



WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Machine Id  
**SIGNET RELIANCE**

Component  
**Port Main Engine**

Fluid  
**CHEVRON DELO 400 MULTIGRADE 15W40 (212 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0052106</b>	MW0034673	MW0051925
Sample Date		Client Info		<b>11 Apr 2024</b>	24 Jan 2024	23 Nov 2023
Machine Age	hrs	Client Info		<b>26509</b>	26260	25979
Oil Age	hrs	Client Info		<b>841</b>	595	339
Filter Age	hrs	Client Info		<b>841</b>	595	339
Oil Changed		Client Info		<b>N/A</b>	Changed	N/A
Filter Changed		Client Info		<b>Changed</b>	Changed	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

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

**CONTAMINATION**

There is no indication of any contamination in the component.

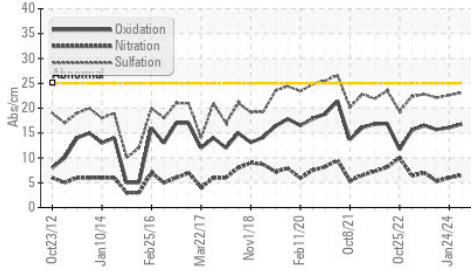
Silicon	ppm	ASTM D5185m	>20	<b>6</b>	6	4
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	<1	0
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>6.5</b>	6.0	5.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>23.1</b>	22.6	22.1
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

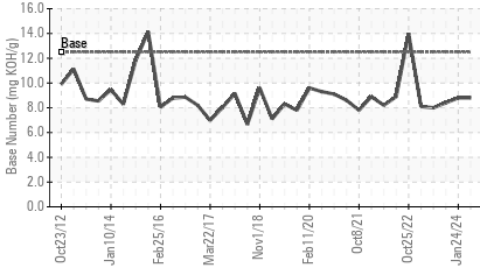
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	<b>1</b>	<1	<1
Boron	ppm	ASTM D5185m	151	<b>422</b>	358	367
Barium	ppm	ASTM D5185m	0.4	<b>&lt;1</b>	0	<1
Molybdenum	ppm	ASTM D5185m	250	<b>125</b>	127	125
Manganese	ppm	ASTM D5185m		<b>1</b>	0	<1
Magnesium	ppm	ASTM D5185m	0	<b>591</b>	709	697
Calcium	ppm	ASTM D5185m	2046	<b>1559</b>	1560	1721
Phosphorus	ppm	ASTM D5185m	1043	<b>751</b>	803	814
Zinc	ppm	ASTM D5185m	943	<b>830</b>	921	900
Sulfur	ppm	ASTM D5185m	5012	<b>2786</b>	2710	2847
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.8</b>	16.1	15.7
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	<b>8.8</b>	8.8	8.4
Visc @ 100°C	cSt	ASTM D445	14.4	<b>13.7</b>	13.8	13.9

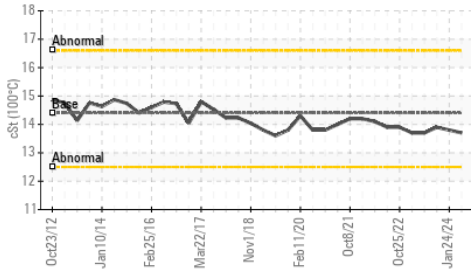
**FT-IR (Direct Trend)**



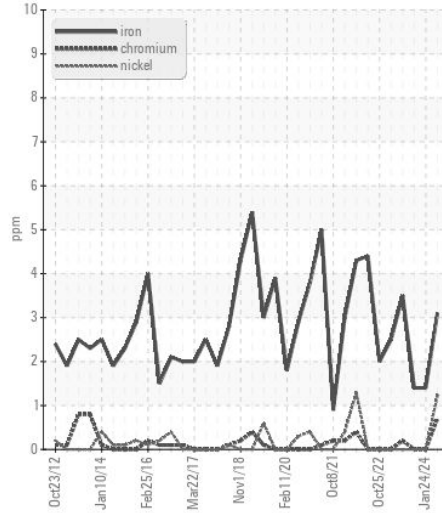
**Base Number**



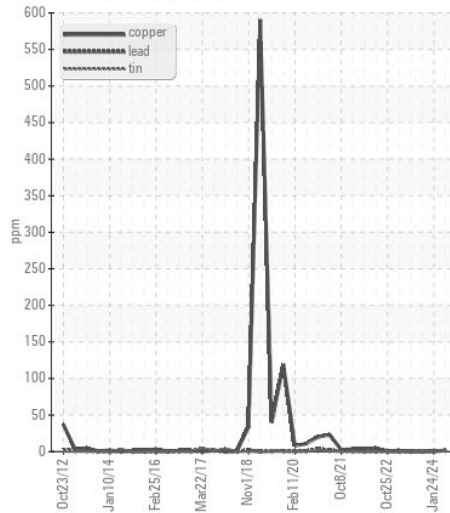
**Viscosity @ 100°C**



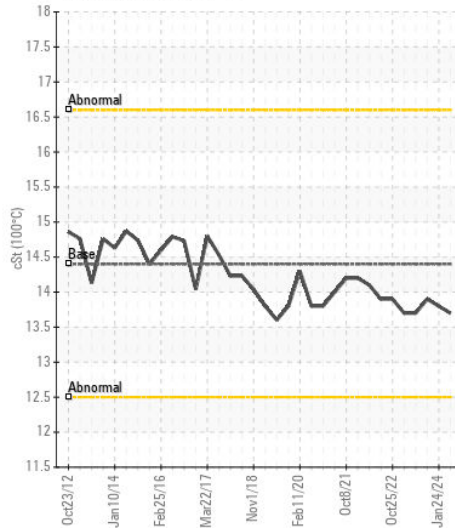
**Ferrous Alloys**



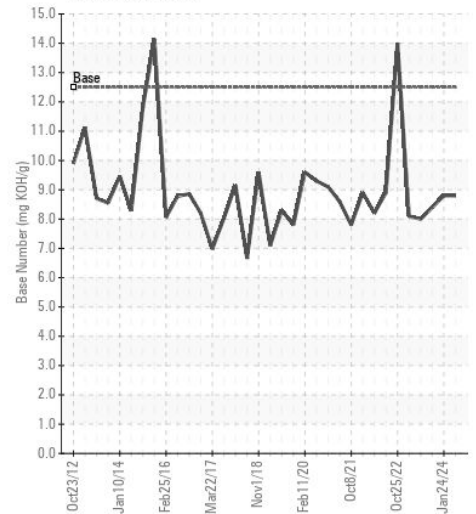
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

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

**Sample No.** : MW0052106

**Lab Number** : 06152771

**Unique Number** : 10982849

**Test Package** : MAR 2

**Received** : 18 Apr 2024

**Tested** : 18 Apr 2024

**Diagnosed** : 22 Apr 2024 - Don Baldrige

**MARITIME COMPANY**

3802 PORT RIVER RD

PASCAGOULA, MS

US 39567

Contact: TERRY SCUDDER

terry.scudder@signetmaritime.com

T:

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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