



# PROBLEM SUMMARY

Sample Rating Trend

WEAR

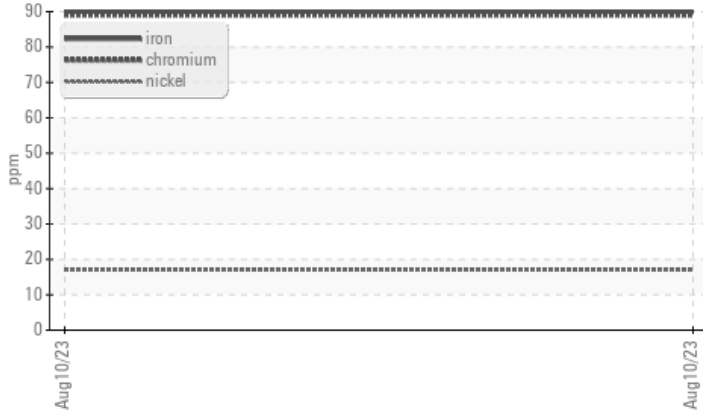


Area  
**(C-FIYQ)**  
 Machine Id  
**[C-FIYQ] CESSNA 414 218881-R**  
 Component  
**Right Piston Aircraft Engine**  
 Fluid  
**AVIATION ENGINE OIL SAE 15W50 (12 GAL)**

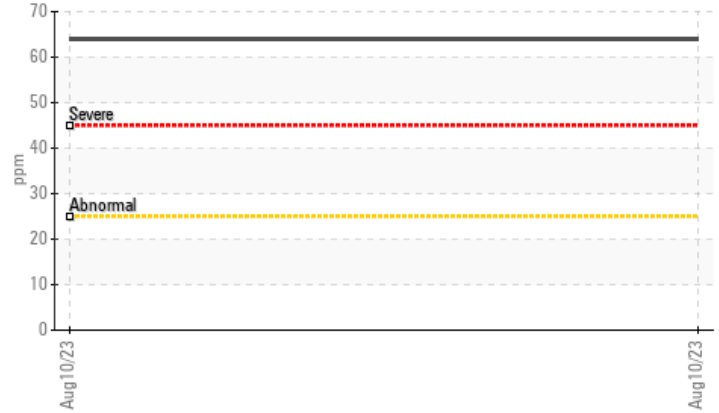


## COMPONENT CONDITION SUMMARY

### ▲ Ferrous Alloys



### ▲ Aluminum (ppm)



## RECOMMENDATION

We advise that you check the engine magneto timing. We advise that you check for a possible too-lean mixture, or an over-advanced ignition timing. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) AVIATION ENGINE OIL SAE 15W50. Please confirm.

## PROBLEMATIC TEST RESULTS

Sample Status				<b>ABNORMAL</b>	---	---
Chromium	ppm	ASTM D5185(m)	>20	▲ 89	---	---
Aluminum	ppm	ASTM D5185(m)	>25	▲ 64	---	---

Customer Id: ITPLON  
 Sample No.: WC0844063  
 Lab Number: 02577152  
 Test Package: AVI 1



To manage this report scan the QR code

To discuss the diagnosis or test data:  
 Kevin Marson +1 (289)291-4644 x4644  
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To change component or sample information:  
 Gloria Gonzalez +1 (289)291-4643 x4643  
[gloria.gonzalez@wearcheck.com](mailto:gloria.gonzalez@wearcheck.com)

## RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Resample	---	---	?	We recommend an early resample to monitor this condition.
Alert	---	---	?	The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) AVIATION ENGINE OIL SAE 15W50. Please confirm.
Information Required	---	---	?	The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) AVIATION ENGINE OIL SAE 15W50. Please confirm.
Check Timing	---	---	?	We advise that you check the engine magneto timing.

## HISTORICAL DIAGNOSIS

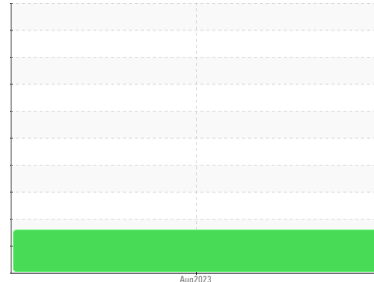


# OIL ANALYSIS REPORT

Sample Rating Trend

**WEAR**

Area  
**(C-FIYQ)**  
 Machine Id  
**[C-FIYQ] CESSNA 414 218881-R**  
 Component  
**Right Piston Aircraft Engine**  
 Fluid  
**AVIATION ENGINE OIL SAE 15W50 (12 GAL)**



## DIAGNOSIS

### Recommendation

We advise that you check the engine magneto timing. We advise that you check for a possible too-lean mixture, or an over-advanced ignition timing. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) AVIATION ENGINE OIL SAE 15W50. Please confirm.

### Wear

Aluminum and chromium ppm levels are abnormal. Ring wear is indicated. High Aluminum (Al) level indicates abnormal bearing wear.

### Contamination

There is no indication of any contamination in the oil.

### Fluid Condition

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>WC0844063</b>	---	---
Sample Date	Client Info	<b>10 Aug 2023</b>	---	---
TSN	hrs Client Info	<b>0</b>	---	---
TSO	hrs Client Info	<b>269</b>	---	---
Oil Age	hrs Client Info	<b>0</b>	---	---
Oil Changed	Client Info	<b>Changed</b>	---	---
Sample Status		<b>ABNORMAL</b>	---	---

## CONTAMINATION

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

## WEAR METALS

method	limit/base	current	history1	history2
PQ	ASTM D8184*	<b>11</b>	---	---
Iron	ppm ASTM D5185(m) >90	<b>90</b>	---	---
Chromium	ppm ASTM D5185(m) >20	<b>▲ 89</b>	---	---
Nickel	ppm ASTM D5185(m) >15	<b>17</b>	---	---
Titanium	ppm ASTM D5185(m)	<b>&lt;1</b>	---	---
Silver	ppm ASTM D5185(m) >5	<b>0</b>	---	---
Aluminum	ppm ASTM D5185(m) >25	<b>▲ 64</b>	---	---
Lead	ppm ASTM D5185(m) >20000	<b>5652</b>	---	---
Copper	ppm ASTM D5185(m) >25	<b>12</b>	---	---
Tin	ppm ASTM D5185(m) >30	<b>2</b>	---	---
Antimony	ppm ASTM D5185(m)	<b>&lt;1</b>	---	---
Vanadium	ppm ASTM D5185(m)	<b>0</b>	---	---
Beryllium	ppm ASTM D5185(m)	<b>0</b>	---	---
Cadmium	ppm ASTM D5185(m)	<b>2</b>	---	---

## ADDITIVES

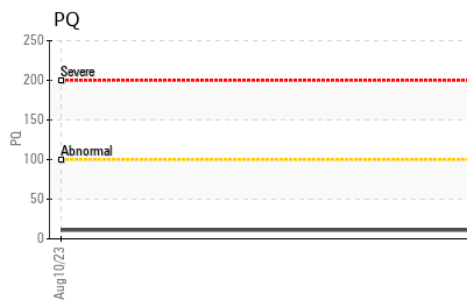
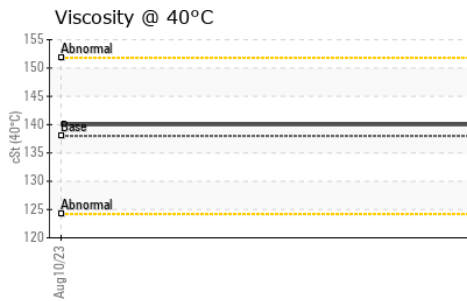
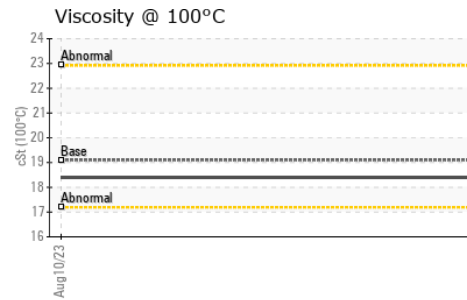
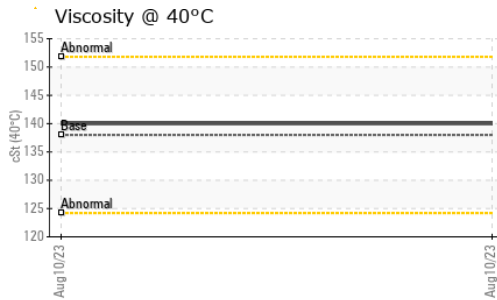
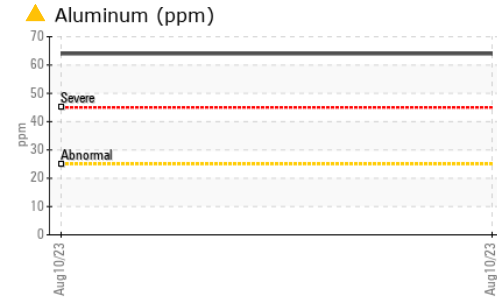
method	limit/base	current	history1	history2
Boron	ppm ASTM D5185(m) 5	<b>&lt;1</b>	---	---
Barium	ppm ASTM D5185(m) 5	<b>0</b>	---	---
Molybdenum	ppm ASTM D5185(m) 12	<b>&lt;1</b>	---	---
Manganese	ppm ASTM D5185(m)	<b>0</b>	---	---
Magnesium	ppm ASTM D5185(m) 5	<b>3</b>	---	---
Calcium	ppm ASTM D5185(m) 5	<b>6</b>	---	---
Phosphorus	ppm ASTM D5185(m) 1000	<b>1187</b>	---	---
Zinc	ppm ASTM D5185(m) 12	<b>9</b>	---	---
Sulfur	ppm ASTM D5185(m) 3500	<b>1813</b>	---	---
Lithium	ppm ASTM D5185(m)	<b>&lt;1</b>	---	---

## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >15	<b>8</b>	---	---
Sodium	ppm ASTM D5185(m)	<b>&lt;1</b>	---	---
Potassium	ppm ASTM D5185(m) >20	<b>&lt;1</b>	---	---



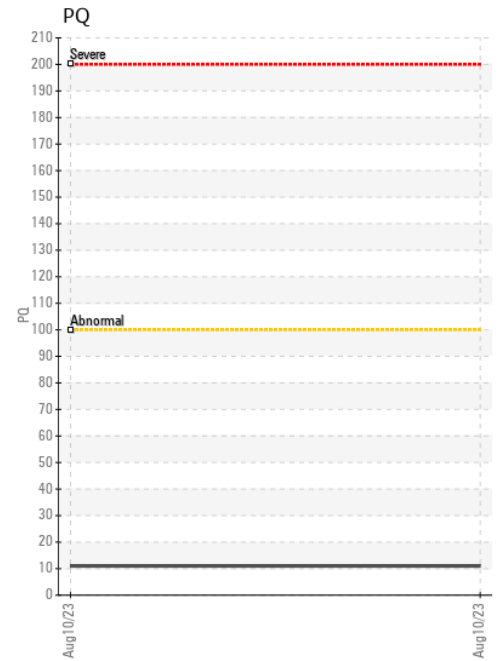
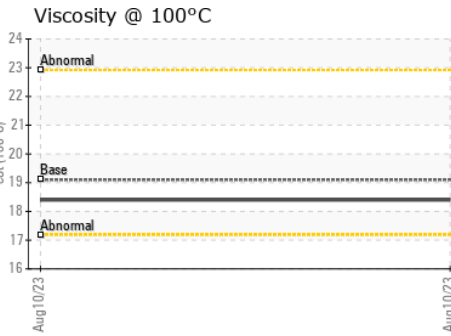
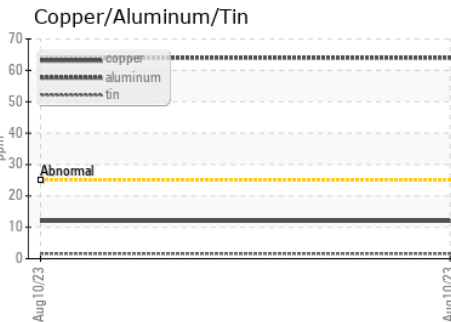
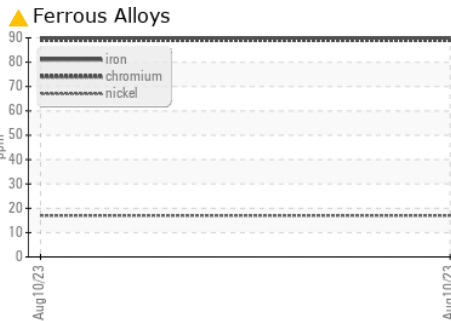
# OIL ANALYSIS REPORT



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	LIGHT	---
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 @ 40°C	cSt	ASTM D7279(m)	138	140	---
Visc @ 100°C	cSt	ASTM D7279(m)	19.1	18.4	---
Viscosity Index (VI)	Scale	ASTM D2270*	157	147	---

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0844063 **Received** : 21 Aug 2023  
**Lab Number** : 02577152 **Diagnosed** : 22 Aug 2023  
**Unique Number** : 5630212 **Diagnostician** : Kevin Marson  
**Test Package** : AVI 1 ( Additional Tests: KV40, PQ, VI )

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.

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