

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id **738212** Component **Diesel Engine** Fluid **PETRO CANADA DURON SHP 10W30 (--- GAL)**

DIAGNOSIS

Recommendation

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

Wear

Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the oil.

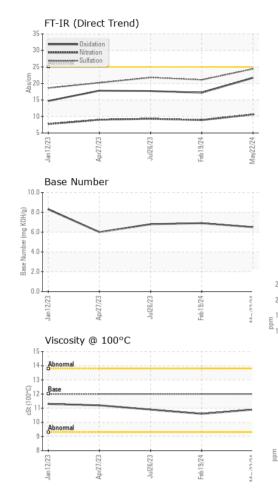
Fluid Condition

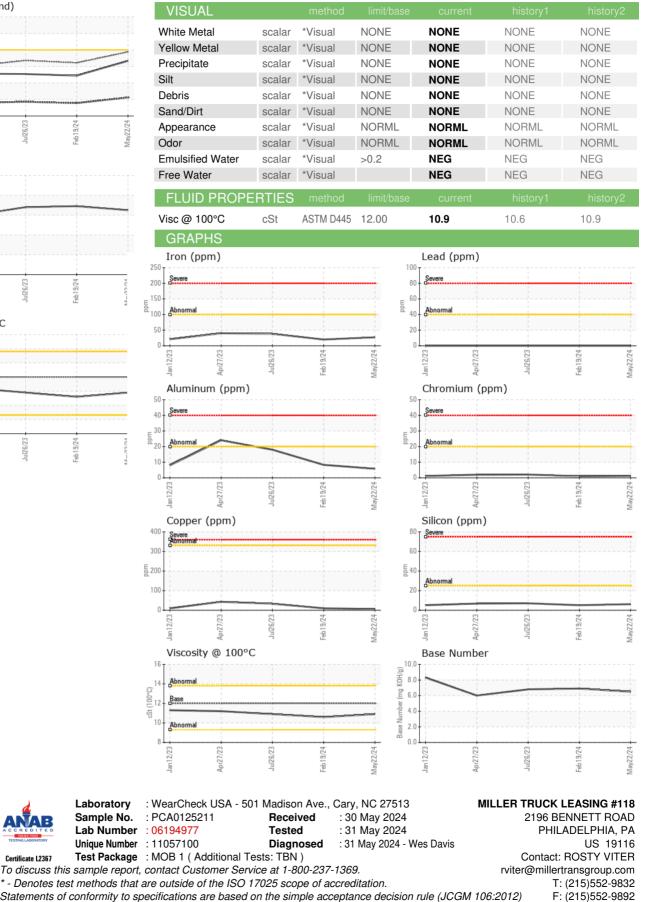
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	NATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0125211	PCA0119049	PCA0102928
Sample Date		Client Info		22 May 2024	19 Feb 2024	26 Jul 2023
Machine Age	mls	Client Info		49088	246595	166001
Oil Age	mls	Client Info		49088	246595	166001
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	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						history2
Iron	ppm	ASTM D5185m	>100	27	20	38
Chromium	ppm	ASTM D5185m	>20	1	1	2
Nickel	ppm	ASTM D5185m	>4	<1	<1	<1
Titanium	ppm	ASTM D5185m		22	10	3
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	6	8	18
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	6	10	33
Tin	ppm	ASTM D5185m	>15	<1	<1	1
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm		limit/base	current 9	history1 9	history2 5
	ppm ppm					
Boron		ASTM D5185m	2	9	9	5
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	9 1	9 0	5
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	9 1 48	9 0 50	5 2 75
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	9 1 48 <1	9 0 50 <1	5 2 75 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	9 1 48 <1 788	9 0 50 <1 875	5 2 75 <1 1142
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	9 1 48 <1 788 1275	9 0 50 <1 875 1210	5 2 75 <1 1142 1572
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995	9 1 48 <1 788 1275 1105	9 0 50 <1 875 1210 1092	5 2 75 <1 1142 1572 1265
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180	9 1 48 <1 788 1275 1105 1241	9 0 50 <1 875 1210 1092 1334	5 2 75 <1 1142 1572 1265 1593
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	9 1 48 <1 788 1275 1105 1241 2946	9 0 50 <1 875 1210 1092 1334 2930	5 2 75 <1 1142 1572 1265 1593 3377
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	2 0 50 950 1050 995 1180 2600	9 1 48 <1 788 1275 1105 1241 2946 current	9 0 50 <1 875 1210 1092 1334 2930 history1	5 2 75 <1 1142 1572 1265 1593 3377 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	2 0 50 950 1050 995 1180 2600 Limit/base	9 1 48 <1 788 1275 1105 1241 2946 current 6	9 0 50 <1 875 1210 1092 1334 2930 history1 5	5 2 75 <1 1142 1572 1265 1593 3377 history2 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m 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	9 1 48 <1 788 1275 1105 1241 2946 current 6 0	9 0 50 <1 875 1210 1092 1334 2930 history1 5 1	5 2 75 <1 1142 1572 1265 1593 3377 history2 7 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20	9 1 48 <1 788 1275 1105 1241 2946 current 6 0 13	9 0 50 <1 875 1210 1092 1334 2930 history1 5 1 1 14	5 2 75 <1 1142 1572 1265 1593 3377 history2 7 2 32
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >25 -20 imit/base	9 1 48 <1 788 1275 1105 1241 2946 current 6 0 13 current	9 0 50 <1 875 1210 1092 1334 2930 history1 5 1 14 14 history1	5 2 75 <1 1142 1572 1265 1593 3377 history2 7 2 32 history2
Boron Barium Molybdenum Manganese 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	9 1 48 <1 788 1275 1105 1241 2946 <i>current</i> 6 0 13 <i>current</i> 1.2	9 0 50 <1 875 1210 1092 1334 2930 history1 5 1 1 14 history1 0.8	5 2 75 <1 1142 1572 1265 1593 3377 history2 7 2 32 history2 0.9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc 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	9 1 48 <1 788 1275 1105 1241 2946 <i>current</i> 6 0 13 <i>current</i> 1.2 10.6	9 0 50 <1 875 1210 1092 1334 2930 history1 5 1 1 14 14 0.8 8.9	5 2 75 <1 1142 1572 1265 1593 3377 history2 7 2 32 7 2 32 history2 0.9 9.3
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 D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >25 20 imit/base >3 >20 33 >30	9 1 48 <1 788 1275 1105 1241 2946 <i>current</i> 6 0 13 <i>current</i> 1.2 10.6 24.4	9 0 50 <1 875 1210 1092 1334 2930 history1 5 1 14 14 0.8 8.9 21.1	5 2 75 <1 1142 1572 1265 1593 3377 history2 7 2 32 7 2 32 history2 0.9 9.3 21.8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAC	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	2 0 50 0 950 1050 995 1180 2600 imit/base >25 >20 imit/base >3 >20 >30	9 1 48 <1 788 1275 1105 1241 2946 <i>current</i> 6 0 13 <i>current</i> 1.2 10.6 24.4 <i>current</i>	9 0 50 <1 875 1210 1092 1334 2930 history1 5 1 14 5 1 14 0.8 8.9 21.1 history1	5 2 75 <1 1142 1572 1265 1593 3377 history2 7 2 32 7 2 32 history2 0.9 9.3 21.8 history2



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

-St (100°C)

Laboratory

Sample No.

Certificate 12367

Contact/Location: ROSTY VITER - MILPHINE