APPENDIX-H

TABLE H-1

Home Heat Deliveries via Tank Wagon - Estimated Costs

Home Heat operation Based on 300 days per year operational availability

Tandem Axle Tank Wagon - 20,000 Litres Capacity
Delivery Cost Per Annum and per Day

	Estimated	Assumed	Cost per	Cost Per
Direct Operating Expenses	**$/Annum**	**Days**	**$/Day**	**$/Day**
Driver salary and benefits	$35,900	300	$120	$18
Helper salary and benefits	8,300	300	$28	$0
Interest- Vehicle financing	19,500	300	$65	$65
Depreciation- Vehicle*	34,000	300	$113	$113
Fuel consumed	12,000	300	$40	$0
Repairs and maintenance	12,000	300	$40	$8
Insurance	5,000	300	$17	$16
Licence	1,000	300	$3	$3
Miscellaneous	300	300	$1	$0
Annual Operating Cost	**$128,000**	300	**$427**	**$223**
Equivalent Cost per Hour - 8 hour working day			**$53.33**	**$27.91**

*Based on a tandem at a cost of $195,000 less an estimated residual value of $25,000 after 5 years with straight line depreciation.

Single Axle Tank Wagon - 11,500 Litres Capacity
Delivery Cost Per Annum and per Day

	Cost	Operating	Average	day when
Direct Operating Expenses	**$/Annum**	**Days**	**$/Day**	**$/Day**
Driver salary and benefits	$35,900	300	$120	$18
Helper salary and benefits	8,300	300	$28	$0
Interest- Vehicle financing	16,000	300	$53	$53
Depreciation- Vehicle**	28,000	300	$93	$93
Fuel consumed	11,500	300	$38	$0
Repairs and maintenance	12,000	300	$40	$8
Insurance	5,000	300	$17	$17
Licence	1,000	300	$3	$3
Miscellaneous	300	300	$1	$0
	$118,000	300	**$393**	**$193**
Equivalent Cost per Hour - 8 hour working day			**$49.17**	**$24.08**

**Based on a single-axle at a cost of $160,000 less an estimated residual value of $20,000 after 5 years with straight line depreciation..

APPENDIX H

Table H1-ANE

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 1 Avalon North East - (Base Zone)

Census Population -1991	176,346	Loading Tank Wagon at type Facility	**Terminal**
Census Population -1996	178,411	Average Kilometres for return trip in Zone	**55**
Census Population -2001	176,778	Average travel speed - Winter period (Km/Hr)	**30**
Estimated Households and Heating Method - 2001		Average travel speed - Remaining Months (Km/Hr)	**30**
Electric	51,606	Average annual drop per household delivery (Litres)	**495**
Oil/Other	22,066	Working Hours per Day per T/W - Winter Period	**10**
Total	73,671	Working Hours per Day per T/W - Remaining Months	**8**
Avg Population per Household 2001	**2.38**	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Estimated Percent Homes with Oil Heat	**30.0%**	Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Est Avg Vol Per Year Per Household Using Oil	**3,400**	Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**75,023,559**	Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**

Average Cost of T/W Deliveries CPL	
HH Pricing Zone 1 Avalon North East	**3.42**

HH Pricing Zone 1 Avalon North East

	A. Use all Single Axle Tank Wagons			B. Use all Tandem Axle Tank Wagons		
	Winter Dec-Mar 61% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 61% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	45,764,371	29,259,188	75,023,559	45,764,371	29,259,188	75,023,559
Average Drop Amount per Household (Litres)	**525**	**448**	**495**	**525**	**448**	**495**
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**	**20,000**	**20,000**	**20,000**
Loading Time per Vehicle Load (Minutes)	27	24	25.33	35	32	33.83
Average # Drops Per Vehicle Load	21.9	25.7	23.2	38.1	44.6	40.4
Estimate of Kms Traveled Per Return Trip for Zone	**55**	**55**	**55**	**55**	**55**	**55**
Time for Each Drop (Mins)	20	15	**18**	20	15	**18**
Total Drop Time per Load (Minutes)	438	385	419	762	670	729
Average Speed Attained for Travel Time (kms /hr)	**30**	**30**	**30**	**30**	**30**	**30**
Total Travel Time per Load (Minutes)	110	110	110	110	110	110
Total Average Delivery Time for Each Load (Hours)	9.6	8.6	9.2	15.1	13.5	14.6
Average Delivery Rate Litres/Hr	1201	1331	1244	1323	1478	1374
Volume Delivered During Period for area	45,764,371	29,259,188	75,023,559	45,764,371	29,259,188	75,023,559
# of Working Days during Period	100	200	300	100	200	300
Average Volume Delivered per Working Day for period	457,644	146,296	250,079	457,644	146,296	250,079
Average Required Total Trips per Day	39.8	12.7		22.9	7.3	
Total Hours Required per day During Period	381.1	109.9		345.9	99.0	
Assumed Working Hours per Day per Vehicle	**10.0**	**8.0**		**10.0**	**8.0**	
Indicated Number of Vehicles Required	38.11	13.74		34.59	12.37	
Average Volume delivered by each TW for period	1,200,845	2,129,036		1,323,182	2,365,572	
Average Volume delivered by each TW per day.	12,008	10,645		13,232	11,828	
Actual Number of Vehicles required to be on hand	39	14		35	13	
Number of vehicles required full-time	38	13		34	12	
Volume delivered by full time vehicle(s)	45,632,122	27,677,463		44,988,186	28,386,870	
Volume left to be delivered by part time Vehicle	132,249	1,581,725		776,185	872,318	
Part time Operation vehicle (Days)	11	149		59	74	
Idle time for part time vehicles) -(Days)	89	51		41	126	
Full Time Cost per vehicle per Day	$393	$393		$427	$427	
Idle Time Cost per vehicle per Day	$193	$193		$223	$223	
Cost of Full Time Vehicles for period	$1,494,667	$1,022,667		$1,450,667	$1,024,000	
Cost of Part Time Vehicles for period	$4,332	$58,444		$25,028	$31,467	
Cost of Idle Time for part Time Vehicles for period	$17,174	$0		$9,219	$0	
Total Cost for vehicles for period	$1,516,173	$1,081,111	$2,597,283	$1,484,914	$1,055,467	$2,540,381
Cost per Period based on required Vehicles (CPL)	**3.31**	**3.69**	**3.46**	**3.24**	**3.61**	**3.39**

Average Tandem & Single Axle TWs	**3.42**

APPENDIX H

Table H1-ANW

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 1 - Avalon North West

Census Population -1991	42,778	Loading Tank Wagon at type Facility	**Bulk Plant**
Census Population -1996	41,915	Average Kilometres for return trip in Zone	**100**
Census Population -2001	38,849	Average travel speed - Winter period (Km/Hr)	**30**
Estimated Households and Heating Method - 2001		Average travel speed - Remaining Months (Km/Hr)	**50**
Electric	9,010	Average annual drop per household delivery (Litres)	**422**
Oil/Other	7,335	Working Hours per Day per T/W - Winter Period	**10**
Total	16,345	Working Hours per Day per T/W - Remaining Months	**8**
Avg Population per Household 2001	**2.4**	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Estimated Percent Homes with Oil Heat	**44.9%**	Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Est Avg Vol Per Year Per Household Using Oil	**3,060**	Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**22,444,997**	Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**

Average Cost of T/W Deliveries CPL	
HH Pricing Zone 1 - Avalon North West	**4.19**

HH Pricing Zone 1 - Avalon North West

	A. Use all Single Axle Tank Wagons			B. Use all Tandem Axle Tank Wagons		
	Winter Dec-Mar 61% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 61% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	13,691,448	8,753,549	22,444,997	13,691,448	8,753,549	22,444,997
Average Drop Amount per Household (Litres)	**447**	**382**	**422**	**447**	**382**	**422**
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**	**20,000**	**20,000**	**20,000**
Loading Time per Vehicle Load (Minutes)	32	30	30.72	40	38	39.22
Average # Drops Per Vehicle Load	25.7	30.1	27.3	44.7	52.4	47.4
Estimate of Kms Traveled Per Return Trip for Zone	**100**	**100**	**100**	**100**	**100**	**100**
Time for Each Drop (Mins)	20	15	**18**	20	15	**18**
Total Drop Time per Load (Minutes)	515	452	492	895	785	855
Average Speed Attained for Travel Time (kms /hr)	**30**	**50**	**37.8**	**30**	**50**	**37.8**
Total Travel Time per Load (Minutes)	200	120	159	200	120	159
Total Average Delivery Time for Each Load (Hours)	12.4	10.0	11.4	18.9	15.7	17.6
Average Delivery Rate Litres/Hr	925	1148	1013	1057	1272	1139
Volume Delivered During Period for area	13,691,448	8,753,549	22,444,997	13,691,448	8,753,549	22,444,997
# of Working Days during Period	100	200	300	100	200	300
Average Volume Delivered per Working Day for period	136,914	43,768	74,817	136,914	43,768	74,817
Average Required Total Trips per Day	11.9	3.8		6.8	2.2	
Total Hours Required per day During Period	148.0	38.1		129.5	34.4	
Assumed Working Hours per Day per Vehicle	**10.0**	**8.0**		**10.0**	**8.0**	
Indicated Number of Vehicles Required	14.80	4.77		12.95	4.30	
Average Volume delivered by each TW for period	924,882	1,836,722		1,057,404	2,035,321	
Average Volume delivered by each TW per day.	9,249	9,184		10,574	10,177	
Actual Number of Vehicles required to be on hand	15	5		13	5	
Number of vehicles required full-time	14	4		12	4	
Volume delivered by full time vehicle(s)	12,948,343	7,346,890		12,688,850	8,141,283	
Volume left to be delivered by part time Vehicle	743,105	1,406,659		1,002,598	612,266	
Part time Operation vehicle (Days)	80	153		95	60	
Idle time for part time vehicles) -(Days)	20	47		5	140	
Full Time Cost per vehicle per Day	$393	$393		$427	$427	
Idle Time Cost per vehicle per Day	$193	$193		$223	$223	
Cost of Full Time Vehicles for period	$550,667	$314,667		$512,000	$341,333	
Cost of Part Time Vehicles for period	$31,603	$60,247		$40,455	$25,670	
Cost of Idle Time for part Time Vehicles for period	$3,793	$0		$1,156	$0	
Total Cost for vehicles for period	$586,063	$374,914	$960,976	$553,611	$367,003	$920,614
Cost per Period based on required Vehicles (CPL)	**4.28**	**4.28**	**4.28**	**4.04**	**4.19**	**4.10**

Average Tandem & Single Axle TWs	**4.19**

APPENDIX H

Table H1-ASW

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 1- Avalon South West			
Census Population -1991	12,809	Loading Tank Wagon at type Facility	**Bulk Plant**
Census Population -1996	11,777	Average Kilometres for return trip in Zone	**136**
Census Population -2001	10,432	Average travel speed - Winter period (Km/Hr)	**45**
Estimated Households and Heating Method - 2001		Average travel speed - Remaining Months (Km/Hr)	**65**
Electric	2,101	Average annual drop per household delivery (Litres)	**350**
Oil/Other	2,114	Working Hours per Day per T/W - Winter Period	**10**
Total	4,215	Working Hours per Day per T/W - Remaining Months	**8**
Avg Population per Household 2001	**2.5**	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Estimated Percent Homes with Oil Heat	**52.3%**	Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Est Avg Vol Per Year Per Household Using Oil	**3,060**	Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**6,468,840**	Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**

Average Cost of T/W Deliveries CPL HH Pricing Zone 1- Avalon South West	**4.95**

HH Pricing Zone 1- Avalon South West

	A. Use all Single Axle Tank Wagons			B. Use all Tandem Axle Tank Wagons		
	Winter Dec-Mar 61% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 61% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	3,945,992	2,522,848	6,468,840	3,945,992	2,522,848	6,468,840
Average Drop Amount per Household (Litres)	**371**	**317**	**350**	**371**	**317**	**350**
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**	**20,000**	**20,000**	**20,000**
Loading Time per Vehicle Load (Minutes)	32	30	30.72	40	38	39.22
Average # Drops Per Vehicle Load	31.0	36.3	32.9	53.9	63.1	57.1
Estimate of Kms Traveled Per Return Trip for Zone	**136**	**136**	**136**	**136**	**136**	**136**
Time for Each Drop (Mins)	20	15	**18**	20	15	**18**
Total Drop Time per Load (Minutes)	620	544	593	1078	946	1031
Average Speed Attained for Travel Time (kms /hr)	**45**	**65**	**52.8**	**45**	**65**	**52.8**
Total Travel Time per Load (Minutes)	181	126	155	181	126	155
Total Average Delivery Time for Each Load (Hours)	13.9	11.7	13.0	21.7	18.5	20.4
Average Delivery Rate Litres/Hr	829	987	887	923	1081	979
Volume Delivered During Period for area	3,945,992	2,522,848	6,468,840	3,945,992	2,522,848	6,468,840
# of Working Days during Period	100	200	300	100	200	300
Average Volume Delivered per Working Day for period	39,460	12,614	21,563	39,460	12,614	21,563
Average Required Total Trips per Day	3.4	1.1		2.0	0.6	
Total Hours Required per day During Period	47.6	12.8		42.7	11.7	
Assumed Working Hours per Day per Vehicle	**10.0**	**8.0**		**10.0**	**8.0**	
Indicated Number of Vehicles Required	4.76	1.60		4.27	1.46	
Average Volume delivered by each TW for period	828,551	1,578,942		923,432	1,729,869	
Average Volume delivered by each TW per day.	8,286	7,895		9,234	8,649	
Actual Number of Vehicles required to be on hand	5	2		5	2	
Number of vehicles required full-time	4	1		4	1	
Volume delivered by full time vehicle(s)	3,314,203	1,578,942		3,693,727	1,729,869	
Volume left to be delivered by part time Vehicle	631,789	943,906		252,265	792,979	
Part time Operation vehicle (Days)	76	120		27	92	
Idle time for part time vehicles) -(Days)	24	80		73	108	
Full Time Cost per vehicle per Day	$393	$393		$427	$427	
Idle Time Cost per vehicle per Day	$193	$193		$223	$223	
Cost of Full Time Vehicles for period	$157,333	$78,667		$170,800	$85,400	
Cost of Part Time Vehicles for period	$29,993	$47,028		$11,665	$39,148	
Cost of Idle Time for part Time Vehicles for period	$4,583	$0		$16,208	$0	
Total Cost for vehicles for period	$191,909	$125,694	$317,604	$198,673	$124,548	$323,221
Cost per Period based on required Vehicles (CPL)	**4.86**	**4.98**	**4.91**	**5.03**	**4.94**	**5.00**

Average Tandem & Single Axle TWs	**4.95**

APPENDIX H

Table H1-ASE

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 1 - Avalon South East

Census Population -1991	13,231	Loading Tank Wagon at type Facility	**Bulk Plant**
Census Population -1996	12,114	Average Kilometres for return trip in Zone	**155**
Census Population -2001	10,565	Average travel speed - Winter period (Km/Hr)	**40**
Estimated Households and Heating Method - 2001		Average travel speed - Remaining Months (Km/Hr)	**60**
Electric	1,605	Average annual drop per household delivery (Litres)	**350**
Oil/Other	2,157	Working Hours per Day per T/W - Winter Period	**10**
Total	3,763	Working Hours per Day per T/W - Remaining Months	**8**
Avg Population per Household 2001	**2.8**	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Estimated Percent Homes with Oil Heat	**57.3%**	Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Est Avg Vol Per Year Per Household Using Oil	**3,060**	Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**6,601,044**	Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**

Average Cost of T/W Deliveries CPL HH Pricing Zone 1 - Avalon South East	**5.21**

HH Pricing Zone 1 - Avalon South East

	A. Use all Single Axle Tank Wagons			B. Use all Tandem Axle Tank Wagons		
	Winter Dec-Mar 61% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 61% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	4,026,637	2,574,407	6,601,044	4,026,637	2,574,407	6,601,044
Average Drop Amount per Household (Litres)	**371**	**317**	**350**	**371**	**317**	**350**
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**	**20,000**	**20,000**	**20,000**
Loading Time per Vehicle Load (Minutes)	32	30	30.72	40	38	39.22
Average # Drops Per Vehicle Load	31.0	36.3	32.9	53.9	63.1	57.1
Estimate of Kms Traveled Per Return Trip for Zone	**155**	**155**	**155**	**155**	**155**	**155**
Time for Each Drop (Mins)	20	15	**18**	20	15	**18**
Total Drop Time per Load (Minutes)	620	544	593	1078	946	1031
Average Speed Attained for Travel Time (kms /hr)	**40**	**60**	**47.8**	**40**	**60**	**47.8**
Total Travel Time per Load (Minutes)	233	155	195	233	155	195
Total Average Delivery Time for Each Load (Hours)	14.7	12.1	13.6	22.5	19.0	21.1
Average Delivery Rate Litres/Hr	781	947	843	888	1053	948
Volume Delivered During Period for area	4,026,637	2,574,407	6,601,044	4,026,637	2,574,407	6,601,044
# of Working Days during Period	100	200	300	100	200	300
Average Volume Delivered per Working Day for period	40,266	12,872	22,003	40,266	12,872	22,003
Average Required Total Trips per Day	3.5	1.1		2.0	0.6	
Total Hours Required per day During Period	51.6	13.6		45.3	12.2	
Assumed Working Hours per Day per Vehicle	**10.0**	**8.0**		**10.0**	**8.0**	
Indicated Number of Vehicles Required	5.16	1.70		4.53	1.53	
Average Volume delivered by each TW for period	780,591	1,515,102		888,450	1,685,138	
Average Volume delivered by each TW per day.	7,806	7,576		8,884	8,426	
Actual Number of Vehicles required to be on hand	6	2		5	2	
Number of vehicles required full-time	5	1		4	1	
Volume delivered by full time vehicle(s)	3,902,953	1,515,102		3,553,799	1,685,138	
Volume left to be delivered by part time Vehicle	123,684	1,059,306		472,837	889,269	
Part time Operation vehicle (Days)	16	140		53	106	
Idle time for part time vehicles) -(Days)	84	60		47	94	
Full Time Cost per vehicle per Day	$393	$393		$427	$427	
Idle Time Cost per vehicle per Day	$193	$193		$223	$223	
Cost of Full Time Vehicles for period	$196,667	$78,667		$170,800	$85,400	
Cost of Part Time Vehicles for period	$6,232	$55,001		$22,725	$45,067	
Cost of Idle Time for part Time Vehicles for period	$16,242	$0		$10,432	$0	
Total Cost for vehicles for period	$219,141	$133,668	$352,809	$203,957	$130,467	$334,424
Cost per Period based on required Vehicles (CPL)	**5.44**	**5.19**	**5.34**	**5.07**	**5.07**	**5.07**

Average Tandem & Single Axle TWs	**5.21**

APPENDIX H

Table H1-AS

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 1 - Avalon South

Census Population -1991	26,040	Loading Tank Wagon at type Facility	**Bulk Plant**
Census Population -1996	23,891	Average Kilometres for return trip in Zone	**155**
Census Population -2001	20,997	Average travel speed - Winter period (Km/Hr)	**40**
Estimated Households and Heating Method - 2001		Average travel speed - Remaining Months (Km/Hr)	**60**
Electric	3,706	Average annual drop per household delivery (Litres)	**350**
Oil/Other	4,271	Working Hours per Day per T/W - Winter Period	**10**
Total	7,978	Working Hours per Day per T/W - Remaining Months	**8**
Avg Population per Household 2001	**2.6**	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Estimated Percent Homes with Oil Heat	**53.5%**	Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Est Avg Vol Per Year Per Household Using Oil	**3,060**	Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**13,069,884**	Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**

Average Cost of T/W Deliveries CPL HH Pricing Zone 1 - Avalon South	**5.06**

HH Pricing Zone 1 - Avalon South

	A. Use all Single Axle Tank Wagons			**B. Use all Tandem Axle Tank Wagons**		
	Winter Dec-Mar 61% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 61% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	7,972,629	5,097,255	13,069,884	7,972,629	5,097,255	13,069,884
Average Drop Amount per Household (Litres)	**371**	**317**	**350**	**371**	**317**	**350**
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**	**20,000**	**20,000**	**20,000**
Loading Time per Vehicle Load (Minutes)	32	30	30.72	40	38	39.22
Average # Drops Per Vehicle Load	31.0	36.3	32.9	53.9	63.1	57.1
Estimate of Kms Traveled Per Return Trip for Zone	**155**	**155**	**155**	**155**	**155**	**155**
Time for Each Drop (Mins)	20	15	**18**	20	15	**18**
Total Drop Time per Load (Minutes)	620	544	593	1078	946	1031
Average Speed Attained for Travel Time (kms /hr)	**40**	**60**	**47.8**	**40**	**60**	**47.8**
Total Travel Time per Load (Minutes)	233	155	195	233	155	195
Total Average Delivery Time for Each Load (Hours)	14.7	12.1	13.6	22.5	19.0	21.1
Average Delivery Rate Litres/Hr	781	947	843	888	1053	948
Volume Delivered During Period for area	7,972,629	5,097,255	13,069,884	7,972,629	5,097,255	13,069,884
# of Working Days during Period	100	200	300	100	200	300
Average Volume Delivered per Working Day for period	79,726	25,486	43,566	79,726	25,486	43,566
Average Required Total Trips per Day	6.9	2.2		4.0	1.3	
Total Hours Required per day During Period	102.1	26.9		89.7	24.2	
Assumed Working Hours per Day per Vehicle	**10.0**	**8.0**		**10.0**	**8.0**	
Indicated Number of Vehicles Required	10.21	3.36		8.97	3.02	
Average Volume delivered by each TW for period	780,591	1,515,102		888,450	1,685,138	
Average Volume delivered by each TW per day.	7,806	7,576		8,884	8,426	
Actual Number of Vehicles required to be on hand	11	4		9	4	
Number of vehicles required full-time	10	3		8	3	
Volume delivered by full time vehicle(s)	7,805,906	4,545,305		7,107,599	5,055,415	
Volume left to be delivered by part time Vehicle	166,723	551,950		865,030	41,839	
Part time Operation vehicle (Days)	21	73		97	5	
Idle time for part time vehicles) -(Days)	79	127		3	195	
Full Time Cost per vehicle per Day	$393	$393		$427	$427	
Idle Time Cost per vehicle per Day	$193	$193		$223	$223	
Cost of Full Time Vehicles for period	$393,333	$236,000		$341,333	$256,000	
Cost of Part Time Vehicles for period	$8,401	$28,658		$41,542	$2,119	
Cost of Idle Time for part Time Vehicles for period	$15,178	$0		$588	$0	
Total Cost for vehicles for period	$416,912	$264,658	$681,570	$383,463	$258,119	$641,582
Cost per Period based on required Vehicles (CPL)	**5.23**	**5.19**	**5.21**	**4.81**	**5.06**	**4.91**

Average Tandem & Single Axle TWs	**5.06**

APPENDIX H

Table H-1a

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 1a - Bell Island

Census Population -1991	4,185
Census Population -1996	3,596
Census Population -2001	3,078
Estimated Households and Heating Method - 2001	
Electric	698
Oil/Other	716
Total	1,414
Avg Population per Household 2001	**2.2**
Estimated Percent Homes with Oil Heat	**50.6%**
Est Avg Vol Per Year Per Household Using Oil	**3,450**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**2,470,200**

Assuming Deliveries from Bulk Plant on Bell Island

	Bulk Plant
Loading Tank Wagon at type Facility	
Average Kilometres for return trip in Zone	**12**
Average travel speed - Winter period (Km/Hr)	**30**
Average travel speed - Remaining Months (Km/Hr)	**50**
Average annual drop per household delivery (Litres)	**400**
Working Hours per Day per T/W - Winter Period	**10**
Working Hours per Day per T/W - Remaining Months	**8**
Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**

Average Cost of T/W Deliveries CPL HH Pricing Zone 1a - Bell Island	**3.82**

HH Pricing Zone 1a - Bell Island

	A. Use all Single Axle Tank Wagons			**B. Use all Tandem Axle Tank Wagons**		
	Winter Dec-Mar 61% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 61% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	1,506,822	963,378	2,470,200	1,506,822	963,378	2,470,200
Average Drop Amount per Household (Litres)	**424**	**362**	**400**	**424**	**362**	**400**
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**	**20,000**	**20,000**	**20,000**
Loading Time per Vehicle Load (Minutes)	32	30	30.72	40	38	39.22
Average # Drops Per Vehicle Load	27.1	31.8	28.8	47.2	55.2	50.0
Estimate of Kms Traveled Per Return Trip for Zone	**12**	**12**	**12**	**12**	**12**	**12**
Time for Each Drop (Mins)	20	15	**18**	20	15	**18**
Total Drop Time per Load (Minutes)	542	477	519	943	829	903
Average Speed Attained for Travel Time (kms /hr)	**30**	**50**	**37.8**	**30**	**50**	**37.8**
Total Travel Time per Load (Minutes)	24	14	19	24	14	19
Total Average Delivery Time for Each Load (Hours)	10.0	8.7	9.5	16.8	14.7	16.0
Average Delivery Rate Litres/Hr	1154	1326	1213	1191	1362	1249
Volume Delivered During Period for area	1,506,822	963,378	2,470,200	1,506,822	963,378	2,470,200
# of Working Days during Period	100	200	300	100	200	300
Average Volume Delivered per Working Day for period	15,068	4,817	8,234	15,068	4,817	8,234
Average Required Total Trips per Day	1.3	0.4		0.8	0.2	
Total Hours Required per day During Period	13.1	3.6		12.6	3.5	
Assumed Working Hours per Day per Vehicle	**10.0**	**8.0**		**10.0**	**8.0**	
Indicated Number of Vehicles Required	1.31	0.45		1.26	0.44	
Average Volume delivered by each TW for period	1,153,937	2,121,366		1,191,190	2,179,022	
Average Volume delivered by each TW per day.	11,539	10,607		11,912	10,895	
Actual Number of Vehicles required to be on hand	2	1		2	1	
Number of vehicles required full-time	1	0		1	0	
Volume delivered by full time vehicle(s)	1,153,937	0		1,191,190	0	
Volume left to be delivered by part time Vehicle	352,885	963,378	2,470,200	315,632	963,378	2,470,200
Part time Operation vehicle (Days)	31	84		26	48	
Idle time for part time vehicles) -(Days)	69	116		74	152	
Full Time Cost per vehicle per Day	$393	$393		$427	$427	
Idle Time Cost per vehicle per Day	$193	$193		$223	$223	
Cost of Full Time Vehicles for period	$39,333	$0		$42,667	$0	
Cost of Part Time Vehicles for period	$12,029	$32,950		$11,305	$20,552	
Cost of Idle Time for part Time Vehicles for period	$13,398	$0		$16,391	$0	
Total Cost for vehicles for period	$64,760	$32,950	$97,710	$70,363	$20,552	$90,915
Cost per Period based on required Vehicles (CPL)	**4.30**	**3.42**	**3.96**	**4.67**	**2.13**	**3.68**

Average Tandem & Single Axle TWs	**3.82**

APPENDIX H

Table H-2

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 2 - Burin and Bonavista Peninsulas

Note: - Assumes there are Bulk Plants in each of the 3 Areas making up this zone.

Census Population -1991	61,110	Loading Tank Wagon at type Facility	**Bulk Plant**
Census Population -1996	58,634	Average Kilometres for return trip in Zone	**120**
Census Population -2001	51,933	Average travel speed - Winter period (Km/Hr)	**40**
Estimated Households and Heating Method - 2001		Average travel speed - Remaining Months (Km/Hr)	**65**
Electric	12,395	Average annual drop per household delivery (Litres)	**405**
Oil/Other	10,463	Working Hours per Day per T/W - Winter Period	**10**
Total	22,858	Working Hours per Day per T/W - Remaining Months	**8**
Avg Population per Household 2001	**2.3**	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Estimated Percent Homes with Oil Heat	**45.8%**	Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Est Avg Vol Per Year Per Household Using Oil	**3,042**	Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**31,827,734**	Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**

Average Cost of T/W Deliveries CPL	
HH Pricing Zone 2 - Burin and Bonavista Peninsulas	**4.25**

HH Pricing Zone 2 - Burin and Bonavista Peninsulas	**A. Use all Single Axle Tank Wagons**			**B. Use all Tandem Axle Tank Wagons**		
	Winter Dec-Mar 61% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 61% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	19,414,918	12,412,816	31,827,734	19,414,918	12,412,816	31,827,734
Average Drop Amount per Household (Litres)	**429**	**367**	**405**	**429**	**367**	**405**
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**	**20,000**	**20,000**	**20,000**
Loading Time per Vehicle Load (Minutes)	32	30	30.72	40	38	39.22
Average # Drops Per Vehicle Load	26.8	31.3	28.4	46.6	54.5	49.4
Estimate of Kms Traveled Per Return Trip for Zone	**120**	**120**	**120**	**120**	**120**	**120**
Time for Each Drop (Mins)	20	15	**18**	20	15	**18**
Total Drop Time per Load (Minutes)	536	470	513	932	817	891
Average Speed Attained for Travel Time (kms /hr)	**40**	**65**	**49.75**	**40**	**65**	**49.75**
Total Travel Time per Load (Minutes)	180	111	145	180	111	145
Total Average Delivery Time for Each Load (Hours)	12.5	10.2	11.5	19.2	16.1	17.9
Average Delivery Rate Litres/Hr	923	1131	1003	1041	1242	1116
Volume Delivered During Period for area	19,414,918	12,412,816	31,827,734	19,414,918	12,412,816	31,827,734
# of Working Days during Period	100	200	300	100	200	300
Average Volume Delivered per Working Day for period	194,149	62,064	106,092	194,149	62,064	106,092
Average Required Total Trips per Day	16.9	5.4		9.7	3.1	
Total Hours Required per day During Period	210.4	54.9		186.4	50.0	
Assumed Working Hours per Day per Vehicle	**10.0**	**8.0**		**10.0**	**8.0**	
Indicated Number of Vehicles Required	21.04	6.86		18.64	6.25	
Average Volume delivered by each TW for period	922,916	1,808,957		1,041,304	1,987,150	
Average Volume delivered by each TW per day.	9,229	9,045		10,413	9,936	
Actual Number of Vehicles required to be on hand	22	7		19	7	
Number of vehicles required full-time	21	6		18	6	
Volume delivered by full time vehicle(s)	19,381,231	10,853,741		18,743,477	11,922,900	
Volume left to be delivered by part time Vehicle	33,687	1,559,075		671,441	489,917	
Part time Operation vehicle (Days)	4	172		64	49	
Idle time for part time vehicles) -(Days)	96	28		36	151	
Full Time Cost per vehicle per Day	$393	$381		$427	$427	
Idle Time Cost per vehicle per Day	$193	$193		$223	$223	
Cost of Full Time Vehicles for period	$826,000	$457,200		$768,000	$512,000	
Cost of Part Time Vehicles for period	$1,436	$65,674		$27,512	$21,038	
Cost of Idle Time for part Time Vehicles for period	$18,596	$0		$7,921	$0	
Total Cost for vehicles for period	$846,031	$522,874	$1,368,905	$803,433	$533,038	$1,336,471
Cost per Period based on required Vehicles (CPL)	**4.36**	**4.21**	**4.30**	**4.14**	**4.29**	**4.20**

Average Tandem & Single Axle TWs	**4.25**

APPENDIX H

Table H-3

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 3 Central Newfoundland

Census Population -1991	81,698	Loading Tank Wagon at type Facility	**Terminal**
Census Population -1996	78,096	Kilometres for return trip in Zone	**167**
Census Population -2001	71,049	Average travel speed - Winter period (Km/Hr)	**50**
Estimated Households and Heating Method - 2001		Average travel speed - Remaining Months (Km/Hr)	**70**
Electric	9,110	Average annual drop per household delivery (Litres)	**400**
Oil/Other	14,988	Working Hours per Day per T/W - Winter Period	**10**
Total	24,098	Working Hours per Day per T/W - Remaining Months	**8**
Avg Population per Household 2001	**2.9**	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Estimated Percent Homes with Oil Heat	**62.2%**	Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Est Avg Vol Per Year Per Household Using Oil	**2,800**	Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**41,967,185**	Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**

Average Cost of T/W Deliveries CPL HH Pricing Zone 3 Central Newfoundland	**4.41**

HH Pricing Zone 3 Central Newfoundland

	A. Use all Single Axle Tank Wagons			B. Use all Tandem Axle Tank Wagons		
	Winter Dec-Mar 61% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 61% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	25,599,983	16,367,202	41,967,185	25,599,983	16,367,202	41,967,185
Average Drop Amount per Household (Litres)	**424**	**362**	**400**	**424**	**362**	**400**
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**	**20,000**	**20,000**	**20,000**
Loading Time per Vehicle Load (Minutes)	27	24	25.33	35	32	33.83
Average # Drops Per Vehicle Load	27.1	31.8	28.8	47.2	55.2	50.0
Estimate of Kms Traveled Per Return Trip for Zone	**167**	**167**	**167**	**167**	**167**	**167**
Time for Each Drop (Mins)	20	15	**18**	20	15	**18**
Total Drop Time per Load (Minutes)	542	477	519	943	829	903
Average Speed Attained for Travel Time (kms /hr)	**50**	**70**	**57.8**	**50**	**70**	**57.8**
Total Travel Time per Load (Minutes)	200	143	173	200	143	173
Total Average Delivery Time for Each Load (Hours)	12.8	10.7	12.0	19.6	16.7	18.5
Average Delivery Rate Litres/Hr	897	1073	962	1018	1195	1081
Volume Delivered During Period for area	25,599,983	16,367,202	41,967,185	25,599,983	16,367,202	41,967,185
# of Working Days during Period	100	200	300	100	200	300
Average Volume Delivered per Working Day for period	256,000	81,836	139,891	256,000	81,836	139,891
Average Required Total Trips per Day	22.3	7.1		12.8	4.1	
Total Hours Required per day During Period	285.4	76.3		251.5	68.5	
Assumed Working Hours per Day per Vehicle	**10.0**	**8.0**		**10.0**	**8.0**	
Indicated Number of Vehicles Required	28.54	9.54		25.15	8.56	
Average Volume delivered by each TW for period	896,858	1,716,519		1,017,988	1,912,594	
Average Volume delivered by each TW per day.	8,969	8,583		10,180	9,563	
Actual Number of Vehicles required to be on hand	29	10		26	9	
Number of vehicles required full-time	28	9		25	8	
Volume delivered by full time vehicle(s)	25,112,015	15,448,669		25,449,691	15,300,753	
Volume left to be delivered by part time Vehicle	487,967	918,533		150,291	1,066,449	
Part time Operation vehicle (Days)	54	107		15	112	
Idle time for part time vehicles) -(Days)	46	93		85	88	
Full Time Cost per vehicle per Day	$393	$393		$427	$427	
Idle Time Cost per vehicle per Day	$193	$193		$223	$223	
Cost of Full Time Vehicles for period	$1,101,333	$708,000		$1,066,667	$682,667	
Cost of Part Time Vehicles for period	$21,401	$42,096		$6,299	$47,581	
Cost of Idle Time for part Time Vehicles for period	$8,799	$0		$19,008	$0	
Total Cost for vehicles for period	$1,131,533	$750,096	$1,881,629	$1,091,974	$730,248	$1,822,221
Cost per Period based on required Vehicles (CPL)	**4.42**	**4.58**	**4.48**	**4.27**	**4.46**	**4.34**

Average Tandem & Single Axle TWs	**4.41**

APPENDIX H

Table H-3a

Tank Wagon Delivery Cost Model - Home Heating Fuel

Delivered Direct to Zone from Gander Bulk Plant

HH Pricing Zone 3a - St. Brendan's Island

Ferry from Burnside-Return Rates: $5.50 Driver $106.00 T/W

FerryTrip 1 hour each way - Get Ferry at 9:15 am - return at 7:30 pm

Time available on Island for Drops 5 hrs 300 minutes

Census Population -1991	378	Loading Tank Wagon at type Facility	**Bulk Plant**
Census Population -1996	321	Average Kilometres for return trip in Zone	**204**
Census Population -2001	251	Average travel speed - Winter period (Km/Hr)	**60**
Estimated Households and Heating Method - 2001		Average travel speed - Remaining Months (Km/Hr)	**80**
Electric	17	Average annual drop per household delivery (Litres)	**400**
Oil/Other	68	Working Hours per Day per T/W - Winter Period	**12**
Total	85	Working Hours per Day per T/W - Remaining Months	**12**
Avg Population per Household 2001	**2.8**	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Estimated Percent Homes with Oil Heat	**65.0%**	Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Est Avg Vol Per Year Per Household Using Oil	**2,600**	**Average Cost of T/W Deliveries CPL**	
Estimated Total Heating Fuel Per Year for Zone (Litres)	**176,800**	**HH Pricing Zone 3a - St. Brendan's Island**	**7.49**
Load at Gander Bulk Plant	**6:30 am**	**Total Trip**	
Retrun to Gander at	**9:30 pm**	**15 Hours**	

Note: Not Feasible to use Tandem TWs due to trip time involved

HH Pricing Zone 3a - St. Brendan's Island

	A. Use all Single Axle Tank Wagons			B. Use all Tandem Axle Tank Wagons		
	Winter Dec-Mar 61% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	Winter Months	Remaining Months	Full Year Avg/Totals
Total Volume by Zone for Heating Fuel for Year (Litres)	107,848	68,952	176,800			
Average Drop Amount per Household (Litres)	**424**	**362**	**400**			
Capacity per Vehicle (Litres)	**9,000**	**9,000**	**9,000**			
Loading Time per Vehicle Load (Minutes)	29	27	28.22			
Average # Drops Per Vehicle Load	21.2	24.9	22.5			
Estimate of Kms Traveled Per Return Trip for Zone	**204**	**204**	**204**			
Time for Each Drop (Mins)	21	15	**19**			
Total Drop Time per Load (Minutes)	446	373	420			
Average Speed Attained for Travel Time (kms /hr)	**60**	**80**	**67.8**			
Total Travel Time per Load (Minutes)	204	153	181			
Ferry Crossing Time Return Trip (Mins)	180	180	180			
Total Load Delivery Time including return Ferry Trip(Mins)	859	733	809			
Total Average Delivery Time for Each Load (Hours)	14.3	12.2	13.5			
Average Delivery Rate Litres/Hr	629	737	668			
Volume Required Delivered During Period for area	107,848	68,952	176,800			
# of Working Days during Period	12	8	20			
Average Volume Delivered per Working Day for period	9,000	9,000	9,000			
Average Required Total Trips per Day	1.0	1.0				
Total Hours Required per day During Period	14.3	12.2				
Assumed Working Hours per Day per Vehicle	**15.0**	**13.0**				
Indicated Number of Vehicles Required	0.95	0.94				
Average Volume delivered by each TW for period	113,028	73,380	186,408			
Average Volume delivered by each TW per day.	9,432	9,578				
Number of vehicles required full-time	1	1				
Volume delivered by full time vehicle(s)	113,028	73,380	186,408			
Volume left to be delivered by part time Vehicle	N/A	N/A				
Part time Operation vehicle (Days)	N/A	N/A				
Idle time for part time vehicles) -(Days)	N/A	N/A				
Full Time Cost per vehicle per Day	$393	$393				
Full time Cost per Hour based on 10 Hour day	$39	$39				
Idle Time Cost per vehicle per Day	$193	$193				
Idle Time Cost per Hour based on 10 hour day	$19	$24				
Cost of Full Time Vehicles for period	$7,064	$3,914				
Cost of Part Time Vehicles for period	N/A	N/A				
Cost of Idle Time for part Time Vehicles for period	N/A	N/A				
Cost of Ferry Per Trip (Driver and Helper in Winter)	$117	$112				
Total cost of Ferry Trips for period	$1,402	$854				
Total Cost for vehicles for period	$8,466	$4,768	$13,234			
Cost per Period based on required Vehicles (CPL)	**7.85**	**6.92**	**7.49**			

Average Single Axle TWs **7.49**

APPENDIX H

Table H-3b

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 3b Fogo Island	
Census Population -1991	3,915
Census Population -1996	3,573
Census Population -2001	3,018
Estimated Households and Heating Method - 2001	
Electric	382
Oil/Other	709
Total	1,090
Avg Population per Household 2001	**2.8**
Estimated Percent Homes with Oil Heat	**65.0%**
Est Avg Vol Per Year Per Household Using Oil	**2,600**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**1,842,100**

Assuming Deliveries from Bulk Plant on Fogo Island	
Loading Tank Wagon at type Facility	**Bulk Plant**
Kilometres for return trip in Zone	**40**
Average travel speed - Winter period (Km/Hr)	**40**
Average travel speed - Remaining Months (Km/Hr)	**60**
Average annual drop per household delivery (Litres)	**400**
Working Hours per Day per T/W - Winter Period	**10**
Working Hours per Day per T/W - Remaining Months	**8**
Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**

Average Cost of T/W Deliveries CPL HH Pricing Zone 3b Fogo Island	3.93

HH Pricing Zone 3b Fogo Island	A. Use all Single Axle Tank Wagons			B. Use all Tandem Axle Tank Wagons		
	Winter Dec-Mar 61% Annual Volume	Remaining Months	Full Year Avg/Totals	Winter Dec-Mar 61% Annual Volume	Remaining Months	Full Year Avg/Totals
Total Volume by Zone for Heating Fuel for Year (Litres)	1,123,681	718,419	1,842,100	1,123,681	718,419	1,842,100
Average Drop Amount per Household (Litres)	**424**	**362**	**400**	**424**	**362**	**400**
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**	**20,000**	**20,000**	**20,000**
Loading Time per Vehicle Load (Minutes)	32	30	30.72	40	38	39.22
Average # Drops Per Vehicle Load	27.1	31.8	28.8	47.2	55.2	50.0
Estimate of Kms Traveled Per Return Trip for Zone	**40**	**40**	**40**	**40**	**40**	**40**
Time for Each Drop (Mins)	20	15	**18**	20	15	**18**
Total Drop Time per Load (Minutes)	542	477	519	943	829	903
Average Speed Attained for Travel Time (kms /hr)	**40**	**60**	**47.8**	**40**	**60**	**47.8**
Total Travel Time per Load (Minutes)	60	40	50	60	40	50
Total Average Delivery Time for Each Load (Hours)	10.6	9.1	10.0	17.4	15.1	16.5
Average Delivery Rate Litres/Hr	1088	1264	1150	1150	1323	1210
Volume Delivered During Period for area	1,123,681	718,419	1,842,100	1,123,681	718,419	1,842,100
# of Working Days during Period	100	200	300	100	200	300
Average Volume Delivered per Working Day for period	11,237	3,592	6,140	11,237	3,592	6,140
Average Required Total Trips per Day	1.0	0.3		0.6	0.2	
Total Hours Required per day During Period	10.3	2.8		9.8	2.7	
Assumed Working Hours per Day per Vehicle	**10.0**	**8.0**		**10.0**	**8.0**	
Indicated Number of Vehicles Required	1.03	0.36		0.98	0.34	
Average Volume delivered by each TW for period	1,088,409	2,021,906		1,150,090	2,117,501	
Average Volume delivered by each TW per day.	10,884	10,110		11,501	10,588	
Actual Number of Vehicles required to be on hand	2	1		1	1	
Number of vehicles required full-time	1	0		0	0	
Volume delivered by full time vehicle(s)	1,088,409	0		0	0	
Volume left to be delivered by part time Vehicle	35,272	718,419	1,842,100	1,123,681	718,419	1,842,100
Part time Operation vehicle (Days)	3	71		98	36	
Idle time for part time vehicles) -(Days)	97	129		2	164	
Full Time Cost per vehicle per Day	$393	$393		$427	$427	
Idle Time Cost per vehicle per Day	$193	$193		$223	$223	
Cost of Full Time Vehicles for period	$39,333	$0		$0	$0	
Cost of Part Time Vehicles for period	$1,275	$27,952		$41,687	$15,326	
Cost of Idle Time for part Time Vehicles for period	$18,675	$0		$512	$0	
Total Cost for vehicles for period	$59,283	$27,952	$87,234	$42,199	$15,326	$57,525
Cost per Period based on required Vehicles (CPL)	**5.28**	**3.89**	**4.74**	**3.76**	**2.13**	**3.12**

Average Tandem & Single Axle TWs	3.93

APPENDIX H

Table H-3c

Tank Wagon Delivery Cost Model - Home Heating Fuel

No Bulk Plant on Change Islands - Delivey via Fery from Fogo Island Bulk Plant

HH Pricing Zone 3c -Change Islands
Ferry from Farewell - Sundays Only

Census Population -1991	
Census Population -1996	
Census Population -2001	
Estimated Households and Heating Method - 2001	
Electric	
Oil/Other	
Total	
Avg Population per Household 2001	
Estimated Percent Homes with Oil Heat	
Est Avg Vol Per Year Per Household Using Oil	
Estimated Total Heating Fuel Per Year for Zone (Litres)	
Load at Lewisporte Terminal	
Return to Lewisporte at	
Additional Wages at straight time over 10 hrs per day.	

Ferry Return Rates Return: $3 Driver $106 T/W

Ferry Trip 1 hour each way - Get Ferry at 7:45 am - return at 4:30 pm

Time available on Island for Drops-hrs 8 480 minutes

524	Loading Tank Wagon at type Facility	**Terminal**
460	Average Kilometres for return trip in Zone	**48**
360	Average travel speed - Winter period (Km/Hr)	**40**
	Average travel speed - Remaining Months (Km/Hr)	**50**
38	Average annual drop per household delivery (Litres)	**400**
113	Working Hours per Day per T/W - Winter Period	**11**
150	Working Hours per Day per T/W - Remaining Months	**10**
2.4	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
75.0%	Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
2,600	**Average Cost of T/W Deliveries CPL**	
292,500	**HH Pricing Zone 3c -Change Islands**	**6.71**
5:30 am	**Total Trip**	
6:30 pm	**13 Hours**	

Note: Not Feasible to use Tandem TWs due to trip time involved

HH Pricing Zone 3c -Change Islands

	A. Use all Single Axle Tank Wagons			B. Use all Tandem Axle Tank Wagons		
	Winter Dec-Mar 61% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 61% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	178,425	114,075	292,500	178,425	114,075	292,500
Average Drop Amount per Household (Litres)	**424**	**362**	**400**	**424**	**362**	**400**
Capacity per Vehicle (Litres)	**9,000**	**9,000**	**9,000**	**16,000**	**16,000**	**16,000**
Average # Drops Per Vehicle Load	21	25	23	38	44.2	40.0
Loading Time per Vehicle Load (Minutes)	24	21	22.83	31	28	29.83
Estimate of Kms Traveled Per Return Trip for Zone	**48**	**52**	**52**	**48**	**48**	**48**
Average Speed Attained for Travel Time (kms /hr)	**40**	**50**	**43.9**	**40**	**50**	**43.9**
Total Travel Time per Load (Minutes)	72	62	71	72	58	66
Time for Each Drop (Mins)	23	16	**20**	17	16	**17**
Total Available Drop Time per Load (Mins)	480	398	451	480	N/A	N/A
Ferry Crossing Time Return Trip (Mins)	90	90	90			
Total Load Delivery Time with Ferry Trip (Mins)	**666**	571	635	Insufficient time for each drop to use Tandem Tank Wagon in this service.		
Average Delivery Time required for Each Load (Hours)	11.1	9.5	10.6			
Volume Required Delivered During Period for area	178,425	114,075	292,500			
# of Full Working Days available during Period	20	13	33			
Average Volume Delivered per Working Day for period	9,000	9,000	8,952			
# of Full Working Days required during Period	20	13	33			
Average Required Total Trips per Working Day	1.0	1.0				
Total Hours Required per day During Period	11.1	9.5				
Working Hours per Working Day per Vehicle	**13.0**	**13.0**				
Indicated Number of Vehicles Required	1.53	1.00				
Average Volume delivered by each TW for period	117,000	114,075	231,075			
Average Volume delivered by each TW per day.	5,902	9,000				
Number of vehicles required full-time	1.0	1.0				
Number of vehicles required part-time	0.5	NIL				
Volume delivered by full time vehicle(s)	76,721	114,075	190,796			
Volume left to be delivered by part time Vehicle	40,279	Nil				
Part time Operation vehicle (Days)	7	Nil				
Idle time for part time vehicles) -(Days)	N/A	Nil				
Full Time Cost per vehicle per Day	$393	$393				
Full time Cost per Hour based on 10 Hours per day	$39	$39				
Idle Time Cost per vehicle per Day	$193	$193				
Idle Time Cost per Hour based on 10 hour day	$19	$19				
Cost of Full Time Vehicles for period	$7,999	$5,094				
Cost of Part Time Vehicles for period	$2,885	N/A				
Cost of Idle Time for part Time Vehicles for period	N/A	N/A				
Cost of Ferry Per Trip (Driver and Helper in Winter)	$115	$109				
Total cost of Ferry Trips for period	$2,280	$1,382				
Total Cost for vehicles for period	$13,164	$6,475	$19,639			
Cost per Period based on required Vehicles (CPL)	**7.38**	**5.68**	**6.71**			

Average Single Axle TWs **6.71**

APPENDIX H

Table H-4

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 4 Connaigre Peninsula

Census Population -1991	9,156
Census Population -1996	8,870
Census Population -2001	7,887
Estimated Households and Heating Method - 2001	
Electric	821
Oil/Other	1,916
Total	2,737
Avg Population per Household 2001	**2.9**
Estimated Percent Homes with Oil Heat	**70.0%**
Est Avg Vol Per Year Per Household Using Oil	**2,500**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**4,790,172**

Assuming Deliveries from Bulk Plant within Zone

Loading Tank Wagon at type Facility	**Bulk Plant**
Kilometres for return trip in Zone	**97**
Average travel speed - Winter period (Km/Hr)	**40**
Average travel speed - Remaining Months (Km/Hr)	**60**
Average annual drop per household delivery (Litres)	**350**
Working Hours per Day per T/W - Winter Period	**10**
Working Hours per Day per T/W - Remaining Months	**8**
Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**

Average Cost of T/W Deliveries CPL HH Pricing Zone 4 Connaigre Peninsula	**4.97**

HH Pricing Zone 4 Connaigre Peninsula

	A. Use all Single Axle Tank Wagons			B. Use all Tandem Axle Tank Wagons		
	Winter Dec-Mar 61% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 61% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	2,922,005	1,868,167	4,790,172	2,922,005	1,868,167	4,790,172
Average Drop Amount per Household (Litres)	**371**	**317**	**350**	**371**	**317**	**350**
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**	**20,000**	**20,000**	**20,000**
Loading Time per Vehicle Load (Minutes)	32	30	30.72	40	38	39.22
Average # Drops Per Vehicle Load	31.0	36.3	32.9	53.9	63.1	57.1
Estimate of Kms Traveled Per Return Trip for Zone	**97**	**97**	**97**	**97**	**97**	**97**
Time for Each Drop (Mins)	20	15	**18**	20	15	**18**
Total Drop Time per Load (Minutes)	620	544	593	1078	946	1031
Average Speed Attained for Travel Time (kms /hr)	**40**	**60**	**47.8**	**40**	**60**	**47.8**
Total Travel Time per Load (Minutes)	146	97	122	146	97	122
Total Average Delivery Time for Each Load (Hours)	13.3	11.2	12.4	21.1	18.0	19.9
Average Delivery Rate Litres/Hr	866	1029	925	950	1110	1006
Volume Delivered During Period for area	2,922,005	1,868,167	4,790,172	2,922,005	1,868,167	4,790,172
# of Working Days during Period	100	200	300	100	200	300
Average Volume Delivered per Working Day for period	29,220	9,341	15,967	29,220	9,341	15,967
Average Required Total Trips per Day	2.5	0.8		1.5	0.5	
Total Hours Required per day During Period	33.7	9.1		30.8	8.4	
Assumed Working Hours per Day per Vehicle	**10.0**	**8.0**		**10.0**	**8.0**	
Indicated Number of Vehicles Required	3.37	1.13		3.08	1.05	
Average Volume delivered by each TW for period	865,805	1,646,130		949,617	1,775,522	
Average Volume delivered by each TW per day.	8,658	8,231		9,496	8,878	
Actual Number of Vehicles required to be on hand	4	2		4	2	
Number of vehicles required full-time	3	1		3	1	
Volume delivered by full time vehicle(s)	2,597,415	1,646,130		2,848,852	1,775,522	
Volume left to be delivered by part time Vehicle	324,590	222,038	3,144,043	73,154	92,645	3,014,651
Part time Operation vehicle (Days)	37	27		8	10	
Idle time for part time vehicles) -(Days)	63	173		92	190	
Full Time Cost per vehicle per Day	$393	$393		$427	$427	
Idle Time Cost per vehicle per Day	$193	$193		$223	$223	
Cost of Full Time Vehicles for period	$118,000	$78,667		$128,000	$85,333	
Cost of Part Time Vehicles for period	$14,746	$10,611		$3,287	$4,453	
Cost of Idle Time for part Time Vehicles for period	$12,064	$0		$20,582	$0	
Total Cost for vehicles for period	$144,810	$89,278	$234,088	$151,869	$89,786	$241,655
Cost per Period based on required Vehicles (CPL)	**4.96**	**4.78**	**4.89**	**5.20**	**4.81**	**5.04**

Average Tandem & Single Axle TWs **4.97**

APPENDIX H

Table H-4a

Drum deliveries from Hermitage to Coastal Communities of McCallum, Gaultois, and from Pool's Cove to Rencontre East

HH Pricing Zone 4a - Gaultois / McCallum / Rencontre East	Gaultois	McCallum	Rencontre East	Totals
Census Population -1991	516	147	212	875
Census Population -1996	423	138	215	776
Census Population -2001	321	128	202	651
Estimated Households and Heating Method - 2001:				
Electric	33	13	18	64
Oil/Other	77	30	42	149
Total	110	43	60	213
Avg Population per Household 2001	2.9	3.0	3.4	3.1
Estimated Percent Homes with Oil Heat	70%	70%	70%	70%
Est Avg Vol Per Year Per Household Using Oil	1,800	1,800	1,800	1,800
Estimated Total Heating Fuel Per Year for Zone (Litres)	138,600	54,180	75,600	**268,380**
HH Pricing Zone 4a - Gaultois / McCallum / Rencontre East				**14.85**

HH Pricing Zone 4a - Gaultois / McCallum / Rencontre East	**Gaultois**	**McCallum**	**Rencontre East**		**Totals & Averages**
Total Volume by Community for Heating Fuel for Year (Litres)	138,600	54,180	75,600		268,380
Total Volume by Community for winter months (Litres)	84,546	33,050	46,116		163,712
Total Volume by Community for remaining months (Litres)	54,054	21,130	29,484		104,668
Total Drums Required per Year	676	264	369		1,309
Tank Wagon Delivery to Drums at Dockside					
Connaigre Zone- Calculated Tank Wagon cost to deliver fuel and fill drums at dockside in Hermitage and Pool's Cove - CPL	**2.87**	**2.87**	**2.87**		**2.87**
Capacity of each 45 Imperial Gallon Drum (Litres)	205	205	205		205
Estimated Weight of each Drum Empty (Kg)	23	23	23		23
Estimated Weight of each Drum Full (Kg)	196	196	196		196
Cost of per shipment $ per 50 Kilograms ($50 max per shipment)	$2.00	$2.00	$2.00		$2.00
Winter Period:					
Total Number of Drums required over Winter Period	412	161	225		799
Number of Weeks during Winter Period	17	17	17		17
Average Number of Drums shipped per week in winter period	25	10	14		47
Coastal Freight Shipping Full Drums Cost (Maximum per shipment)	$50.00	$50.00	$50.00		$150.00
Cost of Shipping each Full Drum each week	$2.00	$5.00	$3.57		$3.19
Coastal Freight Shipping Return Empty Drums Cost per week (Total)	$12.00	$5.00	$7.00		$22.00
Cost of Shipping each Drum Empty (Return to Filling Dock each week)	$0.48	$0.50	$0.50		$0.47
Total Return Coastal Freight Shipping Cost per Drum	$2.48	$5.50	$4.07		$3.66
Total Return Coastal Freight Shipping Cost (Cents per Litre)	**1.21**	**2.68**	**1.99**		**1.79**
Non-Winter Period:					
Total Number of Drums required over Period	264	103	144		511
Number of Months during Period	8	8	8		8
Average Number of Drums shipped per month in Period	33	13	18		64
Coastal Freight Shipping Full Drums Cost (Maximum per shipment)	$50.00	$50.00	$50.00		$150.00
Cost of Shipping each Full Drum each month	$1.52	$3.88	$2.78		$2.35
Coastal Freight Shipping Empty Drums Cost per month	$50.00	$50.00	$50.00		$150.00
Cost of Shipping each Drum Empty (Return to Filling Dock each month)	$1.52	$3.88	$2.78		$2.35
Total Return Coastal Freight Shipping Cost per Drum	$3.03	$7.76	$5.56		$4.70
Total Return Coastal Freight Shipping Cost (Cents per Litre)	**1.48**	**3.79**	**2.71**		**2.29**
Year Round Average Costs:					
Total Shipping Costs all Drums	$1,823	$1,687	$1,716		$5,323
Average annual Shipping Costs all Drums CPL	**1.32**	**3.11**	**2.27**		**1.98**
Total Delivered Cost to Destination Community Docks (Wholesale point of sale) CPL	**4.19**	**5.98**	**5.14**	Avg	**4.85**
Total cost of delivering drums to customers in Communities (Retail Margin)	**10.00**	**10.00**	**10.00**		**10.00**
Delivered Retail ex-tax Cost to Coastal Communities Customers CPL	**14.19**	**15.98**	**15.14**	Avg	**14.85**

APPENDIX H

Table H-5

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 5 - Triton, Springdale, Baie Verte Peninsula

Census Population -1991	21,158	Loading Tank Wagon at type Facility	**Bulk Plant**
Census Population -1996	19,523	Kilometres for return trip in Zone	**139**
Census Population -2001	16,945	Average travel speed - Winter period (Km/Hr)	**50**
Estimated Households and Heating Method - 2001		Average travel speed - Remaining Months (Km/Hr)	**70**
Electric	2,583	Average annual drop per household delivery (Litres)	**425**
Oil/Other	4,042	Working Hours per Day per T/W - Winter Period	**10**
Total	6,624	Working Hours per Day per T/W - Remaining Months	**8**
Avg Population per Household 2001	**2.6**	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Estimated Percent Homes with Oil Heat	**61.0%**	Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Est Avg Vol Per Year Per Household Using Oil	**2,400**	Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**9,700,036**	Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**
Mother Marine Terminal Location	**Corner Brook**		

Average Cost of T/W Deliveries CPL HH Pricing Zone 5 - Triton, Springdale, Baie Verte Peninsula	**4.22**

HH Pricing Zone 5 - Triton, Springdale, Baie Verte Peninsula

	A. Use all Single Axle Tank Wagons			B. Use all Tandem Axle Tank Wagons		
	Winter Dec-Mar 61% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 61% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	5,917,022	3,783,014	9,700,036	5,917,022	3,783,014	9,700,036
Average Drop Amount per Household (Litres)	**451**	**385**	**425**	**451**	**385**	**425**
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**	**20,000**	**20,000**	**20,000**
Loading Time per Vehicle Load (Minutes)	32	30	30.72	40	38	39.22
Average # Drops Per Vehicle Load	25.5	29.9	27.1	44.3	51.9	47.1
Estimate of Kms Traveled Per Return Trip for Zone	**139**	**139**	**139**	**139**	**139**	**139**
Time for Each Drop (Mins)	20	15	**18**	20	15	**18**
Total Drop Time per Load (Minutes)	510	448	488	887	779	849
Average Speed Attained for Travel Time (kms /hr)	**50**	**70**	**57.8**	**50**	**70**	**57.8**
Total Travel Time per Load (Minutes)	167	119	144	167	119	144
Total Average Delivery Time for Each Load (Hours)	11.8	9.9	11.1	18.2	15.6	17.2
Average Delivery Rate Litres/Hr	974	1156	1040	1097	1282	1162
Volume Delivered During Period for area	5,917,022	3,783,014	9,700,036	5,917,022	3,783,014	9,700,036
# of Working Days during Period	100	200	300	100	200	300
Average Volume Delivered per Working Day for period	59,170	18,915	32,333	59,170	18,915	32,333
Average Required Total Vehicle Trips per Day	5.1	1.6		3.0	0.9	
Total Hours Required per day During Period	60.7	16.4		53.9	14.8	
Assumed Working Hours per Day per Vehicle	**10.0**	**8.0**		**10.0**	**8.0**	
Indicated Number of Vehicles Required	6.07	2.04		5.39	1.84	
Average Volume delivered by each TW for period	974,194	1,850,192		1,097,175	2,050,485	
Average Volume delivered by each TW per day.	9,742	9,251		10,972	10,252	
Actual Number of Vehicles required to be on hand	7	3		6	2	
Number of vehicles required full-time	6	2		5	1	
Volume delivered by full time vehicle(s)	5,845,164	3,700,384		5,485,875	2,050,485	
Volume left to be delivered by part time Vehicle	71,858	82,630	9,700,036	431,147	1,732,529	9,700,036
Part time Operation vehicle (Days)	7	9		39	169	
Idle time for part time vehicles) -(Days)	93	191		61	31	
Full Time Cost per vehicle per Day	$393	$393		$427	$427	
Idle Time Cost per vehicle per Day	$193	$193		$223	$223	
Cost of Full Time Vehicles for period	$236,000	$157,333		$213,333	$85,333	
Cost of Part Time Vehicles for period	$2,901	$3,513		$16,766	$72,101	
Cost of Idle Time for part Time Vehicles for period	$17,876	$0		$13,537	$0	
Total Cost for vehicles for period	$256,778	$160,847	$417,624	$243,637	$157,435	$401,071
Cost per Period based on required Vehicles (CPL)	**4.34**	**4.25**	**4.31**	**4.12**	**4.16**	**4.13**

Average Tandem & Single Axle TWs	**4.22**

APPENDIX H

Table H-5a

Tank Wagon Delivery Cost Model - Home Heating Fuel

Deliver to Long Island from Springdale Bulk Plant

HH Pricing Zone 5a - Long Island

Ferry from Pilleys Island

Census Population -1991	397
Census Population -1996	348
Census Population -2001	308
Estimated Households and Heating Method - 2001	
Electric	44
Oil/Other	76
Total	120
Avg Population per Household 2001	**2.6**
Estimated Percent Homes with Oil Heat	**63.0%**
Est Avg Vol Per Year Per Household Using Oil	**2,400**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**181,440**
Load at Springdale Bulk Plant	**7:30 am**
Return to Springdale at	**6:30 pm**
Total Trip Time (Hours)	**11.0**

Ferry Return Rates: $4.00 Driver $44.00 T/W

Ferry Trip 1 hour each way - Get Ferry at 9:30 am - return at 4:30 pm

Time available on Island for Drops 7 hrs 420 minutes

Loading Tank Wagon at type Facility **Bulk Plant**

Average Kilometres for return trip in Zone	**112**
Average travel speed - Winter period (Km/Hr)	**50**
Average travel speed - Remaining Months (Km/Hr)	**70**
Average annual drop per household delivery (Litres)	**400**
Working Hours per Day per T/W - Winter Period	**11**
Working Hours per Day per T/W - Remaining Months	**10**
Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**

Average Cost of T/W Deliveries CPL	
HH Pricing Zone 5a - Long Island	**4.94**

HH Pricing Zone 5a - Long Island

	A. Use all Single Axle Tank Wagons			B. Use all Tandem Axle Tank Wagons		
	Winter Dec-Mar 61% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 61% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	110,678	70,762	181,440	110,678	70,762	181,440
Average Drop Amount per Household (Litres)	**424**	**362**	**400**	**424**	**362**	**400**
Capacity per Vehicle (Litres)	**9,000**	**9,000**	**9,000**	**16,000**	**16,000**	**16,000**
Average # Drops Per Vehicle Load	21	25	23	38	44.2	40.0
Loading Time per Vehicle Load (Minutes)	29	27	28.22	36	34	35.22
Estimate of Kms Traveled Per Return Trip for Zone	**112**	**112**	**112**	**112**	**112**	**112**
Average Speed Attained for Travel Time (kms /hr)	**50**	**70**	**57.8**	**50**	**70**	**57.8**
Total Travel Time per Load (Minutes)	134	96	116	134	96	116
Time for Each Drop (Mins)	20	16	**18**	17	16	**17**
Total Available Drop Time per Load (Mins)	420	398	412	642	707	664
Ferry Crossing Time Return Trip (Mins)	20	20	20	40	3.0	3.0
Total Load Delivery Time with Ferry Trip (Mins)	**603**	541	576	**852**	852	852
Average Delivery Time required for Each Load (Hours)	10.1	9.0	9.6	14.2	17.0	16.6
Volume Required Delivered During Period for area	110,678	70,762	181,440			
# of Full Working Days available during Period	100	200	300	**Note: Not Feasible to use Tandem TWs due to trip time involved**		
Average Volume Delivered per Working Day for period	9,000	9,000	9,000			
# of Full Working Days required during Period	12	8	20			
Average Required Total Trips per Day	1.0	1.0				
Total Hours Required per day During Period	10.1	9.0				
Rounded up Working Hours per Day per Vehicle	**11.0**	**10.0**				
Indicated Number of Vehicles Required	0.91	0.90				
Average Volume delivered by each TW for period	110,678	70,762	181,440			
Average Volume delivered by each TW per day.	9,000	9,000				
Number of vehicles required full-time	1	1				
Volume delivered by full time vehicle(s)	110,678	70,762	181,440			
Volume left to be delivered by part time Vehicle	Nil	Nil				
Part time Operation vehicle (Days)	Nil	Nil				
Idle time for part time vehicles) -(Days)	Nil	Nil				
Full Time Cost per vehicle per Day	$393	$393				
Full time Cost per Hour based on 10 Hours per day	$39	$39				
Idle Time Cost per vehicle per Day	$193	$193				
Idle Time Cost per Hour based on 10 hour day	$19	$19				
Cost of Full Time Vehicles for period	$4,860	$3,090				
Cost of Part Time Vehicles for period	N/A	N/A				
Cost of Idle Time for part Time Vehicles for period	N/A	N/A				
Cost of Ferry Per Trip (Driver and Helper in Winter)	$52	$48				
Total cost of Ferry Trips for period	$639	$377				
Total Cost for vehicles for period	$5,500	$3,467	$8,967			
Cost per Period based on required Vehicles (CPL)	**4.97**	**4.90**	**4.94**			

Average Single Axle TWs **4.94**

APPENDIX H

Table H-5b

Tank Wagon Delivery Cost Model - Home Heating Fuel

Deliver to Long Island from Springdale Bulk Plant

HH Pricing Zone 5b - Little Bay Islands
Ferry from Shoal Arm

Census Population -1991	261
Census Population -1996	244
Census Population -2001	176
Estimated Households and Heating Method - 2001	
Electric	26
Oil/Other	49
Total	75
Avg Population per Household 2001	**2.3**
Estimated Percent Homes with Oil Heat	**65.0%**
Est Avg Vol Per Year Per Household Using Oil	**2,400**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**117,000**
Load at Springdale Bulk Plant	**7:30 am**
Return to Springdale at	**6:30 pm**
Total Trip Time (Hours)	**11.0**

Ferry Return Rates: $4.50 Driver $82.00 T/W
Ferry Trip 1 hour each way - Get Ferry at 8:45 am - return at 5:30 pm
Time available on Island for Drops (Hrs 6.25 375 minutes

		Bulk Plant
Loading Tank Wagon at type Facility		
Average Kilometres for return trip in Zone		**52**
Average travel speed - Winter period (Km/Hr)		**50**
Average travel speed - Remaining Months (Km/Hr)		**60**
Average annual drop per household delivery (Litres)		**450**
Working Hours per Day per T/W - Winter Period		**11**
Working Hours per Day per T/W - Remaining Months		**10**
Annual Operation Cost - Singe Axle Tank Wagon		$118,000
Annual Operation Cost - Tandem Axle Tank Wagon		$128,000
Idle Time Cost per day - Single Axle Tank-Wagon		**$193**
Idle Time Cost per day - Tandem Axle Tank-Wagon		**$223**

Average Cost of T/W Deliveries CPL	
HH Pricing Zone 5b - Little Bay Islands	**5.38**

HH Pricing Zone 5b - Little Bay Islands

	A. Use all Single Axle Tank Wagons			B. Use all Tandem Axle Tank Wagons		
	Winter Dec-Mar 61% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 61% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	71,370	45,630	117,000	71,370	45,630	117,000
Average Drop Amount per Household (Litres)	**477**	**407**	**450**	**477**	**407**	**450**
Capacity per Vehicle (Litres)	**9,000**	**9,000**	**9,000**	**16,000**	**16,000**	**16,000**
Average # Drops Per Vehicle Load	19	22	20	34	39.3	35.6
Loading Time per Vehicle Load (Minutes)	29	27	28	36	34	35.22
Estimate of Kms Traveled Per Return Trip for Zone	**52**	**52**	**52**	**52**	**52**	**52**
Average Speed Attained for Travel Time (kms /hr)	**50**	**60**	**54**	**50**	**60**	**53.9**
Total Travel Time per Load (Minutes)	62	52	58	62	52	58
Time for Each Drop (Mins)	20	16	18	20	16	**18**
Total Available Drop Time per Load (Mins)	375	354	367	**671**	629	656
Ferry Crossing Time Return Trip (Mins)	150	150	150	40	3.0	3.0
Total Trip Delivery Time with Ferry Trip (Mins)	**616**	583	603	**809**		
Average Delivery Time required for Each Load (Hours)	10.3	9.7	10.1	13.5	14.9	15.5
Volume Required Delivered During Period for area	71,370	45,630	117,000			
# of Full Working Days available during Period	100	200	300	**Note: Not Feasible to use Tandem TWs due to trip time involved**		
Average Volume Delivered per Working Day for period	9,000	9,000	9,000			
# of Full Working Days required during Period	8	5	13			
Average Required Total Trips per Day	1.0	1.0				
Total Hours Required per day During Period	10.3	9.7				
Rounded up Working Hours per Day per Vehicle	**11.0**	**10.0**				
Indicated Number of Vehicles Required	0.93	0.97				
Average Volume delivered by each TW for period	71,370	45,630	117,000			
Average Volume delivered by each TW per day.	9,000	9,000				
Number of vehicles required full-time	1	1				
Volume delivered by full time vehicle(s)	71,370	45,630	117,000			
Volume left to be delivered by part time Vehicle	Nil	Nil				
Part time Operation vehicle (Days)	Nil	Nil				
Idle time for part time vehicles) -(Days)	Nil	Nil				
Full Time Cost per vehicle per Day	$393	$393				
Full time Cost per Hour based on 10 Hours per day	$39	$39				
Idle Time Cost per vehicle per Day	$193	$193				
Idle Time Cost per Hour based on 10 hour day	$19	$19				
Cost of Full Time Vehicles for period	$3,202	$1,935				
Cost of Part Time Vehicles for period	N/A	N/A				
Cost of Idle Time for part Time Vehicles for period	N/A	N/A				
Cost of Ferry Per Trip (Driver and Helper in Winter)	$91	$87				
Total cost of Ferry Trips for period	$722	$439				
Total Cost for vehicles for period	$3,923	$2,374	$6,297			
Cost per Period based on required Vehicles (CPL)	**5.50**	**5.20**	**5.38**			

Average Single Axle TWs **5.38**

APPENDIX H

Table H-6

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 6 - Corner Brook, Bay of Islands, Deer Lake to Howley

Census Population -1991	43,196	Loading Tank Wagon at type Facility	**Terminal**
Census Population -1996	42,396	Kilometres for return trip in Zone	**76**
Census Population -2001	38,824	Average travel speed - Winter period (Km/Hr)	**40**
Estimated Households and Heating Method - 2001		Average travel speed - Remaining Months (Km/Hr)	**60**
Electric	7,421	Average annual drop per household delivery (Litres)	**450**
Oil/Other	7,079	Working Hours per Day per T/W - Winter Period	**10**
Total	14,500	Working Hours per Day per T/W - Remaining Months	**8**
Avg Population per Household 2001	**2.7**	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Estimated Percent Homes with Oil Heat	**48.8%**	Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Est Avg Vol Per Year Per Household Using Oil	**3,000**	Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**21,235,825**	Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**

Loading Terminal Location **Corner Brook**

Average Cost of T/W Deliveries CPL HH Pricing Zone 6 - Corner Brook, Bay of Islands, Deer Lake to Howley	**3.62**

HH Pricing Zone 6 - Corner Brook, Bay of Islands, Deer Lake to Howley

	A. Use all Single Axle Tank Wagons			B. Use all Tandem Axle Tank Wagons		
	Winter Dec-Mar 61% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 61% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	12,953,853	8,281,972	21,235,825	12,953,853	8,281,972	21,235,825
Average Drop Amount per Household (Litres)	**477**	**407**	**450**	**477**	**407**	**450**
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**	**20,000**	**20,000**	**20,000**
Loading Time per Vehicle Load (Minutes)	27	24	25.33	35	32	33.83
Average # Drops Per Vehicle Load	24.1	28.3	25.6	41.9	49.1	44.4
Estimate of Kms Traveled Per Return Trip for Zone	**76**	**76**	**76**	**76**	**76**	**76**
Time for Each Drop (Mins)	20	15	**18**	20	15	**18**
Total Drop Time per Load (Minutes)	482	424	461	839	737	802
Average Speed Attained for Travel Time (kms /hr)	**40**	**60**	**47.8**	**40**	**60**	**47.8**
Total Travel Time per Load (Minutes)	114	76	95	114	76	95
Total Average Delivery Time for Each Load (Hours)	10.4	8.7	9.7	16.5	14.1	15.5
Average Delivery Rate Litres/Hr	1108	1318	1186	1215	1420	1288
Volume Delivered During Period for area	12,953,853	8,281,972	21,235,825	12,953,853	8,281,972	21,235,825
# of Working Days during Period	100	200	300	100	200	300
Average Volume Delivered per Working Day for period	129,539	41,410	70,786	129,539	41,410	70,786
Average Required Total Trips per Day for Period	11.3	3.6		6.5	2.1	
Total Hours Required per day During Period	116.9	31.4		106.6	29.2	
Assumed Working Hours per Day per Vehicle	**10.0**	**8.0**		**10.0**	**8.0**	
Indicated Number of Vehicles Required	11.69	3.93		10.66	3.65	
Average Volume delivered by each TW for period	1,108,113	2,109,556		1,215,098	2,271,919	
Average Volume delivered by each TW per day.	11,081	10,548		12,151	11,360	
Actual Number of Vehicles required to be on hand	12	4		11	4	
Number of vehicles required full-time	11	3		10	3	
Volume delivered by full time vehicle(s)	12,189,241	6,328,667		12,150,983	6,815,756	Ck Total
Volume left to be delivered by part time Vehicle	764,613	1,953,304	21,235,825	802,870	1,466,216	21,235,825
Part time Operation vehicle (Days)	69	185		66	129	
Idle time for part time vehicles) -(Days)	31	15		34	71	
Full Time Cost per vehicle per Day	$393	$381		$427	$427	
Idle Time Cost per vehicle per Day	$193	$193		$223	$223	
Cost of Full Time Vehicles for period	$432,667	$228,600		$426,667	$256,000	
Cost of Part Time Vehicles for period	$27,141	$70,556		$28,192	$55,071	
Cost of Idle Time for part Time Vehicles for period	$5,983	$0		$7,565	$0	
Total Cost for vehicles for period	$465,790	$299,156	$764,946	$462,424	$311,071	$773,495
Cost per Period based on required Vehicles (CPL)	**3.60**	**3.61**	**3.60**	**3.57**	**3.76**	**3.64**

Average Tandem & Single Axle TWs **3.62**

APPENDIX H

Table H-7W

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 7 - West - Stephenville and Port aux Basque Areas

Census Population -1991	35,672	Loading Tank Wagon at type Facility	**Bulk Plant**
Census Population -1996	33,891	Average Kilometres for return trip in Zone	**80**
Census Population -2001	29,941	Average travel speed - Winter period (Km/Hr)	**50**
Estimated Households and Heating Method - 2001		Average travel speed - Remaining Months (Km/Hr)	**70**
Electric	5,227	Average annual drop per household delivery (Litres)	**400**
Oil/Other	6,328	Working Hours per Day per T/W - Winter Period	**10**
Total	11,555	Working Hours per Day per T/W - Remaining Months	**8**
Avg Population per Household 2001	**2.6**	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Estimated Percent Homes with Oil Heat	**54.8%**	Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Est Avg Vol Per Year Per Household Using Oil	**2,500**	Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**15,820,650**	Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**
Mother Marine Terminal Location	**Corner Brook**		

HH Pricing Zone 7 - West - Stephenville and Port aux Basque Areas	**3.98**

HH Pricing Zone 7 - West - Stephenville and Port aux Basque Areas

	A. Use all Single Axle Tank Wagons			B. Use all Tandem Axle Tank Wagons		
	Winter Dec-Mar 61% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 61% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	9,650,597	6,170,054	15,820,650	9,650,597	6,170,054	15,820,650
Average Drop Amount per Household (Litres)	**424**	**362**	**400**	**424**	**362**	**400**
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**	**20,000**	**20,000**	**20,000**
Loading Time per Vehicle Load (Minutes)	32	30	30.72	40	38	39.22
Average # Drops Per Vehicle Load	27.1	31.8	28.8	47.2	55.2	50.0
Estimate of Kms Traveled Per Return Trip for Zone	**80**	**80**	**80**	**80**	**80**	**80**
Time for Each Drop (Mins)	20	15	**18**	20	15	**18**
Total Drop Time per Load (Minutes)	542	477	519	943	829	903
Average Speed Attained for Travel Time (kms /hr)	**50**	**70**	**57.8**	**50**	**70**	**57.8**
Total Travel Time per Load (Minutes)	96	69	83	96	69	83
Total Average Delivery Time for Each Load (Hours)	11.2	9.6	10.5	18.0	15.6	17.1
Average Delivery Rate Litres/Hr	1030	1201	1091	1112	1283	1171
Volume Delivered During Period for area	9,650,597	6,170,054	15,820,650	9,650,597	6,170,054	15,820,650
# of Working Days during Period	100	200	300	100	200	300
Average Volume Delivered per Working Day for period	96,506	30,850	52,736	96,506	30,850	52,736
Average Required Total Trips per Day	8.4	2.7		4.8	1.5	
Total Hours Required per day During Period	93.7	25.7		86.8	24.0	
Assumed Working Hours per Day per Vehicle	**10.0**	**8.0**		**10.0**	**8.0**	
Indicated Number of Vehicles Required	9.37	3.21		8.68	3.01	
Average Volume delivered by each TW for period	1,029,923	1,921,367		1,111,733	2,052,816	
Average Volume delivered by each TW per day.	10,299	9,607		11,117	10,264	
Actual Number of Vehicles required to be on hand	10	4		9	4	
Number of vehicles required full-time	9	3		8	3	
Volume delivered by full time vehicle(s)	9,269,309	5,764,102	Ck Total	8,893,861	6,158,447	Ck Total
Volume left to be delivered by part time Vehicle	381,287	405,951	15,820,650	756,736	11,606	15,820,650
Part time Operation vehicle (Days)	37	42		68	1	
Idle time for part time vehicles) -(Days)	63	158		32	199	
Full Time Cost per vehicle per Day	$393	$381		$427	$427	
Idle Time Cost per vehicle per Day	$193	$193		$223	$223	
Cost of Full Time Vehicles for period	$354,000	$228,600		$341,333	$256,000	
Cost of Part Time Vehicles for period	$14,562	$16,100		$29,042	$482	
Cost of Idle Time for part Time Vehicles for period	$12,155	$0		$7,121	$0	
Total Cost for vehicles for period	$380,717	$244,700	$625,416	$377,497	$256,482	$633,979
Cost per Period based on required Vehicles (CPL)	**3.95**	**3.97**	**3.95**	**3.91**	**4.16**	**4.01**

Average Tandem & Single Axle TWs **3.98**

APPENDIX H

Table H-7SE

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 7 - South East - Burgeo

Census Population -1991	2,400	Loading Tank Wagon at type Facility	**Bulk Plant**
Census Population -1996	2,098	Kilometres for return trip in Zone	**12**
Census Population -2001	1,782	Average travel speed - Winter period (Km/Hr)	**30**
Estimated Households and Heating Method - 2001		Average travel speed - Remaining Months (Km/Hr)	**50**
Electric	274	Average annual drop per household delivery (Litres)	**400**
Oil/Other	411	Working Hours per Day per T/W - Winter Period	**8**
Total	685	Working Hours per Day per T/W - Remaining Months	**8**
Avg Population per Household 2001	**2.6**	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Estimated Percent Homes with Oil Heat	**60.0%**	Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Est Avg Vol Per Year Per Household Using Oil	**2,500**	Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**1,027,500**	Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**
Mother Marine Terminal Location	**Corner Brook**	**Average Cost of T/W Deliveries CPL**	
		HH Pricing Zone 7 - South East - Burgeo	**4.80**

HH Pricing Zone 7 - South East - Burgeo

	A. Use all Single Axle Tank Wagons			B. Use all Tandem Axle Tank Wagons		
	Winter Dec-Mar 61% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 61% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	626,775	400,725	1,027,500	626,775	400,725	1,027,500
Average Drop Amount per Household (Litres)	**424**	**362**	**400**	**424**	**362**	**400**
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**	**20,000**	**20,000**	**20,000**
Loading Time per Vehicle Load (Minutes)	32	30	30.72	40	38	39.22
Average # Drops Per Vehicle Load	27.1	31.8	28.8	47.2	55.2	50.0
Estimate of Kms Traveled Per Return Trip for Zone	**12**	**12**	**12**	**12**	**12**	**12**
Time for Each Drop (Mins)	20	15	**18**	20	15	**18**
Total Drop Time per Load (Minutes)	542	477	519	943	829	903
Average Speed Attained for Travel Time (kms /hr)	**30**	**50**	**37.8**	**30**	**50**	**37.8**
Total Travel Time per Load (Minutes)	24	14	19	24	14	19
Total Average Delivery Time for Each Load (Hours)	10.0	8.7	9.5	16.8	14.7	16.0
Average Delivery Rate Litres/Hr	1154	1326	1213	1191	1362	1249
Volume Delivered During Period for area	626,775	400,725	1,027,500	626,775	400,725	1,027,500
# of Working Days available during Period	100	200	300	100	200	300
# of Working Days required during Period	68	38		66	37	
Average Volume Delivered per Working Day for period	6,268	2,004	3,425	6,268	2,004	3,425
Average Required Total Trips per Day	0.5	0.2		0.3	0.1	
Total Hours Required per day During Period	5.4	1.5		5.3	1.5	
Assumed Available Working Hours per Day per Vehicle	**8.0**	**8.0**		**8.0**	**8.0**	
Indicated Number of Vehicles Required	0.68	0.19		0.66	0.18	
Average Volume delivered by each TW for period	626,775	400,725	1,027,500	626,775	400,725	1,027,500
Average Volume delivered by each TW per day.	6,268	2,004		6,268	2,004	
Actual Number of Vehicles required to be on hand	1	1		1	1	
Number of vehicles required full-time	0	0		0	0	
Volume delivered by full time vehicle(s)	0	0		0	0	
Volume left to be delivered by part time Vehicle	626,775	400,725	1,027,500	626,775	400,725	1,027,500
Part time Operation vehicle (Days)	68	38		66	37	
Idle time for part time vehicles -(Days)	32	162		34	163	
Full Time Cost per vehicle per Day	$393	$381		$427	$427	
Idle Time Cost per vehicle per Day	$193	$186		$223	$223	
Cost of Full Time Vehicles for period	$0	$0		$0	$0	
Cost of Part Time Vehicles for period	$26,705	$14,394		$28,063	$15,693	
Cost of Idle Time for part Time Vehicles for period	$6,196	$0		$7,633	$0	
Total Cost for vehicles for period	$32,902	$14,394	$47,296	$35,696	$15,693	$51,388
Cost per Period based on required Vehicles (CPL)	**5.25**	**3.59**	**4.60**	**5.70**	**3.92**	**5.00**

Average Tandem & Single Axle TWs **4.80**

APPENDIX H

Table H-7a

Tank Wagon Delivery Cost Model - Home Heating Fuel

No Bulk Plant at Ramea - Deliver Direct to Zone from Burgeo Bulk Plant

HH Pricing Zone 7a - Ramea

Ferry from Burgeo-Return Rates: $6.00 Driver $128.00 T/W

Ferry Trip 1 hour each way - Get Ferry at 9:30 am - return at 3:30 pm next day

Time available on Island for Drops-hrs **14.5** **870** minutes

Census Population -1991	1,224	Loading Tank Wagon at type Facility - BURGEO	**Bulk Plant**
Census Population -1996	1,080	Average Kilometres for return trip in Zone	**20**
Census Population -2001	754	Average travel speed - Winter period (Km/Hr)	**50**
Estimated Households and Heating Method - 2001		Average travel speed - Remaining Months (Km/Hr)	**50**
Electric	27	Average annual drop per household delivery (Litres)	**300**
Oil/Other	242	Working Hours per Day per T/W - Winter Period	See Table
Total	269	Working Hours per Day per T/W - Remaining Months	See Table
Avg Population per Household 2001	**2.8**	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Estimated Percent Homes with Oil Heat	**90.0%**	Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Est Avg Vol Per Year Per Household Using Oil	**2,500**	Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**605,714**	Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**
Load at Burgeo Bulk Plan	**7:30 am**	Note: **Tank Wagon and Driver must over-night in Ramea due to**	
Get Ferry at 4:30 pm and arrive Burgeo Next Day at	**6:00 pm**	**Ferry Schedule to allow time for full load T/W deliveries**	
Total Trip Time (Hours)	**22.5**	**Average Cost of T/W Deliveries CPL HH Pricing Zone 7a - Ramea**	**8.58**

HH Pricing Zone 7a - Ramea

	A. Use all Single Axle Tank Wagons			
	Winter Dec-Mar 61% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Note: Use of Tandem Tank Wagons not possible in Ramea due to narrow roadways.**
Total Volume by Zone for Heating Fuel for Year (Litres)	369,486	236,229	605,714	
Average Drop Amount per Household (Litres)	**318**	**271**	**300**	
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**	
Average # Drops Per Vehicle Load	36	42	38	
Loading Time per Vehicle Load (Minutes)	32	32	32	
Estimate of Kms Traveled Per Return Trip for Zone	**20**	**20**	**20**	
Average Speed Attained for Travel Time (kms /hr)	**50**	**50**	**50**	
Total Travel Time per Load (Minutes)	24	24	24	
Allowable Time for Each Drop (Mins)	24	21	**23**	
Total Available Drop Time per Load (Mins)	870	870	870	
Ferry Crossing Time Return Trip (Mins)	200	200	200	
Total Load Delivery Time with Ferry Trip (Mins)	**1126**	1126	1126	
Average Total Working Time required for Each Load (Hrs)	18.8	18.8	18.8	
Volume Required Delivered During Period for area	369,486	236,229	605,714	
# of Full Working Days available during Period	100	200	300	
Average Volume Delivered per Trip	11,500	11,500	5,750	
# of Full Working Days required during Period (2 per Trip)	64	41	105	
Average Required Total Trips per period	32	21		
Total Hours Required per day During Period	11.3	11.3		
Rounded up Working Hours per Day per Vehicle	**12.0**	**12.0**		
Indicated Number of Vehicles Required	0.94	0.94		
Average Volume delivered by each TW for period	369,486	236,229	605,714	
Average Volume delivered by each TW per day.	5,750	5,750		
Number of vehicles required to be on-hand	1	1		
Volume delivered by full time vehicle(s)	0	0	0	
Volume left to be delivered by part time Vehicle	369,486	236,229		
Part time Operation vehicle (Days)	64	41		
Idle time for part time vehicles) -(Days)	36	159		
Full Time Cost per vehicle per Day	$393	$393		
Full time Cost per Hour based on 10 Hours per day	$39	$39		
Idle Time Cost per vehicle per Day	$186	$186		
Idle Time Cost per Hour based on 10 hour day	$19	$19		
Cost of Full Time Vehicles for period	$0	$0		
Cost of Part Time Vehicles for period	$23,695	$15,149		
Cost of Idle Time for part Time Vehicles for period	Not Applied	Not Applied		
Cost of return Ferry Per Trip (Driver and Helper in Winter)	$140	$134		
Total cost of Ferry Crossings for Period	$4,498	$2,753		
Cost of Over-night in Ramea (Driver and Helper in Winter)	$6,426	$2,054		
Total Cost for vehicles for period	$34,619	$17,338	$51,957	
Cost per Period based on required Vehicles (CPL)	**9.37**	**7.34**	**8.58**	

Average Single Axle TWs for Year CPL **8.58**

APPENDIX H

Table H-7b

Drum deliveries Furnace Oil or Diesel from Burgeo to Coastal Communities of La Poile, Grand Bruit, and Grey River & Francois

HH Pricing Zone 7b - Grey River / Francois / Lapoile / Grand Bruit

Furnace Oil Use	La Poile	Grand Bruit	Grey River	Francois	Totals
Census Population -1991	168	64	181	187	600
Census Population -1996	148	57	188	175	568
Census Population -2001	131	50	174	162	517
Estimated Households and Heating Method - 2001:					
Electric	14	5	18	15	53
Oil/Other	33	13	42	35	123
Total	47	18	60	50	175
Avg Population per Household 2001	2.8	2.8	2.9	3.2	3.0
Estimated Percent Homes with Oil Heat	70%	70%	70%	70%	70%
Est Avg Vol Per Year Per Household Using Oil	1,800	1,800	1,800	1,800	1,800
Estimated Total Heating Fuel Per Year for Zone (Litres)	59,220	22,680	75,600	63,000	**220,500**
	(Average Including Retail Margin of 10.0 cpl)				**14.27**

HH Pricing Zone 7b - Grey River / Francois / Lapoile / Grand Bruit	**La Poile**	**Grand Bruit**	**Grey River**	**Francois**		**Totals & Averages**
Total Volume by Community for Heating Fuel for Year (Litres)	59,220	22,680	75,600	63,000		220,500
Total Volume by Community for winter months (Litres)	36,124	13,835	46,116	38,430		134,505
Total Volume by Community for remaining months (Litres)	23,096	8,845	29,484	24,570		85,995
Total Drums Required per Year	289	111	369	307		1,076
Tank Wagon Delivery to Drums at Dockside						
Single Axle Tank-Wagon - Capacity (Litres)	11,500	11,500	11,500	11,500		11,500
Drums filled per month (Winter period)	44	17	56	47		164
Capacity of each drum (litres)	205	205	205	205		205
Total quantity required to fill drums (Litres)	9,031	3,459	11,529	9,608		33,626
Minutes to Load tank wagon @ 500 litres /min	18	7	23	19		
Driving Time - Return Trip to dockside	20	20	20	20		
Drum filling time (minutes each drum)	4	4	4	4		
Total Drum filling time (mins)	176	67	225	187		
Allowance for delays (mins)	30	10	30	30		Weighted
Total time for return trip (mins)	244	104	298	257		Averages
Total trip time (hours)	4.1	1.7	5.0	4.3		by
Single Axle Tank-Wagon - Cost per hour	$49.17	$49.17	$49.17	$49.17		Volume
Total cost based on time coat per hour for truck and driver	$200.19	$85.56	$244.22	$210.35		$740.32
Average cost per drum	$4.54	$5.07	$4.34	$4.49		$5.64
Average cost (Cents per litre) at 25% over tank-wagon cost	**2.77**	**3.09**	**2.65**	**2.74**		**2.75**
Estimated Weight of each Drum Empty (Kg)	23	23	23	23		23
Estimated Weight of each Drum Full (Kg)	196	196	196	196		196
Winter Period: Handling and Shipping Drums						
Total Number of Drums required over Winter Period	176	67	225	187		656
Number of Months during Winter Period (Dec-Mar)	4	4	4	4		4
Average Number of Drums shipped per month in winter period	44	17	56	47		164
Freight Cost per 50 Kg (Maximum $50 per trip)	$2.00	$2.00	$2.00	$2.00		$2.00
Total weight shipment (Kgs)	8,635	3,307	11,023	9,186		32,150
Coastal Freight Shipping Full Drums Cost (Maximum per shipment)	$50.00	$50.00	$50.00	$50.00		$200.00
Cost of Shipping each Full Drum each shipment	$1.13	$2.96	$0.89	$1.07		$1.22
Total weight empty drums returned each month (Kgs)	1,013	388	1,293	1,078		3,773
Coastal Freight Shipping Return Empty Drums Cost per month	$40.53	$15.52	$50.00	$43.12		$149.17
Cost of Shipping each Drum Empty (Return to Burgeo each month)	$0.92	$0.92	$0.89	$0.92		$0.91
Total Return Coastal Freight Shipping Cost per Drum	$2.05	$3.88	$1.78	$1.99		$2.13
Total Return Coastal Freight Shipping Cost (Cents per Litre)	1.00	1.89	0.87	0.97		1.04
Non-Winter Period: Handling and Shipping Drums						
Total Number of Drums required over Period	113	43	144	120		419
Number of Months during Period	8	8	8	8		8
Average Number of Drums shipped per month in Period	15	6	18	15		53
Total weight shipment (Kgs)	2,940	1,176	3,528	2,940		10,584
Coastal Freight Shipping Full Drums Cost (Maximum per shipment)	$50.00	$47.04	$50.00	$50.00		$197.04
Cost of Shipping each Full Drum each month	$3.33	$7.84	$2.78	$3.33		$3.72
Total weight empty drums returned each month (Kgs)	345	138	414	345		1,219
Coastal Freight Shipping Empty Drums Cost per month	$13.80	$5.52	$16.56	$13.80		$49.68
Cost of Shipping each Drum Empty (Return to Burgeo each week)	$0.92	$0.92	$0.92	$0.92		$0.94
Total Return Coastal Freight Shipping Cost per Drum	$4.25	$8.76	$3.70	$4.25		$4.66
Total Return Coastal Freight Shipping Cost (Cents per Litre)	2.07	4.27	1.80	2.07		2.27
Year Round Average Costs:						
Total Shipping Costs all Drums	$841	$640	$932	$882		$3,349
Average annual Shipping Costs all Drums CPL	**1.42**	**2.82**	**1.23**	**1.40**		**1.52**
Total Delivered Cost to Destination Community Docks (**Wholesale point of sale**) CPL	**4.19**	**5.91**	**3.88**	**4.14**	**Avg**	**4.27**
Total cost of delivering drums to customers in Communities (Retail Margin)	**10.00**	**10.00**	**10.00**	**10.00**		**10.00**
Delivered Retail ex-tax Cost to Coastal Communities Customers CPL	**14.19**	**15.91**	**13.88**	**14.14**	**Avg**	**14.27**

APPENDIX H

Table H-8

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 8 - Gros Morne to Bellburns

Area serviced direct from Corner Brook Marine Terminal

Census Population -1991	5,862	Loading Tank Wagon at type Facility	**Terminal**
Census Population -1996	5,449	Kilometres for return trip in Zone	**151**
Census Population -2001	4,771	Average travel speed - Winter period (Km/Hr)	**50**
Estimated Households and Heating Method - 2001		Average travel speed - Remaining Months (Km/Hr)	**70**
Electric	618	Average annual drop per household delivery (Litres)	**400**
Oil/Other	1,149	Working Hours per Day per T/W - Winter Period	**10**
Total	1,767	Working Hours per Day per T/W - Remaining Months	**8**
Avg Population per Household 2001	**2.7**	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Estimated Percent Homes with Oil Heat	**65.0%**	Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Est Avg Vol Per Year Per Household Using Oil	**2,200**	Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**2,526,863**	Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**
Marine Terminal Location	**Corner Brook**		

Average Cost of T/W Deliveries CPL	
HH Pricing Zone 8 - Gros Morne to Bellburns	**4.64**

HH Pricing Zone 8 - Gros Morne to Bellburns

	A. Use all Single Axle Tank Wagons			B. Use all Tandem Axle Tank Wagons		
	Winter Dec-Mar 61% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 61% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	1,541,386	985,477	2,526,863	1,541,386	985,477	2,526,863
Average Drop Amount per Household (Litres)	**424**	**362**	**400**	**424**	**362**	**400**
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**	**20,000**	**20,000**	**20,000**
Loading Time per Vehicle Load (Minutes)	27	24	25.33	35	32	33.83
Average # Drops Per Vehicle Load	27.1	31.8	28.8	47.2	55.2	50.0
Estimate of Kms Traveled Per Return Trip for Zone	**151**	**151**	**151**	**151**	**151**	**151**
Time for Each Drop (Mins)	20	15	**18**	20	15	**18**
Total Drop Time per Load (Minutes)	542	477	519	943	829	903
Average Speed Attained for Travel Time (kms /hr)	**50**	**70**	**57.8**	**50**	**70**	**57.8**
Total Travel Time per Load (Minutes)	181	129	157	181	129	157
Total Average Delivery Time for Each Load (Hours)	12.5	10.5	11.7	19.3	16.5	18.2
Average Delivery Rate Litres/Hr	920	1096	984	1035	1212	1098
Volume Delivered During Period for area	1,541,386	985,477	2,526,863	1,541,386	985,477	2,526,863
# of Working Days during Period	100	200	300	100	200	300
Average Volume Delivered per Working Day for period	15,414	4,927	8,423	15,414	4,927	8,423
Average Required Total Trips per Day	1.3	0.4		0.8	0.2	
Total Hours Required per day During Period	16.8	4.5		14.9	4.1	
Assumed Working Hours per Day per Vehicle	**10.0**	**8.0**		**10.0**	**8.0**	
Indicated Number of Vehicles Required	1.68	0.56		1.49	0.51	
Average Volume delivered by each TW for period	919,813	1,753,918		1,034,843	1,939,085	
Average Volume delivered by each TW per day.	9,198	8,770		10,348	9,695	
Actual Number of Vehicles required to be on hand	2	1		2	1	
Number of vehicles required full-time	1	0		1	0	
Volume delivered by full time vehicle(s)	919,813	0		1,034,843	0	
Volume left to be delivered by part time Vehicle	621,574	985,477		506,543	985,477	
Part time Operation vehicle (Days)	68	112		49	102	
Idle time for part time vehicles) -(Days)	32	88		51	98	
Full Time Cost per vehicle per Day	$393	$393		$427	$427	
Idle Time Cost per vehicle per Day	$193	$193		$223	$223	
Cost of Full Time Vehicles for period	$39,333	$0		$42,667	$0	
Cost of Part Time Vehicles for period	$26,580	$44,201		$20,885	$43,368	
Cost of Idle Time for part Time Vehicles for period	$6,258	$0		$11,384	$0	
Total Cost for vehicles for period	$72,171	$44,201	$116,372	$74,936	$43,368	$118,304
Cost per Period based on required Vehicles (CPL)	**4.68**	**4.49**	**4.61**	**4.86**	**4.40**	**4.68**

Average Tandem & Single Axle TWs	**4.64**

APPENDIX H

Table H-9

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 9 - Northern Peninsula North - River of Ponds to St. Anthony

Census Population -1991	18,795	Loading Tank Wagon at type Facility Area	**Bulk Plant**
Census Population -1996	17,085	Average Kilometres for return trip in Zone	**244**
Census Population -2001	15,044	Average travel speed - Winter period (Km/Hr)	**50**
Estimated Households and Heating Method - 2001		Average travel speed - Remaining Months (Km/Hr)	**70**
Electric	1,564	Average annual drop per household delivery (Litres)	**400**
Oil/Other	3,648	Working Hours per Day per T/W - Winter Period	**10**
Total	5,212	Working Hours per Day per T/W - Remaining Months	**8**
Avg Population per Household 2001	**2.9**	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Estimated Percent Homes with Oil Heat	**70.0%**	Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Est Avg Vol Per Year Per Household Using Oil	**2,100**	Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**7,661,640**	Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**
Mother Marine Terminal Location	**Corner Brook**		

Average Cost of T/W Deliveries CPL	
HH Pricing Zone 9 - Northern Peninsula North	**4.84**

HH Pricing Zone 9 - Northern Peninsula North - River of Ponds to St. Anthony

	A. Use all Single Axle Tank Wagons			**B. Use all Tandem Axle Tank Wagons**		
	Winter Dec-Mar 61% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 61% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	4,673,600	2,988,040	7,661,640	4,673,600	2,988,040	7,661,640
Average Drop Amount per Household (Litres)	**424**	**362**	**400**	**424**	**362**	**400**
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**	**20,000**	**20,000**	**20,000**
Loading Time per Vehicle Load (Minutes)	32	30	30.72	40	38	39.22
Average # Drops Per Vehicle Load	27.1	31.8	28.8	47.2	55.2	50.0
Estimate of Kms Traveled Per Return Trip for Zone	**244**	**244**	**244**	**244**	**244**	**244**
Time for Each Drop (Mins)	20	15	**18**	20	15	**18**
Total Drop Time per Load (Minutes)	542	477	519	943	829	903
Average Speed Attained for Travel Time (kms /hr)	**50**	**70**	**57.8**	**50**	**70**	**57.8**
Total Travel Time per Load (Minutes)	293	209	253	293	209	253
Total Average Delivery Time for Each Load (Hours)	14.4	11.9	13.4	21.3	17.9	19.9
Average Delivery Rate Litres/Hr	796	965	859	940	1115	1004
Volume Delivered During Period for area	4,673,600	2,988,040	7,661,640	4,673,600	2,988,040	7,661,640
# of Working Days during Period	100	200	300	100	200	300
Average Volume Delivered per Working Day for period	46,736	14,940	25,539	46,736	14,940	25,539
Average Required Total Trips per Day	4.1	1.3		2.3	0.7	
Total Hours Required per day During Period	58.7	15.5		49.7	13.4	
Assumed Working Hours per Day per Vehicle	**10.0**	**8.0**		**10.0**	**8.0**	
Indicated Number of Vehicles Required	5.87	1.94		4.97	1.67	
Average Volume delivered by each TW for period	796,075	1,543,706		940,294	1,784,599	
Average Volume delivered by each TW per day.	7,961	7,719		9,403	8,923	
Actual Number of Vehicles required to be on hand	6	2		5	2	
Number of vehicles required full-time	5	1		4	1	
Volume delivered by full time vehicle(s)	3,980,374	1,543,706		3,761,177	1,784,599	
Volume left to be delivered by part time Vehicle	693,227	1,444,334	7,661,640	912,423	1,203,441	7,661,640
Part time Operation vehicle (Days)	87	187		97	135	
Idle time for part time vehicles) -(Days)	13	13		3	65	
Full Time Cost per vehicle per Day	$393	$393		$427	$427	
Idle Time Cost per vehicle per Day	$193	$193		$223	$223	
Cost of Full Time Vehicles for period	$196,667	$78,667		$170,667	$85,333	
Cost of Part Time Vehicles for period	$34,252	$73,603		$41,402	$57,544	
Cost of Idle Time for part Time Vehicles for period	$2,493	$0		$661	$0	
Total Cost for vehicles for period	$233,412	$152,269	$385,681	$212,730	$142,878	$355,607
Cost per Period based on required Vehicles (CPL)	**4.99**	**5.10**	**5.03**	**4.55**	**4.78**	**4.64**

Average Tandem & Single Axle TWs **4.84**

APPENDIX H

Table H-10

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 10 - Labrador Straits - L'Anse au Clair to Red Bay

Census Population -1991	2,177	Loading Tank Wagon at type Facility	**Secondary Terminal**
Census Population -1996	2,062	Average Kilometres for return trip in Zone	**36**
Census Population -2001	1,996	Average travel speed - Winter period (Km/Hr)	**40**
Estimated Households and Heating Method - 2001		Average travel speed - Remaining Months (Km/Hr)	**60**
Electric	142	Average annual drop per household delivery (Litres)	**300**
Oil/Other	533	Working Hours per Day per T/W - Winter Period	**8**
Total	675	Working Hours per Day per T/W - Remaining Months	**8**
Avg Population per Household 2001	**3.0**	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Estimated Percent Homes with Oil Heat	**79.0%**	Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Est Avg Vol Per Year Per Household Using Oil	**1,700**	Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**906,100**	Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**
Loading Terminal Location	**L'Anse au Loup**	**Average Cost of T/W Deliveries CPL**	
		HH Pricing Zone 10 - Labrador Straits - L'Anse au Clair to Red Bay	**5.79**

Note 1: 70% Volume delivered during 4 winter months

Note 2: Due to home heat low volumes, no tank wagon idle time is charged anytime during year.

HH Pricing Zone 10 - Labrador Straits - L'Anse au Clair to Red Bay

	A. Use all Single Axle Tank Wagons			B. Use all Tandem Axle Tank Wagons		
	Winter Dec-Mar 70% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 70% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	634,270	271,830	906,100	634,270	271,830	906,100
Average Drop Amount per Household (Litres)	**318**	**271**	**300**	**318**	**271**	**300**
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**	**20,000**	**20,000**	**20,000**
Loading Time per Vehicle Load (Minutes)	32	30	30.72	40	38	39.22
Average # Drops Per Vehicle Load	36.2	42.4	38.3	62.9	73.8	66.7
Estimate of Kms Traveled Per Return Trip for Zone	**36**	**36**	**36**	**36**	**36**	**36**
Time for Each Drop (Mins)	20	15	**18**	20	15	**18**
Total Drop Time per Load (Minutes)	723	637	692	1258	1107	1203
Average Speed Attained for Travel Time (kms /hr)	**40**	**60**	**47.8**	**40**	**60**	**47.8**
Total Travel Time per Load (Minutes)	54	36	45	54	36	45
Total Average Delivery Time for Each Load (Hours)	13.5	11.7	12.8	22.5	19.7	21.5
Average Delivery Rate Litres/Hr	853	983	899	888	1016	932
Volume Delivered During Period for area	634,270	271,830	906,100	634,270	271,830	906,100
# of Working Days during Period	100	200	300	100	200	300
# of Working Days Required during Period	93	35		89	33	
Average Volume Delivered per Working Day for period	6,825	7,863		7,101	8,129	
Average Required Total Trips per Day	0.6	0.7		0.4	0.4	
Total Hours Required per day During Period	8.0	8.0		8.0	8.0	
Assumed Working Hours per Day per Vehicle	**8.0**	**8.0**		**8.0**	**8.0**	
Indicated Number of Vehicles Required	1.00	1.00		1.00	1.00	
Average Volume delivered by each TW for period	634,270	271,830	906,100	634,270	271,830	
Average Volume delivered by each TW per day.	6,825	7,863		7,101	8,129	
Actual Number of Vehicles required to be on hand	1	1		1	1	
Number of vehicles required full-time	0.93	0.17		0.89	0.17	
Volume delivered by full time vehicle(s)	0	0		0	0	
Volume left to be delivered by part time Vehicle	634,270	271,830	906,100	634,270	271,830	
Part time Operation vehicle (Days)	93	35		89	33	
Idle time for part time vehicles) -(Days)	7	165		11	167	
Full Time Cost per vehicle per Day	$393	$393		$427	$427	
Idle Time Cost per vehicle per Day	$193	$193		$223	$223	
Cost of Full Time Vehicles for period	$0	$0		$0	$0	
Cost of Part Time Vehicles for period	$36,553	$13,598		$38,109	$14,268	
Cost of Idle Time for part Time Vehicles for period	$0	$0		$2,382	$0	
Total Cost for vehicles for period	$36,553	$13,598	$50,151	$40,491	$14,268	$54,759
Cost per Period based on required Vehicles (CPL)	**5.76**	**5.00**	**5.53**	**6.38**	**5.25**	**6.04**

Average Tandem & Single Axle TWs **5.79**

APPENDIX H

Table H-11

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 11 - Labrador South Coast - Lodge Bay to Cartwright
(All Road Connected Communities throughout Area)

Census Population -1991	2,558	Loading Tank Wagon at type Facility	**Marine Depot/ Bulk Plant**
Census Population -1996	2,528	Average Kilometres for return trip within Zone	**245**
Census Population -2001	2,411	Average travel speed - Winter period (Km/Hr)	**45**
Estimated Households and Heating Method - 2001		Average travel speed - Remaining Months (Km/Hr)	**65**
Electric	150	Average annual drop size per household delivery (Litres)	**350**
Oil/Other	608	Working Hours per Day per T/W - Winter Period	**8**
Total	758	Working Hours per Day per T/W - Remaining Months	**8**
Avg Population per Household 2001	**3.2**	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Estimated Percent Homes with Oil Heat	**80.2%**	Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Est Avg Vol Per Year Per Household Using Oil	**640**	Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**389,120**	Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**

Note: Deliveries assumed from Bulk Plant or Marine Depot within the Zone Area

Average Cost of T/W Deliveries CPL	
HH Pricing Zone 11 - Labrador South Coast - Lodge Bay to Cartwright	**6.35**

Note 1: 70% Volume delivered during 4 winter months

Note 2: Due to home heat low volumes, no tank wagon idle time is charged anytime during year.

HH Pricing Zone 11 - Labrador South Coast - Lodge Bay to Cartwright

	A. Use all Single Axle Tank Wagons			B. Use all Tandem Axle Tank Wagons		
	Winter Dec-Mar 70% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 70% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	272,384	116,736	389,120	272,384	116,736	389,120
Average Drop Amount per Household (Litres)	**371**	**317**	**350**	**371**	**317**	**350**
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**	**20,000**	**20,000**	**20,000**
Loading Time per Vehicle Load (Minutes)	32	30	30.72	40	38	39.22
Average # Drops Per Vehicle Load	31.0	36.3	32.9	53.9	63.1	57.1
Estimate of Kms Traveled Per Return Trip for Zone	**245**	**245**	**245**	**245**	**245**	**245**
Time for Each Drop (Mins)	20	15	**18**	20	15	**18**
Total Drop Time per Load (Minutes)	620	544	593	1078	946	1031
Average Speed Attained for Travel Time (kms /hr)	**45**	**65**	**52.8**	**45**	**65**	**52.8**
Total Travel Time per Load (Minutes)	327	226	278	327	226	278
Total Average Delivery Time for Each Load (Hours)	16.3	13.3	15.0	24.1	20.2	22.5
Average Delivery Rate Litres/Hr	705	863	765	831	991	890
Volume Delivered During Period for area	272,384	116,736	389,120	272,384	116,736	389,120
# of Working Days during Period	100	200	300	100	200	300
# of Working Days Required during Period	48	17		41	15	
Average Volume Delivered per Working Day for period	5,644	6,902		6,644	7,930	
Average Required Total Trips per Day	0.5	0.6		0.3	0.4	
Total Hours Required per day During Period	8.0	8.0		8.0	8.0	
Assumed Working Hours per Day per Vehicle	**8.0**	**8.0**		**8.0**	**8.0**	
Indicated Number of Vehicles Required	1	1		0.41	0.07	
Average Volume delivered by each TW for period	272,384	116,736	389,120	272,384	116,736	
Average Volume delivered by each TW per day.	5,644	6,902		6,644	7,930	
Actual Number of Vehicles required to be on hand	1	1		1	1	
Number of vehicles required full-time	0.48	0.08		0	0	
Volume delivered by full time vehicle(s)	0	0		0	0	
Volume left to be delivered by part time Vehicle	272,384	116,736	389,120	272,384	116,736	389,120
Part time Operation vehicle (Days)	48	17		41	15	
Idle time for part time vehicles) -(Days)	52	183		59	185	
Full Time Cost per vehicle per Day	$393	$393		$427	$427	
Idle Time Cost per vehicle per Day	$193	$193		$223	$223	
Cost of Full Time Vehicles for period	$0	$0	$0	$0	$0	$0
Cost of Part Time Vehicles for period	$18,984	$6,653	25,637	$17,491	$6,281	23,772
Cost of Idle Time for part Time Vehicles for period	$0	$0	0	$0	$0	0
Total Cost for vehicles for period	$18,984	$6,653	$25,637	$17,491	$6,281	$23,772
Cost per Period based on required Vehicles (CPL)	**6.97**	**5.70**	**6.59**	**6.42**	**5.38**	**6.11**

Average Tandem & Single Axle TWs **6.35**

APPENDIX H

Table H-11a

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Zone 11a – Labrador South Coast (Isolated Communities with depots)

Census Population -1991 Black Tickle and Domino	260	Loading Tank Wagon at type Facility	**Marine Depot**
Census Population -1996 Black Tickle and Domino	231	Average Kilometres for return trip in Zone	**10**
Census Population -2001 Black Tickle and Domino	201	Average travel speed - Winter period (Km/Hr)	**40**
Estimated Households and Heating Method - 2001		Average travel speed - Remaining Months (Km/Hr)	**60**
Electric	0	Average annual drop per household delivery (Litres)	**200**
Oil/Other	67	Working Hours per Day per T/W - Winter Period	**8**
Total	67	Working Hours per Day per T/W - Remaining Months	**8**
Avg Population per Household 2001	**3.0**	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Estimated Percent Homes with Some Oil Heat	**95.0%**		
Est Avg Vol Per Year Per Household Using Oil	**1,200**		
Estimated Total Heating Fuel Per Year for Zone (Litres)	**80,400**		
Loading Terminal Location	**Various**		

Drum filling cost at Depot	CPL	10.00

Supply Mode Alternatives

HH Zone 11a – Labrador South Coast (Isolated Communities with depots)

	A. Use all Single Axle Tank Wagons for deliveries to homes				B. Fill 205 litre Drums for customers at marine Depot		
	Winter Dec-Mar 70% Annual Volume	Remaining Months	Full Year Avg/Totals			Full Year Avg/Totals	
Total Volume by Zone for Heating Fuel for Year (Litres)	56,280	24,120	80,400			80,400	
Average Drop Amount per Household (Litres)	**212**	**181**	**200**				
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**				
Capacity of each Drum Filled at Marine Depot						205	
Number of Drums Filled per period						392	
Number of weeks per period						52	
Cost of Filling / Handling each drum						$20.50	
Total cost of Filling/ Handling Drums						$8,040	
Loading Time per Vehicle Load (Minutes)							
Average # Drops Per Vehicle Load							
Estimate of Kms Traveled Per Return Trip for Zone							
Time for Each Drop (Mins)							
Total Drop Time per Load (Minutes)							
Average Speed Attained for Travel Time (kms /hr)							
Total Travel Time per Load (Minutes)							
Total Average Delivery Time for Each Load (Hours)							
Assumed Working Hours per Day per Vehicle							
Average days for delivering each load							
Average Delivery Rate Litres/Working Day							
Volume Delivered During Period for area							
# of Available Working Days during Period							
# of Working Days Required during Period 1 T/W							
Average Volume Delivered per Working Day for period							
Average Required Total Trips per working Day							
Total Hours Required per day During Period							
Assumed Working Hours per Day per Vehicle							
Indicated Number of Vehicles Required							
Actual Number of Vehicles required to be on hand							
Number of vehicles required full-time							
Average Volume delivered by each vehicle(s)							
Volume left to be delivered by part time Vehicle							
Part time Operation vehicle (Days)							
Idle time for full time vehicles -(Days)							
Full Time Cost per vehicle per Day							
Idle Time Cost per vehicle per Day							
Cost of Full Time Vehicles for period							
Cost of Part Time Vehicles for period							
Cost of Idle Time for full time Vehicles for period							
Total Cost for vehicles for period							
Cost per Period Cents per Litre (CPL)	**N/A**	**N/A**	**N/A**			**10.00**	

Note: Tank Wagon Delivery not feasible for low home heat volume unless commercial volumes were otherwise sufficient to justify the expense of operating a tank wagon vehicle in the community.

Average Cost of Drum Filling At Depot CPL 10.00

APPENDIX H

Table H-11b

Drum deliveries from Charlottetown to Coastal Communities of Williams Harbour & Norman Bay

HH Pricing Zone 11b - Williams Harbour - Norman Bay - Freight Ferry (If Service Applicable)

	Williams Harbour	Norman Bay	Totals
Census Population -1991	77	58	135
Census Population -1996	71	52	123
Census Population -2001	60	45	105
Estimated Households and Heating Method - 2001:			
Electric	0	0	0
Oil/Wood Combination	20	15	35
Total	20	15	35
Avg Population per Household 2001	3.0	3.0	3.0
Estimated Percent Homes with Oil or Wood Heat	100%	100%	100%
Est Avg Vol Per Year Per Household Using Oil	1,000	1,000	1,000
Estimated Total Heating Fuel Per Year for Zone (Litres)	20,000	15,000	35,000

HH Pricing Zone 11b - Williams Harbour - Norman Bay - Freight Ferry (If Service Applicable) **16.29**

HH Pricing Zone 11b - Williams Harbour - Norman Bay - Freight Ferry (If Service Applicable)	**Williams Harbour**	**Norman Bay**	**Totals / Averages**
Total Number of Drums required for year.	98	73	171
Number of shipping season months during Period	5	5	5
Average Number of Drums shipped per month during shipping season	20	15	35

Tank-Wagon delivery for drum filling at dockside from Bulk Plant / Marine Depot	Port Hope Simpson or Charlottetown	Charlottetown or Port Hope Simpson	**Totals / Averages**
For drums for shipment to:	Williams Harbour	Norman Bay	**Both**
Location	Dockside	Dockside	Dockside
Supplier	Agent	Agent	Agent
Distance one way (kms)	43	43	43
Tank Wagon	Single	Single	Single
Capacity (litres)	11,500	11,500	11,500
Avg Speed of TW (kms/hr)	50	50	50
Litres Delivered	4,100	3,075	7,175
Mins to Load	11	9	20
Mins driving (Return Trip)	103	103	103
# Drums per shipment	**20**	**15**	**35**
Litres per Drum	205	205	205
Total Drum Filling Time at 5 minutes per drum	100	75	175
Allowance for Delays (Mins)	20	20	40
Total Time return Trip Minutes	223	198	318
Total Trip Hrs	3.7	3.3	7.0
Operating cost $/hr	$49.17	$49.17	$49.17
Total load delivered cost	$182.91	$162.41	$345.31
Filling Cost per Drum	$9.15	$10.83	$9.87
Delivered cost to fill drums at dockside- CPL (Weighted Average)			**4.81**

Shipping Drums and Returning Empties: (See attached Calculation Table H-29 Supplement)

Coastal Freight Shipping Full Drums (Cost per shipment)	$389.83	$292.37	$682.20
Coastal Freight Return Shipping Empty Drums Cost per shipment	$80.86	$60.65	$141.51
Total Return Coastal Freight Shipping Cost per Drum	$23.53	$23.53	$23.53
Total Return Coastal Freight Shipping Cost (Cents per Litre)	**11.48**	**11.48**	**11.48**

Total Landed Cost of Drums at Dockside at Destination Community **(Wholesale Point of Sale)**			**16.29**

APPENDIX H

Table H-11b-Supplement

Drum Delivery Calculations - Freight Ferry to Williams Harbour and Norman Bay - Stove Oil (If Applicable)

Ferry Freight Rates to Williams Harbour and Norman Bay	Williams Harbour	Norman Bay	Totals / Averages
Full Drums Stove Oil:			
Weight of empty 45 imperial gallon oil drum is 23 Kgs or	50.7	50.7	50.7
Weight of 205 litres of Stove Oil at 7.97 lbs / gallon =	359.4	359.4	359.4
Total weight full drum Stove Oil	**410.1**	**410.1**	**410.1**
Cubic Weight of 1 drum gasoline per Ferry Rates Schedule			
Volume of 45 gallon drum at 6.228 gallons per cu. Ft.=	7.23	7.23	7.23
Cubic Weight of 1 Drum per Ferry Rate Calculations @ 10lbs/cu ft=	**72.3**	**72.3**	**72.3**
Assume 4 drums are strapped to one 4' by 4' pallet			
Weight of pallet approx =	22	22	22
Weight of full drum gasoline on pallet (Including 25% of pallet wt)	**415.6**	**415.6**	**415.6**
For full drum shipments Rate would be based on actual weight since it is greater than cubic weight			
Number of drums per shipment	20	15	35
Actual weight drum shipment palletized=	8312	6234	14546
Number of hundred weights	83	62	145
Rate $/cwt =	$4.36	$4.36	$4.36
Rate per actual weight=	$4.36	$4.36	$4.36
Rate per shipment =	$362.40	$271.80	$634.20
Add Top Wharfage at Load Port	$13.71	$10.29	$24.00
Add Top Wharfage at Discharge Port	$13.71	$10.29	$24.00
Total cost per shipment =	$389.83	$292.37	$682.20
Rate for 1 drum =	$19.49	$19.49	$19.49
Rate per Litre	**9.51**	**9.51**	**9.51**
Empty Drums Returned:			
Weight of empty 45 imperial gallon oil drum is 23 Kgs or	50.7	50.7	50.7
Use Cubic Weight per empty drum since it is greater	**72.3**	**72.3**	**72.3**
Number of drums per shipment	20	15	35
Cubic weight empty drum shipment + 1/4 pallet=	78	78	78
Total weight of shipment	1555	1166	2721
Rate $/cwt =	$4.87	$4.87	$4.87
Rate per shipment =	$75.73	$56.80	$132.53
Add Top Wharfage at Load Port	$2.57	$1.92	$4.49
Add Top Wharfage at Discharge Port	$2.57	$1.92	$4.49
Total cost per shipment =	$80.86	$60.65	$141.51
Rate for 1 drum =	$4.04	$4.04	$4.04
Equivalent Rate per Litre	**1.97**	**1.97**	**1.97**
Total cost drum shipments with drums returned	$23.53	$23.53	$23.53
Total cost drum shipments with drums returned	**11.48**	**11.48**	**11.48**

APPENDIX H

Table H-12

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 12 - Central Labrador - Happy Valley/ Goose Bay - North West River

Census Population -1991	10,050	Loading Tank Wagon at type Facility	**Terminal**
Census Population -1996	10,240	Average Kilometres for return trip in Zone	**36**
Census Population -2001	9,654	Average travel speed - Winter period (Km/Hr)	**40**
Estimated Households and Heating Method - 2001		Average travel speed - Remaining Months (Km/Hr)	**60**
Electric	3,026	Average annual drop per household delivery (Litres)	**450**
Oil/Other	159	Working Hours per Day per T/W - Winter Period	**8**
Total	3,185	Working Hours per Day per T/W - Remaining Months	**8**
Avg Population per Household 2001	**3.0**	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Estimated Percent Homes with Oil Heat	**5.0%**	Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Est Avg Vol Per Year Per Household Using Oil	**1,800**	Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**286,650**	Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**
Loading Terminal Location	**Goose Bay**	**Average Cost of T/W Deliveries CPL**	
Note: Due to low volume, no idle time is charged to T/W anytime during year		**HH Pricing Zone 12 - Central Labrador - Happy Valley/ Goose Bay - North West River**	**3.84**

HH Pricing Zone 12 - Central Labrador - Happy Valley/ Goose Bay - North West River

	A. Use all Single Axle Tank Wagons			B. Use all Tandem Axle Tank Wagons		
	Winter Dec-Mar 70% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 70% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	200,655	85,995	286,650	**(Not Feasible to use Tandem Tank-Wagons due low demand for home heat fuel)**		
Average Drop Amount per Household (Litres)	**477**	**407**	**450**			
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**			
Loading Time per Vehicle Load (Minutes)	27	24	25.33			
Average # Drops Per Vehicle Load	24.1	28.3	25.6			
Estimate of Kms Traveled Per Return Trip for Zone	**36**	**36**	**36**			
Time for Each Drop (Mins)	20	15	**18**			
Total Drop Time per Load (Minutes)	482	424	461			
Average Speed Attained for Travel Time (kms /hr)	**40**	**60**	**47.8**			
Total Travel Time per Load (Minutes)	54	36	45			
Total Average Delivery Time for Each Load (Hours)	9.4	8.1	8.9			
Average Delivery Rate Litres/Hr	1226	1428	1297			
Volume Delivered During Period for area	200,655	85,995	286,650			
# of Working Days during Period	100	200	300			
# of Working Days Required during Period	20	8				
Average Volume Delivered per Working Day for period	2,007	430	956			
Average Required Total Trips per Day	0.2	0.0				
Total Hours Required per day During Period	1.6	0.3				
Assumed Working Hours per Day per Vehicle	**8.0**	**8.0**				
Indicated Number of Vehicles Required	0.20	0.04				
Average Volume delivered by each TW for period	200,655	85,995				
Average Volume delivered by each TW per day.	9,810	11,421				
Actual Number of Vehicles required to be on hand	1	1				
Number of vehicles required full-time	0	0				
Volume delivered by full time vehicle(s)	0	0				
Volume left to be delivered by part time Vehicle	200,655	85,995	286,650			
Part time Operation vehicle (Days)	20	8				
Idle time for part time vehicles) -(Days)	80	192				
Full Time Cost per vehicle per Day	$393	$393				
Idle Time Cost per vehicle per Day	$193	$193				
Cost of Full Time Vehicles for period	$0	$0				
Cost of Part Time Vehicles for period	$8,045	$2,962				
Cost of Idle Time for part Time Vehicles for period	$0	$0				
Total Cost for vehicles for period	$8,045	$2,962	$11,007			
Cost per Period based on required Vehicles (CPL)	**4.01**	**3.44**	**3.84**	**N/A**	**N/A**	**N/A**

Average Single Axle TWs **3.84**

APPENDIX H

Table H-13

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 13 - Western Labrador - Labrador City/ Wabush

Census Population -1991	11,392	Loading Tank Wagon at type Facility	**Bulk Plant**
Census Population -1996	10,473	Average Kilometres for return trip in Zone	**36**
Census Population -2001	9,638	Average travel speed - Winter period (Km/Hr)	**40**
Estimated Households and Heating Method - 2001		Average travel speed - Remaining Months (Km/Hr)	**60**
Electric	3,355	Average annual drop per household delivery (Litres)	**450**
Oil/Other	110	Working Hours per Day per T/W - Winter Period	**8**
Total	3,465	Working Hours per Day per T/W - Remaining Months	**8**
Avg Population per Household 2001	**2.8**	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Estimated Percent Homes with Oil Heat	**3.2%**	Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Est Avg Vol Per Year Per Household Using Oil	**2,000**	Idle Time Cost per day - Single Axle Tank-Wagon	**$193**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**220,000**	Idle Time Cost per day - Tandem Axle Tank-Wagon	**$223**
Loading Terminal Location	**Labrador City**		

Note: Due to low volume, no idle time is charged to T/W anytime during year

Average Cost of T/W Deliveries CPL	
HH Pricing Zone 13 - Western Labrador - Labrador City/ Wabush	**3.88**

HH Pricing Zone 13 - Western Labrador - Labrador City/ Wabush

	A. Use all Single Axle Tank Wagons			B. Use all Tandem Axle Tank Wagons		
	Winter Dec-Mar 70% Annual Volume	**Remaining Months**	**Full Year Avg/Totals**	**Winter Dec-Mar 70% Annual Volume**	**Remaining Months**	**Full Year Avg/Totals**
Total Volume by Zone for Heating Fuel for Year (Litres)	154,000	66,000	220,000	**(Not Feasible to use Tandem Tank-Wagons due low demand for home heat fuel)**		
Average Drop Amount per Household (Litres)	**477**	**407**	**450**			
Capacity per Vehicle (Litres)	**11,500**	**11,500**	**11,500**			
Loading Time per Vehicle Load (Minutes)	32	30	30.72			
Average # Drops Per Vehicle Load	24.1	28.3	25.6			
Estimate of Kms Traveled Per Return Trip for Zone	**36**	**36**	**36**			
Time for Each Drop (Mins)	20	15	**18**			
Total Drop Time per Load (Minutes)	482	424	461			
Average Speed Attained for Travel Time (kms /hr)	**40**	**60**	**47.8**			
Total Travel Time per Load (Minutes)	54	36	45			
Total Average Delivery Time for Each Load (Hours)	9.5	8.2	9.0			
Average Delivery Rate Litres/Hr	1215	1410	1284			
Volume Delivered During Period for area	154,000	66,000	220,000			
# of Working Days during Period	100	200	300			
# of Working Days Required during Period	16	6				
Average Volume Delivered per Working Day for period	9,724	11,281				
Average Required Total Trips per Day	0.8	1.0				
Total Hours Required per day During Period	8.0	8.0				
Assumed Working Hours per Day per Vehicle	**8.0**	**8.0**				
Indicated Number of Vehicles Required	1.00	1.00				
Average Volume delivered by each TW for period	154,000	66,000				
Average Volume delivered by each TW per day.	9,724	11,281				
Actual Number of Vehicles required to be on hand	1	1				
Number of vehicles required full-time	0	0				
Volume delivered by full time vehicle(s)	0	0				
Volume left to be delivered by part time Vehicle	154,000	66,000				
Part time Operation vehicle (Days)	16	6				
Idle time for part time vehicles) -(Days)	84	194				
Full Time Cost per vehicle per Day	$393	$393				
Idle Time Cost per vehicle per Day	$193	$193				
Cost of Full Time Vehicles for period	$0	$0				
Cost of Part Time Vehicles for period	$6,229	$2,301				
Cost of Idle Time for part Time Vehicles for period	$0	$0				
Total Cost for vehicles for period	$6,229	$2,301	$8,531			
Cost per Period based on required Vehicles (CPL)	**4.05**	**3.49**	**3.88**			

Average Single Axle TWs **3.88**

APPENDIX H

Table H-13a

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 13a - Churchill Falls

Census Population -1991	810	Loading Tank Wagon at type Facility	**Bulk Plant**
Census Population -1996	717	Average Kilometres for return trip in Zone	**486**
Census Population -2001	645	Average travel speed - Winter period (Km/Hr)	**60**
Estimated Households and Heating Method - 2001		Average travel speed - Remaining Months (Km/Hr)	**80**
Electric	210	Average annual drop per household delivery (Litres)	**450**
Oil/Other	0	Working Hours per Day per T/W - Winter Period	**8**
Total	210	Working Hours per Day per T/W - Remaining Months	**8**
Avg Population per Household 2001	**3.1**	Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Estimated Percent Homes with Oil Heat	**0.0%**	Annual Operation Cost - Tandem Axle Tank Wagon	$128,000
Est Avg Vol Per Year Per Household Using Oil	**N/A**		
Estimated Total Heating Fuel Per Year for Zone (Litres)	**0**	**Average Cost of T/W Deliveries CPL**	
Loading Terminal Location: **Labrador City**		**HH Pricing Zone 13a - Churchill Falls**	**5.94**

Note: No Home Heat Volume required - all Electric Heated Homes
Delivery Calculation done on Tandem Axle Tank Wagon from Labrador City Bulk Plant

HH Pricing Zone 13a - Churchill Falls

Tank Wagon Delivery to Homes in Churchill Falls	
Tandem Axle Tank-Wagon - Capacity (Litres)	20,000
Minutes to Load tank wagon @ 500 litres /min	40
Loading time (Hours)	**0.7**
Driving Distance to Churchill Falls	243
Average Driving Speed (Kms per Hour)	70
Driving Time - Return Trip to Churchill Falls (Hours)	**3.5**
Average Drop per Household (Litres)	450
Number of drops per Tank-Wagon load	44
Average Time for each drop	18
Total Drop Time (minutes)	800
Total Drop Time (Hours)	**13.3**
Driver and Tank Wagon must Overnight in Churchill Falls:	
Cost of Hotel and Meals for Driver	$150
Idle Time on Tank wagon = 16 hrs less 13.3 hrs	2.7
Cost of Idle Time on Tank wagon at $24.08/ hr	$65
Cost of extra 2.7 hours for driver	$41
Total trip time to and from Churchill Falls	**17.5**
Tandem Axle Tank-Wagon - Cost per hour	$53.33
Total cost based on operating time for truck and driver	$932
Total overnight and Idle Time costs	$256
Total Trip Costs	$1,187
Average cost (Cents per Litre)	**5.94**

This calculation is done in order to establish a cost to delivery furnace fuel from the Labrador City Rail Car bulk plant. The calculation is based on a tandem tank wagon loading at Labrador City, making full load deliverers to homes in Churchill Falls and returning to Labrador City the following day. Extra costs for a full 16 hour shift by driver and his overnight lodging costs are included. Idle time for vehicle where it is less than a full 16 hours for 2 days is also applied.

APPENDIX H

Table H-14

Tank Wagon Delivery Cost Model - Home Heating Fuel

HH Pricing Zone 14 - Northern Labrador - (6 Coastal Communities)

Census Population -1991	2,984
Census Population -1996	3,186
Census Population -2001	3,214
Estimated Households and Heating Method - 2001	
Electric	214
Oil/Other	641
Total	855
Avg Population per Household 2001	**3.8**
Estimated Percent Homes with Oil Heat	**75.0%**
Est Avg Vol Per Year Per Household Using Oil	**1,200**
Estimated Total Heating Fuel Per Year for Zone (Litres)	**769,500**
Loading Terminal Location	**Various**

Including Natuashish run by Band Council

Loading Tank Wagon at type Facility	**Marine Depots**
Average Kilometres for return trip in Zone	**14**
Average travel speed - Winter period (Km/Hr)	**40**
Average travel speed - Remaining Months (Km/Hr)	**60**
Average annual drop per household delivery (Litres)	**300**
Working Hours per Day per T/W - Winter Period	**8**
Working Hours per Day per T/W - Remaining Months	**8**
Annual Operation Cost - Singe Axle Tank Wagon	$118,000
Annual Operation Cost - Tandem Axle Tank Wagon	$128,000

Drum filling cost at Depot	**CPL**	**10.00**

Supply Mode Alternatives

HH Pricing Zone 14 - Northern Labrador - (6 Isolated Coastal Communities)

	A. Use all Single Axle Tank Wagons for deliveries to homes				B. Fill 205 litre Drums for customers at marine Depot		
	Winter Dec-Mar 70% Annual Volume	Remaining Months	Full Year Avg/Totals			Full Year Avg/Totals	
Total Volume by Zone for Heating Fuel for Year (Litres)	538,650	230,850	769,500			769,500	
Average Drop Amount per Household (Litres)	**Use of tank wagon vehicles for home heat delivery is generally not feasible in the wintertime with unplowed local roads. Most Heating Fuel deliveries are made by drums via ATV or snowmobile trailers by the customers themselves picking up product at the Depot.**						
Capacity per Vehicle (Litres)							
Capacity of each Drum Filled at Marine Depot						205	
Number of Drums Filled per period						3,754	
Number of weeks per period						52	
Cost of Filling / Handling each drum						$20.50	
Total cost of Filling/ Handling Drums						$76,950	
Loading Time per Vehicle Load (Minutes)							
Average # Drops Per Vehicle Load							
Estimate of Kms Traveled Per Return Trip for Zone							
Time for Each Drop (Mins)							
Total Drop Time per Load (Minutes)							
Average Speed Attained for Travel Time (kms /hr)							
Total Travel Time per Load (Minutes)							
Total Average Delivery Time for Each Load (Hours)							
Assumed Working Hours per Day per Vehicle							
Average days for delivering each load							
Average Delivery Rate Litres/Working Day							
Volume Delivered During Period for area							
# of Working Days during Period							
# of Working Days Required during Period 5 T/Ws							
Average Volume Delivered per Working Day for period							
Average Required Total Trips per Day							
Total Hours Required per day During Period							
Assumed Working Hours per Day per Vehicle							
Indicated Number of Vehicles Required							
Average Volume delivered by each TW for period							
Average Volume delivered by each TW per day.							
Actual Number of Vehicles required to be on hand							
Number of vehicles required full-time per community							
Volume delivered by full time vehicle(s)							
Volume left to be delivered by part time Vehicle							
Part time Operation vehicle (Days)							
Idle time for full time vehicles -(Days)							
Full Time Cost per vehicle per Day							
Idle Time Cost per vehicle per Day							
Cost of Full Time Vehicles for period							
Cost of Part Time Vehicles for period per community							
Cost of Idle Time for part time Vehicles for period							
Total Cost for vehicles for period per community							
Cost per Period Cents per Litre (CPL)						**10.00**	

Average Single Axle Tank Wagon Delivery Cost - CPL **N/A** **Drum filling cost at Depot** **10.00**