



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

Machine Id  
**HAL PANNELL (S/N 81-M1-1072)**  
Component  
**Port Main Engine**  
Fluid  
**CHEVRON DELO 710 LS (380 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0069617</b>	MW0066379	MW0062361
Sample Date		Client Info		<b>18 May 2024</b>	16 Apr 2024	16 Mar 2024
Machine Age	hrs	Client Info		<b>4573</b>	3823	3155
Oil Age	hrs	Client Info		<b>4573</b>	3823	3155
Filter Age	hrs	Client Info		<b>968</b>	218	924
Oil Changed		Client Info		<b>N/A</b>	Not Changed	N/A
Filter Changed		Client Info		<b>N/A</b>	Changed	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	<b>15</b>	14	14
Chromium	ppm	ASTM D5185m	>8	<b>2</b>	1	<1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m	>3	<b>&lt;1</b>	<1	0
Silver	ppm	ASTM D5185m	>2	<b>1</b>	0	0
Aluminum	ppm	ASTM D5185m	>15	<b>2</b>	2	2
Lead	ppm	ASTM D5185m	>18	<b>4</b>	4	4
Copper	ppm	ASTM D5185m	>80	<b>14</b>	13	19
Tin	ppm	ASTM D5185m	>14	<b>9</b>	9	10
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 oil.

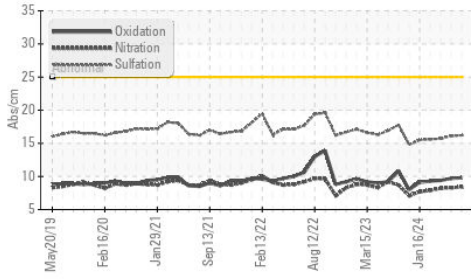
Silicon	ppm	ASTM D5185m	>20	<b>4</b>	4	3
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	2	3
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.4</b>	8.3	8.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>16.2</b>	16.1	15.7
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**

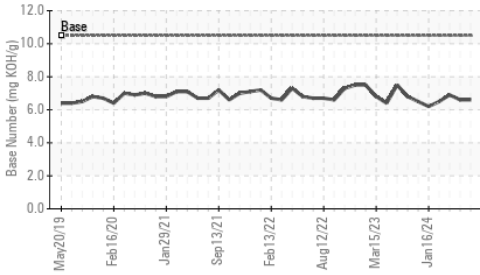
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m	>75	<b>1</b>	<1	<1
Boron	ppm	ASTM D5185m		<b>41</b>	40	39
Barium	ppm	ASTM D5185m		<b>1</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>47</b>	45	47
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Magnesium	ppm	ASTM D5185m		<b>12</b>	40	25
Calcium	ppm	ASTM D5185m		<b>3399</b>	3283	3578
Phosphorus	ppm	ASTM D5185m		<b>20</b>	38	10
Zinc	ppm	ASTM D5185m		<b>9</b>	28	8
Sulfur	ppm	ASTM D5185m		<b>2293</b>	2356	2258
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>9.8</b>	9.7	9.4
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	<b>6.6</b>	6.6	6.9
Visc @ 100°C	cSt	ASTM D445	15.5	<b>14.2</b>	14.5	14.4

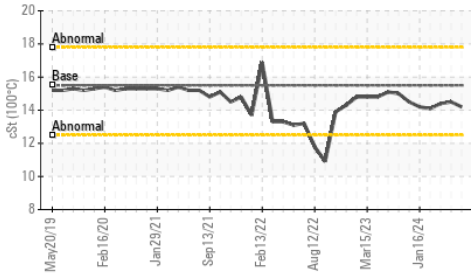
**FT-IR (Direct Trend)**



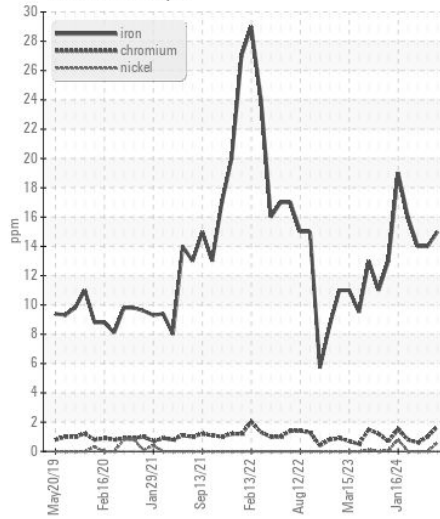
**Base Number**



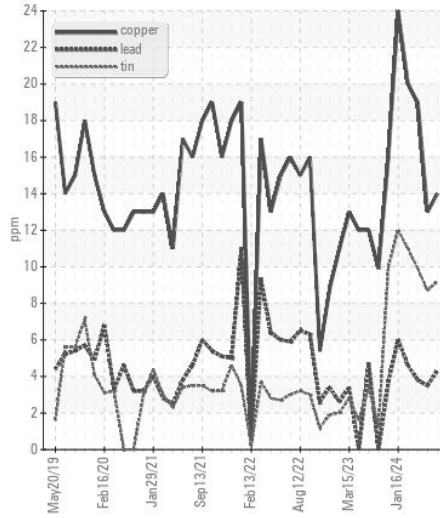
**Viscosity @ 100°C**



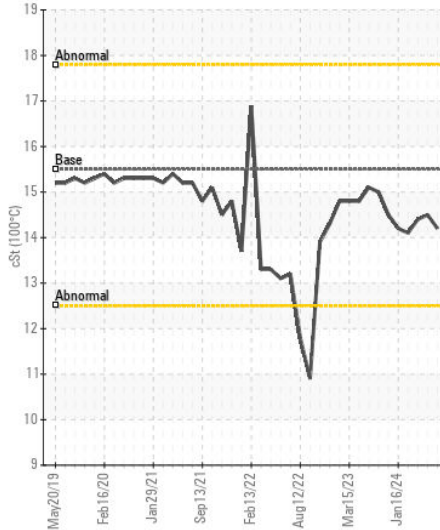
**Ferrous Alloys**



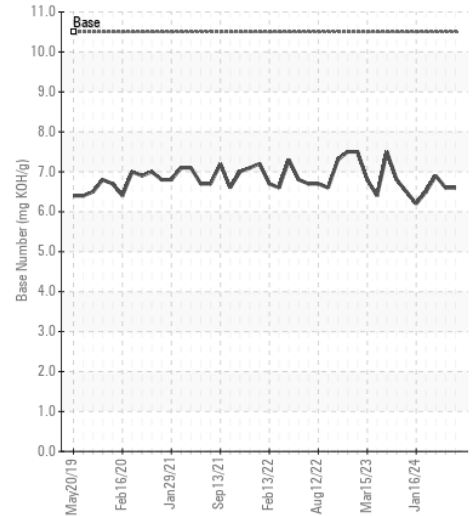
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW0069617  
**Lab Number** : 06191902  
**Unique Number** : 11048654  
**Test Package** : MAR 2

**Received** : 28 May 2024  
**Tested** : 29 May 2024  
**Diagnosed** : 30 May 2024 - Sean Felton

**AMERICAN COMMERCIAL LINES**  
 PO BOX 610, 1701 E. MARKET STREET  
 JEFFERSONVILLE, IN  
 US 47130  
 Contact: RONALD SCHNEIDER  
 ronald.schneider@bargeacbl.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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