

Rhonda Miller - MVLWB

From: Lynn Boettger - MVLWB [lboettger@mvlwb.com]
Sent: July-06-11 9:54 AM
To: 'Rhonda Miller - MVLWB'
Subject: FW: Town of Fort Smith Water License - Response to MVLWB questions
Attachments: Fort Smith MVLWB July 5 2011 .pdf; Town of Fort Smith - Information on Landfill Capacity - July 5, 2011.pdf

For MV2011L3-0001 - to go up on registry today please

The one file "...July 5 2011" is a Technical Memorandum on Development of Effluent Criteria and should probably show up in the "consultation/Reviews" folder.

The other document "...Information on Landfill Capacity..." is part of the public hearing stuff

Thanks!
Lynn

From: [Johnson, Ken](#)
To: [Kathy Racher - WLWB](#)
Cc: [Jean Soucy](#); [Lanteigne, Michel](#)
Subject: RE: Town of Fort Smith Water License - Response to MVLWB questions
Date: Tuesday, July 05, 2011 2:16:44 PM
Attachments: [110705 Ft Smith landfill operating areas.pdf](#)
[Airspace Sizing for 20 years - part 1 WASTE GENERATION.pdf](#)
[Airspace Sizing for 20 years - part 2 VOLUME+AREA CALCULATIONS.pdf](#)

Kathy - regarding the question on the anticipated capacity of the Fort Smith Landfill for a 20 years horizon, please see attachments, which include:

1. site map with existing and expansion area for landfill and areas.
2. table on anticipated waste generation for next 20 years
3. anticipated operating depth of waste based upon waste generation and available areas.

KRJ

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-----Original Message-----

From: Kathy Racher - WLWB [<mailto:racherk@wlwb.ca>]
Sent: Thursday, June 30, 2011 11:57 AM
To: Johnson, Ken
Cc: 'Jean Soucy'; Lanteigne, Michel
Subject: RE: Town of Fort Smith Water License - Response to MVLWB questions

Thanks for this! I know you are a busy man and it is difficult to get to this. Will you be available for the public hearing scheduled for July 20?

Kathy

Kathleen Racher, Ph. D.,
Technical Director
Wek'eezhii Land and Water Board
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-----Original Message-----

From: Johnson, Ken [<mailto:Ken.Johnson@aecom.com>]
Sent: Thursday, June 30, 2011 11:35 AM
To: racherk@wlwb.ca
Cc: Jean Soucy; Lanteigne, Michel
Subject: Town of Fort Smith Water License - Response to MVLWB questions

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Area A
Existing Area
43,000 m²

Area B
Future Area
19,000 m²

Town of Fort Smith Solid Waste Management Landfill Operating Areas

Prepared 2011 07 05

Table A.1: Population and Waste Projections

Year	Population	Waste Generated (m ³) ^b	Accumulated Waste (m ³)	Waste Generated (tonnes) ^c	Accumulated Waste (tonnes)
2006 ^a	2,364	25,886		2,589	
2007 ^b	2,412	26,416		2,642	
2008	2,462	26,958		2,696	
2009	2,512	27,511		2,751	
2010	2,564	28,075		2,807	
2011	2,616	28,650	28,650	2,865	2,865
2012	2,670	29,237	57,888	2,924	5,789
2013	2,725	29,837	87,724	2,984	8,772
2014	2,781	30,448	118,173	3,045	11,817
2015	2,838	31,073	149,246	3,107	14,925
2016	2,896	31,710	31,710	3,171	3,171
2017	2,955	32,360	64,069	3,236	6,407
2018	3,016	33,023	97,092	3,302	9,709
2019	3,078	33,700	130,793	3,370	13,079
2020 ^a	3,141	34,391	165,183	3,439	16,518
2021	3,205	35,096	200,279	3,510	20,028
2022	3,271	35,815	236,095	3,582	23,609
2023	3,338	36,550	272,644	3,655	27,264
2024	3,406	37,299	309,943	3,730	30,994
2025	3,476	38,064	348,007	3,806	34,801
2026	3,547	38,844	386,851	3,884	38,685
2027	3,620	39,640	426,491	3,964	42,649
2028	3,694	40,453	466,943	4,045	46,694
2029	3,770	41,282	508,225	4,128	50,823
2030	3,847	42,128	550,354	4,213	55,035
2031	3,926	42,992	593,346	4,299	59,335
2032	4,007	43,873	637,219	4,387	63,722
2033	4,089	44,773	681,992	4,477	68,199
2034	4,173	45,690	727,682	4,569	72,768
2035	4,258	46,627	774,309	4,663	77,431
2036	4,345	47,583	821,892	4,758	82,189

a Calculation based on available airspace for accepted waste, determined by design

^a Source : Statistics Canada. 2007. Fort Smith, Northwest Territories (Code6106001) (table). 2006 Community Profiles

^b Average annual rate of 2.05% was used to estimate the population (Statistics Canada 2007)

^b Assumed waste generation rate is 0.03 m³/person/day or 1,095 m³/person/year

^c Density of uncompacted waste is 100 kg/m³

Table A.2: Airspace Calculation

Item	Quantity	Unit
Total waste generation 2016 to 2036 (20 years)	821,892	m ³
Total waste generation until 2036 with the density of 100 kg/m ³	82,189	tonnes
Airspace requirement until 2036 with a density of 400 kg/m ³ at the future landfill		
Total airspace for requirement for accepted waste	205,473	m ³
Total "soil" requirement for cover material (waste to soil ratio of 4:1)	51,368	m ³
Total airspace for the future landfill (in m ³)	256,841	m ³
Total airspace for the future landfill (in tonnes)	102,737	tonnes
Available areas (see figure)		
Area A		
	L = 170	m
	W = 250	m
	H = 4.2	m
	Landfill Cell Area = 42,500	m²
Area B		
	L = 170	m
	W = 110	m
	H = 4.2	m
	Landfill Cell Area = 18,700	m²
	Total Landfill Cell Area = 61,200	m²
	Total Landfill Cell Volume = 257,040	m³