



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



Machine Id  
**CAIRO (S/N TSJ00163)**  
Component  
**Port Main Engine**  
Fluid  
**CHEVRON DELO 400 MULTIGRADE 15W40 (245 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0062419</b>	MW0062594	MW0062582
Sample Date		Client Info		<b>19 May 2024</b>	03 May 2024	11 Apr 2024
Machine Age	hrs	Client Info		<b>87021</b>	86648	86130
Oil Age	hrs	Client Info		<b>1064</b>	674	178
Filter Age	hrs	Client Info		<b>258</b>	674	178
Oil Changed		Client Info		<b>Not Changd</b>	Changed	Not Changd
Filter Changed		Client Info		<b>Changed</b>	Changed	Not Changd
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	<b>8</b>	7	3
Chromium	ppm	ASTM D5185m	>8	<b>0</b>	<1	0
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m	>3	<b>17</b>	16	14
Silver	ppm	ASTM D5185m	>2	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m	>15	<b>2</b>	2	<1
Lead	ppm	ASTM D5185m	>18	<b>0</b>	<1	0
Copper	ppm	ASTM D5185m	>80	<b>0</b>	<1	0
Tin	ppm	ASTM D5185m	>14	<b>&lt;1</b>	<1	0
Vanadium	ppm	ASTM D5185m		<b>0</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 oil.

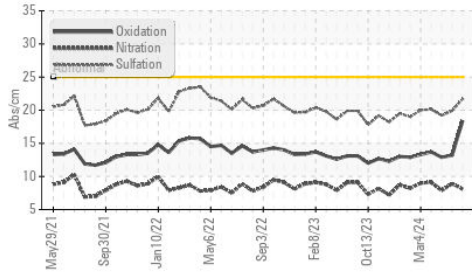
Silicon	ppm	ASTM D5185m	>20	<b>4</b>	4	2
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	5	2
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.6</b>	1.4	0.8
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.1</b>	8.9	7.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>21.7</b>	19.9	19.2
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**

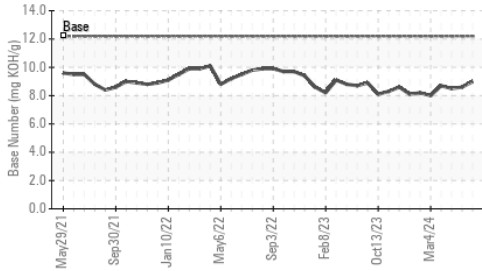
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	<b>1</b>	1	<1
Boron	ppm	ASTM D5185m		<b>82</b>	81	86
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>32</b>	30	31
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Magnesium	ppm	ASTM D5185m		<b>799</b>	704	790
Calcium	ppm	ASTM D5185m		<b>1642</b>	1539	1799
Phosphorus	ppm	ASTM D5185m	1360	<b>775</b>	775	819
Zinc	ppm	ASTM D5185m	1480	<b>887</b>	863	971
Sulfur	ppm	ASTM D5185m		<b>3571</b>	3587	4017
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>18.4</b>	13.2	12.9
Base Number (BN)	mg KOH/g	ASTM D2896	12.2	<b>9.0</b>	8.6	8.5
Visc @ 100°C	cSt	ASTM D445	15.1	<b>15.5</b>	15.3	14.8

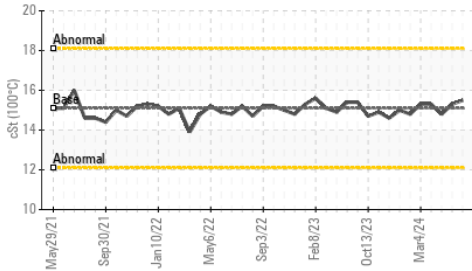
**FT-IR (Direct Trend)**



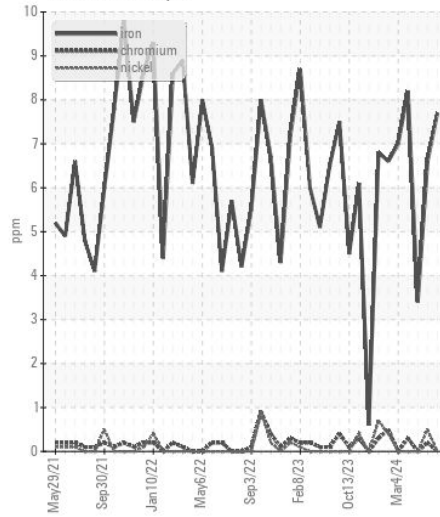
**Base Number**



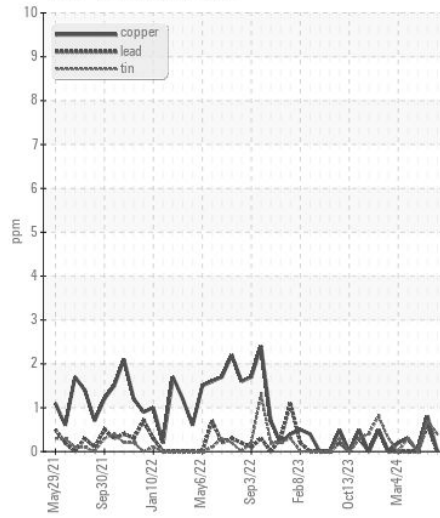
**Viscosity @ 100°C**



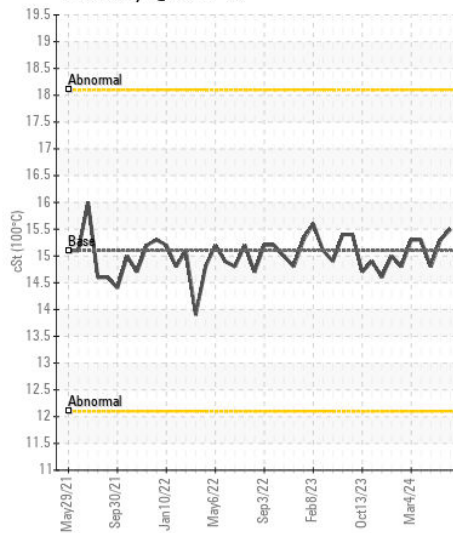
**Ferrous Alloys**



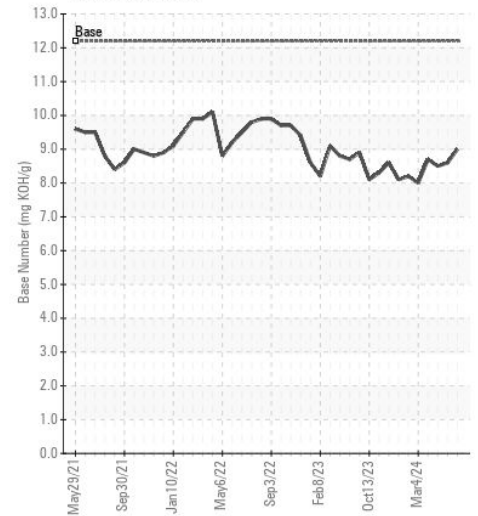
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

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

**Sample No.** : MW0062419

**Lab Number** : 06188881

**Unique Number** : 11045633

**Test Package** : MAR 2

**Received** : 23 May 2024

**Tested** : 24 May 2024

**Diagnosed** : 28 May 2024 - Don Baldrige

**AMERICAN COMMERCIAL LINES**

PO BOX 610, 1701 E. MARKET STREET

JEFFERSONVILLE, IN

US 47130

Contact: RONALD SCHNEIDER

ronald.schneider@bargaeacbl.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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