

## **OIL ANALYSIS REPORT**

Sample Rating Trend





Component Diesel Engine

Fluid 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.

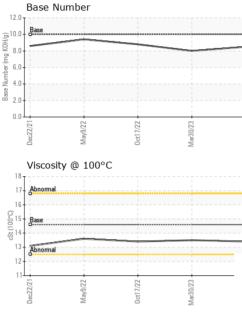
### Fluid Condition

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

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0085458	PCA0085462	PCA0076220
Sample Date		Client Info		13 Jul 2023	30 Mar 2023	17 Oct 2022
Machine Age	mls	Client Info		122475	106502	87866
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>2.0	<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	>100	16	26	13
Chromium	ppm	ASTM D5185m	>20	<1	<1	3
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	4	5	6
Lead	ppm	ASTM D5185m	>40	<1	2	4
Copper	ppm	ASTM D5185m	>330	1	1	2
Tin	ppm	ASTM D5185m	>15	- <1	0	0
Vanadium	ppm	ASTM D5185m	>15	<1	0	<1
Cadmium		ASTM D5185m		0	0	0
	ppm	ASTIVI DOTODIII		0	0	-
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	method ASTM D5185m	limit/base	235	200	173
Boron Barium	ppm ppm		limit/base	235 <1	200 0	173 0
Boron		ASTM D5185m	limit/base	235	200	173
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	235 <1	200 0	173 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	235 <1 125	200 0 123	173 0 106
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	235 <1 125 <1	200 0 123 1	173 0 106 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	235 <1 125 <1 683	200 0 123 1 732	173 0 106 <1 577
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		235 <1 125 <1 683 1594	200 0 123 1 732 1652	173 0 106 <1 577 1422
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	235 <1 125 <1 683 1594 771	200 0 123 1 732 1652 753	173 0 106 <1 577 1422 604
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	235 <1 125 <1 683 1594 771 880	200 0 123 1 732 1652 753 958	173 0 106 <1 577 1422 604 720
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	760 800 3000 limit/base	235 <1 125 <1 683 1594 771 880 3084	200 0 123 1 732 1652 753 958 3078	173 0 106 <1 577 1422 604 720 2109
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 ASTM D5185m	760 800 3000 limit/base	235 <1 125 <1 683 1594 771 880 3084 current	200 0 123 1 732 1652 753 958 3078 history1	173 0 106 <1 577 1422 604 720 2109 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN 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 <b>method</b> ASTM D5185m	760 800 3000 limit/base >25	235 <1 125 <1 683 1594 771 880 3084 <i>current</i> 10	200 0 123 1 732 1652 753 958 3078 history1 11	173 0 106 <1 577 1422 604 720 2109 history2 10
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m 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	235 <1 125 <1 683 1594 771 880 3084 current 10 2	200 0 123 1 732 1652 753 958 3078 history1 11 2	173 0 106 <1 577 1422 604 720 2109 history2 10 <1
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 ASTM D5185m	760 800 3000 limit/base >25 >20	235 <1 125 <1 683 1594 771 880 3084 current 10 2 5	200 0 123 1 732 1652 753 958 3078 history1 11 2 7	173 0 106 <1 577 1422 604 720 2109 history2 10 <1 11
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	760 800 3000 limit/base >25 >20 limit/base	235 <1 125 <1 683 1594 771 880 3084 current 10 2 5 5 current	200 0 123 1 732 1652 753 958 3078 history1 11 2 7 7 history1 1.1	173 0 106 <1 577 1422 604 720 2109 history2 10 <1 11 11 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b>	ASTM D5185m ASTM D5185m	760 800 3000 limit/base >25 >20 limit/base >3	235 <1 125 <1 683 1594 771 880 3084 current 10 2 5 5 current 0.6	200 0 123 1 732 1652 753 958 3078 history1 11 2 7 7 history1	173 0 106 <1 577 1422 604 720 2109 history2 10 <1 10 <1 11 11 history2 0.8
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 >3 >20	235 <1 125 <1 683 1594 771 880 3084 <i>current</i> 10 2 5 <i>current</i> 0.6 8.8	200 0 123 1 732 1652 753 958 3078 history1 11 2 7 history1 1.1 9.0	173 0 106 <1 577 1422 604 720 2109 history2 10 <1 10 <1 11 history2 0.8 9.2
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 ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	760 800 3000 225 >22 20 imit/base >3 >20 >30 >30 >30	235 <1 125 <1 683 1594 771 880 3084 <i>current</i> 10 2 5 <i>current</i> 0.6 8.8 24.2 <i>current</i>	200 0 123 1 732 1652 753 958 3078 history1 11 2 7 history1 1.1 9.0 24.1 history1	173 0 106 <1 577 1422 604 720 2109 history2 10 <10 <1 11 11 history2 0.8 9.2 25.9 history2
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>imit/base</b> >25 >20 <b>imit/base</b> >3 >20 >3 >20	235 <1 125 <1 683 1594 771 880 3084 <b>current</b> 10 2 5 <b>current</b> 0.6 8.8 24.2	200 0 123 1 732 1652 753 958 3078 history1 11 2 7 <b>history1</b> 1.1 9.0 24.1	173 0 106 <1 577 1422 604 720 2109 history2 10 <1 11 11 history2 0.8 9.2 25.9



# **OIL ANALYSIS REPORT**



	Laboratory Sample No. Lab Number Unique Number Test Package	: WearCheck USA - : PCA0085458	501 Madis Received		ry, NC 2751: Jul 2023	3 <b>E</b>	<b>Ergon Trucking Inc MAG60</b> 11337 State Route 80 Magnolia, Ol US 4464 Contact: Eddy Smit		
		Dec22/21	0ct17/22	Mar30/23	0.	Dec22/21	0ct17/22	Mar30/23 -	
		12 -			2.	0 -			
		13 Abnormal			(b)HOX Bunn back Base Number 4.1	D -			
		G 15 Base			ber (mg				
		16							
		17- Abnormal			12.	Page			
		Viscosity @ 100°	C		12.	Base Number			
		Dec22/21 May9/22	0ct17/22	Mar30/23	Jul13/23				
		2/22	1/22	)/23	3/23				
		10	and the second s						
		15							
		E <sup>25</sup> <sub>20</sub>							
		35							
	45 40 - copper								
		Non-ferrous Meta		2	-				
		Dec22/21 May9/22	0ct17/22	Mar30/23	Jul13/23				
		00							
		10							
		ရီ 15	$\checkmark$						
00	Ma	20-							
0ct17/22	Mar30/23 -	25 - iron mickel		$\wedge$					
		Ferrous Alloys							
		GRAPHS		-					
		Visc @ 100°C	cSt	ASTM D445		13.4	13.5	13.4	
		Free Water	scalar ERTIES	*Visual method	limit/base	NEG current	NEG history1	NEG history2	
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG	
0ct17/22	Mar30/23 Jul13/23	Odor	scalar	*Visual	NORML	NORML	NORML	NORML	
- 1/22	/lar30/23 - Jui13/23 -	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML	
		Debris Sand/Dirt	scalar scalar	*Visual *Visual	NONE NONE	NONE	NONE	NONE NONE	
		Silt	scalar	*Visual	NONE	NONE	NONE	NONE	
		Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE	
		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE	
		VISUAL White Metal	scalar	method *Visual	limit/base	current	history1 NONE	history2 NONE	

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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