

OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id DT800 Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (--- GAL)

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

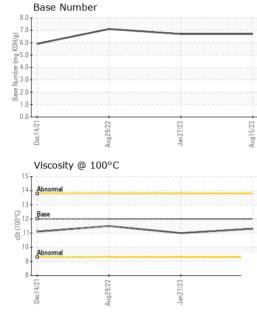
Fluid Condition

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

SAMPLE INFORMATION method limit/base current history1 history2 Sample Number Client Info 15 Aug 2023 27 Jan 2023 29 Aug 2022 20 Jan 2023 20 Jan	GAL)		Dec202	1 Aug2022	Jan 2023 Au	g2023	
Sample Date	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Machine Age mls Client Info 152234 126629 101404 51050 Oil Age mls Client Info 30424 101404 51050 Oil Changed	Sample Number		Client Info		PCA0102275	PCA0090276	PCA0079602
Oil Age mls Client Info 30424 101404 51050 Oil Changed Chang	Sample Date		Client Info		15 Aug 2023	27 Jan 2023	29 Aug 2022
Oil Changed Sample Status Client Info Changed NORMAL NORMAL <th< th=""><th>Machine Age</th><th>mls</th><th>Client Info</th><th></th><th>152234</th><th>126629</th><th>101404</th></th<>	Machine Age	mls	Client Info		152234	126629	101404
Sample Status	Oil Age	mls	Client Info		30424	101404	51050
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 <1.0 Glycol WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >110 21 17 17 Chromium ppm ASTM D5185m >2 0 <1 <1 Nickel ppm ASTM D5185m >2 0 <1 <1 0 Silver ppm ASTM D5185m >2 <1 0 0 Silver ppm ASTM D5185m >25 9 6 9 9 Lead ppm ASTM D5185m >25 9 6 9 9 Lead ppm ASTM D5185m >4 <1 <1 1 1 1 1 1	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 history2 Iron ppm ASTM D5185m >4 <1 <1 <1 Chromium ppm ASTM D5185m >4 <1 <1 <1 Nickel ppm ASTM D5185m >2 0 <1 <1 Silver ppm ASTM D5185m >2 <1 0 0 Aluminum ppm ASTM D5185m >2 <1 0 0 Aluminum ppm ASTM D5185m >2 <1 0 0 Aluminum ppm ASTM D5185m >4 <1 <1 <1 Copper ppm ASTM D5185m >4 <1 <1 1 Vanadium ppm ASTM D5185m 0 0 <1 <1 Cadmium ppm ASTM D5185m 0 0 0 <1 Cadmium ppm ASTM D5185m 0 0 0 0 <th>Fuel</th> <th></th> <th>WC Method</th> <th>>5</th> <th><1.0</th> <th><1.0</th> <th><1.0</th>	Fuel		WC Method	>5	<1.0	<1.0	<1.0
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185n >4 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>110	21	17	17
Titanium	Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Silver	Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Aluminum	Titanium	ppm	ASTM D5185m		0	<1	0
Lead	Silver	ppm	ASTM D5185m	>2	<1	0	0
Copper ppm ASTM D5185m >85 1 2 2 Tin ppm ASTM D5185m >4 <1 <1 1 Antimony ppm ASTM D5185m Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 6 3 10 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 68 68 58 Manganese ppm ASTM D5185m 0 -1 -1 -1 -1 Magnesium ppm ASTM D5185m 950 1019 981 913 Calcium ppm ASTM D5185m 995 1136 1024 926 <th>Aluminum</th> <th>ppm</th> <th>ASTM D5185m</th> <th>>25</th> <th>9</th> <th>6</th> <th>9</th>	Aluminum	ppm	ASTM D5185m	>25	9	6	9
Tin ppm ASTM D5185m >4 <1	Lead	ppm	ASTM D5185m	>45	0	<1	<1
Antimony ppm ASTM D5185m Vanadium ppm ASTM D5185m 0 0 <1	Copper	ppm	ASTM D5185m	>85	1	2	2
Vanadium ppm ASTM D5185m 0 0 <1	Tin	ppm	ASTM D5185m	>4	<1	<1	1
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 6 3 10 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 68 68 58 Manganese ppm ASTM D5185m 0 <1 <1 <1 <1 Magnesium ppm ASTM D5185m 950 1019 981 913 Calcium ppm ASTM D5185m 950 1019 981 913 Calcium ppm ASTM D5185m 995 1136 1024 926 Zinc ppm ASTM D5185m 995 1136 1276 1226 Sulfur ppm ASTM D5185m 20 3637 3238 2547 CONTAMINANTS	Antimony	ppm	ASTM D5185m				
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 6 3 10 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 68 68 58 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 950 1019 981 913 Calcium ppm ASTM D5185m 950 1019 981 913 Calcium ppm ASTM D5185m 950 1264 1263 1036 Phosphorus ppm ASTM D5185m 995 1136 1024 926 Zinc ppm ASTM D5185m 995 1396 1276 1226 Sulfur ppm ASTM D5185m 2600 3637 3238 2547 CONTAMINANTS method limit/bas	Vanadium	ppm	ASTM D5185m				
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Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 68 68 58 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 950 1019 981 913 Calcium ppm ASTM D5185m 1050 1264 1263 1036 Phosphorus ppm ASTM D5185m 1050 1264 1263 1036 Phosphorus ppm ASTM D5185m 995 1136 1024 926 Zinc ppm ASTM D5185m 1180 1396 1276 1226 Sulfur ppm ASTM D5185m 2600 3637 3238 2547 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 2 2 2 3 Potassium ppm AST	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 50 68 68 58 Manganese ppm ASTM D5185m 0 <1	Boron	ppm	ASTM D5185m	2	6	3	10
Manganese ppm ASTM D5185m 0 <1	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 950 1019 981 913 Calcium ppm ASTM D5185m 1050 1264 1263 1036 Phosphorus ppm ASTM D5185m 995 1136 1024 926 Zinc ppm ASTM D5185m 1180 1396 1276 1226 Sulfur ppm ASTM D5185m 2600 3637 3238 2547 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 7 6 4 Sodium ppm ASTM D5185m 2 2 2 3 Potassium ppm ASTM D5185m >20 4 5 15 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.7 0.8 Nitration Abs/.1mm *ASTM D74	Molybdenum	ppm	ASTM D5185m		68	68	58
Calcium ppm ASTM D5185m 1050 1264 1263 1036 Phosphorus ppm ASTM D5185m 995 1136 1024 926 Zinc ppm ASTM D5185m 1180 1396 1276 1226 Sulfur ppm ASTM D5185m 2600 3637 3238 2547 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 7 6 4 Sodium ppm ASTM D5185m 2 2 3 Potassium ppm ASTM D5185m >20 4 5 15 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.7 0.8 Nitration Abs/.1mm *ASTM D7415 >30 22.1 21.9 24.4 FLUID DEGRADATION limit/base <td< th=""><th>Manganese</th><th>ppm</th><th>ASTM D5185m</th><th>0</th><th><1</th><th><1</th><th><1</th></td<>	Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Phosphorus ppm ASTM D5185m 995 1136 1024 926 Zinc ppm ASTM D5185m 1180 1396 1276 1226 Sulfur ppm ASTM D5185m 2600 3637 3238 2547 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 7 6 4 Sodium ppm ASTM D5185m 2 2 3 Potassium ppm ASTM D5185m >20 4 5 15 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.7 0.8 Nitration Abs/.1mm *ASTM D7415 >30 22.1 21.9 24.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414	Magnesium	ppm	ASTM D5185m	950	1019	981	913
Zinc ppm ASTM D5185m 1180 1396 1276 1226 Sulfur ppm ASTM D5185m 2600 3637 3238 2547 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 7 6 4 Sodium ppm ASTM D5185m 2 2 3 Potassium ppm ASTM D5185m >20 4 5 15 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.7 0.8 Nitration Abs/.mm *ASTM D7624 >20 9.7 10.2 11.4 Sulfation Abs/.1mm *ASTM D7415 >30 22.1 21.9 24.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM	Calcium	ppm	ASTM D5185m			1263	
Sulfur ppm ASTM D5185m 2600 3637 3238 2547 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 7 6 4 Sodium ppm ASTM D5185m 2 2 2 3 Potassium ppm ASTM D5185m >20 4 5 15 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.7 0.8 Nitration Abs/.mm *ASTM D7624 >20 9.7 10.2 11.4 Sulfation Abs/.1mm *ASTM D7415 >30 22.1 21.9 24.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.5 17.3 19.5		ppm	ASTM D5185m	995			
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 7 6 4 Sodium ppm ASTM D5185m 2 2 3 Potassium ppm ASTM D5185m >20 4 5 15 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.7 0.8 Nitration Abs/cm *ASTM D7624 >20 9.7 10.2 11.4 Sulfation Abs/.1mm *ASTM D7415 >30 22.1 21.9 24.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.5 17.3 19.5	-	ppm	ASTM D5185m			1276	1226
Silicon ppm ASTM D5185m >30 7 6 4 Sodium ppm ASTM D5185m 2 2 2 3 Potassium ppm ASTM D5185m >20 4 5 15 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.7 0.8 Nitration Abs/cm *ASTM D7624 >20 9.7 10.2 11.4 Sulfation Abs/.1mm *ASTM D7415 >30 22.1 21.9 24.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.5 17.3 19.5	Sulfur	ppm	ASTM D5185m	2600	3637	3238	2547
Sodium ppm ASTM D5185m 2 2 3 Potassium ppm ASTM D5185m >20 4 5 15 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.7 0.8 Nitration Abs/cm *ASTM D7624 >20 9.7 10.2 11.4 Sulfation Abs/.1mm *ASTM D7415 >30 22.1 21.9 24.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.5 17.3 19.5	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 4 5 15 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.7 0.8 Nitration Abs/cm *ASTM D7624 >20 9.7 10.2 11.4 Sulfation Abs/.1mm *ASTM D7415 >30 22.1 21.9 24.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.5 17.3 19.5		ppm		>30			
INFRA-RED		ppm			2	2	3
Soot % % *ASTM D7844 >3 0.7 0.7 0.8 Nitration Abs/cm *ASTM D7624 >20 9.7 10.2 11.4 Sulfation Abs/.1mm *ASTM D7415 >30 22.1 21.9 24.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.5 17.3 19.5	Potassium	ppm	ASTM D5185m	>20	4	5	15
Nitration Abs/cm *ASTM D7624 >20 9.7 10.2 11.4 Sulfation Abs/.1mm *ASTM D7415 >30 22.1 21.9 24.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.5 17.3 19.5	INFRA-RED		method	limit/base		history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 22.1 21.9 24.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.5 17.3 19.5							
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.5 17.3 19.5				>20			
Oxidation Abs/.1mm *ASTM D7414 >25 17.5 17.3 19.5	Sulfation	Abs/.1mm	*ASTM D7415	>30	22.1	21.9	24.4
	FLUID DEGRA	OATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 6.7 6.7 7.1	Oxidation	Abs/.1mm	*ASTM D7414	>25	17.5	17.3	19.5
	Base Number (BN)	mg KOH/g	ASTM D2896		6.7	6.7	7.1



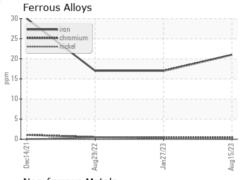
OIL ANALYSIS REPORT

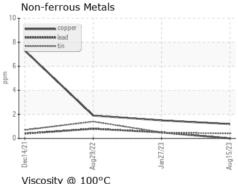


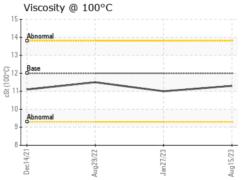
			limit/base	current	history1	history2
White Metal so	calar '	*Visual	NONE	NONE	NONE	NONE
Yellow Metal so	calar '	*Visual	NONE	NONE	NONE	NONE
Precipitate so	calar '	*Visual	NONE	NONE	NONE	NONE
Silt	calar '	*Visual	NONE	NONE	NONE	NONE
Debris so	calar '	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt so	calar '	*Visual	NONE	NONE	NONE	NONE
Appearance so	calar '	*Visual	NORML	NORML	NORML	NORML
Odor so	calar '	*Visual	NORML	NORML	NORML	NORML
Emulsified Water so	calar '	*Visual	>0.2	NEG	NEG	NEG
Free Water so	calar '	*Visual		NEG	NEG	NEG

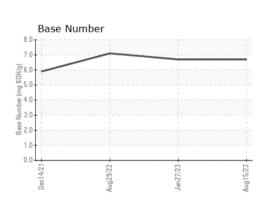
	EHILO	method			riistory i	HISTORYZ
Visc @ 100°C	cSt	ASTM D445	12.00	11.3	11.0	11.5

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10620016 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : PCA0102275 : 05934745

Received Diagnosed

: 25 Aug 2023 : 25 Aug 2023 Diagnostician : Wes Davis

NW WHITE & CO - COLUMBIA DIVISION

100 INDEPENDENCE BLVD COLUMBIA, SC US 29210

Contact: GEORGE EDWARDS

gedwards@nwwhite.com

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

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.

Report Id: NWWCOL [WUSCAR] 05934745 (Generated: 08/25/2023 18:43:01) Rev: 1

Submitted By: Paul Riddick

T:

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