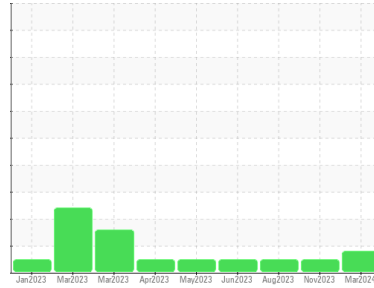




# OIL ANALYSIS REPORT

Sample Rating Trend



**WEAR**



Area  
**(C-GCJH)**  
Machine Id  
**[C-GCJH] PIPER PA31-350 RL-569-68A**  
Component  
**Right Piston Aircraft Engine**  
Fluid  
**PHILLIPS 66 AVIATION X/C OIL SAE20W50 (12 LTR)**

## 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. We recommend an early resample to monitor this condition.

### ▲ Wear

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

### Contamination

The water content is negligible. 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>WC0886714</b>	WC0754572	WC0826702
Sample Date	Client Info		<b>08 Mar 2024</b>	06 Nov 2023	14 Aug 2023
TSN	hrs	Client Info	<b>12903</b>	0	12497
TSO	hrs	Client Info	<b>1488</b>	2187	1083
Oil Age	hrs	Client Info	<b>57</b>	44	46
Oil Changed		Client Info	<b>N/A</b>	Changed	Changed
Sample Status			<b>ABNORMAL</b>	NORMAL	NORMAL

## CONTAMINATION

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

## WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	>90	<b>52</b>	37	34
Chromium	ppm	ASTM D5185(m)	>20	<b>14</b>	10	10
Nickel	ppm	ASTM D5185(m)	>15	<b>▲ 16</b>	10	11
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Silver	ppm	ASTM D5185(m)	>5	<b>&lt;1</b>	<1	<1
Aluminum	ppm	ASTM D5185(m)	>25	<b>7</b>	6	5
Lead	ppm	ASTM D5185(m)	>20000	<b>7887</b>	6763	6690
Copper	ppm	ASTM D5185(m)	>25	<b>9</b>	10	8
Tin	ppm	ASTM D5185(m)	>30	<b>0</b>	0	0
Antimony	ppm	ASTM D5185(m)		<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Beryllium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185(m)		<b>0</b>	0	<1

## ADDITIVES

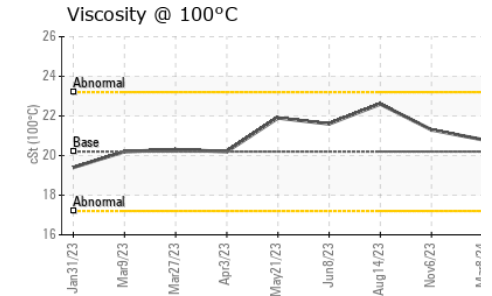
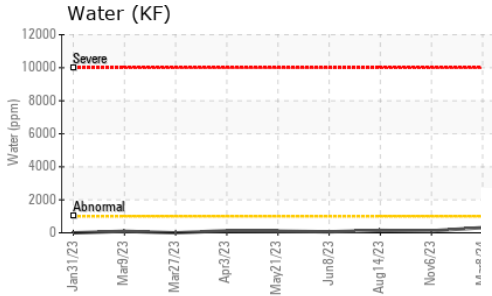
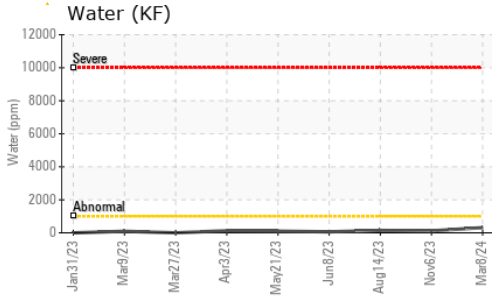
	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m)	0.0	<b>0</b>	<1	0
Barium	ppm	ASTM D5185(m)	0.0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185(m)	0.0	<b>0</b>	0	0
Manganese	ppm	ASTM D5185(m)	0.0	<b>0</b>	0	0
Magnesium	ppm	ASTM D5185(m)	0.0	<b>7</b>	4	2
Calcium	ppm	ASTM D5185(m)	4.7	<b>4</b>	<1	1
Phosphorus	ppm	ASTM D5185(m)	0.0	<b>&lt;1</b>	0	0
Zinc	ppm	ASTM D5185(m)	0.1	<b>3</b>	2	3
Sulfur	ppm	ASTM D5185(m)	848	<b>1039</b>	973	1010
Lithium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1

## CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>15	<b>6</b>	3	4
Sodium	ppm	ASTM D5185(m)		<b>&lt;1</b>	1	<1
Potassium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	0	0
Water	%	ASTM D6304*	>0.1	<b>0.031</b>	0.011	0.014
ppm Water	ppm	ASTM D6304*	>1000	<b>314</b>	119.9	145.6



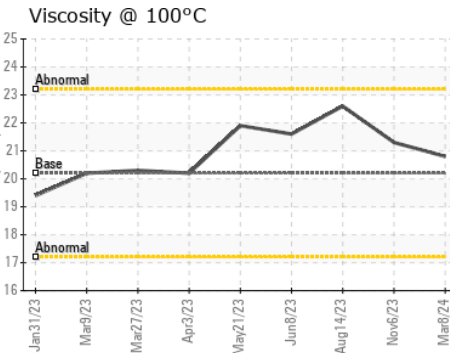
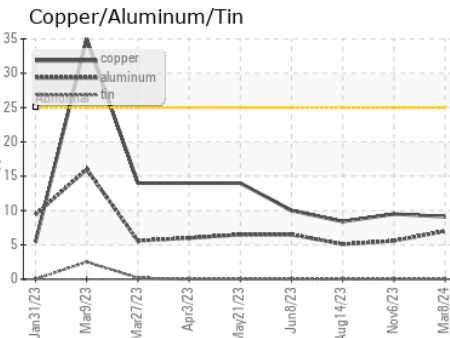
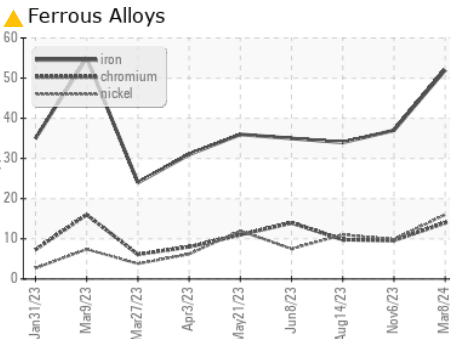
# OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	VLITE
Debris	scalar	Visual*	NONE	NONE	VLITE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	.2%	.2%
Free Water	scalar	Visual*		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	20.2	20.8	21.3

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0886714  
**Lab Number** : 02621974  
**Unique Number** : 5747093  
**Test Package** : AVI 1 ( Additional Tests: KF )  
**Received** : 14 Mar 2024  
**Tested** : 15 Mar 2024  
**Diagnosed** : 15 Mar 2024 - Kevin Marson

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.

**SKYCAR AIR AMBULANCE**  
 BOX 289, 17 AIRPORT ROAD  
 SIOUX LOOKOUT, ON  
 CA P8T 1A3  
 Contact: Jason Murphy  
 prm@skycare.ca  
 T: (807)737-0039  
 F: (807)737-0040