



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
LARRY DRUMMOND
Machine Id
[LARRY DRUMMOND] 003 518412-3
Component
Starboard Main Engine
Fluid
CHEVRON DELO 710 LE (350 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0068773	MW0058649	MW0064420
Sample Date		Client Info		02 Apr 2024	01 Mar 2024	01 Feb 2024
Machine Age	hrs	Client Info		10856	10539	9850
Oil Age	hrs	Client Info		10856	10539	9850
Filter Age	hrs	Client Info		0	0	700
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		Changed	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	34	27	27
Chromium	ppm	ASTM D5185m	>10	1	<1	1
Nickel	ppm	ASTM D5185m	>11	<1	0	0
Titanium	ppm	ASTM D5185m	>3	<1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>5	3	2	2
Lead	ppm	ASTM D5185m	>10	22	13	14
Copper	ppm	ASTM D5185m	>20	44	40	41
Tin	ppm	ASTM D5185m	>1	12	10	10
Vanadium	ppm	ASTM D5185m		<1	0	<1
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.

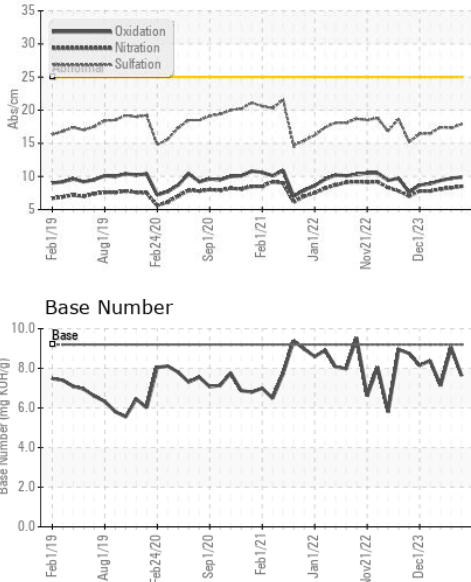
Silicon	ppm	ASTM D5185m	>5	9	8	9
Potassium	ppm	ASTM D5185m	>20	<1	3	2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.2	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	8.5	8.3	8.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.9	17.3	17.4
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

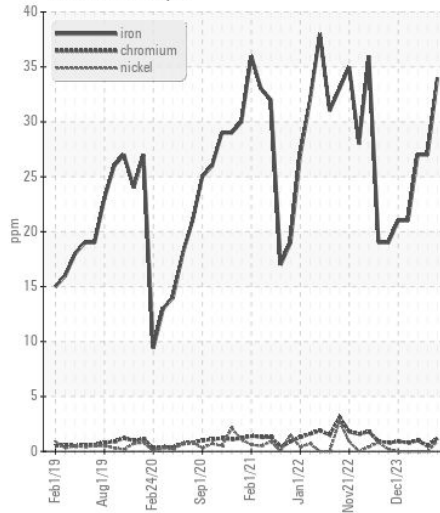
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	0	1	1
Boron	ppm	ASTM D5185m		40	37	37
Barium	ppm	ASTM D5185m		<1	0	0
Molybdenum	ppm	ASTM D5185m		60	51	52
Manganese	ppm	ASTM D5185m		5	4	3
Magnesium	ppm	ASTM D5185m		22	17	15
Calcium	ppm	ASTM D5185m		4260	3190	3305
Phosphorus	ppm	ASTM D5185m		21	14	11
Zinc	ppm	ASTM D5185m	10	15	7	3
Sulfur	ppm	ASTM D5185m		3987	2260	2472
Oxidation	Abs/.1mm	*ASTM D7414	>25	9.9	9.7	9.4
Base Number (BN)	mg KOH/g	ASTM D2896	9.2	7.62	9.05	7.13
Visc @ 100°C	cSt	ASTM D445	15.5	14.6	14.5	14.3

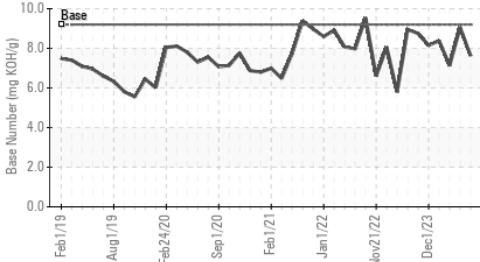
FT-IR (Direct Trend)



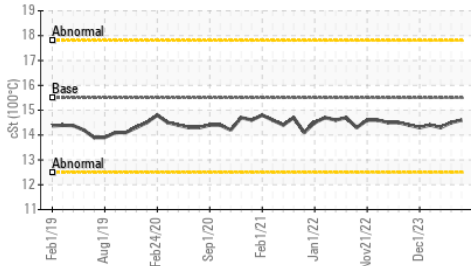
Ferrous Alloys



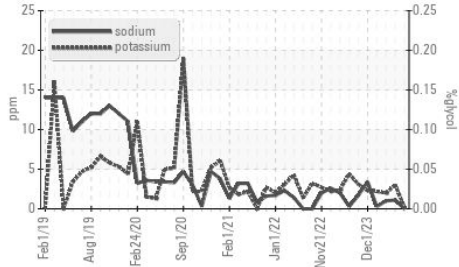
Base Number



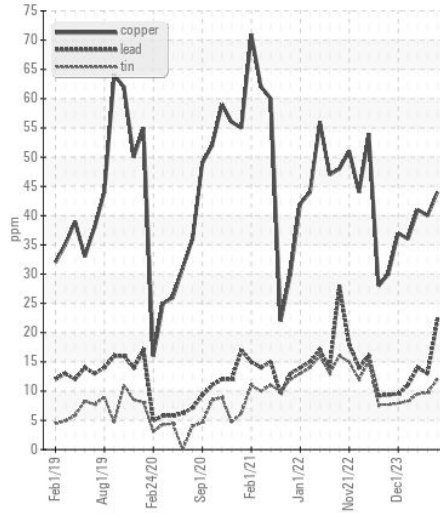
Viscosity @ 100°C



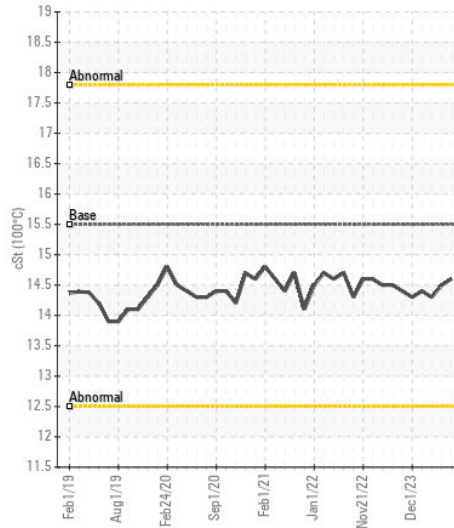
Glycol Contamination



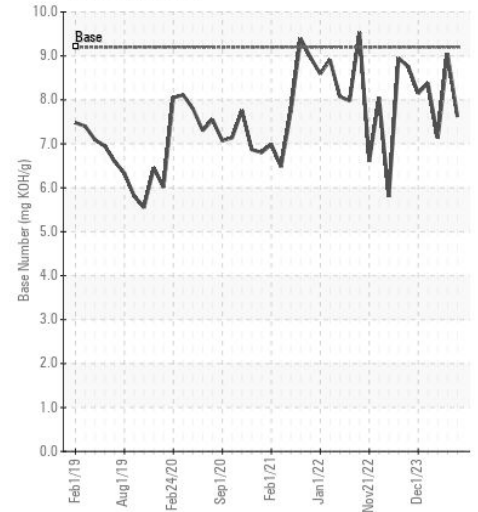
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0068773 **Received** : 11 Apr 2024
Lab Number : 06146712 **Tested** : 16 Apr 2024
Unique Number : 10976790 **Diagnosed** : 16 Apr 2024 - Jonathan Hester
Test Package : MAR 2 (Additional Tests: Glycol)

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

Contact: JEFF BISHOP
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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)

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 F: (615)695-3697