

## **OIL ANALYSIS REPORT**

Sample Rating Trend





### Machine Id 912083

Fluid

Component Diesel Engine

MOBIL DELVAC 1300 SUPER15W40 (10 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

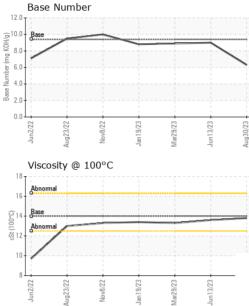
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0088474	GFL0073218	GFL0073229
Sample Date		Client Info		30 Aug 2023	13 Jun 2023	29 Mar 2023
	bro	Client Info		30 Aug 2023 4293	3704	29 Mar 2023 3138
Machine Age	hrs				650	650
Oil Age	hrs	Client Info		650 Changed		
Oil Changed		Client Info		Changed	Changed	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
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	14	12	13
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	<1	<1	1
Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	1	2
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	4	3	3
Tin	ppm	ASTM D5185m	>15	<1	1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 247	history1 28	history2 28
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	247	28	28
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	247 0	28 0	28 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	247 0 88	28 0 42	28 0 42
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	247 0 88 <1	28 0 42 <1	28 0 42 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	247 0 88 <1 453	28 0 42 <1 531	28 0 42 <1 524
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	247 0 88 <1 453 1627	28 0 42 <1 531 1909	28 0 42 <1 524 1592
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	247 0 88 <1 453 1627 1050	28 0 42 <1 531 1909 736	28 0 42 <1 524 1592 704
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	0 0 0	247 0 88 <1 453 1627 1050 1333	28 0 42 <1 531 1909 736 943	28 0 42 <1 524 1592 704 939
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	0 0 0 0 0 limit/base	247 0 88 <1 453 1627 1050 1333 3568	28 0 42 <1 531 1909 736 943 2700	28 0 42 <1 524 1592 704 939 2442
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	0 0 0 0 0 limit/base	247 0 88 <1 453 1627 1050 1333 3568 current	28 0 42 <1 531 1909 736 943 2700 history1	28 0 42 <1 524 1592 704 939 2442 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>	0 0 0 0 	247 0 88 <1 453 1627 1050 1333 3568 current 9	28 0 42 <1 531 1909 736 943 2700 history1 5	28 0 42 <1 524 1592 704 939 2442 history2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	0 0 0 0 	247 0 88 <1 453 1627 1050 1333 3568 current 9 3	28 0 42 <1 531 1909 736 943 2700 history1 5 2	28 0 42 <1 524 1592 704 939 2442 history2 5 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	247 0 88 <1 453 1627 1050 1333 3568 current 9 3 0 0	28 0 42 <1 531 1909 736 943 2700 history1 5 2 2 <1	28 0 42 <1 524 1592 704 939 2442 history2 5 2 2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0	247 0 88 <1 453 1627 1050 1333 3568 <u>current</u> 9 3 0 <u>current</u>	28 0 42 <1 531 1909 736 943 2700 history1 5 2 2 <1 5 2 <1 history1 0.7	28 0 42 <1 524 1592 704 939 2442 history2 5 2 3 3 history2 0.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0	247 0 88 <1 453 1627 1050 1333 3568 current 9 3 0 0	28 0 42 <1 531 1909 736 943 2700 history1 5 2 2 <1 history1	28 0 42 <1 524 1592 704 939 2442 history2 5 2 3 history2
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	0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	247 0 88 <1 453 1627 1050 1333 3568 <i>current</i> 9 3 0 <i>current</i> 0.7 8.0	28 0 42 <1 531 1909 736 943 2700 history1 5 2 2 <1 5 2 <1 history1 0.7 9.1	28 0 42 <1 524 1592 704 939 2442 history2 5 2 2 3 <i>history2</i> 0.7 8.9
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	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	247 0 88 <1 453 1627 1050 1333 3568 <i>current</i> 9 3 0 <i>current</i> 0.7 8.0 22.8 <i>current</i>	28 0 42 <1 531 1909 736 943 2700 history1 5 2 2 <1 5 2 <1 history1 0.7 9.1 23.8 history1	28 0 42 <1 524 1592 704 939 2442 <b>history2</b> 5 2 2 3 <b>history2</b> 0.7 8.9 23.6
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 D7844 *ASTM D7844 *ASTM D7844	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	247 0 88 <1 453 1627 1050 1333 3568 <u>current</u> 9 3 0 <u>current</u> 0.7 8.0 22.8	28 0 42 <1 531 1909 736 943 2700 history1 5 2 2 <1 5 2 <1 0.7 9.1 23.8	28 0 42 <1 524 1592 704 939 2442 history2 5 2 2 3 history2 0.7 8.9 23.6 history2



# **OIL ANALYSIS REPORT**

VISUAL



Laboratory Sample No. Lab Number Unique Number Test Package To discuss this sample report,		: GFL0088474 : <mark>05941776</mark> r : 10632388	Receive Diagnos	Diagnosed : 06 Sep 2023 Diagnostician : Sean Felton			GFL Environmental - 146 - August 1064 Franke Industri Augusta, G US 3090 Contact: JEFFERY WASHINGTO jeff.washington@gflenv.com		
		Jun2/22 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Jan 19/23	Mar29/23 Jun 13/23	0.0 - B <sup>ase</sup>	Jun2/22	Nav8/22	Mar29/23	
		15 Base 14 Base 13 45 12 11 11 11 12 11 12 13 14 12 14 13 12 14 14 13 14 14 14 14 14 14 14 14 14 14			(0)HO X 8.0- ba (0)- ba quump aseg				
		18 17 16			12.0	Base Numbe			
		ZZ/Zunr Viscosity @ 100°	Jan 19/23	Mar29/23 Jun13/23	Aug30/23	Base Numbe	r		
		40 20 0	<u> </u>						
		Non-ferrous Meta	als						
		Jun2/22	Jan 19/23	Mar29/23 Jun13/23	Aug30/23				
		20- 10-			_				
Jan 19/23 Mar 29/23	Jun 13/23	50							
		GRAPHS Ferrous Alloys							
		FLUID PROPE Visc @ 100°C	cSt	ASTM D445		current 13.8	history1 13.6	13.3	
		Free Water	scalar	*Visual method	limit/base	NEG	NEG	NEG history2	
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG	
Mar29/23	Jun 13/2	Appearance Odor	scalar scalar	*Visual *Visual	NORML NORML	NORML NORML	NORML NORML	NORML	
	_ Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE		
	Debris	scalar	*Visual	NONE	NONE	NONE	NONE		
	Precipitate Silt	scalar scalar	*Visual *Visual	NONE	NONE NONE	NONE	NONE		
	Duestaliate	a a a l a u	*\/:		NONE	NONE			

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Submitted By: CHRISTOPHER FARRER