CG-NGTL-001

Reference:

NGTL Phase 2 Application

Issue:

Much of the Application is based on 2003 Actual Data

Request:

(a) Please revise the Application, where possible, by replacing 2003 actual data with 2004 actual data, including with regard to the following:

i. The Cost of Service Study (including the System Average Metering Charge)
ii. The Distance of Haul Study
iii. The Cost of Haul Study
iv. The Existing Allocation Methodology and the 6 Alternative Allocation Methodologies
v. Tables 2.2.2-3, 2.2.2-4, and 2.2.2-5
vi. Figure 5.1-1

(b) If NGTL is unable or unwilling to provide the 2004 actual data, please fully explain and please provide approximate changes to each of the items listed in (a).

Response:

(a) NGTL provides the 2005 DOH and 2005 COH studies for the 2004 calendar year as Attachments 1 and 2, CG-NGTL-001, which have been recently completed.

NGTL has not conducted a 2005 Cost of Service study for the 2004 calendar year. This study takes significant time and effort and NGTL will not be in a position to complete it until late 2005. Therefore, revisions cannot be provided for items (iv), (v), and (vi) as they are dependant of the Cost of Service study. NGTL expects that the relative results using 2004 information would not vary substantially from the information provided in the Application.

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(b) Please refer to the response to (a).

NOVA Gas Transmission Ltd.

Distance of Haul Study
Revised Methodology
2004 Calendar Year

June 2005

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1. SUMMARY

The purpose of this distance of haul study ("DOH Study") is to determine average distances of haul for transportation of gas on the Alberta System during a particular calendar year. This Study is for the 2004 calendar year.

The results for 2004 indicate that the average distance of haul for:

- intra-Alberta deliveries was 233 km;
- ex-Alberta deliveries was 543 km; and
- all deliveries (intra-Alberta and ex-Alberta) was 498 km.

The average intra-Alberta DOH is 42.9% of the average DOH for ex-Alberta deliveries.

2. METHODOLOGY

For each month, a hydraulic simulation is performed to balance the gas received at each receipt point against the volume of gas delivered to each delivery point on the Alberta System. The flows are balanced based on the operating parameters and conditions employed on the Alberta System during that month. From this, the flow path from each receipt meter station to its associated downstream delivery stations can be determined. By reversing direction, the flow path to each delivery station can also be determined. Based on this hydraulic simulation, the distances of haul are calculated using the following steps:

1) The flow of gas is tracked in the reverse direction of the actual flow through all pipes from each delivery station to all upstream receipt stations that contribute flows to the delivery station. For each pipe in the system the following information is recorded:
   - the length of this pipe; and
   - the percent of volume at each downstream delivery station that was transported through this pipe. This is called the delivery station flow fraction. Each pipe gets a delivery station flow fraction for each downstream delivery station whose path it is in.

2) The distance of haul of a delivery station for the month is calculated by summing, for all pipes that have a delivery station flow fraction for that delivery station, the product of:
   - the length of the pipe; and
   - the delivery station flow fraction.

   The monthly DOH for the delivery station is recorded. This process is repeated for every delivery station for all 12 months.

3) The overall annual average DOH for a delivery station is determined by:
   - summing the product of the monthly DOH and actual delivered volume (the "Volume-Distance") over all 12 months and
   - dividing this sum by the actual delivery station volume for the year.

   This process is repeated for each delivery station.

4) The average distance of haul for intra-Alberta deliveries, ex-Alberta deliveries and total deliveries is calculated by:
   - summing the product of the overall annual DOH and total yearly volume for all stations in each group and
   - dividing this sum by the actual total volume for the year for all stations in each group.

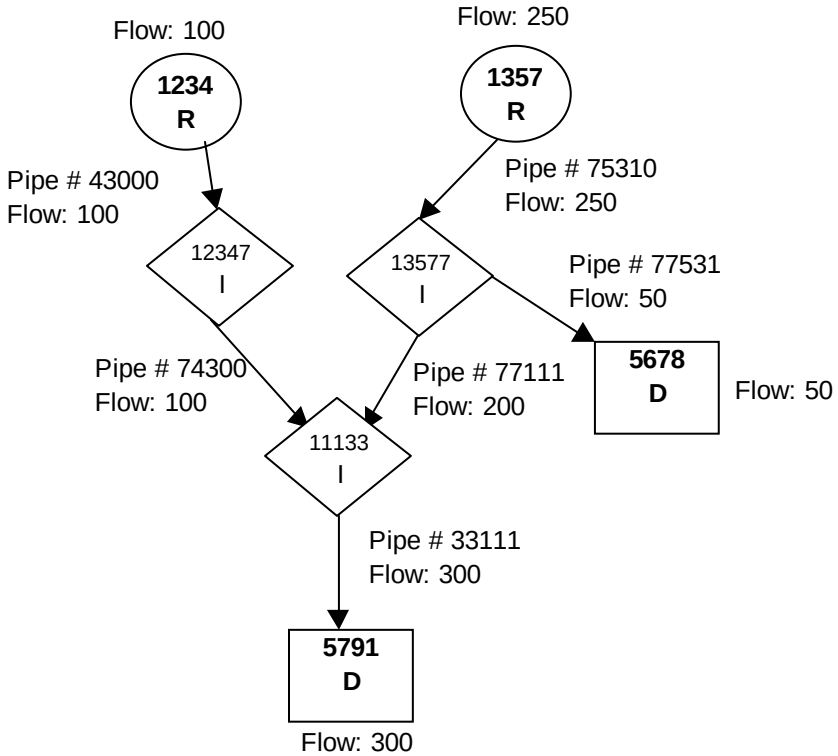
3. ILLUSTRATIVE EXAMPLE

The following is a detailed illustrative example of calculating the distance of haul for delivery stations in a simplified network. The actual delivery stations on the Alberta System have much more complex paths. Nevertheless, their DOH is calculated in exactly the same way as described in this simplified example.

In this example the network is composed of two receipt meter stations (R) and two delivery stations (D). There are 6 pieces of pipe and three intermediate nodes (I) that join different pipes together. All stations, intermediate nodes and pipes have their unique identification number. Two of those intermediate nodes are junctions. For this example, assume that the following flows in 10^3m^3 occurred at those stations for the month of January:

Meter station number	Meter station type	Meter station flow in January
1234	R	100
1357	R	250
5678	D	50
5791	D	300

From the hydraulic simulation based on the above actual flows at the meter stations, the following schematic could be derived.



At this stage of the methodology the recording spreadsheet would look like Table #1.

Table #1

Pipe #	January flow
43000	100
74300	100
75310	250
77531	50
77111	200
33111	300

In Step 1 of the methodology, the length of each pipe and the delivery flow fractions for each delivery meter station at each pipe would be recorded. The flow fraction for a particular delivery station at a particular pipe is calculated as follows:

- Flow fraction = Sum of delivery station flow fraction on links leaving downstream node * flow on current link / sum of flows on all links entering downstream node.

For example, the delivery flow fraction for pipe 33111 for station 5791 is 1.0000 (or 100% of the flow) as it is the first pipe or link. The delivery flow fraction for pipe 77111 for station 5791 is 1.0000*(200/(200+100) = 0.6667 and the delivery flow fraction for pipe 75310 for station 5791 is 0.6667*(250/250) = 0.6667; that means that 67% of the volume for station 5791 flows through pipe 77111 and 75310 (the other 33% of the volume would come from a different path – pipes 43000 and 74300). At the end of Step 1 the recording spreadsheet for this example would look like Table #2.

Table #2

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)*(5)/(7)
Delivery Station	**Pipe #**	**D/S Node**	**Flow Fraction on Links Leaving D/S Node**	**Flow on Current Link**	**Links Entering D/S Node**	**Flows from Links Entering D/S Node**	**Flow Fraction**
5791	33111	5791	1.0000	300	33111	300	1.0000
	77111	11133	1.0000	200	77111,74300	300	0.6667
	74300	11133	1.0000	100	77111,74300	300	0.3333
	43000	12347	0.3333	100	43000	100	0.3333
	77531	5678	0.0000	50	77531	50	0.0000
	75310	13577	0.6667	250	75310	250	0.6667
5678	33111	5791	0.0000	300	33111	300	0.0000
	77111	11133	0.0000	200	77111,74300	300	0.0000
	74300	11133	0.0000	100	77111,74300	300	0.0000
	43000	12347	0.0000	100	43000	100	0.0000
	77531	5678	1.0000	50	77531	50	1.0000
	75310	13577	1.0000	250	75310	250	1.0000

All the information required to calculate the DOH for each delivery station for the illustrative month of January is now available. After Step #2 of the methodology for the month of January, the recording spreadsheet would look like Table #3.

Table #3

(1)	(2)	(3)	(4)	(5)	(6)=(3)*(4)	(7)=(3)*(5)
Pipe #	**January flow**	**Length in km**	**Delivery 5678 flow fractions**	**Delivery 5791 flow fractions**	**DOH for 5678 in km**	**DOH for 5791 in km**
43000	100	2	0.0000	0.3333	-	0.7
74300	100	5	0.0000	0.3333	-	1.7
75310	250	10	1.0000	0.6667	10.0	6.7
77531	50	3	1.0000	0.0000	3.0	-
77111	200	15	0.0000	0.6667	-	10.0
33111	300	5	0.0000	1.0000	-	5.0
				Total DOH	**13.0**	**24.0**

The DOH calculations for the remaining months (February to December) would be done exactly the same way as demonstrated above. For this example assume that at the end of the year, the monthly results have been obtained for station 5791 as shown in columns 2 to 4 and station 5678 as shown in columns 5 to 7 of Table #4. By following Step 3, the overall volume weighted average annual DOH for each delivery station can be derived as shown at the bottom of Table #4. It should be noted that the DOH for meter station 5678, is not volume dependent so will always be 13 km as only gas from receipt meter station 1357 via pipe 75310 (10 km) and pipe 77531 (3 km) is physically available. The DOH for station 5791 is volume dependant and does change from month to month as flow fractions for pipe in the station's path change.

Table #4

(1)	(2)	(3)	(4)=(2)*(3)	(5)	(6)	(7)=(5)*(6)
	Meter station 5791			**Meter station 5678**		
	DOH	**Volume**	**Volume-Distance**	**DOH**	**Volume**	**Volume-Distance**
	(km)	**($10^3 m^3$)**	**($10^3 m^3$ * km)**	**(km)**	**($10^3 m^3$)**	**($10^3 m^3$ * km)**
Jan	24.0	300	7,200	13.0	50	650
Feb	23.0	350	8,050	13.0	75	975
Mar	24.1	400	9,640	13.0	75	975
Apr	20.0	350	7,000	13.0	50	650
May	22.5	300	6,750	13.0	50	650
Jun	22.5	300	6,750	13.0	50	650
Jul	23.0	320	7,360	-	-	-
Aug	24.0	340	8,160	13.0	50	650
Sep	24.2	350	8,470	13.0	50	650
Oct	22.7	300	6,810	13.0	50	650
Nov	21.3	310	6,603	13.0	50	650
Dec	22.4	310	6,944	13.0	50	650
Total		3,930	89,737		600	7,800
Annual Average	**22.8**			**13.0**		

In accordance with Step 4, the volume-weighted average annual distance of haul for all delivery stations, which in this example is two delivery stations, would be calculated as follows:

(22.8 * 3,930 + 13 * 600) / (3,930 + 600) = 21.5 km

4. RESULTS

Table 4.1 contains the DOH results for 2004. The average distance of haul for:

- intra-Alberta deliveries was 233 km; and
- ex-Alberta deliveries was 543 km.

For 2004, the average distance of haul for intra-Alberta deliveries is 42.9% of the average distance of haul for ex-Alberta deliveries.

Table 4.2 compares the annual results for 2004, using the methodology described in this report, against the results of studies from previous years. The results for 2004 do not vary significantly from previous years.

TABLE 4.1
DOH RESULTS FOR 2004

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	2004
Avg. Intra-Alberta distance (km)	211	221	229	242	240	266	250	250	239	234	230	209	232.6
Avg. Ex-Alberta distance (km)	495	524	555	578	581	567	560	555	557	546	522	491	542.8
Avg. Ex-Alberta to Intra-Alberta Ratio	2.34:1	2.37:1	2.42:1	2.39:1	2.42:1	2.13:1	2.24:1	2.22:1	2.32:1	2.34:1	2.27:1	2.35:1	2.33:1
Avg. Intra-Alberta to ex-Alberta Ratio	42.6 %	42.2 %	41.3 %	41.8 %	41.4 %	47.0 %	44.7 %	45.0 %	43.0 %	42.8 %	44.1 %	42.6 %	42.9 %

TABLE 4.2
RESULTS FROM 1988 to 2004

	2004	2003	2002	2001	2000	1999	1998	1997	1996
Avg. Intra-Alberta distance (km)	232.62	239.17	255.80	266.18	267.56	265.49	253.32	245.78	247.00
Avg. ex-Alberta distance (km)	542.77	559.42	569.38	564.03	548.68	554.91	547.88	541.83	531.68
Avg. Ex-Alberta to intra-Alberta Ratio	2.33:1	2.34:1	2.23:1	2.12:1	2.05:1	2.09:1	2.16:1	2.20:1	2.15:1
Avg. Intra-Alberta to ex-Alberta % Ratio	42.86%	42.75%	44.93%	47.19%	48.76%	47.84%	46.24%	45.36%	46.46%

	1995	1994	1993	1992	1991	1990	1989	1988
Avg. Intra-Alberta distance (km)	249.54	234.03	229.68	219.86	224.13	224.94	198.80	209.46
Avg. ex-Alberta distance (km)	553.61	540.77	532.74	517.58	496.19	477.48	445.47	442.10
Avg. Ex-Alberta to intra-Alberta Ratio	2.22:1	2.31:1	2.32:1	2.35:1	2.21:1	2.12:1	2.24:1	2.11:1
Avg. Intra-Alberta to ex-Alberta % Ratio	45.07%	43.28%	43.11%	42.48%	45.17%	47.11%	44.63%	47.38 %

NOTES:

- The years 2002 through 2004 are calculated using the methodology approved by the EUB in Decision 2004-097, whereas all other years are calculated using the previous methodology.
- All studies are based on the calendar year except 1988 which is based on volumetric data collected over a 12-month period ending September 30, 1988.

5. DOH FOR EACH DELIVERY STATION

DOH for Ex-Alberta Deliveries:

Unit Number	Unit Name	Annual Volume (e3m3)	DOH (Km)	Volume-Distance
1250	UNITY BORDER	151,573	66.1	10,012,387
1417	COLD LAKE BDR	137,375	54.1	7,431,169
1958	EMPRESS BORDER	50,463,492	540.6	27,281,056,369
2001	ABC SALES #1	10,441,825	475.1	4,961,038,203
2002	ALBERTA-MONTANA	74,537	189.8	14,145,563
2004	ABC SALES #2	10,461,033	474.3	4,961,602,306
3886	GORDONDALE INTR	16,828	27.4	460,463
6404	MCNEILL BORDER	21,604,846	626.9	13,543,044,081
8002	ESTHER DELIVERY	65,127	9.9	646,055
8003	MERIDIAN LK DLV	139,893	0.3	44,066
	Subtotal for ex-Alberta deliveries	**93,556,528**	**542.8**	**50,779,480,664**

DOH for Intra-Alberta Deliveries:

Unit Number	Unit Name	Annual Volume (e3m3)	DOH (Km)	Volume-Distance
2360	COCHRANE EXTRCT	1,297,336	347.3	450,595,043
3050	SARATOGA SALES	4,262	406.7	1,733,388
3051	SIMONETTE SALES	2,958	0.1	207
3052	COLEMAN SALES	3,859	476.1	1,836,879
3053	SUNDRE SALES	4,693	214.0	1,004,417
3055	GRANDE PRAIR SL	0	0.0	0
3058	LUNDBRECK-COWLE	1,083	162.1	175,423
3059	ALLISON CRK SLS	8,441	461.3	3,894,414
3060	CARROT CREEK SL	7,662	86.6	663,324
3061	PEMBINA SALES	8,164	102.4	836,298
3062	E. CALGARY B SL	92,972	0.3	30,588
3063	VIRGINIA HLS SL	504	20.9	10,519
3067	BIGSTONE SALES	4,717	69.3	326,994
3068	BEAVER HILL SLS	136	40.9	5,553
3069	WILSON CRK S SL	8,140	5.9	48,308
3071	CYNTHIA SALES	0	0.0	0
3072	PADDY CREEK SLS	47,412	0.6	26,930
3073	PRIDDIS SALES	82,899	384.7	31,889,905
3074	WATERTON SALES	252,727	0.0	2,527
3076	RAINBOW SALES	2,534	0.0	106

Unit Number	Unit Name	Annual Volume (e3m3)	DOH (Km)	Volume-Distance
3077	FIRE CREEK SALE	2,686	39.1	105,096
3078	JUDY CREEK SALE	0	0.0	0
3080	LOUISE CREEK SL	22,068	36.0	794,827
3082	ELK RIVER S SLS	0	0.0	0
3085	DEEP VLLY CR SL	4,192	0.1	298
3086	PINE CREEK SLS	3,592	83.8	301,121
3087	GOLD CREEK SLS	10,536	38.6	407,186
3088	VALHALLA SALES	2,485	247.0	613,772
3091	OUTLET CREEK SL	110	2.0	219
3092	MOOSEHORN R SLS	7,193	25.1	180,828
3093	HARMATTAN-LEDUC	0	0.0	0
3094	BRAZEAU N SALES	46	55.7	2,542
3095	SAKWATAMAU SALE	12,159	8.0	97,051
3097	CHICKADEE CK SL	17,944	23.0	413,178
3098	DUTCH CREEK SLS	0	0.0	0
3099	SOUSA CRK E SLS	56,228	2.5	139,164
3100	HEART RIVER SLS	11,148	0.0	223
3101	CAROLINE SALES	128	195.4	24,971
3103	VIRGO SALES	3,980	13.7	54,481
3105	CRANBERRY LK SL	109,890	41.7	4,587,181
3106	CARMON CREEK SL	162	172.4	27,860
3107	FERGUSON SALES	36,210	164.3	5,949,118
3109	CALDWELL SALES	5,535	87.3	483,108
3110	MARSH HD CR W S	145	353.6	51,130
3111	MINNOW LK S. SL	720	8.1	5,802
3112	FALHER SALES	24,999	29.1	727,970
3113	TWINLAKES CK SL	266	92.1	24,458
3114	WEMBLEY SALES	3,875	184.5	715,069
3115	USONA SALES	85,116	7.4	630,881
3117	GRIZZLY SALES	26,089	81.1	2,116,306
3119	DEADRICK CK SLS	5,895	16.7	98,171
3120	MILDRED LK SLS	1,420,097	251.3	356,830,405
3123	MILDRED LK #2 S	76	256.2	19,391
3124	DEEP VY CK S SL	9	0.0	0
3125	HUGGARD CREEK S	1,467	37.6	55,163
3128	GARRINGTON SALE	896	11.0	9,859
3129	EKWAN SALES	1,184	106.7	126,366
3130	SUNDANCE CREEK	0	0.0	0
3131	RASPBERRY LAKE	0	0.0	0
3132	SUNDAY CREEK SA	75	44.1	3,306
3133	JACKPOT CREEK S	220	19.7	4,341
3134	WELLING SALES	598	0.0	12
3300	OTAUWAU SALES	1,207	11.0	13,275

Unit Number	Unit Name	Annual Volume (e3m3)	DOH (Km)	Volume-Distance
3301	SAULTEAUX SALES	300	19.5	5,867
3304	FORESTBURG SLS	6,301	262.1	1,651,812
3305	CHIGWELL N. SLS	2,826	0.0	48
3368	NOEL LAKE SALES	52,755	55.8	2,943,350
3405	RIM-WEST SALES	125,571	0.0	4,144
3406	REDWATER SALES	67,701	58.1	3,935,305
3410	VIKING SALES	68,321	23.4	1,600,172
3411	MONARCH N. B SL	6,599	3.7	24,408
3412	WAYNE N B SALES	18,192	0.0	564
3413	ATMORE B SALES	0	0.0	0
3414	HANNA S B SALES	8,404	7.9	66,528
3416	COUSINS A SALES	0	0.0	0
3418	COUSINS C SALES	1,170	37.9	44,340
3419	INLAND SALES	1,024,144	136.7	139,974,232
3421	WIMBORNE SALES	0	0.0	0
3422	THORHILD SALES	3,484	0.0	80
3423	BASHAW WEST SLS	616	13.3	8,180
3424	GRANDE CENTRE S	23,098	26.2	605,293
3425	WOOD RVR SALES	64,526	22.0	1,422,768
3427	WESTLOCK SALES	71	0.0	3
3429	ST. PAUL SALES	17,973	35.9	645,437
3430	FERINTOSH SALES	1,592	13.9	22,074
3432	PETRO GAS PLANT	949,311	518.3	492,030,942
3434	AMOCO INLET	1,407,683	623.0	877,011,956
3435	PAN CAN INLET	612,043	541.8	331,635,446
3437	HARMATTAN SALES	0	0.0	0
3438	REDWATER B SL	48,132	60.9	2,932,181
3439	SHEERNESS SALES	5,944	31.0	184,253
3440	PROGAS PLANT	176,114	492.6	86,753,365
3444	PINCHER CRK SLS	6,601	121.4	801,425
3446	BITTERN LAKE SL	90,076	24.9	2,241,989
3448	ROSS CREEK SLS	132,739	36.8	4,888,963
3449	FLEET SALES	1,355	9.2	12,408
3452	JOFFRE EXTRACTI	121,735	84.7	10,306,203
3454	NORTH PENHOLD S	64,034	60.7	3,889,493
3456	ELK POINT SALES	11,971	5.2	62,453
3457	MITSUE SALES	0	0.0	0
3458	COUSINS B SALES	1,058,928	37.7	39,907,441
3460	LANDON LAKE SLS	10,016	0.1	811
3464	GREENCOURT W SL	17,359	7.9	137,706
3465	DEMMITT SALES	668	9.5	6,363
3467	KILLAM SALES	0	0.0	0
3468	BLEAK LAKE SLS	12,457	13.2	164,091

Unit Number	Unit Name	Annual Volume (e3m3)	DOH (Km)	Volume-Distance
3469	EVERGREEN SALES	449	0.0	7
3470	NOSEHILL CRK SL	22,951	4.4	100,432
3471	BLUE RIDGE E SL	51,727	13.7	706,735
3472	INNISFAIL SALES	2,511	11.5	28,874
3474	LLOYD CREEK SLS	0	0.0	0
3476	LAC LA BICHE SL	4,099	17.7	72,686
3477	RICINUS S SALES	0	0.0	0
3478	ONETREE SALES	23,205	0.0	464
3479	NOSEHILL CRK N.	4,163	348.3	1,449,924
3481	SAWRIDGE SALES	35,488	0.2	8,757
3482	LONE PINE CK SL	10,094	0.0	293
3483	CRAMMOND SALES	268	0.0	5
3484	CARIBOU LAKE SL	0	0.0	0
3485	SHORNCLIFFE CRK	0	0.0	0
3486	WESTERDALE SLS	2,515	0.8	2,120
3488	ARDLEY SALES	11,432	44.3	505,965
3489	ATUSIS CREEK SL	221,710	541.0	119,937,458
3490	GAETZ LAKE SLS	4,684	0.0	47
3491	JOFFRE SLS #2	618,709	84.8	52,454,679
3492	JOFFRE SLS #3	531,262	84.6	44,952,314
3494	SILVER VLY SLS	1,659	36.1	59,918
3495	CAVALIER SALES	314	0.0	1
3496	CHIPEWYAN RIVER	393,015	24.6	9,671,994
3497	SUNDAY CREEK SO	55,814	20.4	1,135,912
3562	AMOCO SALES TAP	19	170.6	3,173
3600	STORNHAM COULEE	31,119	39.2	1,219,513
3604	MARGUERITE L SL	51,473	170.3	8,765,761
3605	LEMING LAKE SLS	1,684,742	94.4	159,107,103
3606	LOSEMAN LAKE SL	327,752	24.2	7,934,599
3609	SARRAIL SALES	42,701	32.9	1,403,685
3610	RANFURLY SALES	17,890	31.3	560,061
3611	HERMIT LAKE SLS	132,286	288.7	38,191,667
3612	CONKLIN W SALES	52,591	27.6	1,451,470
3613	SHANTZ SALES	908	50.4	45,789
3615	HAYNES SALES	79,430	64.8	5,145,821
3616	GAS CITY SALES	20,250	39.3	795,644
3618	JENNER EAST SLS	1,874	422.6	791,963
3621	LOSEMAN LK SL#2	5,602	24.2	135,587
3622	CHEECHAM W. SLS	17,027	11.3	192,487
3623	FERINTOSH N. SL	348	26.3	9,161
3624	GODS LAKE SALES	64	117.1	7,520
3626	MIRAGE SALES	0	0.0	0
3632	EAST CALGARY SA	0	0.0	0

Unit Number	Unit Name	Annual Volume (e3m3)	DOH (Km)	Volume-Distance
3633	RUTH LK SLS	98,905	244.7	24,199,434
3634	CANOE LAKE SALE	243	0.0	9
3635	ROD LAKE SALES	1,979	37.6	74,328
3637	RUTH LK SLS #2	1,690	243.3	411,239
3639	VEGREVILLE SALE	17,530	235.5	4,127,672
3640	RUTH LK SLS #3	212,250	241.6	51,286,487
3642	VENTURES KV OIL	666,888	261.5	174,404,339
3884	COALDALE S. JCT	4,248	9.9	42,016
3885	CHIP LAKE JCT	7,259	0.0	73
5007	HOUSE RIVER	0	0.0	0
5024	CROW LAKE SALES	4,239	65.8	278,885
6011	DOVER SALES	11,109	220.8	2,453,055
6012	JAPAN CANADA SA	25,444	146.6	3,731,218
6014	CHEVRON AURORA	0	0.0	0
6021	MILDRED LAKE NO	286,256	233.0	66,696,827
6903	MCNEILL A UTIL	76	616.9	47,068
	Subtotal for Intra-Alberta deliveries	**15,730,792**	**232.6**	**3,659,219,288**

NOVA Gas Transmission Ltd.

Cost of Haul Study
2004 Calendar Year

June 2005

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1. SUMMARY

The purpose of this Cost of Haul Study ("COH Study") is to provide an indication of the relative cost of transporting gas between intra-Alberta and ex-Alberta deliveries for the Alberta System. This study is for the 2004 calendar year.

The results indicate that the average cost of haul for intra-Alberta deliveries is 74.7% of the average cost of haul for ex-Alberta deliveries.

2. OBJECTIVES

The primary objective of this COH Study is to provide an indication of the relative cost of transporting gas between intra-Alberta and ex-Alberta deliveries. This COH Study incorporates two well accepted engineering/cost axioms as the basis for determining relative costs which are:

- unit costs increase with an increase in distance and
- unit costs decrease with an increase in pipe diameter

Distance is taken into account by modeling the flow of gas.

Diameter is taken into account by applying a relative cost index against the length of each pipe diameter that was used to transport the gas.

3. METHODOLOGY

For each month, a hydraulic simulation is performed to balance the gas received at each receipt point against the volume of gas delivered to each delivery point on the Alberta System. The flows are balanced based on the operating parameters and conditions employed on the Alberta System during that month. From this, the flow path from each receipt meter station to its associated downstream delivery stations can be determined. By reversing direction, the flow path to each delivery station can also be determined. Based on this hydraulic simulation, the costs of haul are calculated using the following steps:

1) The flow of gas is tracked in the reverse direction of the actual flow through all pipes from each delivery station to all upstream receipt stations that contribute flows to the delivery station. For each pipe in the system the following information is recorded:
   - the length and diameter of this pipe; and
   - the percent of volume at each downstream delivery station that was transported through this pipe. This is called the delivery station flow fraction. Each pipe gets a delivery station flow fraction for each downstream delivery station whose path it is in.

2) The cost of haul for a delivery station for the month is calculated by summing, for all pipes that have a delivery station flow fraction for that delivery station, the product of:
   - the length of the pipe;
   - the delivery station flow fraction; and
   - the unit cost index for this pipe diameter.

   The monthly COH for the delivery station is recorded. This process is repeated for every delivery station for all 12 months.

3) The overall annual average COH for a delivery station is determined by:
   - summing the product of the monthly COH and actual delivered volume (the "Relative Volume-Distance Cost") over all 12 months and
   - dividing this sum by the actual delivery station volume for the year.

   This process is repeated for each delivery station.

4) The average cost of haul for intra-Alberta deliveries and ex-Alberta deliveries is calculated by:
   - summing the product of the overall annual COH and total yearly volume for all stations in each group and
   - dividing this sum by the actual total volume for the year for all stations in each group.

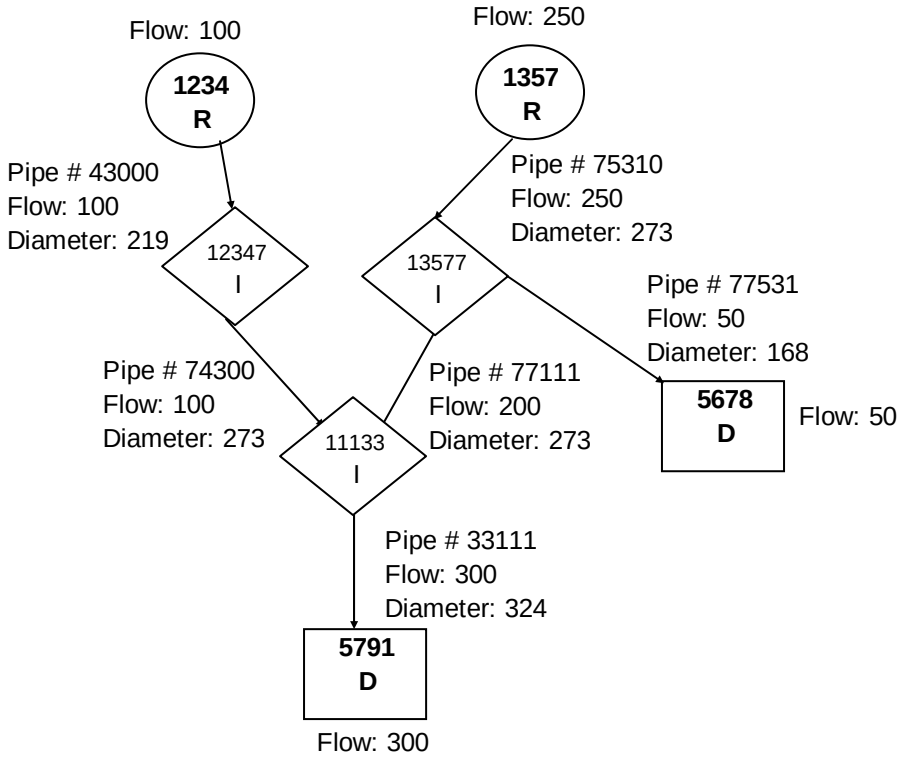
4. ILLUSTRATIVE EXAMPLE

The following is a detailed illustrative example of calculating the cost of haul for delivery stations in a simplified network. The actual delivery stations on the Alberta System have much more complex paths. Nevertheless, their COH is calculated in exactly the same way as described in this simplified example.

In this example the network is composed of two receipt meter stations (R) and two delivery stations (D). There are 6 pieces of pipe and three intermediate nodes (I) that join different pipes together. All stations, intermediate nodes and pipes have their unique identification number. Two of those intermediate nodes are junctions. For this example, assume that the following flows in 10^3m^3 occurred at those stations for the month of January:

Meter station number	Meter station type	Meter station flow in January
1234	R	100
1357	R	250
5678	D	50
5791	D	300

From the hydraulic simulation based on the above actual flows at the meter stations, the following schematic could be derived.



At this stage of the methodology the recording spreadsheet would look like Table #1.

Table #1

Pipe #	January flow
43000	100
74300	100
75310	250
77531	50
77111	200
33111	300

In Step 1 of the methodology, the length and diameter of each pipe and the delivery flow fractions for each delivery meter station at each pipe would be recorded. The flow fraction for a particular delivery station at a particular pipe is calculated as follows:

- Flow fraction = Sum of delivery station flow fraction on links leaving downstream node * flow on current link / sum of flows on all links entering downstream node.

For example, the delivery flow fraction for pipe 33111 for station 5791 is 1.0000 (or 100% of the flow) as it is the first pipe or link. The delivery flow fraction for pipe 77111 for station 5791 is 1.0000*(200/(200+100) = 0.6667 and the delivery flow fraction for pipe 75310 for station 5791 is 0.6667*(250/250) = 0.6667; that means that 67% of the volume for station 5791 flows through pipe 77111 and 75310 (the other 33% of the volume would come from a different path – pipes 43000 and 74300). At the end of Step 1 the recording spreadsheet for this example would look like Table #2.

Table #2

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)*(5)/(7)
Delivery Station	**Pipe #**	**D/S Node**	**Flow Fraction on Links Leaving D/S Node**	**Flow on Current Link**	**Links Entering D/S Node**	**Flows from Links Entering D/S Node**	**Flow Fraction**
5791	33111	5791	1.0000	300	33111	300	1.0000
	77111	11133	1.0000	200	77111,74300	300	0.6667
	74300	11133	1.0000	100	77111,74300	300	0.3333
	43000	12347	0.3333	100	43000	100	0.3333
	77531	5678	0.0000	50	77531	50	0.0000
	75310	13577	0.6667	250	75310	250	0.6667
5678	33111	5791	0.0000	300	33111	300	0.0000
	77111	11133	0.0000	200	77111,74300	300	0.0000
	74300	11133	0.0000	100	77111,74300	300	0.0000
	43000	12347	0.0000	100	43000	100	0.0000
	77531	5678	1.0000	50	77531	50	1.0000
	75310	13577	1.0000	250	75310	250	1.0000

To calculate the cost of haul, described in Step 2, a cost index is multiplied by the flow fraction and length for each pipe. The cost index is based on historical costs for different pipe diameters and is derived by calculating a unit cost for each pipe size relative to the largest pipe diameter. This is the index used in determining the receipt point rates in accordance with the methodology approved by the EUB in Decision 2000-6. The relative cost index for each pipe diameter for 2004 is shown below.

Outside Diameter (mm)	Cost Index
114	64.14
168	25.11
219	14.88
273	10.17
324	7.15
356	6.64
406	5.36
457	4.61
508	3.87
559	3.35
610	1.79
660	1.66
711	1.54
762	1.44
864	1.33
914	1.24
1067	1.17
1219	1.00

All the information required to calculate the cost of haul for each delivery station for the illustrative month of January is now available. The product of the cost index, length and flow fraction is then summed for all pipes in the path to determine a total cost of haul for each station. After step 2 of the methodology, for the month of January, the recording spreadsheet would look like Table #3.

Table #3

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)*(5)*(6)	(9)=(4)*(5)*(7)
Pipe #	January flow	Outside Diameter (mm)	Cost Index	Length in km	Delivery 5678 flow fractions	Delivery 5791 flow fractions	COH for 5678 in km	COH for 5791 in km
43000	100	219	14.88	2	0.0000	0.3333	-	9.9
74300	100	273	10.17	5	0.0000	0.3333	-	16.9
75310	250	273	10.17	10	1.0000	0.6667	101.7	67.8
77531	50	168	25.11	3	1.0000	0.0000	75.3	-
77111	200	273	10.17	15	0.0000	0.6667	-	101.7
33111	300	324	7.15	5	0.0000	1.0000	-	35.8
						Total Cost of Haul	177.0	232.1

The COH calculations for the remaining months (February to December) would be done exactly the same way as demonstrated above. For this example assume that at the end of the year, the monthly results have been obtained for station 5678 as shown in columns 2 to 4 and station 5791 as shown in columns 5 to 7 of Table #4. By following Step 3, the overall volume weighted average annual COH for each delivery station can be derived as shown at the bottom of Table #4. It should be noted that the COH for meter station 5678 is not volume dependent, so will be 177.0 for all months as only gas from receipt meter station 1357 via pipe 75310 (COH = 101.7) and pipe 77531 (COH = 75.3) is physically available. The COH for station 5791 is volume dependant and does change from month to month as flow fractions for pipe in the station's path change.

Table #4

(1)	(2)	(3)	(4)=(2)*(3)	(5)	(6)	(7)=(5)*(6)
	Meter Station 5678			**Meter Station 5791**		
	Delivery Volume	**COH**	**Relative Volume-Distance Cost**	**Delivery Volume**	**COH**	**Relative Volume-Distance Cost**
Jan	50	177.0	8,850.3	300	232.1	69,620.4
Feb	75	177.0	13,275.5	350	222.4	77,839.5
Mar	75	177.0	13,275.5	400	233.0	93,214.0
Apr	50	177.0	8,850.3	350	193.4	67,686.5
May	50	177.0	8,850.3	300	217.6	65,269.1
Jun	50	177.0	8,850.3	300	217.6	65,269.1
Jul	-	-	-	320	222.4	71,167.5
Aug	50	177.0	8,850.3	340	232.1	78,903.1
Sep	50	177.0	8,850.3	350	234.0	81,900.7
Oct	50	177.0	8,850.3	300	219.5	65,849.3
Nov	50	177.0	8,850.3	310	206.0	63,847.7
Dec	50	177.0	8,850.3	310	216.6	67,145.0
Total	600		106,204.0	3,930		867,711.9
Annual Average		177.0			220.8	

In accordance with Step 4, the volume-weighted average annual cost of haul for all delivery stations, which in this example is two delivery stations, would be calculated as follows:

(177.0 * 600 + 220.8 * 3,930) / (600 + 3,930) = 215.0

5. RESULTS

Table 5.1 contains the COH results for 2004. The average cost of haul for:

- intra-Alberta deliveries was 659; and
- ex-Alberta deliveries was 883.

For 2004, the average cost of haul for intra-Alberta deliveries is 74.7% of the average cost of haul for ex-Alberta deliveries.

Table 5.2 compares the results for 2004 against the results of the studies from previous years.

TABLE 5.1
RESULTS FOR 2004

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	2004
Avg. Intra-Alberta COH	604	644	660	675	665	680	677	672	657	697	684	635	659
Avg. Ex-Alberta COH	788	850	915	943	940	922	915	909	913	891	856	787	883
Avg. Ex-Alberta to Intra-Alberta Ratio	1.31:1	1.32:1	1.39:1	1.4:1	1.41:1	1.36:1	1.35:1	1.35:1	1.39:1	1.28:1	1.25:1	1.24:1	1.3:1
Avg. Intra-Alberta to ex-Alberta Ratio	77%	76%	72%	72%	71%	74%	74%	74%	72%	78%	80%	81%	74.7%

TABLE 5.2
COMPARISON OF ANNUAL RESULTS, 2002 - 2004

	2004 COH	2003 COH	2002 COH
Average Intra-Alberta COH	659.34	673.14	635.80
Average Ex-Alberta COH	883.05	935.85	936.36
Average Ex-Alberta to Intra-Alberta Ratio	1.34:1	1.39:1	1.47:1
Average Intra-Alberta to ex-Alberta Ratio	74.67%	71.93%	67.88%

6. APPENDIX – COH FOR EACH DELIVERY STATION

COH for Ex-Alberta Deliveries:

Unit Number	Unit Name	Annual Volume (e3m3)	COH	Relative Volume-Distance Cost
1250	UNITY BORDER	151,573	604.8	91,673,691
1417	COLD LAKE BDR	137,375	574.4	78,911,752
1958	EMPRESS BORDER	50,463,492	901.4	45,489,537,697
2001	ABC SALES #1	10,441,825	736.6	7,691,226,506
2002	ALBERTA-MONTANA	74,537	741.9	55,299,544
2004	ABC SALES #2	10,461,033	731.0	7,646,972,024
3886	GORDONDALE INTR	16,828	518.4	8,723,032
6404	MCNEILL BORDER	21,604,846	996.8	21,535,412,730
8002	ESTHER DELIVERY	65,127	249.1	16,225,479
8003	MERIDIAN LK DLV	139,893	7.9	1,106,710
	Subtotal for ex-Alberta deliveries	93,556,528	883.0	82,615,089,164

COH for Intra-Alberta Deliveries:

Unit Number	Unit Name	Annual Volume (e3m3)	COH	Relative Volume-Distance Cost
2360	COCHRANE EXTRCT	1,297,336	583.0	756,287,853
3050	SARATOGA SALES	4,262	636.7	2,714,014
3051	SIMONETTE SALES	2,958	0.4	1,091
3052	COLEMAN SALES	3,859	739.7	2,854,034
3053	SUNDRE SALES	4,693	445.7	2,091,662
3055	GRANDE PRAIR SL	-	-	-
3058	LUNDBRECK-COWLE	1,083	627.5	679,313
3059	ALLISON CRK SLS	8,441	741.0	6,255,326
3060	CARROT CREEK SL	7,662	362.2	2,775,047
3061	PEMBINA SALES	8,164	326.1	2,662,301
3062	E. CALGARY B SL	92,972	1.6	148,393
3063	VIRGINIA HLS SL	504	310.5	156,531
3067	BIGSTONE SALES	4,717	250.2	1,180,107
3068	BEAVER HILL SLS	136	420.2	57,062
3069	WILSON CRK S SL	8,140	97.7	795,182
3071	CYNTHIA SALES	-	-	-
3072	PADDY CREEK SLS	47,412	33.2	1,572,277
3073	PRIDDIS SALES	82,899	620.2	51,415,485
3074	WATERTON SALES	252,727	0.0	4,532
3076	RAINBOW SALES	2,534	1.6	3,956
3077	FIRE CREEK SALE	2,686	1,103.6	2,964,151
3078	JUDY CREEK SALE	-	-	-

Unit Number	Unit Name	Annual Volume (e3m3)	COH	Relative Volume-Distance Cost
3080	LOUISE CREEK SL	22,068	389.3	8,590,600
3082	ELK RIVER S SLS	-	-	-
3085	DEEP VLLY CR SL	4,192	0.6	2,435
3086	PINE CREEK SLS	3,592	497.5	1,787,154
3087	GOLD CREEK SLS	10,536	143.4	1,510,414
3088	VALHALLA SALES	2,485	482.1	1,197,996
3091	OUTLET CREEK SL	110	29.4	3,218
3092	MOOSEHORN R SLS	7,193	255.6	1,838,274
3093	HARMATTAN-LEDUC	-	-	-
3094	BRAZEAU N SALES	46	388.5	17,716
3095	SAKWATAMAU SALE	12,159	193.5	2,352,662
3097	CHICKADEE CK SL	17,944	235.8	4,231,260
3098	DUTCH CREEK SLS	-	-	-
3099	SOUSA CRK E SLS	56,228	36.9	2,072,281
3100	HEART RIVER SLS	11,148	0.9	9,949
3101	CAROLINE SALES	128	484.4	61,903
3103	VIRGO SALES	3,980	105.4	419,639
3105	CRANBERRY LK SL	109,890	382.7	42,054,135
3106	CARMON CREEK SL	162	986.2	159,367
3107	FERGUSON SALES	36,210	965.9	34,975,280
3109	CALDWELL SALES	5,535	350.1	1,937,668
3110	MARSH HD CR W S	145	600.3	86,805
3111	MINNOW LK S. SL	720	139.1	100,172
3112	FALHER SALES	24,999	886.9	22,170,829
3113	TWINLAKES CK SL	266	628.5	166,868
3114	WEMBLEY SALES	3,875	402.8	1,561,113
3115	USONA SALES	85,116	53.0	4,512,861
3117	GRIZZLY SALES	26,089	320.4	8,358,718
3119	DEADRICK CK SLS	5,895	160.4	945,734
3120	MILDRED LK SLS	1,420,097	1,041.5	1,479,000,071
3123	MILDRED LK #2 S	76	1,076.3	81,473
3124	DEEP VY CK S SL	9	0.5	5
3125	HUGGARD CREEK S	1,467	637.3	934,771
3128	GARRINGTON SALE	896	163.6	146,630
3129	EKWAN SALES	1,184	361.2	427,747
3130	SUNDANCE CREEK	-	-	-
3131	RASPBERRY LAKE	-	-	-
3132	SUNDAY CREEK SA	75	400.8	30,062
3133	JACKPOT CREEK S	220	213.8	47,067
3134	WELLING SALES	598	1.3	767
3300	OTAUWAU SALES	1,207	166.1	200,493
3301	SAULTEAUX SALES	300	298.2	89,561
3304	FORESTBURG SLS	6,301	954.0	6,011,627
3305	CHIGWELL N. SLS	2,826	0.7	2,107

Unit Number	Unit Name	Annual Volume (e3m3)	COH	Relative Volume-Distance Cost
3368	NOEL LAKE SALES	52,755	373.5	19,703,342
3405	RIM-WEST SALES	125,571	0.1	7,431
3406	REDWATER SALES	67,701	876.8	59,361,793
3410	VIKING SALES	68,321	262.6	17,938,031
3411	MONARCH N. B SL	6,599	16.2	107,234
3412	WAYNE N B SALES	18,192	1.4	24,812
3413	ATMORE B SALES	-	-	-
3414	HANNA S B SALES	8,404	104.2	875,627
3416	COUSINS A SALES	-	-	-
3418	COUSINS C SALES	1,170	318.6	372,823
3419	INLAND SALES	1,024,144	836.4	856,634,750
3421	WIMBORNE SALES	-	-	-
3422	THORHILD SALES	3,484	0.9	3,236
3423	BASHAW WEST SLS	616	563.1	346,915
3424	GRANDE CENTRE S	23,098	276.7	6,392,450
3425	WOOD RVR SALES	64,526	382.7	24,695,611
3427	WESTLOCK SALES	71	2.0	140
3429	ST. PAUL SALES	17,973	427.7	7,686,739
3430	FERINTOSH SALES	1,592	348.4	554,818
3432	PETRO GAS PLANT	949,311	817.7	776,275,851
3434	AMOCO INLET	1,407,683	991.0	1,395,029,221
3435	PAN CAN INLET	612,043	928.9	568,541,258
3437	HARMATTAN SALES	-	-	-
3438	REDWATER B SL	48,132	921.4	44,347,925
3439	SHEERNESS SALES	5,944	258.0	1,533,780
3440	PROGAS PLANT	176,114	893.6	157,372,590
3444	PINCHER CRK SLS	6,601	416.8	2,751,273
3446	BITTERN LAKE SL	90,076	653.9	58,902,624
3448	ROSS CREEK SLS	132,739	484.9	64,361,930
3449	FLEET SALES	1,355	144.2	195,317
3452	JOFFRE EXTRACTI	121,735	338.8	41,238,672
3454	NORTH PENHOLD S	64,034	192.0	12,292,868
3456	ELK POINT SALES	11,971	53.6	641,173
3457	MITSUE SALES	-	-	-
3458	COUSINS B SALES	1,058,928	324.3	343,436,818
3460	LANDON LAKE SLS	10,016	4.6	46,170
3464	GREENCOURT W SL	17,359	83.7	1,453,352
3465	DEMMITT SALES	668	127.2	84,904
3467	KILLAM SALES	-	-	-
3468	BLEAK LAKE SLS	12,457	201.7	2,512,881
3469	EVERGREEN SALES	449	1.0	431
3470	NOSEHILL CRK SL	22,951	280.7	6,441,418
3471	BLUE RIDGE E SL	51,727	93.7	4,845,599
3472	INNISFAIL SALES	2,511	289.1	726,131

Unit Number	Unit Name	Annual Volume (e3m3)	COH	Relative Volume-Distance Cost
3474	LLOYD CREEK SLS	-	-	-
3476	LAC LA BICHE SL	4,099	450.2	1,845,673
3477	RICINUS S SALES	-	-	-
3478	ONETREE SALES	23,205	0.9	20,711
3479	NOSEHILL CRK N.	4,163	572.8	2,384,604
3481	SAWRIDGE SALES	35,488	7.9	281,668
3482	LONE PINE CK SL	10,094	1.3	13,327
3483	CRAMMOND SALES	268	0.1	33
3484	CARIBOU LAKE SL	-	-	-
3485	SHORNCLIFFE CRK	-	-	-
3486	WESTERDALE SLS	2,515	7.6	19,125
3488	ARDLEY SALES	11,432	620.2	7,090,051
3489	ATUSIS CREEK SL	221,710	760.3	168,573,965
3490	GAETZ LAKE SLS	4,684	0.6	3,004
3491	JOFFRE SLS #2	618,709	339.0	209,746,420
3492	JOFFRE SLS #3	531,262	338.0	179,561,188
3494	SILVER VLY SLS	1,659	654.6	1,086,203
3495	CAVALIER SALES	314	0.1	24
3496	CHIPEWYAN RIVER	393,015	277.7	109,138,265
3497	SUNDAY CREEK SO	55,814	345.1	19,260,937
3562	AMOCO SALES TAP	19	965.8	17,964
3600	STORNHAM COULEE	31,119	510.6	15,889,262
3604	MARGUERITE L SL	51,473	960.9	49,462,014
3605	LEMING LAKE SLS	1,684,742	541.5	912,292,001
3606	LOSEMAN LAKE SL	327,752	141.0	46,213,368
3609	SARRAIL SALES	42,701	373.6	15,954,130
3610	RANFURLY SALES	17,890	305.8	5,470,256
3611	HERMIT LAKE SLS	132,286	652.4	86,297,601
3612	CONKLIN W SALES	52,591	359.9	18,928,406
3613	SHANTZ SALES	908	128.4	116,540
3615	HAYNES SALES	79,430	346.3	27,505,218
3616	GAS CITY SALES	20,250	512.6	10,381,087
3618	JENNER EAST SLS	1,874	1,043.4	1,955,470
3621	LOSEMAN LK SL#2	5,602	141.4	791,939
3622	CHEECHAM W. SLS	17,027	367.3	6,253,427
3623	FERINTOSH N. SL	348	678.8	236,077
3624	GODS LAKE SALES	64	815.6	52,362
3626	MIRAGE SALES	-	-	-
3632	EAST CALGARY SA	-	-	-
3633	RUTH LK SLS	98,905	1,124.8	111,250,524
3634	CANOE LAKE SALE	243	0.7	166
3635	ROD LAKE SALES	1,979	427.4	845,855
3637	RUTH LK SLS #2	1,690	1,114.1	1,882,866
3639	VEGREVILLE SALE	17,530	970.5	17,013,490

Unit Number	Unit Name	Annual Volume (e3m3)	COH	Relative Volume-Distance Cost
3640	RUTH LK SLS #3	212,250	1,102.2	233,939,444
3642	VENTURES KV OIL	666,888	1,060.4	707,146,951
3884	COALDALE S. JCT	4,248	147.7	627,323
3885	CHIP LAKE JCT	7,259	0.6	4,656
5007	HOUSE RIVER	-	-	-
5024	CROW LAKE SALES	4,239	545.7	2,313,545
6011	DOVER SALES	11,109	1,618.2	17,977,031
6012	JAPAN CANADA SA	25,444	1,112.0	28,293,235
6014	CHEVRON AURORA	-	-	-
6021	MILDRED LAKE NO	286,256	1,443.9	413,319,044
6903	MCNEILL A UTIL	76	981.1	74,859
	Subtotal for Intra-Alberta deliveries	15,730,792	659.3	10,371,984,999

CG-NGTL-002

Reference:

Q7, Page 3 of 4 of Executive Summary

Preamble:

In Q7 of the Executive Summary, NGTL states that the proposed rate design is appropriate for 2005.

Request:

(a) Given the Phase I is valid for 2005–2007, please indicate how NGTL is proposing to deal with rates beyond 2005;

(b) Please explain what circumstances would be required in order for NGTL's proposed rate design to be considered inappropriate for future years beyond 2005.

Response:

(a) NGTL explained in its 2005-2007 Revenue Requirement Settlement Application (Application No. 1392296), at Section 3, Page 5, lines 8 to 17 how it would calculate future rates;

> For each year, NGTL will calculate interim rates, tolls and charges based on the forecast revenue requirement, a forecast of firm transportation contract demand quantity and throughput, and the approved rate design in place at the time. On or before December 1 of the prior year, the interim rates, tolls and charges will be provided to interested parties and filed with the Board for approval.
>
> The final rates, tolls and charges for each year will be calculated and provided to interested parties and filed with the Board for approval on or before March 15 of each year. Such final rates shall enable NGTL to collect its annual revenue requirement, recognizing amounts collected under interim rates.

CG-NGTL-002

(b) Please refer to the response to CAPP-NGTL-003(b).

CG-NGTL-003

Reference:

APPENDIX 2A, Cost of Service Study, Existing Allocation Methodologies; Appendix 1: Distance of Haul Study – 2003 Calendar Year, p.8 of 13, Table 4.2

Preamble:

Calculation of long-term average Distance of Haul

Request:

(a) Please confirm that the calculation of the long-term Average Intra-Alberta to Ex-Alberta % Ratio of Distance of Haul of 45.5% used by NGTL in Alternatives 1 to 3 is based on the average of the distance of haul of the years 1988 through 2003 as shown in Table 4.2.

(b) If (a) is not confirmed, please explain the calculation of the long-term Average Intra-Alberta to Ex-Alberta % Ratio of Distance of Haul of 45.5%.

(c) If (a) is confirmed, please explain why NGTL believes the optimal calculation of long-term distance of haul incorporates 16 years of values.

Response:

(a) Confirmed.

(b) Not applicable.

(c) NGTL has not characterized this calculation as optimal as suggested in the question. NGTL used this calculation as it contains all the historical DOH data values from 1988, the first year in which a DOH study was prepared.

CG-NGTL-004(a)

Reference:

APPENDIX 2B, Cost of Service Study, Existing & Alternative Allocation Methodologies

Request:

Under the Existing Methodology, for each FT-A delivery point, please provide the calculation of the forecast monthly and annual revenues for 2005. Please provide subtotals of the revenues at each delivery point subdivided into the Utility, Producer and Industrial customer classes. If possible, please take into account revisions to the forecast 2005 rates pursuant to CG-NGTL-1 a) and b).

Response:

The FT-A volume forecast is derived from the total intra-Alberta delivery forecast less extraction, storage and FT-P volumes. FT-A volumes are forecast at an annual level for the total Alberta System and not at the individual delivery station or customer class level. The FT-A rate is a uniform commodity rate for all intra-Alberta delivery stations. As a result only the total numbers can be provided for 2005.

FT-A annual volume forecast: 1.03 Bcf/d x 365 days = 375.95 Bcf/year.

FT-A annual revenue: 1.03 Bcf/day x 1.42¢/Mcf x 365 days = $5.3 million.

CG-NGTL-004(b) to (d)

Reference:

APPENDIX 2B, Cost of Service Study, Existing & Alternative Allocation Methodologies

Request:

(b) Under Alternative Allocation Methodologies 1, 2, 3, 4 and 6, for each FT-A delivery point, please provide the calculation of the forecast monthly and annual revenues for 2005. Please provide subtotals of the revenues at each delivery point subdivided into the Utility, Producer and Industrial customer classes. If possible, please take into account revisions to forecast 2005 rates for each Alternative pursuant to CG-NGTL-1 a) and b).

(c) Under Alternative Methodology 5, for each current FT-A delivery point, please provide the calculation of the forecast monthly and annual revenues for 2005. Please also illustrate what, if any, load factors are used in each calculation. Please provide subtotals of the revenues at each delivery point subdivided into the Utility, Producer and Industrial customer classes. If possible, please take into account revisions to the forecast 2005 rates for Alternative 5 pursuant to CG-NGTL-1 a) and b).

(d) Please provide the total forecast monthly and annual revenues for the FT-A rate class at all delivery points, including subtotals for Utility, Producer and Industrial customer classes for the Existing Methodology and Alternative Methodologies referenced in (a), (b) and (c) above.

Response:

(b) Please refer to the response to CG-NGTL-004(a). The requested information, at the greatest level of detail that NGTL can provide, appears in the following table:

	FT-A Rate (¢/Mcf)	Annual Revenues ($M)
Alternative 1	1.42	5.3
Alternative 2	1.87	7.0
Alternative 3	3.00	11.2
Alternative 4	1.33	5.0
Alternative 6	3.37	12.6

CG-NGTL-004(b) to (d)

(c) Under Alternative 5 there is no FT-A rate and there are no FT-A volumes. Volumes were assumed to be transported under FT-P service contracted to the nearest upstream receipt points at a 75% utilization rate. The revenues at each location would depend on the source of gas that would be contracted under FT-P service, which NGTL has not forecast.

(d) Please refer to the responses to CG-NGTL-004(a) and (b).

CG-NGTL-005

Reference:

Alternatives 2 & 3

Issue:

Transmission costs allocated to the FT-A

Request:

(a) Please illustrate the amount of total transmission costs allocated to FT-A in Alternatives 2 & 3 and provide a calculation for each.

(b) Please explain how NGTL would ensure that the transmission costs allocated to FT-A in Alternatives 2 & 3 above are allocated only to the FT-A, and would not be paid twice by intra-Alberta customers (i.e. once through the FT-R rate and again through the FT-A rate).

(c) Please explain the rationale for the allocation of 50% of the referenced costs in each respective Alternative, as opposed to another percentage like 25% or 75%?

Response:

(a) Please refer to the responses to BR-NGTL-006(f) and BR-NGTL-007(e).

(b) Please refer to the response to BR-NGTL-006(d).

(c) Please refer to the response to BR-NGTL-007(b).

CG-NGTL-006

Reference:

Appendix 2A Page 11

Issue:

Calculation of the System Average Metering Charge and Rates.

Request:

(a) Please confirm that the calculation of the system wide metering charge on page 11 of Appendix 2A uses 2003 data, as suggested in the header of that page.

(b) If (a) is confirmed, please explain why the calculation of the 2005 system average metering charge is based on 2003 actual data rather than 2005 forecast data.

(c) Please provide the calculation of the system wide metering charge as shown on page 11 of Appendix 2A using 2005 forecast data.

Response:

(a) Confirmed.

(b) The metering rate is established using the data in the COS Study. It is designed to cover the actual costs of metering on the system. NGTL determines these costs using historical data. The most current data available is from 2003. NGTL does not forecast metering cost at this level of detail. Once the rate has been established using historical cost data it is applied to 2005 forecast volume to produce forecast revenue for 2005.

(c) Please refer to the response to (b).

CG-NGTL-007

Reference:

Section 5.0, 2005 Rates Tolls and Charges; Table 5.1-1, p.4 of 27

Issue:

Receipt and Delivery Volumes for 2005

Request:

(a) Please reconcile receipt volumes with delivery volumes in the above table.

(b) Please explain any unreconciled volumes.

(c) Please account for the reduction in FT-R rate from $\$188.41/10^3m^3$ in 2004 to 167.52 10^3m^3 in 2005. If possible, please take into account revisions to these rates pursuant to CG-NGTL-1 (a) and (b).

(d) Please account for the reduction in the FT-A rate from \$0.57 per 10^3m^3 in 2004 to \$0.50 per 10^3m^3 in 2005. If possible, please take into account revisions to these rates pursuant to CG-NGTL-1 (a) and (b).

Response:

(a) Table 5.1-1 illustrates variances in revenue for each service type that result from the application of 2004 rates against 2005 volumes and 2005 rates against 2005 volumes. As the purpose of the table is a revenue comparison, for each service which is demand based, the volumes listed in the table are contract demand quantities. For a verification that the volumes in the table actually produce the 2005 rates, please refer to Table 5.1-1. For a reconciliation of receipt volumes and delivery volumes to 2005 forecasted throughput please refer to Tables 4.3-2 and 4.3-3 in Section 4 of the Application.

(b) There are none.

CG-NGTL-007

(c) The reduction in the average FT-R rate from $188.41 to $167.52 is attributable to different throughput and contract demand forecasts between 2004 and 2005 and a lower revenue requirement for 2005 than 2004.

(d) The reduction in the FT-A rate from 2004 to 2005 is primarily due to reduced metering costs in 2003 from 2002 as shown in the calculations below.

The calculation of the metering rate for 2005 (based on the 2003 COS Study) is: $114,741,982 ÷ (22,137,781 Mcf/d * 365 days) = $0.0142.

The calculation of the metering rate for 2004 (based on the 2002 COS Study) was: $159,064,609 ÷ (23,696,172 Mcf/d * 365 days) = $0.0184.

Please refer to the Application, Appendix 2A, Page 11 for an explanation of the components of this calculation.

CG-NGTL-008

Reference:

Alternative 4, Section 2.0, Rate Design
Page 28 of 62

Preamble:

NGTL states: Alternative 4 produces rates that are within 10% of the illustrative rates derived from the existing methodology for all services. Thus this alternative will have the least distributional impact on existing customers. The FT-A rate under this alternative includes a direct transmission component, however it is a negative amount. This results from the fact that FT-P and FCS services generate sufficient revenue to reduce the share of intra-Alberta delivery costs to be collected by FT-A to be less than the metering costs.

Request:

(a) Please define the term "distributional impact."

(b) Does having the "least distributional impact" on existing customers suggest that, in NGTL's opinion, Alternative 4 would be the "best" of the Alternative Allocation Methodologies.

(c) Please provide an explanation for how the FT-P and FCS services generate sufficient revenue to reduce the share of intra-Alberta delivery costs to be collected by FT-A to be less than the metering costs

(d) Please provide calculations supporting this explanation.

Response:

(a) Please refer to the response to BR-NGTL-003.

(b) No. It suggests that Alternative 4 will have the least distributional impact as compared to the other alternatives because the resulting rates under this Alternative for the various services are, on average, closer to the rates produced by the current methodology than those produced by the other alternatives.

CG-NGTL-008

(c) This result is attributable to the allocation methodology used in this alternative. This methodology allocates 50% of the FT-P revenue as a credit against receipt service revenue requirement and 50% of the FT-P revenue as a credit against intra-Alberta delivery service revenue requirement. This 50-50 allocation of FT-P revenue to receipt service revenue requirement and intra-Alberta delivery service revenue requirement recognizes that both the receipt and delivery aspects of the FT-P service are equally required. This methodology allocates 100% of the FCS revenue as a credit against intra-Alberta delivery service revenue requirement. As this FCS revenue is only associated with facilities that provide FT-A service, any revenue generated should be credited against the intra-Alberta delivery service revenue requirement.

As a simplification in developing this alternative, NGTL credited all associated revenue from the FT-P service and FCS against the transmission component of the FT-A revenue requirement even though components of the FT-P and the FCS are related to metering. Otherwise, the FT-P and FCS revenue would have to be subdivided into transmission and metering components with the metering related credits being subtracted from the FT-A metering revenue requirement and the transmission related credits being subtracted from the FT-A transmission revenue requirement. To avoid this complexity, all credits were applied to the transmission component of the FT-A revenue requirement. As a result, the transmission component of the FT-A rate is lower than the average metering charge because some metering credits were applied against the transmission component of the FT-A revenue requirement that should have been applied against the metering component. This simplification is appropriate as overall the FT-A rate is the same, notwithstanding that the transmission component is lower and the metering component is higher as a result of the simplification. The FT-A transmission revenue requirement is a negative $0.3 million for this alternative. However, the FCS revenue is $4.9 million with the majority of this amount being related to metering. Thus the FT-A transmission revenue requirement is actually positive but due to the simplification appears to be negative.

(d) Please refer to the response to (c).

CG-NGTL-009

Reference:

Alternative 5, Section 2.0, Rate Design
Page 28 of 62

Preamble:

NGTL states: Alternative 5 produces the most precisely measured allocation of transmission costs to the intra-Alberta delivery service. This results from eliminating the FT-A service and requiring intra-Alberta delivery services to be provided only by FT-P service. As the FT-P service is a full path service based on the distance between the receipt points and the delivery point, a better determination of actual costs can be made. However, adopting this approach would require removal of all intra-Alberta deliveries from NIT.

Request:

(a) Please discuss the advantages and/or disadvantages of transmission costs being the "most precisely measured".

(b) Please discuss the advantages and/or disadvantages of eliminating the FT-A service and requiring intra-Alberta delivery services to be provided only by FT-P service.

(c) Please expand on the negative effects of removal of all intra-Alberta deliveries from NIT.

Response:

(a) An advantage of the Alternative 5 methodology is that the distance is more precisely measured with the FT-P service than it is under other service options in the other alternatives. Accordingly, the resulting FT-P rate should more precisely reflect the underlying cost of providing the service. Customers may therefore be able to achieve a lower transportation cost if they can contract for service between receipt and delivery points in close proximity.

CG-NGTL-009

A disadvantage of the methodology is that intra-Alberta delivery shippers would have to contract for a firm demand quantity. This requirement would probably increase the cost of transportation for intra-Alberta end users as they probably would not be able to utilize firm demand contracts at a 100% utilization rate on a year round basis.

Another disadvantage of the methodology is that an intra-Alberta delivery shipper would have to contract at specific receipt points and not have access to the NIT market. This would limit their flexibility to source gas and might place them at a disadvantage in negotiating the price for the gas with the supplier. These requirements might also increase their administration if they have to contract with multiple suppliers at multiple receipt points in order to meet their gas requirements.

Whether the advantages offset the disadvantages or vice versa would depend on the gas consumption pattern of the individual shipper, the price at which the shipper contracts gas supply and the price of its FT-P contracts.

(b) Please refer to the response to (a).

(c) Please refer to the response to BR-NGTL-013(e) for a discussion on the impact to the NIT market.

CG-NGTL-010

Reference:

Response to Information Request AP–NGTL-P1, Summary of Rate Calculation - Alternative 5

Issue:

Calculation of the FT-P rate for Alternative 5

Request:

(a) Please confirm that this calculation assumes a 100% load factor for traditional FT-P volumes and a 75% load factor for new FT-P volumes (formerly FT-A volumes as part of the Existing Methodology).

(b) If (a) is confirmed,

i) please indicate if the 75% load factor for the new FT-P volumes is assumed for all customer classes (industrial, producer, utility) or if separate load factors were assumed for each customer class.

ii) if the response to (b)(i) above indicates that separate load factors were assumed for each customer class, please indicate what load factors were used and provide a separate calculation for the cents/Mcf rate calculation for each customer class for the Transmission rate only and also for the Total rate (Transmission plus metering)

(c) If (a) is not confirmed,

i) please, explain how the 75% load factor is incorporated into the calculation of the FT-P rate in Alternative 5.
ii) please indicate if the 75% load factor for FT-P volumes is assumed for all customer classes (industrial, producer, utility) or if separate load factors were assumed for each customer class
iii) if the response to (c)(ii) above indicates that separate load factors were assumed for each customer class, please indicate what load factors were used and provide a separate calculation for the cents/Mcf rate calculation

CG-NGTL-010

for each customer class for the Transmission rate only and also for the Total rate (Transmission plus metering)

Response:

(a) Confirmed.

(b) A 75% utilization rate was used for all FT-A volumes converted to FT-P service.

(c) Not applicable.

CG-NGTL-011

Reference:

Alternative 6, Section 2.0, Rate Design
Page 28 of 62

Preamble:

NGTL states: Alternative 6 is the only methodology that allocates costs to all service categories. However, by including FT-P as a primary service, it greatly reduces the amount of revenue that this service would be required to generate, resulting in a significantly lower rate. This would better align the FT-P rate structure with FT-A (the other intra-Alberta delivery service) but skew the rate structure from FT-R (the other intra-Alberta receipt service). Alternative 6 introduces significant rates for FT-X and IT-S services, which most stakeholders and NGTL believe are not appropriate at this time.

Request

(a) Please discuss the advantages and/or disadvantages of allocating costs to all service categories.

(b) Please discuss the advantages and/or disadvantages of better aligning FT-P with FT-A

(c) Please discuss the advantages and/or disadvantages of skewing the rate structure from FT-R.

(d) Please provide an explanation as to why Alternative 6 calculates the highest FT-A rate of all the Alternatives, especially considering costs are also allocated separately to FT-X and IT-S on a distance of haul basis.

Response:

(a) Advantages of allocating costs to all service categories would be that all the services are treated similarly and all services would have an explicit rate. Disadvantages would be more administration and rate shock for FT-X customers.

CG-NGTL-011

This methodology allocates significant cost to extraction and storage services, even though the Alberta System revenue requirement would not be much different if there were no extraction plants or storage sites, so this type of allocation may be seen as unfair. It also may not appropriately recognize overall system benefits associated with storage and extraction.

(b) Alternative 6 is the only alternative that introduces FT-A and FT-P as primary services and both rates are calculated using an average volume weighted distance. This provides consistency in the way the rates are developed. Disadvantages to this Alternative may be the distributional impacts that may result and a lower level of customer acceptance.

(c) The FT-R service has a floor rate and ceiling rate. By eliminating floor and ceiling rates for the FT-P service the cost to access the system will be different for FT-P and FT-R. There may be distributional impacts or degree of customer acceptance.

(d) The FT-A rate is higher in Alternative 6 than in Alternatives 1, 2 and 3 due to the fundamental change in cost allocation between the first three Alternatives and the second three Alternatives. Alternative 6 has a higher FT-A rate than Alternative 4, because in Alternative 4, FT-P is a secondary service that reduces the FT-A Transmission Revenue Requirement. There is no FT-A rate for Alternative 5, so a comparison cannot be made.

CG-NGTL-012

Reference:

Appendix 2B, p.59 of 69, Table 7.1-2, Alternative 6

Preamble:

FT-P DOH is set equal to Intra-Alberta DOH excluding FT-X and IT-S.

Request:

(a) Please explain the rationale for setting the FT-P distance of haul in Alternative 6 equal to the Intra-Alberta distance of haul excluding FT-X and IT-S.

(b) Is NGTL able to calculate the average FT-P distance of haul? If so, please provide the calculation for 2004. If not please provide an estimate.

Response:

(a) The FT-P distance of haul in Alternative 6 is the physical distance to deliver gas to intra-Alberta delivery stations excluding those for extraction and storage. This distance is the same whether the commercial service is provided by FT-A, FT-P or a combination of both.

(b) Yes. NGTL estimates the DOH for FT-P service for 2004 at 143 km. This DOH was calculated by summing the product of :

i. the 2003 DOH for each intra-Alberta delivery station that was contracted for FT-P service; and
ii. the actual FT-P volume delivered to each respective station,

and dividing this total by the total FT-P volume delivered in 2004.

CG-NGTL-013

Reference:

Appendix 2B, p.37 of 69, Table 5.1-2, Alternative 4
Appendix 2B, p.59 of 69, Table 7.1-2, Alternative 6

Preamble:

In Alternatives 4 and 6, the Intra-Alberta Distance of Haul is calculated by excluding consideration of distances of haul of FT-X and IT-S services.

Request:

(a) Please provide the rationale for excluding FT-X and IT-S distances of haul values in the calculation of Intra-Alberta Distance of Haul in Alternatives 4 and 6.

(b) Please provide the rationale for including FT-X and IT-S distances of haul values in the calculation of Intra-Alberta Distance of Haul for the Existing Methodology.

(c) Would it be fair for the calculation of Intra-Alberta Distance of Haul for the Existing Methodology to exclude FT-X and IT-S distances of haul? Please explain why or why not?

Response:

(a) In the existing methodology the intra-Alberta DOH is calculated for all volumes that are delivered off the Alberta System for consumption within the intra-Alberta market. This includes all gas delivered to intra-Alberta delivery points via FT-A or FT-P services and the volumes extracted at extraction plants delivered via FT-X service but excludes IT-S volumes as these volumes will eventually be returned to the Alberta System. The purpose of the DOH study for the existing methodology is to determine the actual DOH for all volumes delivered to the intra-Alberta market, not just the volumes delivered to a subsection of the intra-Alberta market, and the actual DOH for all volumes delivered to the ex-Alberta market.

In Alternatives 4, 5 and 6 the distances of haul for specified service categories are used to allocate the revenue requirement. NGTL identified six service categories:

CG-NGTL-013

Receipt; Export Delivery; Intra-Alberta Delivery (FT-A); Intra-Alberta Delivery (FT-P); Extraction Access; and Storage Access.

Not all of the categories were used in all alternatives. In Alternatives 4 and 5 Extraction Access and Storage Access were not included to reflect alternatives that NGTL believes are aligned with the desires of the majority of its customer base. In Alternative 4, the Intra-Alberta Delivery (FT-P) category was not included to provide an alternative for FT-P that is similar to the existing design as again NGTL believes that this is consistent with the views of the majority of its customers. In Alternative 5, the intra-Alberta (FT-A) category was not included to provide an option without the FT-A service being available.

(b) Please refer to the response to (a).

(c) No. The application of the DOH in Alternatives 1, 2 and 3 includes the entire intra-Alberta market, while the application in Alternative 6 segregates the intra-Alberta market into four categories: storage, extraction, FT-A and FT-P. Please refer to the response to (a).

CG-NGTL-014

Reference:

Section 2.0, Rate Design, Page 29 of 62

Preamble:

NGTL states that it "considers all of the alternatives to have some merit…"

Request:

(a) Please rank the Alternatives Allocation Methodologies based on "merit" from NGTL's point of view. Please provide a rationale.

(b) If an answer to (a) cannot be given, please provide a general discussion regarding which of the Alternatives have more merit and which of the Alternatives have less merit, and why.

Response:

(a) NGTL has not ranked the alternative methodologies. Each of the Alternatives provides for the allocation of costs based on a reasonable approach, supported by various criteria. NGTL believes the existing methodology is the most appropriate as none of the Alternatives would produce cost allocations or yield a rate design that is clearly superior to the existing design.

Alternative 3 may be less desirable as it results in the greatest aggregate rate changes, the greatest distributional impacts to NGTL's customer base and also provides the greatest opportunity for border and intra-Alberta bypass. NGTL has similar concerns with respect to Alternative 2 but to a lesser extent.

Alternative 6 may be less desirable as it would have a very dramatic effect on the extraction industry due to the significant rate increase and it would create explicit rates for certain services which NGTL understands the majority of its customers do not desire. It would also increase the complexity and administration associated with managing NGTL's services.

CG-NGTL-014

Alternative 5 may be less desirable as it excludes intra-Alberta deliveries from the NIT market. However as the full path transportation cost to serve the intra-Alberta market decreases in this option, it may be acceptable to the majority of intra-Alberta customers. If this is the case and it was also acceptable to other stakeholders then it would be acceptable to NGTL.

NGTL has no major concerns with Alternatives 1 or 4 as long as customer acceptability is not an issue. However, other stakeholders may have concerns regarding the transmission component of the FT-A rate in both Alternatives.

Please also refer to the response to CAPP-NGTL-007(b).

(b) Please refer to the response to (a).

CG-NGTL-015

Reference:

P.44 of 69 Section 2.0, Rate Design, Alternative 4
Box 6 of Diagram 5.2-1

Request:

(a) Please confirm that the "Other Service Revenue" is calculated in the same way for each item listed in Box 6 as is calculated under the existing methodology

(b) If not, please provide the calculation for each and explain the rationale for the change from the existing methodology.

Response:

(a) Confirmed.

(b) Not applicable.

CG-NGTL-016

Reference:

Gaske Evidence, Appendix 2D-2, Table 1.3-2, p.1 of 1
Appendix 2B, p.61 of 69

Preamble:

Alternative 6 is the only alternative in which the calculation of the Average Metering Rate includes FT-X and IT-S.

Request:

(a) Is the average metering rate referenced in this Table the same as the System wide metering charge of 1.42 cents per Mcf.

(b) If the answer to (a) is no, please provide an explanation as to what average metering rate is being referred to, and provide a calculation of it

(c) If the answer to (a) is yes, please explain how the system average metering charge can be the same regardless of whether FT-X and IT-S are included in the calculation.

Response:

(a) Yes. Contrary to the statement in the preamble, the metering charge in Alternative 6 is calculated in the same manner as it is calculated in all other Alternatives. The metering charge reflects all metering costs and all metered volumes for the Alberta System for the base year. The metering charge is allocated to all transportation services that have an explicit rate. Only in Alternative 6 is the metering charge applied to the FT-X and IT-S service, as only in Alternative 6 is there an explicit rate for these services.

(b) Not applicable.

(c) Please refer to the response to (a).

CG-NGTL-017

Reference:

Appendix 2D-2, Direct Evidence of Dr. Gaske, Table 1.3-5, p.2 of 3, Footnote

Preamble:

"FT-P allocation units are calculated using volume * distance for all intra-Alberta delivery points assuming that FT-R/FT-A customers convert to FT-P service by connecting each intra-Alberta delivery point to the receipt points upstream of that delivery point based on actual system flows."

Request:

(a) Please confirm that the above quote simply means that the allocation to FT-P in Alternative 5 will be based on the multiplication of the total volume of FT-P and other intra-Alberta customers (14,473 $10^6 m^3$) by the proposed distance of haul of FT-P and Intra-Alberta (124 km).

(b) If the answer to (a) is no, please expand on the meaning of this quote, particularly referencing the description of the determination of the distance factor.

Response:

(a) Confirmed.

(b) Not applicable.

CG-NGTL-018

Reference:

Appendix 2D, Direct Evidence of Dr. Gaske, p.35, Question 38

Preamble:

Mr. Gaske states that that there are two primary questions to consider with regard to how one should evaluate a fully allocated cost of service study:

1. Does the study reasonably reflect the relative costs of providing different services to different customer groups?
2. Will the study produce rates that meet the commonly recognized criteria of a sound rate structure?

Request:

(a) The Response to the second question above appears to be based on the principles of Professor Bonbright as discussed in Q.40 on p.36 of Dr. Gaske's evidence. On what literature is the response to the first question above based? Is it also based on Bonbright principles?

(b) Please rank the Alternative Allocation Methodologies based on the two primary questions referenced above by Dr. Gaske and any other criteria Dr. Gaske considers important. Please discuss.

(c) If an answer to (b) cannot be given, please provide a general discussion regarding which of the Alternatives would better reflect the criteria and principles referenced above and which of the Alternatives would less reflect the criteria and principles referenced above.

Response:

(a) Criterion 1 is based on Bonbright's principles and is in accordance with the general literature on cost allocation and rate design. However, the first criterion emphasizes the preeminence of relative costs in the cost allocation process and the need to make tradeoffs among the various Bonbright principles in order to come up with allocations that reasonably reflect costs when all of the Bonbright principles

are considered. Moreover, criterion 1 emphasizes that cost allocation can provide no more than a reasonable reflection of relative costs in circumstances where the "costs" of rendering any single service cannot be precisely determined.

(b) An evaluation of the alternatives relative to the principles is contained in Sections 1.4 and 1.6 of Appendix 2D. It is not possible to precisely rank every allocation methodology with respect to every principle because the principles are not quantifiable.

(c) Please refer to the response to (b).

CG-NGTL-019

Reference:

Appendix 2D, Direct Evidence of Dr. Gaske, p.60, Existing Methodology

Preamble:

One consideration of the Existing Methodology appears in the allocation of transmission costs to those intra-Alberta deliveries that are made through the FT-R/FT-A service combination. Because the FT-R component of the rate is developed based on the distance between the receipt point and the Alberta border export points, the FT-R/FT-A full-haul rate can, in many situations, place too much of the transmission cost burden on intra-Alberta transportation service and thereby encourage uneconomic by-pass of the system. NGTL introduced the FT-P service option for intra-Alberta deliveries in order to ensure that intra-Alberta shippers would have a rate and service option that reflects the actual distance between specific intra-Alberta receipt and delivery points.

Request:

(a) Would it be fair for those intra-Alberta customers for whom use of FT-P service is uneconomic due to having a low load factor have a rate that better reflects the actual distance between specific intra-Alberta receipt and delivery points?

(b) If the answer to (a) is yes, please explain.

(c) If the answer to (a) is no, please explain why not.

Response:

(a) It is a fact that pipeline services involve facilities with fixed costs that generally are related to peak demands rather than the load factors of customers. However, this question cannot be answered because it is unclear as to what this question is suggesting as an alternative to the FT-R/FT-A and FT-P service options and what is meant by the term “uneconomic.”

(b) Please refer to the response to (a).

(c) Please refer to the response to (a).

CG-NGTL-020

Reference:

Appendix 2D, Direct Evidence of Dr. Gaske, p.66, Alternative 1

Preamble:

Dr. Gaske states with regard to Alternative 1, "…because it is based on calculations of average physical flow distances, it is difficult to say that this allocation approach is a more accurate method for determining the costs incurred to provide FT-R/FT-A service combinations where *contract* flow distances may be very different from *physical* flow distances.

Request:

(a) Please comment on the relevance of consideration of contract flow distances in this context, given that contract flows are "largely untraceable," as referenced by Dr. Gaske on p.60 of his evidence.

(b) Since the distance of haul ratio of 2.2:1 used in Alternative 1 more accurately reflects long-term DOH ratio between intra-Alberta and ex-Alberta than does the 2:1 ratio used in the existing methodology, is it not fair to state that the Alternative 1 Allocation Methodology is more accurate than the existing methodology? Please explain.

Response:

(a) The point being made with respect to contract flow distances and physical flow distances is that physical flow distances are not necessarily a good indicator of costs when the system uses displacement to provide portions of the service. Physical flow distances are most likely to reflect the costs of providing service when (i) contracts specify the receipt points and the delivery points so that contract flows can be traced and (ii) the receipt points and the delivery points in the contracts are closely related to the receipt points and delivery points used to provide physical flows.

(b) No. When the contract distances are very different from the physical flow distances, physical flow distances may have very little correlation with the costs

of providing a service. In order for the 2.2:1 DOH ratio to be more accurate than the 2:1 ratio, NGTL would need to change the service so that the contract for each delivery point requires the shipper to contract only for service from the nearest upstream receipt point. However, if NGTL offers a service that allows a delivery point access to every receipt point on the system, it cannot be determined that either ratio is more accurate than the other.

CG-NGTL-021

Reference:

Fuel Allocation

Preamble:

NGTL continues to support the status quo methodology for allocation of transmission costs which is based on the principle of allocation of 50% of to receipt service and 50% to export delivery service

Request:

Given that fuel is a cost directly related to compression which in turn is a major component of transmission costs, has NGTL given any further consideration in their 2005 review of rate design to allocating fuel requirements on a similar 50/50 basis to receipt and export delivery service to be consistent with the allocation of other transmission costs? If not, please fully explain.

Response:

No. The Board determined in Decision 2004-097 that NGTL's fuel policy continues to be reasonable at this time.

CG-NGTL-022

Reference:

Calculation of Alternative 3, Ventures Pipeline Costs

Preamble:

In the NGTL Review and Variance Application of 2004-069, NGTL applies for $1.5 million more in costs on the Ventures pipeline for 2004.

Request:

(a) If NGTL is successful in its Review and Variance of Decision 2004-069 regarding the Ventures Pipeline, how will the additional costs be collected and will Revenue Requirement for 2005 or 2006 be affected?

(b) Could the calculation of the FT-A rates under the Existing Methodology or any of the Alternative Allocation Methodologies illustrated in NGTL's 2005 Phase 2 application be affected? Please specifically reference Alternative 3.

(c) If the answer to (b) is yes, please provide a calculation showing the affect on the particular FT-A rate or rates.

(d) If the answer to (b) is no, please explain.

Response:

(a) Assuming the issue is resolved in NGTL's favor in 2005, NGTL anticipates the Board would require the costs to be included in the Flow-through Costs deferral account for 2005 and deferred to 2006, where the amount will be included in the 2006 total revenue requirement and collected through service rates for 2006.

(b) Yes. For the existing methodology and all alternatives these costs would be recovered from services with rates that have a transmission component. These services would be FT-R, FT-RN, IT-R, FT-D, FT-DW, STFT, IT-D, FT-P for the existing methodology and all alternatives; FT-A service in Alternatives 2, 3, 4, and 6; and FT-X and IT-S services in Alternative 6.

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(c) The effect on any individual rate would be insignificant as there would be an additional $1.5 million added to the approximately $1.1 billion that would be collected from the services identified in the response to (b).

(d) Not applicable.