

CAPITAL AND OPERATING COSTS

APPLICATION FOR APPROVAL OF
THE DEVELOPMENT PLAN FOR
PARSONS LAKE FIELD
PROJECT DESCRIPTION

INTRODUCTION

14.1.1 SCOPE

The cost of developing the Parsons Lake field includes historical exploration and delineation expenditures as well as estimated costs for future development and operating expenditures. The cost estimates do not include capital and operating costs for the Mackenzie gathering system or the Mackenzie Valley pipeline. These are addressed separately in their respective applications.

14.1.2 HISTORICAL EXPENDITURES

Historical expenditures include exploration, delineation and pre-development engineering and technical studies from 1972 through 2003 for the Parsons Lake field. The expenditures presented are gross costs in as-spent dollars and in constant 2003\$, adjusted for inflation to January 1, 2003, according to the Canadian Consumer Price Index (CPI).

14.1.2.1 Expenditures By Category

Table 14-1 shows the historical expenditures as spent in the year the work was completed, categorized into drilling, seismic and regulatory preparation expenditures. The costs include:

- drilling:
 - the Parsons F-09 discovery well
 - subsequent delineation wells
 - well surveys
 - abandonment and reclamation
- acquiring and processing 2-D and 3-D seismic surveys
- regulatory preparation to the end of 2003, including:
 - all conceptual and preliminary engineering work
 - technical, environmental and socio-economic studies
 - community consultation
 - project management

Table 14-1: Parsons Lake Field Historical Costs

Year Incurred	\$Million Cdn ^{1,2}				CPI ³ Index	2003\$ ³ Total Costs
	Drilling	Seismic	Regulatory Preparation	Total Costs		
1972	2.2	0	0	2.2	4.7	10.2
1973	2.7	0	0	2.7	4.3	11.6
1974	5.6	1.4	0	7.0	3.9	27.2
1975	9.2	1.5	0	10.7	3.5	37.7
1976	28.3	1.1	0	29.4	3.3	96.1
1977	11.6	0.4	0	12.0	3.0	36.3
1978	0	0.5	0	0.5	2.8	1.3
1979	0	0	0	0	2.6	0
1980	0	0	0	0	2.3	0
1981	0	0	0	0	2.1	0
1982	0	0	0	0	1.9	0
1983	0	1.3	0	1.3	1.8	2.4
1984	0	1.5	0	1.5	1.7	2.6
1985	0	0	0	0	1.6	0
1986	0	0	0	0	1.6	0
1987	0	0	0	0	1.5	0
1988	0	0	0	0	1.4	0
1989	0	0	0	0	1.4	0
1990	0	0	0	0	1.3	0
1991	0	0	0	0	1.2	0
1992	0.7	0	0.2	0.9	1.2	1.1
1993	0	0	0	0	1.2	0
1994	0	0	0	0	1.2	0
1995	0	0	0	0	1.2	0
1996	0	0	0	0	1.1	0
1997	0	0	0	0	1.1	0
1998	0	0	0	0	1.1	0
1999	0	0.1	0	0.1	1.1	0.1
2000	0	0.2	0	0.2	1.1	0.2
2001	0	2.0	1.8	3.8	1.0	3.9
2002	0	33.7	3.6	37.3	1.0	38.0
2003	0	0.1	5.0	5.1	1.0	5.1
Total	60.3	43.8	10.6	114.7	N/A	273.7

Note:

1. Drilling costs are per year of work completion.
2. As-spent costs are gross capital expenditures treated as mid-year following completion of the work activity.
3. CPI adjusts as-spent costs to 2003\$ as of January 1, 2003, using average annual CPI inflation factors.

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PROJECT DESCRIPTION****DEVELOPMENT COST ESTIMATES****14.2.1 DEVELOPMENT ESTIMATE SCOPE**

Development cost estimates include expenditures for:

- supporting regulatory applications
- completing detailed engineering
- constructing and installing well pads and field facilities
- drilling and completing development wells
- installing intrafield flow lines connecting the well pads

Regulatory support includes estimated costs for:

- technical studies
- environmental and socio-economic studies
- preliminary engineering
- community consultation
- project management for the regulatory review process

The development plan includes the potential for future satellite well pads, which might be required to optimize field depletion.

Development cost estimates are preliminary and based on internationally competitive assumptions. The cost estimates have an accuracy of $\pm 25\%$. All costs are expressed in constant 2003\$, and include customs duties and import taxes, where applicable. Goods and Services Tax (GST) and provincial sales taxes are not included in the estimate for any project materials, equipment or services.

14.2.2 ASSUMPTIONS FOR CAPITAL COST ESTIMATES

The capital cost estimates have been prepared based on the following assumptions:

- The reservoir parameters for the Parsons Lake north and south pools, the technical basis and the scope of work are as described in Sections 3 through 7 of this development plan.
- The development will be executed according to the management philosophies and schedule described in Section 1 of this development plan.

14.2.2 ASSUMPTIONS FOR CAPITAL COST ESTIMATES (cont'd)

- All facilities, goods and services will be bid and acquired on an internationally competitive basis, according to the Canada Benefits Plan and Inuvialuit Benefits Agreement.
- Worldwide economic conditions in January 2004 will generally prevail, subject only to annual inflation and escalation adjustments, when capital costs are incurred.

14.2.3 BASIS OF CAPITAL COST ESTIMATE

Cost estimates are based on contractors' estimates and in-house cost studies developed in 2002 and 2003. The contractors' estimates are derived from:

- preliminary facilities design
- equipment sizes and weights
- equipment-to-bulk ratios and weights
- fabrication work hours per tonne
- international wage rates
- contractor cost data
- fabrication and installation schedules
- engineering and project management costs

14.2.4 PRELIMINARY CAPITAL COST ESTIMATE

Table 14-2 shows the preliminary capital cost estimate for the Parsons Lake field development, including a contingency allowance of 25%.

Capital costs for the Parsons Lake field development are in six main categories:

- regulatory application support
- start-up and training
- north pad and facilities
- south pad and facilities
- north pad future compression
- development drilling

The development plan for Parsons Lake includes consideration of the potential need for satellite well pads. As the specific need and potential locations for satellite well pads have not yet been established, drilling and flow line connection costs have not been estimated, and no costs associated with satellite facilities, including the pad, have been included in the Preliminary Capital Cost Estimate.

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DEVELOPMENT COST ESTIMATES

Table 14-2: Preliminary Capital Cost Estimate (2003\$)

Year	Regulatory Application Support ¹	Start-Up and Training	North Pad and Facilities ²	South Pad and Facilities ³	North Pad Future Compression ⁴	Development Drilling	Total (\$Million)
2004	9.3	0	4.0	0	0	0	13.3
2005	6.5	0.6	11.0	0	0	0	18.1
2006	2.5	3.1	27.0	0	0	0	32.6
2007	0	5.6	99.9	0	0	0	105.5
2008	0	8.8	54.0	0	0	128.1	190.9
2009	0	11.9	69.0	0	0	117.8	198.7
2010	0	5.6	0	0	0	70.2	75.8
2011	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0
2013	0	0	0	5.5	0	0	5.5
2014	0	0	0	19.6	0	0	19.6
2015	0	0	0	28.4	0	35.8	64.2
2016	0	0	0	0	7.0	35.8	42.8
2017	0	0	0	0	28.2	37.4	65.6
2018	0	0	0	0	13.8	0	13.8
2019	0	0	0	0	18.4	0	18.4
2020	0	0	0	0	11.3	0	11.3
2021	0	0	0	0	18.4	0	18.4
2022	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0.0
Total	18.3	35.6	264.9	53.5	97.1	425.1	894.5

Note:

1. Includes Parsons Lake pre-development project management costs.
2. Includes logistics support for north pad construction and an all-weather airstrip.
3. Includes logistics support for south pad and facilities construction.
4. The timing of these expenditures might vary as a function of ultimate resource performance.

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14.3.1 ASSUMPTIONS FOR OPERATING AND MAINTENANCE COST ESTIMATE

Operating cost estimates have been prepared based on the following assumptions:

- The reservoir parameters for the Parson Lake field, the technical design basis, and the scope of work are as described in this development plan.
- The development will be operated by ConocoPhillips according to a joint-venture development and operating agreement, and according to the management philosophies and schedule described in Section 1.
- All geological, geophysical and reservoir engineering costs are treated as operating costs through the pre-development phase.

14.3.2 BASIS OF OPERATING COST ESTIMATE

Operating cost estimates are based on oil and gas operations in northern Alberta and on northern Alaska operating experience. The operating costs were developed by estimating the major cost components and cost variations throughout the life of the development.

Operating cost estimates include:

- field facilities, including:
 - personnel costs and catering
 - maintenance, inspection and repair
 - fuel and lubricants
 - insurance
 - property tax and access fees
 - power generation costs
- well workovers, including:
 - inspection and maintenance of wells and flow lines
 - control systems and wireline equipment
 - minor wireline workovers
 - insurance

14.3.2 BASIS OF OPERATING COST ESTIMATE (cont'd)

- variable costs, such as chemical treatment costs for produced and injected fluids and consumable goods and services
- logistics support, including:
 - fixed-wing aircraft and helicopter support
 - ice roads and trucking services
 - low-ground-pressure vehicles
 - disposal costs
- administration, including:
 - a northern operating office and personnel
 - communications
 - warehousing and storage
- abandonment and reclamation

14.3.3 PRELIMINARY OPERATING COST ESTIMATE

Table 14-3 shows the preliminary operating cost estimate for the Parsons Lake field, including a contingency allowance of 25%.

Table 14-3: Preliminary Operating Cost Estimate (\$Million 2003)

Year	Annual Operating Cost for Facilities and Wells ¹
2009	1.3
2010	9.7
2011	8.9
2012	10.3
2013	10.3
2014	8.9
2015	8.5
2016	10.3
2017	9.5
2018	10.9
2019	11.1
2020	11.3
2021	8.5
2022	11.7
2023	11.3
2024	11.0
2025	11.7

Table 14-3: Preliminary Operating Cost Estimate (\$Million 2003) (cont'd)

Year	Annual Operating Cost for Facilities and Wells¹
2026	9.5
2027	9.1
2028	15.3
2029	9.2
2030	9.5
2031	11.7
2032	9.7
2033	12.5
Total ²	251.7
Note:	
1. Excludes cost of fuel gas.	
2. Based on a 25-year forecast.	

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ANNUAL OPERATING COSTS
