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June 26, 2009

David Crumpacker
City of Girard
120 N. Ozark St.
Girard, KS 66743

Dear David;

As you requested, I conducted a sludge profile of your systems wastewater stabilization ponds on June 24, 2009. The enclosed report summarizes my findings. Also included is the previous sludge profile KRWA conducted.

We took 54 measurements in the North (primary) cell. The average sludge depth in this cell was 14.33 inches. This cell was being operated at an average depth of 70.8 inches. The bottom of your systems wastewater stabilization cells is very uneven, so I averaged the operating depth. The loss of capacity due to sludge accumulation is 20.24 percent. The depth of heavy sludge is about 4-6 inches, with a lot of grit and heavy solids near the inlet pipe.

In the second cell (west) we took 40 measurements. This cell was being operated at an average depth of 67.5 inches. The average sludge depth in this cell was 9.15 inches. The loss of capacity in this cell was 13.56 percent. This cell also had only 4-6 inches of heavy sludge.

We took 26 measurements in the final (discharging) cell. This cell was being operated at an average depth of 10.43 feet. The average sludge depth in this cell was 15.08 inches. Loss of capacity in this cell was 12.56 percent. There was only about four inches of the heavier thick sludge in this cell.

Sludge removal may be needed in the primary cell in the future. I do not believe removal is warranted in cells 2 and 3 given the limited amount of heavy sludge present. Sludge removal is usually only necessary when a system fails to meet discharge permit limits or when the system has constant odor problems, which is when approximately 25 percent of lagoon capacity is lost due to sludge accumulation. Other factors include system design and capacity. Sludge removal project can be a significant expense and should be budgeted for.

Excessive inflow and infiltration (I&I) during rain events can cause short circuiting, which in the lagoon system means improperly treated waste. This is due to the reduction of time for treatment. As you know, most lagoon systems are designed for 120 days of detention at a given flow rate such as yours for 0.325 MGD. When I&I increases in the collection system, it decreases detention time in the treatment process, making for probable failure of discharge permit limits. I believe that correcting I&I is the best place to spend funds first. Then you may want to look at treatment facility, such as sludge removal. Please call if KRWA can be of any further help or provide additional information.

Sincerely,

Charlie Schwindamann
Wastewater Tech

CS: ejr
Enclosure
C: Maurice Harley, Mayor
Gary Emry, City Administrator
Richard Thomas, KDHE, Chanute

TOP IS NORTH

CELL #1

8"	8"	8"	8"	10"	10"	8"	10"	12"	20"	20"	24"	36"	36"	42"	24"	20"	10"	10"	10"	10"	8"
	10"	8"	8"		10"	8"	10"		10"	10"	10"		10"	8"	8"		8"	8"			
	12"	16"	24"	16"		14"	14"	16"	12"		24"	18"	20"	12"		14"	14"	12"	12"	16"	20"

6"	CELL #2	
6"	8"	8"
8"	10"	10"
8"	6"	8"
8"	8"	8"
10"	8"	10"
10"		8"
8"	10"	10"
10"	6"	8"
10"	8"	10"
10"	8"	12"
10"	10"	12"
10"	10"	12"
10"	12"	12"
10"		

CELL #3		14"
	16"	12"
	18"	10"
	18"	14"
		14"
	16"	12"
	16"	14"
	14"	18"
		14"
	14"	14"
	16"	16"
	18"	14"
	18"	14"
	20"	12"
		16"