

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 221712

Component Diesel Engine

Fluid PETRO CANADA DURON SHP 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.

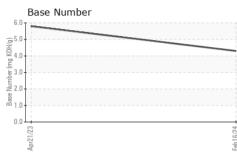
Fluid Condition

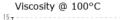
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

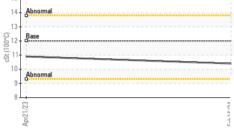
,			Apr2023	Feb2024		
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0114572	PCA0095784	
Sample Date		Client Info		16 Feb 2024	21 Apr 2023	
Machine Age	mls	Client Info		39735	12523	
Oil Age	mls	Client Info		39735	12523	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	NORMAL	
CONTAMINAT		method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	motory
Water		WC Method	>0.2	<1.0 NEG	NEG	
		WC Method	>0.2	NEG		
Glycol		WC Wethod		NEG	0.0	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	35	21	
Chromium	ppm	ASTM D5185m	>20	1	<1	
Nickel	ppm	ASTM D5185m	>4	<1	0	
Titanium	ppm	ASTM D5185m		<1	4	
Silver	ppm	ASTM D5185m	>3	<1	0	
Aluminum	ppm	ASTM D5185m	>20	16	13	
Lead	ppm	ASTM D5185m	>40	5	0	
Copper	ppm	ASTM D5185m	>330	2	14	
Tin	ppm	ASTM D5185m	>15	2	1	
Vanadium	ppm	ASTM D5185m		<1	<1	
	ppm ppm	ASTM D5185m ASTM D5185m		<1 0	<1 0	
Vanadium			limit/base			
Vanadium Cadmium	ppm	ASTM D5185m	limit/base	0 current	0	
Vanadium Cadmium ADDITIVES Boron	ppm ppm	ASTM D5185m method ASTM D5185m		0	0 history1	 history2
Vanadium Cadmium ADDITIVES Boron Barium	ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	2 0	0 current 3 0	0 history1 11 0	 history2
Vanadium Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	0 current 3 0 52	0 history1 11 0 45	 history2
Vanadium Cadmium ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	0 current 3 0 52 1	0 history1 11 0 45 2	 history2
Vanadium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	0 current 3 0 52 1 870	0 history1 11 0 45 2 801	 history2
Vanadium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	0 current 3 0 52 1 870 1054	0 history1 11 0 45 2 801 1137	 history2
Vanadium Cadmium ADDITIVES Boron Barium Molybdenum Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	0 current 3 0 52 1 870 1054 1010	0 history1 11 0 45 2 801 1137 862	 history2
Vanadium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	0 current 3 0 52 1 870 1054 1010 1217	0 history1 11 0 45 2 801 1137	 history2
Vanadium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600	0 current 3 0 52 1 870 1054 1010 1217 2983	0 history1 11 0 45 2 801 1137 862 1095 2942	 history2
Vanadium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	0 current 3 0 52 1 870 1054 1010 1217 2983 current	0 history1 11 0 45 2 801 1137 862 1095 2942 history1	 history2 history2
Vanadium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	0 current 3 0 52 1 870 1054 1010 1217 2983 current 5	0 history1 11 0 45 2 801 1137 862 1095 2942 history1 12	 history2 history2
Vanadium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Calcium Phosphorus Zinc Sulfur Sulfur Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	0 current 3 0 52 1 870 1054 1010 1217 2983 current 5 <1	0 history1 11 0 45 2 801 1137 862 1095 2942 history1 12 2	 history2 history2
Vanadium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Calcium Phosphorus Zinc Sulfur Sulfur Sulfur Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25 >20	0 current 3 0 52 1 870 1054 1010 1217 2983 current 5 <1 58	0 history1 11 0 45 2 801 1137 862 1095 2942 history1 12 2 2 60	 history2 history2 <li< th=""></li<>
Vanadium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 Imit/base >25 -20 Imit/base	0 current 3 0 52 1 870 1054 1010 1217 2983 current 5 <1 58 current	0 history1 11 0 45 2 801 1137 862 1095 2942 history1 12 2 60 history1	 history2 history2
Vanadium Cadmium ADDITIVES Boron Barium Molybdenum Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base	0 current 3 0 52 1 870 1054 1010 1217 2983 current 5 <1 58 current 0.5	0 history1 11 0 45 2 801 1137 862 1095 2942 history1 12 2 2 60 history1 0.2	 history2 history2 <li< th=""></li<>
Vanadium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Calcium Phosphorus Zinc Sulfur Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 Imit/base >25 -20 Imit/base	0 current 3 0 52 1 870 1054 1010 1217 2983 current 5 <1 58 current 0.5 10.9	0 history1 11 0 45 2 801 1137 862 1095 2942 history1 12 2942 history1 12 2 60 history1 0.2 8.3	 history2 history2 history2
Vanadium Cadmium ADDITIVES Boron Barium Barium Molybdenum Manganese Magnesium Calcium Phosphorus Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base	0 current 3 0 52 1 870 1054 1010 1217 2983 current 5 <1 58 current 0.5	0 history1 11 0 45 2 801 1137 862 1095 2942 history1 12 2 2 60 history1 0.2	history2 history2 history2
Vanadium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Calcium Phosphorus Zinc Sulfur Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	0 current 3 0 52 1 870 1054 1010 1217 2983 current 5 <1 58 current 0.5 10.9	0 history1 11 0 45 2 801 1137 862 1095 2942 history1 12 2942 history1 12 2 60 history1 0.2 8.3	history2
Vanadium Cadmium ADDITIVES 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	2 0 50 0 950 1050 995 1180 2600 imit/base >25 >20 imit/base >3 >20 >30	0 current 3 0 52 1 870 1054 1054 1010 1217 2983 current 5 <1 58 current 0.5 10.9 24.7	0 history1 11 0 45 2 801 1137 862 1095 2942 history1 12 2 9 60 history1 0.2 8.3 19.2	 history2 history2 history2 history2
Vanadium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Calcium Phosphorus Zinc Sulfur 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	2 0 50 0 950 1050 995 1180 2600 imit/base >25 >20 imit/base >3 >20 >30	0 current 3 0 52 1 870 1054 1010 1217 2983 current 5 <1 5 <1 58 current 0.5 10.9 24.7 current	0 history1 11 0 45 2 801 1137 862 1095 2942 history1 12 2942 history1 12 2 60 history1 0.2 8.3 19.2 history1	history2 history2 history2 history2 history2 history2 history2

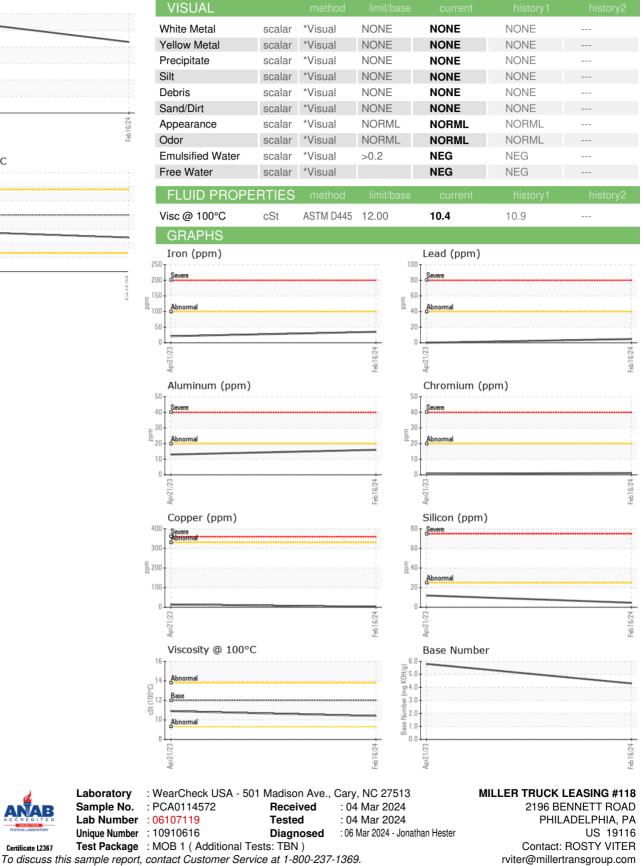


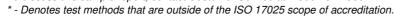
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Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Certificate L2367

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