

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 26539

Component Diesel Engine

Fluid PETRO CANADA DURON SHP 10W30 (--- QTS)

DIAGNOSIS

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.

RTS)		0ct2020	Aug2021 Nov2021	Jul2022 Oct2022 Mar2023	Sep2023	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0106114	PCA0095209	PCA0082463
Sample Date		Client Info		08 Sep 2023	13 Mar 2023	04 Oct 2022
Machine Age	mls	Client Info		0	0	0
Oil Age	mls	Client Info		0	40000	20000
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	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 METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	32	42	23
Chromium	ppm	ASTM D5185m	>20	1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	<1
Titanium	ppm	ASTM D5185m		3	14	19
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	6	6	4
Lead	ppm	ASTM D5185m	>40	4	6	4
Copper	ppm	ASTM D5185m	>330	3	2	3
Tin	ppm	ASTM D5185m	>15	1	<1	1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	0	3	9
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	50	57	48	47
Manganaca				<1	<1	<1
-	ppm	ASTM D5185m				
Magnesium	ppm ppm	ASTM D5185m	950	889	851	798
Magnesium Calcium				889 1114		798 1273
Magnesium Calcium Phosphorus	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	950 1050 995	889 1114 1006	851 1260 959	798 1273 968
Magnesium Calcium Phosphorus Zinc	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	950 1050 995 1180	889 1114	851 1260 959 1256	798 1273 968 1220
Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	950 1050 995	889 1114 1006	851 1260 959	798 1273 968
Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	950 1050 995 1180	889 1114 1006 1220	851 1260 959 1256	798 1273 968 1220
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	950 1050 995 1180 2600	889 1114 1006 1220 3146	851 1260 959 1256 3026 history1 4	798 1273 968 1220 3240 history2 4
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	950 1050 995 1180 2600 limit/base	889 1114 1006 1220 3146 current	851 1260 959 1256 3026 history1	798 1273 968 1220 3240 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ypm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	950 1050 995 1180 2600 limit/base >25	889 1114 1006 1220 3146 current 4	851 1260 959 1256 3026 history1 4	798 1273 968 1220 3240 history2 4
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ypm JTS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	950 1050 995 1180 2600 limit/base >25	889 1114 1006 1220 3146 <u>current</u> 4 12	851 1260 959 1256 3026 history1 4 17 3 history1	798 1273 968 1220 3240 history2 4 12 <1 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm vTS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	950 1050 995 1180 2600 limit/base >25 >20	889 1114 1006 1220 3146 current 4 12 4 current 0.6	851 1260 959 1256 3026 history1 4 17 3	798 1273 968 1220 3240 history2 4 12 <1 12 <1 history2 0.5
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ypm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	889 1114 1006 1220 3146 current 4 12 4 current	851 1260 959 1256 3026 history1 4 17 3 history1	798 1273 968 1220 3240 history2 4 12 <1 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm vTS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	889 1114 1006 1220 3146 current 4 12 4 current 0.6	851 1260 959 1256 3026 history1 4 17 3 history1 0.7	798 1273 968 1220 3240 history2 4 12 <1 12 <1 history2 0.5
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm vTS ppm ppm ppm ppm ppm pm val ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	950 1050 995 1180 2600 limit/base >25 >20 limit/base >3 >20	889 1114 1006 1220 3146 <i>current</i> 4 12 4 <i>current</i> 0.6 10.6	851 1260 959 1256 3026 history1 4 17 3 history1 0.7 10.5	798 1273 968 1220 3240 history2 4 12 <1 history2 0.5 10.2
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm vTS ppm ppm ppm ppm ppm pm val ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7824	950 1050 995 1180 2600 limit/base >25 >20 limit/base >3 >20 >3	889 1114 1006 1220 3146 current 4 12 4 current 0.6 10.6 22.3	851 1260 959 1256 3026 history1 4 17 3 history1 0.7 10.5 24.5	798 1273 968 1220 3240 history2 4 12 <1 kistory2 0.5 10.2 22.9

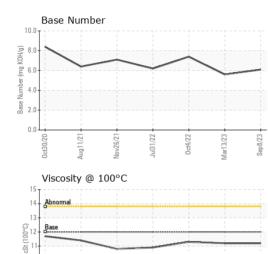


Abnorm

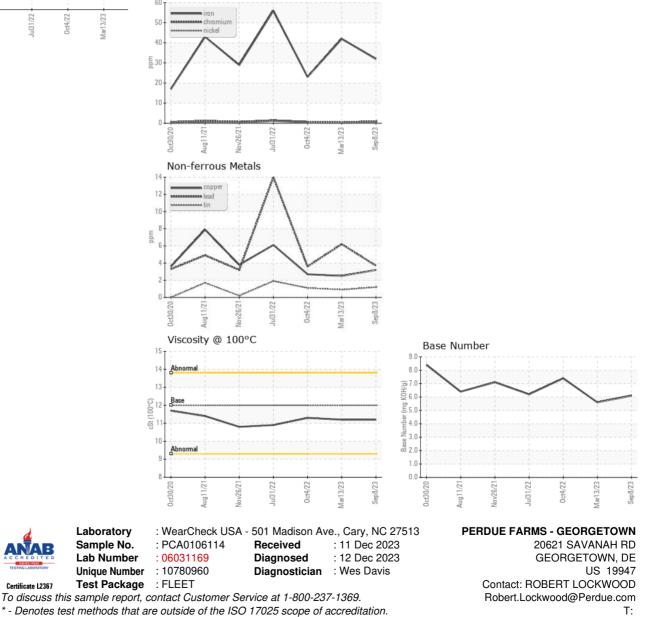
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OIL ANALYSIS REPORT



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 PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	11.2	11.2	11.3
GRAPHS						
Ferrous Alloys						



* - 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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