APPENDIX G
INDUSTRIAL AUDIT (FY 2005/2006)

INTER-OFFICE MEMORANDUM

To: Steve Masters, Public Utilities Administrator

From: Dave Beyersdorf, Associate Engineer, Sanitary Engineering

Date: June 12th, 2007

Subj: FY 05/06 Industrial Audit (September 2005 - August 2006)

PC: Karl Fredrickson, Gary Brandt, Margaret Remmenga, Gary Thalken

Following is the Industrial Audit for FY 05/06 and the corresponding recommendations for the industrial surcharge rates and liquid waste dump station rates for FY 07/08. If you have any questions and/or comments on any of the information contained in this report, please respond back to me. I plan on sending a copy of this Industrial Audit to NDEQ on June 25th, 2007, so if you have information that you feel needs to be corrected, updated, or included in the audit to NDEQ, please respond back to me before June 25th, 2007.

INDUSTRIAL SURCHARGE RATE RECOMMENDATION

Parameter	2005 Rates	2006 Rates	Current 2007 Rates	Projected 2007/08 Rates	% Change
Flow Charge ($/hcf)	$1.205	$1.325	$1.44	$1.555	8.0%
BOD/COD Surcharge ($/lb)	$0.117	$0.117	$0.117	$0.117	0.0%
TSS Surcharge ($/lb)	$0.150	$0.150	$0.150	$0.150	0.0%

Based on proposed rates and projected flows, revenue will be adequate to cover the plant operating costs associated with the industrial surcharge program.

BOD = Biochemical Oxygen Demand (surcharges apply for values greater than 250 mg/l).
COD = Chemical Oxygen Demand (surcharges apply for values greater than 400 mg/l as Equivalent BOD = COD x 250/400, if Equivalent BOD is greater than actual BOD).
TSS = Total Suspended Solids (surcharges apply for values greater than 300 mg/l).

Note: Current surcharge rates effective through August 31,2007; proposed surcharge rates to become effective September 1, 2007.

LIQUID WASTE DUMP STATION RATE RECOMMENDATION

Waste Routing	2005 Rates ($/Gal.)	2006 Rates ($/Gal.)	Current 2007 Rates ($/Gal.)	Proposed 2007/08 Rates ($/Gal.)	% Change
Anaerobic Digestion	$0.037	$0.037	$0.037	$0.037	0.0%
Grit Processing	$0.114	$0.114	$0.125	$0.125	0.0%
Plant Head-works	$0.032	$0.032	$0.035	$0.035	0.0%
Minimum Fee per load	$12.00	$12.00	$13.00	$13.00	0.0%

Based on proposed rates and fluctuations in the loads received, revenue is anticipated to be adequate to cover the operating costs associated with the liquid waste dump station.

Note: Current dump station rates effective through August 31,2007; proposed dump station rates to become effective September 1, 2007.

Year 2006 Industrial Surcharge & Dump Station Programs & Rates

- Work in conjunction with Nebraska Department of Environmental Quality (NDEQ) and Lincoln Lancaster County Health Department (LLCHD) for these Programs.

- Industrial Wastewater Discharge Permits are required for certain qualifying industries, and all loads received at the Dump Station require permits with each load.

- Sanitary Engineering Section of Lincoln Wastewater System actively monitors wastewater discharges from 43 major industries in Lincoln and performs approximately 14,000 laboratory analyses per year to support the Industrial Pretreatment and Special Waste Programs

- These industries contribute approximately 10% of the total flow and approximately 30% of the total organic loading to the City's two wastewater treatment plants (TSTP and NETP)

- Industrial surcharge rates apply to those industries whose waste strength exceeds normal residential/light commercial type wastewater strength (TSS > 300 mg/L, BOD > 250 mg/L).

- Approximately 4.1 million gallons and 3,700 loads were received at the Dump Station Facilities (FY05/06)

- Rate calculation methods are prescribed by NDEQ.

- Industrial Surcharge and Dump Station costs must be fully recovered and not borne by other users.

- Dump Station Rates have been typically driven more by fluctuation in loadings, rather than by variations in the costs of operation.

- Cost averaging techniques and waste treatment allocations are used to develop rates

- The 2006 Dump Station labor cost per load was calculated to be $13.28 per load. The current minimum load charge is $13.00 per load. We are not recommending a change in the minimum load charge at this time. Approximately 10% of the loads that are received at the Dump Station are charged the minimum load size fee, the other 90% of the loads received are charged under the applicable rate structure based on waste processing (anaerobic digestion, headworks, or grit processing)

  Five year average flow weighted costs for liquid wastes are $0.035/gal for digester waste, $0.125/gal for grit, and $0.043/gal for headworks. The current rates charged are $ 0.037/gal, $ 0.125/gal, and $0.035/gal, respectively. These unit costs are dramatically influenced by the quantities delivered since the actual operating costs are very constant. We are not recommending any change to the current rates at this time.

- The current Industrial Surcharge rates are: TSS $ 0.150/lb, and BOD $ 0.117/lb. The projected 2007 Industrial surcharge costs are: TSS $ 0.159/lb, and BOD $ 0.121/lb. We are not recommending a change in existing TSS or BOD surcharge rates at this time. The current surcharge rates for BOD and TSS will provide the necessary revenue to cover the projected cost for the treatment of the higher strength waste projected from industrial flows. The flow rate charge was increased from $1.325 to $1.44 in 2006. An 8% increase in the flow rate charge is projected for FY 07/08, due to the increased costs associated with the addition of the nitrification facilities and other system improvements at both wastewater treatment plants.

2006 Data vs. Previous Year Comparison

Item	2005	2006	% change
Number of Industries	43	43	0%
Number of Analysis	13,418	14,879	10.9%
Discharge Excursions	375	573	52.8%
Industrial Surcharge Revenue	$1,775,673	$1,826,392	2.9%
Industrial Flow, gpd	2,208,042	2,251,031	1.9%
TSS, lb/day	4,232	4,685	10.7%
BOD, lb/day	18,981	15,653	-17.5%
Dump-station Revenue	$165,236	$178,502	8.0%
DS Anaerobic Digestion Flow, gal.	2,871,725	2,693,327	-6.2%
DS Anaerobic Digestion Loads	2,923	2,604	-10.9%
DS Grit Processing, gal.	370,032	365,645	-1.2%
DS Grit Processing, loads	450	416	-7.6%
DS Plant Headworks, gal.	539,415	1,073,052	98.9%
DS Plant Headworks, loads	400	665	66.2%
Combined Plant Flow, gal.	23,121,000	23,463,000	1.5%
Plant TSS, lb/day	54,398	46,988	-13.6%
Plant BOD, lb/day	55,521	51,836	- 6.6%

SUPPORTING INFORMATION

1. **Surcharge Revenues/Loadings from Major Industries**

   a. **Revenues.** Reference Appendix 1 in the Audit. Total = $1,826,392 (without sales tax) for billing periods from September 2005 through August 2006. The increase in wastewater flow rate charge (+10%) that occurred in November 2005 ($1.325/hcf vs $1.205/hcf), was offset by a reduction in the amount of surcharge fee based TSS (-0.9%) and BOD (-4.5%) discharged from industries in FY 05/06, therefore overall Industrial Surcharge revenues only increased by 2.85% from the previous year.

   b. **Industrial Loadings.** Reference Appendix 4 in the Audit. Overall, the major industries represent the following percentages of loading to the two treatment plants:

INDUSTRIAL LOADINGS

Parameter	Theresa St.	Northeast	Combined
Flow	7.6%	18.7%	9.6%
TSS	6.7%	24.4%	10.0%
BOD	27.3%	43.3%	30.2%
COD	23.3%	46.3%	27.5%
TKN	7.3%	16.2%	8.5%

These loading percentages are consistent with previous years contributions.
The wastewater flows to the treatment plants have been reduced due to dry conditions.

   c. **Trends.** Long-term trends in the industrial loadings for Flow, BOD, TSS, etc. are expected to reflect production changes from several of the larger industries. Refer to Appendix 2 and 5 for the loading

data. The biosolids from the treatment plants continues to meet the heavy metals requirements for land disposal per EPA's 40CFR 503 regulations.

2. **Dump Station Revenues/Disposal Amounts**

a. **Revenues.** Dump Station total revenue was $178,502 (without sales tax) for the billing period from September 2005 through August 2006; approximately an 8% increase from the previous audit. There were changes in the rates from the previous audit. The increase in revenue was due to these increased rates and an increase in the quantities routed to the headworks of the facility and is typical of the fluctuations in loads and volume of waste received at the dump station.

b. **Disposal Amounts.** Total = 4,132,024 gallons, approximately a 9% increase from the previous audit.

c. **Trends.** Total allocated costs and revenues required have tracked very well with revenue actually received. Load volumes are still estimated for the three waste routing categories, and continue to fluctuate more than the respective allocated costs. Therefore, the rates over time have tended to be more dependent on waste volumes received than operating costs at this point.

3. **Industrial Pretreatment Program - Discharge Excursions**

The number of discharge excursions under Title 17 of the Lincoln Municipal Code recorded for the September 1 2005 to August 31, 2006 Audit period was 573 excursions. An increase in continuous pH and hydrogen sulfide monitoring may be accounting for more recorded excursions. More consistent permit limits for pH, BOD/COD, and TSS for the various industries that are monitored, as well as improved process control at some of the regulated industries have resulted in reduced excursions in recent years. The majority of the excursions recorded involve pH and oil & grease, accounting for 62% of the total. The compatible parameters of BOD/COD and TSS account for another 35% of the excursions. Only 2 metals excursions were detected during the audit period.

4. **Treatment Plant Loadings**

a. **Water/Wastewater Usage Comparison.** Reference Appendix 4. The overall water-to-wastewater ratio during the audit period was 61.3%. The Water/Wastewater ratio averaged approximately 92% for the winter period (Nov-Jan), with a high of 96% in Dec, and averaged approximately 42% for the summer period (Jul-Sep), with a low of 33.7% in July. The high ratio in the winter months may reflect low infiltration/inflow (I/I) due to a lower water table caused by recent years drought conditions, as well as improvements in the collection system to reduce I/I. The low ratio in the summer is also reflective of the recent drought conditions with approximately 50% of the water being used for lawn irrigation, and cooling tower operations that directly discharge to the stream. These ratios continue to illustrate the sensitivity of flow at the two treatment plants to that of climatic and groundwater conditions.

5. **Other Recent and Anticipated Industrial Activity**

a. **Cook's Hams, Inc.** Cook's Hams, Inc. has increased their production and their effluent loadings. LWWS has installed a continuous sampler at Cook's Hams, Inc. to provide more accurate monitoring of their effluent. This has provided better information to Cook's and the treatment system and has resulted in more accurate billings. Their performance will continue to be monitored.

b. **Lincoln Industries:** Lincoln Industries has achieved over 1350 days without an excursion, and has reduced their metal loading to the treatment plant by approximately 1 ton per year.

c. **pH excurions**: Recent evaluation of food processing waste streams indicates that a lowering of the pH of food processing wastewater is occurring while the wastewater is sitting in the collection container prior to taking a pH reading the following day. This pH lowering is accounting for a higher number of pH excursions being reported than are actually occurring within the collection system. In

order to eliminate these false pH excursions we are implementing refrigerated sampling equipment and real time logging of pH readings, and we will perform QA/QC of pH data associated with food processing industries to remove suspect data from the database to prevent them from being reported as excursions in the future.

6. **Industrial Surcharge Rate Analysis**

a. **Unit Cost Calculation Methodology**. The Municipal Code, in keeping with EPA and NDEQ policies, specifies that surcharge rates are to be based on treatment costs only; with cost allocation made among Flow, TSS, and BOD for each unit treatment process. Treatment costs include operation and maintenance, bonded indebtedness, administrative costs, etc., exclusive of costs associated with the wastewater collection system and the City's Liquid Waste Dump Station Facility. NDEQ loan fund (SRF Program) has been replaced by the sale of revenue bonds in 2003. The new revenue bond debt service payment costs were allocated on the basis of the respective principal amounts for the projects funded.

b. **Capital Amortization.** Major proposed capital improvement projects (CIP) (those greater than or equal to $100,000) that are funded directly with user revenues were linearly distributed over 20 years. The SRF loan was retired with the sale of revenue bonds. Similarly, user revenue costs from major CIP's from prior years of $100,000 or greater were carried forward and distributed in the same process. The cost of CIP's of less than $100,000 are considered routine and uniform from year to year and do not warrant cost spreading.

A change has been made in the amortization of capital improvement projects. Previously the projects were amortized on a 15-year time frame based on the date and funding amount. This lead to a higher than actual amortization cost due to the project not being completed or project costs changing. Starting in the 2000-01 fiscal year the actual cash-flow expenditure was used in determining the amortization cost. Using 2000-01 as a cut-off date the amount amortized based on funding was subtracted from the actual expenditures. The remainder was listed as a line item called amortization adjustment. This amount was then amortized over 20 years. This action will more accurately reflect the actual operating costs and there-by stabilize the rates.

c. **Overall Cost Allocation**. Refer to the discussion in Paragraphs a. and b. above concerning cost allocations and averaging techniques. The projections of loadings were modified last year by plotting historical loadings and creating a log trend-line that indicated a leveling of loading % for each unit. The calculation in the attached Audit (see Appendix item 7) shows the overall projected cost allocations for FY 2005-06 to be as follows:

1)	Treatment Cost @ approx. 85.8% of Total Budget Cost	$15,645,816
	Consisting of:	
	a) Flow @ 63.5% of Treatment Cost	$ 9,928,988
	b) BOD @ 15.2% of Treatment Cost	$ 2,385,345
	c) TSS @ 21.3% of Treatment Cost	$ 3,331,483
2)	Collection Cost @ 13.1% of Total Budget Cost	$ 2,394,657
3)	Total Treatment + Collection	$18,040,473
4)	Dump Station Costs @ 1.0% of Total Budget Cost	$ 187,669
	Total Budget Cost	$18,228,142

Note: Mathematical round-off errors from numerous embedded formulas affect the totals and subtotals to a minor extent.

d. **Calculated Unit Costs for 2006**. Based on Linear projections from past treatment plant operating records, it is estimated that 19,746,940 lbs. BOD and 20,936,240 lbs. TSS will be processed in FY 06/07. Unit cost calculations for FY 06/07 are as follows:

1) BOD = $2,385,345 / 19,746,940 lbs. = $0.121 per lb.
2) TSS = $3,331,483 / 20,936,240 lbs. = $0.159 per lb.

It is recommended that the surcharge rates remain at $ 0.117/lb for BOD and $ 0.150/lb for TSS for FY 06/07.

e. **Billing Methodology**. The respective values for BOD/COD and TSS from the major industries are based on the moving averages of these parameters over the previous twelve-month period. Surcharge unit costs apply to the net pounds of each parameter in excess of that defined in the Municipal Code as "normal wastewater" (that is, the base-level pounds resulting from 250 mg/l BOD, 400 mg/l COD as equivalent BOD, or 300 mg/l TSS respectively). Approximately 24% of the BOD/COD and 2% of the TSS from industries was subject to surcharge billing in FY 05/06.

7. **Dump Station Rate Analysis**

a. **Methodology**. Cost allocations were made in a similar manner as for the surcharge rates; that is, all applicable costs were included in the calculations, with the intent being that there will be no overlap with other charges and fees. Costs are distributed according to waste routing options: direct pumping to the anaerobic digesters, pumping to special grit processing or controlled diversion to the plant head-works.

b. **Calculated Unit Costs for FY 06/07**. Cost allocations are as follows:

Waste Routing	Alloc.	T. Cost	Gallons	5 yr. avg. Unit Cost	Current Rates
Anaerobic Digestion	53.2%	$ 98,545	2,693,327	$0.035/gal.	$.037/gal.
Grit Processing	24.1%	$ 44,592	365,645	$0.125/gal.	$.125/gal.
Plant Head-works	22.7%	$ 42,119	1,073,052	$0.043/gal.	$.035/gal.
Totals	100.0%	$ 182,256	4,132,024		

c. **Proposed Rates for FY 06/07.** The following rates are recommended for the dump station for FY 06-07: Anaerobic Digestion remain at $0.037/gal, Grit processing remain at $0.125/gal, and Plant Headworks remain at $0.035/gal. The Grit processing and headworks rates were increased in 2006. The actual fixed cost fee per load for 2005-06 was $13.28. The current minimum load fee of $13.00 per load should remain at the current level to allow for collection of the costs attributable to dealing with each load. This fixed fee is intended to cover the approximate "fixed cost per load" of direct labor for operation and maintenance and laboratory monitoring of incoming loads. It does not include engineering and administrative costs for review of permits, records management, billings, etc. The cost per load is very sensitive to the total number of loads delivered over the time period. One hauler accounts for approximately 80% of the minimum sized loads.

d. **Billings**. Haulers are billed by volumes of loads delivered, as reported by them on an "honor system". Representative samples are taken from each load, and waste routing is at staff discretion based on experience. The staff has used an infrared thermometer to help estimate the quantity in the haulers trucks. Recent evaluation of a septic receiving station has shown the error in reported volumes versus measured volumes can be as high as 100%, if more accurate quantification methods are put in place, adjustments to the rates charged for liquid wastes delivered to the dump station may be required. While an annual net zero accounting of all costs and revenues for the liquid waste handling facility is impractical, long-term total accounting of all cost is practical. Accumulated costs and revenues for the dump station over the past 10 years indicate that the revenues received from this operation are adequately covering all costs associated with processing of these wastes.

LINCOLN WASTEWATER SYSTEM

2006 INDUSTRIAL AUDIT

September 1, 2005 - August 31, 2006

APPENDIX

App. 1: Industrial Billing Summary

App. 2: Summary of Industrial Loadings

App. 3: Summary of Industrial Discharge Excursions

App. 4: Treatment Plant Organic Loadings & System Water Consumption

App. 5: Treatment Plant Heavy Metals Loadings

App. 6: Solids Digestion, Dewatering & Co-generation of Power

App. 7: Cost Allocation Analysis and Industrial Surcharge Rate Development

App. 8 Dumpstation Loads & Rates

App. 9: Dumpstation Treatment Cost Allocations

INDUSTRIAL BILLING SUMMARY

September 1, 2005 to August 31, 2006

INDUSTRY	100 CF WATER USAGE	100 CF SEWER USAGE	100 CF SURCH. USAGE	FLOW CHARGE ($)	TSS SURCH. ($)	BOD SURCH. ($)	TOTAL SURCH. ($)	FLOW CHG. + SURCH. ($)
THERESA STREET TREATMENT PLANT								
ADM TRUCKING	1,337	1,337	1,337	$1,696.67	$0.00	$0.00	$0.00	$1,696.67
BNSF RAILROAD - WEST O	36,169	14,360	14,360	$18,426.77	$0.00	$0.00	$0.00	$18,426.77
BRYAN MEMORIAL HOSPITAL [1]	58,632	40,364						
CAE VANGUARD INC [1]	-	-						
CONAGRA FOODS	194,218	86,784	82,732	$109,590.03	$0.00	$156,515.21	$156,515.21	$266,105.24
DUNCAN AVIATION [1]	418	418						
FISHER FOODS	10,159	7,887	7,887	$10,051.54	$718.14	$7,387.53	$8,105.67	$18,157.21
GENERAL DYNAMICS ATP	15,138	11,192	11,192	$14,369.83	$0.00	$0.00	$0.00	$14,369.83
GOOCH FOODS INC [1]	16,064	-						
GOOCH MILLING & ELEVATOR CO [1]	4,283	3,697						
HILLAERO MOD CENTER [1]	950	950						
INDUSTRIAL POWDER COATING	3,228	3,223	3,223	$4,107.19	$0.00	$656.85	$656.85	$4,764.04
JOURNAL-STAR PRINTING CO	4,118	3,515	3,515	$4,496.97	$8.35	$3,939.02	$3,947.37	$8,444.34
KAWASAKI MOTORS MFG CORP	45,371	103,575	28,518	$131,025.47	$0.00	$0.00	$0.00	$131,025.47
LESTER ELECTRICAL	5,187	5,187	5,187	$6,604.72	$0.00	$0.00	$0.00	$6,604.72
LINCOLN PLATING CO	78,853	77,828	77,828	$99,018.26	$0.00	$0.00	$0.00	$99,018.26
LINCOLN SNACK CO	26,163	16,970	16,970	$21,492.28	$8,448.49	$108,120.18	$116,568.67	$138,060.95
MAPES INDUSTRIES INC [1]								
MEADOW GOLD DAIRIES	48,735	42,375	33,575	$53,895.35	$18,277.03	$85,884.66	$104,161.69	$158,057.04
MOLEX INC	31,350	15,147	15,147	$19,413.16	$0.00	$0.00	$0.00	$19,413.16
NEBR STATE PENITENTIARY	74,445	74,445	74,445	$94,713.01	$0.00	$450.85	$450.85	$95,163.86
PARAMOUNT LINEN & UNIFORM	857	24,739	23,821	$31,544.52	$5,048.72	$27,696.48	$32,745.20	$64,289.72
PFIZER ANIMAL HEALTH	141,975	85,671	85,671	$109,834.53	$0.00	$7,488.64	$7,488.64	$117,323.17
PREMIUM PROTEIN PRODUCTS	35,028	34,945	34,945	$44,383.71	$0.00	$2,676.31	$2,676.31	$47,060.02
QUEBECOR PRINTING LINCOLN INC	23,083	23,083	23,083	$29,344.69	$0.00	$13,558.93	$13,558.93	$42,903.62
RANSOMES TEXTRON TURFCARE SPECIAL PROD. [1]								
REEL QUICK INC	-	-	1,313	$0.00	$0.00	$0.00	$0.00	$0.00
SANDHILLS PUBLISHING	1,408	1,408	1,408	$1,792.56	$0.00	$140.76	$140.76	$1,933.32
SQUARE D CO	14,454	11,836	11,836	$15,237.16	$0.00	$1,050.84	$1,050.84	$16,288.00
STANDARD MEAT CO [1]								
TMCO A TOTAL MANUFACTURING COMPANY	4,004	3,879	3,879	$4,962.84	$96.37	$33.81	$130.18	$5,093.02
VAN SICKLE PAINT MFG CO	1,471	1,177	1,177	$1,507.47	$0.00	$166.60	$166.60	$1,674.07
WEAVER POTATO CHIP CO	18,341	18,278	18,278	$23,352.71	$12,305.51	$17,522.28	$29,827.79	$53,180.50
WIS-PAK OF LINCOLN [1]	2,346	2,346						
SUBTOTALS	**897,785**	**716,616**	**581,327**	**$850,861.44**	**$44,902.61**	**$433,288.95**	**$478,191.56**	**$1,329,053.00**
NORTHEAST TREATMENT PLANT								
ARCHER DANIELS MIDLAND	333,605	143,249	143,249	$184,061.75	$13.72	$26,758.64	$26,772.36	$210,834.11
ARCK FOODS INC	8,906	8,906	8,906	$11,332.72	$563.40	$12,040.89	$12,604.29	$23,937.01
BNSF RAILROAD - HAVELOCK	22,046	22,046	22,046	$28,101.47	$0.00	$0.00	$0.00	$28,101.47
CENTENNIAL - MI INDUSTRIES	2,511	2,511	2,511	$3,209.27	$3,237.12	$5,882.85	$9,119.97	$12,329.24
GOODYEAR TIRE & RUBBER CO	311,546	47,688	47,688	$60,969.62	$1,157.38	$5,298.85	$6,456.23	$67,425.85
ISCO INC	4,203	49	49	$62.56	$0.00	$0.00	$0.00	$62.56
JOHNSRUD TRANSPORT INC	2,535	2,535	2,535	$3,257.74	$994.02	$3,910.91	$4,904.93	$8,162.67
NOVARTIS CONSUMER HEALTH INC	61,394	34,059	34,059	$43,349.69	$0.00	$0.00	$0.00	$43,349.69
SPECTRONICS CORP								
UNISERVICE INC	44,274	36,423	36,423	$46,663.21	$9,848.22	$46,624.64	$56,472.86	$103,136.07
SUBTOTALS	**791,020**	**297,466**	**297,466**	**$381,008.03**	**$15,813.86**	**$100,516.78**	**$116,330.64**	**$497,338.67**
TOTALS	**1,688,805**	**1,014,082**	**878,793**	**$1,231,869.47**	**$60,716.47**	**$533,805.73**	**$594,522.20**	**$1,826,391.67**

NOTES:

[1] Not monitored during period.

SUMMARY OF FY 05/06 LOADINGS FOR "COMPATIBLE" INDUSTRIES

Industry	Flow gpd	TSS mg/l	TSS lb/day	BOD mg/l	BOD lb/day	COD mg/l	COD lb/day	O&G mg/l	TKN mg/l	TCN mg/l	Total Metals (mg/l) As	Cd	Cr	Cu	Pb	Hg	Mo	Ni	Se	Ag	Zn
Theresa St. Treatment Plant																					
BNSF Railroad - West O	274,868	71	41	53	116	217	495	9.8	3.3	0.0187											
Conagra Foods	207,381	151	282	2,464	4,573	4,004	7,450	84	107.0												
Fisher Foods	15,664	157	34	768	164	1,339	275	58	471.0												
Journal Star Printing Company [1]	6,481	269	15	1,508	74	2,412	119	45	65.4	0.0080	0.0044	0.0004	0.0004	0.1687	0.0057	0.0000	0.1059	0.0044	0.0101	0.0021	0.0811
Lincoln Snack Company	45,602	591	188	6,588	2,092	10,114	3,196	499	19.8												
Meadow Gold Dairies	72,172	656	394	2,482	1,520	4,050	2,457	537	77.7												
Nebraska Penitentiary	148,083	185	228	242	298	451	558	38	54.6												
Paramount Linen/Uniform	71,750	504	300	1,268	768	2,157	1,889	268	25.4												
Pfizer Animal Health	79,582	102	69	64	42	187	122	9	7.8	0.0067	0.0020	0.0003	0.0010	0.1432	0.0015		0.2737	0.0019	0.0100	0.0004	0.0607
Premium Protein Products	85,324	142	108	344	259	585	437	70	20.0												
Quebecor Printing Lincoln, Inc.	43,205	132	46	1,015	354	1,944	679	39	50.8	0.0261											
Sandhills Publishing	2,178	38	1	342	6	613	11	15	11.3												
Van Sickle Paint Mfg Company [1]	2,635	125	2	318	6	508	10	11	1.0												
Affinity Snacks / Weaver Potato Chip	64,590	1,305	700	1,503	805	2,729	1,461	118	112.2												
Totals/Weighted Averages (T or A)	**1,119,515**	**258**	**2,406**	**1,196**	**11,078**	**2,052**	**19,159**	**111**	**52.8**	**0.0190**	**0.0005**	**0.0001**	**0.0002**	**0.0340**	**0.0004**	**0.0000**	**0.0634**	**0.0005**	**0.0024**	**0.0001**	**0.0144**
	(T)	(A)	(T)	(A)	(T)	(A)	(T)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
Northeast Treatment Plant																					
Archer Daniels Midland	313,059	274	720	465	1,210	800	2,086	165	13.8												
Arck Foods, Inc.	23,713	300	59	2,180	436	3,626	720	87	35.6												
Centennial Corporation	6,762	2,098	121	3,529	202	7,053	405	1,866	288.7												
Johnsrud Transport	6,793	913	53	2,767	164	5,467	325	1,596	16.1	0.0020											
Novartis Consumer Health, Inc.	225,656	177	327	212	387	523	963	23	75.4	0.0058	0.0024	0.0003	0.0008	0.0722	0.0019	0.0005	0.0429	0.0056	0.0100	0.0004	0.1491
Uniservice Inc	100,501	535	443	1,486	1,252	3,301	3,776	618	20.2												
Totals/Weighted Averages (T or A)	**676,484**	**306**	**1,724**	**647**	**3,651**	**1,467**	**8,275**	**213**	**38.8**	**0.0049**	**0.0018**	**0.0002**	**0.0005**	**0.0488**	**0.0016**	**0.0005**	**0.0282**	**0.0040**	**0.0069**	**0.0003**	**0.0960**
	(T)	(A)	(T)	(A)	(T)	(A)	(T)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)

SUMMARY OF FY 05/06 LOADINGS FOR INDUSTRIES WITH POTENTIAL HEAVY METALS CONSIDERATIONS

Industry	Flow gpd	TSS mg/l	TSS lb/day	BOD mg/l	BOD lb/day	COD mg/l	COD lb/day	O&G mg/l	TKN mg/l	TCN mg/l	Total Metals (mg/l) As	Cd	Cr	Cu	Pb	Hg	Mo	Ni	Se	Ag	Zn
Theresa St. Treatment Plant																					
Industrial Powder Coating [1]	10,238	106	8	647	54	1,035	86	61	10.4	0.0083	0.0043	0.0003	0.0031	0.1037	0.0117	0.0000	0.0491	0.0282	0.0106	0.0005	0.1474
Kawasaki Motors Manufacturing [1]	79,525	18	11	190	126	304	201	5	5.0	0.0306	0.0026	0.0005	0.0029	0.0230	0.0010	0.0000	0.0307	0.6567	0.0100	0.0004	0.0976
Lester Electrical [1]	194	15	0	24	106	38	170	3	1.4	0.0028	0.0033	0.0005	0.0029	0.0380	0.0014	0.0000	0.0025	0.0132	0.0102	0.0004	0.0263
General Dynamics ATP [1]	20,446	26	6	91	13	145	21	12	7.1	0.0028	0.0037	0.0004	0.0255	0.6675	0.0043	0.0000	0.0769	0.0048	0.0104	0.1373	0.0782
Lincoln Plating Co [1]	177,260	73	105	78	105	125	170	5	13.3	0.0758	0.0020	0.0057	0.4209	0.1028	0.0613	0.0000	0.0311	0.5342	0.0100	0.0011	0.4179
Molex Inc [1]	23,604	12	2	131	26	210	42	6	61.9	0.1475	0.0022	0.0003	0.0012	0.4412	0.0010	0.0000	0.0010	3.1591	0.0100	0.0009	0.0435
Reel Quick [1]	2,819	16	0	86	2	138	3	6	1.6	0.0008	0.0061	0.0004	0.0008	0.0593	0.0013	0.0000	0.0083	0.0144	0.0100	0.0005	0.1185
Square D Co [1]	13,382	42	5	425	49	680	78	27.6	17.3	0.0176	0.0027	0.0003	0.0047	0.3076	0.0018	0.0000	0.0045	0.0272	0.0105	0.0004	0.1884
TMCO A Total Manufacturing Company [1]	13,376	60	6	86	9	138	15	9.7	3.4	0.0137	0.0031	0.0003	0.0084	0.0690	0.0066	0.0000	0.0089	0.0203	0.0100	0.0004	0.2464
Totals/Weighted Averages (T or A)	**340,844**	**51**	**145**	**741**	**491**	**277**	**786**	**7**	**13.9**	**0.0584**	**0.0024**	**0.0032**	**0.2218**	**0.1478**	**0.0331**	**0.00002**	**0.0301**	**0.6529**	**0.0101**	**0.0090**	**0.2703**
	(T)	(A)	(T)	(A)	(T)	(A)	(T)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
Northeast Treatment Plant																					
BNSF Railroad - Havelock [1]	10,487	71	3	89	5	142	8	14	16.8	0.0068	0.0039	0.0004	0.0008	0.0448	0.0117	0.0000	0.0135	0.0043	0.0107	0.0004	0.0865
Goodyear Tire & Rubber Co [1]	103,441	446	408	489	428	782	684	95	16.0	0.0029	0.0021	0.0006	0.0044	0.0527	0.0065	0.0000	0.1286	0.0071	0.0107	0.0006	1.0504
ISCO [1]	260	40	0	58	1	92	1	4	4.3	0.0051	0.0028	0.0007	0.0132	0.0939	0.0102	0.0000	0.2510	0.0116	0.0102	0.0006	0.0567
Totals/Weighted Averages (T or A)	**114,188**	**431**	**411**	**455**	**433**	**728**	**693**	**87**	**16.0**	**0.0033**	**0.0023**	**0.0005**	**0.0041**	**0.0521**	**0.0070**	**0.00002**	**0.1183**	**0.0069**	**0.0107**	**0.0006**	**0.9596**
	(T)	(A)	(T)	(A)	(T)	(A)	(T)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)

OVERALL SUMMARY OF FY 05/06 INDUSTRIAL LOADINGS

Receiving Treatment Plant	Flow gpd	TSS lb/day	BOD lb/day	COD lb/day	O&G lb/day	TKN lb/day	TCN lb/day	Total Metals (lb/day) As	Cd	Cr	Cu	Pb	Hg	Mo	Ni	Se	Ag	Zn
Theresa St. Treatment Plant	1,460,359	2,550	11,569	19,945	984	609	0.2261	0.0081	0.0077	0.5651	0.4692	0.0796	0.0001	0.2659	1.6969	0.0339	0.0239	0.7492
Northeast Treatment Plant	790,672	2,135	4,084	8,968	1,262	223	0.0164	0.0071	0.0011	0.0055	0.1823	0.0106	0.0010	0.1867	0.0176	0.0289	0.0013	1.2130
Totals	**2,251,031**	**4,685**	**15,653**	**28,913**	**2,246**	**832.1**	**0.2425**	**0.0152**	**0.0088**	**0.5707**	**0.6715**	**0.0903**	**0.00103**	**0.4525**	**1.7145**	**0.0629**	**0.0252**	**1.9623**

Summary of FY05/06 Discharge Excursions for "Compatible" Industries

Industry	Flow gpd	Hrly. pH	TSS mg/l	BOD mg/l	COD mg/l	O&G mg/l	H2S ppm	D.Sulf. mg/l	TCN mg/l	Totals
ADM Trucking										
Archer Daniels Midland	0	1	18	52	63	13	1	7		155
Arck Foods Inc		10				1				11
Burlington Northern - West O	1	0	0	0	1	0	0	0	0	2
Centennial Corp.		6				10				16
Conagra Foods		0				2				2
Fisher Foods		12				7				19
Johnsrud Transport Inc.		70				11				81
Journal-Star Printing Company		1				2			0	3
Lincoln Snack Company		4				10				14
Meadow Gold Dairies		1				10				11
Nebraska Penitentiary		0				0			0	0
Novartis Consumer Health Inc	0	0	4	0	3	0	6	0	0	13
Paramount Linen/Uniform		76				4				80
Pfizer Animal Health		0				0			0	0
Premium Protein Products	0	0	0	6	10	2	0	0		18
Quebecor Printing Lincoln Inc.		23				1				24
Sandhills Publishing		1				0			0	1
Uniservice		9				8				17
Van Sickle Paint Manufacturing Co.		0				0				0
Weaver Potato Chip		13				4				17
Excursions Subtotals	**1**	**227**	**22**	**58**	**77**	**85**	**7**	**7**	**0**	**484**
Subtotal Number of Measurements	**1048**	**22008**	**1048**	**957**	**1049**	**305**	**210240**	**47**	**47**	**236,749**
Percent Excursions	**0.1%**	**1.0%**	**2.1%**	**6.1%**	**7.3%**	**27.9%**	**0.0%**	**14.9%**	**0.0%**	**0.2%**

Summary of FY05/06 Discharge Excursions for Industries with Heavy Metals

Industry	Flow gpd	Hrly. pH	TSS mg/l	COD mg/l	O&G mg/l	TCN mg/l	Cd mg/l	Cr mg/l	Cu mg/l	Pb mg/l	Ni mg/l	Ag mg/l	Zn mg/l	T.Met. mg/l	Totals
Burlington Northern - Havelock		0			0	0									0
Goodyear Tire & Rubber Co.		2			5										7
Industrial Powder Coating		2	0	30	1	0	0	0	0	0	0	0	0		33
ISCO		5	0	0	0	0	0	0	0	0	0	0	0		5
Kawasaki Motors Manufacturing		0			0										0
Lester Electrical		0	0	0	0	0	0	0	0	0	0	0	0		0
General Dynamics ATP		3			0	0	0	0		0					3
Lincoln Plating Company		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Molex, Inc.		0	0	0	0	0	0	0	0	0	1	0	0		1
[illegible]															0
Reel Quick		0			0	0	0	0	0	0	0	0	0		0
[illegible]															0
Square D		0	0	14	0	0	0	0	0	0	0	0	0		14
TMCO A Total Manufacturing Co		24	0	1	0	0	0	0	0	0	0	0	1		26
Excursions Subtotals	**0**	**36**	**0**	**45**	**6**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**89**
Subtotal Number of Measurements	**498**	**10458**	**498**	**503**	**58**	**367**	**370**	**370**	**370**	**370**	**370**	**370**	**370**	**65**	**15,037**
Percent Excursions	**0.0%**	**0.3%**	**0.0%**	**8.9%**	**10.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.3%**	**0.0%**	**0.3%**	**0.0%**	**0.6%**

indicates that the industry does not have a permit limit for, or the industry is not monitored for, that parameter by the City of Lincoln

Total Excurions	573
Total Number of Measurements	251,786
Percent Excursions	0.23%

FY 05/06 AVERAGE TREATMENT PLANT ORGANIC LOADINGS & SYSTEM WATER CONSUMPTION

THERESA ST. PLANT

MONTH	WW Flow MGD	Infl. TSS mg/l	Infl. TSS lb/day	Infl. BOD mg/l	Infl. BOD lb/day	Infl. COD mg/l	Infl. COD lb/day	Infl. ORG-N mg/l	Infl. ORG-N lb/day	Infl. NH3-N mg/l	Infl. NH3-N lb/day	Infl. TKN mg/l	Infl. TKN lb/day
Sep-05	17.998	234	34,997	263	39,389	527	79,094	17.0	2550	26.5	3986.7	43.5	6536.5
Oct-05	19.511	252	41,047	285	46,437	581	94,621	18.7	3251	32.5	5633.0	51.2	8884.1
Nov-05	21.656	270	48,909	297	53,647	593	107,292	23.1	4335	31.1	5769.1	54.3	10104.3
Dec-05	20.768	251	43,541	276	48,160	562	97,806	18.0	3216	33.5	5999.7	51.5	9215.9
Jan-06	18.858	256	40,400	266	41,903	535	84,389	18.4	2896.8	35.8	5666.8	54.2	8563.6
Feb-06	18.700	213	33,266	254	39,771	519	81,031	17.2	2675.7	34.0	5287.4	51.2	7963.1
Mar-06	18.596	229	35,496	283	43,805	566	87,920	18.3	2899.8	30.0	4745.5	48.4	7645.3
Apr-06	17.991	203	30,663	251	37,830	496	74,792	15.1	2472.8	33.7	5490.3	48.9	7963.1
May-06	17.866	253	37,466	249	37,153	511	75,946	15.1	2282.3	38.7	5859.2	53.8	8141.5
Jun-06	18.872	244	38,490	249	39,319	500	78,828	16.1	2654.2	35.3	5829.9	51.4	8484.0
Jul-06	18.613	218	33,880	240	37,359	507	79,164	15.3	2400.9	29.6	4661.8	44.9	7062.6
Aug-06	21.300	229	40,788	248	44,003	496	88,420	21.7	4007.4	31.5	5873.3	53.2	9880.7
AVERAGES	**19.227**	**238**	**38,245**	**263**	**42,398**	**533**	**85,775**	**17.6**	**2,970**	**32.7**	**5,400**	**50.5**	**8,370**
% INDUSTRIAL CONTRIBUTION	**7.6%**		**6.7%**		**27.3%**		**23.3%**						**7.3%**

NORTHEAST PLANT

MONTH	WW Flow MGD	Infl. TSS mg/l	Infl. TSS lb/day	Infl. BOD mg/l	Infl. BOD lb/day	Infl. COD mg/l	Infl. COD lb/day	Infl. ORG-N mg/l	Infl. ORG-N lb/day	Infl. NH3-N mg/l	Infl. NH3-N lb/day	Infl. TKN mg/l	Infl. TKN lb/day
Sep-05	4.661	218.8	8,508	244	9,481	502	19,719	16.3	635	23.8	932	37.3	1,451
Oct-05	3.047	235.7	5,955	258	6,558	540	13,432	16.9	417	22.7	564	39.6	981
Nov-05	3.303	235.6	6,511	268	7,373	567	14,943	20.1	537	22.0	611	42.2	1,149
Dec-05	3.082	251.6	6,464	298	7,561	608	15,990	20.1	536	20.2	530	40.3	1,066
Jan-06	4.003	250.2	8,375	283	9,435	560	18,229	18.7	617	22.3	734	41.1	1,351
Feb-06	4.443	257.5	9,587	274	10,162	552	19,874	18.1	672	22.3	818	40.4	1,487
Mar-06	4.656	251.0	9,661	285	11,008	583	21,866	18.0	690	21.5	832	39.5	1,522
Apr-06	4.886	268.8	10,951	264	10,743	574	23,200	19.3	795	22.2	911	41.2	1,693
May-06	4.685	250.9	9,842	258	10,085	564	21,977	17.0	668	20.3	804	37.3	1,472
Jun-06	4.493	278.0	10,445	268	10,039	565	20,472	15.5	581	20.8	772	36.2	1,353
Jul-06	4.702	233.6	9,180	258	10,121	529	20,450	14.3	580	20.6	831	34.9	1,411
Aug-06	4.863	232.5	9,431	264	10,690	553	22,397	16.6	685	20.9	863	37.5	1,548
AVERAGES	**4.235**	**247**	**8,742**	**268**	**9,438**	**558**	**19,379**	**17.6**	**618**	**21.6**	**767**	**38.9**	**1,373**
% INDUSTRIAL CONTRIBUTION	**18.7%**		**24.4%**		**43.3%**		**46.3%**						**16.2%**

TOTALS

MONTH	WW Flow MGD	Water Usage MGD	% WW of Water %	Infl. TSS lb/day	Infl. BOD lb/day	Infl. COD lb/day	Infl. TKN lb/day
Sep-05	22.659	53.074	42.7%	43,505	48,870	98,813	7,988
Oct-05	22.558	38.045	59.3%	47,003	52,995	108,052	9,865
Nov-05	24.959	29.534	84.5%	55,420	61,020	122,234	11,253
Dec-05	23.850	26.253	90.8%	50,005	55,721	113,797	10,282
Jan-06	22.861	26.025	87.8%	48,775	51,338	102,618	9,915
Feb-06	23.143	28.006	82.6%	42,853	49,933	100,905	9,450
Mar-06	23.252	24.832	93.6%	45,157	54,813	109,785	9,167
Apr-06	22.877	30.147	75.9%	41,614	48,573	97,993	9,656
May-06	22.551	38.413	58.7%	47,308	47,238	97,923	9,613
Jun-06	23.365	56.068	41.7%	48,936	49,357	99,300	9,837
Jul-06	23.315	62.371	37.4%	43,060	47,479	99,614	8,473
Aug-06	26.163	47.812	54.7%	50,219	54,693	110,816	11,429
AVERAGES	**23.463**	**38.382**	**61.1%**	**46,988**	**51,836**	**105,154**	**9,744**
% INDUSTRIAL CONTRIBUTION	**9.6%**	**9.0%**		**10.0%**	**30.2%**	**27.5%**	**8.5%**

Long-Term Summary of Industrial and Treatment Plant Loadings

Industrial Audit Period	Industrial Loading: Billed Usage mgd	Industrial Loading: TSS lb/day	Industrial Loading: BOD lb/day	Industrial Loading: COD lb/day	Totals from Treatment Plants: Flow mgd	Totals from Treatment Plants: TSS lb/day	Totals from Treatment Plants: BOD lb/day	Totals from Treatment Plants: COD lb/day	Percent Industrial Contributions: Flow	Percent Industrial Contributions: TSS	Percent Industrial Contributions: BOD	Percent Industrial Contributions: COD
07/01/1990-06/30/1991	2.197	12,368	19,724	51,285	23.405	47,180	39,568		9.4%	26.2%	49.8%	
06/01/1991-05/31/1992	2.250	10,855	16,228	44,494	22.718	51,051	40,140		9.9%	21.3%	40.4%	
01/01/1993 - 12/31/1993	2.296	9,312	12,713	36,893	27.597	54,281	41,666	110,905	8.3%	17.2%	30.5%	33.3%
01/01/1994 - 12/31/1994	2.346	8,983	21,923	40,306	22.773	54,381	47,626	112,568	10.3%	16.5%	46.0%	35.8%
01/01/1995 - 12/31/1995	2.396	6,045	19,835	33,917	25.697	66,424	51,625	118,708	9.3%	9.1%	38.4%	28.6%
01/01/1996 - 12/31/1996	2.390	6,110	18,679	35,034	24.231	54,535	47,874	105,155	9.9%	11.2%	39.0%	33.3%
01/01/1997 - 12/31/1997	2.657	6,917	19,048	36,192	23.912	46,721	46,062	107,143	11.1%	14.8%	41.4%	33.8%
01/01/1998 - 12/31/1998	2.426	6,435	17,856	33,656	27.451	48,939	47,404	113,234	8.8%	13.1%	37.7%	29.7%
01/01/1999 - 12/31/1999	2.637	6,579	20,844	38,330	24.445	46,278	45,538	107,146	10.8%	14.2%	45.8%	35.8%
01/01/2000 - 12/31/2000	2.312	7,360	22,399	41,133	22.664	45,557	42,541	96,711	10.2%	16.2%	52.7%	42.5%
01/01/2001 - 12/31/2001	2.246	5,417	14,124	33,225	24.382	54,936	45,203	105,753	9.2%	9.9%	31.2%	31.4%
01/01/2002 - 12/31/2002	2.583	4,437	14,311	29,672	23.672	54,590	52,407	111,353	10.9%	8.1%	27.3%	26.6%
9/1/2002 - 8/31/2003	2.187	4,656	19,882	39,128	22.288	53,190	50,855	105,515	9.8%	8.8%	39.1%	37.1%
9/1/2003 - 8/31/2004	2.165	4,468	19,538	34,397	24.439	57,809	54,476	114,083	8.9%	7.7%	35.9%	30.2%
9/1/2004 - 8/31/2005	2.208	4,232	18,981	30,540	23.121	54,398	55,521	108,387	9.5%	7.8%	34.2%	28.2%
9/1/2005 - 8/31/2006	2.251	4,685	15,653	28,913	23.463	46,988	51,836	105,154	9.6%	10.0%	30.2%	27.5%

FY 05/06 AVERAGE TREATMENT PLANT HEAVY METALS LOADINGS

HEAVY METALS [1]	THERESA INFLUENT mg/l	lb/day	% Ind. Contrib.	THERESA EFFLUEN mg/l	lb/day	HERESA BELT FILTER PRESS SLUDG mg/l	AVE. % SOLIDS	mg/kg	503 LIMITS [2] MAX.	"CLEAN"
Arsenic (As)	0.0020	0.33	2.4%	0.0038	0.64	0.82	14.30%	5.73	75	41
Cadmium (Cd)	0.0006	0.10	7.8%	0.0003	0.06	0.43		3.00	85	39
Chromium (Cr)	0.0044	0.74	76.6%.	0.0011	0.19	4.13		28.88		
Copper (Cu)	0.0984	16.26	3.0%	0.0110	1.84	87.38		611	4300	1500
Lead (Pb)	0.0055	0.93	8.5%	0.0017	0.28	6.23		43.57	840	300
Mercury (Hg)	0.00023	0.04	0.1%	0.00002	0.00	0.0034		0.02	57	17
Molybdenum (Mo)	0.0093	1.54	17.3%	0.0076	1.25	2.54		17.76	75	
Nickel (Ni)	0.0158	2.59	65.5%	0.0089	1.46	7.04		49.23	420	420
Selenium (Se)	0.0100	1.66	2.1%	0.0099	1.63	0.01		0.07	100	100
Silver (Ag)	0.0015	0.25	9.4%	0.0005	0.08	1.78		12.45		
Zinc (Zn)	0.1208	20.00	3.7%	0.0431	7.10	100.91		705.66	7500	2800

HEAVY METALS [1]	NETP INFLUENT mg/l	lb/day	% Ind. Contrib.	NETP EFFLUENT mg/l	lb/day	NETP INJECTED SLUDGE mg/l	AVE. % SOLIDS	mg/kg	503 LIMITS [2] MAX.	"CLEAN"
	0.0025	0.09	8.0%	0.0034	0.11	0.00	5.00%	0.04	75	41
Cadmium (Cd)	0.0005	0.02	6.2%	0.0003	0.01	0.08		1.67	85	39
Chromium (Cr)	0.0015	0.05	10.5%	0.0007	0.02	0.83		16.56		
Copper (Cu)	0.1212	4.22	4.3%	0.0213	0.72	40.62		812.46	4300	1500
Lead (Pb)	0.0083	0.27	3.9%	0.0021	0.07	2.66		53.24	840	300
Mercury (Hg)	0.00020	0.007	13.1%	0.00004	0.001	0.0574		1.15	57	17
Molybdenum (Mo)	0.0168	0.56	33.5%	0.0149	0.49	1.22		24.33	75	
Nickel (Ni)	0.0055	0.19	9.2%	0.0025	0.09	1.75		34.92	420	420
Selenium (Se)	0.0100	0.35	8.4%	0.0102	0.34	0.01		0.20	100	100
Silver (Ag)	0.0015	0.05	2.4%	0.0005	0.02	1.14		22.78		
Zinc (Zn)	0.1479	5.09	23.8%	0.0357	1.19	62.50		1,250.00	7500	2800

[1] Heavy metals for each treatment plant are based on 24-hour, 7-day composite samples.
[2] EPA 40 CFR Part 503 Regulations. All values in mg/kg.

FY 05/06 SOLIDS DIGESTION, DEWATERING & CO-GENERATION OF POWER

(Based on Theresa Street Plant Data)

ANAEROBIC DIGESTER INFLUENT (FEED)

MONTH	AVERAGE INFLUENT TSS Lb/Day	AVERAGE PC TSS REMOVAL %	PC TSS TO DIG. Lb/Day	DAF TSS TO DIG. Lb/Day	DUMP STATION DIRECT VOL. TO DIG. Gal./Mo.	DUMP STATION DIRECT TSS TO DIG. MG/L (avg)	DUMP STATION DIRECT TSS TO DIG. Lb/Day	TOTAL TSS TO DIGESTER Lb/Day	COMB. SLUDGE FLOW Gal/Mo.	COMB. SLUDGE TS MG/L	COMB. SLUDGE TVS MG/L	COMB. SLUDGE TS Lb/Day	COMB. SLUDGE TVS Lb/Day	VS IN %
Sep-05	34,997	63.2%	22,129	15,378	219,350	22,555	1,375	38,883	4,182,853	41,137	31,501	47,835	36,630	76.6%
Oct-05	41,047	63.3%	25,995	15,606	239,895	22,555	1,456	43,057	4,084,599	45,817	35,746	50,348	39,281	78.0%
Nov-05	48,909	62.1%	30,386	16,804	260,965	22,555	1,636	48,826	4,131,886	46,066	36,208	52,914	41,591	78.6%
Dec-05	43,541	60.7%	26,410	26,610	269,899	22,555	1,638	54,658	4,548,756	44,869	35,587	54,909	43,550	79.3%
Jan-06	40,400	63.2%	25,547	20,246	260,015	22,555	1,578	47,371	4,322,789	45,789	35,653	53,251	42,845	80.5%
Feb-06	33,266	60.3%	20,067	19,540	146,635	22,555	985	40,592	4,162,897	36,718	29,264	45,528	35,035	77.0%
Mar-06	35,496	58.7%	20,822	20,987	243,579	22,555	1,478	43,287	4,599,058	42,959	33,961	53,153	42,020	79.1%
Apr-06	30,663	51.7%	15,865	23,500	161,750	22,555	1,014	40,379	4,562,237	39,256	30,923	49,788	39,220	78.8%
May-06	37,466	58.4%	21,872	21,783	260,490	22,555	1,581	45,236	4,513,810	44,233	33,112	53,715	40,210	74.9%
Jun-06	38,490	67.4%	25,942	14,638	230,460	22,555	1,445	42,025	4,175,392	44,648	33,999	51,826	39,465	76.1%
Jul-06	33,880	63.5%	21,515	17,630	202,024	22,555	1,226	40,371	4,078,556	38,895	29,376	42,678	32,233	75.5%
Aug-06	40,788	73.3%	29,887	17,543	198,265	22,555	1,203	48,634	3,862,392	40,837	30,884	42,434	32,092	75.6%
TOTALS/AVERAGES (T or A)	**38,245 (A)**	**62.2% (A)**	**23,870 (A)**	**19,189 (A)**	**2,693,327 (T)**	**22,555 (A)**	**1,385 (A)**	**44,443 (A)**	**4,268,769 (A)**	**42,602 (A)**	**33,018 (A)**	**49,865 (A)**	**38,681 (A)**	**77.5% (A)**

ANAEROBIC DIGESTER EFFLUENT (SLUDGE TO BFP) AND PERFORMANCE

MONTH	BFP OPER. DAYS PER MO.	BFP DRY SLDS. PER OPER. DAY	BFP DRY SLDS. PER CAL. DAY	DIGESTER TSS WT. RED. %	DIGESTER TS MG/L	DIGESTER TVS MG/L	VS OUT %	VS RED. %	VS RED. Lb/Day	TS RED. %	GAS PROD. CF	GAS PROD. CF PER LB. VS RED.	GEN. POWER kwh	GEN. kwh PER CF GAS	GEN. KW PER LB. VS RED.
Sep-05	16	52,123	27,799	28.5%	25,463	16,344	64.2%	45.2%	16,548	34.6%	8,966,968	18.1	389,340	0.043	0.784
Oct-05	18	55,507	32,230	25.1%	26,310	17,050	64.8%	48.1%	18,904	37.5%	10,536,741	18.0	492,327	0.047	0.840
Nov-05	24	62,572	50,058	-2.5%	29,136	18,642	64.0%	51.6%	21,475	40.6%	7,103,872	11.0	525,897	0.074	0.816
Dec-05	23	48,810	36,214	33.7%	26,525	15,987	60.3%	60.4%	26,318	47.9%	8,920,522	10.9	563,842	0.063	0.691
Jan-06	18	57,696	33,501	29.3%	27,339	17,315	63.3%	58.0%	24,871	46.7%	7,332,341	9.5	488,241	0.067	0.633
Feb-06	17	49,723	30,189	25.6%	23,192	14,628	63.1%	48.8%	17,110	37.6%	5,697,898	11.5	376,738	0.066	0.759
Mar-06	18	53,066	30,813	28.8%	24,321	14,903	61.3%	58.1%	24,403	45.9%	8,387,919	11.1	301,373	0.036	0.398
Apr-06	18	59,742	35,845	11.2%	25,781	16,107	62.5%	55.1%	21,623	43.4%	10,808,690	16.7	265,587	0.025	0.409
May-06	22	57,644	40,909	9.6%	26,138	15,972	61.1%	47.2%	18,992	35.4%	10,948,140	18.6	441,164	0.040	0.749
Jun-06	18	65,706	39,424	6.2%	24,673	14,822	60.1%	52.9%	20,866	40.3%	10,339,362	16.5	492,296	0.048	0.786
Jul-06	17	55,363	30,360	24.8%	24,185	14,479	59.9%	51.7%	16,652	39.0%	9,734,029	18.9	402,349	0.041	0.779
Aug-06	21	59,977	40,630	16.5%	26,710	15,909	59.6%	52.5%	16,859	39.7%	9,632,229	18.4	405,955	0.042	0.777
TOTALS/AVERAGES (T or A)	**230 (T)**	**56,494 (A)**	**35,664 (A)**	**19.7% (A)**	**25,814 (A)**	**16,013 (A)**	**62.0% (A)**	**52.5% (A)**	**20,385 (A)**	**40.7% (A)**	**9,034,059 (A)**	**14.9 (A)**	**428,759 (A)**	**0.049 (A)**	**0.702 (A)**

TOTAL COST ALLOCATION AND SURCHARGE RATE DEVELOPMENT

(All Costs Based on Projected F.Y. 2006-2007 Budget)

Regression	43.6	23.5	32.9
8 year ave	42.1	22.8	35.2
10 yr ave.	39.7	23.9	36.4

COST PROJECTIONS BASED ON 06-07 BUDGET	FLOW		BOD		TSS		Total - Dumpstation	Dump-station Costs	Total	06-07 BUDGET			
NORTHEAST TREATMENT PLANT TOTALS	43.6%	$701,626	23.5%	$378,170	32.9%	$529,438	$1,609,234	$0	$1,609,234	1,609,234			
THERESA STREET TREATMENT PLANT TOTALS (1)	43.6%	$1,797,127	23.5%	$968,635	32.9%	$1,356,089	$4,121,851	$145,887	$4,267,738	4,267,738			
COLLECTION SYSTEM TOTAL COSTS	100.0%	$2,394,657	0.0%	$0	0.0%	$0	$2,394,657	$0	$2,394,657	2,394,657			
SANITARY ENGINEERING (1)	60.2%	$1,234,066	16.6%	$339,650	23.2%	$475,510	$2,049,225	$36,956	$2,086,181	2,086,181			
BUSINESS OFFICE EXP. (debt service)	71.8%	$4,148,454	11.8%	$678,890	16.5%	$950,447	$5,777,791	$0	$5,777,791	5,777,791			
BUSINESS OFFICE EXP. (admin cost - acct, billing, meter repl, etc.)	98.1%	$2,047,715	1.0%	$20,000	1.0%	$20,000	$2,087,715	$2,413	$2,090,128	2,090,128			
General System Improvements & Selective Replacement	43.6%	$0	23.5%	$0	32.9%	$0	$0	$0	$0	$0			
TOTAL COST	68.3%	$12,323,645	13.2%	$2,385,345	18.5%	$3,331,483	$18,040,473	$185,256	$18,225,729	$18,225,729	$0	$0	$0
Rate Projection													
Actual 2005-06 Flow,Bod,TSS (treated flows, not metered/billed flows)	Hcf	11,449,069	M lbs	18,920	M lbs	17,151							
Cost per Unit based on 05-06 budget request	$/Hcf	$1.524	$/lb	$0.121	$/lb	$0.159							
Actual 2005-06 Industrial Load (Load Applicable to Surcharge Fees)	Hcf	1,014,082	M lbs	4,562	M lbs	405							
Cost of Industrial Treatment based on 05-06 budget request		$1,545,246		$551,123		$64,410	$ 2,160,779						
Projected Flow,Bod,TSS based on regression analysis (FY 06/07)	Hcf	11,449,069	lbs	19,746,940	lbs	20,936,240							
Subtract out - monthly service charge revenue													
Add in - Non surcharged BOD and TSS costs reallocated to flow		$5,122,306											
Revenue required for each cost center (Flow, Bod, TSS) (@2006 projections)		$17,445,951		$551,123		$64,410	$18,061,484						
Rates required to generate necessary revenue based on projected flows	$/Hcf	$1.524	$/lb	$0.121	$/lb	$0.159							
Current Rates	$/Hcf	$1.440	$/lb	$0.117	$/lb	$0.150							
Revenue based on current rates and projected loadings		$16,486,660		$533,806		$60,716.47	$17,081,182						
Excess/shortfall if rates are not changed		-959,291		-17,318		-3,694	-$980,303						
% increase		7.6%		0.0%		0.0%							
Recommended Rates	$/Hcf	1.550	$/lb	0.117	$/lb	0.150							
Revenue		$17,746,057		533,806		60,716	$18,340,579						
Excess/shortfall if rates are changed	1.7%	300,106	-3.1%	-17,318	-5.7%	-3,694	$279,095						
INDUSTRIAL CONTRIBUTION BASED ON OLD RATES		$1,460,278		$533,806		$60,716	$2,054,800						
INDUSTRIAL CONTRIBUTION BASED ON Recommended RATES		$1,571,827		$533,806		$60,716	$2,166,349	0.3%					
CHANGE IN INDUSTRIAL REVENUE							$111,549						

Overall Cost Allocation		
Treatment	85.8%	
Flow	63.5%	$9,928,988
BOD	15.2%	$2,385,345
TSS	21.3%	$3,331,483
Total Treatment		$15,645,816
Collection Cost	13.1%	$2,394,657
Total Treatment & Collection		$18,040,473
Dumpstation Cost *	1.0%	$187,669
Total Budget Cost		$18,228,142

* Includes $12/load charge

DUMP STATION UNIT COSTS & PROJECTED RATES

Calculated Cost Allocations				
Cost of Waste Routed to Anaerobic Digestion	53.2%	Allocation	$98,545	Total Dump Station Costs 185,256
Cost of Waste Routed to Grit Processing	24.1%	Allocation	$44,592	Total Revenue based on 5 yr average Loading
Cost of Waste Routed to Plant Headworks	22.7%	Allocation	$42,119	
	100.0%	Allocation	$185,256	

2006 Dump Station Loads with Unit Costs Based on FY 2005-2006 Budgeted Cost Allocations

Waste Category	No. Loads	% of Loads	Volume Gal.	Revenue	Ave. COD mg/l	Ave. TSS mg/l	% T. Volume	Ave. Load Gal.	Unit Cost Per Load	Unit Cost Per Gal.	Unit Cost Per Gal.	Curent Rates	5 year ave volume
Wastes Routed to Anaerobic Digestion											Based on 5 year ave. volume		
Grease Trap Waste/Cooking Grease Waste	662	18.0%	1,008,172	$37,647	84,966	23,731	24.4%	1,523					
Septage	858	23.3%	928,430	$34,494	101,342	19,916	22.5%	1,082					
Chemical Toilets	858	23.3%	301,965	$12,458	48,056	5,731	7.3%	352					
Inorganic Sludges	2	0.1%	1,160	$49									
Organic Sludges	218	5.9%	445,700	$16,427	338,167	91,140	10.8%	2,044					
Miscellaneous Wastes	6	0.2%	7,900	$292			0.2%	1,317					
Subtotals/Weighted Averages	**2,604**	**70.7%**	**2,693,327**	**$101,367**	**23,565**	**11,931**	**65.2%**	**1,034**	**$37.84**	**$0.038**	**$0.035**	**$0.037**	2,784,098
Wastes Routed to Grit Processing	**416**	**11.3%**	**365,645**	**$41,799**	**51,001**	**259,756**	**8.8%**	**879**	**$107.19**	**$0.122**	**$0.125**	**$0.125**	355,523
Wastes Routed to Plant Headworks													
Grease Trap Waste/Cooking Grease Waste	11	0.3%	22,500	$740			0.5%	2,045					
Mud/Sand Trap Waste (Dilute)	3	0.1%	300	$120	43,000	623,480	0.0%	100					
Septage	209	5.7%	356,205	$11,864	9,480	41,020	8.6%	1,704					
Chemical Toilets	0	0.0%	0				0.0%						
Organic & Inorganic Sludges	12	0.3%	18,000	$576			0.4%	1,500					
Petroleum Contaminated Water	29	0.8%	22,350	$769	178,200	32,340	0.5%	771					
Antifreeze	12	0.3%	4,177	$192			0.1%	348					
Miscellaneous Wastes	389	10.6%	649,520	$21,075	136,344	29,365	15.7%	1,670					
Subtotals/Weighted Averages	**665**	**18.0%**	**1,073,052**	**$35,335**	**65,940**	**16,303**	**26.0%**	**1,614**	**$63.34**	**$0.039**	**$0.043**	**$0.035**	986,911
Totals	**3,685**	**100.0%**	**4,132,024**	**$178,502**	**36,997**	**34,997**		**1,121**	**$50.45**	**$0.045**	**$0.045**		4,126,532

Notes:

Total wet weight of grit scaled at Landfill =	1,039,620	Lbs.
Estimated fraction of total grit volume sent to Landfill =	50%	
Estimated wet weight of grit per gallon grit waste =	5.69	Lbs./Gal.

Laboratory Labor Cost per Load	$7.79
O&M Cost for Minimum size loads	$5.48
Minimum Cost per Load	$13.28
Recommended Minimum Charge per Load	**$13.00**

0.00% Increase

$31,171 Laboratory Labor Cost for Dump Station
4,000 Average Number of Loads
$5.48 O&M for average minimum load processed to Anaerobic Digesters

Historical Dump Station Costs, Revenue & Volumes

Rate Year	Cost Allocations: Wastes to Anaer. Dig.	Wastes to Grit	Wastes to Headworks	Totals	Year	Revenue: Wastes to Anaer. Dig.	Wastes to Grit	Wastes to Headworks	Totals	Volume (Gallons): Wastes to Anaer. Dig.	Wastes to Grit	Wastes to Headworks	Totals
1995	$91,484	$50,460	$26,076	$168,020	1994	$100,905	$39,797	$38,029	$178,731	3,245,743	510,615	1,026,088	4,782,446
1996	$103,554	$44,446	$25,807	$173,807	1995	$117,540	$40,805	$40,634	$198,979	3,340,932	389,230	968,245	4,698,407
1997	$102,330	$55,647	$15,646	$173,623	1996	$105,854	$50,872	$12,514	$169,240	3,591,009	491,195	488,021	4,570,225
1998	$107,798	$39,786	$16,584	$164,168	1997	$102,202	$39,930	$13,899	$156,031	3,243,760	349,830	511,928	4,105,518
1999	$132,087	$39,171	$22,384	$193,642	1998	$113,287	$45,021	$27,432	$185,740	3,586,952	394,417	846,778	4,828,147
2000	$120,923	$34,245	$28,651	$183,819	1999	$106,117	$51,698	$29,878	$187,693	3,262,745	452,995	929,900	4,645,640
2001	$123,449	$32,536	$24,187	$180,171	2000	$121,900	$40,461	$23,428	$185,789	3,230,400	452,995	929,900	4,613,295
2002	$125,129	$31,954	$21,395	$178,479	2001	$104,888	$34,051	$21,366	$160,405	2,790,443	298,328	505,355	3,594,126
2003	$125,028	$34,810	$21,456	$181,294	2002	$106,864	$39,829	$15,724	$162,418	2,840,773	348,928	482,870	3,672,571
2004	$68,255	$38,906	$26,924	$134,085	2003	$102,339	$34,809	$35,320	$174,468	2,716,975	304,731	1,095,130	4,116,836
2005	$81,136	$51,674	$40,847	$173,657	2004	$130,810	$49,823	$57,553	$238,187	2,797,690	388,280	1,744,089	4,930,059
2006	$107,654	$47,059	$33,110	$187,823	2005	$103,964	$42,246	$19,026	$165,236	2,871,725	370,032	539,415	3,781,172
2007	$98,545	$44,592	$42,119	$185,256	2006	$101,367	$41,799	$35,335	$178,502	2,693,327	365,645	1,073,052	4,132,024
Net Revnue	**($6,754)**												

	Cost per Gallon: Digesters	Grit	Headworks	Total
1994	0.028	0.099	0.025	0.035
1995	0.031	0.114	0.027	0.037
1996	0.028	0.113	0.032	0.038
1997	0.033	0.114	0.032	0.040
1998	0.037	0.099	0.026	0.040
1999	0.037	0.076	0.031	0.040
2000	0.038	0.072	0.026	0.039
2001	0.045	0.107	0.042	0.050
2002	0.044	0.100	0.044	0.049
2003	0.025	0.128	0.025	0.033
2004	0.029	0.133	0.023	0.035
2005	0.037	0.127	0.061	0.050
2006	0.037	0.122	0.039	0.045
10 yr ave	0.036	0.108	0.035	0.042
7 yr ave	0.036	0.113	0.037	0.043
5 yr ave	0.034	0.122	0.039	0.042
4 year ave	0.032	0.127	0.037	0.041
3 year ave	0.034	0.127	0.041	0.043
current	0.037	0.125	0.035	0.035

Historical Dump Station Rates

Calendar Year	Wastes to Anaerobic Dig. ($/Gal.)	% Change	Wastes to Grit Processing ($/Gal.)	% Change	Wastes to Headworks ($/Gal.)	% Change	Minimum Load Charge $/load	% Change
1994	$0.035		$0.105		$0.042			
1995	$0.028	-20.0%	$0.099	-5.7%	$0.025	-40.5%		
1996	$0.031	10.7%	$0.114	15.2%	$0.027	8.0%		
1997	$0.031	0.0%	$0.114	0.0%	$0.032	18.5%		
1998	$0.032	3.2%	$0.114	0.0%	$0.032	0.0%		
1999	$0.037	15.6%	$0.114	0.0%	$0.032	0.0%		
2000	$0.037	0.0%	$0.114	0.0%	$0.032	0.0%		
2001	$0.037	0.0%	$0.114	0.0%	$0.032	0.0%		
2002	$0.037	0.0%	$0.114	0.0%	$0.032	0.0%	$12.00	
2003	$0.037	0.0%	$0.114	0.0%	$0.032	0.0%	$12.00	0.0%
2004	$0.037	0.0%	$0.114	0.0%	$0.032	0.0%	$12.00	0.0%
2005	$0.037	0.0%	$0.114	0.0%	$0.032	0.0%	$12.00	0.0%
2006	$0.037	0.0%	$0.125	9.6%	$0.035	9.4%	$13.00	8.3%
RECOMMENDED DUMP STATION RATES	**2007**	**$0.037**	**0.0%**	**$0.125**	**0.0%**	**$0.035**	**0.0%**	**$13.00**	**0.0%**

TREATMENT COST ALLOCATIONS

(All Costs Based on Projected F.Y. 2004-2005 Budget)

COST ITEM	ANAER. DIG. WASTE % ALLOC.	ANAER. DIG. WASTE COST	GRIT WASTE % ALLOC.	GRIT WASTE COST	PLANT HDWORKS WASTE % ALLOC.	PLANT HDWORKS WASTE COST	EST. ANNUAL COST	AMORTIZATION TERM YRS.	AMORTIZATION TOTAL COST
4. LIQUID WASTE DUMP STATION									
a. Payroll									
1) a) WPC Personnel - Operations MP2 info @ 1.5%	35.0%	9,170	30.0%	7,860	35.0%	9,170	26,200		
b) WPC Personnel - Maintenance MP2 infor @ 1.25%	35.0%	7,700	30.0%	6,600	35.0%	7,700	22,000		
2) Lab Personnel (includes fringe)	70.7%	22,027	11.3%	3,519	18.0%	5,625	31,171		
3) Business Office Expense	80.0%	1,930	10.0%	241	10.0%	241	2,413		
SUBTOTALS	**49.9%**	**$40,827**	**22.3%**	**$18,220**	**27.8%**	**$22,736**	**$81,784**		
b. Operations							$81,784		
1) Est. Total Operations Cost [1]									
a) Supplies Expense @ 7.5% of TSTP	65.2%	13,444	8.8%	1,825	26.0%	5,356	20,625		
b) Electricity, % TSTP: 0.8%	65.2%	1,548	8.8%	210	26.0%	617	2,375		
c) Fleet Maintenance @ .5% Theresa	70.7%	1,659	11.3%	265	18.0%	424	2,347		
d) Disposition of Sludge & Grit	33.4%	12,336	56.6%	20,905	10.0%	3,693	36,934		
2) Est. Credit from Digester Gas Production [3.5%]	0.0%	0	0.0%	0	0.0%	0	0		
3) San. Engr. Lab Expense & Chemicals @ 2.6%	65.2%	3,771	8.8%	512	26.0%	1,502	5,785		
SUBTOTALS	**48.1%**	**$32,757**	**34.8%**	**$23,717**	**17.0%**	**$11,592**	**$68,066**		
c. Capital Outlay									
		0	0.0%	0	0.0%	0			
SUBTOTALS		**$0**		**$0**		**$0**	**$0**		
d. Capital Improvements									
1) FY 04/05	65.2%	$19,555	8.8%	$2,655	26.0%	$7,791	$30,000	20	$600,000
Basement of Grit Facility	65.2%	$19,555	8.8%	$2,655	26.0%	$7,791	$30,000		$600,000
2) Prior Years Major User Revenue Cost									
a) User Revenue Portion of Const., FY 91-92 [2]	100.0%	$5,406		$0	0.0%	$0	$5,406	20	$108,119
	100.0%	$5,406	0.0%	$0	0.0%	$0	$5,406		$108,119
SUBTOTALS	**70.5%**	**$24,960**	**7.5%**	**$2,655**	**22.0%**	**$7,791**	**$35,406**		**$708,119**
LIQUID DUMP STATION TOTALS	**53.2%**	**$98,545**	**24.1%**	**$44,592**	**22.7%**	**$42,119**	**$185,256**		