



[CITY OF EDMONTON] A/C BOILER

Customer: PTRHTF20202	System Information	Sample Information
CITY OF EDMONTON 14402 114AVE EDMONTON, AB T5M 2Y9 Canada Attn: Chris Lawrence Tel: E-Mail: chris.laerence@edmonton.ca	System Volume: 2000 ltr Bulk Operating Temp: 350F / 177C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make:	Lab No: 02234291 Analyst: Gordon Susinski Sample Date: 08/09/18 Received Date: 08/17/18 Completed: 08/29/18 To discuss this report contact Gordon Susinski at (587)582-4118

Recommendation: The acid number is abnormally high and is a measure of the acidic compounds in the oil. Increases in the acid number are likely due to the formation of oxidation by products in the oil. This value will increase exponentially once the process begins. Tendencies are for sludge and deposits to increase and corrosion to occur if the fluid continues to be utilized beyond its limits. Oxidation is a reaction of hydrocarbons in the oil with oxygen from air, forming various species including weak organic acids. Oxidation is accelerated by contaminants such as wear debris, dust, water, metals, and high temperatures. Changes in the fluid will be seen as discoloration, increased viscosity, formation of varnish, increase in acidity and finally the formation of heavy insoluble compounds. The GCD results are not as expected. We suggest taking another sample, to confirm the samples results.

Comments: (GCD) 90% Distillation Point is severely high. Visc @ 40°C is severely high. Acid Number (AN) is abnormally high. (GCD) 10% Distillation Point is marginally high. (GCD) 50% Distillation Point is marginally high.

Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
08/09/18	08/17/18	5y	LOWER SYS DRAIN VALV	453 / 234	5.6	59.4	0.520	0.175	748 / 398	852 / 456	976 / 524	0.00
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00



