WEAR CONTAMINATION **FLUID CONDITION**

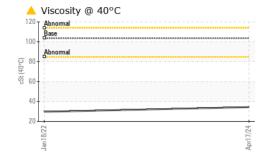
NORMAL NORMAL ABNORMAL

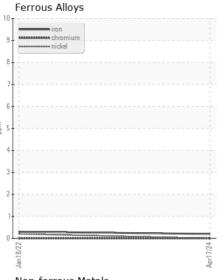
Machine Id

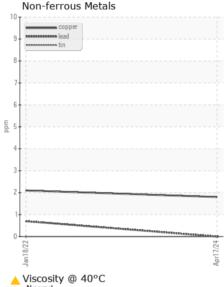
MIDSHIP SERVO

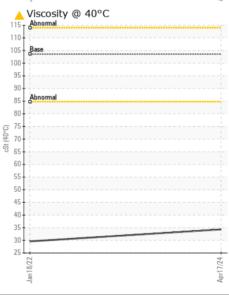
Hydraulic System

CASTROL HYSPIN AWS HYDRAULIC 100 (G	iAL)						
RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the component make and model with your next sample. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MAR 2 test kits, this testkit includes Particle Count to determine the ISO cleanliness of the fluid. this testkit includes AN to determine the suitability of the oil for continued use.	Sample Number		Client Info		WC0872133	WC0610268	
	Sample Date		Client Info		17 Apr 2024	18 Jan 2022	
	Machine Age	hrs	Client Info		13606	0	
	Oil Age	hrs	Client Info		0	0	
	Filter Age	hrs	Client Info		0	0	
	Oil Changed		Client Info		N/A	N/A	
	Filter Changed		Client Info		N/A	N/A	
	Sample Status				ABNORMAL	ABNORMAL	
WEAR All component wear rates are normal.	Iron	ppm	ASTM D5185(m)	>20	<1	<1	
	Chromium	ppm	ASTM D5185(m)	>10	0	0	
	Nickel	ppm	ASTM D5185(m)	>10	0	<1	
	Titanium	ppm	ASTM D5185(m)		0	0	
	Silver	ppm	ASTM D5185(m)		0	0	
	Aluminum	ppm	ASTM D5185(m)	>10	0	0	
	Lead	ppm	ASTM D5185(m)	>10	0	<1	
	Copper	ppm	ASTM D5185(m)	>75	2	2	
	Tin	ppm	ASTM D5185(m)	>10	0	0	
	Vanadium	ppm	ASTM D5185(m)		0	0	
	White Metal	scalar	Visual*	NONE	NONE	NONE	
	Yellow Metal	scalar	Visual*	NONE	NONE	NONE	
CONTAMINATION	Silicon	ppm	ASTM D5185(m)	>20	0	<1	
	Potassium	ppm	ASTM D5185(m)	>20	0	<1	
There is no indication of any contamination in the component(unconfirmed).	Water	PP	WC Method	>0.1	NEG	NEG	
	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	
	Emulsified Water	scalar	Visual*	>0.1	NEG	NEG	
FLUID CONDITION	Sodium	ppm	ASTM D5185(m)		<1	<1	
Viscosity of sample indicates oil is within ISO 32 range, advise investigate. The condition of the oil is acceptable for the time in service (unconfirmed).	Boron	ppm	ASTM D5185(m)		0	<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)		<1	<1	
	Calcium	ppm	ASTM D5185(m)		56	67	
	Phosphorus	ppm	ASTM D5185(m)		373	399	
	Zinc	ppm	ASTM D5185(m)		476	482	
	Sulfur	ppm	ASTM D5185(m)	105 -	3882	3585	
Panast Id. UODIZONIADO IMCAMIST 02620020 (Canasatad: 04/22/2024 15:17:20) Paus 1	Visc @ 40°C	cSt	ASTM D7279(m)	103.6	4 34.3	29.6	











CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No.

Lab Number : 02630939 Unique Number : 5772092

: WC0872133 Test Package : MAR 1

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

: 23 Apr 2024 : 23 Apr 2024 Diagnosed

: 23 Apr 2024 - Kevin Marson

87 WATER STREET,, 2ND FLOOR ST.JOHNS, NL **CA A1C 1A5**

Horizon Maritime Services Ltd. - Horizon Arctic

Contact: Horizon Arctic Chief Engineer chiefeng.arctic@horizonvessel.com T: (709)702-4447

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.