



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id  
**HL5631 Forward Fuel Oil Purifier**  
 Component  
**Lube System**  
 Fluid  
**ESSO NUTO H ISO 68 (4 LTR)**

## RECOMMENDATION

Check seals and/or filters for points of contaminant entry. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We recommend an early resample to monitor this condition.

## WEAR

All component wear rates are normal.

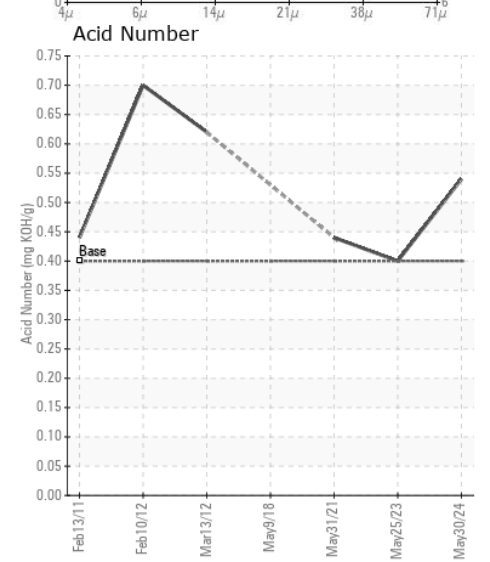
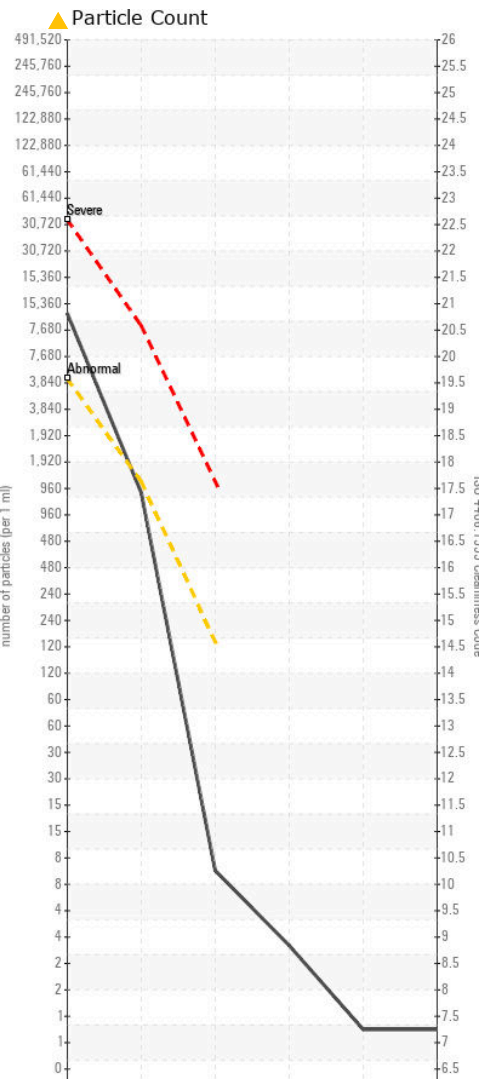
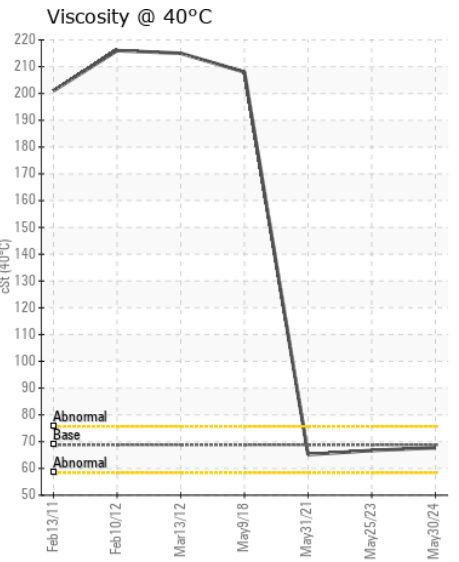
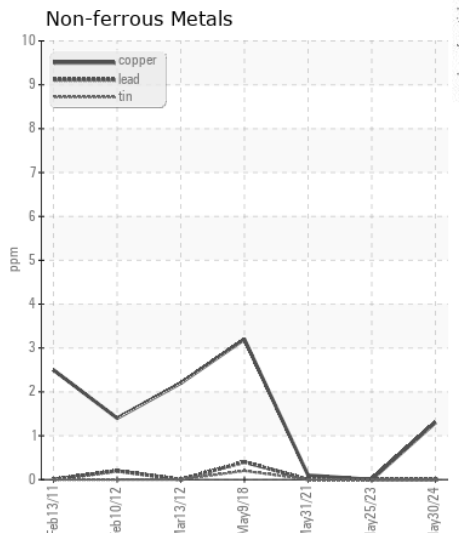
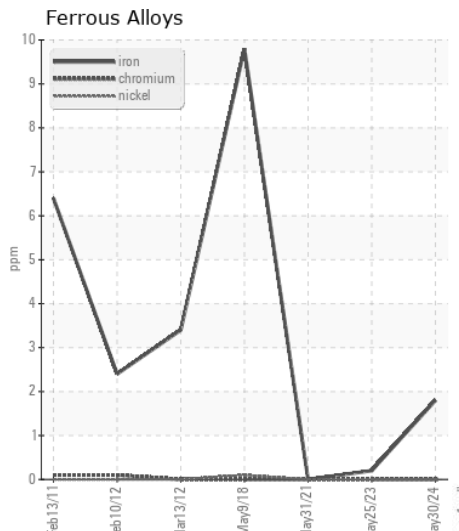
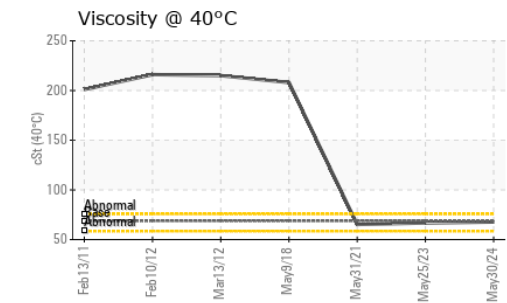
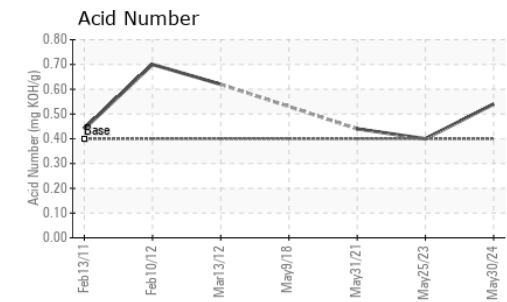
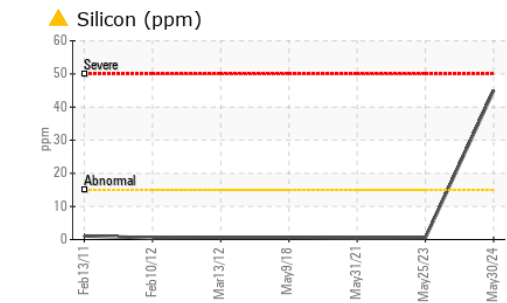
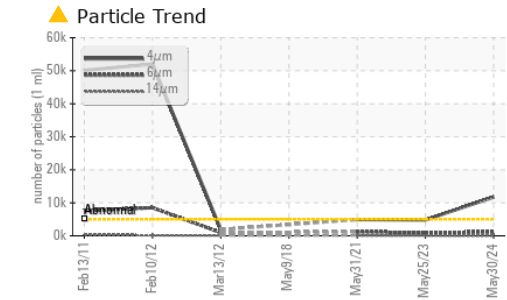
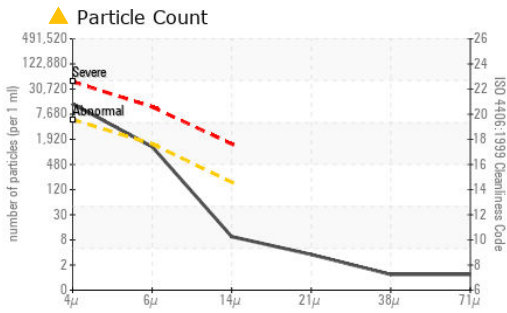
## CONTAMINATION

There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. Elemental level of silicon (Si) above normal indicating ingress of seal material and/or dirt.

## FLUID CONDITION

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0929731</b>	WC0807852	WC0552070
Sample Date		Client Info		<b>30 May 2024</b>	25 May 2023	31 May 2021
Machine Age	hrs	Client Info		<b>12470</b>	0	4708
Oil Age	hrs	Client Info		<b>1384</b>	0	708
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Not Changd</b>	N/A	N/A
Filter Changed		Client Info		<b>None</b>	N/A	N/A
Sample Status				<b>ABNORMAL</b>	NORMAL	NORMAL
Iron	ppm	ASTM D5185(m)	>20	<b>2</b>	<1	0
Chromium	ppm	ASTM D5185(m)	>10	<b>0</b>	0	0
Nickel	ppm	ASTM D5185(m)	>10	<b>0</b>	0	0
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185(m)	>10	<b>0</b>	<1	<1
Lead	ppm	ASTM D5185(m)	>20	<b>0</b>	0	0
Copper	ppm	ASTM D5185(m)	>20	<b>1</b>	0	<1
Tin	ppm	ASTM D5185(m)	>10	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
White Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Silicon	ppm	ASTM D5185(m)	>15	<b>▲ 45</b>	<1	<1
Potassium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	0	0
Water		WC Method	>0.05	<b>NEG</b>	NEG	NEG
Particles >4µm		ASTM D7647	>5000	<b>▲ 11744</b>	4812	4920
Particles >6µm		ASTM D7647	>1300	<b>1122</b>	976	1133
Particles >14µm		ASTM D7647	>160	<b>8</b>	77	58
Particles >21µm		ASTM D7647	>40	<b>3</b>	25	16
Particles >38µm		ASTM D7647	>10	<b>1</b>	3	1
Particles >71µm		ASTM D7647	>3	<b>1</b>	1	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	<b>▲ 21/17/10</b>	19/17/13	19/17/13
Silt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>0.05	<b>NEG</b>	NEG	NEG
Sodium	ppm	ASTM D5185(m)		<b>&lt;1</b>	0	0
Boron	ppm	ASTM D5185(m)	0	<b>0</b>	0	<1
Barium	ppm	ASTM D5185(m)	0	<b>&lt;1</b>	<1	<1
Molybdenum	ppm	ASTM D5185(m)	0	<b>0</b>	0	0
Manganese	ppm	ASTM D5185(m)		<b>0</b>	0	0
Magnesium	ppm	ASTM D5185(m)	5	<b>&lt;1</b>	0	<1
Calcium	ppm	ASTM D5185(m)	50	<b>67</b>	56	52
Phosphorus	ppm	ASTM D5185(m)	330	<b>376</b>	402	356
Zinc	ppm	ASTM D5185(m)	420	<b>455</b>	469	460
Sulfur	ppm	ASTM D5185(m)	3100	<b>6985</b>	7328	7257
Acid Number (AN)	mg KOH/g	ASTM D974*	.40	<b>0.54</b>	0.40	0.44
Visc @ 40°C	cSt	ASTM D7279(m)	68.8	<b>67.7</b>	66.7	65.2



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0929731 **Received** : 05 Jun 2024  
**Lab Number** : 02639994 **Tested** : 06 Jun 2024  
**Unique Number** : 5789156 **Diagnosed** : 06 Jun 2024 - Kevin Marson  
**Test Package** : MAR 2 ( Additional Tests: TAN Man )

**CANADIAN COAST GUARD**  
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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.