



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area

SUE KOSSOW

Machine Id

[SUE KOSSOW] 003 641018-3

Component

Starboard Main Engine

Fluid

CHEVRON DELO 400 MULTIGRADE 15W40 (44 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0068027	MW0068055	MW0058400
Sample Date		Client Info		21 Jun 2024	27 Feb 2024	06 Jan 2024
Machine Age	hrs	Client Info		30730	31018	30690
Oil Age	hrs	Client Info		595	695	355
Filter Age	hrs	Client Info		595	695	355
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	5	12	5
Chromium	ppm	ASTM D5185m	>8	0	0	0
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>3	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	2	3
Lead	ppm	ASTM D5185m	>18	0	3	<1
Copper	ppm	ASTM D5185m	>80	0	<1	0
Tin	ppm	ASTM D5185m	>14	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

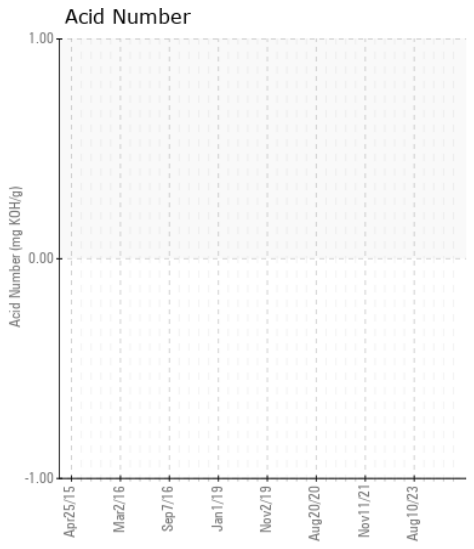
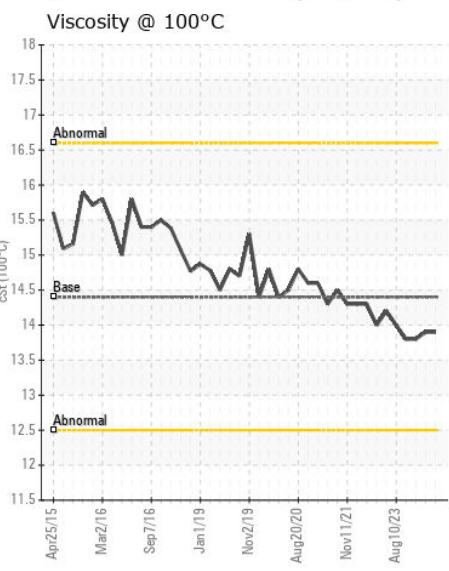
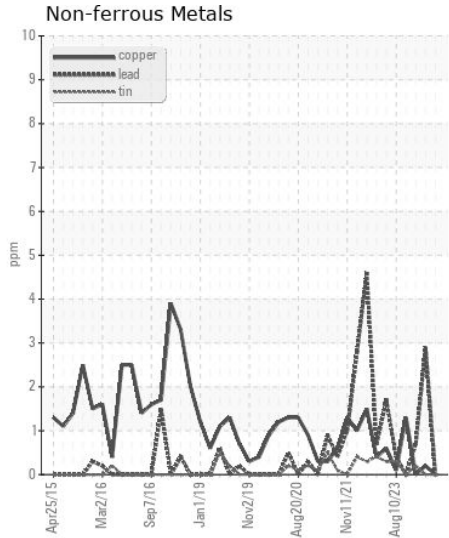
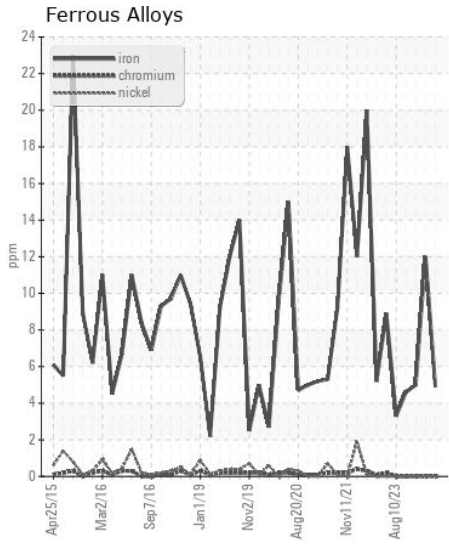
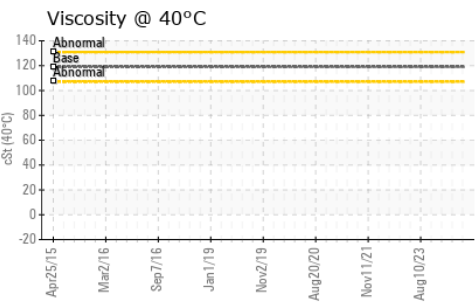
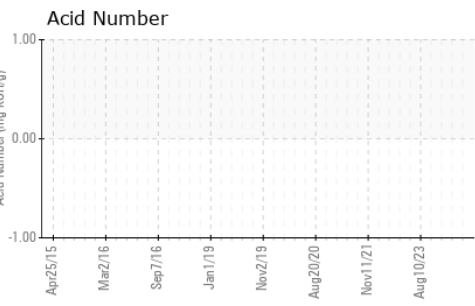
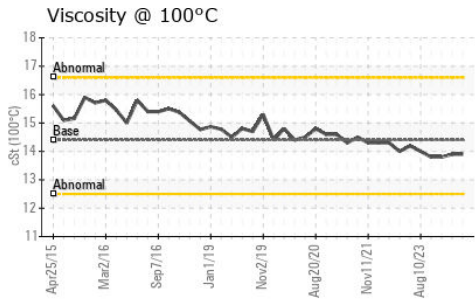
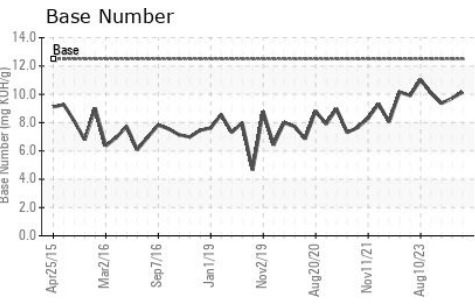
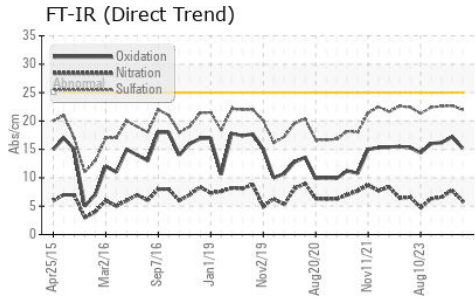
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	5	6	6
Potassium	ppm	ASTM D5185m	>20	0	1	2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.1	0.4	0.2
Nitration	Abs/cm	*ASTM D7624	>20	5.9	7.8	6.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.0	22.7	22.6
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. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	7	14	9
Boron	ppm	ASTM D5185m	151	324	319	330
Barium	ppm	ASTM D5185m	0.4	<1	0	0
Molybdenum	ppm	ASTM D5185m	250	123	123	117
Manganese	ppm	ASTM D5185m		0	0	<1
Magnesium	ppm	ASTM D5185m	0	639	691	638
Calcium	ppm	ASTM D5185m	2046	1713	1673	1454
Phosphorus	ppm	ASTM D5185m	1043	739	718	712
Zinc	ppm	ASTM D5185m	943	842	860	799
Sulfur	ppm	ASTM D5185m	5012	2977	2665	2417
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.2	17.2	16.2
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	10.15	9.72	9.36
Visc @ 100°C	cSt	ASTM D445	14.4	13.9	13.9	13.8



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0068027
Lab Number : 06225349
Unique Number : 11103546
Test Package : MAR 2 (Additional Tests: KV40, TAN Man)

Received : 01 Jul 2024
Tested : 03 Jul 2024
Diagnosed : 03 Jul 2024 - Don Baldridge

INGRAM BARGE
 900 S 3RD ST
 PADUCAH, KY
 US 42003

Contact: CHARLES COPELAND
 charles.copeland@ingrambarga.com

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)

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