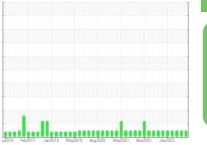


## **OIL ANALYSIS REPORT**

#### Sample Rating Trend

## NORMAL





#### Machine Id **2614** Component

Diesel Engine

## CHEVRON DELO 400 SDE SAE 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.

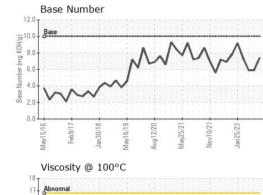
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0092679	GFL0092653	GFL0072425
Sample Date		Client Info		07 Dec 2023	02 Nov 2023	08 Jun 2023
Machine Age	hrs	Client Info		20185	20185	20185
Oil Age	hrs	Client Info		646	282	528
Oil Changed		Client Info		Changed	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method	. 0.1	NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron		ASTM D5185m	>120	4	4	9
Chromium	ppm ppm	ASTM D5185m		4	<1	<1
Nickel		ASTM D5185m	>5	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm ppm	ASTM D5185m	>2	0	0	0
Aluminum		ASTM D5185m		2	2	2
Lead	ppm	ASTM D5185m	>20	0	0	2
Copper	ppm	ASTM D5185m		2	<1	<1
Tin	ppm ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m	>15	0	0	<1
Cadmium		ASTM D5185m		0	0	<1
Cadinium	ppm	AGTIM D3103III		U	0	
			11 11 11		11 J	
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	4	6	4
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	4 0	6 0	4
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	4 0 57	6 0 60	4 0 59
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	4 0 57 <1	6 0 60 0	4 0 59 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	4 0 57 <1 920	6 0 60 0 942	4 0 59 <1 959
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		4 0 57 <1 920 1085	6 0 60 0 942 1111	4 0 59 <1 959 1138
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760	4 0 57 <1 920 1085 1042	6 0 60 0 942 1111 1037	4 0 59 <1 959 1138 1008
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 800	4 0 57 <1 920 1085 1042 1282	6 0 60 942 1111 1037 1309	4 0 59 <1 959 1138 1008 1314
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	760 800 3000	4 0 57 <1 920 1085 1042	6 0 60 942 1111 1037 1309 3079	4 0 59 <1 959 1138 1008 1314 3582
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	760 800	4 0 57 <1 920 1085 1042 1282	6 0 60 942 1111 1037 1309	4 0 59 <1 959 1138 1008 1314
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	760 800 3000	4 0 57 <1 920 1085 1042 1282 3089	6 0 60 942 1111 1037 1309 3079	4 0 59 <1 959 1138 1008 1314 3582 history2 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 800 3000 limit/base	4 0 57 <1 920 1085 1042 1282 3089 current	6 0 60 942 1111 1037 1309 3079 history1	4 0 59 <1 959 1138 1008 1314 3582 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b>	760 800 3000 limit/base >25	4 0 57 <1 920 1085 1042 1282 3089 current 3	6 0 60 942 1111 1037 1309 3079 history1 4	4 0 59 <1 959 1138 1008 1314 3582 history2 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	760 800 3000 limit/base >25	4 0 57 <1 920 1085 1042 1282 3089 <u>current</u> 3 4	6 0 60 942 1111 1037 1309 3079 history1 4 3	4 0 59 <1 959 1138 1008 1314 3582 history2 6 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	760 800 3000 limit/base >25 >20	4 0 57 <1 920 1085 1042 1282 3089 current 3 4 <1	6 0 60 0 942 1111 1037 1309 3079 history1 4 3 3 <1	4 0 59 <1 959 1138 1008 1314 3582 history2 6 3 4
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 ASTM D5185m	760 800 3000 limit/base >25 >20 limit/base >20	4 0 57 <1 920 1085 1042 1282 3089 current 3 4 <1 <1	6 0 60 942 1111 1037 1309 3079 history1 4 3 <1 history1	4 0 59 <1 959 1138 1008 1314 3582 history2 6 3 4 4
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 ASTM D5185m	760 800 3000 limit/base >25 >20 limit/base >20	4 0 57 <1 920 1085 1042 1282 3089 current 3 4 <1 <1 current 0.3	6 0 60 942 1111 1037 1309 3079 history1 4 3 <1 4 3 <1 history1 0.3	4 0 59 <1 959 1138 1008 1314 3582 history2 6 3 4 history2 0.4
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 ASTM D5185m	760 800 3000 limit/base >25 >20 limit/base >4 >20	4 0 57 <1 920 1085 1042 1282 3089 current 3 4 <1 current 0.3 7.9	6 0 60 942 1111 1037 1309 3079 history1 4 3 <1 4 3 <1 history1 0.3 8.1	4 0 59 <1 959 1138 1008 1314 3582 history2 6 3 4 4 history2 0.4 8.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	760 800 3000 <b>Iinit/base</b> >25 >20 <b>Iinit/base</b> >4 >20 >4 >20	4 0 57 <1 920 1085 1042 1282 3089 <u>current</u> 3 4 <1 <u>current</u> 0.3 7.9 19.0	6 0 60 942 1111 1037 1309 3079 history1 4 3 <1 4 3 <1 history1 0.3 8.1 18.9	4 0 59 <1 959 1138 1008 1314 3582 <b>history2</b> 6 3 4 <b>history2</b> 0.4 8.6 22.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	760 800 3000 225 >22 >20 imit/base >4 >20 >30 >30 imit/base	4 0 57 <1 920 1085 1042 1282 3089 current 3 4 <1 current 0.3 7.9 19.0 current	6 0 60 0 942 1111 1037 1309 3079 history1 4 3 <1 4 3 <1 0.3 8.1 18.9 history1	4 0 59 <1 959 1138 1008 1314 3582 history2 6 3 4 4 history2 0.4 8.6 22.2 history2



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Feb 9/1

# **OIL ANALYSIS REPORT**



Aug12/20

Mav16/1

	VISUAL		method				history2
	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Λ Λ	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
VV	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
Nov10/21 - Jan25/23 -	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Nov1 Jan2	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
	Free Water	scalar	*Visual		NEG	NEG	NEG
	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Λ	Visc @ 100°C	cSt	ASTM D445	14.6	12.9	12.7	12.7
VVC	GRAPHS						
	Ferrous Alloys						
21	iron						
Nov10/21 Jan25/23	20 - nickel			10101			
2 7	15						
	udd						
	10-						
	10			1			
	A second seconds						
	5 mm	1~	$\sqrt{V}$	1			
	· · ·	~~	VV''	1			
				L			
		ug12/20	Aay25/21	L.			
	May15/16 Feb9/17	100	May25/21 Nov10/21	7			
			May25/21	Annua			
	0 gl/Sl/kep Non-ferrous Metal		May 25,221				
	0 gl/gl/gl/kew Non-ferrous Metal		May25/21				
	0 gl/sj/kew Non-ferrous Metal		Mar/25/21/2 Mov10/21				
	Non-ferrous Metal		May25/21				
	Non-ferrous Metal		Mar25/21				
	Non-ferrous Metal		Mar25/21				
	Non-ferrous Metal		Mar25/21				
	Non-ferrous Metal	S	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				
	Non-ferrous Metal	S	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				
	Non-ferrous Metal	S	Mar25/21 Mar25/21 Mar25/21 Mar25/21 Mar25/21 Mar25/21 Mar25/21 Mar25/21 Mar25/22 Mar				
	Non-ferrous Metal	S	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		Base Number		
	Non-ferrous Metal	S	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		Base Number		
	Non-ferrous Metal	S	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	12.0-	Base Number		
	Non-ferrous Metal	S	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	12.0-			
	Non-ferrous Metal	S	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	12.0-		M	M.A.,
	Non-ferrous Metal	S	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	12.0-		M	W
	Non-ferrous Metal	S	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	12.0-		M	W
	Non-ferrous Metal	S	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	12.0- 10.0- (0)- (0)- (0)- (0)- (0)- (0)- (0)- (0		M	M
	Non-ferrous Metal	S	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	12.0-		M	M
	Non-ferrous Metal	S Aug 12/20 C	May25(21) Nov10/21	12.0 10.0 (%) (%) (%) (%) (%) (%) (%) (%) (%) (%)	Base		
	Non-ferrous Metal	S Mug12/20	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	12.0 10.0 (%) (%) (%) (%) (%) (%) (%) (%) (%) (%)		May16/19 May12/20 May25/21 May25/21	Nov1021



 Certificate 12367
 Test Package
 : FLEET

 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)

Received

Diagnosed

: 12 Dec 2023

: 14 Dec 2023

Diagnostician : Sean Felton

: GFL0092679

: 06032162

Unique Number : 10781953

Sample No.

Lab Number

Submitted By: WALTER SKOKOWSKI

2810 Contentnea Road S

Contact: SPENCER LIGGON

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