



Area
RICH MCCARTY
Machine Id
RICH MCCARTY
Component
Starboard Main Engine
Fluid
CHEVRON DELO 710 LS (350 GAL)

RECOMMENDATION

We advise that you check for possible coolant leak. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0057507	MW0057637	MW0057655
Sample Date		Client Info		30 Jun 2024	15 May 2024	15 Apr 2024
Machine Age	hrs	Client Info		44534	43451	42749
Oil Age	hrs	Client Info		7092	6009	5307
Filter Age	hrs	Client Info		1362	264	995
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Filter Changed		Client Info		Changed	Changed	Not Changd
Sample Status				SEVERE	SEVERE	SEVERE

WEAR

Bearing and/or bushing wear is indicated.

Iron	ppm	ASTM D5185m	>75	39	38	38
Chromium	ppm	ASTM D5185m	>8	2	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m	>3	1	<1	<1
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>15	4	3	3
Lead	ppm	ASTM D5185m	>18	▲ 20	▲ 21	▲ 22
Copper	ppm	ASTM D5185m	>80	▲ 29	▲ 26	▲ 30
Tin	ppm	ASTM D5185m	>14	5	4	5
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

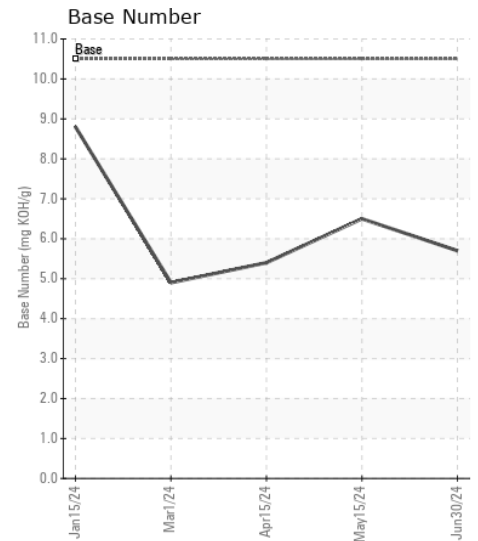
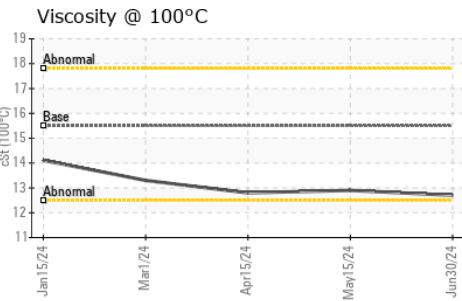
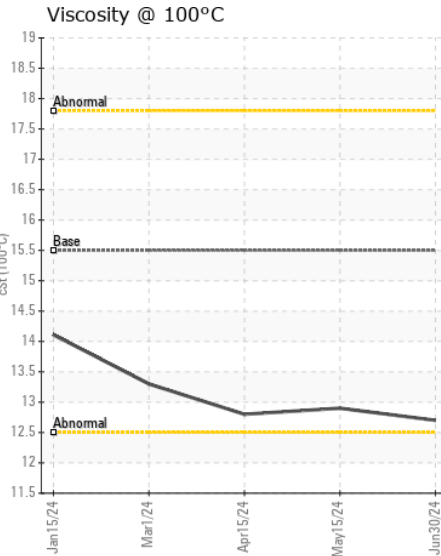
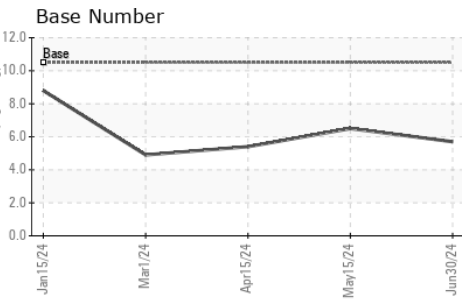
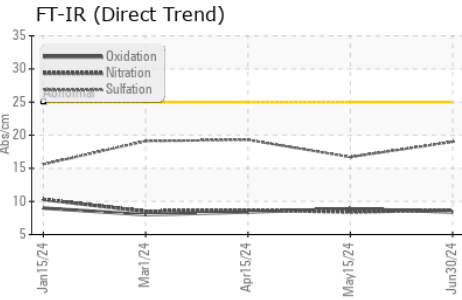
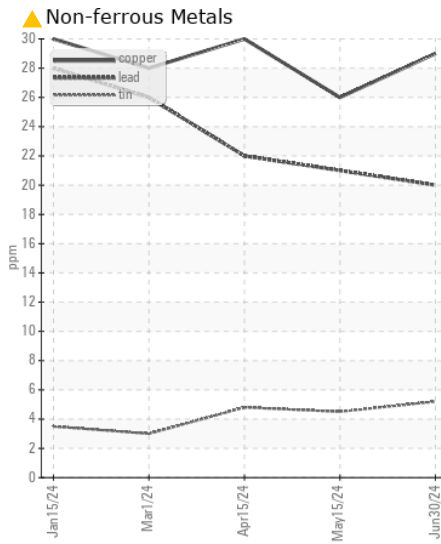
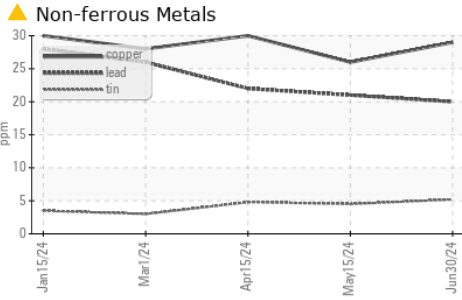
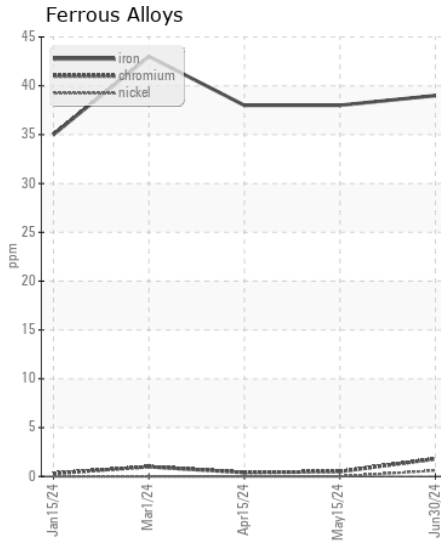
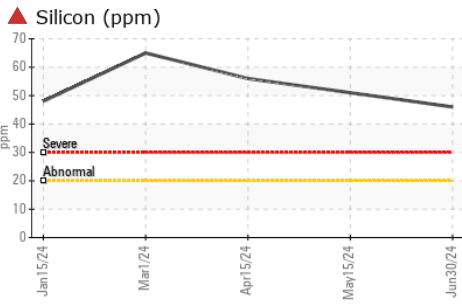
The high sodium (Na) level indicates the possible presence of salt water. Elemental level of sodium (Na) and/or boron (B) indicates a possible cooling water leak. Elemental level of silicon (Si) above normal indicating ingress of seal material.

Silicon	ppm	ASTM D5185m	>20	▲ 46	▲ 51	▲ 56
Potassium	ppm	ASTM D5185m	>20	▲ 16	▲ 14	▲ 16
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844		1.3	0.8	1.2
Nitration	Abs/cm	*ASTM D7624	>20	8.7	8.4	8.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.0	16.7	19.3
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
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	>0.1	NEG	NEG	NEG

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m	>75	▲ 467	▲ 528	▲ 691
Boron	ppm	ASTM D5185m		76	92	101
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		47	46	44
Manganese	ppm	ASTM D5185m		1	<1	<1
Magnesium	ppm	ASTM D5185m		55	53	73
Calcium	ppm	ASTM D5185m		2686	2512	2508
Phosphorus	ppm	ASTM D5185m		32	0	0
Zinc	ppm	ASTM D5185m		29	0	0
Sulfur	ppm	ASTM D5185m		2303	2451	2424
Oxidation	Abs/.1mm	*ASTM D7414	>25	8.4	8.9	8.4
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	5.7	6.5	5.4
Visc @ 100°C	cSt	ASTM D445	15.5	12.7	12.9	12.8



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0057507 **Received** : 08 Jul 2024
Lab Number : 06229863 **Tested** : 10 Jul 2024
Unique Number : 11113356 **Diagnosed** : 10 Jul 2024 - Jonathan Hester
Test Package : MAR 2 (Additional Tests: Glycol)

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To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)