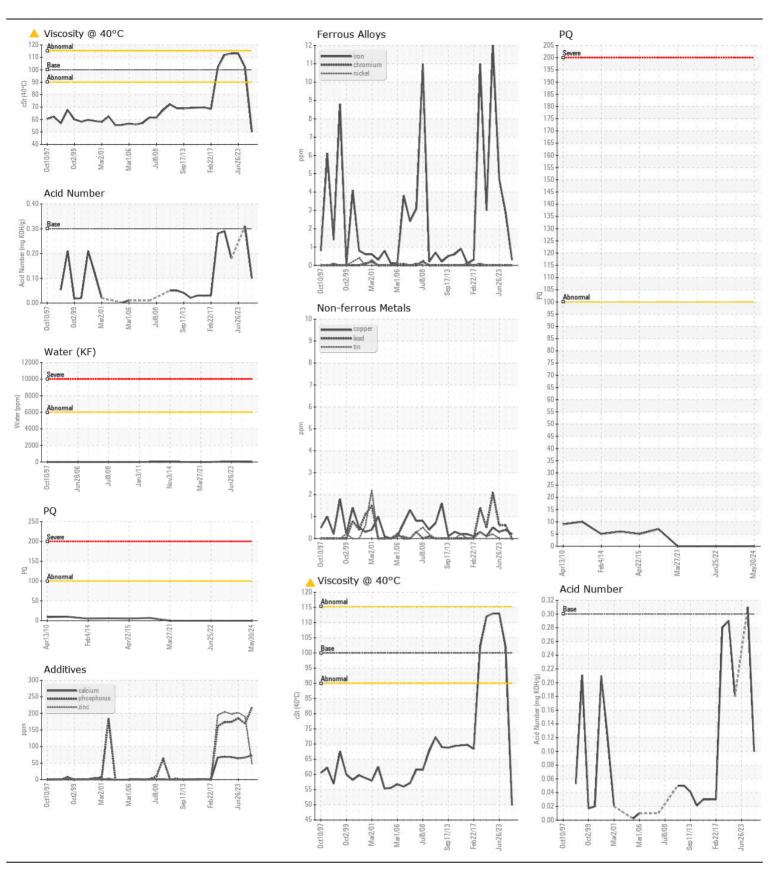
WEAR CONTAMINATION FLUID CONDITION

NORMAL NORMAL ABNORMAL

Machine Id

HL5914 Aft Start Air Comp

Sample Date Client Info	Sample Date Client Info Sample Date Client Info Sample Date Nrs Client Info Sample Sample Samp	RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
Resample at the next service interval to monitor. Sample Data Client Info 4099 4007 35022 25 June 4009 4007 3502	Sample Date Client Info 30 May 201 74 Mor 2023 26 Mor 2014 26 Machino 49 Mor 2014 26 Mor 2014 26 Machino 49 Mor 2014 26		Sample Number		Client Info		WC0929735	WC0807860	WC070912
Machine Age Nrs	Machine Age hrs Client Info 499 4007 300		Sample Date		Client Info		30 May 2024	07 Nov 2023	26 Jun 202
Filter Age	Filter Age	riesample at the next service interval to monitor.	Machine Age	hrs	Client Info		4909	4007	3502
Oil Changed Client Info Not Changed N/A None None None N/A None None None N/A None None			Oil Age	hrs	Client Info		0	1000	0
Filter Changed Sample Status	Filter Changed Sample Status		Filter Age	hrs	Client Info		0	0	0
No	NORTAM NORMAL NO		Oil Changed		Client Info		Not Changd	Changed	N/A
PQ	PQ		Filter Changed		Client Info		None	None	N/A
All component wear rates are normal. Iron	Iron		Sample Status				ABNORMAL	NORMAL	NORMAL
Iron	Iron	WEAR	PQ		ASTM D8184*		0	0	
Chromium ppm ASTN D5185(m) 4 0 0 0 0 0 0 0 0 0	Chromium ppm ASTN 05185 3-4 0 0 0 0 0 0 0 0 0		Iron	ppm	ASTM D5185(m)	>50	<1	3	5
Titanium ppm ASTM 05185 m 0	Titanium ppm ASTM DS185(m) 0	All component wear rates are normal.	Chromium	ppm	ASTM D5185(m)	>4	0	0	0
Silver ppm ASTM D5185 m 0 0 0 0 1 0	Silver		Nickel	ppm	ASTM D5185(m)	>4	0	0	0
Aluminum ppm ASTM D5185 m >10 0 <1 <1 Lead ppm ASTM D5185 m >20 0 <1 <1 Copper ppm ASTM D5185 m >40 <1 <1 <1 <1 Copper ppm ASTM D5185 m >40 <1 <1 <1 <1 Copper ppm ASTM D5185 m >5 0 0 0 Vanadium ppm ASTM D5185 m >5 0 0 0 0 Vanadium ppm ASTM D5185 m >5 0 0 0 0 Vanadium ppm ASTM D5185 m >5 0 0 0 0 Vanadium ppm ASTM D5185 m >5 0 0 0 0 Vanadium ppm ASTM D5185 m >5 0 0 0 0 Vanadium ppm ASTM D5185 m >5 0 0 0 0 Vanadium ppm ASTM D5185 m >5 0 0 0 0 Vanadium ppm ASTM D5185 m >6 0 0 0 Vanadium ppm ASTM D5185 m >20 <1 <1 <1 Valuer % ASTM D5304' >0.6 0.001 0.001 0.001 ppm Water ppm ASTM D5304' >0.6 0.001 0.001 0.001 ppm Water ppm ASTM D5304' >0.6 0.001 0.001 0.001 ppm Water ppm ASTM D5304' >0.6 0.001 0.001 0.001 ppm Water ppm ASTM D5304' >0.6 0.001 0.001 0.001 ppm Water ppm ASTM D5304' >0.6 0.001 0.001 0.001 ppm Water ppm ASTM D5304' >0.6 0.001 0.001 0.001 ppm Water ppm ASTM D5304' >0.6 0.001 0.001 0.001 ppm Water ppm ASTM D5304' >0.6 0.001 0.001 0.001 ppm Water ppm ASTM D5305 m 0.00 0.001 0.001 Appearance scalar Visual' NONE	Aluminum ppm ASTM D5(85/m) >10 0 <1 < < < < < < < <		Titanium	ppm	ASTM D5185(m)		0	0	0
Lead	Lead ppm ASTM D5185 m > 20 0 <1 < <		Silver	ppm	ASTM D5185(m)		0	<1	0
Copper ppm ASTM D5185(m) >40 <1 <1 <1 Tin ppm ASTM D5185(m) >5 0 0 0 Vanadium ppm ASTM D5185(m) >5 0 0 0 Vanadium ppm ASTM D5185(m) >5 0 0 0 Vanadium ppm ASTM D5185(m) NONE	Copper		Aluminum	ppm	ASTM D5185(m)	>10	0	<1	<1
Tin	Tin		Lead	ppm	ASTM D5185(m)	>20	0	<1	<1
Vanadium ppm ASTM D5185(m) NONE NO	Vanadium ppm ASTM D5185 m NONE NO		Copper	ppm			<1	<1	<1
White Metal Yellow Metal Scalar Visual* NONE NONE NONE NONE NONE NONE NONE NON	White Metal Scalar Visual* NONE NO		Tin	ppm	ASTM D5185(m)	>5	0	0	0
Yellow Metal scalar Visual* NONE N	Yellow Metal scalar Visual* NONE N		Vanadium	ppm	ASTM D5185(m)		0		
Silicon ppm ASTM D5185(m) >25 7 6 <1	Silicon ppm ASTM D5185(m) >25 7 6 < >			scalar			-		NONE
Potassium ppm ASTM D5185(m) >20 <1 <1 <1 <1 <1 <1 <1 <	Potassium ppm ASTM D5185(m) >20 <1 <1 <1 <1 <1 <1 <1 <		Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Water % ASTM D6304" >0.6 0.001 0.0	Water % ASTM D6304* > 0.6 0.001 0.	CONTAMINATION	Silicon	ppm	ASTM D5185(m)	>25	7	6	<1
Water % ASTM D6304* >-0.6 0.001	Water % ASTM D6304" >0.6 0.001 0.0	There is no indication of any contamination in the oil.	Potassium	ppm	ASTM D5185(m)	>20	<1	<1	<1
Silt scalar Visual* NONE NORML NOR	Silt scalar Visual* NONE NORML NORM		Water	%	ASTM D6304*	>0.6	0.001	0.001	0.001
Debris Scalar Visual* NONE VLITE NONE NONE Sand/Dirt Scalar Visual* NONE NORML NOR	Debris Scalar Visual* NONE NORML		ppm Water	ppm	ASTM D6304*	>6000	4	15	14.7
Sand/Dirt Scalar Visual* NONE NONE NONE NONE NORML N	Sand/Dirt scalar Visual* NONE NONE NONE NONE Appearance scalar Visual* NORML N		Silt	scalar		NONE	NONE	NONE	NONE
Appearance	Appearance Scalar Visual* NORML NORM			scalar	Visual*	NONE			NONE
Odor scalar Visual* NORML NORML NORML NORML Scalar Visual* Scalar Scalar Visual* Scalar Scalar Visual* Scalar Scalar Visual* Scalar Scal	Odor		Sand/Dirt	scalar	Visual*				NONE
Emulsified Water scalar Visual* >0.6 NEG NEG NEG	Emulsified Water scalar Visual* >0.6 NEG N						-		NORM
Sodium ppm ASTM D5185(m) 3 <1 <1	Sodium ppm ASTM D5185(m) 3 <1 <2								NORM
Viscosity of sample indicates oil is within ISO 46 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service. Boron ppm ASTM D5185(m) 0 <1 <1 0 Molybdenum ppm ASTM D5185(m) 0 0 0 0 Manganese ppm ASTM D5185(m) 0 0 0 0 Magnesium ppm ASTM D5185(m) 0 0 0 0 Magnesium ppm ASTM D5185(m) 0 0 0 0 Magnesium ppm ASTM D5185(m) 0 0 0 0 Sulfur ppm ASTM D5185(m) 160 217 169 185 Zinc ppm ASTM D5185(m) 190 49 190 202 Sulfur ppm ASTM D5185(m) 1300 774 1167 739 Acid Number (AN) mg KOH/g ASTM D974* 0.3 0.10 0.31	Viscosity of sample indicates oil is within ISO 46 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service. Boron ppm ASTM D5185(m) 0 <1 <1 <0 Molybdenum ppm ASTM D5185(m) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Emulsified Water	scalar	Visual*	>0.6	NEG	NEG	NEG
Viscosity of sample indicates oil is within ISO 46 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service. Barium ppm ASTM D5185(m) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Viscosity of sample indicates oil is within ISO 46 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service. Barium ppm ASTM D5185(m) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	FLUID CONDITION	Sodium	ppm	ASTM D5185(m)		3	<1	<1
investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service. Barium ppm ASTM D5185(m) 0 0 0 0 0 0 0 0 0	investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service. Barium ppm ASTM D5185(m) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Boron	ppm	ASTM D5185(m)	0	<1	<1	<1
this fluid. The condition of the oil is suitable for further service. Manganese ppm ASTM D5185(m) 0 0 0	this fluid. The condition of the oil is suitable for further service. Manganese ppm ASTM D5185(m) 0 0 0 0	Viscosity of sample indicates oil is within ISO 46 range, advise	Barium	ppm	ASTM D5185(m)	0	<1	<1	0
Magnesium ppm ASTM D5185(m) 0 <1 0 <1 Calcium ppm ASTM D5185(m) 60 73 67 64 64 Phosphorus ppm ASTM D5185(m) 160 217 169 185 210c ppm ASTM D5185(m) 190 49 190 202 Sulfur ppm ASTM D5185(m) 1300 774 1167 739 Acid Number (AN) mg KOH/g ASTM D974* 0.3 0.10 0.31	Magnesium ppm ASTM D5185(m) 0 <1 0 <1 Calcium ppm ASTM D5185(m) 60 73 67 64 Phosphorus ppm ASTM D5185(m) 160 217 169 18 Zinc ppm ASTM D5185(m) 190 49 190 20 Sulfur ppm ASTM D5185(m) 1300 774 1167 73			mag	ASTM D5185(m)	0	0	0	0
Calcium ppm ASTM D5185(m) 60 73 67 64 Phosphorus ppm ASTM D5185(m) 160 217 169 185 Zinc ppm ASTM D5185(m) 190 49 190 202 Sulfur ppm ASTM D5185(m) 1300 774 1167 739 Acid Number (AN) mg KOH/g ASTM D974* 0.3 0.10 0.31	Calcium ppm ASTM D5185(m) 60 73 67 64 Phosphorus ppm ASTM D5185(m) 160 217 169 18 Zinc ppm ASTM D5185(m) 190 49 190 20 Sulfur ppm ASTM D5185(m) 1300 774 1167 73	investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for	Molybdenum	le le			n	0	0
Phosphorus ppm ASTM D5185(m) 160 217 169 185 Zinc ppm ASTM D5185(m) 190 49 190 202 Sulfur ppm ASTM D5185(m) 1300 774 1167 739 Acid Number (AN) mg KOH/g ASTM D974* 0.3 0.10 0.31	Phosphorus ppm ASTM D5185(m) 160 217 169 18 Zinc ppm ASTM D5185(m) 190 49 190 20 Sulfur ppm ASTM D5185(m) 1300 774 1167 73	investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for	•		, ,		U		
Zinc ppm ASTM D5185(m) 190 49 190 202 Sulfur ppm ASTM D5185(m) 1300 774 1167 739 Acid Number (AN) mg KOH/g ASTM D974* 0.3 0.10 0.31	Zinc ppm ASTM D5185(m) 190 49 190 20 Sulfur ppm ASTM D5185(m) 1300 774 1167 73	investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for	Manganese	ppm	ASTM D5185(m)		<1	0	
Sulfur ppm ASTM D5185(m) 1300 774 1167 739 Acid Number (AN) mg KOH/g ASTM D974* 0.3 0.10 0.31	Sulfur ppm ASTM D5185(m) 1300 774 1167 73	investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for	Manganese Magnesium Calcium	ppm	ASTM D5185(m) ASTM D5185(m)		<1 73	0 67	64
Acid Number (AN) mg KOH/g ASTM D974* 0.3 0.10 0.31		investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for	Manganese Magnesium Calcium Phosphorus	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	60	<1 73 217	0 67 169	64 185
	Asid Number / ANI	investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for	Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	60 160 190	<1 73 217 49	0 67 169 190	64 185 202
Visc @ 40°C cSt		investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for	Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	60 160 190 1300	<1 73 217 49 774	0 67 169 190 1167	64 185





CALA ISO 17025:2017 Accredited

Laboratory

Laboratory Sample No. Lab Number

: WC0929735 : 02639894 Unique Number : 5789056 Test Package: MAR 2 (Additional Tests: KF)

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 Received **Tested**

: 05 Jun 2024 : 06 Jun 2024 Diagnosed

: 06 Jun 2024 - Kevin Marson

CANADIAN COAST GUARD CCGS HENRY LARSEN, P.O. BOX 5667, 280 SOUTHSIDE RD. ST. JOHN`S, NL

CA A1C 5X1 Contact: Chief Engineer henrylarsence@ccgs-ngcc.gc.ca

> T: (709)687-5198 F: (709)685-3187

Validity of results and interpretation are based on the sample and information as supplied.