



Machine Id
LOUISIANA LAGNIAPPE

Component
Starboard Main Engine

Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (44 GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0052158	MW0003436	MW0003429
Sample Date		Client Info		02 Feb 2024	30 Nov 2023	16 Oct 2023
Machine Age	hrs	Client Info		0	6031	4990
Oil Age	hrs	Client Info		0	1468	575
Filter Age	hrs	Client Info		0	1468	575
Oil Changed		Client Info		Changed	Changed	Not Changd
Filter Changed		Client Info		Changed	Changed	Not Changd
Sample Status				ATTENTION	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	22	17	6
Chromium	ppm	ASTM D5185m	>8	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>3	10	11	10
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>15	2	<1	1
Lead	ppm	ASTM D5185m	>18	0	2	<1
Copper	ppm	ASTM D5185m	>80	3	<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

Fuel content negligible. There is no indication of any contamination in the oil.

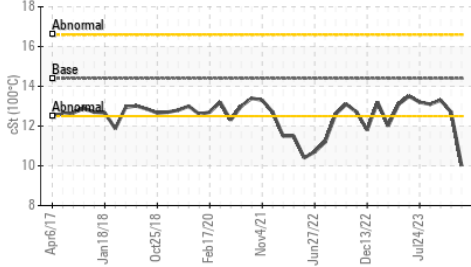
Silicon	ppm	ASTM D5185m	>20	4	4	3
Potassium	ppm	ASTM D5185m	>20	6	0	3
Fuel	%	ASTM D3524	>4.0	0.6	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0	0.5	0.2
Nitration	Abs/cm	*ASTM D7624	>20	6.1	9.0	7.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.0	19.6	18.2
Silt	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

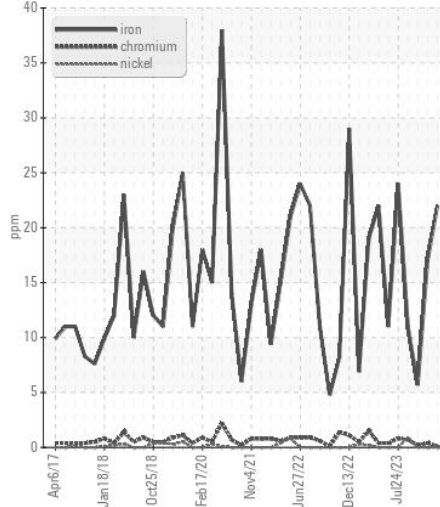
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m	>75	1	2	2
Boron	ppm	ASTM D5185m	151	148	105	117
Barium	ppm	ASTM D5185m	0.4	0	0	0
Molybdenum	ppm	ASTM D5185m	250	40	27	28
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m	0	528	577	552
Calcium	ppm	ASTM D5185m	2046	1719	1640	1627
Phosphorus	ppm	ASTM D5185m	1043	800	705	743
Zinc	ppm	ASTM D5185m	943	923	878	895
Sulfur	ppm	ASTM D5185m	5012	3252	3221	3114
Oxidation	Abs/.1mm	*ASTM D7414	>25	12.7	15.3	13.4
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	8.5	8.1	7.9
Visc @ 100°C	cSt	ASTM D445	14.4	▲ 10.0	12.7	13.3

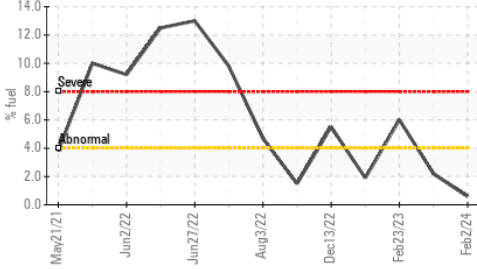
▲ Viscosity @ 100°C



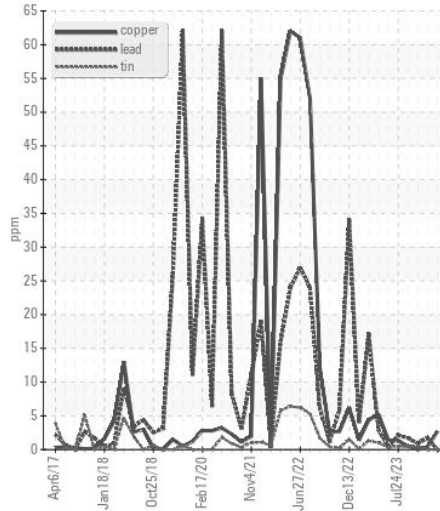
Ferrous Alloys



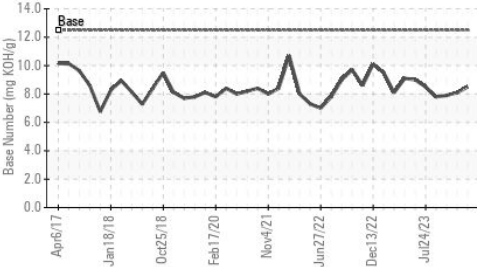
Fuel Dilution



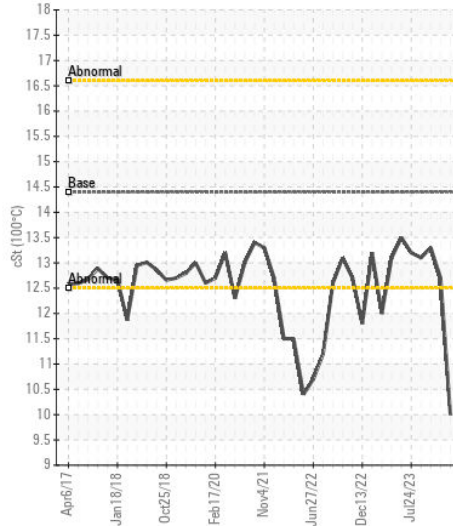
Non-ferrous Metals



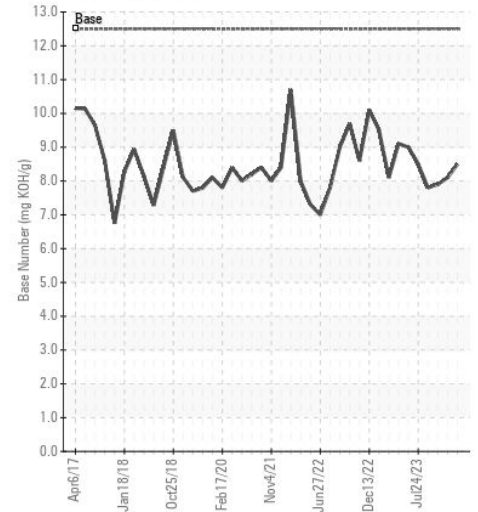
Base Number



▲ Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : MW0052158

Lab Number : 06084605

Unique Number : 10872050

Test Package : MAR 2 (Additional Tests: FuelDilution, PercentFuel)

Received : 09 Feb 2024

Tested : 13 Feb 2024

Diagnosed : 13 Feb 2024 - Jonathan Hester

AMERICAN RIVER TRANSPORTATION CO

8400 RIVER RD, PO BOX 656

WESTWEGO, LA

US 70094-2317

Contact: KEVIN CHIASSON

kevin.chiasson@adm.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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