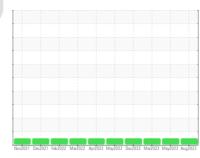


# **OIL ANALYSIS REPORT**

### Sample Rating Trend





T2019

Component **Diesel Engine** 

**CHEVRON 15W40 (--- GAL)** 

## 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

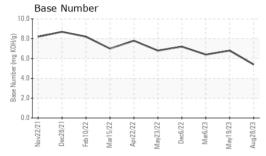
## **Fluid Condition**

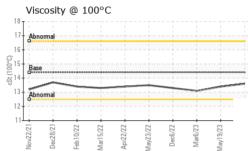
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0085453	PCA0085440	PCA0085426
Sample Date		Client Info		28 Aug 2023	19 May 2023	06 Mar 2023
Machine Age	mls	Client Info		484475	466215	447204
Oil Age	mls	Client Info		0	18883	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	24	22	21
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>25	8	7	10
Lead	ppm	ASTM D5185m	>45	0	2	4
Copper	ppm	ASTM D5185m	>85	3	1	1
Tin	ppm	ASTM D5185m	>4	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
A D D I T I V E O						
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	method ASTM D5185m	limit/base	current 79	history1 156	history2 137
	ppm		limit/base			
Boron		ASTM D5185m	limit/base	79	156	137
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	79 0	156 0	137
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	79 0 120	156 0 123 1 675	137 0 118 <1 639
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	79 0 120 <1 645 1525	156 0 123 1 675 1592	137 0 118 <1 639 1500
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	limit/base	79 0 120 <1 645 1525 632	156 0 123 1 675 1592 690	137 0 118 <1 639 1500 628
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	79 0 120 <1 645 1525 632 803	156 0 123 1 675 1592 690 868	137 0 118 <1 639 1500 628 781
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	limit/base	79 0 120 <1 645 1525 632	156 0 123 1 675 1592 690	137 0 118 <1 639 1500 628
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	limit/base	79 0 120 <1 645 1525 632 803	156 0 123 1 675 1592 690 868 2685 history1	137 0 118 <1 639 1500 628 781
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >30	79 0 120 <1 645 1525 632 803 2792 current	156 0 123 1 675 1592 690 868 2685 history1	137 0 118 <1 639 1500 628 781 2812 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base	79 0 120 <1 645 1525 632 803 2792 current	156 0 123 1 675 1592 690 868 2685 history1 29	137 0 118 <1 639 1500 628 781 2812 history2 8 2
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	limit/base >30	79 0 120 <1 645 1525 632 803 2792 current	156 0 123 1 675 1592 690 868 2685 history1	137 0 118 <1 639 1500 628 781 2812 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >30 >50	79 0 120 <1 645 1525 632 803 2792 current 14 2 1 current	156 0 123 1 675 1592 690 868 2685 history1 29 3 3	137 0 118 <1 639 1500 628 781 2812 history2 8 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  Method  *ASTM D5185m  ASTM D5185m	limit/base >30 >50 >20 limit/base >3	79 0 120 <1 645 1525 632 803 2792 current 14 2 1 current 0.7	156 0 123 1 675 1592 690 868 2685 history1 29 3 3 history1 0.5	137 0 118 <1 639 1500 628 781 2812 history2 8 2 2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  method  *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >30 >50 >20 limit/base >3	79 0 120 <1 645 1525 632 803 2792 current 14 2 1 current 0.7 11.8	156 0 123 1 675 1592 690 868 2685 history1 29 3 3 history1 0.5 10.7	137 0 118 <1 639 1500 628 781 2812 history2 8 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  ASTM D5185m	limit/base >30 >50 >20 limit/base >3	79 0 120 <1 645 1525 632 803 2792 current 14 2 1 current 0.7	156 0 123 1 675 1592 690 868 2685 history1 29 3 3 history1 0.5	137 0 118 <1 639 1500 628 781 2812 history2 8 2 2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m  Method ASTM D5185m ASTM D7624 *ASTM D7624 *ASTM D76145	limit/base >30 >50 >20 limit/base >3 >20	79 0 120 <1 645 1525 632 803 2792 current 14 2 1 current 0.7 11.8	156 0 123 1 675 1592 690 868 2685 history1 29 3 3 history1 0.5 10.7	137 0 118 <1 639 1500 628 781 2812 history2 8 2 2 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 ASTM D7624 *ASTM D7624 *ASTM D76145	limit/base >30 >50 >20 limit/base >3 >20 >30	79 0 120 <1 645 1525 632 803 2792 current 14 2 1 current 0.7 11.8 27.8	156 0 123 1 675 1592 690 868 2685 history1 29 3 3 history1 0.5 10.7 26.4	137 0 118 <1 639 1500 628 781 2812 history2 8 2 2 history2 0.6 10.9 26.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m  Method  ASTM D5185m ASTM D5185m  ASTM D5185m ASTM D5185m ASTM D5185m  ASTM D5185m  Method  *ASTM D7844  *ASTM D7624  *ASTM D76445  Method	limit/base >30 >50 >20 limit/base >3 >20 >30 limit/base	79 0 120 <1 645 1525 632 803 2792 current 14 2 1 current 0.7 11.8 27.8 current	156 0 123 1 675 1592 690 868 2685 history1 29 3 3 history1 0.5 10.7 26.4	137 0 118 <1 639 1500 628 781 2812 history2 8 2 2 history2 0.6 10.9 26.6 history2



# **OIL ANALYSIS REPORT**

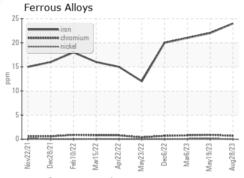


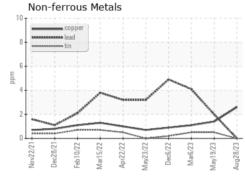


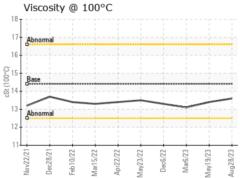
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

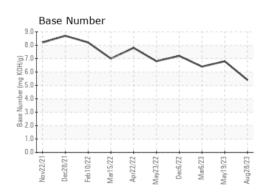
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	14.4	13.6	13.4	13.1

## **GRAPHS**













Certificate L2367

Laboratory

Sample No. Lab Number Unique Number : 10630703 Test Package : FLEET

: PCA0085453 : 05940091

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 31 Aug 2023

: 05 Sep 2023 Diagnosed Diagnostician : Sean Felton

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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Contact: Eddy Smith eddy.smith@ergon.com

T:

F: