

## **OIL ANALYSIS REPORT**



Machine Id

#### 2446 Component

#### Component Diesel Engine Fluid

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.

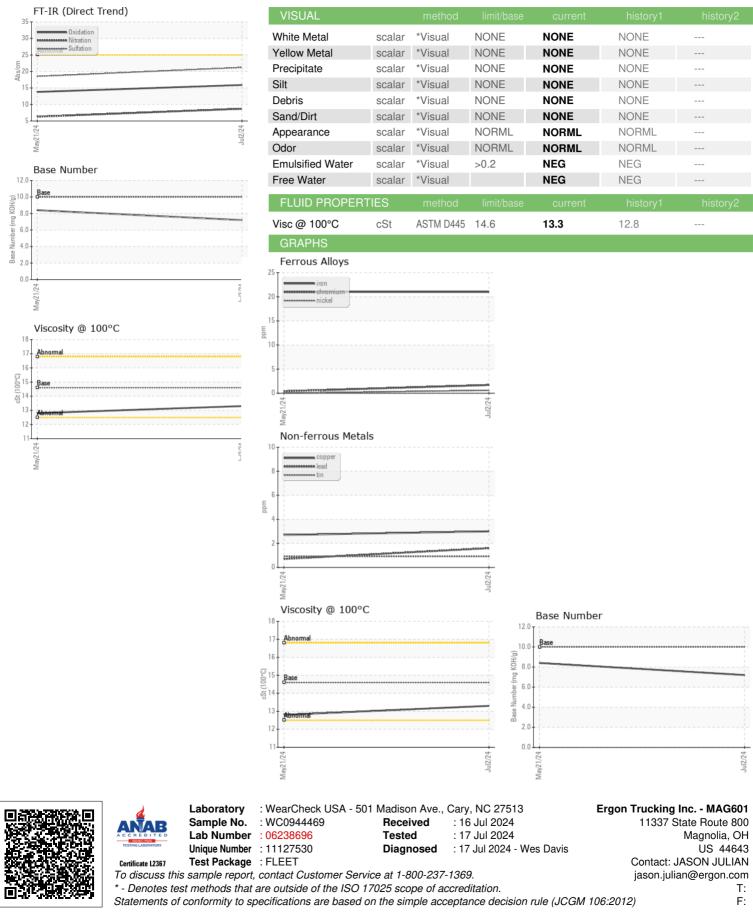
### Fluid Condition

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		WC0944469	WC0944526	
Sample Date		Client Info		02 Jul 2024	21 May 2024	
Machine Age	mls	Client Info		41348	22496	
Oil Age	mls	Client Info		0	0	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	NORMAL	
CONTAMINATION	٨	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	
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	21	21	
Chromium	ppm	ASTM D5185m	>20	2	<1	
Nickel	ppm	ASTM D5185m	>2	<1	0	
Titanium	ppm	ASTM D5185m	>2	8	2	
Silver	ppm	ASTM D5185m	>2	<1	<1	
Aluminum	ppm	ASTM D5185m	>20	18	25	
Lead	ppm	ASTM D5185m	>40	2	<1	
Copper	ppm	ASTM D5185m	>330	3	3	
Tin	ppm	ASTM D5185m	>15	<1	<1	
Vanadium	ppm	ASTM D5185m		<1	0	
Cadmium	ppm	ASTM D5185m		<1	0	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 126	history1 29	history2
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	126	29	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	126 0	29 0	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	126 0 63	29 0 47	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	126 0 63 <1	29 0 47 1	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	126 0 63 <1 649	29 0 47 1 814	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		126 0 63 <1 649 1421	29 0 47 1 814 1222	
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	126 0 63 <1 649 1421 857	29 0 47 1 814 1222 1043	
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	126 0 63 <1 649 1421 857 1004	29 0 47 1 814 1222 1043 1197	
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	126 0 63 <1 649 1421 857 1004 2907	29 0 47 1 814 1222 1043 1197 3656	
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	126 0 63 <1 649 1421 857 1004 2907 current	29 0 47 1 814 1222 1043 1197 3656 history1	     history2
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 <b>method</b> ASTM D5185m	760 800 3000 limit/base	126 0 63 <1 649 1421 857 1004 2907 current 15	29 0 47 1 814 1222 1043 1197 3656 history1 25	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	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	126 0 63 <1 649 1421 857 1004 2907 current 15 2	29 0 47 1 814 1222 1043 1197 3656 history1 25 1	      history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	760 800 3000 limit/base >25 >20	126 0 63 <1 649 1421 857 1004 2907 <u>current</u> 15 2 55	29 0 47 1 814 1222 1043 1197 3656 history1 25 1 69	     history2  
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	760 800 3000 limit/base >25 >20 limit/base	126 0 63 <1 649 1421 857 1004 2907 current 15 2 55 current	29 0 47 1 814 1222 1043 1197 3656 history1 25 1 69 history1	      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	ASTM D5185m ASTM D5185m	760 800 3000 limit/base >25 >20 limit/base >20	126 0 63 <1 649 1421 857 1004 2907 current 15 2 55 current 0.2	29 0 47 1 814 1222 1043 1197 3656 history1 25 1 69 history1 0.1	     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 >20	126 0 63 <1 649 1421 857 1004 2907 current 15 2 55 current 0.2 8.7	29 0 47 1 814 1222 1043 1197 3656 history1 25 1 69 history1 0.1 6.3	      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 <b>iinit/base</b> >25 >20 <b>iinit/base</b> >6 >20 >30	126 0 63 <1 649 1421 857 1004 2907 current 15 2 55 current 0.2 8.7 21.2	29 0 47 1 814 1222 1043 1197 3656 history1 25 1 69 history1 0.1 6.3 18.5	     history2  history2  history2



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