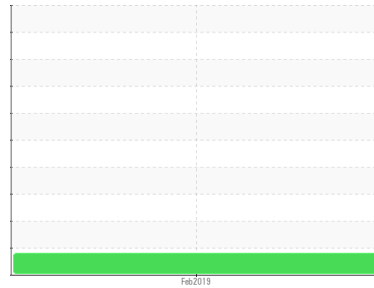




# OIL ANALYSIS REPORT

Sample Rating Trend



**WEAR**



Machine Id

**[FSEF] FSEF**

Component

**Piston Aircraft Engine**

Fluid

**SHELL AEROSHELL W 15W50 MGR (--- QTS)**

## DIAGNOSIS

### ▲ Recommendation

We advise that you check the engine tuning and timing. We advise that you check for excessive valve and valve guide clearance. We recommend that you drain the oil from the component if this has not already been done. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the component make and model with your next sample.

### ▲ Wear

Nickel ppm levels are abnormal. Exhaust valve wear is indicated.

### Contamination

There is no indication of any contamination in the oil.

### Fluid Condition

Additive levels indicate the addition of a different brand, or type of oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC</b>	---	---
Sample Date	Client Info		<b>21 Feb 2019</b>	---	---
TSN	hrs Client Info		<b>0</b>	---	---
TSO	hrs Client Info		<b>0</b>	---	---
Oil Age	hrs Client Info		<b>0</b>	---	---
Oil Changed	Client Info		<b>N/A</b>	---	---
Sample Status			<b>ABNORMAL</b>	---	---

## CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>4.0	<b>&lt;1.0</b>	---	---
Water	WC Method	>0.1	<b>NEG</b>	---	---
Glycol	WC Method		<b>NEG</b>	---	---

## WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184*		<b>23</b>	---	---
Iron	ppm ASTM D5185(m)	>90	<b>92</b>	---	---
Chromium	ppm ASTM D5185(m)	>20	<b>14</b>	---	---
Nickel	ppm ASTM D5185(m)	>15	<b>▲ 25</b>	---	---
Titanium	ppm ASTM D5185(m)		<b>&lt;1</b>	---	---
Silver	ppm ASTM D5185(m)		<b>0</b>	---	---
Aluminum	ppm ASTM D5185(m)	>25	<b>6</b>	---	---
Lead	ppm ASTM D5185(m)	>20000	<b>9129</b>	---	---
Copper	ppm ASTM D5185(m)	>25	<b>6</b>	---	---
Tin	ppm ASTM D5185(m)	>30	<b>0</b>	---	---
Antimony	ppm ASTM D5185(m)		<b>0</b>	---	---
Vanadium	ppm ASTM D5185(m)		<b>&lt;1</b>	---	---
Beryllium	ppm ASTM D5185(m)		<b>0</b>	---	---
Cadmium	ppm ASTM D5185(m)		<b>1</b>	---	---

## ADDITIVES

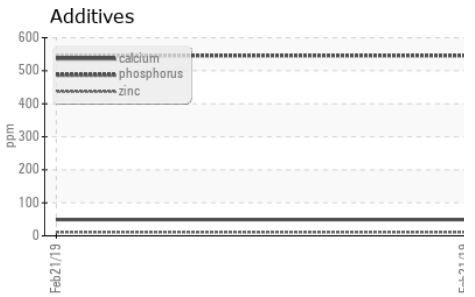
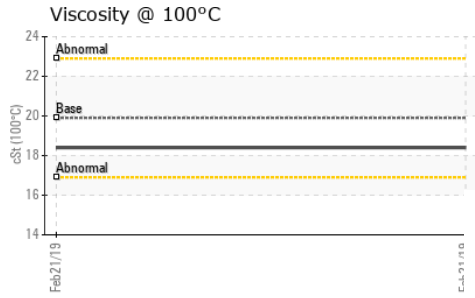
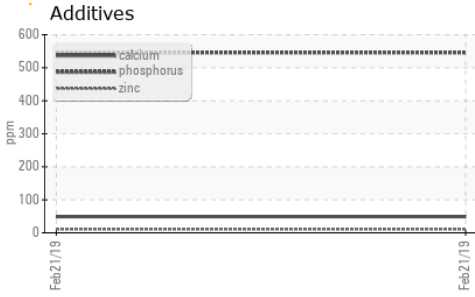
	method	limit/base	current	history1	history2
Boron	ppm ASTM D5185(m)		<b>0</b>	---	---
Barium	ppm ASTM D5185(m)		<b>0</b>	---	---
Molybdenum	ppm ASTM D5185(m)	5	<b>4</b>	---	---
Manganese	ppm ASTM D5185(m)		<b>&lt;1</b>	---	---
Magnesium	ppm ASTM D5185(m)	10	<b>&lt;1</b>	---	---
Calcium	ppm ASTM D5185(m)	10	<b>49</b>	---	---
Phosphorus	ppm ASTM D5185(m)	1280	<b>546</b>	---	---
Zinc	ppm ASTM D5185(m)	10	<b>11</b>	---	---
Sulfur	ppm ASTM D5185(m)	1800	<b>4376</b>	---	---
Lithium	ppm ASTM D5185(m)		<b>0</b>	---	---

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m)	>15	<b>6</b>	---	---
Sodium	ppm ASTM D5185(m)		<b>&lt;1</b>	---	---
Potassium	ppm ASTM D5185(m)	>20	<b>&lt;1</b>	---	---



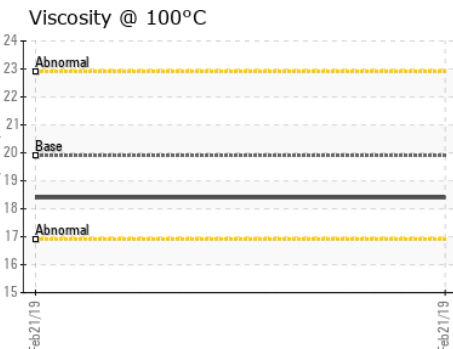
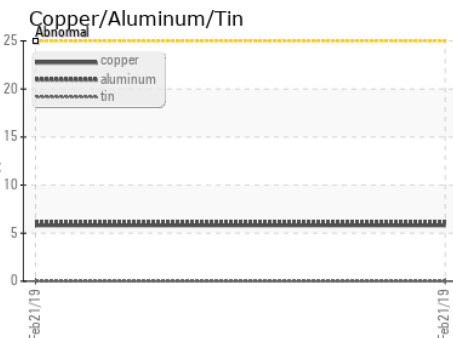
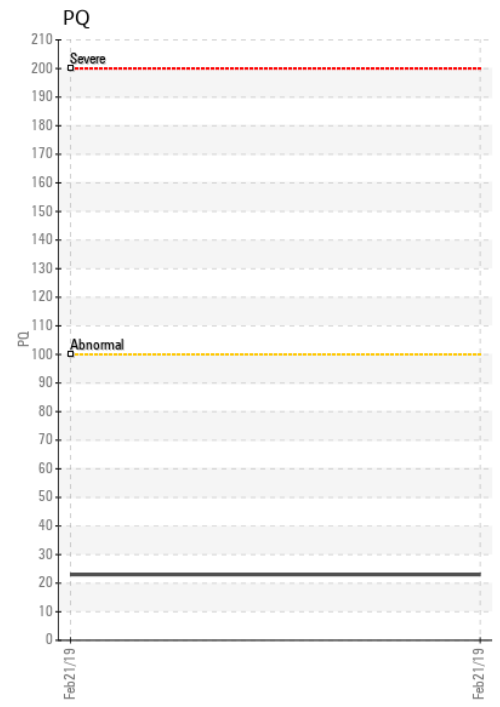
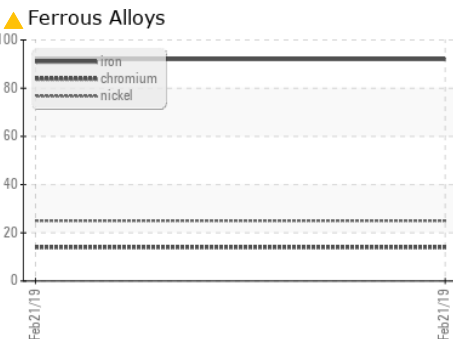
# OIL ANALYSIS REPORT



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	VLITE	---
Debris	scalar	Visual*	NONE	NONE	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---
Appearance	scalar	Visual*	NORML	NORML	---
Odor	scalar	Visual*	NORML	NORML	---
Emulsified Water	scalar	Visual*	>0.1	NEG	---
Free Water	scalar	Visual*		NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	19.9	18.4	---

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC  
**Lab Number** : 02269436  
**Unique Number** : 4824667  
**Test Package** : AVI 1 ( Additional Tests: PQ )  
**Received** : 22 Feb 2019  
**Tested** : 25 Feb 2019  
**Diagnosed** : 25 Feb 2019 - Kevin Marson

**ROCKCLIFFE FLYING CLUB**  
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 maintenance@rfc.ca  
 T: (613)746-4425  
 F: x:

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