

Used Nuclear Fuel Inventory and Transportation Estimates

NWMO TR-2009-21

August 2009

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Nuclear Waste Management Organization

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ABSTRACT

Title: Used Nuclear Fuel Inventory and Transportation Estimates
Report No.: NWMO TR-2009-21
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Abstract

This report provides future fuel inventory and transportation estimates to serve as a framework for conceptual design and cost estimating studies and to develop the capability to review transportation options to a used-fuel long-term management facility. Fuel inventories for future scenarios of 3.6 million used nuclear fuel bundles (base case) and 7.2 million used nuclear fuel bundles (alternate case) are presented.

Assuming all road transport, approximately 18,600 shipments are required to transport 3.6 million fuel bundles to the long-term management facility over a 30 year transportation program and approximately 37,500 shipments are required to transport 7.2 million fuel bundles over a 60 year transportation program. This equates to approximately 630 shipments annually or 53 shipments per month.

The used nuclear fuel scenarios provided in this report have been constructed to provide a framework for conceptual design, cost estimating and operational planning only. These scenarios may differ from the plans of the reactor operators. Operation of the reactors, including decisions on refurbishment, would be subject to future decisions of the individual reactor operators.

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1. INTRODUCTION

Implementation of Adaptive Phased Management (APM), the approach chosen by the Government of Canada for the long-term management of used nuclear fuel, requires the transport of used nuclear fuel from its current interim storage locations at the reactor sites to a centralized facility.

This report provides a breakdown of estimated used nuclear fuel inventories for each interim storage facility by calendar year to the reactor end-of-life of Canada's nuclear program. Where applicable, fuel inventories are presented for wet and dry storage operations. Logistics for the transport of used nuclear fuel from interim storage to the centralized facility are proposed.

The intent of this breakdown is to provide a framework for conceptual design and costing studies and to develop the capability to review transportation options to a conceptual used-fuel long-term management facility. Fuel inventories for two future scenarios of 3.6 million used nuclear fuel bundles (base case) and 7.2 million used nuclear fuel bundles (alternate case) are presented.

2. ASSUMPTIONS

- 1. Fuel Description:** The reference fuel is assumed to be of standard CANDU fuel design (Garamszeghy, 2008) and 30 years old for placement in the repository. Non-standard CANDU fuel and non-CANDU fuels, which comprise less than 1% of the Canadian used nuclear fuel inventory, are not included in the analyses. The fuel used to power proposed nuclear installations is also assumed to be standard CANDU fuel.
- 2. Projected Fuel Inventories:** Two future fuel inventory scenarios are assumed: a base case scenario of 3.6 million bundles and an alternate scenario of 7.2 million bundles (Hung, 2008).
- 3. Existing Fuel Locations:** The used nuclear fuel is assumed to be located at the seven existing generating and interim storage sites shown in Figure 1.

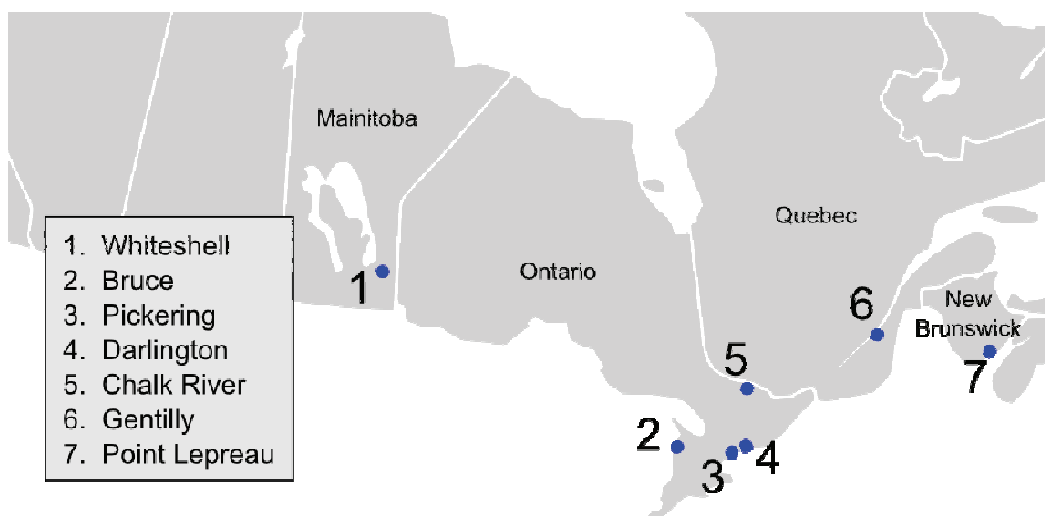


Figure 1: Used Nuclear Fuel Storage Sites

- **Site 1: Whiteshell** AECL fuel (reactor shut down, no new fuel being produced),
 - **Site 2: Bruce** Ontario Power Generation (OPG) fuel from Bruce A (1-4) and Bruce B (5-8) generating stations and Atomic Energy of Canada Limited (AECL) fuel from the Douglas Point reactor (reactor shut down, no new fuel being produced),
 - **Site 3: Pickering** OPG fuel,
 - **Site 4: Darlington** OPG fuel,
 - **Site 5: Chalk River** AECL fuel including Nuclear Power Demonstration (NPD) fuel,
 - **Site 6: Gentilly** AECL fuel from Gentilly 1 (reactor shut down, no new fuel being produced) and Hydro-Québec fuel from Gentilly 2, and
 - **Site 7: Point Lepreau** New Brunswick Power fuel.
4. **New Build Reactors:** For the 7.2 million bundle scenario, the new build reactors (A and B) are assumed to be located in Ontario.
 5. **Used Fuel Deep Geological Repository (UF-DGR) In-service Date:** The earliest in-service date for the Used Fuel DGR is 2035 (NWMO, 2004), by which time the UF-DGR and transportation program are assumed to be fully operational.
 6. **UF-DGR Operational Capacity:** The operational fuel placement capacity of the UF-DGR is assumed to be 120,000 bundles per year (NWMO, 2004). The target transport rate is assumed to match fuel placement capacity.
 7. **Transportation Program:** OPG owned fuel is assumed to be transported starting 2035. Transport of non-OPG owned fuel is assumed to commence in 2050 (NWMO, 2007). Fuel stored in wet bays is assumed to be transported ahead of fuel in dry storage, provided that the conditions in Assumption 1 are met.
 8. **Transportation Program Duration:** The transportation program for the 3.6 million bundle scenario is assumed to last 30 years (2035 to 2064) and 60 years (2035 to 2094) for the 7.2 million bundle scenario.
 9. **Transportation Packages:** Each transportation package is assumed to be able to transport 192 bundles of OPG fuel or 180 bundles of non-OPG fuel (Cogema, 2003a). The package is assumed to be readily transportable by road without the need for overweight permits.
 10. **Shipments:** Shipment data is presented as made by road mode only. This yields the highest number of shipments, but offers the greatest transport flexibility. Transport logistics studies that include rail and water based shipment estimates will be addressed in a future NWMO study.

3. USED NUCLEAR FUEL BUNDLE INVENTORIES AND TRANSPORTATION

The used nuclear fuel inventories and transportation schedules presented in this report are based on periodically updated nuclear fuel waste projections (Garamszeghy, 2008). Two future fuel bundle inventory scenarios are presented: a base case scenario of 3.6 million bundles; and an alternate scenario of 7.2 million bundles. Each scenario is described in greater detail in Sections 3.1 and 3.2 below.

The inventory estimates for the 3.6 and 7.2 million bundle scenarios are summarized in Table 1. The inventory is expressed in terms of number of CANDU used nuclear fuel bundles. The actual fuel bundle inventory as of December 31, 2008 for each site is provided in column 2 for reference. This inventory includes in-reactor fuel.

Fuel bundle inventory estimates used in the previous 2003 cost estimates (Cogema, 2003a and 2003b) are listed in columns 3 and 4 for comparison.

3.1 3.6 MILLION BUNDLE SCENARIO

The 3.6 million fuel bundle scenario was used as the reference case inventory for the 2003 long-term waste management cost estimates. This scenario is based on the assumptions that *“the Pickering, Bruce and Darlington reactors in Ontario will operate an average of 40 years, the Point Lepreau reactor in New Brunswick will operate 25 years, and the Gentilly reactor in Québec will operate 30 years. In this scenario, the existing reactors would be shut down after their respective 25, 30 and 40-year average lifetimes. ... The projected used fuel inventory was prepared in 2001 and estimated to be 3,557,451 bundles which were rounded up to 3.6 million bundles for conceptual design and cost estimating purposes”* (NWMO, 2005).

3.1.1 Fuel Bundle Inventory

The 2001 used fuel inventory estimates were updated to reflect actual fuel bundle production inventories current as of December 31, 2008. For cost estimating purposes, the total inventory estimates to reactor end-of-life were adjusted to match 2001 total inventory estimates of 3,557,451 bundles. These updated estimates are summarized in columns 5 through 7 of Table 1. Detailed inventory estimates by location and year are provided in Table A-1 of Appendix A and are summarized graphically in Figure 2.

3.1.2 Transportation Logistics

Based on the assumptions noted in Section 2, logistics to transport the used nuclear fuel bundles from the seven interim storage sites to the UF-DGR are proposed. Allowances for ramp-up to full transport and UF-DGR operational capacities are made. Transport volumes from any given site are kept as constant as possible to optimize operational and staffing requirements. Detailed transportation estimates by location and year are provided in Table A-2 of Appendix A and are summarized graphically in Figure 3.

Assuming all road transport, approximately 18,600 shipments are required to transport 3.6 million fuel bundles over a 30 year transportation program. This equates to approximately 630 shipments annually (allowing for production ramp-up) or 53 shipments per month.

3.2 7.2 MILLION BUNDLE SCENARIO

Since *Choosing a Way Forward* (NWMO, 2005) was published, a number of proposals for refurbishment of existing reactors and the construction of new reactors have been made. These proposals could significantly extend the life of the nuclear program in Canada. To address this issue, this report provides fuel inventory estimates for a 7.2 million bundle scenario.

3.2.1 Fuel Bundle Inventory

The fuel inventory for the 7.2 million bundle scenario is based on the assumption that all existing operating nuclear reactors are refurbished and further nuclear capacity is added.

Existing nuclear reactors are assumed to be refurbished with a set of new pressure tubes and other major components and operated for an additional 30 years (25 years effective full power). Refurbishment of all existing operating reactors results in an estimated total fuel inventory of approximately 5.5 million bundles (Garamszeghy, 2008).

Additional nuclear capacity is hypothetically assumed to be added in the form of two new 4 unit generating stations located in Ontario. The new nuclear capacity is assumed to begin generation between 2016 and 2018 and run until 2064. This operation would result in the production of approximately 1.7 million fuel bundles raising the total used nuclear fuel bundle inventory to approximately 7.2 million bundles.

These inventory estimates are summarized in columns 8 through 10 of Table 1. Detailed inventory estimates by location and year are provided in Table B-1 of Appendix B and are graphically summarized in Figure 4.

3.2.2 Transportation Logistics

Based on the assumptions noted in Section 2, logistics to transport the used nuclear fuel bundles from the seven interim storage sites to the Used Fuel DGR are proposed. Allowances for ramp-up to full transport and Used Fuel DGR operational capacities are made. Transport volumes from any given site are kept as constant as possible to optimize operational and staffing requirements. Detailed transportation estimates by location and year are provided in Table B-2 of Appendix B and are summarized graphically in Figure 5.

Assuming all road transport, approximately 37,500 shipments are required to transport 7.2 million fuel bundles over a 60 year transportation program. This equates to approximately 630 shipments annually (allowing for production ramp-up) or 53 shipments per month.

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Table 1: Used Nuclear Fuel Inventory Summary

Bundle Location	Current Total Bundles (31/12/08)*	Cogema Study		3.6 Million Bundle Scenario			7.2 Million Bundle Scenario		
		wet/dry split	Total	wet/dry split	Total	% of total	wet/dry split	Total	% of total
Whiteshell Laboratories	360	all dry	360	all dry	360	<0.1	all dry	360	<0.1
Bruce 1-4	410,444	0	625,951	312,798	617,776	42.9	384,043	1,015,357	32.7
Bruce 5-8	510,743	625,951	842,760	304,978	906,769		594,598	1,324,840	
Douglas Point	22,256	377,181	22,256	all dry	22,256	0.6	all dry	22,256	0.3
Pickering 1-4	618,974	465,579	407,488	282,578	332,241	24.1	199,007	400,848	17.3
Pickering 5-8		149,051	522,136	49,663	523,872		310,925	835,095	
Darlington 1-4	370,856	373,085	876,096	326,332	891,482	25.1	726,234	1,332,037	18.6
		529,009		565,150			605,803		
Chalk River Laboratories (and NPD)	4,886	all dry	4,853	all dry	4,886	0.1	all dry	4,886	<0.1
Gentilly 1	3,213	all dry	3,213	all dry	3,213	0.1	all dry	3,213	<0.1
Gentilly 2	112,741	n/a	132,838	33,838	132,838	3.7	38,600	272,000	3.8
				99,000			233,400		
Point Lepreau	121,758	n/a	119,500	40,758	121,758	3.4	40,800	285,000	4.0
				81,000			244,200		
New Build A 1-4	0	n/a	n/a	n/a	n/a	n/a	325,967	807,738	11.3
		n/a		n/a			481,771		
New Build B 1-4	0	n/a	n/a	n/a	n/a	n/a	335,133	851,313	11.9
		n/a		n/a			516,180		
Total	2,176,231		3,557,451		3,557,451	100.0		7,154,943	100.0
Total (rounded)	2,200,000		3,600,000		3,600,000			7,200,000	

* includes in-reactor fuel

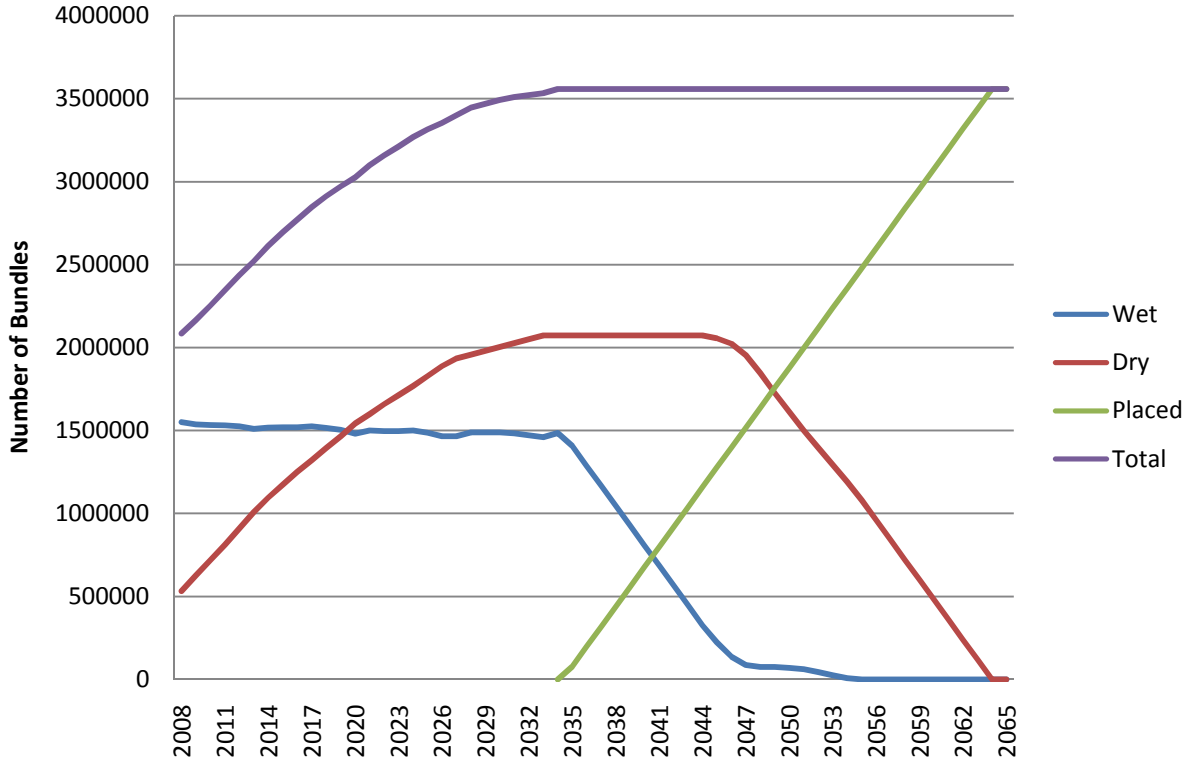


Figure 2: Fuel Bundle Inventory - 3.6 Million Bundles

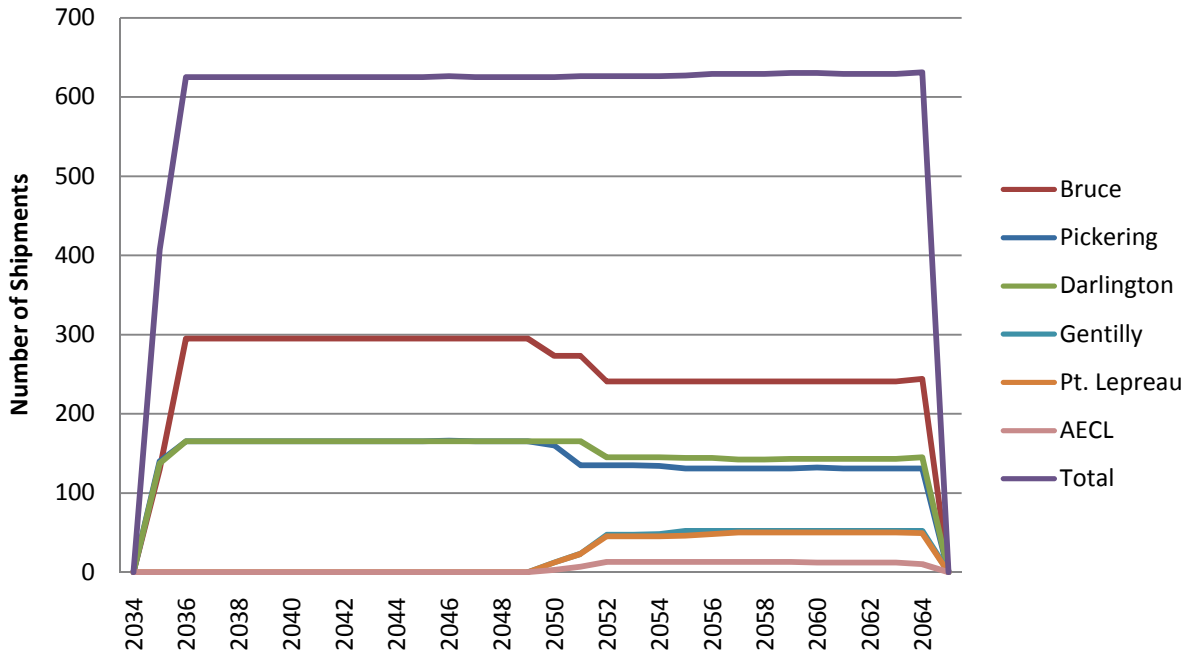


Figure 3: Annual Shipments - 3.6 Million Bundles (All Road Mode)

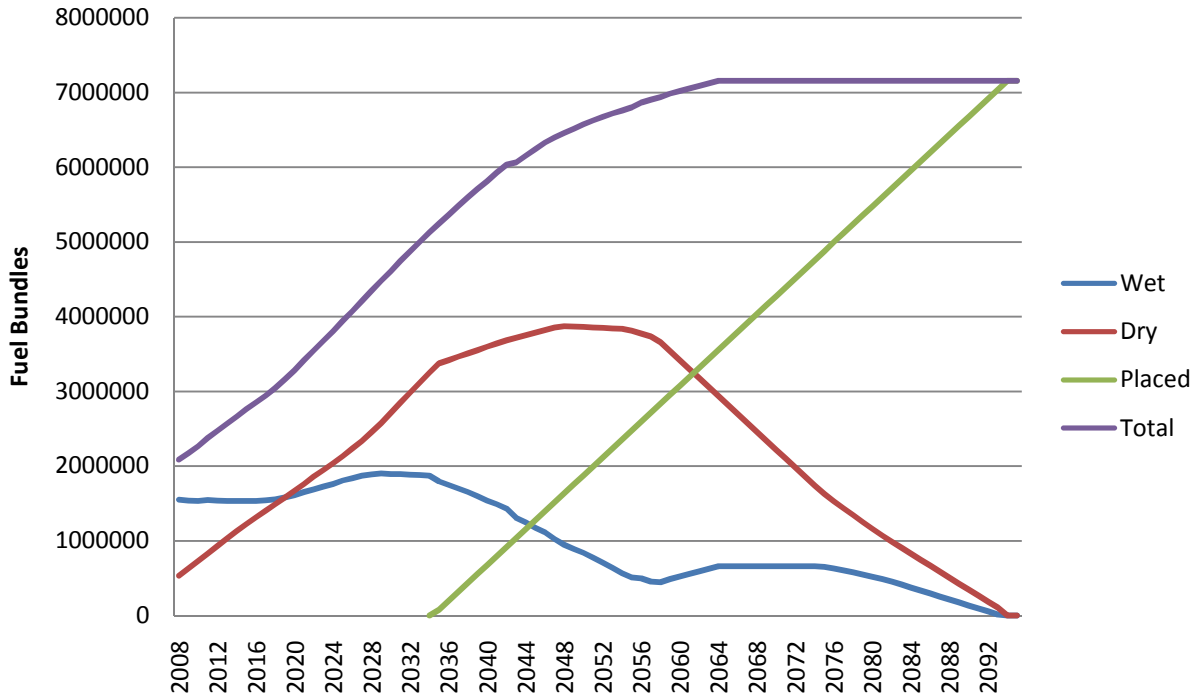


Figure 4: Fuel Bundle Inventory - 7.2 Million Bundles

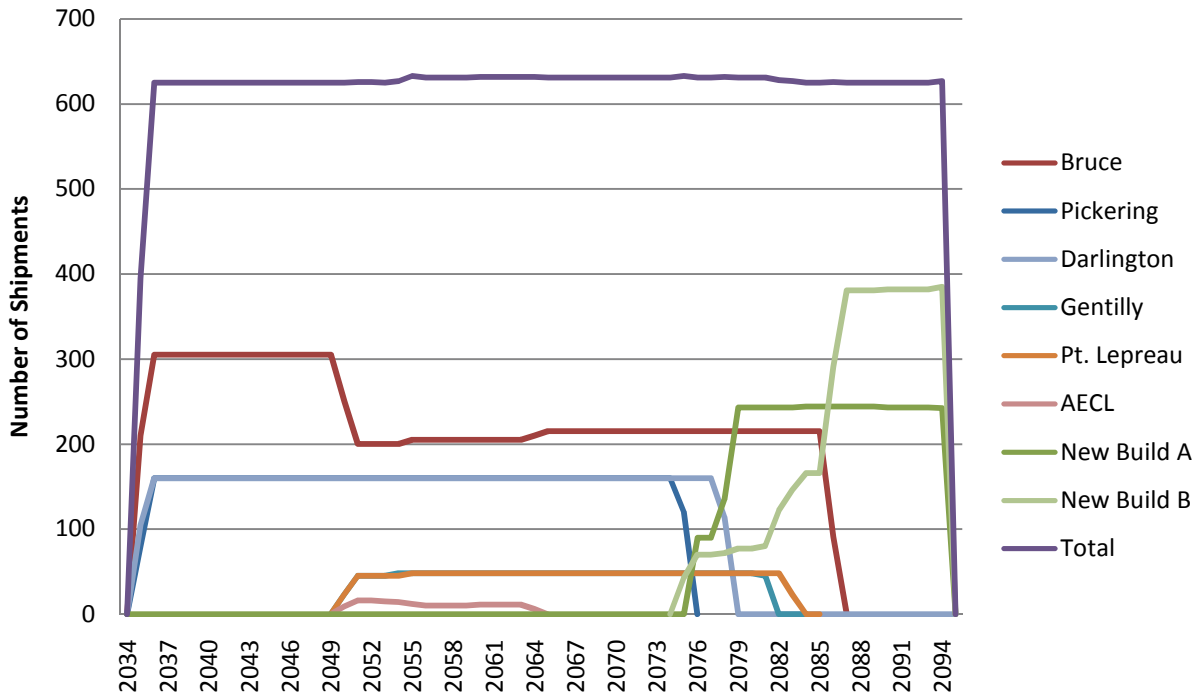


Figure 5: Annual Shipments - 7.2 Million Bundles (All Road Mode)

APPENDIX A: USED NUCLEAR FUEL BUNDLE INVENTORY BY LOCATION AND YEAR

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Table A-1 (continued): Used Nuclear Fuel Inventory by Location and Year – 3.6 Million Bundle Scenario

Location	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Bruce 1-4 total	617,776	617,776	617,776	617,776	617,776	617,776	617,776	617,776	617,776	617,776	600,658	573,778	546,898	520,018	493,138	466,258	439,378
Bruce 1-4 dry	304,978	304,978	304,978	304,978	304,978	304,978	304,978	304,978	304,978	304,978	304,978	304,978	304,978	304,978	304,978	304,978	304,978
Bruce 1-4 wet	312,798	312,798	312,798	312,798	312,798	312,798	312,798	312,798	312,798	312,798	295,680	268,800	241,920	215,040	188,160	161,280	134,400
Bruce 5-8 total	865,506	877,273	883,156	906,769	906,769	906,769	906,769	906,769	906,769	906,769	899,098	869,338	839,578	809,818	780,058	750,298	720,538
Bruce 5-8 dry	494,912	518,445	541,978	541,978	541,978	541,978	541,978	541,978	541,978	541,978	541,978	541,978	541,978	541,978	541,978	541,978	541,978
Bruce 5-8 wet	370,594	358,828	341,178	364,791	364,791	364,791	364,791	364,791	364,791	364,791	357,120	327,360	297,600	267,840	238,080	208,320	178,560
Pickering 1-4 total	332,241	332,241	332,241	332,241	332,241	332,241	332,241	332,241	332,241	332,241	314,961	293,841	272,721	251,601	230,481	209,361	188,241
Pickering 1-4 dry	49,663	49,663	49,663	49,663	49,663	49,663	49,663	49,663	49,663	49,663	49,663	49,663	49,663	49,663	49,663	49,663	49,663
Pickering 1-4 wet	282,578	282,578	282,578	282,578	282,578	282,578	282,578	282,578	282,578	282,578	265,298	244,178	223,058	201,938	180,818	159,698	138,578
Pickering 5-8 total	502,189	505,632	523,872	523,872	523,872	523,872	523,872	523,872	523,872	523,872	514,272	503,712	493,152	482,592	472,032	461,472	450,912
Pickering 5-8 dry	386,450	400,222	400,222	400,222	400,222	400,222	400,222	400,222	400,222	400,222	400,222	400,222	400,222	400,222	400,222	400,222	400,222
Pickering 5-8 wet	115,739	105,410	123,650	123,650	123,650	123,650	123,650	123,650	123,650	123,650	114,050	103,490	92,930	82,370	71,810	61,250	50,690
Darlington 1-4 total	711,660	734,602	757,544	780,486	803,428	826,370	843,576	855,047	866,518	891,482	865,246	833,566	801,886	770,206	738,526	706,846	675,166
Darlington 1-4 dry	381,110	404,052	426,994	449,936	472,878	495,820	518,762	541,704	565,150	565,150	565,150	565,150	565,150	565,150	565,150	565,150	565,150
Darlington 1-4 wet	330,550	330,550	330,550	330,550	330,550	330,550	324,815	313,344	301,368	326,332	300,096	268,416	236,736	205,056	173,376	141,696	110,016
OPG total	3,029,372	3,067,524	3,114,589	3,161,144	3,184,086	3,207,028	3,224,234	3,235,705	3,247,176	3,272,140	3,194,235	3,074,235	2,954,235	2,834,235	2,714,235	2,594,235	2,474,235
dry	1,617,113	1,677,360	1,723,835	1,746,777	1,769,719	1,792,661	1,815,603	1,838,545	1,861,991	1,861,991	1,861,991	1,861,991	1,861,991	1,861,991	1,861,991	1,861,991	1,861,991
wet	1,412,259	1,390,164	1,390,754	1,414,367	1,414,367	1,414,367	1,408,632	1,397,161	1,385,185	1,410,149	1,332,244	1,212,244	1,092,244	972,244	852,244	732,244	612,244
AECL total	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715
Chalk River	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886
Douglas Point	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256
Gentilly 1	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213
Whiteshell	360	360	360	360	360	360	360	360	360	360	360	360	360	360	360	360	360
Gentilly 2 total	132,838	132,838	132,838	132,838	132,838	132,838	132,838	132,838	132,838	132,838	132,838	132,838	132,838	132,838	132,838	132,838	132,838
Gentilly 2 dry	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000
Gentilly 2 wet	33,838	33,838	33,838	33,838	33,838	33,838	33,838	33,838	33,838	33,838	33,838	33,838	33,838	33,838	33,838	33,838	33,838
Pt. Lepreau total	121,758	121,758	121,758	121,758	121,758	121,758	121,758	121,758	121,758	121,758	121,758	121,758	121,758	121,758	121,758	121,758	121,758
Pt. Lepreau dry	81,000	81,000	81,000	81,000	81,000	81,000	81,000	81,000	81,000	81,000	81,000	81,000	81,000	81,000	81,000	81,000	81,000
Pt. Lepreau wet	40,758	40,758	40,758	40,758	40,758	40,758	40,758	40,758	40,758	40,758	40,758	40,758	40,758	40,758	40,758	40,758	40,758
Total	3,314,683	3,352,835	3,399,900	3,446,455	3,469,397	3,492,339	3,509,545	3,521,016	3,532,487	3,557,451	3,479,546	3,359,546	3,239,546	3,119,546	2,999,546	2,879,546	2,759,546
dry	1,827,828	1,888,075	1,934,550	1,957,492	1,980,434	2,003,376	2,026,318	2,049,260	2,072,706	2,072,706	2,072,706	2,072,706	2,072,706	2,072,706	2,072,706	2,072,706	2,072,706
wet	1,486,855	1,464,760	1,465,350	1,488,963	1,488,963	1,488,963	1,483,228	1,471,757	1,459,781	1,484,745	1,406,840	1,286,840	1,166,840	1,046,840	926,840	806,840	686,840
UF-DGR	0	0	0	0	0	0	0	0	0	0	77,905	197,905	317,905	437,905	557,905	677,905	797,905

Table A-1 (continued): Used Nuclear Fuel Inventory by Location and Year – 3.6 Million Bundle Scenario

Location	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059
Bruce 1-4 total	412,498	385,618	358,738	331,858	304,978	278,098	251,218	224,338	200,722	177,106	153,490	129,874	106,258	82,642	59,026	35,410	11,794	0
Bruce 1-4 dry	304,978	304,978	304,978	304,978	304,978	278,098	251,218	224,338	200,722	177,106	153,490	129,874	106,258	82,642	59,026	35,410	11,794	0
Bruce 1-4 wet	107,520	80,640	53,760	26,880	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bruce 5-8 total	690,778	661,018	631,258	601,498	571,738	541,978	512,218	482,458	453,658	424,858	402,202	379,546	356,890	334,234	311,578	288,922	266,266	231,898
Bruce 5-8 dry	541,978	541,978	541,978	541,978	541,978	541,978	512,218	482,458	453,658	424,858	402,202	379,546	356,890	334,234	311,578	288,922	266,266	231,898
Bruce 5-8 wet	148,800	119,040	89,280	59,520	29,760	0	0	0	0	0	0	0	0	0	0	0	0	0
Pickering 1-4 total	167,121	146,001	124,881	103,761	82,641	61,521	40,447	21,247	3,007	0	0	0	0	0	0	0	0	0
Pickering 1-4 dry	49,663	49,663	49,663	49,663	49,663	49,663	40,447	21,247	3,007	0	0	0	0	0	0	0	0	0
Pickering 1-4 wet	117,458	96,338	75,218	54,098	32,978	11,858	0	0	0	0	0	0	0	0	0	0	0	0
Pickering 5-8 total	440,352	429,792	419,232	408,672	398,110	387,550	376,990	364,510	352,030	329,182	303,262	277,342	251,614	226,462	201,310	176,158	151,006	125,854
Pickering 5-8 dry	400,222	400,222	400,222	400,222	398,110	387,550	376,990	364,510	352,030	329,182	303,262	277,342	251,614	226,462	201,310	176,158	151,006	125,854
Pickering 5-8 wet	40,130	29,570	19,010	8,450	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Darlington 1-4 total	643,486	611,806	580,126	548,544	516,864	485,184	453,504	421,824	390,144	358,464	330,624	302,784	274,944	247,296	219,648	192,384	165,120	137,664
Darlington 1-4 dry	565,150	565,150	565,150	548,544	516,864	485,184	453,504	421,824	390,144	358,464	330,624	302,784	274,944	247,296	219,648	192,384	165,120	137,664
Darlington 1-4 wet	78,336	46,656	14,976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OPG total	2,354,235	2,234,235	2,114,235	1,994,333	1,874,331	1,754,331	1,634,377	1,514,377	1,399,561	1,289,610	1,189,578	1,089,546	989,706	890,634	791,562	692,874	594,186	495,416
dry	1,861,991	1,861,991	1,861,991	1,845,385	1,811,593	1,742,473	1,634,377	1,514,377	1,399,561	1,289,610	1,189,578	1,089,546	989,706	890,634	791,562	692,874	594,186	495,416
wet	492,244	372,244	252,244	148,948	62,738	11,858	0	0	0	0	0	0	0	0	0	0	0	0
AECL total	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,175	28,915	26,575	24,235	21,895	19,555	17,215	14,875	12,535	10,195
Chalk River	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886
Douglas Point	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256	21,716	20,456	18,116	15,776	13,436	11,096	8,756	6,416	4,076	1,736
Gentilly 1	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213
Whiteshell	360	360	360	360	360	360	360	360	360	360	360	360	360	360	360	360	360	360
Gentilly 2 total	132,838	132,838	132,838	132,838	132,838	132,838	132,838	132,838	130,534	126,118	117,094	108,070	99,000	89,100	79,200	69,300	59,400	49,500
Gentilly 2 dry	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000	89,100	79,200	69,300	59,400	49,500
Gentilly 2 wet	33,838	33,838	33,838	33,838	33,838	33,838	33,838	33,838	31,534	27,118	18,094	9,070	0	0	0	0	0	0
Pt. Lepreau total	121,758	121,758	121,758	121,758	121,758	121,758	121,758	121,758	119,454	115,038	106,398	97,758	89,118	80,460	71,820	62,820	53,820	44,820
Pt. Lepreau dry	81,000	81,000	81,000	81,000	81,000	81,000	81,000	81,000	81,000	81,000	81,000	81,000	81,000	80,460	71,820	62,820	53,820	44,820
Pt. Lepreau wet	40,758	40,758	40,758	40,758	40,758	40,758	40,758	40,758	38,454	34,038	25,398	16,758	8,118	0	0	0	0	0
Total	2,639,546	2,519,546	2,399,546	2,279,644	2,159,642	2,039,642	1,919,688	1,799,688	1,679,724	1,559,681	1,439,645	1,319,609	1,199,719	1,079,749	959,797	839,869	719,941	599,931
dry	2,072,706	2,072,706	2,072,706	2,056,100	2,022,308	1,953,188	1,845,092	1,725,092	1,609,736	1,498,525	1,396,153	1,293,781	1,191,601	1,079,749	959,797	839,869	719,941	599,931
wet	566,840	446,840	326,840	223,544	137,334	86,454	74,596	74,596	69,988	61,156	43,492	25,828	8,118	0	0	0	0	0
UF-DGR	917,905	1,037,905	1,157,905	1,277,807	1,397,809	1,517,809	1,637,763	1,757,763	1,877,727	1,997,770	2,117,806	2,237,842	2,357,732	2,477,702	2,597,654	2,717,582	2,837,510	2,957,520

Table A-1 (continued): Used Nuclear Fuel Inventory by Location and Year – 3.6 Million Bundle Scenario

Location	2060	2061	2062	2063	2064
Bruce 1-4 total	0	0	0	0	0
Bruce 1-4 dry	0	0	0	0	0
Bruce 1-4 wet	0	0	0	0	0
Bruce 5-8 total	185,626	139,354	93,082	46,810	0
Bruce 5-8 dry	185,626	139,354	93,082	46,810	0
Bruce 5-8 wet	0	0	0	0	0
Pickering 1-4 total	0	0	0	0	0
Pickering 1-4 dry	0	0	0	0	0
Pickering 1-4 wet	0	0	0	0	0
Pickering 5-8 total	100,510	75,358	50,206	25,054	0
Pickering 5-8 dry	100,510	75,358	50,206	25,054	0
Pickering 5-8 wet	0	0	0	0	0
Darlington 1-4 total	110,208	82,752	55,296	27,840	0
Darlington 1-4 dry	110,208	82,752	55,296	27,840	0
Darlington 1-4 wet	0	0	0	0	0
OPG total	396,344	297,464	198,584	99,704	0
dry	396,344	297,464	198,584	99,704	0
wet	0	0	0	0	0
AECL total	8,099	5,939	3,779	1,619	0
Chalk River	4,886	3,626	2,366	1,106	0
Douglas Point	0	0	0	0	0
Gentilly 1	3,213	2,313	1,413	513	0
Whiteshell	0	0	0	0	0
Gentilly 2 total	39,600	29,700	19,800	9,900	0
Gentilly 2 dry	39,600	29,700	19,800	9,900	0
Gentilly 2 wet	0	0	0	0	0
Pt. Lepreau total	35,820	26,820	17,820	8,820	0
Pt. Lepreau dry	35,820	26,820	17,820	8,820	0
Pt. Lepreau wet	0	0	0	0	0
Total	479,863	359,923	239,983	120,043	0
dry	479,863	359,923	239,983	120,043	0
wet	0	0	0	0	0
UF-DGR	3,077,588	3,197,528	3,317,468	3,437,408	3,557,451

Table A-2 (continued): Used Nuclear Fuel Inventory by Location and Year – 7.2 Million Bundle Scenario

Location	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Bruce 1-4 total	772,398	794,904	817,410	839,916	862,422	884,928	907,434	929,940	952,446	974,952	966,045	948,498	925,325	908,797	879,997	851,197	822,397
Bruce 1-4 dry	417,507	440,013	462,519	485,025	507,531	530,037	552,543	575,049	597,555	620,061	631,314	631,314	631,314	631,314	631,314	631,314	631,314
Bruce 1-4 wet	354,891	354,891	354,891	354,891	354,891	354,891	354,891	354,891	354,891	354,891	334,731	317,184	294,011	277,483	248,683	219,883	191,083
Bruce 5-8 total	865,864	889,397	912,930	936,464	959,997	983,530	1,007,063	1,030,596	1,054,130	1,077,663	1,081,036	1,074,809	1,068,582	1,062,355	1,056,128	1,049,901	1,043,674
Bruce 5-8 dry	494,912	518,445	541,978	565,511	589,044	612,577	636,110	659,643	683,176	706,709	730,242	730,242	730,242	730,242	730,242	730,242	730,242
Bruce 5-8 wet	370,952	370,952	370,952	370,953	370,953	370,953	370,953	370,953	370,954	370,954	350,794	344,567	338,340	332,113	325,886	319,659	313,432
Pickering 1-4 total	385,766	388,625	391,484	400,848	400,848	400,848	400,848	400,848	400,848	400,848	393,168	377,808	362,448	347,088	331,728	316,368	301,008
Pickering 1-4 dry	106,835	116,336	125,837	135,338	144,839	154,340	163,841	173,341	182,841	192,341	201,841	201,841	201,841	201,841	201,841	201,841	201,841
Pickering 1-4 wet	278,931	272,289	265,647	265,510	256,009	246,508	237,007	227,507	218,007	208,507	191,327	175,967	160,607	145,247	129,887	114,527	99,167
Pickering 5-8 total	513,871	527,643	541,415	555,187	568,959	582,731	596,503	610,275	624,047	637,819	643,911	642,323	640,735	639,147	637,559	635,971	634,383
Pickering 5-8 dry	386,450	400,222	413,994	427,766	441,538	455,310	469,082	482,854	496,626	510,398	524,170	524,170	524,170	524,170	524,170	524,170	524,170
Pickering 5-8 wet	127,421	127,421	127,421	127,421	127,421	127,421	127,421	127,421	127,421	127,421	119,741	118,153	116,565	114,977	113,389	111,801	110,213
Darlington 1-4 total	708,563	731,505	754,447	777,389	800,331	823,273	846,215	869,157	892,604	909,810	913,097	899,583	892,310	878,796	871,523	858,009	850,231
Darlington 1-4 dry	381,110	404,052	426,994	449,936	472,878	495,820	518,762	541,704	565,151	582,357	605,803	605,803	605,803	605,803	605,803	605,803	605,803
Darlington 1-4 wet	327,453	327,453	327,453	327,453	327,453	327,453	327,453	327,453	327,453	327,453	307,294	293,780	286,507	272,993	265,720	252,206	244,428
OPG total	3,246,462	3,332,074	3,417,686	3,509,804	3,592,557	3,675,310	3,758,063	3,840,816	3,924,075	4,001,092	3,997,257	3,943,021	3,889,400	3,836,183	3,776,935	3,711,446	3,651,693
dry	1,786,814	1,879,068	1,971,322	2,063,576	2,155,830	2,248,084	2,340,338	2,432,591	2,525,349	2,611,866	2,693,370	2,693,370	2,693,370	2,693,370	2,693,370	2,693,370	2,693,370
wet	1,459,648	1,453,006	1,446,364	1,446,228	1,436,727	1,427,226	1,417,725	1,408,225	1,398,726	1,389,226	1,303,887	1,249,651	1,196,030	1,142,813	1,083,565	1,018,076	958,323
AECL total	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715
Chalk River	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886
Douglas Point	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256
Gentilly 1	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213
Whiteshell	360	360	360	360	360	360	360	360	360	360	360	360	360	360	360	360	360
Gentilly 2 total	185,840	190,640	195,440	200,240	205,040	209,840	214,640	219,440	224,240	229,040	233,840	238,640	243,440	248,240	253,040	257,840	262,640
Gentilly 2 dry	151,800	156,600	161,400	166,200	171,000	175,800	180,600	185,400	190,200	195,000	199,800	204,600	209,400	214,200	219,000	223,800	228,600
Gentilly 2 wet	34,040	34,040	34,040	34,040	34,040	34,040	34,040	34,040	34,040	34,040	34,040	34,040	34,040	34,040	34,040	34,040	34,040
Pt. Lepreau total	203,358	208,158	212,958	217,758	222,558	227,358	232,158	236,958	241,758	246,558	251,358	256,158	260,958	265,758	270,558	275,358	280,158
Pt. Lepreau dry	162,600	167,400	172,200	177,000	181,800	186,600	191,400	196,200	201,000	205,800	210,600	215,400	220,200	225,000	229,800	234,600	239,400
Pt. Lepreau wet	40,758	40,758	40,758	40,758	40,758	40,758	40,758	40,758	40,758	40,758	40,758	40,758	40,758	40,758	40,758	40,758	40,758
New Build A 1-4 total	118,746	135,952	159,399	176,605	193,811	211,017	234,464	251,670	268,876	286,082	309,529	326,735	350,182	367,388	390,835	408,042	431,489
New Build A 1-4 dry	0	0	0	0	0	17,206	34,412	51,618	68,824	86,030	103,236	120,442	137,648	154,854	172,060	189,266	206,472
New Build A 1-4 wet	118,746	135,952	159,399	176,605	193,811	193,811	200,052	200,052	200,052	200,052	206,293	206,293	212,534	212,534	218,775	218,776	225,017
New Build B 1-4 total	156,081	173,287	190,493	207,699	231,146	248,352	271,799	289,005	312,452	329,658	346,864	370,311	387,517	410,964	428,170	451,617	475,064
New Build B 1-4 dry	0	0	0	17,206	34,412	51,618	68,824	86,030	103,236	120,442	137,648	154,854	172,060	189,266	206,472	223,678	240,884
New Build B 1-4 wet	156,081	173,287	190,493	190,493	196,734	196,734	202,975	202,975	209,216	209,216	209,216	215,457	215,457	221,698	221,698	227,939	234,180
Total	3,941,202	4,070,826	4,206,691	4,342,821	4,475,827	4,602,592	4,741,839	4,868,604	5,002,116	5,123,145	5,169,563	5,165,580	5,162,212	5,159,248	5,150,253	5,135,018	5,131,759
dry	2,131,929	2,233,783	2,335,637	2,454,697	2,573,757	2,710,023	2,846,289	2,982,554	3,119,324	3,249,853	3,375,369	3,419,381	3,463,393	3,507,405	3,551,417	3,595,429	3,639,441
wet	1,809,273	1,837,043	1,871,054	1,888,124	1,902,070	1,892,569	1,895,550	1,886,050	1,882,792	1,873,292	1,794,194	1,746,199	1,698,819	1,651,843	1,598,836	1,539,589	1,492,318
UF-DGR	0	0	0	0	0	0	0	0	0	0	75840	195840	315840	435840	555840	675840	795840

Table A-2 (continued): Used Nuclear Fuel Inventory by Location and Year – 7.2 Million Bundle Scenario

Location	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	
Bruce 1-4 total	793,597	764,797	735,997	707,197	678,397	649,597	620,946	595,986	573,906	551,826	529,746	507,666	485,586	462,546	439,506	416,466	393,426	370,386	
Bruce 1-4 dry	631,314	631,314	631,314	631,314	631,314	631,314	620,946	595,986	573,906	551,826	529,746	507,666	485,586	462,546	439,506	416,466	393,426	370,386	
Bruce 1-4 wet	162,283	133,483	104,683	75,883	47,083	18,283	0	0	0	0	0	0	0	0	0	0	0	0	
Bruce 5-8 total	1,037,447	1,025,337	1,007,344	983,467	973,480	943,720	913,960	880,360	854,440	838,120	821,800	805,480	789,160	772,840	756,520	740,200	723,906	711,426	
Bruce 5-8 dry	730,242	730,242	730,242	730,242	730,242	730,242	730,242	730,242	730,242	730,242	730,242	730,242	730,242	730,242	730,242	730,242	730,242	727,746	711,426
Bruce 5-8 wet	307,205	295,095	277,102	253,225	243,238	213,478	183,718	150,118	124,198	107,878	91,558	75,238	58,918	42,598	26,278	9,958	-3,840	0	
Pickering 1-4 total	285,648	201,841	201,841	201,841	201,841	201,841	193,585	178,225	162,865	147,505	132,145	116,785	101,425	86,065	70,705	55,345	39,985	24,625	
Pickering 1-4 dry	201,841	201,841	201,841	201,841	201,841	201,841	193,585	178,225	162,865	147,505	132,145	116,785	101,425	86,065	70,705	55,345	39,985	24,625	
Pickering 1-4 wet	83,807	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pickering 5-8 total	632,795	631,207	629,619	628,031	623,000	614,526	606,052	594,135	597,015	581,655	566,295	550,935	535,575	520,330	504,970	489,610	474,250	458,890	
Pickering 5-8 dry	524,170	524,170	524,170	524,170	524,170	524,170	524,170	524,170	524,170	524,170	524,170	524,170	524,170	520,330	504,970	489,610	474,250	458,890	
Pickering 5-8 wet	108,625	107,037	105,449	103,861	98,830	90,356	81,882	69,965	72,845	57,485	42,125	26,765	11,405	0	0	0	0	0	
Darlington 1-4 total	842,453	834,675	826,897	819,119	811,341	803,563	795,785	788,007	774,494	760,981	741,731	722,481	697,497	672,513	666,757	636,037	605,419	574,699	
Darlington 1-4 dry	605,803	605,803	605,803	605,803	605,803	605,803	605,803	605,803	605,803	605,803	605,803	605,803	605,803	605,803	605,803	605,803	605,803	605,419	574,699
Darlington 1-4 wet	236,650	228,872	221,094	213,316	205,538	197,760	189,982	182,204	168,691	155,178	135,928	116,678	91,694	66,710	60,954	30,234	0	0	
OPG total	3,591,940	3,457,857	3,401,698	3,339,655	3,288,059	3,213,247	3,130,328	3,036,713	2,962,720	2,880,087	2,791,717	2,703,347	2,609,243	2,514,294	2,438,458	2,337,658	2,236,986	2,140,026	
dry	2,693,370	2,693,370	2,693,370	2,693,370	2,693,370	2,693,370	2,674,746	2,634,426	2,596,986	2,559,546	2,522,106	2,484,666	2,447,226	2,404,986	2,351,226	2,297,466	2,240,826	2,140,026	
wet	898,570	764,487	708,328	646,285	594,689	519,877	455,582	402,287	365,734	320,541	269,611	218,681	162,017	109,308	87,232	40,192	-3,840	0	
AECL total	30,715	30,715	30,715	30,715	30,715	30,715	30,715	30,715	29,095	26,215	23,335	20,635	18,115	15,955	14,155	12,355	10,555	8,755	
Chalk River	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	4,886	
Douglas Point	22,256	22,256	22,256	22,256	22,256	22,256	22,256	22,256	20,636	17,936	15,236	12,536	10,016	7,856	6,056	4,256	2,456	656	
Gentilly 1	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	3,213	
Whiteshell	360	360	360	360	360	360	360	360	360	180	0	0	0	0	0	0	0	0	
Gentilly 2 total	267,440	272,000	272,000	272,000	272,000	272,000	272,000	272,000	267,584	258,944	250,304	241,664	232,680	224,040	215,400	206,760	198,120	189,480	
Gentilly 2 dry	233,400	233,400	233,400	233,400	233,400	233,400	233,400	233,400	233,400	233,400	233,400	233,400	232,680	224,040	215,400	206,760	198,120	189,480	
Gentilly 2 wet	34,040	38,600	38,600	38,600	38,600	38,600	38,600	38,600	34,184	25,544	16,904	8,264	0	0	0	0	0	0	
Pt. Lepreau total	285,000	285,000	285,000	285,000	285,000	285,000	285,000	285,000	280,584	271,944	263,304	254,664	246,024	237,360	228,720	220,080	211,440	202,800	
Pt. Lepreau dry	244,200	244,200	244,200	244,200	244,200	244,200	244,200	244,200	244,200	244,200	244,200	244,200	244,200	237,360	228,720	220,080	211,440	202,800	
Pt. Lepreau wet	40,800	40,800	40,800	40,800	40,800	40,800	40,800	40,800	36,384	27,744	19,104	10,464	1,824	0	0	0	0	0	
New Build A 1-4 total	448,695	472,142	489,348	504,513	516,143	526,748	538,378	550,008	560,613	577,819	595,025	612,231	629,437	646,643	663,849	687,296	704,502	721,708	
New Build A 1-4 dry	223,678	240,884	258,090	275,296	292,502	309,708	326,914	344,120	361,326	378,532	395,741	412,947	430,153	447,359	464,565	481,771	481,771	481,771	
New Build A 1-4 wet	225,017	231,258	231,258	229,217	223,641	217,040	211,464	205,888	199,287	199,287	199,284	199,284	199,284	199,284	199,284	205,525	222,731	239,937	
New Build B 1-4 total	492,270	507,435	519,065	529,670	541,300	552,930	563,535	580,741	597,947	615,153	632,359	649,565	666,771	683,977	707,424	724,630	741,836	765,283	
New Build B 1-4 dry	258,090	275,296	292,502	309,708	326,914	344,120	361,326	378,532	395,738	412,944	430,150	447,356	464,562	481,768	498,974	516,180	516,180	516,180	
New Build B 1-4 wet	234,180	232,139	226,563	219,962	214,386	208,810	202,209	202,209	202,209	202,209	202,209	202,209	202,209	202,209	208,450	208,450	225,656	249,103	
Total	5,116,060	5,025,149	4,997,826	4,961,553	4,933,217	4,880,640	4,819,956	4,755,177	4,698,543	4,630,162	4,556,044	4,482,106	4,402,270	4,322,269	4,268,006	4,188,779	4,103,439	4,028,052	
dry	3,683,453	3,717,865	3,752,277	3,786,689	3,821,101	3,855,513	3,871,301	3,865,393	3,860,745	3,854,837	3,848,932	3,843,204	3,836,936	3,811,468	3,773,040	3,734,612	3,658,892	3,539,012	
wet	1,432,607	1,307,284	1,245,549	1,174,864	1,112,116	1,025,127	948,655	889,784	837,798	775,325	707,112	638,902	565,334	510,801	494,966	454,167	444,547	489,040	
UF-DGR	915840	1035840	1155840	1275840	1395840	1515840	1635594	1755594	1875486	1995486	2115486	2235306	2355290	2475439	2595319	2715199	2834951	2954831	

Table A-2 (continued): Used Nuclear Fuel Inventory by Location and Year – 7.2 Million Bundle Scenario

Location	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077
Bruce 1-4 total	347,346	324,306	301,266	278,226	254,226	229,266	204,306	179,346	154,386	129,426	104,466	79,506	54,546	29,586	4,626	0	0	0
Bruce 1-4 dry	347,346	324,306	301,266	278,226	254,226	229,266	204,306	179,346	154,386	129,426	104,466	79,506	54,546	29,586	4,626	0	0	0
Bruce 1-4 wet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bruce 5-8 total	695,106	678,786	662,466	646,146	629,826	613,506	597,186	580,866	564,546	548,226	531,906	515,586	499,266	482,946	466,626	430,146	388,866	347,586
Bruce 5-8 dry	695,106	678,786	662,466	646,146	629,826	613,506	597,186	580,866	564,546	548,226	531,906	515,586	499,266	482,946	466,626	430,146	388,866	347,586
Bruce 5-8 wet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pickering 1-4 total	9,265	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pickering 1-4 dry	9,265	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pickering 1-4 wet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pickering 5-8 total	443,530	422,218	391,498	360,778	330,058	299,338	268,618	237,898	207,178	176,458	145,738	115,018	84,298	53,578	22,858	0	0	0
Pickering 5-8 dry	443,530	422,218	391,498	360,778	330,058	299,338	268,618	237,898	207,178	176,458	145,738	115,018	84,298	53,578	22,858	0	0	0
Pickering 5-8 wet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Darlington 1-4 total	543,979	513,259	482,539	451,819	421,099	390,379	359,659	328,939	298,219	267,499	236,779	206,059	175,339	144,619	113,899	83,179	52,459	21,739
Darlington 1-4 dry	543,979	513,259	482,539	451,819	421,099	390,379	359,659	328,939	298,219	267,499	236,779	206,059	175,339	144,619	113,899	83,179	52,459	21,739
Darlington 1-4 wet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OPG total	2,039,226	1,938,569	1,837,769	1,736,969	1,635,209	1,532,489	1,429,769	1,327,049	1,224,329	1,121,609	1,018,889	916,169	813,449	710,729	608,009	513,325	441,325	369,325
dry	2,039,226	1,938,569	1,837,769	1,736,969	1,635,209	1,532,489	1,429,769	1,327,049	1,224,329	1,121,609	1,018,889	916,169	813,449	710,729	608,009	513,325	441,325	369,325
wet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AECL total	6,839	4,859	2,879	899	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chalk River	4,346	3,086	1,826	566	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Douglas Point	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gentilly 1	2,493	1,773	1,053	333	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Whiteshell	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gentilly 2 total	180,840	172,200	163,560	154,920	146,280	137,640	129,000	120,360	111,720	103,080	94,440	85,800	77,160	68,520	59,880	51,240	42,600	33,960
Gentilly 2 dry	180,840	172,200	163,560	154,920	146,280	137,640	129,000	120,360	111,720	103,080	94,440	85,800	77,160	68,520	59,880	51,240	42,600	33,960
Gentilly 2 wet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pt. Lepreau total	194,160	185,520	176,880	168,240	159,600	150,960	142,320	133,680	125,040	116,400	107,760	99,120	90,480	81,840	73,200	64,560	55,920	47,280
Pt. Lepreau dry	194,160	185,520	176,880	168,240	159,600	150,960	142,320	133,680	125,040	116,400	107,760	99,120	90,480	81,840	73,200	64,560	55,920	47,280
Pt. Lepreau wet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Build A 1-4 total	738,914	756,120	773,326	790,532	807,738	807,738	807,738	807,738	807,738	807,738	807,738	807,738	807,738	807,738	807,738	807,738	790,458	773,178
New Build A 1-4 dry	481,771	481,771	481,771	481,771	481,771	481,771	481,771	481,771	481,771	481,771	481,771	481,771	481,771	481,771	481,771	481,771	472,555	468,715
New Build A 1-4 wet	257,143	274,349	291,555	308,761	325,967	325,967	325,967	325,967	325,967	325,967	325,967	325,967	325,967	325,967	325,967	325,967	317,903	304,463
New Build B 1-4 total	782,489	799,695	816,901	834,107	851,313	851,313	851,313	851,313	851,313	851,313	851,313	851,313	851,313	851,313	851,313	843,249	829,809	816,369
New Build B 1-4 dry	516,180	516,180	516,180	516,180	516,180	516,180	516,180	516,180	516,180	516,180	516,180	516,180	516,180	516,180	516,180	516,180	516,180	516,180
New Build B 1-4 wet	266,309	283,515	300,721	317,927	335,133	335,133	335,133	335,133	335,133	335,133	335,133	335,133	335,133	335,133	335,133	327,069	313,629	300,189
Total	3,942,468	3,856,963	3,771,315	3,685,667	3,600,140	3,480,140	3,360,140	3,240,140	3,120,140	3,000,140	2,880,140	2,760,140	2,640,140	2,520,140	2,400,140	2,280,112	2,160,112	2,040,112
dry	3,419,016	3,299,099	3,179,039	3,058,979	2,939,040	2,819,040	2,699,040	2,579,040	2,459,040	2,339,040	2,219,040	2,099,040	1,979,040	1,859,040	1,739,040	1,627,076	1,528,580	1,435,460
wet	523,452	557,864	592,276	626,688	661,100	661,100	661,100	661,100	661,100	661,100	661,100	661,100	661,100	661,100	661,100	653,036	631,532	604,652
UF-DGR	3074827	3194744	3314804	3434864	3554803	3674803	3794803	3914803	4034803	4154803	4274803	4394803	4514803	4634803	4754803	4874831	4994831	5114831

Table A-2 (continued): Used Nuclear Fuel Inventory by Location and Year – 7.2 Million Bundle Scenario

Location	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094
Bruce 1-4 total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bruce 1-4 dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bruce 1-4 wet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bruce 5-8 total	306,306	265,026	223,746	182,466	141,186	99,906	58,626	0	0	0	0	0	0	0	0	0	0
Bruce 5-8 dry	306,306	265,026	223,746	182,466	141,186	99,906	58,626	0	0	0	0	0	0	0	0	0	0
Bruce 5-8 wet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pickering 1-4 total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pickering 1-4 dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pickering 1-4 wet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pickering 5-8 total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pickering 5-8 dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pickering 5-8 wet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Darlington 1-4 total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Darlington 1-4 dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Darlington 1-4 wet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OPG total	306,306	265,026	223,746	182,466	141,186	99,906	58,626	0	0	0	0	0	0	0	0	0	0
dry	306,306	265,026	223,746	182,466	141,186	99,906	58,626	0	0	0	0	0	0	0	0	0	0
wet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AECL total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chalk River	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Douglas Point	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gentilly 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Whiteshell	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gentilly 2 total	25,320	16,680	8,040	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gentilly 2 dry	25,320	16,680	8,040	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gentilly 2 wet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pt. Lepreau total	38,640	30,000	21,360	12,720	4,080	0	0	0	0	0	0	0	0	0	0	0	0
Pt. Lepreau dry	38,640	30,000	21,360	12,720	4,080	0	0	0	0	0	0	0	0	0	0	0	0
Pt. Lepreau wet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Build A 1-4 total	747,258	700,602	653,946	607,290	560,634	513,978	467,130	420,282	373,434	326,586	279,738	232,890	186,234	139,578	92,922	46,266	0
New Build A 1-4 dry	456,235	423,403	391,531	359,659	328,363	301,675	274,795	247,915	221,035	194,155	167,275	140,395	113,707	87,019	60,331	33,643	0
New Build A 1-4 wet	291,023	277,199	262,415	247,631	232,271	212,303	192,335	172,367	152,399	132,431	112,463	92,495	72,527	52,559	32,591	12,623	0
New Build B 1-4 total	802,545	787,761	772,977	757,617	734,193	706,161	674,289	642,417	586,545	513,393	440,241	367,089	293,745	220,401	147,057	73,713	0
New Build B 1-4 dry	516,180	516,180	516,180	516,180	512,724	504,660	492,756	480,852	444,948	391,764	338,580	285,396	232,020	178,644	125,268	71,892	0
New Build B 1-4 wet	286,365	271,581	256,797	241,437	221,469	201,501	181,533	161,565	141,597	121,629	101,661	81,693	61,725	41,757	21,789	1,821	0
Total	1,920,069	1,800,069	1,680,069	1,560,093	1,440,093	1,320,045	1,200,045	1,062,699	959,979	839,979	719,979	599,979	479,979	359,979	239,979	119,979	0
dry	1,342,681	1,251,289	1,160,857	1,071,025	986,353	906,241	826,177	728,767	665,983	585,919	505,855	425,791	345,727	265,663	185,599	105,535	0
wet	577,388	548,780	519,212	489,068	453,740	413,804	373,868	333,932	293,996	254,060	214,124	174,188	134,252	94,316	54,380	14,444	0
UF-DGR	5234874	5354874	5474874	5594850	5714850	5834898	5954898	6074898	6194964	6314964	6434964	6554964	6674964	6794964	6914964	7034964	7154943

APPENDIX B: USED NUCLEAR FUEL TRANSPORT BY LOCATION AND YEAR

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B.1 3.6 MILLION BUNDLE SCENARIO

Table B-1: Used Nuclear Fuel Transport by Location and Year – 3.6 Million Bundle Scenario

Year	Bruce A		Bruce B		Bruce Shipments	Pickering A		Pickering B		Pickering Shipments	Darlington		Darlington Shipments	Total OPG Bundles	Total OPG Shipments
	Wet	Dry	Wet	Dry		Wet	Dry	Wet	Dry		Wet	Dry			
2034	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2035	17,118	0	7,671	0	130	17,280	0	9,600	0	140	26,236	0	137	77,905	407
2036	26,880	0	29,760	0	295	21,120	0	10,560	0	165	31,680	0	165	120,000	625
2037	26,880	0	29,760	0	295	21,120	0	10,560	0	165	31,680	0	165	120,000	625
2038	26,880	0	29,760	0	295	21,120	0	10,560	0	165	31,680	0	165	120,000	625
2039	26,880	0	29,760	0	295	21,120	0	10,560	0	165	31,680	0	165	120,000	625
2040	26,880	0	29,760	0	295	21,120	0	10,560	0	165	31,680	0	165	120,000	625
2041	26,880	0	29,760	0	295	21,120	0	10,560	0	165	31,680	0	165	120,000	625
2042	26,880	0	29,760	0	295	21,120	0	10,560	0	165	31,680	0	165	120,000	625
2043	26,880	0	29,760	0	295	21,120	0	10,560	0	165	31,680	0	165	120,000	625
2044	26,880	0	29,760	0	295	21,120	0	10,560	0	165	31,680	0	165	120,000	625
2045	26,880	0	29,760	0	295	21,120	0	10,560	0	165	14,976	16,606	165	119,902	625
2046	26,880	0	29,760	0	295	21,120	0	8,450	2,112	166	0	31,680	165	120,002	626
2047	0	26,880	29,760	0	295	21,120	0	0	10,560	165	0	31,680	165	120,000	625
2048	0	26,880	0	29,760	295	11,858	9,216	0	10,560	165	0	31,680	165	119,954	625
2049	0	26,880	0	29,760	295	0	19,200	0	12,480	165	0	31,680	165	120,000	625
2050	0	23,616	0	28,800	273	0	18,240	0	12,480	160	0	31,680	165	114,816	598
2051	0	23,616	0	28,800	273	0	3,007	0	22,848	135	0	31,680	165	109,951	573
2052	0	23,616	0	22,656	241	0	0	0	25,920	135	0	27,840	145	100,032	521
2053	0	23,616	0	22,656	241	0	0	0	25,920	135	0	27,840	145	100,032	521
2054	0	23,616	0	22,656	241	0	0	0	25,728	134	0	27,840	145	99,840	520
2055	0	23,616	0	22,656	241	0	0	0	25,152	131	0	27,648	144	99,072	516
2056	0	23,616	0	22,656	241	0	0	0	25,152	131	0	27,648	144	99,072	516
2057	0	23,616	0	22,656	241	0	0	0	25,152	131	0	27,264	142	98,688	514
2058	0	23,616	0	22,656	241	0	0	0	25,152	131	0	27,264	142	98,688	514
2059	0	11,794	0	34,368	241	0	0	0	25,152	131	0	27,456	143	98,770	515
2060	0	0	0	46,272	241	0	0	0	25,344	132	0	27,456	143	99,072	516
2061	0	0	0	46,272	241	0	0	0	25,152	131	0	27,456	143	98,880	515
2062	0	0	0	46,272	241	0	0	0	25,152	131	0	27,456	143	98,880	515
2063	0	0	0	46,272	241	0	0	0	25,152	131	0	27,456	143	98,880	515
2064	0	0	0	46,810	244	0	0	0	25,054	131	0	27,840	145	99,704	520
2065	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	312,798	304,978	364,791	541,978	7,942	282,578	49,663	123,650	400,222	4,461	326,332	565,150	4,645	3,272,140	17,048
Wet+Dry	617,776		906,769			332,241		523,872			891,482				

Table B-1 (continued): Used Nuclear Fuel Transport by Location and Year – 3.6 Million Bundle Scenario

Year	Gentilly 2			Pt. Lepreau			Whiteshell (AECL)	Douglas Pt. (AECL)	Gentilly 1 (AECL)	Chalk River (AECL)	Total AECL Shipments	Total Non-OPG Bundles	Total From Wet Bays		Total From Dry Storage		Cumulative Total	Total Shipped	Total Shipments		
	Wet	Dry	Shipments	Wet	Dry	Shipments	Dry	Dry	Dry	Dry			Bundles	Cumulative	Bundles	Cumulative					
2034	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2035	0	0	0	0	0	0	0	0	0	0	0	0	77,905	77,905	0	0	77,905	77,905	407		
2036	0	0	0	0	0	0	0	0	0	0	0	0	120,000	197,905	0	0	197,905	120,000	625		
2037	0	0	0	0	0	0	0	0	0	0	0	0	120,000	317,905	0	0	317,905	120,000	625		
2038	0	0	0	0	0	0	0	0	0	0	0	0	120,000	437,905	0	0	437,905	120,000	625		
2039	0	0	0	0	0	0	0	0	0	0	0	0	120,000	557,905	0	0	557,905	120,000	625		
2040	0	0	0	0	0	0	0	0	0	0	0	0	120,000	677,905	0	0	677,905	120,000	625		
2041	0	0	0	0	0	0	0	0	0	0	0	0	120,000	797,905	0	0	797,905	120,000	625		
2042	0	0	0	0	0	0	0	0	0	0	0	0	120,000	917,905	0	0	917,905	120,000	625		
2043	0	0	0	0	0	0	0	0	0	0	0	0	120,000	1,037,905	0	0	1,037,905	120,000	625		
2044	0	0	0	0	0	0	0	0	0	0	0	0	120,000	1,157,905	0	0	1,157,905	120,000	625		
2045	0	0	0	0	0	0	0	0	0	0	0	0	103,296	1,261,201	16,606	16,606	1,277,807	119,902	625		
2046	0	0	0	0	0	0	0	0	0	0	0	0	86,210	1,347,411	33,792	50,398	1,397,809	120,002	626		
2047	0	0	0	0	0	0	0	0	0	0	0	0	50,880	1,398,291	69,120	119,518	1,517,809	120,000	625		
2048	0	0	0	0	0	0	0	0	0	0	0	0	11,858	1,410,149	108,096	227,614	1,637,763	119,954	625		
2049	0	0	0	0	0	0	0	0	0	0	0	0	0	1,410,149	120,000	347,614	1,757,763	120,000	625		
2050	2,304	0	12	2,304	0	12	0	540	0	0	3	5,148	4,608	1,414,757	115,356	462,970	1,877,727	119,964	625		
2051	4,416	0	23	4,416	0	23	0	1,260	0	0	7	10,092	8,832	1,423,589	111,211	574,181	1,997,770	120,043	626		
2052	9,024	0	47	8,640	0	45	0	2,340	0	0	13	20,004	17,664	1,441,253	102,372	676,553	2,117,806	120,036	626		
2053	9,024	0	47	8,640	0	45	0	2,340	0	0	13	20,004	17,664	1,458,917	102,372	778,925	2,237,842	120,036	626		
2054	9,070	0	48	8,640	0	45	0	2,340	0	0	13	20,050	17,710	1,476,627	102,180	881,105	2,357,732	119,890	626		
2055	0	9,900	52	8,118	540	46	0	2,340	0	0	13	20,898	8,118	1,484,745	111,852	992,957	2,477,702	119,970	627		
2056	0	9,900	52	0	8,640	48	0	2,340	0	0	13	20,880	0	1,484,745	119,952	1,112,909	2,597,654	119,952	629		
2057	0	9,900	52	0	9,000	50	0	2,340	0	0	13	21,240	0	1,484,745	119,928	1,232,837	2,717,582	119,928	629		
2058	0	9,900	52	0	9,000	50	0	2,340	0	0	13	21,240	0	1,484,745	119,928	1,352,765	2,837,510	119,928	629		
2059	0	9,900	52	0	9,000	50	0	2,340	0	0	13	21,240	0	1,484,745	120,010	1,472,775	2,957,520	120,010	630		
2060	0	9,900	52	0	9,000	50	360	1,736	0	0	12	20,996	0	1,484,745	120,068	1,592,843	3,077,588	120,068	630		
2061	0	9,900	52	0	9,000	50	0	0	900	1260	12	21,060	0	1,484,745	119,940	1,712,783	3,197,528	119,940	629		
2062	0	9,900	52	0	9,000	50	0	0	900	1260	12	21,060	0	1,484,745	119,940	1,832,723	3,317,468	119,940	629		
2063	0	9,900	52	0	9,000	50	0	0	900	1260	12	21,060	0	1,484,745	119,940	1,952,663	3,437,408	119,940	629		
2064	0	9,900	52	0	8,820	49	0	0	513	1106	10	20,339	0	1,484,745	120,043	2,072,706	3,557,451	120,043	631		
2065	0	0	0	0	0	0	0	0	0	0	0	0	0	1,484,745	0	2,072,706	3,557,451	0	0		
Totals	33,838	99,000	697	40,758	81,000	663	360	22,256	3,213	4,886	172	285,311	1,484,745		2,072,706		3,557,451	18,580			
Wet+Dry	132,838			121,758						4,886							Average	118,582	619		

B.2 7.2 MILLION BUNDLE SCENARIO

Table B-2: Used Nuclear Fuel Transport by Location and Year – 7.2 Million Bundle Scenario

Year	Bruce A		Bruce B		Bruce Shipments	Pickering A		Pickering B		Pickering Shipments	Darlington		Darlington Shipments	OPG Bundles Shipped	Total OPG Shipments	New Build A		New Build A Shipments
	Wet	Dry	Wet	Dry		Wet	Dry	Wet	Dry		Wet	Dry				Wet	Dry	
2034	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2035	20,160	0	20,160	0	210	7,680	0	7,680	0	80	20,160	0	105	75,840	395	0	0	0
2036	28,800	0	29,760	0	305	15,360	0	15,360	0	160	30,720	0	160	120,000	625	0	0	0
2037	28,800	0	29,760	0	305	15,360	0	15,360	0	160	30,720	0	160	120,000	625	0	0	0
2038	28,800	0	29,760	0	305	15,360	0	15,360	0	160	30,720	0	160	120,000	625	0	0	0
2039	28,800	0	29,760	0	305	15,360	0	15,360	0	160	30,720	0	160	120,000	625	0	0	0
2040	28,800	0	29,760	0	305	15,360	0	15,360	0	160	30,720	0	160	120,000	625	0	0	0
2041	28,800	0	29,760	0	305	15,360	0	15,360	0	160	30,720	0	160	120,000	625	0	0	0
2042	28,800	0	29,760	0	305	15,360	0	15,360	0	160	30,720	0	160	120,000	625	0	0	0
2043	28,800	0	29,760	0	305	15,360	0	15,360	0	160	30,720	0	160	120,000	625	0	0	0
2044	28,800	0	29,760	0	305	15,360	0	15,360	0	160	30,720	0	160	120,000	625	0	0	0
2045	28,800	0	29,760	0	305	15,360	0	15,360	0	160	30,720	0	160	120,000	625	0	0	0
2046	28,800	0	29,760	0	305	15,360	0	15,360	0	160	30,720	0	160	120,000	625	0	0	0
2047	28,800	0	29,760	0	305	15,360	0	15,360	0	160	30,720	0	160	120,000	625	0	0	0
2048	18,283	10,368	29,760	0	305	7,007	8,256	15,360	0	160	30,720	0	160	119,754	625	0	0	0
2049	0	24,960	33,600	0	305	0	15,360	15,360	0	160	30,720	0	160	120,000	625	0	0	0
2050	0	22,080	25,920	0	250	0	15,360	15,360	0	160	30,720	0	160	109,440	570	0	0	0
2051	0	22,080	16,320	0	200	0	15,360	15,360	0	160	30,720	0	160	99,840	520	0	0	0
2052	0	22,080	16,320	0	200	0	15,360	15,360	0	160	30,720	0	160	99,840	520	0	0	0
2053	0	22,080	16,320	0	200	0	15,360	15,360	0	160	30,720	0	160	99,840	520	0	0	0
2054	0	22,080	16,320	0	200	0	15,360	15,360	0	160	30,720	0	160	99,840	520	0	0	0
2055	0	23,040	16,320	0	205	0	15,360	11,405	3,840	160	30,720	0	160	100,685	525	0	0	0
2056	0	23,040	16,320	0	205	0	15,360	0	15,360	160	30,720	0	160	100,800	525	0	0	0
2057	0	23,040	16,320	0	205	0	15,360	0	15,360	160	30,720	0	160	100,800	525	0	0	0
2058	0	23,040	13,798	2,496	205	0	15,360	0	15,360	160	30,234	384	160	100,672	525	0	0	0
2059	0	23,040	0	16,320	205	0	15,360	0	15,360	160	0	30,720	161	100,800	525	0	0	0
2060	0	23,040	0	16,320	205	0	15,360	0	15,360	160	0	30,720	160	100,800	525	0	0	0
2061	0	23,040	0	16,320	205	0	9,265	0	21,312	160	0	30,720	160	100,657	525	0	0	0
2062	0	23,040	0	16,320	205	0	0	0	30,720	160	0	30,720	160	100,800	525	0	0	0
2063	0	23,040	0	16,320	205	0	0	0	30,720	160	0	30,720	160	100,800	525	0	0	0
2064	0	24,000	0	16,320	210	0	0	0	30,720	160	0	30,720	160	101,760	530	0	0	0

Table B-2 (continued): Used Nuclear Fuel Transport by Location and Year – 7.2 Million Bundle Scenario

Year	Bruce A		Bruce B		Bruce Shipments	Pickering A		Pickering B		Pickering Shipments	Darlington		Darlington Shipments	OPG Bundles Shipped	Total OPG Shipments	New Build A		New Build A Shipments
	Wet	Dry	Wet	Dry		Wet	Dry	Wet	Dry		Wet	Dry				Wet	Dry	
2065	0	24,960	0	16,320	215	0	0	0	30,720	160	0	30,720	160	102,720	535	0	0	0
2066	0	24,960	0	16,320	215	0	0	0	30,720	160	0	30,720	160	102,720	535	0	0	0
2067	0	24,960	0	16,320	215	0	0	0	30,720	160	0	30,720	160	102,720	535	0	0	0
2068	0	24,960	0	16,320	215	0	0	0	30,720	160	0	30,720	160	102,720	535	0	0	0
2069	0	24,960	0	16,320	215	0	0	0	30,720	160	0	30,720	160	102,720	535	0	0	0
2070	0	24,960	0	16,320	215	0	0	0	30,720	160	0	30,720	160	102,720	535	0	0	0
2071	0	24,960	0	16,320	215	0	0	0	30,720	160	0	30,720	160	102,720	535	0	0	0
2072	0	24,960	0	16,320	215	0	0	0	30,720	160	0	30,720	160	102,720	535	0	0	0
2073	0	24,960	0	16,320	215	0	0	0	30,720	160	0	30,720	160	102,720	535	0	0	0
2074	0	24,960	0	16,320	215	0	0	0	30,720	160	0	30,720	160	102,720	535	0	0	0
2075	0	4,626	0	36,480	215	0	0	0	22,858	120	0	30,720	160	94,684	495	0	0	0
2076	0	0	0	41,280	215	0	0	0	0	0	0	30,720	160	72,000	375	8,064	9,216	90
2077	0	0	0	41,280	215	0	0	0	0	0	0	30,720	160	72,000	375	13,440	3,840	90
2078	0	0	0	41,280	215	0	0	0	0	0	0	21,739	114	63,019	329	13,440	12,480	135
2079	0	0	0	41,280	215	0	0	0	0	0	0	0	0	41,280	215	13,824	32,832	243
2080	0	0	0	41,280	215	0	0	0	0	0	0	0	0	41,280	215	14,784	31,872	243
2081	0	0	0	41,280	215	0	0	0	0	0	0	0	0	41,280	215	14,784	31,872	243
2082	0	0	0	41,280	215	0	0	0	0	0	0	0	0	41,280	215	15,360	31,296	243
2083	0	0	0	41,280	215	0	0	0	0	0	0	0	0	41,280	215	19,968	26,688	243
2084	0	0	0	41,280	215	0	0	0	0	0	0	0	0	41,280	215	19,968	26,880	244
2085	0	0	0	41,280	215	0	0	0	0	0	0	0	0	41,280	215	19,968	26,880	244
2086	0	0	0	17,346	91	0	0	0	0	0	0	0	0	17,346	91	19,968	26,880	244
2087	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19,968	26,880	244
2088	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19,968	26,880	244
2089	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19,968	26,880	244
2090	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19,968	26,688	243
2091	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19,968	26,688	243
2092	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19,968	26,688	243
2093	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19,968	26,688	243
2094	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12,623	33,643	242
2095	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	384,043	631,314	594,598	730,242	12,191	199,007	201,841	310,925	524,170	6,440	726,234	605,803	11,147	5,715,915	29,778	325,967	481,771	4,208
Wet+Dry	1,015,357		1,324,840			400,848		835,095			1,332,037					807,738		

Table B-2 (continued): Used Nuclear Fuel Transport by Location and Year – 7.2 Million Bundle Scenario

Year	Gentilly 2			Pt. Lepreau			White-shell	Douglas Point	Gentilly 1	Chalk River	Total AECL Shipments	New Build B			Total Non-OPG Bundles	Total From Wet Bays		Total From Dry Storage		Cumulative Total	Total Shipped	Total Shipments
	Wet	Dry	Shipments	Wet	Dry	Shipments	Dry	Dry	Dry	Dry	Shipments	Wet	Dry	Shipments	Bundles	Cumulative	Bundles	Cumulative				
2034	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2035	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75,840	75,840	0	0	75,840	75,840	395
2036	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120,000	195,840	0	0	195,840	120,000	625
2037	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120,000	315,840	0	0	315,840	120,000	625
2038	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120,000	435,840	0	0	435,840	120,000	625
2039	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120,000	555,840	0	0	555,840	120,000	625
2040	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120,000	675,840	0	0	675,840	120,000	625
2041	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120,000	795,840	0	0	795,840	120,000	625
2042	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120,000	915,840	0	0	915,840	120,000	625
2043	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120,000	1,035,840	0	0	1,035,840	120,000	625
2044	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120,000	1,155,840	0	0	1,155,840	120,000	625
2045	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120,000	1,275,840	0	0	1,275,840	120,000	625
2046	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120,000	1,395,840	0	0	1,395,840	120,000	625
2047	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120,000	1,515,840	0	0	1,515,840	120,000	625
2048	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	101,130	1,616,970	18,624	18,624	1,635,594	119,754	625
2049	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	79,680	1,696,650	40,320	58,944	1,755,594	120,000	625
2050	4,416	0	23	4,416	0	23	0	1,620	0	0	9	0	0	0	10,452	80,832	1,777,482	39,060	98,004	1,875,486	119,892	625
2051	8,640	0	45	8,640	0	45	180	2,700	0	0	16	0	0	0	20,160	79,680	1,857,162	40,320	138,324	1,995,486	120,000	626
2052	8,640	0	45	8,640	0	45	180	2,700	0	0	16	0	0	0	20,160	79,680	1,936,842	40,320	178,644	2,115,486	120,000	626
2053	8,640	0	45	8,640	0	45	0	2,700	0	0	15	0	0	0	19,980	79,680	2,016,522	40,140	218,784	2,235,306	119,820	625
2054	8,264	720	48	8,640	0	45	0	2,520	0	0	14	0	0	0	20,144	79,304	2,095,826	40,680	259,464	2,355,290	119,984	627
2055	0	8,640	48	1,824	6,840	48	0	2,160	0	0	12	0	0	0	19,464	60,269	2,156,095	59,880	319,344	2,475,439	120,149	633
2056	0	8,640	48	0	8,640	48	0	1,800	0	0	10	0	0	0	19,080	47,040	2,203,135	72,840	392,184	2,595,319	119,880	631
2057	0	8,640	48	0	8,640	48	0	1,800	0	0	10	0	0	0	19,080	47,040	2,250,175	72,840	465,024	2,715,199	119,880	631
2058	0	8,640	48	0	8,640	48	0	1,800	0	0	10	0	0	0	19,080	44,032	2,294,207	75,720	540,744	2,834,951	119,752	631
2059	0	8,640	48	0	8,640	48	0	1,800	0	0	10	0	0	0	19,080	0	2,294,207	119,880	660,624	2,954,831	119,880	631
2060	0	8,640	48	0	8,640	48	0	656	720	540	11	0	0	0	19,196	0	2,294,207	119,996	780,620	3,074,827	119,996	632
2061	0	8,640	48	0	8,640	48	0	0	720	1,260	11	0	0	0	19,260	0	2,294,207	119,917	900,537	3,194,744	119,917	632
2062	0	8,640	48	0	8,640	48	0	0	720	1,260	11	0	0	0	19,260	0	2,294,207	120,060	1,020,597	3,314,804	120,060	632
2063	0	8,640	48	0	8,640	48	0	0	720	1,260	11	0	0	0	19,260	0	2,294,207	120,060	1,140,657	3,434,864	120,060	632
2064	0	8,640	48	0	8,640	48	0	0	333	566	6	0	0	0	18,179	0	2,294,207	119,939	1,260,596	3,554,803	119,939	632

Table B-2 (continued): Used Nuclear Fuel Transport by Location and Year – 7.2 Million Bundle Scenario

Year	Gentilly 2			Pt. Lepreau			White-shell	Douglas Point	Gentilly 1	Chalk River	Total AECL Shipments	New Build B			Total Non-OPG Bundles	Total From Wet Bays		Total From Dry Storage		Cumulative Total	Total Shipped	Total Shipments	
	Wet	Dry	Shipments	Wet	Dry	Shipments	Dry	Dry	Dry	Dry	Shipments	Wet	Dry	Shipments	Bundles	Cumulative	Bundles	Cumulative					
2065	0	8,640	48	0	8,640	48	0	0	0	0	0	0	0	0	17,280	0	2,294,207	120,000	1,380,596	3,674,803	120,000	631	
2066	0	8,640	48	0	8,640	48	0	0	0	0	0	0	0	0	17,280	0	2,294,207	120,000	1,500,596	3,794,803	120,000	631	
2067	0	8,640	48	0	8,640	48	0	0	0	0	0	0	0	0	17,280	0	2,294,207	120,000	1,620,596	3,914,803	120,000	631	
2068	0	8,640	48	0	8,640	48	0	0	0	0	0	0	0	0	17,280	0	2,294,207	120,000	1,740,596	4,034,803	120,000	631	
2069	0	8,640	48	0	8,640	48	0	0	0	0	0	0	0	0	17,280	0	2,294,207	120,000	1,860,596	4,154,803	120,000	631	
2070	0	8,640	48	0	8,640	48	0	0	0	0	0	0	0	0	17,280	0	2,294,207	120,000	1,980,596	4,274,803	120,000	631	
2071	0	8,640	48	0	8,640	48	0	0	0	0	0	0	0	0	17,280	0	2,294,207	120,000	2,100,596	4,394,803	120,000	631	
2072	0	8,640	48	0	8,640	48	0	0	0	0	0	0	0	0	17,280	0	2,294,207	120,000	2,220,596	4,514,803	120,000	631	
2073	0	8,640	48	0	8,640	48	0	0	0	0	0	0	0	0	17,280	0	2,294,207	120,000	2,340,596	4,634,803	120,000	631	
2074	0	8,640	48	0	8,640	48	0	0	0	0	0	0	0	0	17,280	0	2,294,207	120,000	2,460,596	4,754,803	120,000	631	
2075	0	8,640	48	0	8,640	48	0	0	0	0	0	8,064	0	42	25,344	8,064	2,302,271	111,964	2,572,560	4,874,831	120,028	633	
2076	0	8,640	48	0	8,640	48	0	0	0	0	0	13,440	0	70	48,000	21,504	2,323,775	98,496	2,671,056	4,994,831	120,000	631	
2077	0	8,640	48	0	8,640	48	0	0	0	0	0	13,440	0	70	48,000	26,880	2,350,655	93,120	2,764,176	5,114,831	120,000	631	
2078	0	8,640	48	0	8,640	48	0	0	0	0	0	13,824	0	72	57,024	27,264	2,377,919	92,779	2,856,955	5,234,874	120,043	632	
2079	0	8,640	48	0	8,640	48	0	0	0	0	0	14,784	0	77	78,720	28,608	2,406,527	91,392	2,948,347	5,354,874	120,000	631	
2080	0	8,640	48	0	8,640	48	0	0	0	0	0	14,784	0	77	78,720	29,568	2,436,095	90,432	3,038,779	5,474,874	120,000	631	
2081	0	8,040	45	0	8,640	48	0	0	0	0	0	15,360	0	80	78,696	30,144	2,466,239	89,832	3,128,611	5,594,850	119,976	631	
2082	0	0	0	0	8,640	48	0	0	0	0	0	19,968	3,456	122	78,720	35,328	2,501,567	84,672	3,213,283	5,714,850	120,000	628	
2083	0	0	0	0	4,080	23	0	0	0	0	0	19,968	8,064	146	78,768	39,936	2,541,503	80,112	3,293,395	5,834,898	120,048	627	
2084	0	0	0	0	0	0	0	0	0	0	0	19,968	11,904	166	78,720	39,936	2,581,439	80,064	3,373,459	5,954,898	120,000	625	
2085	0	0	0	0	0	0	0	0	0	0	0	19,968	11,904	166	78,720	39,936	2,621,375	80,064	3,453,523	6,074,898	120,000	625	
2086	0	0	0	0	0	0	0	0	0	0	0	19,968	35,904	291	102,720	39,936	2,661,311	80,130	3,533,653	6,194,964	120,066	626	
2087	0	0	0	0	0	0	0	0	0	0	0	19,968	53,184	381	120,000	39,936	2,701,247	80,064	3,613,717	6,314,964	120,000	625	
2088	0	0	0	0	0	0	0	0	0	0	0	19,968	53,184	381	120,000	39,936	2,741,183	80,064	3,693,781	6,434,964	120,000	625	
2089	0	0	0	0	0	0	0	0	0	0	0	19,968	53,184	381	120,000	39,936	2,781,119	80,064	3,773,845	6,554,964	120,000	625	
2090	0	0	0	0	0	0	0	0	0	0	0	19,968	53,376	382	120,000	39,936	2,821,055	80,064	3,853,909	6,674,964	120,000	625	
2091	0	0	0	0	0	0	0	0	0	0	0	19,968	53,376	382	120,000	39,936	2,860,991	80,064	3,933,973	6,794,964	120,000	625	
2092	0	0	0	0	0	0	0	0	0	0	0	19,968	53,376	382	120,000	39,936	2,900,927	80,064	4,014,037	6,914,964	120,000	625	
2093	0	0	0	0	0	0	0	0	0	0	0	19,968	53,376	382	120,000	39,936	2,940,863	80,064	4,094,101	7,034,964	120,000	625	
2094	0	0	0	0	0	0	0	0	0	0	0	1,821	71,892	385	119,979	14,444	2,955,307	105,535	4,199,636	7,154,943	119,979	627	
2095	0	0	0	0	0	0	0	0	0	0	0	8,064	0	42	25,344	8,064	2,302,271	111,964	2,572,560	4,874,831	120,028	633	
Totals	38,600	233,400	1,499	40,800	244,200	1,570	360	22,256	0	4,886	173	335,133	516,180	4,435	1,439,028	2,955,307		4,199,636		7,154,943		37,455	
Wet+Dry		272,000			285,000								851,313							Average	119,249		624