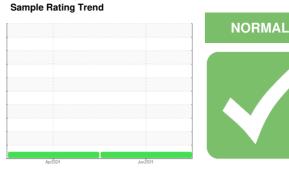


# **OIL ANALYSIS REPORT**

[GH-9162A] 170831 DB

**Unknown Component** 

{not provided} (--- GAL)



## DIAGNOSIS

#### Recommendation

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. Resample at the next service interval to monitor. Please provide more complete information on your next sample. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

### Wear

All component wear rates are normal.

#### Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

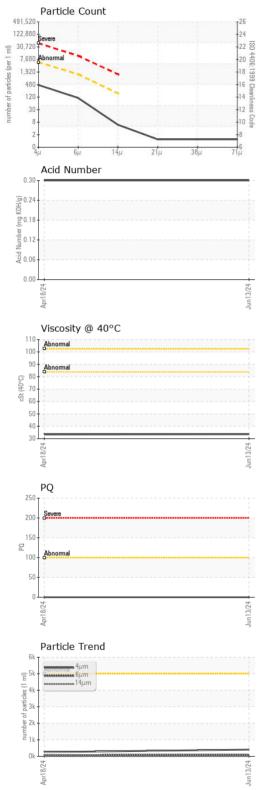
## **Fluid Condition**

Viscosity of sample indicates oil is within ISO 32 range, advise investigate. The AN level is acceptable for this fluid. The condition of the sample is suitable for further service.

SAMPLE INFORMATION   method   imit/base   current   history1   history2							
Sample Date         Client Info         13 Jun 2024         18 Apr 2024	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age         hrs         Client Info         0         0            Oil Age         hrs         Client Info         0         0            Oil Changed         Client Info         N/A         N/A            Sample Status         NORMAL         NORMAL         NORMAL           CONTAMINATION         method         limit/base         current         history1         history2           Water         WC Method         NEG         NEG             WEAR METALS         method         limit/base         current         history1         history2           PQ         ASTM D8184*         0         0             Iron         ppm         ASTM D8185(m)         6         6            Chromium         ppm         ASTM D8185(m)         0         0            Nickel         ppm         ASTM D8185(m)         0         0            Aluminum         ppm         ASTM D8185(m)         0         0            Lead         ppm         ASTM D8185(m)         0         0            Copper	Sample Number		Client Info		PP	PP	
Oil Age         hrs         Client Info         N/A         N/A         N/A	Sample Date		Client Info		13 Jun 2024	18 Apr 2024	
Oil Changed Sample Status         Client Info         N/A N/A N/A NORMAL         NORMAL NORMAL	Machine Age	hrs	Client Info		0	0	
Sample Status	Oil Age	hrs	Client Info		0	0	
CONTAMINATION         method         limit/base         current         history1         history2           Water         WC Method         NEG         NEG	Oil Changed		Client Info		N/A	N/A	
Water         WC Method         NEG         NEG            WEAR METALS         method         limit/base         current         history1         history2           PQ         ASTM D81844*         0         0            Iron         ppm         ASTM D8185(m)         6         6           Chromium         ppm         ASTM D8185(m)         0         0           Nickel         ppm         ASTM D5185(m)         0         0           Nickel         ppm         ASTM D5185(m)         0         0           Titanium         ppm         ASTM D5185(m)         0         0           Aluminum         ppm         ASTM D5185(m)         0         0	Sample Status				NORMAL	NORMAL	
WEAR METALS         method         limit/base         current         history1         history2           PQ         ASTM D8184*         0         0            Iron         ppm         ASTM D5185(m)         6         6            Chromium         ppm         ASTM D5185(m)         0         0            Nickel         ppm         ASTM D5185(m)         0         0            Titanium         ppm         ASTM D5185(m)         0         0            Silver         ppm         ASTM D5185(m)         0         0            Aluminum         ppm         ASTM D5185(m)         0         0            Lead         ppm         ASTM D5185(m)         0         0            Copper         ppm         ASTM D5185(m)         0         0            Tin         ppm         ASTM D5185(m)         0         0            Antimony         ppm         ASTM D5185(m)         0         0            Vanadium         ppm         ASTM D5185(m)         0         0            Beryllium	CONTAMINATIO	V	method	limit/base	current	history1	history2
PQ	Water		WC Method		NEG	NEG	
Iron         ppm         ASTM D5185(m)         6         6            Chromium         ppm         ASTM D5185(m)         0         0            Nickel         ppm         ASTM D5185(m)         0         0            Titanium         ppm         ASTM D5185(m)         0         0            Silver         ppm         ASTM D5185(m)         0         0            Aluminum         ppm         ASTM D5185(m)         0         0            Aluminum         ppm         ASTM D5185(m)         0         0            Lead         ppm         ASTM D5185(m)         0         0            Copper         ppm         ASTM D5185(m)         0         0            Tin         ppm         ASTM D5185(m)         0         0            Antimony         ppm         ASTM D5185(m)         0         0            Antimony         ppm         ASTM D5185(m)         0         0            Beryllium         ppm         ASTM D5185(m)         0         0            Cadmium	WEAR METALS		method	limit/base	current	history1	history2
Chromium         ppm         ASTM D5185(m)         0         0            Nickel         ppm         ASTM D5185(m)         0         0            Titanium         ppm         ASTM D5185(m)         0         0            Silver         ppm         ASTM D5185(m)         0         0            Aluminum         ppm         ASTM D5185(m)         0         0            Lead         ppm         ASTM D5185(m)         0         <1	PQ		ASTM D8184*		0	0	
Chromium         ppm         ASTM D5185(m)         0         0            Nickel         ppm         ASTM D5185(m)         0         0            Titanium         ppm         ASTM D5185(m)         0         0            Silver         ppm         ASTM D5185(m)         0         0            Aluminum         ppm         ASTM D5185(m)         0         0            Lead         ppm         ASTM D5185(m)         0         <1	Iron	ppm	ASTM D5185(m)				
Nickel	Chromium		( /		0	0	
Titanium	Nickel		ASTM D5185(m)		0	0	
Silver         ppm         ASTM D5185(m)         0         0            Aluminum         ppm         ASTM D5185(m)         0         0            Lead         ppm         ASTM D5185(m)         0         <1	Titanium		. ,		0	0	
Aluminum         ppm         ASTM D5185(m)         0         0            Lead         ppm         ASTM D5185(m)         0         <1	Silver		ASTM D5185(m)		0	0	
Lead         ppm         ASTM D5185(m)         0         <1            Copper         ppm         ASTM D5185(m)         7         7            Tin         ppm         ASTM D5185(m)         0         0            Antimony         ppm         ASTM D5185(m)         0         0            Antimony         ppm         ASTM D5185(m)         0         0            Vanadium         ppm         ASTM D5185(m)         0         0            Beryllium         ppm         ASTM D5185(m)         0         0            Cadmium         ppm         ASTM D5185(m)         0         0            Cadmium         ppm         ASTM D5185(m)         0         0            Barium         ppm         ASTM D5185(m)         0         0            Molybdenum         ppm         ASTM D5185(m)         0         0            Magnesium         ppm         ASTM D5185(m)         0         0            Magnesium         ppm         ASTM D5185(m)         220         221	Aluminum		( )		0	0	
Copper         ppm         ASTM D5185(m)         7         7            Tin         ppm         ASTM D5185(m)         0         0            Antimony         ppm         ASTM D5185(m)         0         0            Vanadium         ppm         ASTM D5185(m)         0         0            Beryllium         ppm         ASTM D5185(m)         0         0            Cadmium         ppm         ASTM D5185(m)         0         0            Cadmium         ppm         ASTM D5185(m)         0         0            Boron         ppm         ASTM D5185(m)         0         0            Barium         ppm         ASTM D5185(m)         0         0            Molybdenum         ppm         ASTM D5185(m)         0         0            Magnesium         ppm         ASTM D5185(m)         0         0            Magnesium         ppm         ASTM D5185(m)         42         42            Phosphorus         ppm         ASTM D5185(m)         254         249	Lead		ASTM D5185(m)		0	<1	
Tin         ppm         ASTM D5185(m)         0         0            Antimony         ppm         ASTM D5185(m)         0         0            Vanadium         ppm         ASTM D5185(m)         0         0            Beryllium         ppm         ASTM D5185(m)         0         0            Cadmium         ppm         ASTM D5185(m)         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         0         0            Barium         ppm         ASTM D5185(m)         0         0            Molybdenum         ppm         ASTM D5185(m)         0         0            Magnesium         ppm         ASTM D5185(m)         6         6            Magnesium         ppm         ASTM D5185(m)         42         42            Phosphorus         ppm         ASTM D5185(m)         220         221            Zinc         ppm         ASTM D5185(m)         2487         2559	Copper		ASTM D5185(m)		7	7	
Vanadium         ppm         ASTM D5185(m)         0         0            Beryllium         ppm         ASTM D5185(m)         0         0            Cadmium         ppm         ASTM D5185(m)         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         0         0            Barium         ppm         ASTM D5185(m)         0         0            Molybdenum         ppm         ASTM D5185(m)         0         0            Magnesium         ppm         ASTM D5185(m)         6         6            Magnesium         ppm         ASTM D5185(m)         42         42            Phosphorus         ppm         ASTM D5185(m)         254         249            Zinc         ppm         ASTM D5185(m)         2487         2559            Sulfur         ppm         ASTM D5185(m)         <1	Tin	ppm	ASTM D5185(m)		0	0	
Beryllium         ppm         ASTM D5185(m)         0         0            Cadmium         ppm         ASTM D5185(m)         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         <1         <1            Barium         ppm         ASTM D5185(m)         0         0            Molybdenum         ppm         ASTM D5185(m)         0         0            Manganese         ppm         ASTM D5185(m)         0         0            Magnesium         ppm         ASTM D5185(m)         42         42            Calcium         ppm         ASTM D5185(m)         220         221            Phosphorus         ppm         ASTM D5185(m)         2487         2559            Zuinc         ppm         ASTM D5185(m)         <1         <1            Sulfur         ppm         ASTM D5185(m)         <1         <1            CONTAMINANTS         method         limit/base         current         history1 <td>Antimony</td> <td>ppm</td> <td>ASTM D5185(m)</td> <td></td> <th>0</th> <td>0</td> <td></td>	Antimony	ppm	ASTM D5185(m)		0	0	
Cadmium         ppm         ASTM D5185(m)         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         <1	Vanadium	ppm	ASTM D5185(m)		0	0	
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         <1	Beryllium	ppm	ASTM D5185(m)		0	0	
Boron         ppm         ASTM D5185(m)         <1	•	ppm			0	0	
Barium         ppm         ASTM D5185(m)         0         0            Molybdenum         ppm         ASTM D5185(m)         0         0            Manganese         ppm         ASTM D5185(m)         0         0            Magnesium         ppm         ASTM D5185(m)         6         6            Calcium         ppm         ASTM D5185(m)         42         42            Phosphorus         ppm         ASTM D5185(m)         254         249            Zinc         ppm         ASTM D5185(m)         2487         2559            Sulfur         ppm         ASTM D5185(m)         <1         <1            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         <1         <1            Sodium         ppm         ASTM D5185(m)         <1         <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185(m)         0         0            Manganese         ppm         ASTM D5185(m)         0         0            Magnesium         ppm         ASTM D5185(m)         6         6            Calcium         ppm         ASTM D5185(m)         42         42            Phosphorus         ppm         ASTM D5185(m)         220         221            Zinc         ppm         ASTM D5185(m)         254         249            Sulfur         ppm         ASTM D5185(m)         2487         2559            Lithium         ppm         ASTM D5185(m)         <1         <1            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         <1         <1            Sodium         ppm         ASTM D5185(m)         <1         <1	Boron	ppm	ASTM D5185(m)		<1	<1	
Manganese         ppm         ASTM D5185(m)         0         0            Magnesium         ppm         ASTM D5185(m)         6         6            Calcium         ppm         ASTM D5185(m)         42         42            Phosphorus         ppm         ASTM D5185(m)         220         221            Zinc         ppm         ASTM D5185(m)         254         249            Sulfur         ppm         ASTM D5185(m)         2487         2559            Lithium         ppm         ASTM D5185(m)         <1	Barium	ppm	ASTM D5185(m)		0	0	
Magnesium         ppm         ASTM D5185(m)         6         6            Calcium         ppm         ASTM D5185(m)         42         42            Phosphorus         ppm         ASTM D5185(m)         220         221            Zinc         ppm         ASTM D5185(m)         254         249            Sulfur         ppm         ASTM D5185(m)         2487         2559            Lithium         ppm         ASTM D5185(m)         <1	Molybdenum	ppm	ASTM D5185(m)		0	0	
Calcium         ppm         ASTM D5185(m)         42         42            Phosphorus         ppm         ASTM D5185(m)         220         221            Zinc         ppm         ASTM D5185(m)         254         249            Sulfur         ppm         ASTM D5185(m)         2487         2559            Lithium         ppm         ASTM D5185(m)         <1	Manganese	ppm	ASTM D5185(m)		0	0	
Phosphorus         ppm         ASTM D5185(m)         220         221            Zinc         ppm         ASTM D5185(m)         254         249            Sulfur         ppm         ASTM D5185(m)         2487         2559            Lithium         ppm         ASTM D5185(m)         <1	Magnesium	ppm	ASTM D5185(m)		6	6	
Zinc         ppm         ASTM D5185(m)         254         249            Sulfur         ppm         ASTM D5185(m)         2487         2559            Lithium         ppm         ASTM D5185(m)         <1         <1            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         <1         <1            Sodium         ppm         ASTM D5185(m)         <1         <1	Calcium	ppm	ASTM D5185(m)		42	42	
Sulfur         ppm         ASTM D5185(m)         2487         2559            Lithium         ppm         ASTM D5185(m)         <1         <1            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         <1	Phosphorus	ppm	ASTM D5185(m)		220	221	
Lithium         ppm         ASTM D5185(m)         <1         <1            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         <1	Zinc	ppm	ASTM D5185(m)		254	249	
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         <1	Sulfur	ppm	ASTM D5185(m)		2487	2559	
Silicon         ppm         ASTM D5185(m)         <1	Lithium	ppm	ASTM D5185(m)		<1	<1	
Sodium         ppm         ASTM D5185(m)         <1	CONTAMINANTS	;	method	limit/base	current	history1	history2
	Silicon	ppm	ASTM D5185(m)		<1	<1	
Potassium ppm ASTM D5185(m) >20 <1 <1	Sodium		ASTM D5185(m)		<1	<1	
	Potassium	ppm	ASTM D5185(m)	>20	<1	<1	



# **OIL ANALYSIS REPORT**



FLUID CLEANLIN	ESS	method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	406	253	
Particles >6µm		ASTM D7647	>1300	96	61	
Particles >14μm		ASTM D7647	>160	5	3	
Particles >21μm		ASTM D7647	>40	1	2	
Particles >38μm		ASTM D7647	>10	1	1	
Particles >71μm		ASTM D7647	>3	1	1	
Oil Cleanliness		ISO 4406 (c)	>19/17/14	16/14/10	15/13/9	
FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		0.30	0.30	
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	NONE	
Debris	scalar	Visual*	NONE	NONE	NONE	
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	
Appearance	scalar	Visual*	NORML	NORML	NORML	
Odor	scalar	Visual*	NORML	NORML	NORML	
<b>Emulsified Water</b>	scalar	Visual*		NEG	NEG	
Free Water	scalar	Visual*		NEG	NEG	
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)		33.6	33.4	
SAMPLE IMAGES	;	method	limit/base	current	history1	history2
Color						no image
Bottom						no image
Bottom						no image



CALA ISO 17025:2017 Accredited Laboratory

Laboratory

Sample No. Lab Number : 02641964 Unique Number : 5799503

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 : PP

Received : 14 Jun 2024 **Tested** : 18 Jun 2024 Diagnosed : 18 Jun 2024 - Kevin Marson

HIBERNIA MGMT & DEVELOPMENT CO. LTD SUITE 1000,, 100 NEW GOWER STREET

ST.JOHNS, NL CA A1C 6K3 Contact: Sam Nash

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.

Test Package : IND 2 (Additional Tests: PQ, PRTCOUNT)

T: F: (709)722-3766

Validity of results and interpretation are based on the sample and information as supplied. Report Id: HIBSTJ [WCAMIS] 02641964 (Generated: 06/18/2024 12:21:04) Rev: 1

Contact/Location: Sam Nash - HIBSTJ

samantha.m.nash@exxonmobil.com