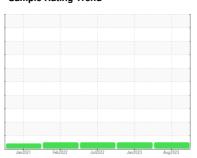


OIL ANALYSIS REPORT

Sample Rating Trend









Machine Id DT735 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

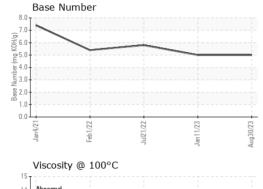
Fluid Condition

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

Sample Date Client Info 30 Aug 2023 11 Jan 2023 21 Jul 2022 Machine Age mls Client Info 154458 128802 104208 Oil Age mls Client Info 25656 0 26060 Oil Changed Client Info Changed Changed Changed Sample Status NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2	N SHP 10W30 (Q1S)	Jan 2021	Feb 2022	Jul2022 Jan2023	Aug 2023	
Sample Date	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Machine Age mls Client Info 154458 128802 104208 26060	Sample Number		Client Info		PCA0103261	PCA0080893	PCA0074807
Oil Age	Sample Date		Client Info		30 Aug 2023	11 Jan 2023	21 Jul 2022
Client Info Changed Changed NORMAL NORMAL NORMAL	Machine Age	mls	Client Info		154458	128802	104208
NORMAL NORMAL NORMAL CONTAMINATION method limil/base current history1 history2 history2	Oil Age	mls	Client Info		25656	0	26060
CONTAMINATION	Oil Changed		Client Info		Changed	Changed	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
WEAR METALS	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 18 25 19 Chromium ppm ASTM D5185m >20 <1	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Chromium	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1 1 <1 Nickel ppm ASTM D5185m >5 1 3 0 Tittanium ppm ASTM D5185m >2 0 0 0 Siliver ppm ASTM D5185m >2 0 0 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	18	25	19
Titanium	Chromium	ppm	ASTM D5185m	>20	<1	1	<1
Silver	Nickel	ppm	ASTM D5185m	>5	1	3	0
Aluminum	Titanium		ASTM D5185m	>2	0	0	0
Lead	Silver	ppm	ASTM D5185m	>2	0	0	<1
Copper ppm ASTM D5185m >330 5 6 6 Tin ppm ASTM D5185m >15 <1	Aluminum	ppm	ASTM D5185m	>20	4	6	5
Tin	Lead	ppm	ASTM D5185m	>40	0	<1	<1
Antimony	Copper	ppm	ASTM D5185m	>330	5	6	6
Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 0 2 3 Barium ppm ASTM D5185m 0 0 2 0 Molybdenum ppm ASTM D5185m 0 70 72 64 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 950 934 1014 930 Calcium ppm ASTM D5185m 1050 1169 1223 1089 Phosphorus ppm ASTM D5185m 995 949 1045 976 Zinc ppm ASTM D5185m 2600 2940 2903 2743 CONTAMINANTS method limit/base current history1	Tin	ppm	ASTM D5185m	>15	<1	<1	1
ADDITIVES	Antimony	ppm	ASTM D5185m				
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 0 2 3 Barium ppm ASTM D5185m 0 0 2 0 Molybdenum ppm ASTM D5185m 50 70 72 64 Manganese ppm ASTM D5185m 0 <1	Vanadium	ppm	ASTM D5185m		<1	0	0
Boron ppm ASTM D5185m 2 0 2 3 3	Cadmium	ppm	ASTM D5185m		0	0	0
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 50 70 72 64 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 950 934 1014 930 Calcium ppm ASTM D5185m 1050 1169 1223 1089 Phosphorus ppm ASTM D5185m 1050 1169 1223 1089 Phosphorus ppm ASTM D5185m 995 949 1045 976 Zinc ppm ASTM D5185m 1180 1221 1355 1247 Sulfur ppm ASTM D5185m 2600 2940 2903 2743 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 9 5 Sodium ppm ASTM D5185m >20 2 8 8 INFRA-RED method <	Boron	ppm	ASTM D5185m	2	0	2	3
Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 950 934 1014 930 Calcium ppm ASTM D5185m 1050 1169 1223 1089 Phosphorus ppm ASTM D5185m 995 949 1045 976 Zinc ppm ASTM D5185m 1180 1221 1355 1247 Sulfur ppm ASTM D5185m 2600 2940 2903 2743 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 9 5 Sodium ppm ASTM D5185m >20 2 8 8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.6 0.7 Nitration Abs/cm *ASTM D741	Barium	ppm	ASTM D5185m	0	0	2	0
Magnesium ppm ASTM D5185m 950 934 1014 930 Calcium ppm ASTM D5185m 1050 1169 1223 1089 Phosphorus ppm ASTM D5185m 995 949 1045 976 Zinc ppm ASTM D5185m 1180 1221 1355 1247 Sulfur ppm ASTM D5185m 2600 2940 2903 2743 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 9 5 Sodium ppm ASTM D5185m >20 2 8 8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.6 0.7 Nitration Abs/cm *ASTM D7415 >30 20.9 22.0 24.0 FLUID DEGRADATION met	Molybdenum	ppm	ASTM D5185m	50	70	72	64
Calcium ppm ASTM D5185m 1050 1169 1223 1089 Phosphorus ppm ASTM D5185m 995 949 1045 976 Zinc ppm ASTM D5185m 1180 1221 1355 1247 Sulfur ppm ASTM D5185m 2600 2940 2903 2743 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 9 5 Sodium ppm ASTM D5185m >20 2 8 8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.6 0.7 Nitration Abs/.1mm *ASTM D7415 >30 20.9 22.0 24.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation<	Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Phosphorus ppm ASTM D5185m 995 949 1045 976 Zinc ppm ASTM D5185m 1180 1221 1355 1247 Sulfur ppm ASTM D5185m 2600 2940 2903 2743 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 9 5 Sodium ppm ASTM D5185m >20 2 8 8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.6 0.7 Nitration Abs/cm *ASTM D7624 >20 9.6 10.5 10.7 Sulfation Abs/.1mm *ASTM D7415 >30 20.9 22.0 24.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/	Magnesium	ppm	ASTM D5185m	950	934	1014	930
Zinc ppm ASTM D5185m 1180 1221 1355 1247	Calcium	ppm	ASTM D5185m	1050	1169	1223	1089
Sulfur ppm ASTM D5185m 2600 2940 2903 2743 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 9 5 Sodium ppm ASTM D5185m 6 5 2 Potassium ppm ASTM D5185m >20 2 8 8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.6 0.7 Nitration Abs/cm *ASTM D7624 >20 9.6 10.5 10.7 Sulfation Abs/.1mm *ASTM D7415 >30 20.9 22.0 24.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.8 17.3 18.6	Phosphorus	ppm	ASTM D5185m	995	949	1045	976
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 9 5 Sodium ppm ASTM D5185m 6 5 2 Potassium ppm ASTM D5185m >20 2 8 8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.6 0.7 Nitration Abs/cm *ASTM D7624 >20 9.6 10.5 10.7 Sulfation Abs/.1mm *ASTM D7415 >30 20.9 22.0 24.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.8 17.3 18.6	Zinc	ppm	ASTM D5185m	1180	1221	1355	1247
Silicon ppm ASTM D5185m >25 5 9 5 Sodium ppm ASTM D5185m 6 5 2 Potassium ppm ASTM D5185m >20 2 8 8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.6 0.7 Nitration Abs/cm *ASTM D7624 >20 9.6 10.5 10.7 Sulfation Abs/.1mm *ASTM D7415 >30 20.9 22.0 24.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.8 17.3 18.6	Sulfur	ppm	ASTM D5185m	2600	2940	2903	2743
Sodium ppm ASTM D5185m 6 5 2 Potassium ppm ASTM D5185m >20 2 8 8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.6 0.7 Nitration Abs/cm *ASTM D7624 >20 9.6 10.5 10.7 Sulfation Abs/.1mm *ASTM D7415 >30 20.9 22.0 24.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.8 17.3 18.6	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 2 8 8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.6 0.7 Nitration Abs/cm *ASTM D7624 >20 9.6 10.5 10.7 Sulfation Abs/.1mm *ASTM D7415 >30 20.9 22.0 24.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.8 17.3 18.6	Silicon	ppm	ASTM D5185m	>25	5	9	5
INFRA-RED	Sodium	ppm	ASTM D5185m		6	5	2
Soot % % *ASTM D7844 >4 0.6 0.6 0.7 Nitration Abs/cm *ASTM D7624 >20 9.6 10.5 10.7 Sulfation Abs/.1mm *ASTM D7415 >30 20.9 22.0 24.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.8 17.3 18.6	Potassium	ppm	ASTM D5185m	>20	2	8	8
Nitration Abs/cm *ASTM D7624 >20 9.6 10.5 10.7 Sulfation Abs/.1mm *ASTM D7415 >30 20.9 22.0 24.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.8 17.3 18.6	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 20.9 22.0 24.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.8 17.3 18.6	Soot %	%	*ASTM D7844	>4	0.6	0.6	0.7
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.8 17.3 18.6	Nitration	Abs/cm	*ASTM D7624	>20	9.6	10.5	10.7
Oxidation Abs/.1mm *ASTM D7414 >25 15.8 17.3 18.6	Sulfation	Abs/.1mm	*ASTM D7415	>30	20.9	22.0	24.0
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 5.0 5.8	Oxidation	Abs/.1mm	*ASTM D7414	>25	15.8	17.3	18.6
	Base Number (BN)	mg KOH/g	ASTM D2896		5.0	5.0	5.8



OIL ANALYSIS REPORT



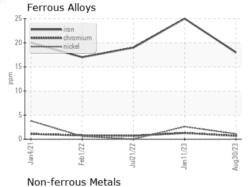
Jul21/22

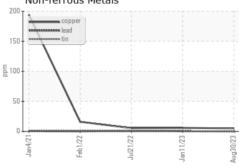
Jan 11/23

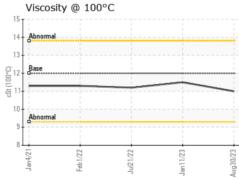
VISUAL		method				history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	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

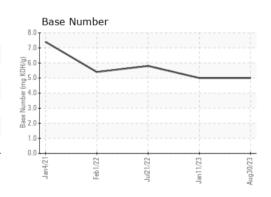
FLUID PROPE	RHES	method			history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	11.0	11.5	11.2

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : PCA0103261 : 05941755 : 10632367

Received Diagnosed

: 05 Sep 2023 : 05 Sep 2023 Diagnostician : Wes Davis

NW WHITE & CO - ANDERSON DIVISION

2605 RIVER RD PIEDMONT, SC US 29673 Contact: James Threatt jthreatt@nwwhite.com

T: (864)918-4646

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)

Report Id: NWWPIE [WUSCAR] 05941755 (Generated: 09/05/2023 18:36:50) Rev: 1