

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id T269

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

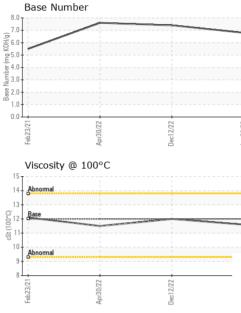
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history 1	history 2
Sample Number		Client Info		PCA0096947	PCA0080915	PCA0068114
Sample Date		Client Info		20 Jun 2023	12 Dec 2022	30 Apr 2022
Machine Age	mls	Client Info		129554	104886	79748
Oil Age	mls	Client Info		24668	25138	27769
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history 1	history 2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>100	33	35	39
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	3	5	11
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm	ASTM D5185m	>330	2	3	5
Tin	ppm	ASTM D5185m	>15	0	<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	history 1	history 2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 2	history 1 5	history 2 5
	ppm ppm					
Boron		ASTM D5185m	2	2	5 0 63	5 0 54
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0 50 0	2 12	5 0 63 <1	5 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	2 12 72 <1 933	5 0 63 <1 923	5 0 54 <1 960
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	2 12 72 <1 933 1148	5 0 63 <1 923 1141	5 0 54 <1 960 1187
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	2 12 72 <1 933 1148 984	5 0 63 <1 923 1141 997	5 0 54 <1 960 1187 1004
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180	2 12 72 <1 933 1148 984 1257	5 0 63 <1 923 1141 997 1236	5 0 54 <1 960 1187 1004 1196
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	2 0 50 0 950 1050 995	2 12 72 <1 933 1148 984	5 0 63 <1 923 1141 997	5 0 54 <1 960 1187 1004
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 ASTM D5185m	2 0 50 950 1050 995 1180	2 12 72 <1 933 1148 984 1257	5 0 63 <1 923 1141 997 1236	5 0 54 <1 960 1187 1004 1196
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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	2 12 72 <1 933 1148 984 1257 3061	5 0 63 <1 923 1141 997 1236 3189	5 0 54 <1 960 1187 1004 1196 2416
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	2 12 72 <1 933 1148 984 1257 3061 current	5 0 63 <1 923 1141 997 1236 3189 history 1 8 0	5 0 54 <1 960 1187 1004 1196 2416 history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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	2 0 50 950 1050 995 1180 2600	2 12 72 <1 933 1148 984 1257 3061 <i>current</i> 7	5 0 63 <1 923 1141 997 1236 3189 history 1 8	5 0 54 <1 960 1187 1004 1196 2416 kistory 2 8
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 50 950 1050 995 1180 2600 limit/base >25	2 12 72 <1 933 1148 984 1257 3061 <i>current</i> 7 1 9 <i>current</i>	5 0 63 <1 923 1141 997 1236 3189 history 1 8 0 15 history 1	5 0 54 <1 960 1187 1004 1196 2416 history 2 8 1 30 history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	2 12 72 <1 933 1148 984 1257 3061 <i>current</i> 7 1 9 <i>current</i> 1.1	5 0 63 <1 923 1141 997 1236 3189 history 1 8 0 15 history 1 0.9	5 0 54 <1 960 1187 1004 1196 2416 history 2 8 1 30 history 2 0.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 -20 limit/base	2 12 72 <1 933 1148 984 1257 3061 <i>current</i> 7 1 9 <i>current</i>	5 0 63 <1 923 1141 997 1236 3189 history 1 8 0 15 history 1	5 0 54 <1 960 1187 1004 1196 2416 history 2 8 1 30 history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	2 12 72 <1 933 1148 984 1257 3061 <i>current</i> 7 1 9 <i>current</i> 1.1	5 0 63 <1 923 1141 997 1236 3189 history 1 8 0 15 history 1 0.9	5 0 54 <1 960 1187 1004 1196 2416 history 2 8 1 30 history 2 0.6
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 50 950 1050 995 1180 2600 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	2 12 72 <1 933 1148 984 1257 3061 <i>current</i> 7 1 9 <i>current</i> 1.1 1.1 11.0	5 0 63 <1 923 1141 997 1236 3189 history 1 8 0 15 history 1 0.9 11.2	5 0 54 <1 960 1187 1004 1196 2416 history 2 8 1 30 history 2 0.6 10.1
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 imit/base >3 >20	2 12 72 <1 933 1148 984 1257 3061 <i>current</i> 7 1 9 <i>current</i> 1.1 1.1 1.1 22.9	5 0 63 <1 923 1141 997 1236 3189 history 1 8 0 15 history 1 0.9 11.2 23.8	5 0 54 <1 960 1187 1004 1196 2416 history 2 8 1 30 history 2 0.6 10.1 22.6
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 TS ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	2 0 0 50 0 950 1050 995 1180 2600 imit/base >25 >20 >20 >30 >30 imit/base	2 12 72 <1 933 1148 984 1257 3061 <i>current</i> 7 1 9 <i>current</i> 1.1 11.0 22.9 <i>current</i>	5 0 63 <1 923 1141 997 1236 3189 history 1 8 0 15 history 1 0.9 11.2 23.8 history 1	5 0 54 <1 960 1187 1004 1196 2416 history 2 8 1 30 history 2 0.6 10.1 22.6 history 2



OIL ANALYSIS REPORT

VISUAL



ACREDITED	Laboratory Sample No. Lab Number Unique Number Test Package	: F : (WearCheck USA PCA0096947 0 <mark>5888610</mark> 10539093	Received Diagnose	501 Madison Ave., Cary, NC 275 Received : 03 Jul 2023 Diagnosed : 05 Jul 2023 Diagnostician : Wes Davis vice at 1-800-237-1369.			i13 NW WHITE & CO - ANDERSON DIVISION 2605 RIVER RE PIEDMONT, SC US 29673 Contact: James Threat jthreatt@nwwhite.com			
		10- 9- 8-	Feb23/21		Dec12/22	Jun20/23	1.0 0.0 Eep53/21	Api30/22 -		Dec12/22	500Cmi
		14 - 13 - ()-012 - ()-12 - 11 - 23 11 -	Abnormal Base				7.0 6.0 5.0 8.0 8.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9				
		15.	Viscosity @ 100)°C			Base	Number			
		4. 2. 0.	Feb23/21		Dec12/22	Jun20/23					
		8. 6.	copper lead								
		10.	Non-ferrous Me		De	یں۔ 					
		20. 10. 0.	Feb23/21		Dec12/22	Jun20/23					
	Deci 2/22	50 · 40 · 톱 30 ·	iron chromium nickel								
		60-	GRAPHS Ferrous Alloys								
		V	∕isc @ 100°C	cSt	ASTM D445		11.		12.0	11.5	., _
		F	ree Water FLUID PROF	scalar	*Visual method	limit/bas	NE	G urrent	NEG history 1	NEG histo	ry 2
: :	Uec1 2/22 Jun 20/23		Ddor Emulsified Water	scalar	*Visual *Visual	NORML >0.2		RML	NORML	NORM	
	/23	S	and/Dirt	scalar scalar scalar	*Visual *Visual *Visual	NONE NONE NORML	NO NO		NONE NONE NORML	NONE NONE NORM	-
		S	Precipitate Silt Debris	scalar scalar	*Visual *Visual	NONE	NO NO	NE	NONE	NONE	-
		Y	Vhite Metal Yellow Metal	scalar scalar	*Visual *Visual	NONE	NO NO	NE	NONE	NONE	

Submitted By: Under NWWDUN - James Threatt