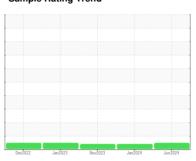


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id **225021-825**

Diesel Engine

CHEVRON DELO 400 XLE 15W40 (6 QTS)

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

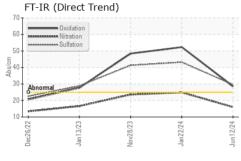
Fluid Condition

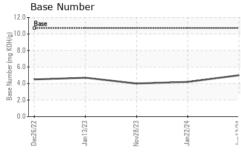
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

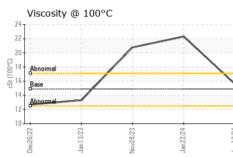
SAMPLE INFORMATION method limit/base current history1 history2			Dec2022	Jan2023	Nov2023 Jan2024	Jun 2024	
Sample Date	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Machine Age mls Client Info 165958 160884 0 Oil Age mls Client Info 160884 137468 0 Oil Changed Client Info Not Changd Not Changd	Sample Number		Client Info		GFL0104694	GFL0096288	GFL0096314
Oil Age mls Client Info 160884 137468 0 Oil Changed Sample Status Client Info Not Changed Not Changed ABNORMAL ANO Changed ABNORMAL ANO Changed ABNORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0	Sample Date		Client Info		12 Jun 2024	22 Jan 2024	28 Nov 2023
Oil Changed Sample Status	Machine Age	mls	Client Info		165958	160884	0
Sample Status	Oil Age	mls	Client Info		160884	137468	0
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	Oil Changed		Client Info		Not Changd	Changed	Not Changd
Fuel	Sample Status				NORMAL	ABNORMAL	ABNORMAL
Water WC Method 0.2.2 NEG NEG NEG Glycol WC Method Imit/base current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 47 104 87 Chromium ppm ASTM D5185m >20 1 3 2 Nickel ppm ASTM D5185m >4 <1 <1 <1 11 11 12 11 11 12 12 11 11 11 12 12 12 20 0	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<1.0	<1.0	<1.0
Iron	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 1 3 2 Nickel ppm ASTM D5185m >4 <1 <1 <1 Titanium ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >30 0 0 0 Aluminum ppm ASTM D5185m >40 0 0 0 Lead ppm ASTM D5185m >40 0 0 0 Copper ppm ASTM D5185m >15 0 <1 0 Vanadium ppm ASTM D5185m >15 0 <1 0 Cadmium ppm ASTM D5185m 42 43 35 Barium ppm ASTM D5185m 0 0 2 Molybdenum ppm ASTM D5185m 0 0 2 Mangaesium	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	47	104	87
Titanium ppm ASTM D5185m 11 11 11 12 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >20 8 16 13 Lead ppm ASTM D5185m >40 0 0 0 Copper ppm ASTM D5185m >40 0 0 0 Vanadium ppm ASTM D5185m >15 0 <1	Chromium	ppm	ASTM D5185m	>20	1	3	2
Stiver	Nickel	ppm	ASTM D5185m	>4	<1	<1	<1
Aluminum ppm ASTM D5185m >20 8 16 13 Lead ppm ASTM D5185m >40 0 0 0 Copper ppm ASTM D5185m >330 12 22 24 Tin ppm ASTM D5185m >15 0 <1 0 Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 42 43 35 Barium ppm ASTM D5185m 0 0 2 Molybdenum ppm ASTM D5185m 52 75 80 Magnesium ppm ASTM D5185m 1 2 <1 Magnesium ppm ASTM D5185m 1458 1691 1529 Phosphorus ppm ASTM D5185m 277	Titanium	ppm	ASTM D5185m		11	11	12
Lead ppm ASTM D5185m >40 0 0 0 Copper ppm ASTM D5185m >330 12 22 24 Tin ppm ASTM D5185m >15 0 <1	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper ppm ASTM D5185m >330 12 22 24 Tin ppm ASTM D5185m >15 0 <1 0 Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 42 43 35 Barium ppm ASTM D5185m 0 0 2 Molybdenum ppm ASTM D5185m 52 75 80 Manganese ppm ASTM D5185m 52 75 80 Magnesium ppm ASTM D5185m 664 735 659 Calcium ppm ASTM D5185m 1458 1691 1529 Phosphorus ppm ASTM D5185m 760 735 745 696 Zinc ppm ASTM D5185m 2770	Aluminum	ppm	ASTM D5185m	>20	8	16	13
Tin ppm ASTM D5185m >15 0 <1	Lead	ppm	ASTM D5185m	>40	0	0	0
Vanadium ppm ASTM D5185m <1	Copper	ppm	ASTM D5185m	>330	12	22	24
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 42 43 35 Barium ppm ASTM D5185m 0 0 2 Molybdenum ppm ASTM D5185m 52 75 80 Manganese ppm ASTM D5185m 1 2 <1 Magnesium ppm ASTM D5185m 664 735 659 Calcium ppm ASTM D5185m 1458 1691 1529 Phosphorus ppm ASTM D5185m 760 735 745 696 Zinc ppm ASTM D5185m 2770 3381 3130 3089 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 13 14 Sodium ppm ASTM D51	Tin	ppm	ASTM D5185m	>15	0	<1	
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 42 43 35 Barium ppm ASTM D5185m 0 0 2 Molybdenum ppm ASTM D5185m 52 75 80 Manganese ppm ASTM D5185m 1 2 <1 Magnesium ppm ASTM D5185m 664 735 659 Calcium ppm ASTM D5185m 760 735 745 696 Zinc ppm ASTM D5185m 770 3381 3130 3089 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 13 14 Sodium ppm ASTM D5185m >25 8 13 14 Sodium ppm ASTM D5185m >20 5 2 4 INFRA-RED <	Vanadium	ppm	ASTM D5185m		<1	0	0
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 2 Molybdenum ppm ASTM D5185m 52 75 80 Manganese ppm ASTM D5185m 1 2 <1 Magnesium ppm ASTM D5185m 664 735 659 Calcium ppm ASTM D5185m 1458 1691 1529 Phosphorus ppm ASTM D5185m 760 735 745 696 Zinc ppm ASTM D5185m 830 844 921 873 Sulfur ppm ASTM D5185m 2770 3381 3130 3089 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 13 14 Sodium ppm ASTM D5185m >20 5 2 4 INFRA-RED method limit/base current history1 history2	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 52 75 80 Manganese ppm ASTM D5185m 1 2 <1	Boron	ppm	ASTM D5185m		42	43	35
Manganese ppm ASTM D5185m 1 2 <1	Barium	ppm	ASTM D5185m		0		2
Magnesium ppm ASTM D5185m 664 735 659 Calcium ppm ASTM D5185m 1458 1691 1529 Phosphorus ppm ASTM D5185m 760 735 745 696 Zinc ppm ASTM D5185m 830 844 921 873 Sulfur ppm ASTM D5185m 2770 3381 3130 3089 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 13 14 Sodium ppm ASTM D5185m >25 8 6 8 6 Potassium ppm ASTM D5185m >20 5 2 4 INFRA-RED method limit/base current history1 history2 Soot % "ASTM D7624 >20 16.0 24.9 23.6 Sulfation Abs/.1mm "ASTM D7415 >30 29	Molybdenum	ppm	ASTM D5185m		52		80
Calcium ppm ASTM D5185m 1458 1691 1529 Phosphorus ppm ASTM D5185m 760 735 745 696 Zinc ppm ASTM D5185m 830 844 921 873 Sulfur ppm ASTM D5185m 2770 3381 3130 3089 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 13 14 Sodium ppm ASTM D5185m >20 5 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 16.0 24.9 23.6 Sulfation Abs/.1mm *ASTM D7415 >30 29.6 43.2 41.3 FLUID DEGRADATION method <	•	ppm			-		
Phosphorus ppm ASTM D5185m 760 735 745 696 Zinc ppm ASTM D5185m 830 844 921 873 Sulfur ppm ASTM D5185m 2770 3381 3130 3089 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 13 14 Sodium ppm ASTM D5185m >20 5 2 4 Potassium ppm ASTM D5185m >20 5 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 16.0 24.9 23.6 Sulfation Abs/.1mm *ASTM D7415 >30 29.6 43.2 41.3 FLUID DEGRADATION method<		ppm					
Zinc ppm ASTM D5185m 830 844 921 873 Sulfur ppm ASTM D5185m 2770 3381 3130 3089 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 13 14 Sodium ppm ASTM D5185m 6 8 6 Potassium ppm ASTM D5185m >20 5 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 16.0 24.9 23.6 Sulfation Abs/.1mm *ASTM D7415 >30 29.6 43.2 41.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7		ppm					
Sulfur ppm ASTM D5185m 2770 3381 3130 3089 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 13 14 Sodium ppm ASTM D5185m >20 5 2 4 Potassium ppm ASTM D5185m >20 5 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 16.0 24.9 23.6 Sulfation Abs/.1mm *ASTM D7415 >30 29.6 43.2 41.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 28.6 52.3 48.4		• • • • • • • • • • • • • • • • • • • •					
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 13 14 Sodium ppm ASTM D5185m 6 8 6 Potassium ppm ASTM D5185m >20 5 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 16.0 24.9 23.6 Sulfation Abs/.1mm *ASTM D7415 >30 29.6 43.2 41.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 28.6 52.3 48.4	-						
Silicon ppm ASTM D5185m >25 8 13 14 Sodium ppm ASTM D5185m 6 8 6 Potassium ppm ASTM D5185m >20 5 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 16.0 24.9 23.6 Sulfation Abs/.1mm *ASTM D7415 >30 29.6 43.2 41.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 28.6 52.3 48.4					3381		
Sodium ppm ASTM D5185m 6 8 6 Potassium ppm ASTM D5185m >20 5 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 16.0 24.9 23.6 Sulfation Abs/.1mm *ASTM D7415 >30 29.6 43.2 41.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 28.6 52.3 48.4							
Potassium ppm ASTM D5185m >20 5 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 16.0 24.9 23.6 Sulfation Abs/.1mm *ASTM D7415 >30 29.6 43.2 41.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 28.6 52.3 48.4				>25			
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 16.0 24.9 23.6 Sulfation Abs/.1mm *ASTM D7415 >30 29.6 43.2 41.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 28.6 52.3 48.4							
Soot % % *ASTM D7844 >3 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 16.0 24.9 23.6 Sulfation Abs/.1mm *ASTM D7415 >30 29.6 43.2 41.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 28.6 52.3 48.4		ppm			5	2	4
Nitration Abs/cm *ASTM D7624 >20 16.0 24.9 23.6 Sulfation Abs/.1mm *ASTM D7415 >30 29.6 43.2 41.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 28.6 52.3 48.4							
Sulfation Abs/.1mm *ASTM D7415 >30 29.6 43.2 41.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 28.6 52.3 48.4							
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 28.6 52.3 48.4							
Oxidation Abs/.1mm *ASTM D7414 >25 28.6 52.3 48.4				>30	29.6	43.2	41.3
	FLUID DEGRA		method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 10.7 5.0 4.2 4.0	Oxidation	Abs/.1mm	*ASTM D7414	>25	28.6	52.3	48.4
	Base Number (BN)	mg KOH/g	ASTM D2896	10.7	5.0	4.2	4.0



OIL ANALYSIS REPORT



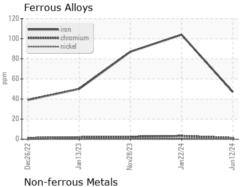


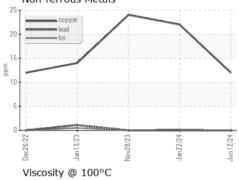


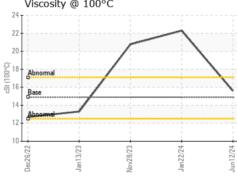
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	LIGHT
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

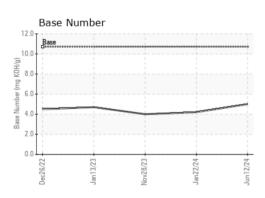
FLUID PROP	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	14.9	15.6	<u>^</u> 22.3	2 0.77

GRAPHS













Certificate 12367

Laboratory Sample No.

: GFL0104694 Lab Number : 06212867 Unique Number : 11085731

Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 17 Jun 2024 **Tested**

: 19 Jun 2024 Diagnosed : 19 Jun 2024 - Angela Borella

10164 M-32 Elmira, MI US 49730 Contact: ANDY GROBASKI

GFL Environmental - 624 - Elmira Hauling

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.

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