

## **OIL ANALYSIS REPORT**

Sample Rating Trend



#### Machine Id 2305 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.

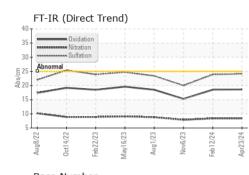
### Fluid Condition

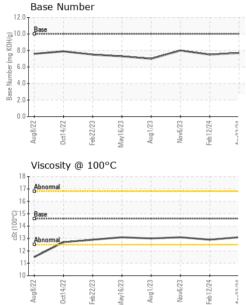
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0859265	WC0859287	WC0859253
Sample Date		Client Info		23 Apr 2024	12 Feb 2024	06 Nov 2023
Machine Age	mls	Client Info		146712	127641	110680
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	N	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	13	14	13
Chromium	ppm	ASTM D5185m	>4	1	2	1
Nickel	ppm	ASTM D5185m	>2	1	1	<1
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>25	8	6	8
Lead	ppm	ASTM D5185m	>45	2	2	1
Copper	ppm	ASTM D5185m	>85	1	1	<1
Tin	ppm	ASTM D5185m	>4	1	1	1
Vanadium	ppm	ASTM D5185m		<1	<1	0
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Cadmium	ppm	ASTM D5185m		<1	<1	0
ADDITIVES	ppm	ASTM D5185m method	limit/base	<1 current	<1 history1	0 history2
	ppm ppm		limit/base			-
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 277	history1 260	history2 197
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base	current 277 0	history1 260 0	history2 197 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 277 0 126	history1 260 0 131	history2 197 0 122
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 277 0 126 <1	history1 260 0 131 1	history2 197 0 122 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 277 0 126 <1 675	history1 260 0 131 1 659	history2 197 0 122 <1 631
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		Current 277 0 126 <1 675 1523	history1 260 0 131 1 659 1449	history2 197 0 122 <1 631 1566
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760	Current 277 0 126 <1 675 1523 851	history1 260 0 131 1 659 1449 642	history2 197 0 122 <1 631 1566 731
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	760 800	Current 277 0 126 <1 675 1523 851 897	history1 260 0 131 1 659 1449 642 861	history2 197 0 122 <1 631 1566 731 889
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 800 3000 limit/base	Current 277 0 126 <1 675 1523 851 897 3234	history1 260 0 131 1 659 1449 642 861 2584	history2 197 0 122 <1 631 1566 731 889 2584
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 800 3000 limit/base	Current 277 0 126 <1 675 1523 851 851 897 3234 current	history1 260 0 131 1 659 1449 642 861 2584 history1	history2 197 0 122 <1 631 1566 731 889 2584 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	760 800 3000 limit/base >30	Current 277 0 126 <1 675 1523 851 897 3234 current 10	history1         260         0         131         1         659         1449         642         861         2584         history1         9	history2         197         0         122         <1         631         1566         731         889         2584         history2         8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	760 800 3000 limit/base >30	current           277           0           126           <1           675           1523           851           897           3234           current           10           3	history1         260         0         131         1         659         1449         642         861         2584         history1         9         0	history2         197         0         122         <1         631         1566         731         889         2584         history2         8         2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	760 800 3000 limit/base >30	current           277           0           126           <1           675           1523           851           897           3234           current           10           3           10	history1         260         0         131         1         659         1449         642         861         2584         history1         9         0         13	history2         197         0         122         <1         631         1566         731         889         2584         history2         8         2         14
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	760 800 3000 limit/base >30 >20 limit/base	Current 277 0 126 <1 675 1523 851 897 3234 Current 10 3 10 Current	history1         260         0         131         1         659         1449         642         861         2584         history1         9         0         13         history1	history2         197         0         122         <1         631         1566         731         889         2584         history2         8         2         14
ADDITIVES 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	method           ASTM D5185m	760 800 3000 limit/base >30 >20 limit/base >3	current         277         0         126         <1         675         1523         851         897         3234         current         10         3         10         3         10         3         0.3	history1         260         0         131         1         659         1449         642         861         2584         history1         9         0         13         history1         0.3	history2         197         0         122         <1         631         1566         731         889         2584         history2         8         2         14         history2         0.7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Sulfur Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	760 800 3000 limit/base >30 limit/base >20 limit/base	current         277         0         126         <1         675         1523         851         897         3234         current         10         3         10         3         0.3         8.4	history1         260         0         131         1         659         1449         642         861         2584         history1         9         0         13         history1         0.3         8.4	history2         197         0         122         <1         631         1566         731         889         2584         history2         8         2         14         history2         0.7         7.9
ADDITIVES 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	method           ASTM D5185m           ASTM D5185m	760 800 3000 limit/base >30 >20 limit/base >3 >20 >30	current         277         0         126         <1         675         1523         851         897         3234         current         10         3         10         3         0.3         8.4         24.1	history1         260         0         131         1         659         1449         642         861         2584         history1         9         0         13         history1         0.3         8.4         23.9	history2         197         0         122         <1         631         1566         731         889         2584         history2         8         2         14         history2         0.7         7.9         20.0



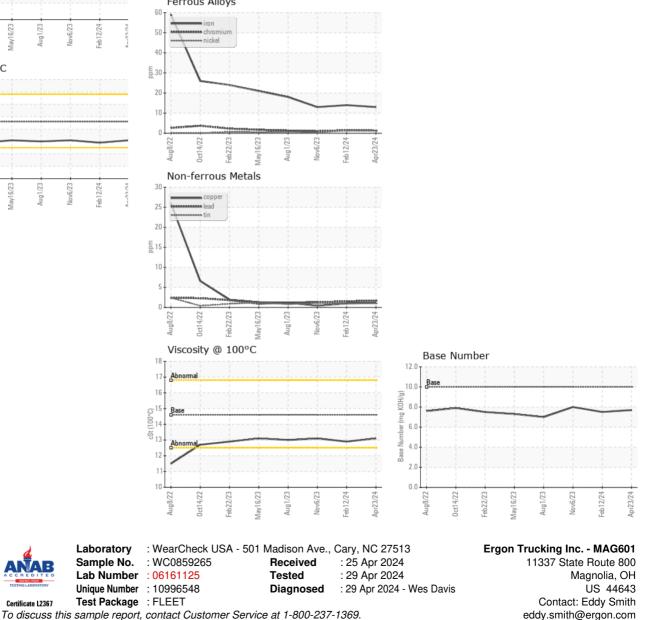
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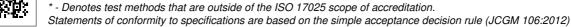




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPER	TIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.6	13.1	12.9	13.1
GRAPHS						

Ferrous Alloys





Certificate 12367

Submitted By: Eddy Smith

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