

OIL ANALYSIS REPORT

Area MACHINE SHOP 0-9024-0000 STRADDLE CARRIER

Diesel Engine

Fluid ROYAL PURPLE MOTOR OIL 15W40 (23 QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

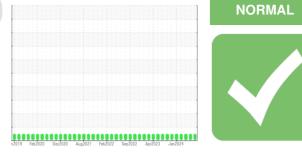
All component wear rates are normal.

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.



Sample Rating Trend

SAMPLE INFORM	1ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0922580	WC0922579	WC0867037
Sample Date		Client Info		19 Jun 2024	06 May 2024	11 Mar 2024
Machine Age	hrs	Client Info		7727	7228	6964
Oil Age	hrs	Client Info		7727	0	6964
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	١	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	>100	9	3	9
Chromium	ppm	ASTM D5185m	>20	0	<1	0
Nickel	ppm	ASTM D5185m	>4	0	<1	<1
Titanium	ppm	ASTM D5185m	~ 1	۰ <1	<1	<1
Silver		ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>3	1	3	3
	ppm					
Lead	ppm	ASTM D5185m	>40	4	2	2
Copper	ppm	ASTM D5185m		7	3	30
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	nnm	ASTM D5185m				0
Oddinidini	ppm	ASTIM DOTOOIII		0	<1	0
ADDITIVES	ppin	method	limit/base	current	<1 history1	0 history2
	ppm		limit/base	-		-
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current	history1 <1	history2 4
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0	current <1 0	history1 <1 <1	history2 4 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0	current <1 0 85	history1 <1 <1 83	history2 4 0 89
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 100	<pre>current <1 0 85 <1</pre>	history1 <1 <1 83 <1	history2 4 0 89 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 100 60	<pre>current <1 0 85 <1 16</pre>	history1 <1 <1 83 <1 15	history2 4 0 89 <1 31
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 100 60 3050	current <1 0 85 <1 16 3452	history1 <1 83 <1 15 3209	history2 4 0 89 <1 31 3234
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 100 60 3050 1050	Current <1 0 85 <1 16 3452 1172	history1 <1 &3 <1 15 3209 1121	history2 4 0 89 <1 31 3234 1119
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 100 60 3050 1050 1200	Current <1 0 85 <1 16 3452 1172 1445	history1 <1 &3 <1 15 3209 1121 1321	history2 4 0 89 <1 31 3234 1119 1334
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 ASTM D5185m	0 0 100 60 3050 1050 1200 12500	Current <1 0 85 <1 16 3452 1172 1445 20197	history1 <1 83 <1 15 3209 1121 1321 18030	history2 4 0 89 <1 31 3234 1119 1334 18770
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 ASTM D5185m	0 0 100 60 3050 1050 1200 12500	Current <1 0 85 <1 16 3452 1172 1445 20197 Current	<1 <1 83 <1 15 3209 1121 1321 18030 history1	history2 4 0 89 <1 31 3234 1119 1334 18770 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm 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 ASTM D5185m	0 0 100 60 3050 1050 1200 12500	Current <1 0 85 <1 16 3452 1172 1445 20197 Current 4	<1 <1 83 <1 15 3209 1121 1321 18030 history1 5	history2 4 0 89 <1 31 3234 1119 1334 18770 history2
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	0 0 100 60 3050 1050 1200 12500 imit/base >25	current <1 0 85 <1 16 3452 1172 1445 20197 current 4 2	<1 <1 83 <1 15 3209 1121 1321 18030 history1 5 4	history2 4 0 89 <1 31 3234 1119 1334 18770 history2 4 3
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	0 0 100 60 3050 1050 1200 12500 imit/base >25 >20	current <1 0 85 <1 16 3452 1172 1445 20197 current 4 2 0	<1 <1 83 <1 15 3209 1121 1321 18030 history1 5 4 3	history2 4 0 89 <1 31 3234 1119 1334 18770 history2 4 3 4 3 4 3 4
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	method ASTM D5185m	0 0 100 60 3050 1050 1200 12500 imit/base >25 -20 imit/base	current <1 0 85 <1 16 3452 1172 1445 20197 current 4 2 0 current 0 current 0.3	<1 <1 83 <1 15 3209 1121 1321 18030 history1 5 4 3 history1 0.1	history2 4 0 89 <1 31 3234 1119 1334 18770 history2 4 3 4 0 13234 18770 history2 4 3 4 0.2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 100 60 3050 1050 1200 12500 255 >25 >20 limit/base >3	Current <1 0 85 <1 16 3452 1172 1445 20197 Current 4 2 0 0	<1 <1 83 <1 15 3209 1121 1321 18030 history1 5 4 3 history1	history2 4 0 89 <1 31 3234 1119 1334 18770 history2 4 3 4 3 4 3 4 history2
ADDITIVES 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	method ASTM D5185m	0 0 100 60 3050 1050 1200 12500 imit/base >25 >20 imit/base >3 >20	current <1 0 85 <1 16 3452 1172 1445 20197 current 4 2 0 current 0 current 0.3 7.4	<1 <1 83 <1 15 3209 1121 1321 18030 history1 5 4 3 history1 0.1 5.3	history2 4 0 89 <1 31 3234 1119 1334 18770 history2 4 3 4 0.2 7.1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7185 method *ASTM D7624 *ASTM D7415 method	0 0 0 100 60 3050 1050 1200 12500 25 20 220 220 20 20 20 20 30 20 30	current <1 0 85 <1 16 3452 1172 1445 20197 current 4 2 0 current 0 current 0.3 7.4 27.0 current	<1 <1 83 <1 15 3209 1121 1321 18030 history1 5 4 3 history1 0.1 5.3 25.3 history1	history2 4 0 89 <1 31 3234 1119 1334 18770 history2 4 3 4 3 4 0.2 7.1 27.3 history2
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	0 0 100 60 3050 1050 1200 12500 255 20 20 imit/base >3 >20 >30	current <1 0 85 <1 16 3452 1172 1445 20197 current 4 2 0 current 0 current 0.3 7.4 27.0	<1 <1 83 <1 15 3209 1121 1321 18030 history1 5 4 3 history1 0.1 5.3 25.3	history2 4 0 89 <1 31 3234 1119 1334 18770 history2 4 3 4 0.2 7.1 27.3

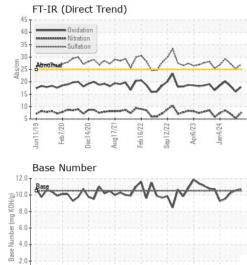


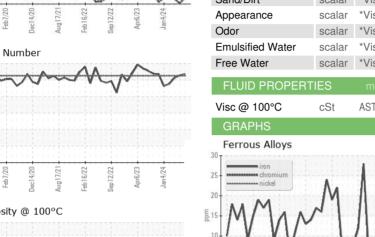
6.0

4.0

Jun1

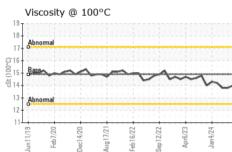
OIL ANALYSIS REPORT



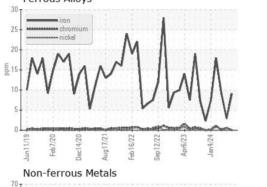


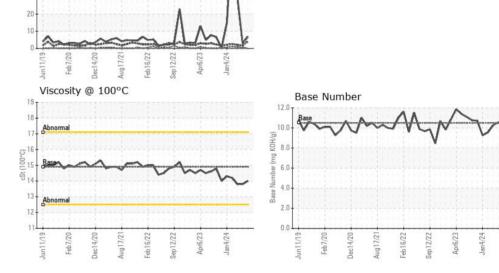
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50 40 21 ead



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	14.9	14.0	13.8	13.8





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 **ALLVAC - MACHINE SHOP** Sample No. : WC0922580 Received : 20 Jun 2024 2020 ASHCRAFT AVE Lab Number : 06215935 Tested : 22 Jun 2024 MONROE, NC Unique Number : 11088799 Diagnosed : 23 Jun 2024 - Don Baldridge US 28110 Test Package : IND 2 Contact: mark eilerman Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. mark.eilerman@atimaterials.com T: (704)292-4051 * - 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)

Report Id: ALLMONMACH [WUSCAR] 06215935 (Generated: 06/23/2024 11:17:05) Rev: 1

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