

FOR INFORMATIONAL PURPOSES ONLY

Groundwater Containment System

Operating Records:

<u>Dates of Operation</u>	<u>Operation period In Months</u>	<u>Annual Costs</u>	<u>Monthly Average</u>
05/01/04 through 04/30/05	12 months	\$ 38,385	\$3199
05/01/05 through 06/30/06	14 months	\$ 64,656	\$4618
07/01/06 through 12/31/07	18 months	\$108,135	\$6007
SUMMARY OF COSTS	44 months	\$211,176	\$4800

Apparent Breakdown:

\$ 84,320 for Labor
 \$126,856 for Expenses
 \$211,176 TOTAL

Monthly average is \$4,800 total per month or approximately \$57,600 per year without monitoring costs (includes \$9,600 electrical per year). The last eighteen months of operation is likely a more accurate calculation of the costs, which indicate an increase in costs per month to \$6007 per month or approximately \$72,084 per year.

Calculations determined upon addition of SE Sump installed in 2006 and run from July 1, 2006 to December 31, 2007. The total amount of water pumped for this period from the recovery system is 40.4 million gallons for an overall average of 2.2 million gallons of water pumped per month. A total of 62,050 pounds of nitrogen was recovered during this period according to records from Shaw. A breakdown of each component of the recovery system is as follows:

	<u>Gallons Pumped Monthly Average</u>	<u>Nitrogen Recovered Monthly Average in Pounds</u>
NW Sump	162,384	1,581
NE Sump	24,979	174
N Sump	60,896	676
S Sump	54,188	463
SE Sump	72,673	530
Recovery Wells	1,868,982	21

Based on this period approximately 1 gallon of contaminated water recovered by the hydraulic containment systems costs 0.0027 cents to pump (approximately 373 gallons per dollar) or 1.6 pounds of nitrogen recovered per dollar.

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Land Application System

Operating Records:

<u>Dates of Operation</u>	<u>Operation period In Months</u>	<u>Annual Costs</u>	<u>Monthly Average</u>
08/01/05 through 08/30/06	13 months	\$ 50,658	\$3896
09/01/06 through 12/31/07	16 months	\$136,559	\$8535
SUMMARY OF COSTS	29 months	\$187,217	\$6456

Apparent Breakdown:

\$ 60,707 for Labor
\$126,510 for Expenses
\$187,217 TOTAL

\$6,456 total per month or approximately \$77,472 per year (includes \$10,000 electrical per year)

During the period of 09/01/2006 through 12/31/2007 a total of 27.8 million gallons of water was land applied and 226,100 pounds of nitrogen. Based on this period approximately 1 gallon of water costs 0.0049 cents to land apply (approximately 203 gallons per dollar) or 1.6 pounds of nitrogen applied per dollar. The average amount of water land applied per month is 14,131 gallons; however, note that 0 gallons are applied during the winter months of December through February so the actual average would be 18,841 gallons per month.

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FIRST PRIORITY – GROUNDWATER – Hydraulic Containment/Remediation

ITEM 1: Installation of one additional recovery well north of PW-04A and south of 15th Street to insure full capture (hydraulic control) of the plume.

\$90,000 completed within a year plus on-going operation and maintenance costs.

These costs were provided by Shaw and are based solely on their calculation detailed on page 146 of the RAP. Costs were recalculated and are based on a March 7, 2008 submittal.

ITEM 2: Continued operation of the Groundwater Containment System and O&M (including monitoring) figured at \$88,000* for first 15 years and \$72,084** for second 15 years. Electric is based on a rate of \$0.071/kw-hour.

\$2,401,260 OM 30 yr (see attachment)
23,274 Pump Replacement TR*
29,121 Pump Replacement RW*
\$2,453,655 Total GWCS OM

* Based on Shaw calculations March 7, 2008

** Based on Actual costs for operation during the last 18 months.

ITEM 3: Continued operation of the Land Application System and O&M figured at \$77,472 ** for 15 years and Shaw's projection of 56,460*) for the remaining 30 years. Electric is based on a rate of \$0.071/kw-hour.

\$2,008,080 OM 30 yr
60,000 Electric Pump Repair*
30,000 Electric Pump*
15,000 Dewatering Pump*
13,500 Dewatering Pump*
70,000 Center Pivot Systems*
100,000 AST Storage Tank*
\$2,296,580 Total LA OM

* Based on Shaw calculations March 7, 2008

** Based on Actual costs for operation during the last 18 months.

**TOTAL COSTS FOR OPERATION, MAINTANENCE AND MONITORING OF THE
HYRDAULIC CONTAINMENT/REMEDATION SYSTEM FOR 30 YEARS**

**\$4,750,235 Total for
Groundwater and Land
Application**

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SECOND PRIORITY – SURFACE WATER – Storm Water Management System

This strategy will include the construction of a new storm water drainage ditch, berm, weir structure, and a detention basin using a pump to facilitate drainage from the detention basin. Contaminated sediments will be removed from the East and West effluent ponds and moved to the Rundown ponds. The East and West effluent ponds will be combined into the detention basin. A pump will facilitate drainage of the detention basin.

ITEM 1: Desludge East and West Effluent Ponds – Activity will include excavation of 74,300 cubic yards and placement of that material in the Rundown Pond. Costs are calculated at \$16.65 per cubic yard.

ITEM 2: Reroute Drainage Channel and Construction of Detention Basin - \$627,339.

ITEM 3: Long-Term Operation and Maintenance of the Detention Basin – Costs are based on \$6,000 for the 30 year life of the project which includes \$3,000 per year for electrical costs at \$0.071/kw-hour.

ITEM 4: NPDES Permit – This includes annual O&M costs for collection of samples, reporting, maintenance of storm water structures, and electrical usage. Costs are based on \$28,700 per year for years 1 – 15 and \$17,220 per year for years 16 – 30.

Costs Associated with the Storm Water Management System*	
Action	Costs
Desludge East & West Effluent Ponds	\$1,237,095 (Total 74,300 cy at \$16.65/cy)
Reroute drainage channel	\$ 627,339
Option A-Original Design w/ 30 years O&M	\$ 180,000 (\$6,000/year for 30 years)
NPDES Permit	\$ 688,800 (30 years)
Maintenance on Remaining Ponds in the Storm Water System (Krehbiel and West Extension). Pump Replacements.	\$ 100,000
Total	\$2,833,234

* All Costs based on Shaw calculations March 7, 2008. Please note that recent increase in diesel costs will likely add to these calculations.

TOTAL COSTS FOR CONSTRUCTION, OPERATION, MAINTANENCE AND MONITORING OF THE STORM WATER MANAGEMENT SYSTEM FOR 30 YEARS

\$2,833,234 Total for Surface Water

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THIRD PRIORITY – LAND USE RESTRICTIONS – Environmental Use Controls

Land use restrictions to restrict certain activities and uses of the property will be required. Some areas will require more restrictions (A, B) than others (C,D,E,F). A site-wide restriction limiting residential zoning and drinking water use will also be required.

Site Wide Restrictions	\$15,000	One-Time Fee**
Restrictions for C, D, E, F	\$15,000	One-Time Fee**
Restrictions for A, B	\$55,000	One-Time Fee**

** Costs based on KDHE's calculations.

TOTAL COSTS FOR LAND USE RESTRICTIONS

\$ 80,000 Total for Land Use Restrictions

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FOURTH PRIORITY – CRS UNIT – Continued Monitoring Until Closure

This task will require additional monitoring until KDHE/BWM concludes the unit can be clean-closed under RCRA authority. There is documentation of current costs for conducting the monitoring and report writing for this unit. The actual costs total \$20,000 per year. The costs do not include major repairs or equipment replacement. These costs are not based on doing anything else at this unit except monitoring for 15 additional years.

\$300,000 Monitoring and reporting based on \$20,000 per year for 15 years.

\$ 30,000 Repair and equipment costs based on \$2,000 per year for 15 years.

* All Costs based on Shaw calculations in the RAP.

TOTAL COSTS FOR CRS UNIT

\$ 330,000 Total for CRS Unit

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SUMMARY OF MINIMUM REQUIREMENTS: Minimum requirements for remedial action at the Farmland-Lawrence site include Priorities 1 through 4; however, there are other remedial alternatives that KDHE would normally be recommended to reduce the overall time to achieve minimum objectives. KDHE would suggest either soil excavation or alternative treatment of elevated nitrate in Area A – the Hill and Area B – the Ponds. In addition to the remediation of environmental media there is a large amount of on-site structures that will have to be demolished. Based on the RAP there remains some uncertainty regarding the newly identified landfill area. Additional investigation would be recommended.

MINIMUM REQUIREMENTS:

\$4,750,235 Total for Groundwater – Priority 1
\$2,833,234 Total for Surface Water – Priority 2
\$ 80,000 Total for Land Use Restrictions – Priority 3
\$ 330,000 Total for CRS Unit – Priority 4
\$ 100,000 KDHE Oversight Costs
\$8,093,469 – MINIMUM REQUIREMENTS FOR REMEDIATION

RECOMMENDED ADDITIONAL REMEDIAL ACTIONS:

\$ 30,000 Additional Investigation of New Landfill Area**
\$ 224,775 Excavation of surface soils in the Hill and transport to existing ponds (based on estimations of \$16.65 per cubic yard and 13,500 cubic yards).*
\$ 5,828 Excavation of soils in the Dam Pond and transport to existing ponds (based on estimations of \$16.65 per cubic yard and 350 cubic yards).*
\$ 21,645 Excavation of re-contaminated soil in the Central Pond area and transport to existing ponds (based on estimations of \$16.65 per cubic yard and 2500 cubic yards).*
\$2,000,000 Demolition Costs (these costs are very rough estimate) *** Administrative Funds
\$2,282,248

RECOMMENDED LONG-TERM REMEDIAL ACTIONS

\$3,925,000 Pond Decommissioning and Capping (costs based on RAP)*
\$ 490,000 Cap Maintenance (costs based on RAP)*
\$4,415,000

\$6,697,248 – TOTAL Recommended Additional Actions

FINANCIAL ASSURANCE REQUIREMENTS:

\$8,375,717 plus 20 percent contingency (\$1,675,143) totals \$10,050,860 (without Demolition or Long-Term Remedial Action Costs.

\$12,790,717 plus 20 percent contingency (\$2,558,143) totals \$15,348,860 without Demolition.

* - Costs based on Shaw

** - Costs based on KDHE

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NOTES

Calculations are based on a 30-year operational life of the systems and no source reduction (i.e., soil removal, pond closure, and etc. could likely decrease the operational life of the system).

Calculations are based on a zero interest scenario for conservative purposes (i.e., investment interest equals inflation).

Calculations are based on actual costs and cost estimates from early 2008; since that time fuel costs have increased by 25 percent.

Calculations are based on an environmental consultant performing the work; potential buyers could reduce the costs through various in-kind operations.

Calculations do not take into consideration complete replacement of equipment should a catastrophic event were to occur.

LONG TERM MONITORING AND O&M

Year	Annual Cost	Discount Rate+0.6	NPW
1	\$88,000	0.99404	\$87,475
2	\$88,000	0.98811	\$86,953
3	\$88,000	0.98221	\$86,435
4	\$88,000	0.97636	\$85,919
5	\$88,000	0.97053	\$85,407
6	\$88,000	0.96474	\$84,897
7	\$88,000	0.95899	\$84,391
8	\$88,000	0.95327	\$83,888
9	\$88,000	0.94758	\$83,387
10	\$88,000	0.94193	\$82,890
11	\$88,000	0.93632	\$82,396
12	\$88,000	0.93073	\$81,904
13	\$88,000	0.92518	\$81,416
14	\$88,000	0.91966	\$80,930
15	\$88,000	0.91418	\$80,448
16	\$72,084	0.90872	\$65,505
17	\$72,084	0.90330	\$65,114
18	\$72,084	0.89792	\$64,725
19	\$72,084	0.89256	\$64,339
20	\$72,084	0.88724	\$63,956
21	\$72,084	0.88195	\$63,574
22	\$72,084	0.87669	\$63,195
23	\$72,084	0.87146	\$62,818
24	\$72,084	0.86626	\$62,444
25	\$72,084	0.86109	\$62,071
26	\$72,084	0.85596	\$61,701
27	\$72,084	0.85085	\$61,333
28	\$72,084	0.84578	\$60,967
29	\$72,084	0.84073	\$60,603
30	\$72,084	0.83572	\$60,242
			\$2,201,325

Year	Annual Cost	Discount Rate 0%	NPW
1	\$88,000	1.00000	\$88,000
2	\$88,000	1.00000	\$88,000
3	\$88,000	1.00000	\$88,000
4	\$88,000	1.00000	\$88,000
5	\$88,000	1.00000	\$88,000
6	\$88,000	1.00000	\$88,000
7	\$88,000	1.00000	\$88,000
8	\$88,000	1.00000	\$88,000
9	\$88,000	1.00000	\$88,000
10	\$88,000	1.00000	\$88,000
11	\$88,000	1.00000	\$88,000
12	\$88,000	1.00000	\$88,000
13	\$88,000	1.00000	\$88,000
14	\$88,000	1.00000	\$88,000
15	\$88,000	1.00000	\$88,000
16	\$72,084	1.00000	\$72,084
17	\$72,084	1.00000	\$72,084
18	\$72,084	1.00000	\$72,084
19	\$72,084	1.00000	\$72,084
20	\$72,084	1.00000	\$72,084
21	\$72,084	1.00000	\$72,084
22	\$72,084	1.00000	\$72,084
23	\$72,084	1.00000	\$72,084
24	\$72,084	1.00000	\$72,084
25	\$72,084	1.00000	\$72,084
26	\$72,084	1.00000	\$72,084
27	\$72,084	1.00000	\$72,084
28	\$72,084	1.00000	\$72,084
29	\$72,084	1.00000	\$72,084
30	\$72,084	1.00000	\$72,084
			\$2,401,260

Year	Annual Cost	Discount Rate(-0.6)	NPW
1	\$88,000	1.00604	\$88,531
2	\$88,000	1.01211	\$89,066
3	\$88,000	1.01822	\$89,603
4	\$88,000	1.02436	\$90,144
5	\$88,000	1.03055	\$90,688
6	\$88,000	1.03677	\$91,236
7	\$88,000	1.04303	\$91,786
8	\$88,000	1.04932	\$92,340
9	\$88,000	1.05566	\$92,898
10	\$88,000	1.06203	\$93,459
11	\$88,000	1.06844	\$94,023
12	\$88,000	1.07489	\$94,590
13	\$88,000	1.08138	\$95,161
14	\$88,000	1.08790	\$95,736
15	\$88,000	1.09447	\$96,313
16	\$72,084	1.10108	\$79,370
17	\$72,084	1.10772	\$79,849
18	\$72,084	1.11441	\$80,331
19	\$72,084	1.12114	\$80,816
20	\$72,084	1.12790	\$81,304
21	\$72,084	1.13471	\$81,795
22	\$72,084	1.14156	\$82,288
23	\$72,084	1.14845	\$82,785
24	\$72,084	1.15539	\$83,285
25	\$72,084	1.16236	\$83,788
26	\$72,084	1.16938	\$84,293
27	\$72,084	1.17643	\$84,802
28	\$72,084	1.18354	\$85,314
29	\$72,084	1.19068	\$85,829
30	\$72,084	1.19787	\$86,347
			\$2,627,770

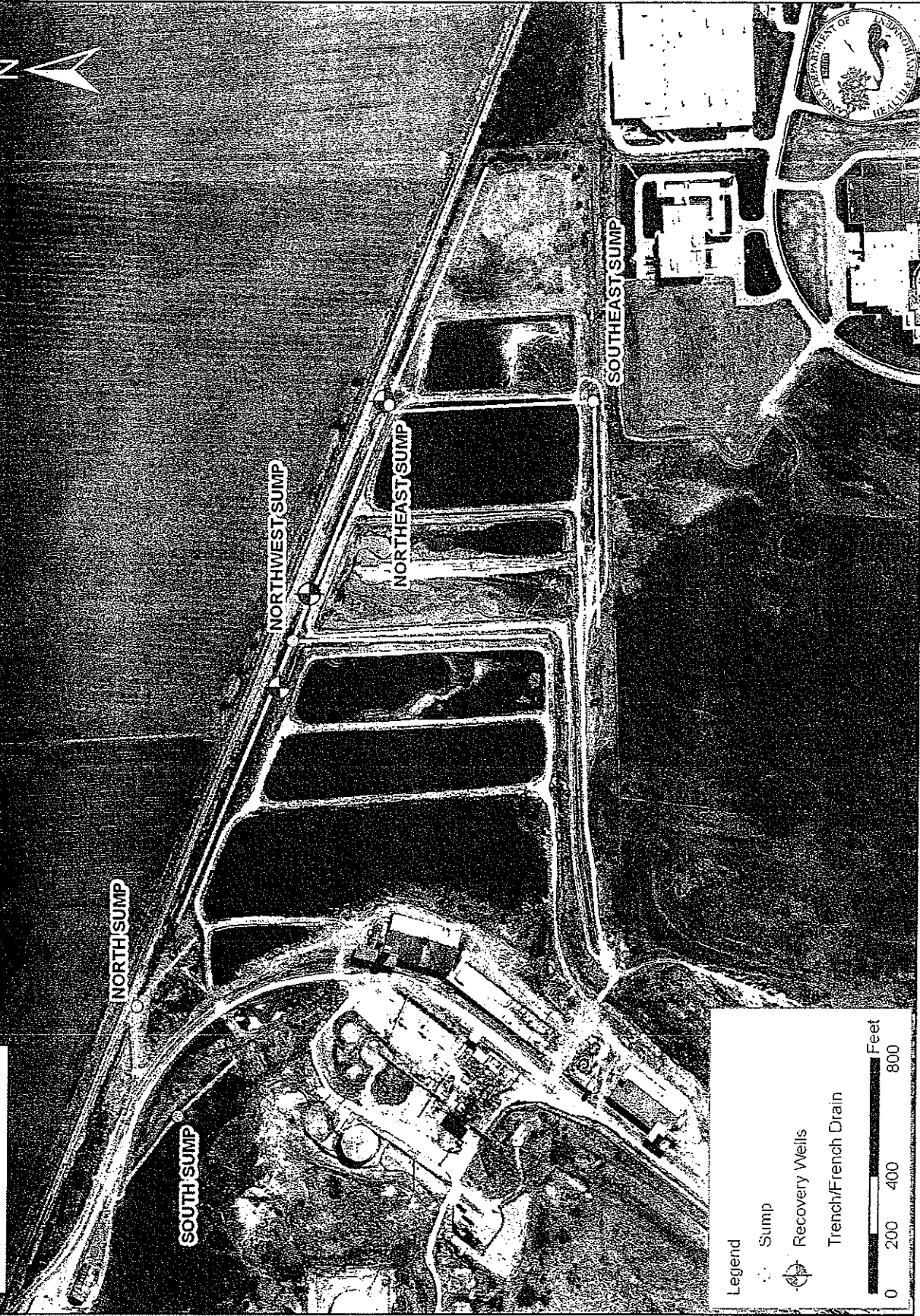
Land Application

Year	Annual Cost	Discount Rate+0.6	NPW
1	\$77,472	0.99404	\$77,010
2	\$77,472	0.98811	\$76,551
3	\$77,472	0.98221	\$76,094
4	\$77,472	0.97636	\$75,640
5	\$77,472	0.97053	\$75,189
6	\$77,472	0.96474	\$74,741
7	\$77,472	0.95899	\$74,295
8	\$77,472	0.95327	\$73,852
9	\$77,472	0.94758	\$73,411
10	\$77,472	0.94193	\$72,973
11	\$77,472	0.93632	\$72,538
12	\$77,472	0.93073	\$72,106
13	\$77,472	0.92518	\$71,676
14	\$77,472	0.91966	\$71,248
15	\$77,472	0.91418	\$70,823
16	\$56,400	0.90872	\$51,252
17	\$56,400	0.90330	\$50,846
18	\$56,400	0.89792	\$50,843
19	\$56,400	0.89256	\$50,340
20	\$56,400	0.88724	\$50,040
21	\$56,400	0.88195	\$49,742
22	\$56,400	0.87669	\$49,445
23	\$56,400	0.87146	\$49,150
24	\$56,400	0.86626	\$48,857
25	\$56,400	0.86109	\$48,566
26	\$56,400	0.85596	\$48,276
27	\$56,400	0.85085	\$47,988
28	\$56,400	0.84578	\$47,702
29	\$56,400	0.84073	\$47,417
30	\$56,400	0.83572	\$47,135
			\$1,845,646

Year	Annual Cost	Discount Rate 0%	NPW
1	\$77,472	1.00000	\$77,472
2	\$77,472	1.00000	\$77,472
3	\$77,472	1.00000	\$77,472
4	\$77,472	1.00000	\$77,472
5	\$77,472	1.00000	\$77,472
6	\$77,472	1.00000	\$77,472
7	\$77,472	1.00000	\$77,472
8	\$77,472	1.00000	\$77,472
9	\$77,472	1.00000	\$77,472
10	\$77,472	1.00000	\$77,472
11	\$77,472	1.00000	\$77,472
12	\$77,472	1.00000	\$77,472
13	\$77,472	1.00000	\$77,472
14	\$77,472	1.00000	\$77,472
15	\$77,472	1.00000	\$77,472
16	\$56,400	1.00000	\$56,400
17	\$56,400	1.00000	\$56,400
18	\$56,400	1.00000	\$56,400
19	\$56,400	1.00000	\$56,400
20	\$56,400	1.00000	\$56,400
21	\$56,400	1.00000	\$56,400
22	\$56,400	1.00000	\$56,400
23	\$56,400	1.00000	\$56,400
24	\$56,400	1.00000	\$56,400
25	\$56,400	1.00000	\$56,400
26	\$56,400	1.00000	\$56,400
27	\$56,400	1.00000	\$56,400
28	\$56,400	1.00000	\$56,400
29	\$56,400	1.00000	\$56,400
30	\$56,400	1.00000	\$56,400
			\$2,008,080

Year	Annual Cost	Discount Rate(-0.6)	NPW
1	\$77,472	1.00604	\$77,940
2	\$77,472	1.01211	\$78,410
3	\$77,472	1.01822	\$78,883
4	\$77,472	1.02436	\$79,360
5	\$77,472	1.03055	\$79,839
6	\$77,472	1.03677	\$80,321
7	\$77,472	1.04303	\$80,805
8	\$77,472	1.04932	\$81,293
9	\$77,472	1.05566	\$81,784
10	\$77,472	1.06203	\$82,277
11	\$77,472	1.06844	\$82,774
12	\$77,472	1.07489	\$83,274
13	\$77,472	1.08138	\$83,776
14	\$77,472	1.08790	\$84,282
15	\$77,472	1.09447	\$84,791
16	\$56,400	1.10108	\$62,101
17	\$56,400	1.10772	\$62,476
18	\$56,400	1.11441	\$62,853
19	\$56,400	1.12114	\$63,232
20	\$56,400	1.12790	\$63,614
21	\$56,400	1.13471	\$63,998
22	\$56,400	1.14156	\$64,384
23	\$56,400	1.14845	\$64,773
24	\$56,400	1.15539	\$65,164
25	\$56,400	1.16236	\$65,557
26	\$56,400	1.16938	\$65,953
27	\$56,400	1.17643	\$66,351
28	\$56,400	1.18354	\$66,751
29	\$56,400	1.19068	\$67,154
30	\$56,400	1.19787	\$67,560
			\$2,191,728

Farmland Lawrence



NORTH SUMP

SOUTH SUMP

NORTHWEST SUMP

NORTHEAST SUMP

SOUTHEAST SUMP

Legend

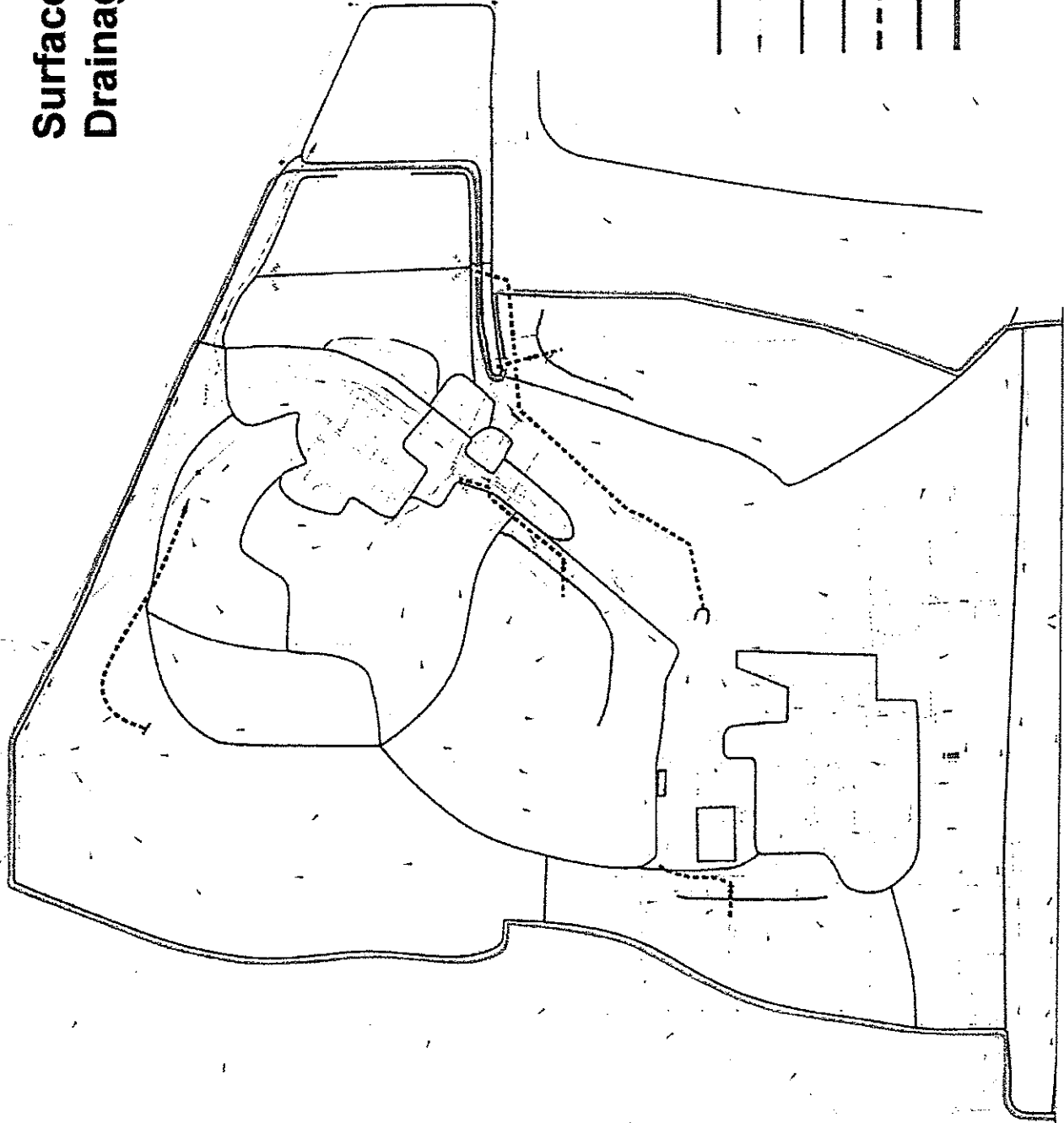
Sump

Recovery Wells

Trench/French Drain



Surface Water Drainage Map



LEGEND

- Drainage Area Boundary
- - - Surface Water Flow
- Property Line
- Area Outline
- Piping
- Dam's
- Border of Area that Drains to the Plant outflow, Excluding Zero Discharge Areas