



Area
ELIZABETH R CHASE
Machine Id
[ELIZABETH R CHASE] 003 663777-3
Component
Starboard Main Engine
Fluid
CHEVRON DELO 710 LE (400 GAL)

RECOMMENDATION

We advise that you check the fuel injection system. We recommend that you change the oil at the next available stoppage or outage. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0048803	MW0049703	MW0049696
Sample Date		Client Info		01 Dec 2023	01 Nov 2023	01 Sep 2023
Machine Age	hrs	Client Info		3538	41416	1389
Oil Age	hrs	Client Info		3538	2849	1389
Filter Age	hrs	Client Info		161	231	114
Oil Changed		Client Info		Not Chngd	Not Chngd	Not Chngd
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				SEVERE	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	12	13	16
Chromium	ppm	ASTM D5185m	>8	<1	1	2
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m	>3	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	<1	1	2
Lead	ppm	ASTM D5185m	>18	9	11	10
Copper	ppm	ASTM D5185m	>80	13	15	18
Tin	ppm	ASTM D5185m	>14	6	7	9
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

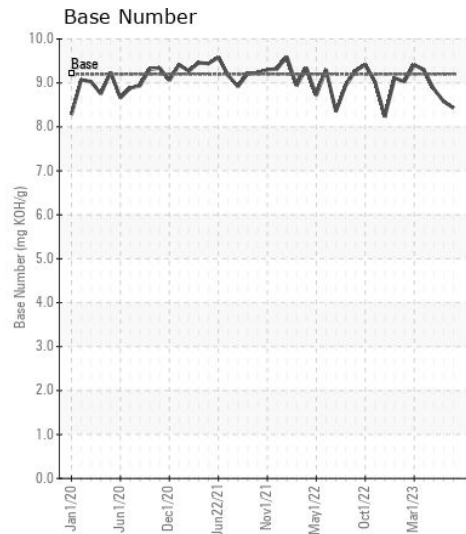
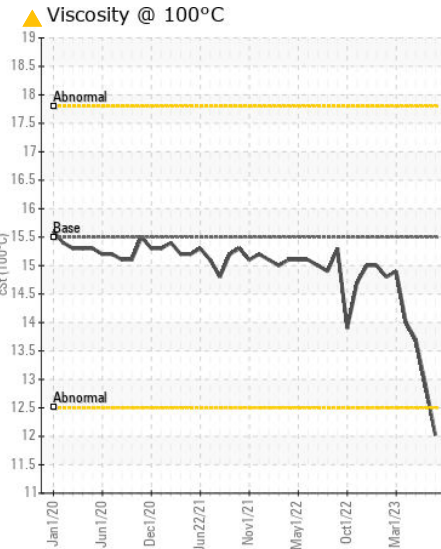
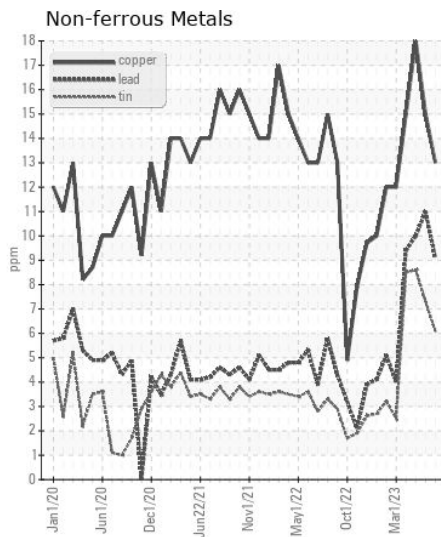
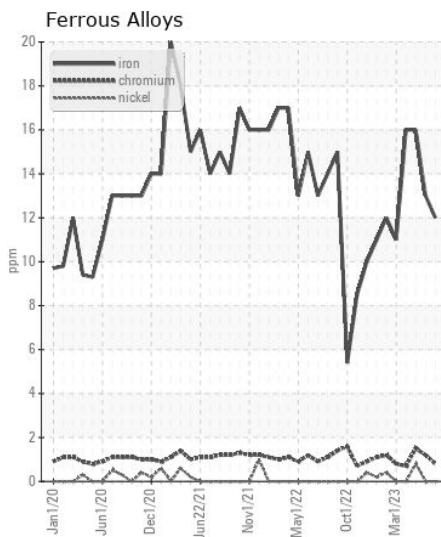
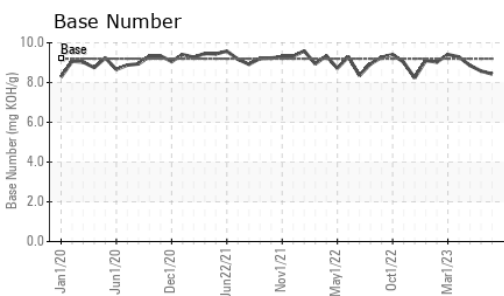
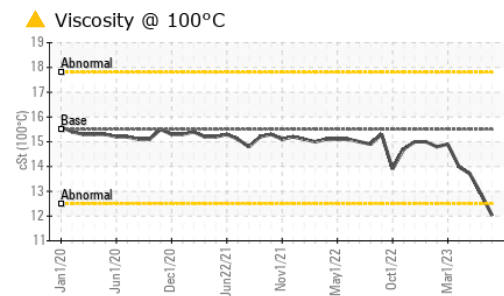
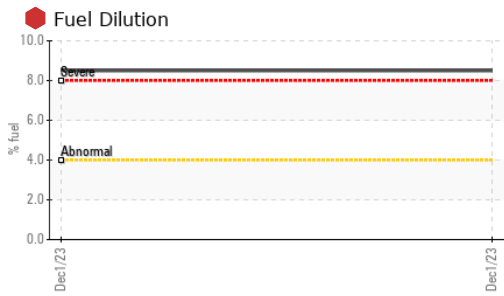
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Silicon	ppm	ASTM D5185m	>20	3	4	6
Potassium	ppm	ASTM D5185m	>20	<1	0	2
Fuel	%	ASTM D3524	>4.0	8.5	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.2	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	8.6	8.7	8.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	16.2	16.8	16.2
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. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m	>75	<1	0	0
Boron	ppm	ASTM D5185m		32	38	37
Barium	ppm	ASTM D5185m		0	0	2
Molybdenum	ppm	ASTM D5185m		38	41	42
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		11	14	12
Calcium	ppm	ASTM D5185m		2908	3258	3310
Phosphorus	ppm	ASTM D5185m		4	6	7
Zinc	ppm	ASTM D5185m	10	0	0	6
Sulfur	ppm	ASTM D5185m		2004	2090	2404
Oxidation	Abs/.1mm	*ASTM D7414	>25	9.5	9.6	9.3
Base Number (BN)	mg KOH/g	ASTM D2896	9.2	8.43	8.58	8.86
Visc @ 100°C	cSt	ASTM D445	15.5	12.02	12.9	13.7



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0048803 **Received** : 08 Jan 2024
Lab Number : 06054119 **Diagnosed** : 12 Jan 2024
Unique Number : 10820068 **Diagnostician** : Wes Davis
Test Package : MAR 2 (Additional Tests: FuelDilution, PercentFuel)

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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