

OIL ANALYSIS REPORT



Machine Id

2443 Component Diesel Engine

CHEVRON DELO 400 SDE SAE 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

Metal levels are typical for a new component breaking in.

Contamination

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. 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	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0944457	WC0859263	
Sample Date		Client Info		13 Jun 2024	23 Apr 2024	
Machine Age	mls	Client Info		41253	22932	
Oil Age	mls	Client Info		0	0	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	ATTENTION	
CONTAMINATION	٨	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	0.5	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	23	46	
Chromium	ppm	ASTM D5185m	>20	2	4	
Nickel	ppm	ASTM D5185m	>2	= <1	1	
Titanium	ppm	ASTM D5185m		4	<1	
Silver	ppm	ASTM D5185m	>2	<1	<1	
Aluminum	ppm	ASTM D5185m	>20	16	29	
Lead	ppm	ASTM D5185m	>40	2	4	
Copper	ppm			6	22	
Tin	ppm	ASTM D5185m	>15	1	3	
Vanadium	ppm	ASTM D5185m		<1	<1	
Cadmium	ppm	ASTM D5185m		<1	<1	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 128	history1 58	history2
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	128	58	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	128 1	58 2	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	128 1 80	58 2 23	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	128 1 80 1	58 2 23 5	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	128 1 80 1 651	58 2 23 5 788	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		128 1 80 1 651 1453	58 2 23 5 788 1393	
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	128 1 80 1 651 1453 826	58 2 23 5 788 1393 900	
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	128 1 80 1 651 1453 826 938	58 2 23 5 788 1393 900 932	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	760 800 3000	128 1 80 1 651 1453 826 938 2685 2685 current 19	58 2 23 5 788 1393 900 932 3628 history1 38	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	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	760 800 3000 limit/base	128 1 80 1 651 1453 826 938 2685 2685	58 2 23 5 788 1393 900 932 3628 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	760 800 3000 limit/base >25	128 1 80 1 651 1453 826 938 2685 2685 current 19	58 2 23 5 788 1393 900 932 3628 history1 38	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	760 800 3000 limit/base >25 >20	128 1 80 1 651 1453 826 938 2685 current 19 2 47 current	58 2 23 5 788 1393 900 932 3628 history1 38 6 100 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS 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	128 1 80 1 651 1453 826 938 2685 <u>current</u> 19 2 47 <u>current</u>	58 2 23 5 788 1393 900 932 3628 history1 38 6 100 history1 0.3	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS 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 >6 >20	128 1 80 1 651 1453 826 938 2685 current 19 2 47 current 0.3 9.6	58 2 23 5 788 1393 900 932 3628 history1 38 6 100 history1 0.3 10.0	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS 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	128 1 80 1 651 1453 826 938 2685 <u>current</u> 19 2 47 <u>current</u>	58 2 23 5 788 1393 900 932 3628 history1 38 6 100 history1 0.3	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS 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 >6 >20	128 1 80 1 651 1453 826 938 2685 current 19 2 47 current 0.3 9.6	58 2 23 5 788 1393 900 932 3628 history1 38 6 100 history1 0.3 10.0	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS 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 limit/base >25 >20 limit/base >6 >20 >20 >30	128 1 80 1 651 1453 826 938 2685 <u>current</u> 19 2 47 <u>current</u> 0.3 9.6 23.1	58 2 23 5 788 1393 900 932 3628 history1 38 6 100 history1 0.3 10.0 22.0	 history2 history2 history2



35

30

12.0 Base

0.01 Base Number (mg KOH/g) 0.0 0.0 0.0 0.0 0.0 0.0

0.0 Apr23/24

18 17. Abnormal

16 () 15 () 10 () 15 13 13 Base Abnormal 12 11 10 Apr23/24

回影

OIL ANALYSIS REPORT

-IR (Direct Trend)		VISUAL		method	limit/base	current	history1	history2
Oxidation Nitration		White Metal	scalar	*Visual	NONE	NONE	NONE	
Sulfation		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
		Precipitate	scalar	*Visual	NONE	NONE	NONE	
		Silt	scalar	*Visual	NONE	NONE	NONE	
*******		Debris	scalar	*Visual	NONE	NONE	NONE	
		Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
	Jun13/24 -	Appearance	scalar	*Visual	NORML	NORML	NORML	
	Jun1	Odor	scalar	*Visual	NORML	NORML	NORML	
se Number		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
		Free Water	scalar	*Visual		NEG	NEG	
se		FLUID PROPER	TI <u>ES</u>	method	limit/base	current	history1	history2
		Visc @ 100°C	cSt	ASTM D445		13.0	11.5	
		GRAPHS			-			
		Ferrous Alloys						
		⁵⁰ T						
	ç	iron						
	61	40- nickel						
cosity @ 100°C		30 -						
		ق 20			<u> </u>			
normal								
ie		10						
		0	00000000000000000000000000000000000000	********				
normal					3/24			
		Apr23/24			Jun13/24			
		Non-ferrous Meta	ils					
	Y C	0.5						
	101	25 copper						
	/ C 51							
	(c)1	20 - copper lead						
		20 - tin						
		20 - copper lead						
		201 15 10-	<u> </u>	<u> </u>	/			
		20- 15- Eg.						
		20- 15- 10- 5- 0-	<u> </u>					
		201 15 10 5	<u> </u>		13/24			
		20 20 15 10 5 10 10 10 10 10 10 10 10 10 10			Jun13/24			
		20- 15- 10- 5- 0-			۲ -	Base Numbe	21	
		20 20 20 20 20 20 20 20 20 20			42/Etung 12.0-	T :	21	
		20 20 20 20 20 20 20 20 20 20			ت 12.0- 10.0-		۲ ۲	
		201 201 10 5 0 4 10 5 10 10 10 10 10 10 10 10 10 10			ت 12.0- 10.0-	Base	2 F	
		201 201 10 5 0 4 10 5 10 10 10 10 10 10 10 10 10 10			ت 12.0- 10.0-	Base	212	
		200 200 200 200 200 200 200 200			ت 12.0- 10.0-	Base	۲ ۲	
		201 201 10 5 0 4 10 5 10 10 10 10 10 10 10 10 10 10			ت 12.0- 10.0-	Base	۲ ۲	
		200 200 200 200 200 200 200 200				Base	2F.	
		200 200 200 200 200 200 200 200				Base	2F.	
		200 200 200 200 200 200 200 200				Base	2F 	1324
		200 200 200 200 200 200 200 200				Base	2 Г	Jun1324
		200 10 10 10 10 10 10 10 10 10	c		-7 12.0 (0,0) (0,0	Base 470E2Jdy		
	Laboratory	200 10 10 10 10 10 10 10 10 10	C D1 Madiso			Base 470E2Jdy	Ergon Trucking	Inc MAG601
	Laboratory Sample No.	200 200 200 200 200 200 200 200	C D1 Madiso Recei	ived : 17		Base 470E2Jdy	Ergon Trucking	Inc MAG601 State Route 800
	Laboratory Sample No. Lab Number	200 200 200 200 200 200 200 200	C 01 Madiso Recei Teste	ived : 17 ed : 19		Base 9	Ergon Trucking	Inc MAG601 State Route 800 Magnolia, OH
	Laboratory Sample No. Lab Number Unique Number Test Package	200 200 200 200 200 200 200 200	C C D1 Madiso Recei Teste Diagr	ived : 17 ed : 19 nosed : 19		Base 9	Ergon Trucking 11337 S	Inc MAG601 State Route 800

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) Report Id: ERGMAG601 [WUSCAR] 06212944 (Generated: 06/22/2024 02:58:47) Rev: 1

Submitted By: Eddy Smith Page 2 of 2

F: