



# WEAR CHECK

## OIL ANALYSIS REPORT

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

Machine Id  
**60607515**  
Component  
**Port Main Engine**  
Fluid  
**CHEVRON DELO 400 MULTIGRADE 15W40 (--- GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>KL0011432</b>	KL0007312	KL0005006
Sample Date		Client Info		<b>12 Jun 2024</b>	13 Mar 2024	11 Jan 2024
Machine Age	hrs	Client Info		<b>2347</b>	1833	754
Oil Age	hrs	Client Info		<b>514</b>	510	285
Filter Age	hrs	Client Info		<b>514</b>	510	285
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	Changed
Filter Changed		Client Info		<b>Not Changd</b>	Not Changd	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	<b>5</b>	4	8
Chromium	ppm	ASTM D5185m	>8	<b>0</b>	0	<1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m	>3	<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>15	<b>2</b>	<1	1
Lead	ppm	ASTM D5185m	>18	<b>0</b>	0	<1
Copper	ppm	ASTM D5185m	>80	<b>1</b>	<1	3
Tin	ppm	ASTM D5185m	>14	<b>0</b>	<1	1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	LIGHT
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

There is no indication of any contamination in the oil.

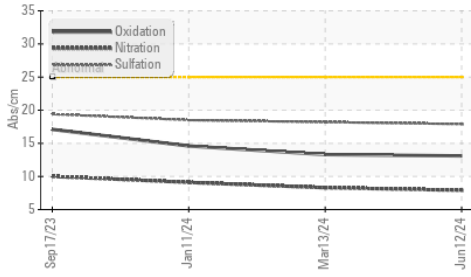
Silicon	ppm	ASTM D5185m	>20	<b>4</b>	3	5
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	<1	1
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.9</b>	8.3	9.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>17.9</b>	18.2	18.5
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

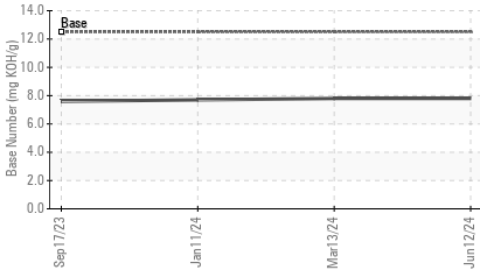
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	<b>3</b>	2	2
Boron	ppm	ASTM D5185m	151	<b>73</b>	69	72
Barium	ppm	ASTM D5185m	0.4	<b>0</b>	<1	0
Molybdenum	ppm	ASTM D5185m	250	<b>0</b>	<1	0
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	0	<b>736</b>	662	736
Calcium	ppm	ASTM D5185m	2046	<b>1400</b>	1195	1279
Phosphorus	ppm	ASTM D5185m	1043	<b>741</b>	656	715
Zinc	ppm	ASTM D5185m	943	<b>819</b>	758	808
Sulfur	ppm	ASTM D5185m	5012	<b>4127</b>	3236	3209
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>13.1</b>	13.3	14.6
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	<b>7.8</b>	7.8	7.7
Visc @ 100°C	cSt	ASTM D445	14.4	<b>13.1</b>	13.2	12.8

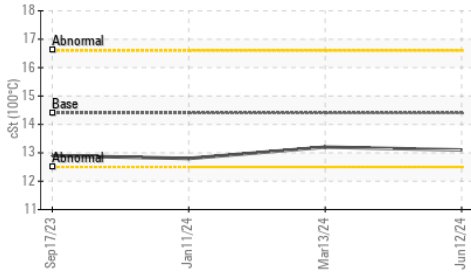
**FT-IR (Direct Trend)**



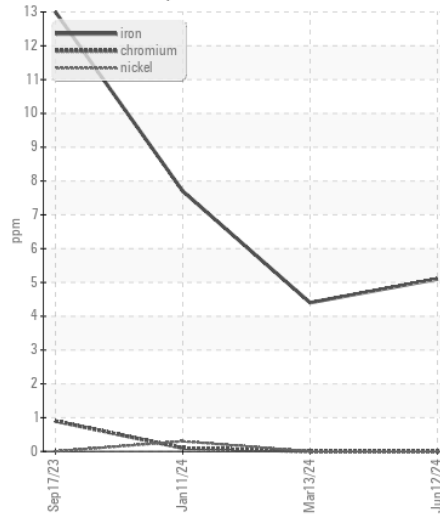
**Base Number**



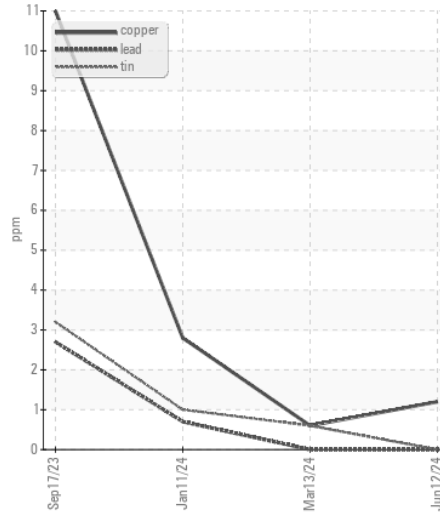
**Viscosity @ 100°C**



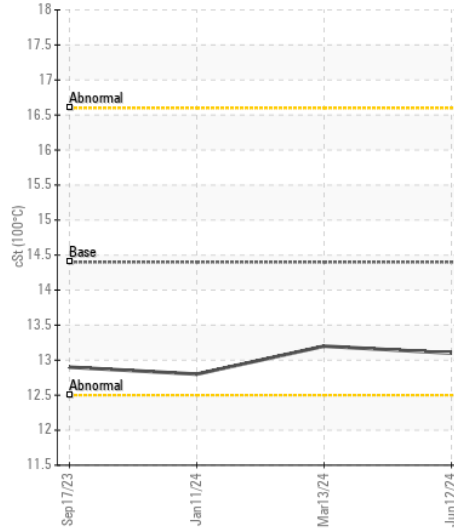
**Ferrous Alloys**



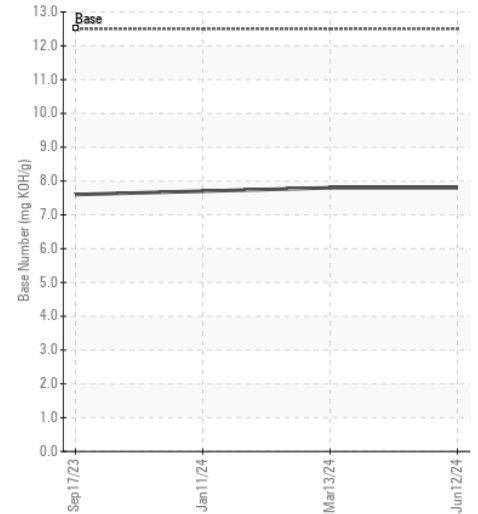
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KL0011432  
**Lab Number** : 06212899  
**Unique Number** : 11085763  
**Test Package** : FLEET  
**Received** : 17 Jun 2024  
**Tested** : 19 Jun 2024  
**Diagnosed** : 19 Jun 2024 - Angela Borella

**VANGUARD FISHERIES LLC**  
 PO BOX 275  
 KODIAK, AK  
 US 99615

Contact: FRANKE BROWN  
 frankelbrown@yahoo.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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