

## **OIL ANALYSIS REPORT**



Machine Id **1901** Component **Diesel Engine** Fluid **DIESEL ENGINE OIL SAE 10W30 (--- QTS)** 

#### 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.

SAIVIFLE INFORIN	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0901359	WC0747829	WC0582155
Sample Date		Client Info		21 May 2024	03 Dec 2022	08 May 2021
Machine Age	mls	Client Info		354228	255481	152508
	mle	Client Info		50000	50000	50000
Oil Age Oil Changed	1113	Client Info		Changed	Changed	Changed
Comple Status				NORMAL	NORMAL	
Sample Status				NORMAL	NORIVIAL	NORMAL
CONTAMINATION	J	method				history2
Fuel		WC Method	>5	<10	<10	<10
Water		WC Method	>0.2	NFG	NEG	NEG
			20.L	ITEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	68	63	61
Chromium	ppm	ASTM D5185m	>20	<1	1	<1
Nickel	maa	ASTM D5185m	>4	<1	<1	<1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	nnm	ASTM D5185m	>3	-1	<1	0
Aluminum	nom	ASTM D5185m	>20	6	6	6
Lead	ppm	ASTM D5185m	>10	5	1/	10
Coppor	ppm	ACTM D5105m	> 220	10	10	50
	ppin	ACTM DE105m	>330	12	10	50
	ррп	ACTM DE105m	>15	1	2	3
Antimony	ppm					0
vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	mqq	method ASTM D5185m	limit/base 250	current 5	history1 4	history2 5
ADDITIVES Boron Barium	ppm mqq	method ASTM D5185m ASTM D5185m	limit/base 250 10	current 5 0	history1 4 0	history2 5 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100	current 5 0 66	history1 4 0 62	history2 5 0 55
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100	current 5 0 66 2	history1 4 0 62 1	history2 5 0 55 1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450	current 5 0 66 2 884	history1 4 0 62 1 834	history2 5 0 55 1 763
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000	current 5 0 66 2 884 1311	history1 4 0 62 1 834 1281	history2 5 0 55 1 763 1562
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	limit/base 250 10 100 450 3000 1150	current 5 0 66 2 884 1311 1001	history1 4 0 62 1 834 1281 875	history2 5 0 55 1 763 1562 1007
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350	Current 5 0 66 2 884 1311 1001 1223	history1 4 0 62 1 834 1281 875 1201	history2 5 0 555 1 763 1562 1007 1195
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250	Current 5 0 66 2 884 1311 1001 1223 2691	history1 4 0 62 1 834 1281 875 1201 3008	history2 5 0 55 1 763 1562 1007 1195 2461
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250	current           5           0           66           2           884           1311           1001           1223           3691	history1 4 0 62 1 834 1281 875 1201 3008	history2 5 0 555 1 763 1562 1007 1195 2461
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	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base	current           5           0           66           2           884           1311           1001           1223           3691           current	history1           4           0           62           1           834           1281           875           1201           3008           history1	history2 5 0 55 1 763 1562 1007 1195 2461 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm 1 ppm 2 ppm 2 ppm 3 ppm 4 ppm 4 ppm 4 ppm 4 ppm 4	method           ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25	current           5           0           66           2           884           1311           1001           1223           3691           current           7	history1           4           0           62           1           834           1281           875           1201           3008           history1           6	history2 5 0 55 1 763 1562 1007 1195 2461 history2 6
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	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25	current           5           0           66           2           884           1311           1001           1223           3691           current           7           8	history1           4           0           62           1           834           1281           875           1201           3008           history1           6           11	history2           5           0           55           1           763           1562           1007           1195           2461           history2           6           7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >20	current           5           0           66           2           884           1311           1001           1223           3691           current           7           8           7           8           7	history1           4           0           62           1           834           1281           875           1201           3008           history1           6           11           9	history2           5           0           55           1           763           1562           1007           1195           2461           history2           6           7           13
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 4 ppm 4 ppm 4 ppm 2 ppm 4 ppm 4 ppm 4 ppm 4 ppm 4 ppm 4 ppm 4	method           ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >20	current           5           0           66           2           884           1311           1001           1223           3691           current           7           8           7           NEG	history1           4           0           62           1           834           1281           875           1201           3008           history1           6           11           9           NEG	history2           5           0           55           1           763           1562           1007           1195           2461           history2           6           7           13           0.0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 4 ppm 2 ppm 3 ppm 3 ppm 4 ppm 3 ppm 3 ppm 4 ppm 4	method           ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >20	current           5           0           66           2           884           1311           1001           1223           3691           current           7           8           7           NEG	history1         4         0         62         1         834         1281         875         1201         3008         history1         6         11         9         NEG	history2         5         0         55         1         763         1562         1007         1195         2461         history2         6         7         13         0.0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED	ppm	method           ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 Limit/base	current           5           0           66           2           884           1311           1001           1223           3691           current           7           8           7           NEG           current	history1         4         0         62         1         834         1281         875         1201         3008         history1         6         11         9         NEG         history1	history2         5         0         55         1         763         1562         1007         1195         2461         history2         6         7         13         0.0         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm       %	method           ASTM D5185m	limit/base 250 10 400 450 3000 1150 1350 255 >20 imit/base >3	current           5           0           66           2           884           1311           1001           1223           3691           current           7           8           7           NEG           current           0.6	history1         4         0         62         1         834         1281         875         1201         3008         history1         6         11         9         NEG         history1         1	history2         5         0         55         1         763         1562         1007         1195         2461         history2         6         7         13         0.0         history2         0.9
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ррт       %       Аbs/ст	method           ASTM D5185m	limit/base 250 10 10 450 3000 1150 1350 225 220 limit/base >3 >20	current           5           0           66           2           884           1311           1001           1223           3691           current           7           8           7           NEG           0.6           11.4	history1         4         0         62         1         834         1281         875         1201         3008         history1         6         11         9         NEG         history1         1         1.2	history2         5         0         55         1         763         1562         1007         1195         2461         history2         6         7         13         0.0         history2         0.9         13
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ррт           %           Abs/cmm	method           ASTM D5185m	limit/base 250 10 10 450 3000 1150 1350 225 220 220 limit/base >3 >20 >30	current           5           0           66           2           884           1311           1001           1223           3691           current           7           8           7           NEG           0.6           11.4           25.5	history1         4         0         62         1         834         1281         875         1201         3008         history1         6         11         9         NEG         history1         1         11.2         25.2	history2         5         0         55         1         763         1562         1007         1195         2461         history2         6         7         13         0.0         history2         0.9         13         25.6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ррт ррт ррт ррт ррт ррт ррт ррт	method           ASTM D5185m	limit/base 250 10 450 3000 1150 1350 225 225 20 imit/base >3 >20 Sa >20 imit/base >3 >30 imit/base	current           5           0           66           2           884           1311           1001           1223           3691           current           7           8           7           NEG           current           0.6           11.4           25.5           current	history1         4         0         62         1         834         1281         875         1201         3008         history1         6         11         9         NEG         history1         1         11.2         25.2         history1	history2         5         0         55         1         763         1562         1007         1195         2461         history2         6         7         13         0.0         history2         0.9         13         25.6         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m *ASTM D7844 *ASTM D7844 *ASTM D7414	limit/base 250 10 450 3000 1150 1350 225 20 limit/base >3 >20 limit/base >33 >20 limit/base >30 >30 >255	current           5           0           66           2           884           1311           1001           1223           3691           current           7           8           7           NEG           current           0.6           11.4           25.5           current           23.3	history1         4         0         62         1         834         1281         875         1201         3008         history1         6         11         9         NEG         history1         1         11.2         25.2         history1         20.4	history2         5         0         55         1         763         1562         1007         1195         2461         history2         6         7         13         0.0         history2         0.9         13         25.6         history2         21.8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation Base Number (BN)	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m           *ASTM D5185m           *ASTM D5185m           *ASTM D5185m           *ASTM D7844           *ASTM D7844           *ASTM D7415           method           *ASTM D7414           *ASTM D7844	limit/base 250 10 10 450 3000 1150 1350 225 220 limit/base >33 >20 limit/base >30 limit/base >30 s30 s	current           5           0           66           2           884           1311           1001           1223           3691           current           7           8           7           NEG           0.6           11.4           25.5           current           23.3           4.4	history1         4         0         62         1         834         1281         875         1201         3008         history1         6         11         9         NEG         history1         1         11.2         25.2         history1         20.4         6.2	history2         5         0         55         1         763         1562         1007         1195         2461         history2         6         7         13         0.0         history2         0.9         13         25.6         history2         21.8         7

Report Id: MIDWIL [WUSCAR] 06211379 (Generated: 06/22/2024 21:47:31) Rev: 1

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# **OIL ANALYSIS REPORT**









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 PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	10.9	10.6	10.6	11.5
GRAPHS						
Ferrous Alloys						
80 iron						
co						
50						
.40						
30-						
20						
10-						
w9/20		ec3/22	21/24			







**MID-ATLANTIC TRANSPORT** Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. : WC0901359 Received 38 IRONSIDE CT : 17 Jun 2024 Lab Number : 06211379 Tested : 19 Jun 2024 WILLINGBORO, NJ Unique Number : 11084243 Diagnosed : 19 Jun 2024 - Don Baldridge US 08046 Test Package : FLEET ( Additional Tests: Glycol ) Contact: GARY LAWYER Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. gary@midatlantictrans.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (609)864-6948 F:

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

Contact/Location: GARY LAWYER - MIDWIL

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