



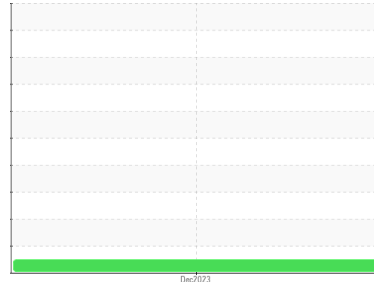
# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Area  
**(N4198M)**  
Machine Id  
**[N4198M] BOMBARDIER DASH 8 Q-400 SP-E084733**  
Component  
**Auxiliary Power Unit Jet Turbine**  
Fluid  
**EASTMAN TURBO OIL 2380 (--- GAL)**



## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.  
NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

### Wear

All component wear rates are normal. The ferrography results are normal indicating no abnormal wear in the system.

### Contaminants

The water content is negligible. There is no indication of any contamination in the oil.

### Oil Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0853664</b>	---	---
Sample Date	Client Info		<b>04 Dec 2023</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>NORMAL</b>	---	---

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m) >8	<b>0</b>	---	---
Chromium	ppm	ASTM D5185(m) >2	<b>0</b>	---	---
Nickel	ppm	ASTM D5185(m) >2	<b>0</b>	---	---
Titanium	ppm	ASTM D5185(m) >2	<b>0</b>	---	---
Silver	ppm	ASTM D5185(m) >2	<b>&lt;1</b>	---	---
Aluminum	ppm	ASTM D5185(m) >2	<b>&lt;1</b>	---	---
Lead	ppm	ASTM D5185(m) >3	<b>&lt;1</b>	---	---
Copper	ppm	ASTM D5185(m) >3	<b>&lt;1</b>	---	---
Tin	ppm	ASTM D5185(m) >2	<b>0</b>	---	---
Antimony	ppm	ASTM D5185(m)	<b>0</b>	---	---
Vanadium	ppm	ASTM D5185(m)	<b>0</b>	---	---
Beryllium	ppm	ASTM D5185(m)	<b>0</b>	---	---
Cadmium	ppm	ASTM D5185(m)	<b>0</b>	---	---

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m) 0	<b>&lt;1</b>	---	---
Barium	ppm	ASTM D5185(m) 0	<b>&lt;1</b>	---	---
Molybdenum	ppm	ASTM D5185(m) 0	<b>0</b>	---	---
Manganese	ppm	ASTM D5185(m)	<b>0</b>	---	---
Magnesium	ppm	ASTM D5185(m) 0	<b>0</b>	---	---
Calcium	ppm	ASTM D5185(m) 0	<b>0</b>	---	---
Phosphorus	ppm	ASTM D5185(m) 2500	<b>2559</b>	---	---
Zinc	ppm	ASTM D5185(m) 0	<b>&lt;1</b>	---	---
Sulfur	ppm	ASTM D5185(m) 0	<b>1</b>	---	---
Lithium	ppm	ASTM D5185(m)	<b>&lt;1</b>	---	---

## CONTAMINANTS

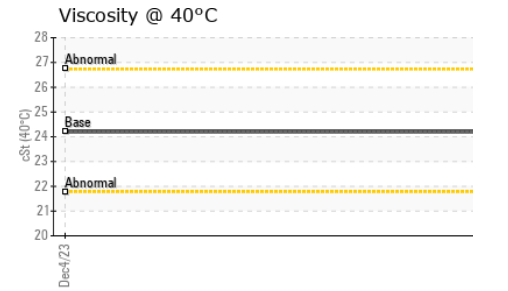
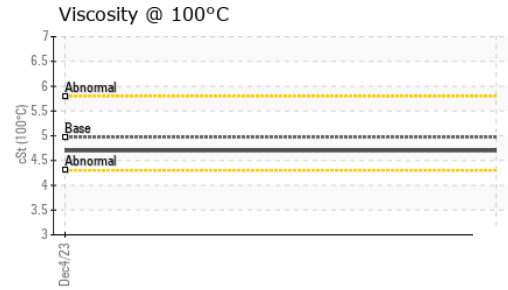
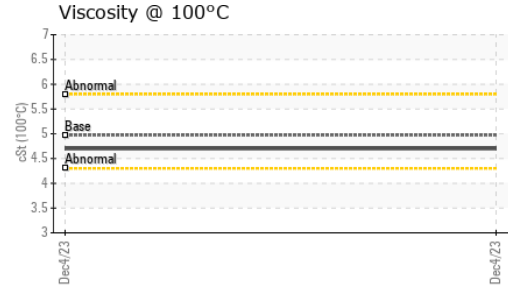
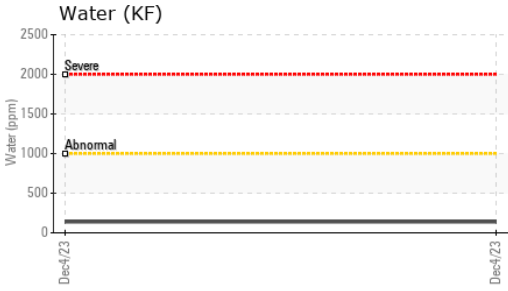
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >8	<b>&lt;1</b>	---	---
Sodium	ppm	ASTM D5185(m)	<b>&lt;1</b>	---	---
Potassium	ppm	ASTM D5185(m) >20	<b>0</b>	---	---
Water	%	ASTM D6304* >0.1	<b>0.013</b>	---	---
ppm Water	ppm	ASTM D6304* >1000	<b>139</b>	---	---

## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974* 0.43	<b>0.55</b>	---	---



# OIL ANALYSIS REPORT



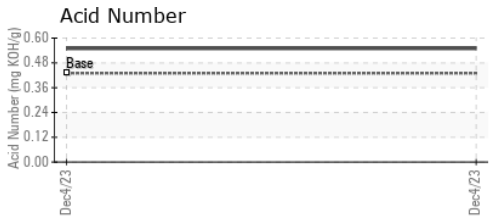
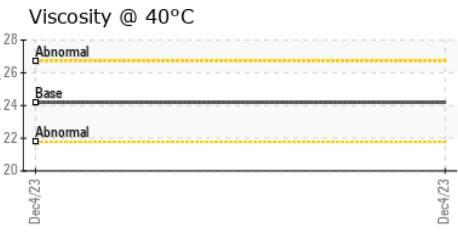
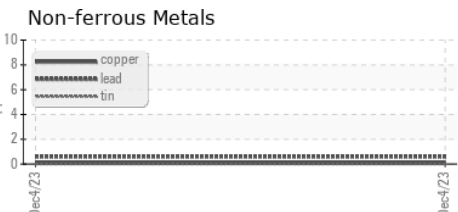
VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	Visual*	NONE	<b>NONE</b>	---	---
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	---	---
Precipitate	scalar	Visual*	NONE	<b>NONE</b>	---	---
Silt	scalar	Visual*	NONE	<b>NONE</b>	---	---
Debris	scalar	Visual*	NONE	<b>NONE</b>	---	---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

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 40°C	cSt	ASTM D7279(m)	24.2	<b>24.2</b>	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	4.97	<b>4.7</b>	---	---
Viscosity Index (VI)	Scale	ASTM D2270*	134	<b>112</b>	---	---

### SAMPLE IMAGES

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

### GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0853664 **Received** : 05 Dec 2023  
**Lab Number** : **02600959** **Diagnosed** : 05 Dec 2023  
**Unique Number** : 5694044 **Diagnostician** : Bill Quesnel  
**Test Package** : AVI 3

**SPRINGER AEROSPACE**  
 377 LAKEVIEW, P.O. BOX 269  
 ECHO BAY, ON  
 CA P0S 1C0  
 Contact: Robert Hope  
 robert@springeraerospace.com  
 T: (705)248-2158  
 F: (705)248-3397

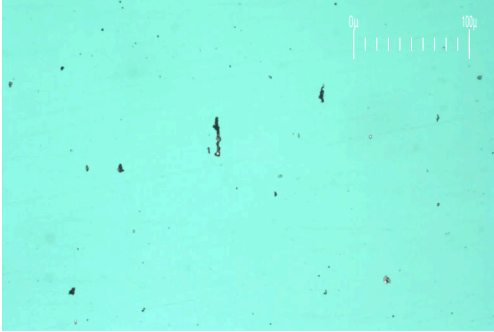
To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.



# FERROGRAPHY REPORT

Area  
**(N4198M)**  
 Machine Id  
**[N4198M] BOMBARDIER DASH 8 Q-400 SP-E084733**  
 Component  
**Auxiliary Power Unit Jet Turbine**  
 Fluid  
**EASTMAN TURBO OIL 2380 (--- GAL)**

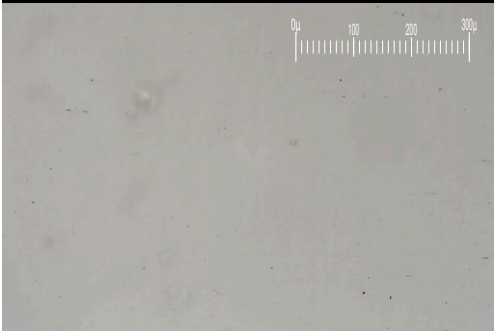
Magn: 200x Illum: BC



Magn: 50x Illum: RW



Magn: 100x Illum: RW

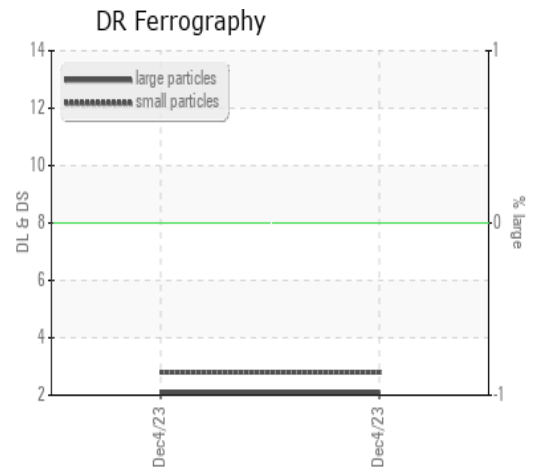


DR-FERROGRAPHY		method	limit/base	current	history1	history2
Large Particles		DR-Ferr*		<b>2.1</b>	---	---
Small Particles		DR-Ferr*		<b>2.8</b>	---	---
Total Particles		DR-Ferr*	>---	<b>4.9</b>	---	---
Large Particles Percentage	%	DR-Ferr*		<b>0</b>	---	---
Severity Index		DR-Ferr*		<b>1</b>	---	---

FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		<b>1</b>		
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*				
Ferrous Rolling	Scale 0-10	ASTM D7684*		<b>1</b>		
Ferrous Break-in	Scale 0-10	ASTM D7684*				
Ferrous Spheres	Scale 0-10	ASTM D7684*		<b>1</b>		
Ferrous Black Oxides	Scale 0-10	ASTM D7684*				
Ferrous Red Oxides	Scale 0-10	ASTM D7684*				
Ferrous Corrosive	Scale 0-10	ASTM D7684*				
Ferrous Other	Scale 0-10	ASTM D7684*				
Nonferrous Rubbing	Scale 0-10	ASTM D7684*				
Nonferrous Sliding	Scale 0-10	ASTM D7684*				
Nonferrous Cutting	Scale 0-10	ASTM D7684*				
Nonferrous Rolling	Scale 0-10	ASTM D7684*				
Nonferrous Other	Scale 0-10	ASTM D7684*				
Carbonaceous Material	Scale 0-10	ASTM D7684*				
Lubricant Degradation	Scale 0-10	ASTM D7684*				
Sand/Dirt	Scale 0-10	ASTM D7684*		<b>2</b>		
Fibres	Scale 0-10	ASTM D7684*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*				

### WEAR

All component wear rates are normal.  
 The ferrography results are normal indicating no abnormal wear in the system.



*This page left intentionally blank*