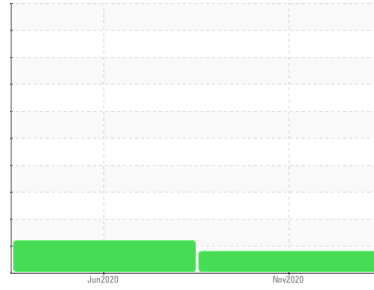




PROBLEM SUMMARY

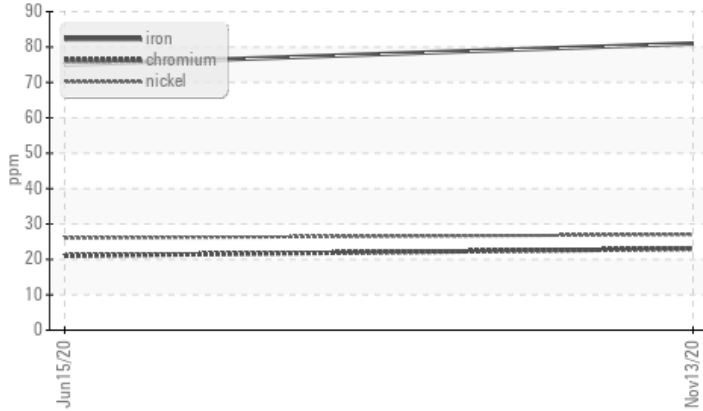
Sample Rating Trend



Area
(C-GGWW)
 Machine Id
[C-GGWW] CIRRUS 5R22 4492
 Component
Front Piston Aircraft Engine
 Fluid
SHELL AEROSHELL 100 (8 QTS)

COMPONENT CONDITION SUMMARY

▲ Ferrous Alloys



RECOMMENDATION

We advise that you check the engine tuning and timing. We advise that you check for excessive valve and valve guide clearance. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status	ABNORMAL	ABNORMAL	---
Nickel ppm ASTM D5185(m) >15	▲ 27	▲ 26	---

Customer Id: DFEMID
 Sample No.: WC995278
 Lab Number: 02392803
 Test Package: AVI 1



To manage this report scan the QR code

To discuss the diagnosis or test data:
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Kevin.Marson@wearcheck.com

To change component or sample information:
 Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Resample	MISSED	Oct 29 2021	?	We recommend an early resample to monitor this condition.
Check Combustion	MISSED	Oct 29 2021	?	We advise that you check the engine tuning and timing.
Check	MISSED	Oct 29 2021	?	We advise that you check for excessive valve and valve guide clearance.

HISTORICAL DIAGNOSIS

15 Jun 2020 Diag: Kevin Marson

WEAR



We advise that you check the engine tuning and timing. We advise that you check for excessive valve and valve guide clearance. The oil change at the time of sampling has been noted. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. Nickel ppm levels are abnormal. Exhaust valve wear is indicated. There is no indication of any contamination in the oil. Viscosity of sample indicates oil is within SAE 50 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report



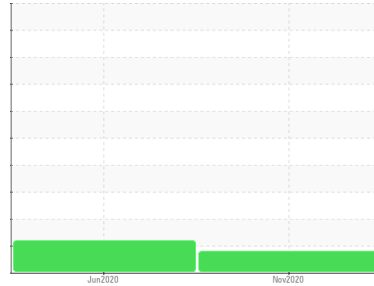


OIL ANALYSIS REPORT

Sample Rating Trend

WEAR

Area
(C-GGWW)
 Machine Id
[C-GGWW] CIRRUS 5R22 4492
 Component
Front Piston Aircraft Engine
 Fluid
SHELL AEROSHELL 100 (8 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. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

▲ Wear

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

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		WC995278	WC995270	---
Sample Date	Client Info		13 Nov 2020	15 Jun 2020	---
TSN	hrs	Client Info	319	290	---
TSO	hrs	Client Info	319	290	---
Oil Age	hrs	Client Info	29	35	---
Oil Changed		Client Info	Changed	Changed	---
Sample Status			ABNORMAL	ABNORMAL	---

CONTAMINATION

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

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>90	81	75
Chromium	ppm	ASTM D5185(m)	>20	23	21
Nickel	ppm	ASTM D5185(m)	>15	▲ 27	▲ 26
Titanium	ppm	ASTM D5185(m)		<1	<1
Silver	ppm	ASTM D5185(m)		<1	0
Aluminum	ppm	ASTM D5185(m)	>25	12	10
Lead	ppm	ASTM D5185(m)	>20000	4951	6287
Copper	ppm	ASTM D5185(m)	>25	11	9
Tin	ppm	ASTM D5185(m)	>30	<1	<1
Antimony	ppm	ASTM D5185(m)		0	<1
Vanadium	ppm	ASTM D5185(m)		<1	<1
Beryllium	ppm	ASTM D5185(m)		0	0
Cadmium	ppm	ASTM D5185(m)		2	1

ADDITIVES

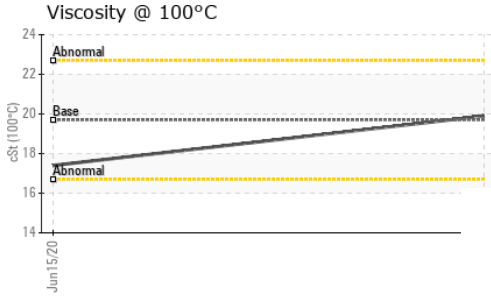
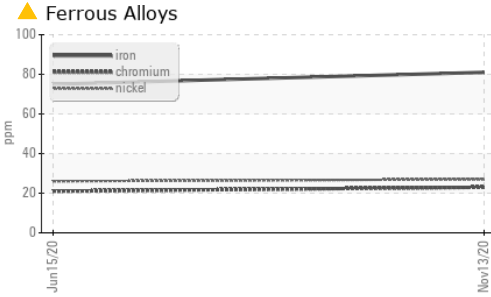
	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		<1	<1
Barium	ppm	ASTM D5185(m)		<1	0
Molybdenum	ppm	ASTM D5185(m)		10	12
Manganese	ppm	ASTM D5185(m)		<1	0
Magnesium	ppm	ASTM D5185(m)		1	2
Calcium	ppm	ASTM D5185(m)		70	40
Phosphorus	ppm	ASTM D5185(m)		971	490
Zinc	ppm	ASTM D5185(m)		7	6
Sulfur	ppm	ASTM D5185(m)	4800	3878	2226
Lithium	ppm	ASTM D5185(m)		<1	<1

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	8	5
Sodium	ppm	ASTM D5185(m)		<1	<1
Potassium	ppm	ASTM D5185(m)	>20	<1	<1



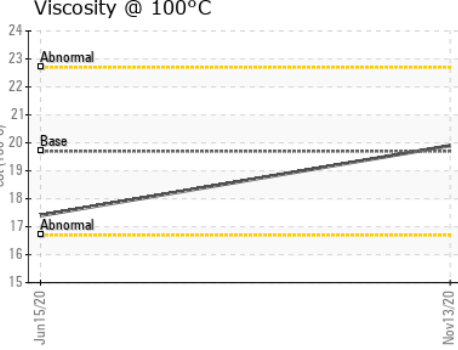
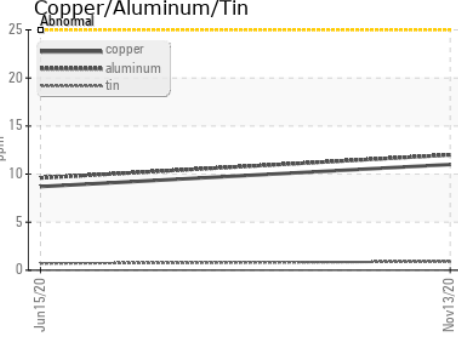
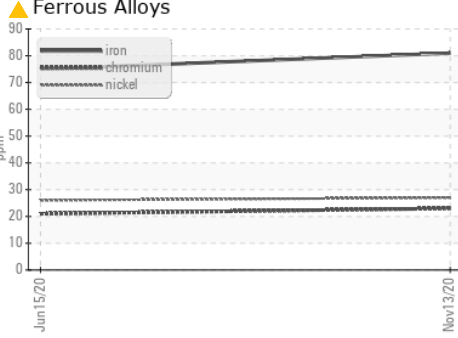
OIL ANALYSIS REPORT



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	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 @ 100°C	cSt	ASTM D7279(m)	19.7	19.9	▲ 17.4

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC995278 **Received** : 14 Dec 2020
Lab Number : **02392803** **Diagnosed** : 15 Dec 2020
Unique Number : 5148261 **Diagnostician** : Kevin Marson
Test Package : AVI 1

DFE Holdings Inc
 43 Holloway Lane
 Midhurst, ON
 CA L9X 0M7
 Contact: David Elliott
 dfelliott10@gmail.com
 T: (705)818-1048
 F: (705)818-1048

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.