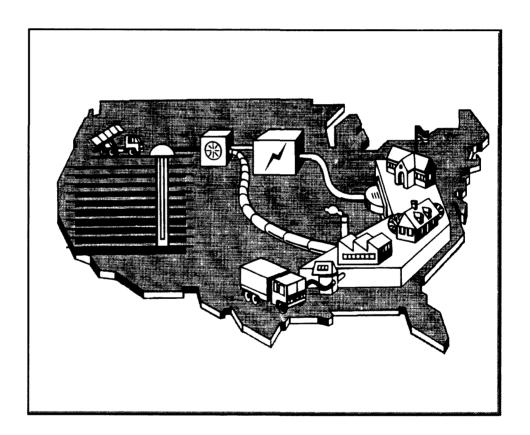


# **EPA** Landfill Gas-to-Energy Project **Opportunities**

## Landfill Profiles for the **State of Minnesota**





## **EPA Landfill Methane Outreach Program**



The EPA Landfill Methane Outreach Program, a key component of the United State's *Climate Change Action Plan*, encourages the use of landfill gas (LFG) as an energy resource. EPA assists utilities,

municipal and private landfill owners and operators, tribes, and state agencies in reducing methane emissions from landfills through the development of profitable landfill energy recovery projects. Methane captured from landfills can be transformed into a cost-effective fuel source for electricity, heat, boiler and vehicular fuel, or sale to a pipeline. EPA estimates there are approximately 200 landfill methane recovery projects in the U.S. and that up to 750 landfills could install economically viable landfill energy projects.

The Landfill Methane Outreach Program includes five important components: the State Ally, Energy Ally, Industry Ally, Community Partner, and Endorser programs. EPA establishes separate alliances with state agencies, energy providers (including investor-owned, municipal and other public power utilities and cooperatives), key trade and public sector associations, members of the landfill gas development industry (including developers, engineers, equipment vendors, and others) and local communities, municipalities and landfill owner/operators through a Memorandum of Understanding (MOU). By signing the MOU, each Ally/Partner acknowledges a shared commitment to the promotion of landfill gas-to-energy recovery at solid waste landfills, recognizes that the widespread use of landfill gas will reduce emissions of methane and other gases, and commits to undertake activities to enhance development of this resource. In return, EPA agrees to provide landfill gas-to-energy project assistance and public recognition of the Allies' and Partners' participation in the program.

#### Introduction

Since 1994 the U.S. EPA's Landfill Methane Outreach Program (LMOP) has participated in an ongoing effort to gather information on Municipal Solid Waste landfills (MSW). A key component of the LMOP is to provide MSW landfill owners and operators, project developers, utilities, and other potential project participants with information on MSW landfills that may offer attractive energy development opportunities. This document presents state specific landfill information, hereinafter referred to as the landfill profiles. These profiles are useful to evaluate the potential for developing landfill gas-toenergy projects (LFGTE). EPA assembled this information from state and local sources as well as various national solid waste publications, landfill owners and operators, and project developers.

The EPA has prepared a separate document to describe the methodology used to develop the state-specific landfill profiles and estimate the benefits of using LFGTE as an energy source. The document, Landfill Gas-to-Energy Project Opportunities, Background Information on Landfill Profiles, contains background information on gas collection and use, describes the data fields according to the five sections listed on the landfill profiles, and where applicable, illustrates calculations and default values used to derive estimates. EPA strongly recommends that users read the document prior to using the landfill profiles. Users can obtain the document by calling the LMOP hotline at 1-888-STAR-YES.

#### **Data Sources**

- EPA-ORD Landfill Gas Utilization-Survey (Thorneloe, 1997)
- Directory and Atlas of Solid Waste Disposal Facilities (SWA, 1994)
- Implementation Guide for Landfill Gas Recovery Projects in the Northeast (SCS, 1994)
- Landfill Gas-to-Energy 1994-1995 Activity Report (SWT, 1994)
- Methane Recovery from Landfill Yearbook (GAA, 1994)
- Project developers, landfill owners, and operators
- · State and local records
- Survey of Landfill Gas Generation Potential (EPRI, 1992)
- U.S. Landfill Directory (SWANA, 1992)

#### **Landfill Classification**

To facilitate the use of available landfill information. EPA has categorized the landfills into five categories: Current Project, <sup>1</sup> Candidate Project, Shutdown, Other, and Unknown waste-in-place (WIP). These categories are based on the status of the landfill's LFGTE project(s) and WIP. The generation of methane is a function of many factors, the most critical being the amount of waste-in-place and the number of years the waste has been in the landfill. Peak methane generation occurs soon after closure; therefore, the longer the landfill has been closed, the less attractive it becomes for methane recovery. Based on the general timing of peak methane generation, EPA assumes that landfills that ceased accepting waste prior to 1993 have a low probability of generating enough methane to make a gas recovery project economical. Consequently, landfills need to be operating in 1993 to be considered as having a Candidate Project.

#### **Landfill Categorizes**

#### **Current Project:**

 Landfill with operational LFGTE project or landfill with LFGTE project under construction.

#### **Candidate Project:**

- Landfill with a potential or planned LFGTE utilization project; or
- Landfill is currently operating or closed after 1993; and has more than 1,000,000 tons of municipal solid waste-inplace.<sup>2</sup>

#### Shutdown:

· Landfill with shutdown LFGTE project.

#### Other:

 Landfill has less than 1,000,000 tons of municipal solid waste-in-place with no current or planned LFGTE project.

#### **Unknown WIP:**

 Landfill with insufficient data to determine the waste-inplace.

### **State Summary**

State-specific landfill profile information is summarized in three exhibits. Exhibit 1 presents a summary of the state-specific potential for LFG utilization energy by landfill category. Exhibit 2 summarizes the emissions avoided by fossil fuel displacement for electricity generation and direct use projects. Exhibit 3 presents an index of the state-specific MSW landfills, referenced by category, landfill name and general characteristics.

<sup>&</sup>lt;sup>2</sup> By modeling the relationship between WIP and methane generation, a cut-off of 1,000,000 tons of WIP was established; landfills having at least 1,000,000 tons of WIP are considered candidate landfills.



Current projects illustrate the wide range of successful project development options.

**Exhibit 1: Minnesota MSW Landfill Summary** 

Category	No. of	Est. Capac	ity Potential	Est. CH4	Methane Reduction (tons/yr)		CO2 Equivalent of CH4		
	Landfills	Electricity (MW)	Gas Capacity (mmBtu/hr)	Generation (mmscf/d)			Reduction (tons/yr)		
					Potential	Current	Potential	Current	
Current	5	30	302	10	55,843	55,118	1,172,707	1,157,476	
Candidate	4	10	103	3	19,100	0	401,104	0	
Other	6	10	97	3	18,051	0	379,065	0	
Unknown WIP	8								
Total	23	50	502	16	92,994	55,118	1,952,876	1,157,476	

**Exhibit 2: Potential Minnesota Emissions Avoided by Fossil Fuel Displacement** 

Category		Electi	ricity Gen	eration P	roject		Direct Use Project					
	CC	CO2 (tons/yr)			SO2 (tons/yr)		CO2 (tons/yr)			SO2 (tons/yr)		
	Coal	Oil	Natural Gas	Coal	Oil	Natural Gas	Coal	Oil	Natural Gas	Coal	Oil	Natural Gas
Current	237,572	194,988	131,113	1,502	1,255	0	168,164	138,022	92,808	1,530	804	1
Candidate	82,085	67,372	45,302	519	434	0	57,518	47,208	31,743	523	275	0
Other	77,349	63,485	42,688	489	409	0	54,358	44,614	29,999	495	260	0
Unknown WIP												
Total	397,006	325,845	219,102	2,510	2,098	0	280,039	229,844	154,550	2,548	1,339	1

## **Exhibit 3: Index of Landfills in Minnesota**

Category	Category Landfill Name		WIP			LFG Collected	LFG	Status of LFGTE
		<2.5 million tons	2.5 to 4 million tons	>4 million tons	Operating in 1998		Utilization Project	Project
Current	Anoka Municipal		V			<u> </u>	V	Operational
Current	Burnsville SLF					<b>V</b>	<b>✓</b>	Operational
Current	Flying Cloud			<b>V</b>		✓	<b>V</b>	Operational
Current	Pine Bend SLF			~	<b>V</b>	<b>V</b>	<b>✓</b>	Operational
Current	Woodlake SLF		<b>V</b>			<b>V</b>	<b>V</b>	Operational
Candidate	Blue Earth County	<b>V</b>			✓	~		Unknown
Candidate	Elk River SLF	<b>✓</b>			✓			Unknown
Candidate	Lyon County SLF	<b>V</b>			<b>V</b>			Unknown
Candidate	Salol	<b>V</b>						Unknown
Other	Albert Lea	✓			Ú	~		Unknown
Other	Crow Wing County SLF (new)	✓		Ш	V	✓		Unknown
Other	East Central SLF	✓			<b>V</b>			Unknown
Other	Forest City Road LF	✓			<b>✓</b>			Unknown
Other	Freeway		✓			<b>V</b>		Unknown
Other	Louisville	<b>V</b>				<b>V</b>		Unknown
Unknown WIP	Brown County SLF					<u>. U</u>		Unknown
Unknown WIP	Clay County SLF							Unknown
Unknown WIP	Crow Wing County SLF(old)		Ш					Unknown
Unknown WIP	Kandiyohi County SLF							Unknown
Unknown WIP	Polk County SLF							Unknown
Unknown WIP	Rice County SLF		Ш					Unknown
Unknown WIP	Steele County SLF							Unknown
Unknown WiP	WLSDD SLF							Unknown

	•	Anoka Mun	. •			Landfill Catego	ory: Current
	A	A. GENERAL LANDFILL	INFORMA'	TION			
Landfill Owner:			Annual Acce	ptance Rate (	(tons):		77,480
Landfill Owner Type:			Year Annual	-	Rate Report	ed:	1993
Alternative Landfill Name:	WMI-Ramsey		Design Capa				
City:	Anoka		Acres Curren	•	d (acres):		64
County:	Anoka		Average Dep				110
State:	MN			in-Place (ton	-		3,419,316
Year Open: Year Closed:	1972 1994		1990 waste-i	in-Place (tons	s):		3,419,316
Teal Closed.	1994	B. LANDFILL GAS C	OLLECTIO	N. San			
Estimated Methane Generation	on (mmaaf/d):		1.29			<u> </u>	
LFG Collection System Status	•	0	perational				
Current LFG Collected (mms		O	2.8				
Collection and Treatment Sys		NSPS/EG:	No				
	-	C. LANDFILL GAS U		N		280	
Current Utilization:		<u> 1800-istania anno anno anno anno anno anno anno </u>		in the state of th		<u> </u>	<u> </u>
Utilization System Status	s: Operation	าทลไ					
Utilization System Type:	•						
Utilization System Start		. 5.0					
Electric Utility Provider(							
Natural Gas Provider(s):							
Energy Purchaser(s):							
Shorgy I drendsor(o).							
Capacity:	Elec	tricity Generation Project (M	/W)	OR	Direct Us	e Project (mmBt	u/hr)
Estimated Potential Cape	acity:		4				40
Current Capacity:			1.8				13
Planned Capacity:							
Utilities in County:	Anoka F	Electric Cooperative; Anoka	Flectric Den	r Anoka Mur	nicinal litili	tv. Northern Sta	res Power C
Cumues in County.		VIROMENTAL BENEFI	_		neipui etiii		.031001
	D. EN			AZATION ,			
		Po	otential	<b>5</b> 450		Current	10 500
Methane Reduction (tons/yr):				7,473			10,792
CO2 Equivalent of CH4 Redu	ction (tons/yr):			156,935			226,638
Emissions Avoided by Fossil I	Fuel Displacement:	Electricity Ger	neration Proje	ect		Direct Use Pro	oiect
•	•	CO2 (tons/yr)	SO2 (to		CO2	(tons/yr)	SO2 (tons/yr)
	Coal:		·	200		22,504	205
	Fuel Oil:	25,912		167		18,470	108
	Natural Gas:	17,424		0	,	12,420	0
4	• 1s , i	E. CONTACT INFO	RMATION				
	Land	Ifill Owner			Landfill	Operator	
Contact Name:					-		
Mailing Address:			j ,				
Mailing Address:			ï				
Dhana Numbar			i				
Phone Number:							
Fax Number:							
+ 1, 11: 1 . J : 1:	- Control of the cont						
* Itallicized indicates values e.	sumated by EPA.	De	ecember 5, 19	70	Sta	ite: MN P	age: 1

	A. GI	Blue Earth Coun ENERAL LANDFILL IN	•	Landfill Cate	gory: Candidat
Landfill Owner:					97.412
Landfill Owner Type:	Private Private	•	nual Acceptance Rate (to r Annual Acceptance R		87,412 1993
Alternative Landfill Name:	Ponderosa LF		ign Capacity (tons):	ate Reported.	1993
City:	i oliderosa Ei		es Currently Landfilled	(acres):	67
County:	Blue Earth		erage Depth (feet):	(deres).	0,
State:	MN		ste-in-Place (tons):		2,097,888
Year Open:	1973		8 Waste-in-Place (tons)		2,272,712
Year Closed:	2066	177	o waste-m-r tace (tons)	•	2,2,2,,12
		LANDFILL GAS COLI	LECTION		
Estimated Methane Generation	n (mmscf/d):		1		***************************************
LFG Collection System Status		Opera	tional		
Current LFG Collected (mmse		•			
Collection and Treatment Sys	tem Required Under NSP	S/EG:	No		
<i>E.</i>		C. LANDFILL GAS UTIL	IZATION		
Current Utilization:					
Utilization System Status	: Unknown				
Utilization System Type:	Unknown				
Utilization System Start	Year:				
Electric Utility Provider(	s):				
Natural Gas Provider(s):					
Energy Purchaser(s):					
Capacity:	Electricit	y Generation Project (MW)	) OR	Direct Use Project (mm)	Btu/hr)
Estimated Potential Capa			3		31
Current Capacity:	<i></i>				<i>3.</i>
Planned Capacity:			1.5		21
Utilities in County:	Blue Farth-N	licollet-Faribault Coop Elec	Assn: Brown County F	Rural Flec Assn: Lake Ci	rystal Public II
Canada III County,		OMENTAL BENEFITS		tarar Bree rissin, Baire er	75.00.7 45.10 5
		_		Curro	nt
Made - De de dias (Assestant)		Poten		Curre	nı 0
Methane Reduction (tons/yr):	ation (4au-4au).		5,778		_
CO2 Equivalent of CH4 Redu	ction (tons/yr):		121,328		0
Emissions Avoided by Fossil I	Fuel Displacement:	Electricity Genera	tion Project	Direct Use P	Project
•	•	CO2 (tons/yr)	SO2 (tons/yr)	CO2 (tons/yr)	SO2 (tons/yr)
	Coal:	24,468	155	17,398	158
	Fuel Oil:	20,082	129	14,280	83
	Natural Gas:	13,503	0	9,602	0
***************************************		E. CONTACT INFORM	IATION		
	Landfill (	Owner		Landfill Operator	- · · · · · · · · · · · · · · · · · · ·
Contact Name: Ken F	rederick		Ken Frederick		
Mailing Address: P.O. E	3566 Sox 3566		P.O. Box 3566		
Phone Number: 507-3	89-8381		507-389-8381		
Phone Number: 507-3: Fax Number:	89-8381		507-389-8381		
307 3		Decen	507-389-8381 nber 5, 1998	State: MN	Page: 2

		Burnsville Sl	LF	Landfill Categor	y: Current
	A. G	ENERAL LANDFILL I	NFORMATION		
Landfill Owner:		A	annual Acceptance Rate	(tons):	104,012
Landfill Owner Type:			ear Annual Acceptance		1993
Alternative Landfill Name:			esign Capacity (tons):		
City:	Burnsville		cres Currently Landfille	ed (acres):	
County:	Dakota	A	verage Depth (feet):		
State:	MN	. v	Vaste-in-Place (tons):		
Year Open:		1	998 Waste-in-Place (ton	s):	
Year Closed:	2001				
		B. LANDFILL GAS CO	LLECTION		
Estimated Methane Generation	n (mmscf/d):				
LFG Collection System Status	<u>-</u>	Оро	erational		
Current LFG Collected (mmsc		•			
Collection and Treatment Systematics		PS/EG:	No		
		C. LANDFILL GAS UT	ILIZATION		
Current Utilization:					
Utilization System Status	: Operational				
Utilization System Type:	Reciprocation	ng Engine			
Utilization System Start Y	Year: 1994				
Electric Utility Provider(s	s):				
Natural Gas Provider(s):					
Energy Purchaser(s):	Northern St	ates Power Co			Ì
Capacity:	Electric	ty Generation Project (M	W) OR	Direct Use Project (mmBtu	/hr)
Estimated Potential Capa	city:				
Current Capacity:	<i>.</i>		4		
Planned Capacity:					
Utilities in County:	Dakota Elec	tric Association; Goodhu	e County Coop Elec Ass	n; Minnesota Valley Electric	Coop; Nor
	D. ENVI	ROMENTAL BENEFIT	S OF UTILIZATION		
		Pot	ential	Current	
Methane Reduction (tons/yr):					
CO2 Equivalent of CH4 Reduc	ction (tons/yr):				
Emissions Avoided by Fossil F	uel Displacement:	Electricity Gene	•	Direct Use Proj	1
		CO2 (tons/yr)	SO2 (tons/yr)	CO2 (tons/yr)	SO2 (tons/yr)
	Coal:				
	Fuel Oil:				
	Natural Gas:				
		E. CONTACT INFOR	MATION		
	Landfill		WHI ION	Landfill Operator	
Contact Name:			John Morley		
				D 1	<u> </u>
Mailing Address:			1000 West Cliff	Koad	
Phone Number:					1
I HOHE INUHIDEL.			612-890-3248		:
Fax Number:					)   
* Itallicized indicates values es.	timated by EPA.	Dec	ember 5, 1998	State: MN Pag	ge: 3

			Elk River E <b>NERAL LANDFIL</b> I		ATION	Landfill Cat	egory: Candidate
			ENERAL LANDFILL				
Landfill Owner:		er SLF Co.			ceptance Rate (t		66,554
Landfill Owner Type					al Acceptance F	Rate Reported:	1993
Alternative Landfill				-	pacity (tons):		100
City:	Elk Rive				ently Landfilled	(acres):	139
County:	Sherbur	ne		Average D			
State:	MN				Place (tons):		1,464,188
Year Open:	1975			1998 Wast	e-in-Place (tons	):	1,597,296
Year Closed:	2042	T)	. LANDFILL GAS C	OLL POTE	ON		
		<u></u>	. LANDFILL GAS C		UN		
Estimated Methane C	-	7d):		0.83			
LFG Collection Syste				Planned			
Current LFG Collecte							
Collection and Treati				No	<del>/AN</del>		· · · · · · · · · · · · · · · · · · ·
			C. LANDFILL GAS U	JIILIZAII	ON .	<u> </u>	
Current Utilization:							
Utilization Syste		Unknown					
Utilization Syste		Reciprocating	g Engine				
Utilization Syste			•				
Electric Utility I							
Natural Gas Pro	` ,						
Energy Purchase	er(s):						
Capacity:		Electricit	y Generation Project (1	MW)	OR	Direct Use Project (mm	nBtu/hr)
Estimated Poten	tial Capacity:			3			26
Current Capacit				•			
Planned Capacit	-			1.2			18
Utilities in County:	}	Anoka Electr	ic Cooperative; East C	Central Elect	ric Assn; Elk Ri	iver Muni Utils; Norther	n States Powe
		D. ENVIR	OMENTAL BENEF	ITS OF UT	ILIZATION		
			P	Potential		Curre	ent
Methane Reduction (	tonshir):		•	oichilai	4,779	00	0
CO2 Equivalent of C	•	ichir).			100,353		0
		137 yr ).			100,555		
Emissions Avoided b	y Fossil Fuel Disp	lacement:	Electricity Ge	neration Pr	oject	Direct Use	Project
			CO2 (tons/yr)	SO2	(tons/yr)	CO2 (tons/yr)	SO2 (tons/yr)
		Coal:	20,521		130	14,390	131
					1	·	
		Fuel Oil:	16,843		108	11,811	69
	No	atural Gas:	11,325		0	7,942	0
			E. CONTACT INFO	ORMATIO	N		
<u>, , , , , , , , , , , , , , , , , , , </u>	·	Landfill (	Owner			Landfill Operator	
Contact Name:	Ms. Vickie Kre	ger		М	s. Vickie Krege	Г	
Mailing Address:	22460 Highway	_		1	2460 Highway 1		
		, .02 .1111			ov ingnway i	O) I TOTAL WOOL	
Phone Number:	610 441 0461				0.441.0464		
Hone rumber.	612-441-2464			61	2-441-2464		
Fax Number:	1						
* Italliainad in 1:	values estimated	L., EDA	<u> </u>	)000mb==5	1000	Ctota: NANI	Daga: 4
* Itallicized indicates	values estimated i	UY EFA.	D	ecember 5,	1770	State: MN	Page: 4

STAR Version 1.0 / LMOP

		Flying Cloud		Landfill Categor	·
	A. G	ENERAL LANDFILL INFO	PRMATION		
Landfill Owner:	BFI		al Acceptance Rate (to		514,800
Landfill Owner Type:			Annual Acceptance R	ate Reported:	0
Alternative Landfill Name:	EL D		n Capacity (tons):		100
City:	Eden Prairie		Currently Landfilled	(acres):	106
County:	Hennepin		ge Depth (feet):		4 700 040
State: Year Open:	MN 1970		Waste-in-Place (tons) Waste-in-Place (tons)		4,799,040 4,799,040
Year Closed:	1985	1990	wasie-in-Flace (lons)	•	4,799,040
Tear Closed.		LANDFILL GAS COLLE	CTION		
Estimated Methane Generation	n (mmscf/d):		1.65		
LFG Collection System Status	:	Operation	onal		
Current LFG Collected (mmsc	f/d):		5.5		
Collection and Treatment System	em Required Under NSP	S/EG:	No		
	( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )	C. LANDFILL GAS UTILIZ	ZATION	Series Series Series	7
Current Utilization:					
Utilization System Status	•				
Utilization System Type:	Reciprocatin	g Engine			
Utilization System Start Y					
Electric Utility Provider(s Natural Gas Provider(s):	s):				
Energy Purchaser(s):					
Energy I dichaser(s).					
Capacity:	Electricit	ty Generation Project (MW)	OR	Direct Use Project (mmBtua	/hr)
Estimated Potential Capa	city:		5		51
Current Capacity:			1.9		15
Planned Capacity:					
Utilities in County:	Anoka Electr	ric Cooperative; Anoka Electr	ric Dept; Elk River M	uni Utils; Minnesota Valley	Electric C
	D. ENVIR	OMENTAL BENEFITS O	FUTILIZATION		
		Potentia	ıl	. Current	
Methane Reduction (tons/yr):			9,513		21,199
CO2 Equivalent of CH4 Reduc	ction (tons/yr):		199,781		445,183
Emissions Avoided by Fossil F	Sual Displacement:	Electricity Generation	n Project	Direct Use Proje	ect
Emissions Avoided by Possii P	uei Dispiacemeni.		SO2 (tons/yr)	•	SO2 (tons/yr)
		•		•	-
	Coal:	40,253	254	28,648	261
	Fuel Oil:	33,038	213	23,513	137
,	Natural Gas:	22,215	0	15,811	0
		E. CONTACT INFORMA	TION		
	Landfill (	Owner		Landfill Operator	<del></del>
Contact Name:					
Mailing Address:			,		
,			! !		
Phone Number:					
Fax Number:			<u> </u>		
* Itallicized indicates values es	timated by EPA.	Decemb	er 5, 1998	State: MN Pag	ge: 5
STAR Version 1.0 /	-			·	

STAR Version 1.0 / LMOP

_		Lyon County		Landfill Cate	gory: Candidate
	A. (	GENERAL LANDFILL	INFORMATION		
Landfill Owner:			Annual Acceptance Rate	(tons):	36,902
Landfill Owner Type:		,	Year Annual Acceptance	Rate Reported:	1993
Alternative Landfill Name:		1	Design Capacity (tons):		
City:	Marshall	1	Acres Currently Landfille	d (acres):	
County:	Lyon		Average Depth (feet):		
State:	MN	•	Waste-in-Place (tons):		996,354
Year Open:	1970		1998 Waste-in-Place (ton	s):	1,070,158
Year Closed:	2020				
		B. LANDFILL GAS CO	DLLECTION		
Estimated Methane Generation	n (mmscf/d)·		0.69		
LFG Collection System Status	•				
Current LFG Collected (mmsc					
Collection and Treatment Syst	•	SPS/EG:	No		
		C. LANDFILL GAS U		<u> </u>	
C I kili-atian	<u></u>				······································
Current Utilization:	. II.l.				
Utilization System Status					
Utilization System Type:					
Utilization System Start					
Electric Utility Provider(s): Natural Gas Provider(s):	s):				
Energy Purchaser(s):					
Capacity:	Electric	city Generation Project (M	(W) OR	Direct Use Project (mml	Btu/hr)
Estimated Potential Capa	acity:		2		22
Current Capacity:					
Planned Capacity:					
Utilities in County:	Lyon-Linc	oln Electric Coop Inc; Ma	rshall Mun Util; Minneso	ota Valley Coop L&P Assn	; Nobles Coor
	D. ENV	IROMENTAL BENEFI	rs of utilization		-
		Po	tential	Currer	nt
Methane Reduction (tons/yr):		10	3,999	Curren	0
CO2 Equivalent of CH4 Reduction	ction (tonshir):		83,983		0
CO2 Equivalent of C114 Reduc	ction (tons/yr).				
Emissions Avoided by Fossil I	Fuel Displacement:	Electricity Gen	eration Project	Direct Use P	roject
		CO2 (tons/yr)	SO2 (tons/yr)	CO2 (tons/yr)	SO2 (tons/yr)
	Coal:	17,364	110	12,043	110
	Fuel Oil:	14,252	92	9,884	58
	Natural Gas:	9,583	0	6,646	0
		E. CONTACT INFO	RMATION	<u> </u>	
	Landfil	l Owner		Landfill Operator	
Contact Name:			Paul Henrickson		
			1		
Mailing Address:			601 West Main		
Dhana Number					
Phone Number:			507-537-6733		
Fax Number:					
* Itallicized indicates values es	stimated by EPA.	De	cember 5, 1998	State: MN	Page: 6
( com. p. v					

			Pine Bend S				tegory: Curren
		A. G	ENERAL LANDFILL	INFORMA:	ΠON		at me
Landfill Owner:			A	Annual Acce	ptance Rate (	tons):	181,368
Landfill Owner Type:			Y	Year Annual	Acceptance I	Rate Reported:	1993
Alternative Landfill Nam	e:			Design Capac	•		
City:	Inver Gro	ve Heights			tly Landfilled	d (acres):	170
County:	Dakota			Average Dep			85
State:	MN				in-Place (ton	,	18,362,736
Year Open:	1971		1	'998 Waste-i	n-Place (tons	s):	19,088,208
Year Closed:	2027		LANDEH L CAS CO	ALL ECTIO			<del></del>
<u> </u>	3.26	%, J	B. LANDFILL GAS CO	PLLECTIO	N. 19 24 114		
Estimated Methane Gene	· · · · · · · · · · · · · · · · · · ·	<i>)</i> ):		5.30			
LFG Collection System S			Op	erational			
Current LFG Collected (r				6.0			
Collection and Treatment	System Requir			No	•		
			C. LANDFILL GAS UT	ILIZATIO	N	<u> </u>	100
Current Utilization:							
Utilization System S		Operational				•	
Utilization System T	• •	Combined C	ycle				
Utilization System S		1996					
Electric Utility Prov	* *						
Natural Gas Provide	• •	N1. G.					
Energy Purchaser(s)	•	Northern Sta	ites Power Co				
Capacity:		Electrici	ty Generation Project (M	(W)	OR	Direct Use Project (m.	mBtu/hr)
Estimated Potential	Capacity:			17			166
Current Capacity:				10.0			79
Planned Capacity:							
	•				<u> </u>		
Utilities in County:		Dakota Elect	tric Association; Goodhu	e County Co	op Elec Assr	n; Minnesota Valley Ele	ctric Coop; Nor
Utilities in County:			tric Association; Goodhu			n; Minnesota Valley Ele	ctric Coop; Nor
Utilities in County:	- 1.7		ROMENTAL BENEFTI	S OF UTIL			
	έχει (vr):		ROMENTAL BENEFTI		IZATION	n; Minnesota Valley Ele Curi	rent
Methane Reduction (tons		D. ENVIR	ROMENTAL BENEFTI	S OF UTIL	<b>IZATION</b> 30,644		rent 23,126
Methane Reduction (tons		D. ENVIR	ROMENTAL BENEFTI Pol	es OF UTII	30,644 643,526		rent
Methane Reduction (tons	Reduction (tons/	D. ENVIF	COMENTAL BENEFII Pol	S OF UTIL	30,644 643,526	Cun Direct Use	rent 23,126 485,654 <i>Project</i>
Methane Reduction (tons, CO2 Equivalent of CH4 I	Reduction (tons/	D. ENVIF	ROMENTAL BENEFTI Pol	es OF UTII	30,644 643,526	Curi	rent 23,126 485,654
Methane Reduction (tons, CO2 Equivalent of CH4 I	Reduction (tons/	D. ENVIF	COMENTAL BENEFII Pol	S OF UTIL	30,644 643,526	Cun Direct Use	rent 23,126 485,654 <i>Project</i>
Methane Reduction (tons, CO2 Equivalent of CH4 I	Reduction (tons/ ssil Fuel Displa	D. ENVIR	Electricity Gene CO2 (tons/yr)	S OF UTIL	30,644 643,526 ect ons/yr) 828	Direct Use CO2 (tons/yr) 92,281	rent 23,126 485,654  Project SO2 (tons/yr) 840
Methane Reduction (tons, CO2 Equivalent of CH4 I	Reduction (tons/ 	D. ENVIR	Electricity Gene CO2 (tons/yr) 131,020 107,535	S OF UTIL	30,644 643,526 ect ons/yr) 828 692	Direct Use CO2 (tons/yr) 92,281 75,740	rent 23,126 485,654  Project SO2 (tons/yr) 840 441
Methane Reduction (tons) CO2 Equivalent of CH4 I Emissions Avoided by Fo	Reduction (tons/ ssil Fuel Displa Nati	D. ENVIR	Electricity Gene CO2 (tons/yr) 131,020 107,535 72,308	tential eration Proje SO2 (to	30,644 643,526 ect ons/yr) 828	Direct Use CO2 (tons/yr) 92,281	rent 23,126 485,654  Project SO2 (tons/yr) 840
Methane Reduction (tons, CO2 Equivalent of CH4 I	Reduction (tons/ 	D. ENVIR	Electricity Gene CO2 (tons/yr) 131,020 107,535 72,308 E. CONTACT INFOI	tential eration Proje SO2 (to	30,644 643,526 ect ons/yr) 828 692	Direct Use CO2 (tons/yr) 92,281 75,740 50,928	rent 23,126 485,654  Project SO2 (tons/yr) 840 441
Methane Reduction (tons, CO2 Equivalent of CH4 I	Reduction (tons/ ssil Fuel Displa Nati	D. ENVIR	Electricity Gene CO2 (tons/yr) 131,020 107,535 72,308 E. CONTACT INFOI	tential eration Proje SO2 (to	30,644 643,526 ect ons/yr) 828 692 0	Direct Use CO2 (tons/yr) 92,281 75,740	rent 23,126 485,654  Project SO2 (tons/yr) 840 441
Methane Reduction (tons, CO2 Equivalent of CH4 I	Reduction (tons/ ssil Fuel Displa Nati	D. ENVIR	Electricity Gene CO2 (tons/yr) 131,020 107,535 72,308 E. CONTACT INFOI	tential eration Proje SO2 (to	30,644 643,526 ect ons/yr) 828 692	Direct Use CO2 (tons/yr) 92,281 75,740 50,928	rent 23,126 485,654  Project SO2 (tons/yr) 840 441
Methane Reduction (tons, CO2 Equivalent of CH4 I Emissions Avoided by Fo	Reduction (tons/ ssil Fuel Displa Nati	D. ENVIR	Electricity Gene CO2 (tons/yr) 131,020 107,535 72,308 E. CONTACT INFOI	tential eration Proje SO2 (to	30,644 643,526 ect ons/yr) 828 692 0	Direct Use CO2 (tons/yr) 92,281 75,740 50,928  Landfill Operator	rent 23,126 485,654  Project SO2 (tons/yr) 840 441
Methane Reduction (tons, CO2 Equivalent of CH4 In Emissions Avoided by For Contact Name:  Mailing Address:	Reduction (tons/ ssil Fuel Displa Nati	D. ENVIR	Electricity Gene CO2 (tons/yr) 131,020 107,535 72,308 E. CONTACT INFOI	eration Proje SO2 (to	30,644 643,526 ect ons/yr) 828 692 0	Direct Use CO2 (tons/yr) 92,281 75,740 50,928  Landfill Operator	rent 23,126 485,654  Project SO2 (tons/yr) 840 441
Methane Reduction (tons, CO2 Equivalent of CH4 In Emissions Avoided by For Contact Name:  Mailing Address:	Reduction (tons/ ssil Fuel Displa Nati	D. ENVIR	Electricity Gene CO2 (tons/yr) 131,020 107,535 72,308 E. CONTACT INFOI	eration Proje SO2 (to	30,644 643,526 ect ons/yr) 828 692 0	Direct Use CO2 (tons/yr) 92,281 75,740 50,928  Landfill Operator	rent 23,126 485,654  Project SO2 (tons/yr) 840 441
Methane Reduction (tons) CO2 Equivalent of CH4 I Emissions Avoided by Fo	Reduction (tons/ ssil Fuel Displa Nati	D. ENVIR	Electricity Gene CO2 (tons/yr) 131,020 107,535 72,308 E. CONTACT INFOI	eration Proje SO2 (to	30,644 643,526 ect ons/yr) 828 692 0	Direct Use CO2 (tons/yr) 92,281 75,740 50,928  Landfill Operator	rent 23,126 485,654  Project SO2 (tons/yr) 840 441

Average Depth (feet)			· · · · · · · · · · · · · · · · · · ·	Salol			Landfill Category	: Candidate
Landfill Owner Type:   Public   Year Annual Acceptance Race Reported:   1991   Atternative Landfill Name:   Design Capacity (tons):   Atternative Landfill (acres):   Acres Currently Landfilled (acres):   Atternative Landfill (acres):   Acres Currently Landfilled (acres):   Attail			A. (	GENERAL LANDFILL	INFORMAT	TON		
Acres   Current   Curren	Landfill Owner:				Annual Accep	tance Rate	(tons):	34,876
City:   Acres Currently Landfilled (acres):   Average Depth (Gent):   Average Depth (Gent):   1,439,112	Landfill Owner Type:	Public			Year Annual	Acceptance	Rate Reported:	1991
County:   Roseau	Alternative Landfill Name:				Design Capac	ity (tons):		
State: MN   1994 Waste-in-Place (tons):   1,439,112	City:				Acres Current	ly Landfille	d (acres):	
1,439,112   1,43	County:	Roseau			Average Dept	h (feet):		
Section   1994   Section   1994   Section   1995   Sect	State:	MN			1994 Waste-i	n-Place (ton	s):	1,439,112
B. LANDFILL GAS COLLECTION	Year Open:	1973			1998 Waste-ir	ı-Place (ton.	s):	1,439,112
Estimated Methane Generation (mmscfd):  LFG Collection System Status:  Current Utilization System Status:  Electricity Generation Project (MW)  OR  Direct Use Project (mmBtu/hr)  Estimated Potential Capacity:  Querent Capacity:  Planned Capacity:  Planned Capacity:  North Stat Electric Coop Inc; Outer Tail Power Company; Roseau Electric Coop Inc; Roseau Muni Po  D. ENVIRONENTAL BENEFITS OF UTILIZATION  Potential  Methane Reduction (tons/yr):  Assisting Avoided by Fossil Fuel Displacement:  Electricity Generation Project  CO2 (tons/yr)  SO2 (tons/yr)  CO2 Equivalent of CH4 Reduction (tons/yr):  Emissions Avoided by Fossil Fuel Displacement:  Electricity Generation Project  CO2 (tons/yr)  CO2 (tons/yr)  SO2 (tons/yr)  CO2 (tons/yr)  SO2 (tons/yr)  CO2 (tons/yr)  SO3 (tons/yr)  CO3 (tons/yr)  CO3 (tons/yr)  Landfill Owner  Landfill Owner  Landfill Owner  Contact Name:  Mailing Address:  Fax Number:  **Inalticized indicates values estimated by EPA.  December 5, 1998  State: MN Page: 8	Year Closed:	1994						
LPG Collection System Status:  Current LPG Collected (mmscfd):  CLANDFILL GAS UTILIZATION  C. LANDFILL GAS UTILIZATION  CUIT returnent System Status:  Unknown  Utilization System Status:  Electricity Generation Project (MW)  OR  Direct Use Project (mmBtu/hr)  Estimated Potential Capacity:  Current Capacity:  Planned Capacity:  Potential  O-ENVIROMENTAL BENEFITS OF UTILIZATION >				B. LANDFILL GAS C	OLLECTION	I		
LPG Collection System Status: Current LPG Collected (mmsclfd): Collection and Treatment System Required Under NSPS/EG:  C. LANDFILL GAS UTILIZATION  C. LANDFILL GAS UTILIZATION  Utilization System Status: Electric Utility Provider(s): Energy Purchaser(s):  Capacity:  Estimated Potential Capacity: Current Capacity: Planned Capacity: Planned Capacity: D. ENVIROMENTAL BENEFITS OF UTILIZATION  **Potential**  **Potential**  **Lectricity Generation Project CO2 (tonstyr) **SO2 (tonstyr) **CO2 Equivalent of CH4 Reduction (tonstyr):  Coal: 19.732 125 13.686 125  Fuel Oil: 16.195 104 11.233 65  **Lectricity Generation Project CO2 (tonstyr) **SO2 (tonstyr) **CO2 (tonstyr) **SO2 (tonstyr) **CO2 (tonstyr) **SO2 (tonstyr) **CO2 (tonstyr) **SO2 (tonstyr) **CO2 (tonstyr) **CO2 (tonstyr) **SO2 (tonstyr) **CO2 (tonstyr) **CO3 (tonstyr) **Landfill Owner **Lan	Estimated Methane Generati	ion (mmsci	%d):		0.79			
Current LFG Collected (mmscl/d): Collection and Treatment System Required Under NSPS/EG: No  CLANDFILL GAS UTILIZATION  Current Utilization: Utilization System Status: Unknown Utilization System Status: Unknown Utilization System Status: Unknown Utilization System Status: Unknown Utilization System Statu Year: Electric Utility Provider(s): Ratural Gas Provider(s): Energy Purchaser(s):  Capacity: Electricity Generation Project (MW)  Estimated Potential Capacity: Current Capacity: Planned Capacity: Planned Capacity: North Star Electric Coop Inc; Otter Tail Power Company; Roscau Electric Coop Inc; Roscau Muni Po  DENVIROMENTAL BENEFITS OF UTILIZATION  Potential Methane Reduction (tons/yr): Potential Methane Reduction (tons/yr): Emissions Avoided by Fossil Fuel Displacement: CO2 Equivalent of CH4 Reduction (tons/yr): Coal: 19-732 125 13.686 125 Fuel Oil: 16-195 104 11-233 66 Natural Gas: 10.890 0 7.553 0  E. CONTACT INFORMATION Landfill Operator  Landfill Owner Landfill Owner Landfill Owner Courthowski, County SW Officer Countact Name: Mailing Address: Engstrom Twp. Phone Number: Fax Number:		-	•					
Current Utilization: Utilization System Status: Unknown Utilization System Status: Unknown Utilization System Start Year: Electric Utility Provider(s): Natural Gas Provider(s): Energy Purchaser(s):  Capacity: Estimated Potential Capacity: Current Capacity: Planned Capacity: Planned Capacity: North Star Electric Coop Inc; Otter Tail Power Company; Roseau Electric Coop Inc; Roseau Muni Po  D. ENVIROMENTAL BENEFITS OF UTILIZATION  Wethane Reduction (tonsfyr):  Methane Reduction (tonsfyr):  CO2 Equivalent of CH4 Reduction (tonsfyr):  Emissions Avoided by Fossil Fuel Displacement:  Co2 (tonsfyr)  Co3  Co4  Encontact Name:  Mailing Address:  Mailing Address:  Phone Number: Fax Number:  **Itallicized indicates values estimated by EPA.  December 5, 1998 State: MN Page: 8	_							
CLANDFIEL GAS UTILIZATION  CUITER UTILIZATION  Utilization System Status: Unknown Utilization System Type: Unknown Utilization System Start Year: Electric Utility Provider(s): Energy Purchaser(s): Energy Purchaser(s):  Capacity:  Electricity Generation Project (MW)  Estimated Potential Capacity: Current Capacity: Planned Capacity: Utilities in County:  North Star Electric Coop Inc; Outer Tail Power Company; Roseau Electric Coop Inc; Roseau Muni Po  D. ENVIROMENTAL BENEFITS OF UTILIZATION  Potential  Potential  Potential  Current  4.545 0 CO2 Equivalent of CH4 Reduction (tonslyr): Emissions Avoided by Fossil Fuel Displacement:  Co2 (tonslyr)  Coal: 19.732 125 13.686 125 Fuel Oil: 16.195 104 11.233 66 Natural Gas: 10.890 0 7.553 0  E. CONTACT INFORMATION  Landfill Owner  Landfill Owner  Landfill Owner  Landfill Owner  Counthouse Engstrom Twp.  Phone Number: Fax Number:  * Itallicized indicates values estimated by EPA.  December 5, 1998 State: MN Page: 8			ired Under NS	SPS/EG:	No			
Utilization System Type: Unknown Utilization System Start Year: Electric Utility Provider(s): Natural Gas Provider(s): Energy Purchaser(s):  Capacity:  Estimated Potential Capacity: Current Capacity: Planned Capacity: O.8  Utilities in County:  North Star Electric Coop Inc; Otter Tail Power Company; Roseau Electric Coop Inc; Roseau Muni Po  D. ENVIROMENTAL BENEFITS OF UTILIZATION  Wethane Reduction (tons/yr): Potential Methane Reduction (tons/yr): CO2 Equivalent of CH4 Reduction (tons/yr): Emissions Avoided by Fossil Fuel Displacement: CO2 (tons/yr)  Co3: 19.732 125 13.686 125 Fuel Oil: 16.195 104 11.233 66 Natural Gas: Natural Gas: Landfill Owner Left Pelowski, County SW Officer  Courthouse Engstrom Twp. Phone Number: Fax Number: Phone Number: Fax Number: Phone Number: Fax Number: Pholic Indicates values estimated by EPA. December S, 1998 State: MN Page: 8					TILIZATION	N		
Utilization System Type: Unknown Utilization System Start Year: Electric Utility Provider(s): Natural Gas Provider(s): Energy Purchaser(s):  Capacity:  Estimated Potential Capacity: Current Capacity: Planned Capacity: O.8  Utilities in County:  North Star Electric Coop Inc; Otter Tail Power Company; Roseau Electric Coop Inc; Roseau Muni Po  D. ENVIROMENTAL BENEFITS OF UTILIZATION  Wethane Reduction (tons/yr): Potential Methane Reduction (tons/yr): CO2 Equivalent of CH4 Reduction (tons/yr): Emissions Avoided by Fossil Fuel Displacement: CO2 (tons/yr)  Co3: 19.732 125 13.686 125 Fuel Oil: 16.195 104 11.233 66 Natural Gas: Natural Gas: Landfill Owner Left Pelowski, County SW Officer  Courthouse Engstrom Twp. Phone Number: Fax Number: Phone Number: Fax Number: Phone Number: Fax Number: Pholic Indicates values estimated by EPA. December S, 1998 State: MN Page: 8	Current Utilization:	8888	700					
Utilization System Type: Unknown Utilization System Start Year: Electric Utility Provider(s): Natural Gas Provider(s): Energy Purchaser(s):  Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)  Estimated Potential Capacity: Current Capacity: Planned Capacity: North Star Electric Coop Inc; Other Tail Power Company; Roseau Electric Coop Inc; Roseau Muni Po  D. ENVIROMENTAL BENEFITS OF UTILIZATION:  Potential Courtent Methane Reduction (tons/yr): Potential 4,545  CO2 Equivalent of CH4 Reduction (tons/yr): Emissions Avoided by Fossil Fuel Displacement: CO2 (tons/yr) SO2 (tons/yr)  CO2 (tons/yr) SO2 (tons/yr)  CO3 (tons/yr) SO2 (tons/yr)  CO4 (tons/yr) SO3 (tons/yr)  CO5 (tons/yr) SO3 (tons/yr)  CO5 (tons/yr) SO3 (tons/yr)  CO6 (tons/yr) SO3 (tons/yr)  CO7 (tons/yr) SO3 (tons/yr)  CO8 (tons/yr) SO3 (tons/yr)  CO9 (tons/yr) SO3 (tons/yr)  CO1 (tons/yr) SO3 (tons/yr)  CO1 (tons/yr) SO3 (tons/yr)  CO2 (tons/yr) SO3 (tons/yr)  CO3 (tons/yr) SO3 (tons/yr)  CO3 (tons/yr) SO3 (tons/yr)  CO4 (tons/yr) SO3 (tons/yr)  CO5 (tons/yr) SO3 (tons/yr)  CO6 (tons/yr) SO3 (tons/yr)  CO7 (tons/yr) SO3 (tons/yr)  CO8 (tons/yr) SO3 (tons/yr)  CO9 (tons/yr) SO3 (tons/yr)  CO0 (tons/yr)		101	Unknown					
Utilization System Start Year: Electric Utility Provider(s): Natural Gas Provider(s): Energy Purchaser(s):  Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)  Estimated Potential Capacity: Planned Capacity: Planned Capacity: O.8 9  Utilities in County: North Star Electric Coop Inc; Otter Tail Power Company; Roseau Electric Coop Inc; Roseau Muni Po  **D. ENVIROMENTAL BENEFITS OF UTILIZATION**  Methane Reduction (tons/yr): Potential  ### Current  ### CO2 Equivalent of CH4 Reduction (tons/yr):  Co3	▼							
Electric Utility Provider(s): Natural Gas Provider(s): Energy Purchaser(s):  Capacity:  Estimated Potential Capacity: Current Capacity: Planned Capacity: Planned Capacity: North Star Electric Coop Inc; Otter Tail Power Company; Roseau Electric Coop Inc; Roseau Muni Po  D. ENVIROMENTAL BENEFITS OF UTILIZATION  Methane Reduction (tons/yr):  Methane Reduction (tons/yr):  Emissions Avoided by Fossil Fuel Displacement:  Electricity Generation Project  CO2 (tons/yr)  SO2 (tons/yr)  Co2 (tons/yr)  CO3 (tons/yr)  Co3 (tons/yr)  Co4 (tons/yr)  Enduring Gas:  10,890  10,7553  10  E. CONTACT INFORMATION  Landfill Owner  E. CONTACT INFORMATION  Landfill Owner  E. Courrhouse Engstrom Twp.  Phone Number:  Fax Number:  * Itallicited indicates values estimated by EPA.  December 5, 1998  State: MN Page: 8	•		Ulikilowii					
Natural Gas Provider(s):   Energy Purchaser(s):								
Energy Purchaser(s):   Capacity:   Electricity Generation Project (MW)   OR   Direct Use Project (mmBtu/hr)								
Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)  Estimated Potential Capacity: Qurrent Capacity: O.8 9  Utilities in County: North Star Electric Coop Inc; Otter Tail Power Company; Roseau Electric Coop Inc; Roseau Muni Po  **D. ENVIROMENTAL BENEFITS OF UTILIZATION**  **D. ENVIROMENTAL BENEFITS OF UTILIZATION**  **D. ENVIROMENTAL BENEFITS OF UTILIZATION**  **Potential**  **Poten	7.7	) <u>.</u>						
Estimated Potential Capacity: Current Capacity: Planned Capacity: North Star Electric Coop Inc; Otter Tail Power Company; Roseau Electric Coop Inc; Roseau Muni Po  D. ENVIROMENTAL BENEFITS OF UTILIZATION  Potential Methane Reduction (tons/yr): CO2 Equivalent of CH4 Reduction (tons/yr): Emissions Avoided by Fossil Fuel Displacement: CO2 (tons/yr) CO2 (tons/yr) CO2 (tons/yr) CO2 (tons/yr) CO3 (tons/yr) CO3 (tons/yr) CO4 (tons/yr) CO5 (tons/yr) CO5 (tons/yr) CO5 (tons/yr) CO6 (tons/yr) CO7 (tons/yr) CO7 (tons/yr) CO8 (tons/yr) CO9 (tons/yr) CO9 (tons/yr) CO9 (tons/yr) CO1 (tons/yr) CO1 (tons/yr) CO1 (tons/yr) CO2 (tons/yr) CO3 (tons/yr) CO3 (tons/yr) CO3 (tons/yr) CO3 (tons/yr) CO4 (tons/yr) CO5 (tons/yr) CO5 (tons/yr) CO5 (tons/yr) CO5 (tons/yr) CO6 (tons/yr) CO7 (tons/yr) CO7 (tons/yr) CO8 (tons/yr) CO9 (tons/yr) CO9 (tons/yr) CO9 (tons/yr) CO1 (tons/yr) CO1 (tons/yr) CO2 (tons/yr) CO2 (tons/yr) CO3 (tons/yr) CO3 (tons/yr) CO3 (tons/yr) CO3 (tons/yr) CO4 (tons/yr) CO5 (tons/yr) CO5 (tons/yr) CO5 (tons/yr) CO5 (tons/yr) CO5 (tons/yr) CO6 (tons/yr) CO7	Energy Furchaser(s).							
Current Capacity:   Planned Capacity:   0.8   9	Capacity:		Electric	city Generation Project (I	MW)	OR	Direct Use Project (mmBtu/l	hr)
Current Capacity:   Planned Capacity:   0.8   9	Estimated Potential Car	nacity			3			25
Planned Capacity:  North Star Electric Coop Inc; Otter Tail Power Company; Roseau Electric Coop Inc; Roseau Muni Po  D. ENVIROMENTAL BENEFITS OF UTILIZATION  Potential  Potential  A,545  Coop Equivalent of CH4 Reduction (tons/yr):  Emissions Avoided by Fossil Fuel Displacement:  Coal:  19,732  125  Fuel Oil:  16,195  104  11,233  66  Natural Gas:  10,890  0  7,553  0  E. CONTACT INFORMATION  Landfill Owner  Landfill Owner  Landfill Owner  Courthouse Engstrom Twp.  Phone Number:  Fax Number:  * Itallicized indicates values estimated by EPA.  December 5, 1998  State: MN Page: 8	-	nacity.			3			2.5
Utilities in County:  North Star Electric Coop Inc; Otter Tail Power Company; Roseau Electric Coop Inc; Roseau Muni Po  D. ENVIROMENTAL BENEFITS OF UTILIZATION  Potential  Potential  A,545  Current  4,545  0  CO2 Equivalent of CH4 Reduction (tons/yr):  Emissions Avoided by Fossil Fuel Displacement:  Coal:  19,732  125  Fuel Oil:  16,195  104  11,233  66  Natural Gas:  10,890  0  T,553  0  E. CONTACT INFORMATION  Landfill Owner  Landfill Operator  Contact Name:  Mailing Address:  Mailing Address:  Fax Number:  * Itallicized indicates values estimated by EPA.  December 5, 1998  State: MN Page: 8					0.8			Q
D. ENVIROMENTAL BENEFITS OF UTILIZATION   Current	Trainice Capacity.		<del></del> ,		·····	<u> </u>		
Methane Reduction (tons/yr):  CO2 Equivalent of CH4 Reduction (tons/yr):  Emissions Avoided by Fossil Fuel Displacement:  CO2 (tons/yr)  CO3 (tons/yr)  CO4 (tons/yr)  CO5 (tons/yr)  CO5 (tons/yr)  CO5 (tons/yr)  CO5 (tons/yr)  CO5 (tons/yr)  CO6 (tons/yr)  CO7	Utilities in County:		North Star	Electric Coop Inc; Otter	Tail Power Co	mpany; Ros	eau Electric Coop Inc; Roseau	Muni Po
Methane Reduction (tons/yr):  CO2 Equivalent of CH4 Reduction (tons/yr):  Emissions Avoided by Fossil Fuel Displacement:  CO2 (tons/yr)  CO3 (tons/yr)  CO4 (tons/yr)  CO5 (tons/yr)  CO5 (tons/yr)  CO5 (tons/yr)  CO5 (tons/yr)  CO5 (tons/yr)  CO6 (tons/yr)  CO7			D. ENVI	ROMENTAL BENEF	ITS OF UTIL	IZATION:		
Methane Reduction (tons/yr):  CO2 Equivalent of CH4 Reduction (tons/yr):  Emissions Avoided by Fossil Fuel Displacement:  Electricity Generation Project CO2 (tons/yr) SO2 (tons/yr) SO2 (tons/yr) CO2 (tons/yr) SO2 (tons/yr) CO2 (tons/yr) SO2 (tons/yr) SO3							<u> </u>	
CO2 Equivalent of CH4 Reduction (tons/yr):  Emissions Avoided by Fossil Fuel Displacement:  Electricity Generation Project CO2 (tons/yr) SO2 (tons/yr) SO2 (tons/yr) SO2 (tons/yr) SO2 (tons/yr) Coal: 19,732 125 13,686 125 Fuel Oil: 16,195 104 11,233 66 Natural Gas: 10,890 0 7,553 0  E. CONTACT INFORMATION  Landfill Owner Landfill Operator  Contact Name: Mailing Address:    Deff Pelowski, County SW Officer   Courthouse   Engstrom Twp.   Courthouse   Engstrom Twp.   Fax Number:   * Itallicized indicates values estimated by EPA.   December 5, 1998   State: MN Page: 8				P	otential	4.5.45	Current	
Emissions Avoided by Fossil Fuel Displacement:  Electricity Generation Project CO2 (tons/yr) SO2 (tons/yr) SO3 (to								
CO2 (tons/yr)   SO2 (tons/yr	CO2 Equivalent of CH4 Red	uction (tor	is/yr):			95,441		U
CO2 (tons/yr)   SO2 (tons/yr	Emissions Avoided by Fossil	Fuel Disn	lacement:	Electricity Ge	neration Proje	ct	Direct Use Proje	ct
19,732   125   13,686   125     Fuel Oil:	2	· vier z vep		1	•		•	
Fuel Oil: 16,195 104 11,233 66  Natural Gas: 10,890 0 7,553 0  E. CONTACT INFORMATION  Landfill Owner Landfill Operator  Contact Name: Jeff Pelowski, County SW Officer  Mailing Address: Courthouse Engstrom Twp.  Phone Number:  * Itallicized indicates values estimated by EPA. December 5, 1998 State: MN Page: 8	,		Coal·		- 3 - 100			
Natural Gas: 10,890 0 7,553 0  E. CONTACT INFORMATION  Landfill Owner Landfill Operator  Contact Name: Jeff Pelowski, County SW Officer  Mailing Address: Courthouse Engstrom Twp.  Phone Number:  * Itallicized indicates values estimated by EPA. December 5, 1998 State: MN Page: 8								
E. CONTACT INFORMATION  Landfill Owner Landfill Operator  Contact Name: Jeff Pelowski, County SW Officer  Mailing Address: Courthouse Engstrom Twp.  Phone Number:  * Itallicized indicates values estimated by EPA. December 5, 1998 State: MN Page: 8								
Landfill Owner  Contact Name:  Mailing Address:  Phone Number:  Fax Number:  * Itallicized indicates values estimated by EPA.  Landfill Operator  Landfill Operator  Landfill Operator  Courthouse Engstrom Twp.  Phone Number:  * Itallicized indicates values estimated by EPA.  December 5, 1998  State: MN Page: 8		N	atural Gas:			U		0
Contact Name:  Mailing Address:  Courthouse Engstrom Twp.  Phone Number:  * Itallicized indicates values estimated by EPA.  December 5, 1998  State: MN Page: 8		e.		and the second s	DRMATION	. 47		
Mailing Address:  Courthouse Engstrom Twp.  Fax Number:  * Itallicized indicates values estimated by EPA.  December 5, 1998  State: MN Page: 8			Landfil	Owner		•	Landfill Operator	
Mailing Address:  Courthouse Engstrom Twp.  Phone Number:  Fax Number:  * Itallicized indicates values estimated by EPA.  December 5, 1998  State: MN Page: 8	Contact Name:				Jeff I	Pelowski, Co	ounty SW Officer	
Phone Number:  Fax Number:  * Itallicized indicates values estimated by EPA.  December 5, 1998  State: MN Page: 8	Mailing Address:				Cour	thouse		
Phone Number:  Fax Number:  * Itallicized indicates values estimated by EPA.  December 5, 1998  State: MN Page: 8	Maining Address.							
Fax Number:  * Itallicized indicates values estimated by EPA.  December 5, 1998  State: MN Page: 8	The state of				Engs	иош тwp.		
* Itallicized indicates values estimated by EPA. December 5, 1998 State: MN Page: 8	Phone Number:							
	Fax Number:							
STAR Version 1.0 / LMOP	* Itallicized indicates values	estimated	by EPA.	D	ecember 5, 19	98	State: MN Pag	e: 8
	STAR Version 1.0	)/LMOP						

Landfill Owner Type:			Woodlake SI			Landfill Cat	egory: Current
Landfill Owner Type:		A. G	ENERAL LANDFILL I	NFORMATION		-	
Alternative Landfill Name:   Design Capacity (tons):   3,919,382	Landfill Owner: WMI	Ī	A	nnual Acceptanc	e Rate (tons):		168,630
City:   Hame    Acres Currently Landfilled (acres);   85	Landfill Owner Type:		Y	ear Annual Acce	ptance Rate Re	ported:	1991
Average Depth (feet)	Alternative Landfill Name:		D	esign Capacity (t	ons):		3,919,382
State: MN 1993 Waste-in-Place (tons): 3,919,382 Year Open: 1971 1998 Waste-in-Place (tons): 3,919,382 Year Closed: 1993	City: Hame	el	A	cres Currently La	andfilled (acres	):	85
Year Open: 1971 1998 Waste-in-Place (tons): 3,919,382 Year Closed: 1993  B. LANDFILL GAS GOLLECTION  Estimated Methane Generation (mmsc/fd): 1.42 LFG Collection System Status: Operational Current LFG Collected (mmsc/fd): No  CLANDFILL GAS UTILIZATION  Current Utilization: Utilization System Status: Operational Utilization System Status: Operational Utilization System Status: Uperational Utilization System Status: Operational Utilization System Status: Operative: Operative Status Project (mmBtu/hr)  Estimated Potential Capacity: As Anoka Electric Utilization Energy Purchaser(s): Northern States Power Co  Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)  Estimated Potential Capacity: As Anoka Electric Dept. Elk River Muni Utilis: Minnesota Valley Electric C  DENVIROMENTAL BENETITS OF UTILIZATION  Wethone Reduction (tons/yr): Rational Status Project (CO2 (tons/yr) SO2 (tons/yr)  CO2 Equivalent of CH4 Reduction (tons/yr): SO2 (tons/yr)  CO2 Equivalent of CH4 Reduction (tons/yr): SO2 (tons/yr)  Coal: 34,728 220 24,731 225  Fuel Oit: 28,503 184 20,298 118  Natural Gas: 19,166 0 13,649 0  F. CONTACT INFORMATION  Landfill Owner  Enderly Departor  Contact Name:  Mailing Address:  Phone Number:	County: Henri	nepin	Α	verage Depth (fe	et):		
Settimated Methane Generation (mmscfd):   1.42	State: MN		1	993 Waste-in-Pla	ace (tons):		3,919,382
B. LANDFILL GAS COLLECTION  Estimated Methane Generation (mascfid):  Collection System Status:  Operational  Utilization System Status:  Operational  Operational  Operations  Indicate Status System Status:  Operational  Operations  Indicate Status S	Year Open: 1971		19	998 Waste-in-Pla	ce (tons):		3,919,382
Estimated Methane Generation (mmscfd): LFG Collection System Status: Collection and Treatment System Required Under NSPS/EG: No  CUrrent LFG Collected (mmscfd): Collection and Treatment System Required Under NSPS/EG: No  CUrrent Utilization: Utilization System Status: Northern States Power Co  Capacity: Electric Utility Provider(s): Ratural Gas Provider(s): Retrinated Protential Capacity: Planned Capacity: Poemital Methane Reduction (tons/yr): Planned Capacity: CO2 (tons/yr) SO2 (tons/yr) SO3 (tons/yr) Landfill Operator Contact Name: Mailing Address: Phone Number: Fas Number:	Year Closed: 1993						
LPG Collection System Status: Operational Current LPG Collection (mnscfd): Collection and Treatment System Required Under NSPS/EG: No  C LANDFILL GAS UTILIZATION  CUITOR Utilization: Utilization System Status: Operational Utilization System Status: Unknown Utilization System Start Year: 1994 Electric Utility Provider(s): Energy Purchaser(s): Northern States Power Co  Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)  Estimated Potential Capacity: 4 4 Current Capacity: 4.8 Planned Capacity: Anoka Electric Cooperative; Anoka Electric Dept. Elk River Muni Utils; Minnesota Valley Electric C  Utilities in County: Anoka Electric Cooperative; Anoka Electric Dept. Elk River Muni Utils; Minnesota Valley Electric C  D. ENVIROMENTAL BENEFITS OF UTILIZATION  Methane Reduction (tons/yr): Potential 8,213 0  CO2 Equivalent of CH4 Reduction (tons/yr): 172,465 0  Emissions Avoided by Fossil Fuel Displacement: Electricity Generation Project CO2 (tons/yr) SO2 (tons/yr) SO3 (tons/yr) SO		I	B. LANDFILL GAS CO	LLECTION			
Current LFG Collected (mmscl/d): Collection and Treatment System Required Under NSPS/EG: No  CUrrent Utilization: Utilization System Status: Operational Operation Project (MW) OR Direct Use Project (mmBtu/hr)  Estimated Potential Capacity: Current Capacity: Planned Capacity:  Utilities in County: Anoka Electric Cooperative; Anoka Electric Dept; Elk River Muni Utils; Minnesota Valley Electric C  D. ENVIROMENTAL BENEFITS OF UTILIZATION  Potential Methane Reduction (tons/yr):  8.213 0 Current Methane Reduction (tons/yr): 8.213 0 CUZ Equivalent of CH4 Reduction (tons/yr): 172,465 0  Emissions Avoided by Fossil Fuel Displacement: Coal: 34,728 220 24,731 225 Fuel Oil: 28,503 184 20,298 118 Natural Gas: 19,166 0 13,649 0  F. CONFACT INFORMATION  Landfill Owner  Landfill Owner  Landfill Owner  Contact Name: Mailing Address: Phone Number: Fax Number:		scf/d):					
Current Utilization: Utilization System Status: Operational Utilization System Status: Operational Utilization System Status: Operational Utilization System Status: Unknown Utilization System Start Year: 1994 Electric Utility Provider(s): Natural Gas Provider(s): Energy Purchaser(s): Northern States Power Co  Capacity: Electric Utility Provider(s): Planned Capacity: Current Capacity: Planned Capacity: Utilities in County: Anoka Electric Cooperative; Anoka Electric Dept; Elk River Muni Utils; Minnesota Valley Electric C  D. ENVIROMENTAL BENEFITS OF UTILIZATION  Weithane Reduction (tons/yr): CO2 Equivalent of CH4 Reduction (tons/yr): Emissions Avoided by Fossil Fuel Displacement: Co2 (tons/yr) SO2 (tons/yr)  Co3 (tons/yr) SO2 (tons/yr)  Co4: 34,728 220 24,731 225  Fuel Oil: 28,503 184 20,298 118 Natural Gas: 19,166 0 13,649 0  E. CONTACT INFORMATION  Landfill Owner  E. CONTACT INFORMATION  Landfill Owner  Contact Name: Mailing Address: Phone Number: Fax Number:			Оре	erational			
Current Utilization System Status: Operational Utilization System Status: Unknown Utilization System Type: Unknown Utilization System Start Year: 1994 Electric Utility Provider(s): Energy Purchaser(s): Northern States Power Co  Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)  Estimated Potential Capacity: 4.8 Current Capacity: 4.8 Planned Capacity: Anoka Electric Cooperative; Anoka Electric Dept; Elk River Muni Utils; Minnesota Valley Electric C  D. ENVIROMENTAL BENETITS OF UTILIZATION  Potential Current  Methane Reduction (tons/yr): 8.213 0  CO2 Equivalent of CH4 Reduction (tons/yr): 172,465 0  Emissions Avoided by Fossil Fuel Displacement: Electricity Generation Project CO2 (tons/yr) SO2 (tons/yr)  Coal: 34.728 220 24.731 225  Fuel Oil: 28.503 184 20.298 118  Natural Gas: 19,166 0 13.649 0  E. CONTACT INFORMATION  Landfill Owner Landfill Operator  Contact Name: Mailing Address:  Phone Number:  Eax Number:							
Current Utilization:  Utilization System Status: Operational Utilization System Type: Unknown Utilization System Type: Unknown Utilization System Status: 1994 Electric Utility Provider(s): Natural Gas Provider(s): Energy Purchaser(s): Northern States Power Co  Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)  Estimated Potential Capacity: 4 4 Current Capacity: Planned Capacity: Anoka Electric Cooperative; Anoka Electric Dept; Elk River Muni Utils; Minnesota Valley Electric C  D. ENVIROMENTAL BENEFITS OF UTILIZATION  Methane Reduction (tonstyr): 8,213 0 CO2 Equivalent of CH4 Reduction (tonstyr): 8,213 172,465 0  Emissions Avoided by Fossil Fuel Displacement: Electricity Generation Project CO2 (tonstyr) SO2 (tonstyr)  Coal: 34,728 220 24,731 225 Fuel Oil: 28,503 184 20,298 1118 Natural Gas: 19,166 0 13,649 0  DEPLOTED TO THE CONTACT INFORMATION  Landfill Owner Landfill Owner Landfill Operator  Contact Name:  Mailing Address:  Phone Number:  Fax Number:	Collection and Treatment System Re	-					
Utilization System Type: Unknown Utilization System Start Year: 1994 Electric Utility Provider(s): Natural Gas Provider(s): Energy Purchaser(s): Northern States Power Co  Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)  Estimated Potential Capacity: 4 4 Current Capacity: Planned Capacity: Anoka Electric Cooperative; Anoka Electric Dept; Elk River Muni Utils; Minnesota Valley Electric C  D. ENVINOMENTAL BENETI'S OF UTILIZATION  Methane Reduction (tons/yr): 172,465  Methane Reduction (tons/yr): Electricity Generation Project (CO2 (tons/yr) SO2 (tons/yr) SO3 (tons/yr) S			2. LANDFILL GAS UT	ILIZATION			
Utilization System Type: 1994 Utilization System Start Year: 1994 Electric Utility Provider(s): Natural Gas Provider(s): Energy Purchaser(s): Northern States Power Co  Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)  Estimated Potential Capacity: 4.8 Current Capacity: 4.8 Planned Capacity: Anoka Electric Cooperative; Anoka Electric Dept; Elk River Muni Utils; Minnesota Valley Electric C  D. ENVIROMENTAL BENEFTIS OF UTILIZATION  Wethane Reduction (tons/yr): 8,213 CO2 Equivalent of CH4 Reduction (tons/yr): 172,465 Emissions Avoided by Fossil Fuel Displacement: Electricity Generation Project CO2 (tons/yr) SO2 (	Current Utilization:						
Utilization System Start Year: 1994 Electric Utility Provider(s): Natural Gas Provider(s): Energy Purchaser(s): Northern States Power Co  Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)  Estimated Potential Capacity: 4.8  Current Capacity: 4.8  Utilities in County: Anoka Electric Cooperative; Anoka Electric Dept; Elk River Muni Utils; Minnesota Valley Electric C  D. ENVIROMENTAL BENEFITS OF UTILIZATION  Methane Reduction (tons/yr): 8.213 Current  Methane Reduction (tons/yr): 172,465 O  Emissions Avoided by Fossil Fuel Displacement: Electricity Generation Project CO2 (tons/yr) SO2 (tons/yr) SO3	Utilization System Status:	Operational					
Electric Utility Provider(s): Natural Gas Provider(s): Energy Purchaser(s): Northern States Power Co  Capacity:  Estimated Potential Capacity: Planned Capacity: Utilities in County:  Anoka Electric Cooperative; Anoka Electric Dept: Elk River Muni Utils; Minnesota Valley Electric C  D. ENVIROMENTAL BENEFITS OF UTILIZATION  Potential Methane Reduction (tons/yr): CO2 Equivalent of CH4 Reduction (tons/yr):  Co3 Equivalent of CH4 Reduction (tons/yr): Co4: 34,728 220 24,731 225 Fuel Oil: Natural Gas: 19,166 0 13,649 0  E. CONTACT INFORMATION  Landfill Owner  Landfill Operator  Contact Name: Mailing Address: Phone Number: Fax Number:	Utilization System Type:	Unknown					
Natural Gas Provider(s): Energy Purchaser(s): Northern States Power Co  Capacity:  Electricity Generation Project (MW)  A Direct Use Project (mmBtu/hr)  Estimated Potential Capacity: Planned Capacity: Planned Capacity:  Utilities in County:  Anoka Electric Cooperative; Anoka Electric Dept; Elk River Muni Utils; Minnesota Valley Electric C  D. ENVIROMENTAL BENEFITS OF UTILIZATION  Methane Reduction (tons/yr):  Methane Reduction (tons/yr):  Emissions Avoided by Fossil Fuel Displacement:  CO2 Equivalent of CH4 Reduction (tons/yr):  Electricity Generation Project CO2 (tons/yr)  SO2 (tons/yr)  Coal:  34.728  220  24.731  225  Fuel Oil: 28.503  184  20.298  118  Natural Gas:  19.166  0  13.649  0  Contact Name:  Mailing Address:  Phone Number:  Fax Number:	Utilization System Start Year:	1994					
Energy Purchaser(s): Northern States Power Co  Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)  Estimated Potential Capacity: 4.8 Current Capacity: 4.8 Utilities in County: Anoka Electric Cooperative; Anoka Electric Dept; Elk River Muni Utils; Minnesota Valley Electric C    D.ENVIROMENTAL BENEFITS OF UTILIZATION	Electric Utility Provider(s):						
Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)  Estimated Potential Capacity: 4.8 Current Capacity: 4.8 Planned Capacity:  Utilities in County: Anoka Electric Cooperative; Anoka Electric Dept; Elk River Muni Utils; Minnesota Valley Electric C  D.ENVIROMENTAL BENEFITS OF UTILIZATION  Potential Current  Methane Reduction (tons/yr): 8.213 Current  Methane Reduction (tons/yr): 172,465 0  Emissions Avoided by Fossil Fuel Displacement: Electricity Generation Project CO2 (tons/yr) SO2 (tons/yr) SO2 (tons/yr)  Coal: 34,728 220 24,731 225  Fuel Oil: 28,503 184 20,298 118  Natural Gas: 19,166 0 0 13,649 0  E. CONTACT INFORMATION  Landfill Owner Landfill Operator  Contact Name:  Mailing Address: Phone Number: Fax Number:	Natural Gas Provider(s):						
Estimated Potential Capacity: Current Capacity: Planned Capacity:  Utilities in County:  Anoka Electric Cooperative; Anoka Electric Dept; Elk River Muni Utils; Minnesota Valley Electric C  D.ENVIROMENTAL BENEFITS OF UTILIZATION  Potential  Current  Methane Reduction (tons/yr):	Energy Purchaser(s):	Northern Sta	tes Power Co				
Current Capacity: Planned Capacity:  Utilities in County: Anoka Electric Cooperative; Anoka Electric Dept; Elk River Muni Utils; Minnesota Valley Electric C    D. ENVIROMENTAL BENEFITS OF UTILIZATION	Capacity:	Electrici	y Generation Project (M	W) OR	Direc	t Use Project (mn	nBtu/hr)
Utilities in County:   Anoka Electric Cooperative; Anoka Electric Dept; Elk River Muni Utils; Minnesota Valley Electric C	Estimated Potential Capacity:			4		1 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3 -	44
Utilities in County:  Anoka Electric Cooperative; Anoka Electric Dept; Elk River Muni Utils; Minnesota Valley Electric C    D.ENVIROMENTAL BENEFITS OF UTILIZATION	Current Capacity:			4.8			
D. ENVIROMENTAL BENEFITS OF UTILIZATION    Potential	Planned Capacity:						
Potential   Current	Utilities in County:	Anoka Elect	ric Cooperative; Anoka E	lectric Dept; Elk	River Muni Ut	ils; Minnesota Va	ılley Electric C
Methane Reduction (tons/yr):  CO2 Equivalent of CH4 Reduction (tons/yr):  Emissions Avoided by Fossil Fuel Displacement:  Electricity Generation Project  CO2 (tons/yr)  SO2 (tons/yr)  Coal:  34,728  220  24,731  225  Fuel Oil:  28,503  184  20,298  118  Natural Gas:  19,166  0  13,649  0  E. CONTACT INFORMATION  Landfill Owner  Landfill Operator  Contact Name:  Mailing Address:  Phone Number:  Fax Number:		D. ENVIR	OMENTAL BENEFIT	S OF UTILIZA	ΓΙΟΝ		
CO2 Equivalent of CH4 Reduction (tons/yr):  Emissions Avoided by Fossil Fuel Displacement:  Electricity Generation Project CO2 (tons/yr) SO2 (tons/yr) SO2 (tons/yr) SO2 (tons/yr) SO2 (tons/yr) CO3 14,731 225 Fuel Oil: 28,503 184 20,298 118 Natural Gas: 19,166 0 13,649 0  E. CONTACT INFORMATION  Landfill Owner Landfill Owner Landfill Owner  Contact Name: Mailing Address:  Phone Number: Fax Number:			Pote	ential		Curr	ent
Emissions Avoided by Fossil Fuel Displacement:  Electricity Generation Project CO2 (tons/yr) SO2 (tons/yr) SO2 (tons/yr) SO2 (tons/yr) SO2 (tons/yr) COal: 34,728 220 24,731 225 Fuel Oil: 28,503 184 20,298 118 Natural Gas: 19,166 0 13,649 0  E. CONTACT INFORMATION Landfill Owner Landfill Operator  Contact Name: Mailing Address: Phone Number: Fax Number:	Methane Reduction (tons/yr):			8,	213		0
CO2 (tons/yr)   SO2 (tons/yr)   CO2 (tons/yr)   SO2 (tons/yr)	CO2 Equivalent of CH4 Reduction (	tons/yr):		172,	465		0
CO2 (tons/yr)   SO2 (tons/yr)   CO2 (tons/yr)   SO2 (tons/yr)							
Coal: 34,728   220   24,731   225	Emissions Avoided by Fossil Fuel D	isplacement:		· · · · · · · · · · · · · · · · · · ·			-
Fuel Oil: 28,503			CO2 (tons/yr)	SO2 (tons/yr	)   (	O2 (tons/yr)	SO2 (tons/yr)
Natural Gas: 19,166 · 0 13,649 0  E. CONTACT INFORMATION  Landfill Owner Landfill Operator  Contact Name: Mailing Address: Phone Number: Fax Number:		Coal:	34,728	22	0	24,731	225
E. CONTACT INFORMATION  Landfill Owner Landfill Operator  Contact Name:  Mailing Address:  Phone Number:  Fax Number:		Fuel Oil:	28,503	18	4	20,298	118
Landfill Owner  Contact Name:  Mailing Address:  Phone Number:  Fax Number:		Natural Gas:	19,166		0	13,649	0
Landfill Owner  Contact Name:  Mailing Address:  Phone Number:  Fax Number:			E. CONTACT INFOR	MATION			
Mailing Address:  Phone Number:  Fax Number:		Landfill (			Lan	dfill Operator	
Phone Number: Fax Number:	Contact Name:						
Phone Number: Fax Number:	Mailing Address:						
Fax Number:							
	Phone Number:			•			
* Itallicized indicates values estimated by EPA December 5 1998 State: MN Page: 0	Fax Number:			;			
	* Itallicized indicates values estimate	ed by FPA	Dage	ember 5 1000		State: MN	Page: 0