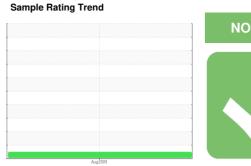


# **OIL ANALYSIS REPORT**

# **CITY OF BRANDON** STERLING #3 IMPELLOE DRIVE

Gearbox

{not provided} (--- GAL)



# **NORMAL**

# DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor. Little or no information is provided as to the component and lubricant being tested.

Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment.

### Wear

All component wear rates are normal.

## Contamination

There is no indication of any contamination in the component.

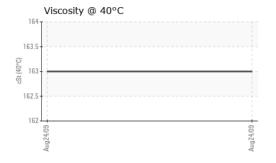
### **Fluid Condition**

The condition of the oil is acceptable for the time in service.

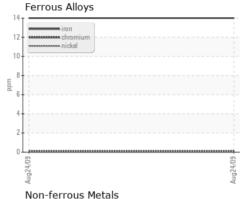
SAMPLE INFORMATION   method   limit/base   current   history1   history2			·	ı	Aug2009		
Sample Date   Client Info   24 Aug 2009	SAMPLE INFORM	1ATION	method	limit/base	current	history1	history2
Sample Date   Client Info   24 Aug 2009	Sample Number		Client Info		LE0000312		
Machine Age         mths         Client Info         24			Client Info		24 Aug 2009		
Oil Age         mths         Client Info         24	•	mths			ŭ		
CONTAMINATION		mths	Client Info		24		
CONTAMINATION         method         limit/base         current         history1         history2           Water         WC Method         NEG             WEAR METALS         method         limit/base         current         history1         history2           Iron         ASTM DS185(m)         14             Chromium         ppm         ASTM DS185(m)         0            Nickel         ppm         ASTM DS185(m)         0            Nickel         ppm         ASTM DS185(m)         0            Silver         ppm         ASTM DS185(m)         0            Aluminum         ppm         ASTM DS185(m)         <1            Lead         ppm         ASTM DS185(m)         <1            Copper         ppm         ASTM DS185(m)         <1            Tin         ppm         ASTM DS185(m)         0            Vanadium         ppm         ASTM DS185(m)         0            ADITIVES         method         limit/base         current         history1         history2           Boron <th>Oil Changed</th> <th></th> <th>Client Info</th> <th></th> <th>Not Changd</th> <th></th> <th></th>	Oil Changed		Client Info		Not Changd		
Water         WC Method         NEG            WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185(m)         14             Nickel         ppm         ASTM D5185(m)         0             Nickel         ppm         ASTM D5185(m)         0             Silver         ppm         ASTM D5185(m)         0             Aluminum         ppm         ASTM D5185(m)         <1             Lead         ppm         ASTM D5185(m)         <1             Copper         ppm         ASTM D5185(m)         <1             Tin         ppm         ASTM D5185(m)         <1             Vanadium         ppm         ASTM D5185(m)         0             Boron         ppm         ASTM D5185(m)         0             Barium         ppm         ASTM D5185(m)         0             Barium	Sample Status				NORMAL		
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185(m)         14	CONTAMINATION	J	method	limit/base	current	history1	history2
Iron	Water		WC Method		NEG		
Chromium	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185(m)		14		
Titanium	Chromium		ASTM D5185(m)		<1		
Titanium	Nickel		ASTM D5185(m)		0		
Aluminum	Titanium		ASTM D5185(m)		0		
Aluminum	Silver		ASTM D5185(m)		0		
Copper         ppm         ASTM D5185(m)         <1             Tin         ppm         ASTM D5185(m)         <1	Aluminum	ppm	ASTM D5185(m)		<1		
Tin	Lead	ppm	ASTM D5185(m)		<1		
Namedium	Copper	ppm	ASTM D5185(m)		<1		
Boron	Tin	ppm	ASTM D5185(m)		<1		
Boron	Vanadium	ppm	ASTM D5185(m)		0		
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185(m)         0             Manganese         ppm         ASTM D5185(m)         <1	Boron	ppm	ASTM D5185(m)		11		
Manganese         ppm         ASTM D5185(m)         <1             Magnesium         ppm         ASTM D5185(m)         <1	Barium	ppm	ASTM D5185(m)		0		
Magnesium         ppm         ASTM D5185(m)         <1             Calcium         ppm         ASTM D5185(m)         111             Phosphorus         ppm         ASTM D5185(m)         691             Zinc         ppm         ASTM D5185(m)         5             Sulfur         ppm         ASTM D5185(m)         768             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         54             Sodium         ppm         ASTM D5185(m)         <1	Molybdenum	ppm	ASTM D5185(m)		0		
Calcium         ppm         ASTM D5185(m)         11             Phosphorus         ppm         ASTM D5185(m)         691             Zinc         ppm         ASTM D5185(m)         5             Sulfur         ppm         ASTM D5185(m)         768             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         <1             Sodium         ppm         ASTM D5185(m)         <1             Potassium         ppm         ASTM D5185(m)         <1             VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         Visual*         NONE         NONE             Yellow Metal         scalar         Visual*         NONE         NONE             Precipitate         scalar         Visual*         NONE         NONE             Silt	Manganese	ppm	ASTM D5185(m)		<1		
Phosphorus         ppm         ASTM D5185(m)         691             Zinc         ppm         ASTM D5185(m)         5             Sulfur         ppm         ASTM D5185(m)         768             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         <1             Sodium         ppm         ASTM D5185(m)         <1             Potassium         ppm         ASTM D5185(m)         <1             VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         Visual*         NONE         NONE             Yellow Metal         scalar         Visual*	Magnesium	ppm	ASTM D5185(m)		<1		
Zinc         ppm         ASTM D5185(m)         5             Sulfur         ppm         ASTM D5185(m)         768             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         54             Sodium         ppm         ASTM D5185(m)         <1             Potassium         ppm         ASTM D5185(m)         <1             VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         Visual*         NONE         NONE             Yellow Metal         scalar         Visual*         NONE         NONE             Precipitate         scalar         Visual*         NONE         NONE             Silt         scalar         Visual*         NONE         NONE             Debris         scalar         Visual*         NONE         NONE	Calcium	ppm	ASTM D5185(m)		11		
Sulfur         ppm         ASTM D5185(m)         768             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         54             Sodium         ppm         ASTM D5185(m)         <1             Potassium         ppm         ASTM D5185(m)         <1             VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         Visual*         NONE         NONE             Yellow Metal         scalar         Visual*         NONE         NONE             Precipitate         scalar         Visual*         NONE         NONE             Silt         scalar         Visual*         NONE         NONE             Debris         scalar         Visual*         NONE         NONE             Sand/Dirt         scalar         Visual*         NORML         NORML	Phosphorus	ppm	ASTM D5185(m)		691		
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         54             Sodium         ppm         ASTM D5185(m)         <1             Potassium         ppm         ASTM D5185(m)         <1             VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         Visual*         NONE         NONE             Yellow Metal         scalar         Visual*         NONE         NONE             Precipitate         scalar         Visual*         NONE         NONE             Silt         scalar         Visual*         NONE         NONE             Debris         scalar         Visual*         NONE         NONE             Sand/Dirt         scalar         Visual*         NORML         NORML             Appearance         scalar         Visual*         NORML <td< th=""><th>Zinc</th><th>ppm</th><th>ASTM D5185(m)</th><th></th><th>5</th><th></th><th></th></td<>	Zinc	ppm	ASTM D5185(m)		5		
Silicon         ppm         ASTM D5185(m)         54             Sodium         ppm         ASTM D5185(m)         <1             Potassium         ppm         ASTM D5185(m)         <1             VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         Visual*         NONE         NONE             Yellow Metal         scalar         Visual*         NONE         NONE             Precipitate         scalar         Visual*         NONE         NONE             Silt         scalar         Visual*         NONE         NONE             Debris         scalar         Visual*         NONE         VLITE             Sand/Dirt         scalar         Visual*         NORML         NORML             Appearance         scalar         Visual*         NORML         NORML             Codor         scalar         Visual*         NORML         NORML <th>Sulfur</th> <th>ppm</th> <th>ASTM D5185(m)</th> <th></th> <th>768</th> <th></th> <th></th>	Sulfur	ppm	ASTM D5185(m)		768		
Sodium         ppm         ASTM D5185(m)         <1	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185(m)         <1             VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         Visual*         NONE         NONE             Yellow Metal         scalar         Visual*         NONE         NONE             Precipitate         scalar         Visual*         NONE         NONE             Silt         scalar         Visual*         NONE         NONE             Debris         scalar         Visual*         NONE         VLITE             Sand/Dirt         scalar         Visual*         NORML         NORML             Appearance         scalar         Visual*         NORML         NORML             Godor         scalar         Visual*         NORML         NORML             Emulsified Water         scalar         Visual*         NORML         NORML	Silicon	ppm	ASTM D5185(m)		54		
VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         Visual*         NONE         NONE             Yellow Metal         scalar         Visual*         NONE         NONE             Precipitate         scalar         Visual*         NONE         NONE             Silt         scalar         Visual*         NONE         NONE             Debris         scalar         Visual*         NONE         VLITE             Sand/Dirt         scalar         Visual*         NORML         NORML             Appearance         scalar         Visual*         NORML         NORML             Codor         scalar         Visual*         NORML         NORML             Emulsified Water         scalar         Visual*         NEG	Sodium	ppm	ASTM D5185(m)		<1		
White Metal         scalar         Visual*         NONE         NONE             Yellow Metal         scalar         Visual*         NONE         NONE             Precipitate         scalar         Visual*         NONE         NONE             Silt         scalar         Visual*         NONE         NONE             Debris         scalar         Visual*         NONE         VLITE             Sand/Dirt         scalar         Visual*         NONE         NORML             Appearance         scalar         Visual*         NORML         NORML             Odor         scalar         Visual*         NORML         NORML             Emulsified Water         scalar         Visual*         NEG	Potassium	ppm	ASTM D5185(m)		<1		
Yellow Metal         scalar         Visual*         NONE         NONE             Precipitate         scalar         Visual*         NONE         NONE             Silt         scalar         Visual*         NONE         NONE             Debris         scalar         Visual*         NONE         VLITE             Sand/Dirt         scalar         Visual*         NONE         NONE             Appearance         scalar         Visual*         NORML         NORML             Odor         scalar         Visual*         NORML         NORML             Emulsified Water         scalar         Visual*         NEG	VISUAL		method	limit/base	current	history1	history2
Precipitate         scalar         Visual*         NONE         NONE             Silt         scalar         Visual*         NONE         NONE             Debris         scalar         Visual*         NONE         VLITE             Sand/Dirt         scalar         Visual*         NONE         NONE             Appearance         scalar         Visual*         NORML         NORML             Odor         scalar         Visual*         NORML         NORML             Emulsified Water         scalar         Visual*         NEG	White Metal	scalar	Visual*	NONE	NONE		
Silt         scalar         Visual*         NONE         NONE             Debris         scalar         Visual*         NONE         VLITE             Sand/Dirt         scalar         Visual*         NONE         NONE             Appearance         scalar         Visual*         NORML         NORML             Odor         scalar         Visual*         NORML         NORML             Emulsified Water         scalar         Visual*         NEG	Yellow Metal	scalar	Visual*	NONE	NONE		
Debris         scalar         Visual*         NONE         VLITE             Sand/Dirt         scalar         Visual*         NONE         NONE             Appearance         scalar         Visual*         NORML         NORML             Odor         scalar         Visual*         NORML         NORML             Emulsified Water         scalar         Visual*         NEG	Precipitate	scalar	Visual*		NONE		
Sand/Dirt         scalar         Visual*         NONE         NONE             Appearance         scalar         Visual*         NORML             Odor         scalar         Visual*         NORML         NORML            Emulsified Water         scalar         Visual*         NEG	Silt	scalar	Visual*	NONE	NONE		
Appearance scalar Visual* NORML NORML COdor scalar Visual* NORML NORML CEMUIsified Water scalar Visual* NEG	Debris	scalar	Visual*	NONE	VLITE		
Odor scalar Visual* NORML Emulsified Water scalar Visual* NEG	Sand/Dirt	scalar	Visual*	NONE	NONE		
Emulsified Water scalar Visual* NEG	Appearance	scalar	Visual*	NORML	NORML		
	Odor	scalar	Visual*	NORML	NORML		
Free Water scalar Visual* NEG	<b>Emulsified Water</b>	scalar	Visual*		NEG		
	Free Water	scalar	Visual*		NEG		



# **OIL ANALYSIS REPORT**







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Viscosity @ 40°C	
164 T	
163.8	
163.6	
163.4	
ဥ163.2	
(c) 163.2 0) 163 73 163	-
8 162.8	
162.6	
162.4	
162.2	
162	
4/09	4/09
Aug24,09	Aug24/09



CALA ISO 17025:2017 Accredited Laboratory

Laboratory

**Sample No.** : LE0000312 Lab Number : 01557736 Unique Number : 2964051 Test Package : IND 1

To discuss this sample report, contact Customer Service at 1-800-268-2131.

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 LUBRICATION ENGINEERS OF CANADA LTD Received : 31 Aug 2009 **Tested** : 31 Aug 2009

Diagnosed

2200 BRISTOL CIRCLE OAKVILLE, ON CA L6H 5R3

Contact: Dan Caruth danc@lubeng.com T: (905)829-3833

F: (905)829-2630

Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.