for well events that:
- Are classified by the EUB as a gas well* event, or an oil well event and
- Have a monthly average daily gas production rate of less than 16.9 $10^3$ m$^3$ per day for gas well events; or
- Have a monthly average daily production rate under 0.15 m$^3$ per day of oil and 16.9 $10^3$ m$^3$ of gas for an oil well event.

Average Daily Production* (ADP) for gas is calculated as:

$$\text{volume of natural gas obtained in the month from the gas event (in }10^3\text{m}^3) \text{...divided by...}$$
$$\text{number of hours of operation of the well in the month ...multiplied by...}$$
$$24$$

Average Daily Production (ADP) for oil is calculated as:

$$\text{volume of oil obtained in the month from the oil event (in m}^3\text{) ...divided by...}$$
$$\text{number of hours of operation of the well in the month ...multiplied by...}$$
$$24$$
The Crown royalty rate for a well event that qualifies for low productivity (for either old or new gas) is calculated as:

\[
R\% = RC - \left( \frac{(RM - 5\%) \times (16.9 - ADP)}{16.9} \right)^2
\]

WHERE:
- \(R\%\) = the Crown royalty low productivity rate for gas.
- \(RC\) = the Crown royalty rate that would apply if the royalty is calculated at either the old or new Methane royalty rate (whichever is applicable) for the production month.
- \(RM\) = the old or new Methane royalty rate (whichever is applicable) for the production month.
- \(ADP\) = the average daily production of gas for the well event for the production month (in \(10^3\) m\(^3\)).

Refer to *Ch. III, Sec. 7.6.1* for an example of low productivity calculation.

### 1.11 Crown Royalty Rate for Ethane

#### 1.11.1 Calculation Criteria

The Crown royalty share for Ethane is a percentage (the Crown royalty rate) of the Crown interest share of production.

The Crown royalty rates for Ethane are calculated each month according to the prescribed formula that provides price sensitivity (*Ethane Par Price*\(^*\)) and distinguishes between *old Ethane*\(^*\) and *new Ethane*\(^*\) (Vintage and *Select Prices*\(^*\)). Ethane, which is measured in m\(^3\), is converted to a gas equivalent heat content and the Crown royalty rate for Ethane is applied to m\(^3\) and GJ volumes. *(For information on how to calculate the Crown royalty rate, please refer to *Ch. III, Sec.7.5).*

#### 1.11.2 Ethane Par Price and Select Prices

The Minister determines an Ethane Par Price for each production month, which is the Ethane Reference Price for the preceding production month. An *Old Ethane Select Price*\(^*\) and a *New Ethane Select Price*\(^*\) is determined by the Minister for each year. The Select Prices apply to all production months in that year. *(For further information on Select Prices, please refer to the Department’s website at www.energy.gov.ab.ca).*

The Department will publish the Ethane Par Price, the Old Ethane Select Price and the New Ethane Select Price in an Information Letter on the 15\(^{th}\) day of the second month following the production month to which they will apply. If this day falls on a weekend or a holiday, the next business day will apply.
The Ethane Par Price, old Ethane Select Price and new Ethane Select Price that are established for a production month will not be changed retroactively.

Calculation of the Ethane Par Price (the previous months Ethane ISC Reference Price) is subject to an independent audit conducted on behalf of the petroleum and natural gas industry.

1.11.3 Ethane Vintage

Unless the Minister determines otherwise, the vintage of Ethane is the same as the gas with which it is produced and from which it is recovered.

1.11.4 Old Ethane Royalty Rate

A.R. 220/2002 Sch. 2 - S. (2)
The Crown royalty rate for old Ethane in a month, expressed as a percentage of the Crown interest share, is calculated as:

\[ RR\% = \frac{15(ESP) + 40(EPP - ESP)}{EPP} \]

WHERE:
- \( RR\% \) = the Crown royalty rate for old Ethane.
- \( ESP \) = the old Ethane select price prescribed by the Minister for the production month.
- \( EPP \) = the Ethane par price prescribed by the Minister for the production month.

The minimum Crown royalty rate for old Ethane is 15%.
The maximum Crown royalty rate for old Ethane is 35%.

1.11.5 New Ethane Royalty Rate

A.R. 220/2002 Sch. 2-S. (2)
The Crown royalty rate for new Ethane in a month, expressed as a percentage of the Crown interest share, is calculated as:

\[ RR\% = \frac{15(ESP) + 40(EPP - ESP)}{EPP} \]

WHERE:
- \( RR\% \) = the Crown royalty rate for new Ethane.
- \( ESP \) = the new Ethane select price prescribed by the Minister for the production month.
- \( EPP \) = the Ethane as par price prescribed by the Minister for the production month.
The minimum Crown royalty rate for new Ethane is 15%.
The maximum Crown royalty rate for new Ethane is 30%

1.11.6 Low Productivity Well Allowance*

A.R. 220/2002 Sch. 2 - S. (3)
The Crown royalty rates for both old and new Ethane will be reduced for well events that:
- Are classified by the EUB as a gas well* event, or an oil well event; and
- Have a monthly average daily gas production rate of less than $16.9 \times 10^3$ m$^3$ per day for gas well events; or
- Have a monthly average daily production rate under 0.15 m$^3$ per day of oil and $16.9 \times 10^3$ m$^3$ of gas for an oil well event.

**Average Daily Production** (ADP) for gas is calculated as:

\[
\text{ADP} = \frac{\text{volume of natural gas obtained in the month from the gas event (in } 10^3 \text{ m}^3)\ldots}{\text{...divided by...}}\frac{\text{number of hours of operation of the well in the month...}}{\text{...multiplied by...}}\frac{24}{24}
\]

Average Daily Production (ADP) for oil is calculated as:

\[
\text{ADP} = \frac{\text{volume of oil obtained in the month from the oil event (in m}^3\ldots)}{\text{...divided by...}}\frac{\text{number of hours of operation of the well in the month...}}{\text{...multiplied by...}}\frac{24}{24}
\]

The Crown royalty rate for a well event that qualifies for low productivity (for either old or new ethane) is calculated as:

\[
R\% = RC - \left[ (RM - 5\%) \times \left( \frac{16.9 - ADP}{16.9} \right)^2 \right]
\]

**WHERE:**
- \(R\%\) = the Crown royalty low productivity rate for Ethane.
- \(RC\) = the Crown royalty rate that would apply if the royalty is calculated at either the old or new Ethane royalty rate (whichever is applicable) for the production month.
- \(RM\%)\) = the old or new Methane royalty rate (whichever is applicable) for the production month.
ADP = the average daily production of gas for the well event for the production month (in 10³ m³).

Refer to Ch. III, Sec. 7.6.1 for an example of low productivity calculation.

1.12 Crown Royalty Rate for Propane

1.12.1 Calculation Criteria

A.R. 220/2002 Sch. 3 - S. (1)
The Crown royalty rate for Propane is calculated each month according to a prescribed formula that provides price sensitivity (Propane Par Price* and Propane Select Price*).

1.12.2 Propane Par Price and Select Prices

The Minister determines a Propane Par Price for each production month, which is the Propane ISC Reference Price for the preceding production month. The Minister determines a Propane Select Price for each year. The Select Price applies to all production months in that year. (For further information on Select Prices refer to the Department’s website at www.energy.gov.ab.ca).

The Department will publish the Propane Par Price and the Propane Select Price in an Information Letter on the 15th day of the second month following the production month to which they will apply. If this day falls on a weekend or a holiday, the next business day will apply.

The Propane Par Price and Propane Select Price that are established for a production month will not be changed retroactively.

Calculation of the Propane Par Price (the previous month’s Propane ISC Reference Price) is subject to an independent audit conducted on behalf of the petroleum and natural gas industry.

1.12.3 Propane Vintage

Unless the Minister determines otherwise, there is no new or old vintage designation for propane.

1.12.4 Propane Royalty Rate

The Crown royalty rate for propane in a month, expressed as a percentage of the Crown interest share, is calculated as:
RR% = \frac{15(PSP) + 40(PPP - PSP)}{PPP}

WHERE:
RR% = the Crown royalty rate for Propane.
PSP = the Propane select price prescribed by the Minister for the production month.
PPP = the Propane par price prescribed by the Minister for the production month.

The minimum Crown royalty rate for Propane is 15%.
The maximum Crown royalty rate for Propane is 30%

1.13 Crown Royalty Rate for Butanes

1.13.1 Calculation Criteria

A.R. 220/2002 Sch. 4 – S. (1)
The Crown royalty rate for Butanes is calculated each month according to a prescribed formula that provides price sensitivity (Butanes Par Price* and Butanes Select Price*).

1.13.2 Butanes Par Price and Select Prices

The Minister determines a Butanes Par Price for each production month, which is the Butanes ISC Reference Price for the preceding production month. The Minister determines a Butanes Select Price for each year. The Select Price applies to all production months in that year. (For further information on Select Prices refer to the Department’s website at www.energy.gov.ab.ca).

The Department will publish the Butanes Par Price and the Butanes Select Price in an Information Letter on the 15th day of the second month following the production month to which they will apply. If this day falls on a weekend or a holiday, the next business day will apply.

The Butanes Par Price and Butanes Select Price that are established for a production month will not be changed retroactively.

Calculation of the Butanes Par Price (the previous month’s Butanes ISC Reference Price) is subject to an independent audit conducted on behalf of the petroleum and natural gas industry.

1.13.3 Butanes Royalty Rate

The Crown royalty rate for Butanes in a month, expressed as a percentage of the Crown interest share, is calculated as:
\[ RR\% = \frac{15(BSP) + 40(BPP - BSP)}{BPP} \]

WHERE:
RR\% = the Crown royalty rate for Butanes.
BSP = the Butanes select price prescribed by the Minister for the production month.
BPP = the Butanes par price prescribed by the Minister for the production month.

The minimum Crown royalty rate for Butanes is 15%.
The maximum Crown royalty rate for Butanes is 30%

1.14 Crown Royalty Rate for Pentanes-Plus

A.R. 220/2002 Sch. 5 - S. (1)
The Crown royalty rates for Pentanes-plus are calculated each month according to a prescribed formula that provides price sensitivity (Pentanes Par Price* and Select Price*) and distinguishes between old and new Pentanes-plus* (Vintage and Royalty Factor). There is a separate Crown royalty rate for old and new Pentanes-plus.

1.14.1 Pentanes Par Price, Select Price and Royalty Factors

The Minister determines a Pentanes Par Price for each production month, which is the Pentanes Reference Price for the preceding production month, minus an allowance for transportation. The deduction for transportation is calculated as the volume-weighted average of the four regional Transportation Allowances* for specification pentanes-plus in the previous production month (refer to Ch. III, Sec. 2.3.1).

The Minister determines:

- A Pentanes Select Price* for each year, and this Select Price for a year applies to all production months of that year.
- An Old Pentanes-plus* Royalty Factor and a New Pentanes-plus Royalty Factor for each year, which will apply to all production months of that year.

The Department will publish the Pentanes Par Price and Pentanes Select Price in an Information Letter on or before the 15\textsuperscript{th} day of the second month following the production month to which they will apply. If this date falls on a weekend or holiday, the next business day will apply.

The Pentanes Par Price, Pentanes Select Price, Old Pentanes-plus Royalty Factor and New Pentanes-plus Royalty Factor that are established for a production month will not be changed retroactively.

Calculation of the Pentanes Par Price is subject to an independent audit conducted on behalf of the petroleum and natural gas industry.
1.14.2 Pentanes-Plus Vintage

A.R. 220/2002 Sch. 5 - S. (2)
Unless the Minister determines otherwise, effective January 1, 1994, the vintage of Pentanes-plus is the same as the gas with which it is produced and from which it is recovered.

1.14.3 Old Pentanes-Plus Royalty Rate

A.R. 220/2002 Sch. 5 - S. (1)
The Crown royalty rate for old Pentanes-plus in a month, expressed as a percentage of the Crown interest share, is calculated as:

\[ R\% = \frac{22(SP) + RF(PP - SP)}{PP} \]

WHERE:
- \( R\% \) = the Crown royalty rate for old Pentanes-plus.
- \( SP \) = the Pentanes select price prescribed by the Minister for the production month.
- \( RF \) = the old Pentanes-plus royalty factor (currently set at 50) prescribed by the Minister for the production month.
- \( PP \) = the Pentanes par price prescribed by the Minister for the production month to which the Crown royalty rate applies.

The minimum Crown royalty rate for old Pentanes-plus is 22%.
The maximum Crown royalty rate for old Pentanes-plus is 50%.

1.14.4 New Pentanes-Plus Royalty Rate

A.R. 220/2002 Sch. 5 - S. (1)
The Crown royalty rate for new Pentanes-plus in a month, expressed as a percentage of the Crown interest share, is calculated as:

\[ R\% = \frac{22(SP) + RF(PP - SP)}{PP} \]

WHERE:
- \( R\% \) = the Crown royalty rate for new Pentanes-plus.
- \( SP \) = the Pentanes select price prescribed by the Minister for the production month.
- \( RF \) = the new Pentanes-plus royalty factor (currently set at 35) prescribed by the Minister for the production month.
- \( PP \) = the Pentanes par price prescribed by the Minister for the production month to which the Crown royalty rate applies.

The minimum Crown royalty rate for new Pentanes-plus is 22%.
The maximum Crown royalty rate for new Pentanes-plus is 35%.
1.15 Crown Royalty Rate for Sulphur

A.R. 220/2002 Sch. 6 - S. (2)
The Crown royalty rate for sulphur, expressed as a percentage of the Crown interest share, is 16\(\frac{2}{3}\)% (16.66667).

1.16 Crown Royalty Rate for Other Products

The Crown royalty rate for other products, expressed as a percentage of the Crown interest share, is 30%. These products are:
- Carbon dioxide;
- Nitrogen;
- Helium; and
- Light ends*
3 Valuation

3.1 Valuing Crown Share of Raw Gas Residue Gas and Ethane

The valuation of Crown share of raw gas, residue gas and, ethane is on a per GJ basis. For Ethane valuation refer to Ch. II, S.3.5.1.

3.1.1 Royalty Client’s Election of Valuation Method

A.R. 220/2002 Sch.1 – S. 8(1)
Subject to certain eligibility criteria, royalty clients may choose one of two methods to value their Crown royalty share of raw gas, residue gas and ethane:
- Reference Price;
  or
- Gas Corporate Average Price (CAP).

The Gas Reference Price and the respective ISC Reference Prices are determined by the Minister for each production month, and are used to value raw gas, and residue gas for royalty clients who choose the Reference Price method.

The Ethane Reference Price is determined by the Minister for each production month, and is used to value the ethane for royalty clients who choose the Reference Price method.

A royalty client calculates CAP annually using his own sales for the period. The Department uses the calculated CAP annually to value the raw gas, residue gas, and ethane for those royalty clients who choose the CAP method. Refer to Ch. II, Sec. 3.4

A.R. 220/2002 Sch.1 - S. 8(2)
If a royalty client wishes to use the CAP method, he must file a VA1 form (refer to Ch. IV, Sec. 3.1). If a royalty client makes no selection, or is not eligible to use the CAP method, he is deemed by the Minister to have selected the Reference Price method.

A royalty client who has chosen to value his Crown royalty share using the CAP method may subsequently elect to use the Reference Price method. However, if the Reference Price method was chosen initially, the CAP method cannot be selected afterwards.
3.2 Reference Price Method

3.2.1 Reference Price Method- Valuing Residue Gas

The Crown's royalty share of residue gas is valued at the Facility Average Price (FAP). Royalty triggered gas at a facility, with some exceptions, will be assessed at FAP. For exceptions to FAP refer to Appendix D. FAP is the aggregate (weighted) average reference price based on the ISC content within the royalty-triggered gas, less the facility gas transportation allowance.

Refer to Ch. III, Sec. 1 and Appendix D for details of the Gas Reference Price, Facility Average Price, and the ISC Reference Prices and Transportation Allowances calculations.

3.2.2 Reference Price Method- Valuing Raw Gas

Raw gas disposed of at arm's-length prior to processing and which is subsequently processed before delivery to a sales pipeline is valued at 80% of the Gas Reference Price. Raw gas that is processed before it can be used as off-site fuel is also valued at 80% of the Gas Reference Price.

For all raw gas sales reported on the RGA submission, the heat content must be reported. In those instances where the heat content is not reported, the Department will use a GJ factor as established by the Minister (currently set at 41 GJ per 10^3m^3). Raw Gas that has been subsequently processed with natural gas products produced will have the products converted back to raw gas for valuation.

A.R. 220/2002 Sch.1 - S.7

The price at which the Department values the Crown royalty share of raw gas is reduced to provide a nominal cost allowance in recognition of value not yet added by processing, but which is reflected in the Gas Reference Price. The allowance is a percentage of the Gas Reference Price as determined by the Minister.

The Minister determined that the Department values raw gas, on which a Crown royalty share is established, at 80% of the Gas Reference Price for the month in which that liability is established. This valuation of 80% of the Gas Reference Price for the month, applies only if the immediate destination of raw gas sale is a gas plant (including field and mainline straddle plants). In all other cases, a valuation of 100% of Gas Reference Price applies unless it is proven later that the raw gas sales volume is sent to a gas plant for processing, or is being used as off-site fuel which otherwise would require processing to meet the pipeline specifications. Such cases should be referred to the Department for review. Raw gas sale volumes that are not subsequently processed (excluding raw gas used for off-site fuel) are not eligible for 80% of the Gas Reference Price. Also, the Crown royalty share of raw gas volumes
3.4.6 Including Non-Alberta Sourced Gas in the Gas Corporate Average Price Method

Where a royalty client's sales include non-Alberta sourced gas, that gas is included in determining the royalty client's CAP except where:

- The non-Alberta gas is not mixed with Alberta gas belonging to the same royalty client at any time prior to being sold; or
- The Minister is satisfied that the arrangements for sale and transportation do not reduce the value of Alberta gas.

Where non-Alberta gas is included in the calculation of a royalty client's CAP, it is subject to the same rules for valuation as if it were produced in Alberta. Specifically, all mixed Alberta and non-Alberta gas must be included in the CAP calculation along with all non-Alberta and Alberta eligible fixed demand and variable demand transportation charges.

3.5 Valuing Gas Products

3.5.1 Valuing Crown Share of Ethane

The Crown's royalty share of ethane is valued at the monthly Ethane Reference Price less the ethane transportation deduction for that ethane. Ethane, which is in m\(^3\), is converted to GJs by using a factor of 0.28148, and then multiplying the result by a factor of 66.065. (*Source: GPA Publication 2145-00.*) Ethane, as part of NGL mix for which no value is received, will be reported as light ends. For royalty clients that have elected to use the CAP method, the Department will value and invoice the monthly ethane Crown royalty share for this royalty client using an estimated CAP, based on the Reference Price in effect during the production month adjusted by the royalty client's Corporate Gas Factor. (*Refer to Ch. III, Sec. 2.1.*

3.5.2 Propane and Butanes

A.R. 220/2002 Sch. 3 – S2, Sch.4 - S.2

The Department values and invoices the monthly Crown royalty share of propane and butanes based on monthly reference prices that represent the value of specification product* delivered at Edmonton. To recognize the different values of propane and butanes at the point where the Crown royalty liability is triggered (the plant gate), adjustments are provided for:

- Regional transportation cost from the plant gate to Edmonton (*refer to Ch.III, Sec. 2.4.1*); and
- Fractionation cost for products produced as a component of an NGL mix (*refer to Ch.III, Sec. 2.4.2*).
3.5.3 Valuing Crown Share of Pentanes-Plus

A.R. 220/2002 Sch.5 - S.2 (2)
The Department values and invoices the monthly Crown royalty for pentanes-plus based on the monthly reference price that represents the value of specification pentanes-plus delivered at Edmonton. To recognize the differing values of pentanes-plus at the point where the Crown royalty liability is triggered, adjustments are provided for:

- Regional transportation cost from the plant gate to Edmonton (refer to Ch.III, Sec. 2.4.1);
- Fractionation cost for pentanes-plus contained as a component of NGL mix (refer to Ch.III, Sec. 2.4.2); and
- Special pentanes processing allowance* provided on a case-by-case basis, if approved by the Minister (refer to Ch.III, Sec. 2.4.3).

3.5.4 Valuing Crown Share of Sulphur

All royalty clients having annual sulphur production of 30,000 tonnes or more (based on previous year’s production) must file monthly VA4 submissions to determine their Sulphur Corporate Average Price (S-CAP). Those royalty clients whose annual sulphur production is less than 30,000 tonnes (based on previous year’s production) may choose to file monthly forms. Refer to Ch.III, Sec. 2.5.1 for additional information.
1 Valuing Raw Gas and Residue Gas (Pricing Calculation)

1.1 Raw Gas and Residue Gas Valuation

1.1.1 Raw Gas

The Crown’s share of raw gas is valued at the Facility Average Price (FAP) of the sales location identified on the RGA submission, except when the raw gas sale is subsequently processed in which case it is assessed at the raw gas average royalty rate and 80% of the Gas Reference Price. If the raw gas sale is subsequently used for lease fuel it is assessed at the raw gas average royalty rate (RARR%) and 100% of the Gas Reference Price. Raw gas that is injected is valued at the FARR% of the injection facility and the FAP of the reproducing facility.

1.1.2 Residue Gas

The Crown’s share of residue gas is valued at the FAP of the facility for a company using the Reference Price Valuation method. A company on the Reference Price valuation method with Grandfathered long-term contracts should refer to Chapter II, Section 3.3.

A company on the Corporate Average Price (CAP) valuation method uses its own sales for the year subject to a minimum annual price calculation.

1.2 Facility Average Price (FAP)

FAP is the facility reference price less the facility gas transportation adjustment. The FAP is equivalent to the Net Gas Reference Price at a facility. The facility reference price is the aggregate (weighted) Gas Reference Price that is calculated using ISC published reference prices and the ISC content within the royalty-triggered gas. The facility gas transportation adjustment is the Transportation Allowance for gas at a facility. It is a weighted average calculation using published Meter Station Factors, published Adjusted Intra-Alberta Transportation Deductions (AIATD) for all ISCs, and the ISC content within the royalty-triggered gas. The FAP for a month is calculated as:

\[
\text{Facility Reference Price for the month} \quad \text{...minus...} \quad \text{Facility Gas Transportation Cost Allowance for the month}
\]
A.R. 220/2002 Sch.1, S.4

**STEP 1:**
The facility reference price is an aggregate gas reference price. The facility reference price is calculated as:

\[
\text{Sum of (ISC Product Energy times ISC Product Reference Price) for the month} \quad \text{... Divided by...} \\
\text{Sum of ISC Product Energy for the month}
\]

**STEP 2:**
The Facility Gas Transportation Adjustment is calculated as:

\[
[\text{Royalty Trigger Factor minus 1}] \text{ for the month} \quad \text{... Multiplied by...} \\
\text{Facility Adjusted IATD for the month}
\]

**STEP 3:**
The Royalty Trigger Factor is calculated as:

\[
\text{Sum of (ISC Product Energy times Meter Station Factor) for the month} \quad \text{... Divided by...} \\
\text{Sum of ISC Product Energy}
\]

**STEP 4:**
The Facility Adjusted IATD is calculated as:

\[
\text{Sum of (ISC Product Energy times Adjusted IATD of ISC) for the month} \quad \text{... Divided by...} \\
\text{Sum of ISC Product Energy}
\]

For a sample of the FAP calculation or exceptions to FAP refer to Appendix D.

### 1.3 Calculation of the Gas Reference Price

The Gas Reference Price for a month is calculated as:

\[
\text{Weighted Average Price of Alberta Gas for the month} \quad \text{... minus...} \\
\text{Transportation Cost Allowance for the month} \quad \text{... minus...} \\
\text{VPA* and Aggregator* OMAC charges adjustment for the month} \quad \text{... minus...} \\
\text{Pipeline Fuel/Loss Allowance* for the month} \quad \text{... plus or minus...} \\
\text{Adjustment for Prior Period Amendments for the month}
\]
2. Valuing Gas Products

2.1 Valuing Crown Share of Ethane

The net unit price at which the Department values and invoices the monthly Crown royalty share of Ethane is determined by the Ethane ISC Reference price calculation (See Appendix D) less the Ethane specific transportation deduction. The Ethane specific transportation is determined by multiplying the Facility Royalty Trigger Factor minus 1 by the Ethane ISC AIATD.

2.2 Valuing Crown Share of Propane and Butanes

2.2.1 Valuation Criteria

The net unit price at which the Department values and invoices the monthly Crown royalty share of propane and butanes is:

Propane/Butanes Reference Price (subject to a Floor Price*) … minus … Transportation (by region) … minus … Fractionation Allowance* (for propane/butanes, contained in an NGL mix)

2.2.2 Propane and Butanes Reference Prices

The Department calculates Propane and Butanes Reference Prices as the weighted average of prices paid for non-field purchases of specification product in the Edmonton area. (Refer to the description of the Edmonton Area in Appendix Q).

The monthly Propane Reference Price and Butanes Reference Price are calculated as follows:

\[
\frac{\text{total value of propane/butanes non-field purchase transactions reported in the month in the Edmonton area.}}{\text{total volumes reported for the same purchase transactions}} \]

Major purchasers of propane and butanes, designated by the Minister, provide price and volume information on the NGL-100 submission by the 10th day of the second month following the production month to which they apply. If the 10th day falls on a non-business day, the next business day will apply. For NGL-100 reporting instructions, refer to Appendix Q.
If the Department receives amendments to information filed by designated purchasers, for a previous period, the Department will:

- Include the adjustments in calculating the Propane Reference Price and/or the Butanes Reference Price for the month in which the amendments are received, up to a maximum of 2% (10% for January 1998 forward) of the respective Reference Price calculated before the adjustments are applied; and,
- Carry forward any amounts above the maximum to the following month(s).

Amendments that are reported and included as adjustments in this manner are those that result from reporting errors or omissions by the reporting company.

If the adjustments result from re-determinations or re-allocations by a Facility Operator, pipeline company, producer or customer, the reporting company includes these adjustments in its reports for the delivery month in which they are transacted, and not for the production month to which the adjustments apply.

If the information required to calculate either the Propane Reference Price or the Butanes Reference Price, or both, is not received by the prescribed date, the Minister will determine the Reference Price(s).

The Department publishes the Propane Reference Price and the Butanes Reference Price in an Information Letter on the 15th day of the second month following the production month to which the Reference Price applies. If the 15th day falls on a non-business day, then the next business day will apply.

The Propane Reference Price and Butanes Reference Price established for a month will not change retroactively. The calculation of the Propane Reference Price and the Butanes Reference Price are subject to an independent audit conducted on behalf of the Petroleum and Natural Gas Industry.

2.2.3 Propane and Butanes Floor Prices

The Department calculates Floor Prices for propane and butanes to protect the Crown against inappropriately depressed prices in the Edmonton market. In any month where the Floor Price of either propane or butanes exceeds the Reference Price for the same product, and the Minister determines that there is no valid market reason for the disparity, the Reference Price(s) will be the same as the Floor Price(s). *(Refer to Appendix E.)*

The Propane Floor Price is calculated from prices posted for specification propane at Conway, Kansas, netted back to Edmonton by deducting transportation and storage costs (using tariffs based on regular rates for four months and incentive rates for eight months each year). The Propane Floor Price is 90% of the price netted back from Conway.
AMENDING A REASSIGNMENT OF VOLUMES TERMINATION

Amendments to the RMF2-T form are not permitted, and all terminations are effective on a prospective basis. Any other revisions to allocation percentages can only be accomplished via an amended RMF2 form, submitted by the assignor.

NOTE: An amended RMF2 form (submitted by an assignor) shall always take precedence over an RMF2-T form should both forms be submitted within the same billing month, unless the RMF2-T form is submitted by an assignee whose allocation percentage on the RMF2 did not change.

Example: original RMF2 submitted by client ‘A’, allocating to client ‘B’ (40%), client ‘C’ (35%) and client ‘D’ (25%). This RMF2 was amended in billing month 2003-01 by client ‘A’ such that the amended RMF2 allocates 55% to client ‘B’, 20% to client ‘C’ and client ‘D’ retains its 25% share.

Based on the above, should clients ‘B’, ‘C’ and ‘D’ submit an RMF2-T form in billing month 2003-01, the RMF2-T form for client ‘B’ and client ‘C’ would not be processed, as their original RMF2 allocation percentage was amended (and therefore would have concurred to the changes by signing the amended RMF2). Client ‘D’ would have its RMF2-T processed, as its allocation percentage was unchanged from the original RMF2.

RMF2-T FORM - COMPLETION INSTRUCTIONS

PART 1: CLIENT INFORMATION

1.1 ASSIGNEE CLIENT ID - The four-character client ID that identifies the assignee royalty client submitting the form.

1.2 CLIENT NAME - The full name of the royalty client whose code appears in field 1.1.

1.3 DATE PREPARED - The numeric year, month and day on which the RMF2-T form is prepared.

1.4 CONTACT PERSON - The name of the person whom the Department can contact concerning the information on the form.

1.5 TELEPHONE - The telephone number, including area code, of the contact person.
PART 2: TERMINATION OF REASSIGNMENT OF VOLUMES FROM THE OWNER ALLOCATION

2.1 ASSIGNOR ID – The four-character client ID that identifies the royalty client originally allocating the volumes via the RMF2 form (field 1.1 of the RMF2).

2.2 ASSIGNOR NAME – The full name of the royalty client whose code appears in field 2.1

2.3 STREAM ID – (field 3.1 from the RMF2)
   • The unique well identifier assigned by the EUB if the original RMF2 was set-up for a single well event; or
   • The code assigned by the Department if the original RMF2 was set-up for a Well Group, a Unit or an Injection Scheme. For an Injection Scheme, enter the new five digit code.

2.4 EUB FACILITY ID – the EUB facility for which the volumes to the stream identified in field 2.3 is linked (informational purposes only);
   • PROV. – the province in which the facility is located: Alberta (AB);
   • TYPE – the type of facility: Battery (BT), Gas Plant (GP), Gathering System (GS) or Injection Facility (IF);
   • CODE – the unique code assigned by the EUB.

2.5 PRODUCT NAME – As the only option is to terminate all products as identified in field 3.2 of the original RMF2, there is no option to select products.

2.6 EFFECTIVE DATE - The numeric year and month in which the termination of royalty reassignments (as allocated on the original RMF2) are to be effective. The effective date will be the first day of that production month, and must be the current production month being processed by the Department.

For the purposes of this form, the current production month is the month prior to the due date of the form. For example, to terminate a reassignment effective January 2003, the form must be received by February 28, 2003. Thus, a form submitted by February 28, would have 2003-01 as the current production month; a form received by July 31, 2003, would have 2003-06 as the current production month.
ISC REFERENCE PRICES

INTRA-ALBERTA CONSUMER PRICE → WEIGHTED AVERAGE PRICE OF ALBERTA GAS

INTRA-ALBERTA CONSUMPTION → INTRA-ALBERTA TRANSPORTATION → WEIGHTED AVERAGE MARKETING ALLOWANCE

VALUATION POINT ADJUSTMENT

AGGREGATOR OMAC ADJUSTMENT

EX-ALBERTA DELIVERIES

AVG. FIELD NETBACK PRICE

multiplied by

PIPELINE FUEL/LOSS FACTOR

plus or minus

ADJUSTMENTS FOR PRIOR PERIOD AMENDMENTS FOR THE MONTH

equals

ISC REFERENCE PRICE
ISC Reference Price Calculation Details

1. The ISC Reference Price calculation utilizes the principles and information collection mechanism of the Gas Reference Price (refer to Ch. III, Sec I). Some additional principles are followed:
   a) ISC quantities in the ISC Reference Price calculations are determined from reported Gas Reference Price quantities based on the percentage of each ISC in the gas stream.
   b) ISCs that are consumed as gas are valued at reported gas prices.
   c) Gas Transportation Costs are adjusted based on the ISC gigajoule content in a volume of gas.
   d) The Alberta large volume end-user pool is split into a mainline straddle plant pool and other Alberta large volume end-user pool. The shrinkage value of the gas extracted at mainline straddle plants is used in the calculation of all ISCs except methane (C1).

2. Alberta mainline straddle plant NGL production is collected from mainline straddle plant operators and used to determine Alberta shrinkage consumption quantities for each of C2, C3, C4 and C5+ used in the calculation of the C2, C3, C4 and C5+ ISC Reference Prices. The average of all arm's length shrinkage supply costs ($/GJ) at the Alberta mainline straddle plants will be used to value all reported heat content removed from the gas stream as reported by large volume end-users at all mainline straddle plants. Any excess quantities of associated dispositions to non-associated dispositions are excluded from the calculation and therefore, do not contribute to the calculation of the reference prices.

3. Ex-Alta arm’s length sales quantity and sales value are reported at the first point of sale as well as Canadian and U.S. transportation costs and fuel gas from the Alberta border to the point of sale.

4. The component makeup of the stream at each point of removal from Alberta is calculated from pipeline information. This information is used to breakdown the Alberta quantities reported removed from Alberta by gas owners into components C1, C2, C3, C4, and C5+.

5. The component makeup of gas delivered for consumption within Alberta (non-shrinkage excluding storage) is obtained from a monthly report submitted by NGTL. This information is used as a proxy for all quantities consumed in Alberta (excluding heat content removed at mainline straddle plants) as reported by large volume end-users and designated distributors for system gas consumption.

6. Ex-Alberta transportation costs, including fuel gas, are allocated at each border point to C1, C2, C3, C4, C5+ on a percentage of volumes that each product represents of those five in the stream. The ex-Alberta transportation costs allocated to each product by volume are then divided by the total gigajoules of each product in the stream to determine a $/GJ ex-Alberta transportation charge for each product. The unit ($/GJ) ex-Alberta transportation charge is deducted from the sales price to determine the netback price of each product at the Alberta border.

7. The intra-Alberta transportation deduction in each ISC Reference Price is calculated from the Intra Alberta Transportation Deduction (IATD) in the Gas Reference Price calculation. The Gas IATD is adjusted in a similar manner to ex-Alberta transportation costs, using the ISC component makeup of field receipts of the included pipelines.
Facility Average Price (FAP) Calculation and Supporting Details

The valuation price for gas is calculated at the facility level. This Facility Average Price (FAP) is the facility aggregate (weighted) average reference price based on the ISC content within the royalty-triggered gas, less the facility gas transportation allowance. Refer to Ch. III, Sec 1.

Royalty triggered gas production at a facility, with some exceptions, will be assessed at FAP. See 'Points to remember for FARR% and FAP calculations' for exceptions.

### FAP Calculation

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<th>Product</th>
<th>Location</th>
<th>Delivery/Ref</th>
<th>Quantity (GJ)</th>
<th>Price</th>
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<th>(6) Meter</th>
<th>(9) Ref Price</th>
<th>(10) Adjusted</th>
<th>(11) Royalty</th>
<th>(12) Transportation</th>
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### Points to remember for FARR% and FAP calculations:

- Same ISC product energy is used in calculation
- ISC product energy refers to the ISC dispositions at the charge facility that are royalty triggers. However, if charge facility is an injection facility, ISC product energy refers to the ISC receipts rather than the dispositions.
- Injection Credits are valued at the FARR% of the injection facility and the FAP of the reproducing facility.
- Only C1-IC, C2-IC, C3-IC, C4-IC, C5-IC product energies are used in calculation.
- Facility averages are different each production month because they are based on volumetric submissions and published royalty variables (royalty rates, reference prices, adjusted intra-Alberta transportation deductions, meter station factors). Once calculated and invoiced for a production month, facility averages will only change for that facility and production month if amendments are processed for volumetrics and meter station factors.
- The Crown Royalty calculation of raw gas that is injected is valued at the FARR% of the injection facility and the FAP of the reproducing facility.
- Exceptions to FARR% and FAP:
  - Raw gas sale subsequently processed is assessed at raw gas average royalty rate and 80% of Gas Reference Price.
  - Raw gas sale subsequently used for lease fuel is assessed at raw gas average royalty rate and 100% of Gas Reference Price.
**Appendix N - Glossary and Definitions**

**Enhanced recovery** means increased recovery of crude oil and/or natural gas from a reservoir, which is achieved by the external application of physical or chemical processes that supplement naturally occurring or simple fluid injection processes.

**Enhanced recovery scheme** is an Injection Scheme that is approved under the Enhanced Recovery of Oil Royalty Reduction Regulation.

**EPSTA fee** means the standard fee specified in the Ethane Plus System Trading Agreement for the fractionation of natural gas liquids.

**Ethan**e, in addition to its normal scientific meaning, is a mixture mainly of ethane, which ordinarily may contain some methane or propane.

**Ethane conversion rate** means one cubic metre of liquid ethane = 0.28132 thousand cubic metres of gas.

**Ethane par price** is a factor used to calculate the Crown royalty rate in the price-sensitive formula for Crown royalty on ethane. It is the previous month’s ethane reference price.

**EUB** means the Alberta Energy and Utilities Board.

**EUB Facility** means a gas gathering system, or gas processing plant, that is approved by the EUB and is recognized by the Alberta Department of Energy as a facility where volumes are available for sale.

**Excess Capacity Fee** is a fee in dollars or in kind, which is specifically charged for those volumes in excess of ownership throughput capacity.

**Excess Capacity Volumes** are volumes processed by a functional unit (Facility Cost Centre) owner in excess of his working interest in the functional unit. (e.g. Company A owns 10,000 capacity, Company B own 10,000 capacity; Company A processes 15,000 volumes of which 5,000 are therefore excess capacity volumes.)

**Exchange** means a transaction where the parties exchange a quantity of gas or a gas product at one location for a quantity of gas or a gas product at another location (see also swap).

**Exhibit A** forms part of a Unit Agreement and describes each Tract, Tract participation, Royalty Owners, Working Interest Owners and each Working Interest Owner’s share of Tract participation. It also summarizes each Working Interest Owner’s Unit participation.

**Experimental oil project** means an experimental oil scheme approved by the EUB and designated by the Minister.

**Ex-Alberta Gas LDC** means a local gas distribution company located outside of Alberta, who removes gas from Alberta that is destined for resale in its franchise area under tolls and tariffs set by the local regulator.

**Facility** means:
- A battery,
- A gathering system,
- A gas processing plant,
- A reprocessing plant,
- A gas injection facility*, or
- A commercial storage facility.

**Facility Average Price (FAP)** is the aggregate (weighted) average reference price based on the ISC content of the royalty-triggered gas, less the facility gas transportation allowance.

**Facility Average Royalty Rate (FARR)** is used to assess royalty trigger gas quantities at the charge facility, and is the aggregate (weighted) average royalty rate based on the ISC compositions (excluding inert gas) of royalty trigger quantities at the charge facility.

**Facility cost centre** means an approved grouping of gathering and/or compression and/or processing facilities that have common ownership interests and the same Facility Operator.

**Factor model** is a model that calculates a factor for a gas meter station and is used to adjust the intra-Alberta transportation deduction in the current Gas Reference Price Calculation. A meter station factor is calculated for a meter station of a pipeline identified by the Department as being an included pipeline. Generally, pipelines are included if they have access to the ex-Alberta market and published tolls and tariffs.

**FAP** – see Facility Average Price.

**FARR** – see Facility Average Royalty Rate.
Fee for service refers to a transaction in which one person provides a service to another person and charges that other person a fee for the service provided.

Field condensate means products obtained from natural gas or solution gas before it is delivered to a gathering system.

Field straddle plant means a reprocessing plant designated by the Minister as a field straddle plant for the purposes of the Regulation, which is royalty neutral and receives only marketable pipeline specification gas.

Flared, with respect to gas, means gas that is released in the atmosphere by burning or otherwise with no direct economic benefit derived.

Floor price, with reference to propane and butane, means the alternate unit value for the monthly reference price of either one of them.

Fractional allowance, with reference to the monthly Propane Reference Price, Butane Reference Price and Pentanes Reference Price, means the amount deducted from that reference price as part of the calculation of the price at which the Department will value the Crown royalty share of propane, butane or pentanes-plus that are subject to Crown royalty as a component of a NGL mix.

Fractional facility means a facility where NGL mix is separated into specification ethane, propane, butane and/or pentanes-plus.

Fractionation Plant means a plant that processes gas products but does not process residue gas.

Freehold lands means all lands in a province, and all rights thereto and interests therein, that are not Crown lands; lands other than Crown lands and other lands vested in Her Majesty.

Fuel gas means raw gas or residue gas that is consumed, prior to sale or other disposition, in the gathering, compressing or processing of natural gas or a gas product, that is owned by the owner of the gas or gas product that is so consumed.

Functional unit is a unit of an EUB facility. It is called a Facility Cost Centre (Post-1993 description) or a GCA facility (Pre-1994 description).

Gas means natural gas, residue gas or ethane. It is an unsold, processed product stream composed mainly of natural gas, which is left over after natural gas is processed (residue gas). Natural gas is processed in order to remove heavier components (natural gas liquids), hydrogen sulphide and/or other impurities from the gas. The residue is the portion of the original gas that remains after processing. A natural gas stream changes category from production to gas at the point where other products (by-products) are extracted from the gas.

Gas account means an account maintained by the Department for a royalty client pursuant to section 15(6) of the Regulation.

Gas injection facility means the wells and other facilities used by an operator in the operation of one or more gas injection schemes*.

Gas injection scheme means a scheme, other than a commercial storage scheme, approved or ordered by the Board under the Oil and Gas Conservation Act and respecting the injection of natural gas or a gas product into an underground formation.

Gas lift means the raising or lifting of liquid from a well by means of injecting gas into the liquid in the well bore.

Gas Par Price is a factor used to calculate the Crown royalty rate in the price-sensitive formula for Crown royalty on raw gas, residue gas and ethane. It is the previous month gas reference price.

Gas processing plant means a plant for the extraction from natural gas of a gas product but does not include a reprocessing plant, well head separator, treater, or dehydrator.

Gas product means residue gas, ethane, pentanes-plus, sulphur, propane, butane or any other product obtained from natural gas by processing or reprocessing or otherwise, but does not include field condensate.