

OIL ANALYSIS REPORT

Sample Rating Trend





Area **TRACTORS** Machine Id **[TRACTORS]** 158 Component **Diesel Engine**

AMERIGUARD 10W30 (--- 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		SBP0006776	SBP0005828	SBP0001917
Sample Date		Client Info		05 Jun 2024	27 Feb 2024	02 Sep 2023
Machine Age	mls	Client Info		85163	64261	34879
Oil Age	mls	Client Info		25000	64261	25000
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	٧	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<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	>120	25	48	47
Chromium	ppm	ASTM D5185m	>20	<1	2	<1
Nickel	ppm	ASTM D5185m	>5	3	9	2
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	4	9	16
Lead	ppm	ASTM D5185m	>40	0	<1	2
Copper	ppm	ASTM D5185m	>330	31	60	131
Tin	ppm	ASTM D5185m	>15	2	3	3
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 0	history1 4	history2 4
			limit/base			
Boron	ppm	ASTM D5185m	limit/base	0	4	4
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	limit/base	0 0	4 0	4 0
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 66	4 0 53	4 0 70
Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 66 <1	4 0 53 2	4 0 70 2
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 66 <1 1009	4 0 53 2 745	4 0 70 2 1052
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 66 <1 1009 1212	4 0 53 2 745 1359	4 0 70 2 1052 1301
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 66 <1 1009 1212 980	4 0 53 2 745 1359 888	4 0 70 2 1052 1301 999
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 66 <1 1009 1212 980 1296	4 0 53 2 745 1359 888 1094	4 0 70 2 1052 1301 999 1284
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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		0 0 66 <1 1009 1212 980 1296 2941	4 0 53 2 745 1359 888 1094 2536	4 0 70 2 1052 1301 999 1284 2992
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 66 <1 1009 1212 980 1296 2941 current	4 0 53 2 745 1359 888 1094 2536 history1	4 0 70 2 1052 1301 999 1284 2992 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	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 method	limit/base	0 0 66 <1 1009 1212 980 1296 2941 current 8	4 0 53 2 745 1359 888 1094 2536 history1 13	4 0 70 2 1052 1301 999 1284 2992 history2 17
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	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 ASTM D5185m ASTM D5185m	limit/base	0 0 66 <1 1009 1212 980 1296 2941 current 8 4	4 0 53 2 745 1359 888 1094 2536 history1 13 4	4 0 70 2 1052 1301 999 1284 2992 history2 17 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20	0 0 66 <1 1009 1212 980 1296 2941 current 8 4 14	4 0 53 2 745 1359 888 1094 2536 history1 13 4 30	4 0 70 2 1052 1301 999 1284 2992 history2 17 4 46
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	limit/base >25 >20 limit/base >20	0 0 66 <1 1009 1212 980 1296 2941 current 8 4 14 14 current	4 0 53 2 745 1359 888 1094 2536 history1 13 4 30 history1	4 0 70 2 1052 1301 999 1284 2992 history2 17 4 4 6 <i>history2</i>
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	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >20	0 0 66 <1 1009 1212 980 1296 2941 <i>current</i> 8 4 14 14 <i>current</i>	4 0 53 2 745 1359 888 1094 2536 history1 13 4 30 history1 1	4 0 70 2 1052 1301 999 1284 2992 history2 17 4 4 46 history2 0.8
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	limit/base >25 >20 limit/base >4 >20	0 0 66 <1 1009 1212 980 1296 2941 <i>current</i> 8 4 14 14 <i>current</i> 0.8 9.7	4 0 53 2 745 1359 888 1094 2536 history1 13 4 30 history1 1 1 1 1 1	4 0 70 2 1052 1301 999 1284 2992 history2 17 4 46 kistory2 0.8 11.0
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	Imit/base >25 >20 Imit/base >20 >4 >20 >30	0 0 66 <1 1009 1212 980 1296 2941 <i>current</i> 8 4 14 14 <i>current</i> 0.8 9.7 21.7	4 0 53 2 745 1359 888 1094 2536 history1 13 4 30 history1 1 1 1 1 1 1 1 2 4.1	4 0 70 2 1052 1301 999 1284 2992 history2 17 4 46 history2 0.8 11.0 22.9



35

30

25 4ps/cm

10

8.0

Sen2/23

Base Number

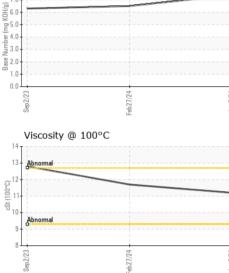
FT-IR (Direct Trend)

Oxidation

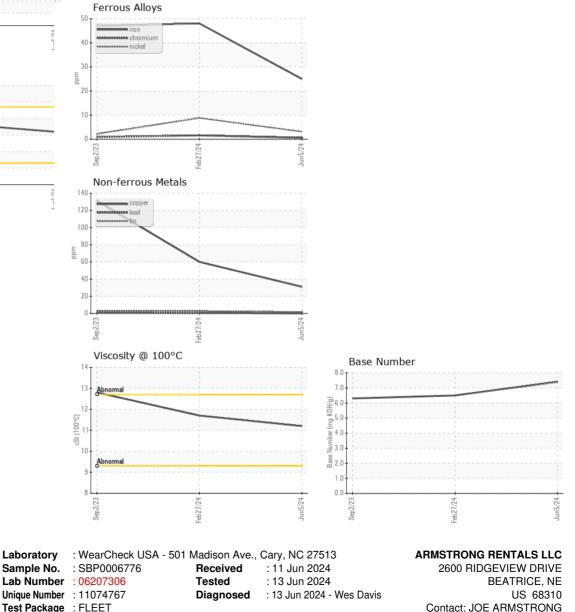
Nitration Sulfation

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		11.2	11.7	12.8
GRAPHS						



DC/LCHo





* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

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

Submitted By: JOE ARMSTRONG

joea@armstrongrentalsllc.com

Page 2 of 2

F:

T: (402)239-9930