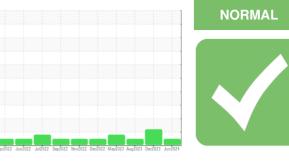


OIL ANALYSIS REPORT

Sample Rating Trend



2305 Component Diesel Engine Fluid ROYAL PURPLE MOTOR OIL 15W40 (--- QTS)

DIAGNOSIS

Machine Id

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

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	ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0720100	WC0720150	WC0720144
Sample Date		Client Info		17 Jun 2024	28 Dec 2023	25 Aug 2023
Machine Age	mls	Client Info		477109	426428	372490
Oil Age	mls	Client Info		50000	100000	50000
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				NORMAL	ABNORMAL	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	>100	35	84	42
Chromium	ppm	ASTM D5185m	>20	<1	2	2
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	<1	<1	0
Aluminum	ppm	ASTM D5185m	>20	9	18	18
Lead	ppm	ASTM D5185m	>40	0	<1	0
Copper	ppm	ASTM D5185m	>330	27	15	54
Tin	ppm	ASTM D5185m	>15	1	1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
O a alterationed		LOTIL DEVOE				
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES	ppm	ASTM D5185m method	limit/base	0 current	0 history1	0 history2
	ppm		limit/base	-	-	-
ADDITIVES		method ASTM D5185m		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current	history1 0	history2 0
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0	current <1 0	history1 0 0	history2 0 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0	current <1 0 3	history1 0 0 5	history2 0 0 6
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 100	current <1 0 3 1	history1 0 0 5 1	history2 0 0 6 1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 100 60	<pre>current <1 0 3 1 57</pre>	history1 0 0 5 1 118	history2 0 0 6 1 116
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	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 3 1 57 2518	history1 0 0 5 1 118 2577	history2 0 0 6 1 116 2386
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 3 1 57 2518 995	history1 0 5 1 118 2577 1060	history2 0 0 6 1 116 2386 895
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm 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 3 1 57 2518 995 1143	history1 0 5 1 118 2577 1060 1304	history2 0 0 6 1 116 2386 895 1109
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 3 1 57 2518 995 1143 3821 current 8	history1 0 0 5 1 118 2577 1060 1304 3538 history1 14	history2 0 0 6 1 1 116 2386 895 1109 3603 history2 8
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 3 1 57 2518 995 1143 3821 current	history1 0 5 1 118 2577 1060 1304 3538 history1	history2 0 0 6 1 116 2386 895 1109 3603 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 limit/base	current <1 0 3 1 57 2518 995 1143 3821 current 8	history1 0 0 5 1 118 2577 1060 1304 3538 history1 14	history2 0 0 6 1 116 2386 895 1109 3603 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	0 0 100 60 3050 1050 1200 12500 limit/base	current <1 0 3 1 57 2518 995 1143 3821 current 8 6	history1 0 0 5 1 118 2577 1060 1304 3538 history1 14 4	history2 0 0 6 1 116 2386 895 1109 3603 history2 8 3 34
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	0 0 100 60 3050 1050 1200 12500 limit/base >25	current <1 0 3 1 57 2518 995 1143 3821 current 8 6 20 current 1.3	history1 0 0 5 1 118 2577 1060 1304 3538 history1 14 4 40 history1 2.1	history2 0 0 6 1 116 2386 895 1109 3603 history2 8 3 34 history2 1.1
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 limit/base >25 >20 limit/base >3	current <1 0 3 1 57 2518 995 1143 3821 current 8 6 20 current	history1 0 0 5 1 118 2577 1060 1304 3538 history1 14 4 40 history1	history2 0 0 6 1 116 2386 895 1109 3603 history2 8 3 34
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	0 0 100 60 3050 1050 1200 12500 limit/base >25 >20 limit/base >3	current <1 0 3 1 57 2518 995 1143 3821 current 8 6 20 current 1.3	history1 0 0 5 1 118 2577 1060 1304 3538 history1 14 4 40 history1 2.1	history2 0 0 6 1 116 2386 895 1109 3603 history2 8 3 34 history2 1.1
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 3 1 57 2518 995 1143 3821 current 8 6 20 current 1.3 10.3	history1 0 0 5 1 118 2577 1060 1304 3538 history1 14 4 40 history1 2.1 13.1	history2 0 0 6 1 116 2386 895 1109 3603 history2 8 34 history2 1.1 9.7
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 20 100 225 20 320 20 20 20 20 20 20 20 20 20 20 20 20 2	current <1 0 3 1 57 2518 995 1143 3821 current 8 6 20 current 1.3 10.3 24.4	history1 0 0 5 1 118 2577 1060 1304 3538 history1 14 4 40 history1 2.1 13.1 32.4	history2 0 0 6 1 116 2386 895 1109 3603 history2 8 3 34 history2 1.1 9.7 23.9

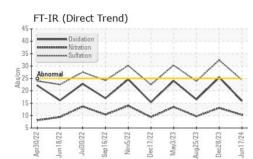


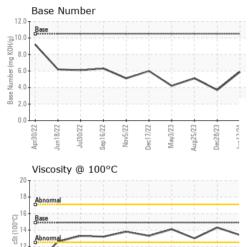
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OIL ANALYSIS REPORT



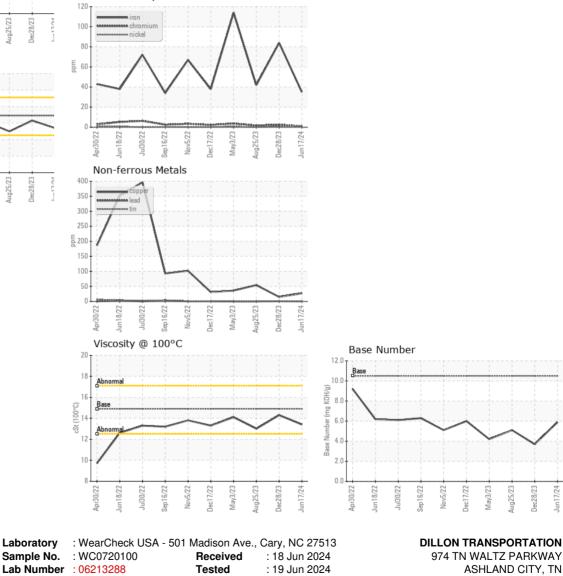


Mav3/23

Aug25/23 lec28/23

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	ΓIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.9	13.4	14.3	13.0
CDADUS						

Ferrous Alloys



Unique Number : 11086152 Diagnosed : 19 Jun 2024 - Wes Davis Test Package : FLEET Contact: MASON NICHOLSON Certificate 12367 M.NICHOLSON@DILLONTRANSPORTATION.COM To discuss this sample report, contact Customer Service at 1-800-237-1369. * - 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)

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