



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

Machine Id  
**PAUL F BROTZGE**  
Component  
**Port Main Engine**  
Fluid  
**CHEVRON DELO 710 LS (350 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0066416</b>	MW0066428	MW0055965
Sample Date		Client Info		<b>02 Mar 2024</b>	01 Feb 2024	04 Jan 2024
Machine Age	hrs	Client Info		<b>11304</b>	10588	9919
Oil Age	hrs	Client Info		<b>11304</b>	10588	1246
Filter Age	hrs	Client Info		<b>1291</b>	5	1246
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>Not Changd</b>	Changed	Not Changd
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

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

**CONTAMINATION**

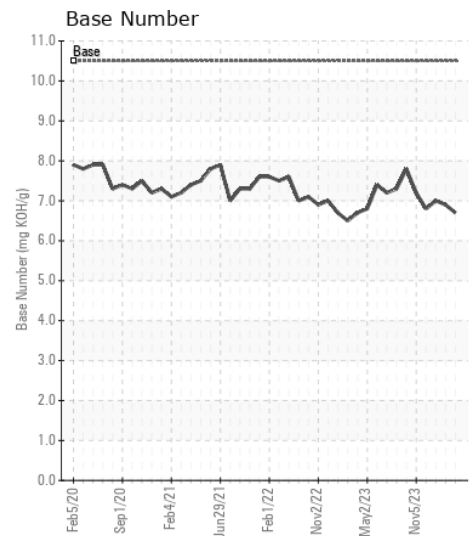
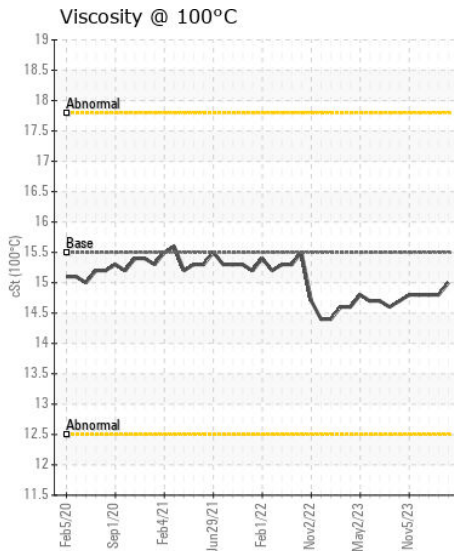
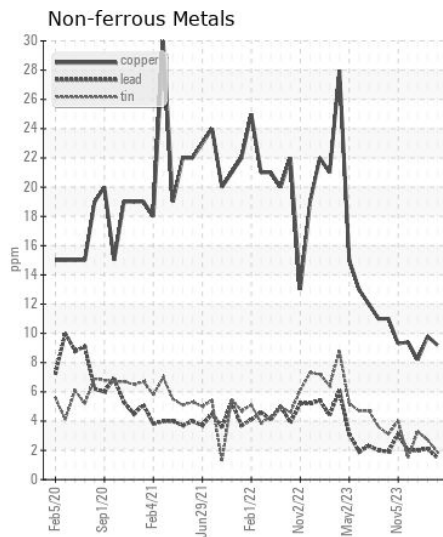
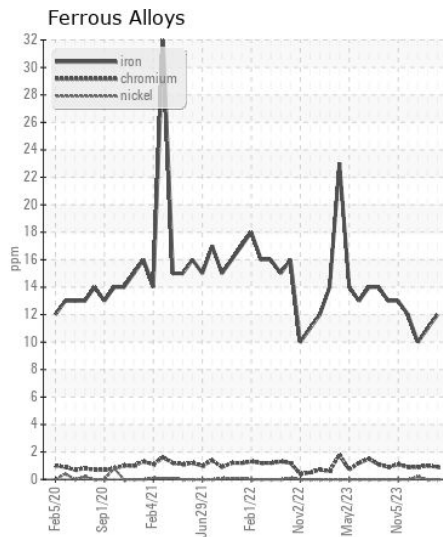
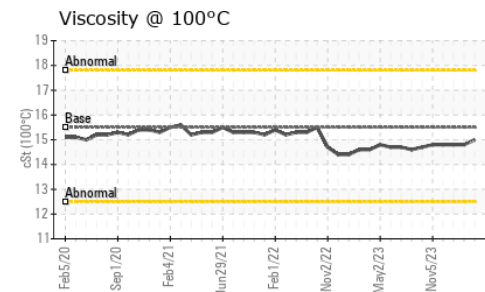
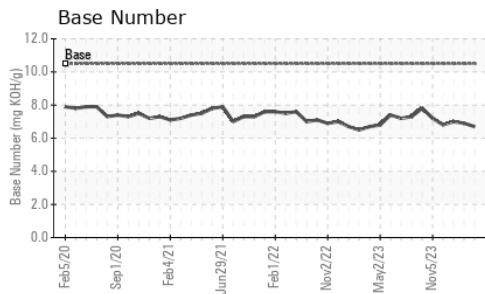
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	<b>2</b>	3	2
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	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	>3	<b>0.6</b>	0.7	0.8
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.8</b>	8.0	7.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>16.2</b>	16.4	16.0
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>	2	0
Boron	ppm	ASTM D5185m		<b>41</b>	45	38
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>47</b>	48	45
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>12</b>	21	18
Calcium	ppm	ASTM D5185m		<b>3675</b>	3350	3460
Phosphorus	ppm	ASTM D5185m		<b>4</b>	8	8
Zinc	ppm	ASTM D5185m		<b>1</b>	8	0
Sulfur	ppm	ASTM D5185m		<b>2694</b>	2073	2206
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>8.2</b>	8.5	8.0
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	<b>6.7</b>	6.9	7.0
Visc @ 100°C	cSt	ASTM D445	15.5	<b>15.0</b>	14.8	14.8



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW0066416  
**Lab Number** : 06122905  
**Unique Number** : 10937056  
**Test Package** : MAR 2

**Received** : 19 Mar 2024  
**Tested** : 20 Mar 2024  
**Diagnosed** : 20 Mar 2024 - Wes Davis

**AMERICAN COMMERCIAL LINES**  
 PO BOX 610, 1701 E. MARKET STREET  
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 US 47130  
 Contact: RONALD SCHNEIDER  
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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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