

# **OIL ANALYSIS REPORT**

(YA112255)

2450
Component
Diesel Engine
Fluid
CHEVRON DELO 400 SDE SAE 15W40 (9 GAL)

d2014 Dsc2014 Mm;2015 Mm2016 Ap;2018 Ap;2020 Ju2021 Ju2023

Sample Rating Trend



## DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil

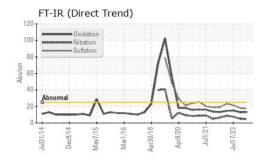
## **Fluid Condition**

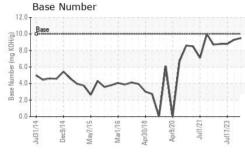
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

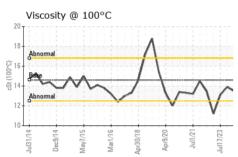
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0112905	GFL0088529	GFL0088568
Sample Date		Client Info		24 Apr 2024	10 Oct 2023	17 Jul 2023
Machine Age	mls	Client Info		456651	456651	120
Oil Age	mls	Client Info		62	456651	120
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	SEVERE
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	2.0	<b>▲</b> 5.1
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method	7 0.2	NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
				3	18	64
Iron	ppm	ASTM D5185m	>120			
Chromium	ppm	ASTM D5185m		<1	<1	1
Nickel	ppm	ASTM D5185m	>5	0	<1	<1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm		>20	<1	2	2
Lead	ppm	ASTM D5185m	>40	0	2	1
Copper	ppm	ASTM D5185m	>330	2	2	4
Tin	ppm	ASTM D5185m	>15	0	1	2
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
A D D I TIVE O		method	limit/base	current	history1	history2
ADDITIVES		momou				
ADDITIVES  Boron	ppm	ASTM D5185m		4	9	9
	ppm			4		9
Boron		ASTM D5185m		-	9	
Boron Barium	ppm	ASTM D5185m ASTM D5185m		0	9	1
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m		0 60	9 0 56	1 59
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 60 <1	9 0 56 <1	1 59 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760	0 60 <1 947	9 0 56 <1 907	1 59 <1 874
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 800	0 60 <1 947 1072	9 0 56 <1 907 1065	1 59 <1 874 1171
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 60 <1 947 1072 1060	9 0 56 <1 907 1065 1056	1 59 <1 874 1171 980
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	800	0 60 <1 947 1072 1060 1240	9 0 56 <1 907 1065 1056 1257	1 59 <1 874 1171 980 1233
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	800 3000 limit/base	0 60 <1 947 1072 1060 1240 3476	9 0 56 <1 907 1065 1056 1257 3179	1 59 <1 874 1171 980 1233 3581
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	800 3000 limit/base	0 60 <1 947 1072 1060 1240 3476	9 0 56 <1 907 1065 1056 1257 3179 history1	1 59 <1 874 1171 980 1233 3581 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m	800 3000 limit/base >25	0 60 <1 947 1072 1060 1240 3476 current	9 0 56 <1 907 1065 1056 1257 3179 history1	1 59 <1 874 1171 980 1233 3581 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m	800 3000 limit/base >25	0 60 <1 947 1072 1060 1240 3476 current 2	9 0 56 <1 907 1065 1056 1257 3179 history1 4	1 59 <1 874 1171 980 1233 3581 history2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	800 3000 limit/base >25 >20 limit/base	0 60 <1 947 1072 1060 1240 3476 current 2 0 <1	9 0 56 <1 907 1065 1056 1257 3179 history1 4 1 4 history1	1 59 <1 874 1171 980 1233 3581 history2 5 2 2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m  Method  *ASTM D5185m	800 3000 limit/base >25 >20 limit/base >4	0 60 <1 947 1072 1060 1240 3476 current 2 0 <1	9 0 56 <1 907 1065 1056 1257 3179 history1 4 1 4 history1 0.7	1 59 <1 874 1171 980 1233 3581 history2 5 2 2 history2 2.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m  method  *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	800 3000 limit/base >25 >20 limit/base >4 >20	0 60 <1 947 1072 1060 1240 3476  current 2 0 <1 current 0.1 4.7	9 0 56 <1 907 1065 1056 1257 3179 history1 4 1 4 0.7 5.1	1 59 <1 874 1171 980 1233 3581 history2 5 2 2 history2 2.1 7.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m  Method  ASTM D5185m  Method  *ASTM D7844  *ASTM D7624  *ASTM D76145	800 3000 limit/base >25 >20 limit/base >4 >20 >30	0 60 <1 947 1072 1060 1240 3476 current 2 0 <1 current 0.1 4.7	9 0 56 <1 907 1065 1056 1257 3179 history1 4 1 4 history1 0.7 5.1 18.1	1 59 <1 874 1171 980 1233 3581 history2 5 2 2 history2 2.1 7.6 21.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRA	ppm	ASTM D5185m  method  *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  method  *ASTM D7844  *ASTM D7624  *ASTM D7415  method	800 3000 limit/base >25 >20 limit/base >4 >20 >30 limit/base	0 60 <1 947 1072 1060 1240 3476 current 2 0 <1 current 0.1 4.7 17.4 current	9 0 56 <1 907 1065 1056 1257 3179 history1 4 1 4 1 1 4 history1 0.7 5.1 18.1	1 59 <1 874 1171 980 1233 3581 history2 5 2 2 history2 2.1 7.6 21.5 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m  Method  ASTM D5185m  Method  *ASTM D7844  *ASTM D7624  *ASTM D76145	800 3000 limit/base >25 >20 limit/base >4 >20 >30	0 60 <1 947 1072 1060 1240 3476 current 2 0 <1 current 0.1 4.7	9 0 56 <1 907 1065 1056 1257 3179 history1 4 1 4 history1 0.7 5.1 18.1	1 59 <1 874 1171 980 1233 3581 history2 5 2 2 history2 2.1 7.6 21.5



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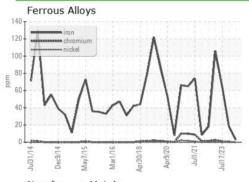


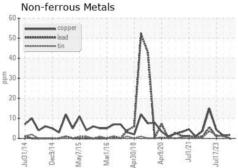


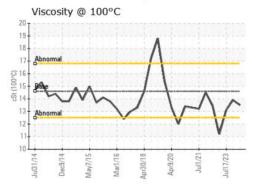
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

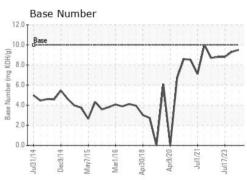
FLUID PROPE	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	14.6	13.5	13.9	13.1

## **GRAPHS**













Laboratory Sample No.

: GFL0112905 Lab Number : 06158936 Unique Number : 10994359

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 24 Apr 2024 **Tested** 

: 25 Apr 2024 Diagnosed : 25 Apr 2024 - Don Baldridge

GFL Environmental - 017 - Durham 148 Stone Park Court Durham, NC

US 27703 Contact:

T: (919)596-1363

F: (919)598-1852

Test Package : FLEET Certificate 12367 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)

Report Id: GFL017 [WUSCAR] 06158936 (Generated: 04/25/2024 15:13:42) Rev: 1

Submitted By: Ren - William Russel

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