



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	NORMAL

Machine Id
PORT STEERING (S/N 115841-080001)
 Component
Port Steering
 Fluid
CASTROL HYSPIN AWH-M ISO 32 (800 LTR)

RECOMMENDATION

Check seals and/or filters for points of contaminant entry. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. 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 AN to determine the suitability of the fluid for continued use. this testkit includes Particle Count to determine the ISO cleanliness of the fluid.

WEAR

All component wear rates are normal.

CONTAMINATION

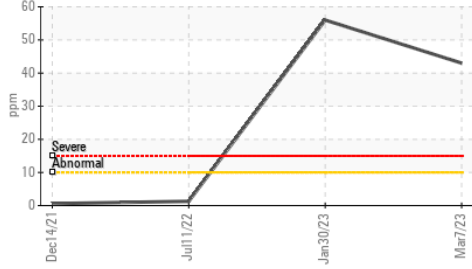
Elemental level of silicon (Si) above normal indicating ingress of seal material.

FLUID CONDITION

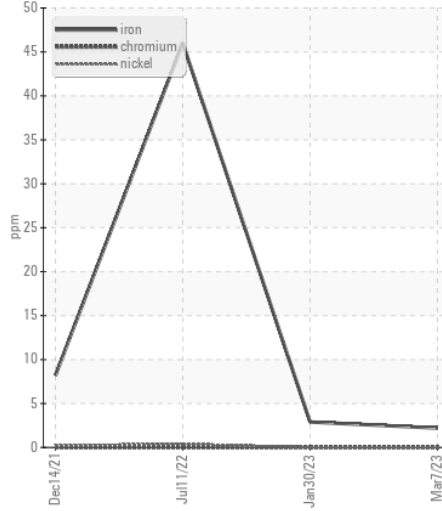
The fluid is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0787170	WC0474211	WC0474242
Sample Date		Client Info		07 Mar 2023	30 Jan 2023	11 Jul 2022
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		1	0	0
Filter Age	hrs	Client Info		1	0	0
Oil Changed		Client Info		Changed	N/A	Not Changd
Filter Changed		Client Info		Changed	Changed	None
Sample Status				SEVERE	SEVERE	ATTENTION
Iron	ppm	ASTM D5185(m)	>60	2	3	46
Chromium	ppm	ASTM D5185(m)	>12	0	0	0
Nickel	ppm	ASTM D5185(m)	>6	0	0	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>4	<1	0	<1
Lead	ppm	ASTM D5185(m)	>12	<1	<1	15
Copper	ppm	ASTM D5185(m)	>30	<1	<1	3
Tin	ppm	ASTM D5185(m)		0	0	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185(m)	>10	▲ 43	▲ 56	1
Potassium	ppm	ASTM D5185(m)	>20	1	<1	0
Water		WC Method		NEG	NEG	NEG
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	VLITE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*		NEG	NEG	NEG
Sodium	ppm	ASTM D5185(m)		<1	0	1
Boron	ppm	ASTM D5185(m)		<1	<1	2
Barium	ppm	ASTM D5185(m)		0	0	0
Molybdenum	ppm	ASTM D5185(m)		0	0	0
Manganese	ppm	ASTM D5185(m)		0	0	<1
Magnesium	ppm	ASTM D5185(m)		<1	<1	<1
Calcium	ppm	ASTM D5185(m)		49	43	3
Phosphorus	ppm	ASTM D5185(m)		415	409	493
Zinc	ppm	ASTM D5185(m)		450	455	14
Sulfur	ppm	ASTM D5185(m)		3786	4294	9978
Visc @ 40°C	cSt	ASTM D7279(m)	32.0	32.4	33.7	97.1

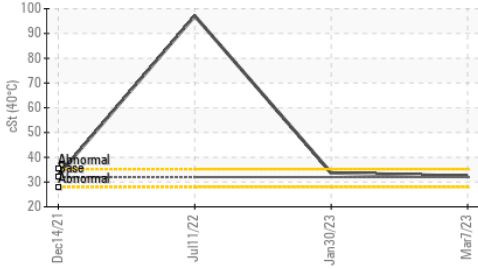
▲ Silicon (ppm)



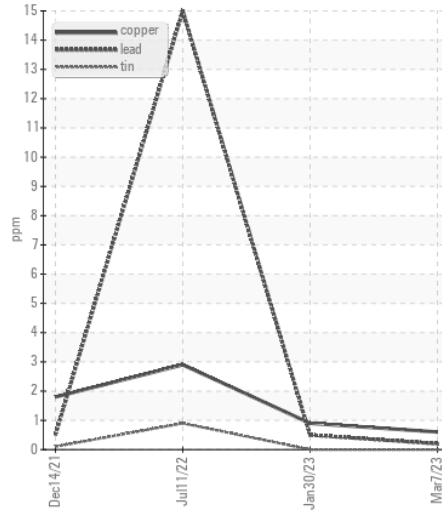
Ferrous Alloys



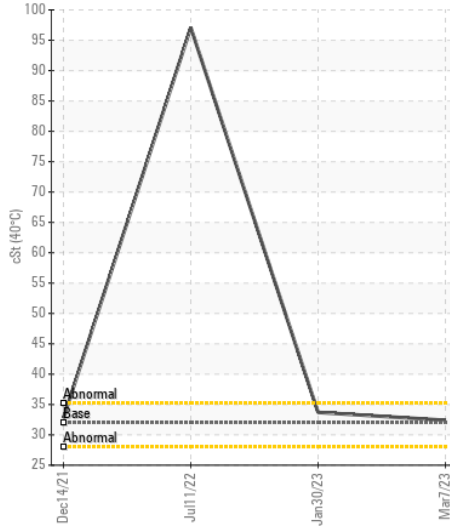
Viscosity @ 40°C



Non-ferrous Metals



Viscosity @ 40°C



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0787170
Lab Number : 02546010
Unique Number : 5551020
Test Package : MAR 1

Horizon Maritime Services Ltd. - K.J. Gardner
 101 Research Drive, Main Floor
 Dartmouth, NS
 CA B2Y 4T6
 Contact: Engine Room
 chiefeng.kjgardner@horizonmaritime.com

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.

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F: