

Exhibit A
Lift Station Operation, Maintenance Replacement Cost Estimate
Eagle Cliff South Sections 2 through 7 and
Cobblestone West Section 2

The Engineering Report provided by the developer provided information to allow calculation the approximate cost to operate, maintain and replace capital equipment for the life of the proposed lift station.						
Proposed Lift Station Sewer Service Area: The table below includes the expected number of residential units as well as the number of acres of commercial, institutional and industrial. Based on this data, the estimated population equivalent to be served by the lift station is calculated. The estimated average daily wastewater flow (ADF) in gallons per day (GPD) and peak hourly flow in GPD then calculated utilizing standards for per capita ADF acceptable to the City of Norman.						
	Eagle Cliff 2 to 6	Cobblestone	Eagle Cliff 7	Commercial	Institutional	
	<u>Lots</u>	<u>Lots</u>	<u>Lots</u>	<u>Acres</u>	<u>Acres</u>	<u>Total</u>
	200	21	38	0	0	
Population Equivalent Per Category	2.55	2.55	2.55	5	10	
Estimated Population	510	54	97	-	-	660
Per Capita average daily wastewater flow (ADF)	125	125	125	125	125	
Estimated ADF in gallons per day	63,750	6,694	12,113	-	-	82,556
Estimated peak hourly flow in GPD	255,000	26,775	48,450	-	-	330,225
Peaking Factor	4.0					
The Engineering Report provided by the developer provided drawings showing the location of the proposed lift station and force main allow the pumping head to be determined.						
HP = ((GPM) x (TDH)) / ((3960) x (0.50)) where pump efficiency is assumed to be 50% (unless otherwise approved). Check if pump of estimated GPM and TDH is available; adjust HP as required.						
	<u>GPM</u>	<u>TDH</u>	<u>Efficiency</u>	<u>HP</u>		
	180	54	40%	6.14		
Estimate average annual electrical cost						
1. Pump time (hours per day) = ((ADF in GPD) x 24) / (1440 x (Pump Capacity in GPM))						
		<u>Pumping</u>	<u>Pumping</u>			
	<u>ADF</u>	<u>Capacity</u>	<u>Hours/day</u>			
	82,556	180	7.64			
2. kilowatt-hours (kWh) = (HP) x 0.746 x (pump time in hours per day) x 365						
		<u>Pumping</u>	<u>Kwh Per</u>	<u>Kwh Per</u>		
	<u>HP</u>	<u>Hours/Day</u>	<u>Day</u>	<u>Year</u>		
	6.14	7.64	34.99	12,772		
3. Annual Electrical Cost = kWh per year x \$0.08 kWh						
	<u>Kwh Per</u>	<u>Cost per</u>	<u>Cost per</u>			
	<u>Year</u>	<u>Kwh</u>	<u>Year</u>			
	12,772	0.08	\$1,021.78			
Estimate annual lift station and force main OM&R cost. Provide approximate cost for lift station and appurtenances. Include wetwell, pumps, discharge piping and valves, electrical controls, flow metering, force main quick-connect coupling, valve vault, fittings and valves, fencing, all weather access road, force main, air release valves and vaults, etc. Assume annual replacement cost is 5% of original construction cost.						
Annual OM&R Cost = 0.05 x Capital Cost						
	<u>Lift Station</u>	<u>Force Main</u>	<u>Force Main</u>	<u>Force Main</u>	<u>Total</u>	<u>Annual</u>
	<u>Cost</u>	<u>Length</u>	<u>Per Foot</u>	<u>Cost</u>	<u>Cost</u>	<u>Cost</u>
Note: Actual costs from 03/11/05 bid inserted	\$118,722.00	2,000	\$17.10	\$34,200	\$152,922	\$7,646
Calculate Total Monthly OM&R Cost: Monthly OM&R Cost = (Annual Electrical Cost + Annual OM&R Cost) / 12						
			<u>Total</u>	<u>Total</u>		
	<u>Electrical</u>	<u>OM&R</u>	<u>Annual</u>	<u>Monthly</u>		
	<u>Cost</u>	<u>Cost</u>	<u>Cost</u>	<u>Cost</u>		
	\$1,021.78	\$7,646.10	\$8,667.88	\$722.32		
Calculate Lift Station Fee: The fee will be calculated on a residential lot basis as well as a per capita basis to accommodate other zoning classifications such as commercial, institutional, industrial, etc.						
Monthly Per Capita Fee = ((Monthly OM&R Cost) x Per Capita ADF) / ((ADF) x 30.417 days per month))						
Monthly Residential Fee = where the average number of persons per household is 2.55 as per 2010 Census.						
	<u>Total Annual</u>	<u>Monthly</u>	<u>Monthly</u>			
	<u>Monthly</u>	<u>Cost Per</u>	<u>Cost Per</u>			
	<u>Cost</u>	<u>Person</u>	<u>Household</u>			
	\$722.32	\$1.09	\$2.79			
CPI Inflation 2006 to 06/30/19 (256.1/199.8=28.18%)	\$925.30	\$1.40	\$3.58			