

# **OIL ANALYSIS REPORT**

Sample Rating Trend





#### Component Diesel Engine Fluid PETRO CANADA DURON SHP 10W30 (--- QTS)

## DIAGNOSIS

#### Recommendation

No corrective action is recommended at this time. 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

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

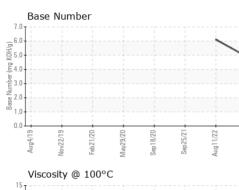
## Fluid Condition

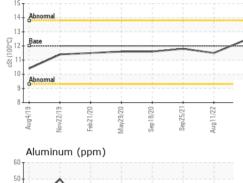
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

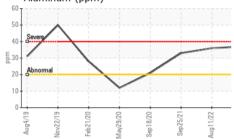
QTS)		Aug2019	lov2019 Feb2020 May20	20 Sep2020 Sep2021 Aug2022	Aug2023	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0097328	PCA0071686	PCA0041987
Sample Date		Client Info		06 Aug 2023	11 Aug 2022	25 Sep 2021
Machine Age	mls	Client Info		252190	188166	132589
Oil Age	mls	Client Info		64024	55577	52064
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	70	53	37
Chromium	ppm	ASTM D5185m	>20	4	5	5
Nickel	ppm	ASTM D5185m	>4	<1	1	<1
Titanium	ppm	ASTM D5185m		55	1	<1
Silver	ppm	ASTM D5185m	>3	0	1	<1
Aluminum	ppm	ASTM D5185m	>20	37	36	33
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm	ASTM D5185m	>330	12	16	44
Tin	ppm	ASTM D5185m	>15	<1	2	2
Antimony	ppm	ASTM D5185m				0
Vanadium	ppm	ASTM D5185m		<1	2	0
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	8	2	4
Barium	ppm	ASTM D5185m	0	<1	<1	0
Molybdenum	ppm	ASTM D5185m	50	31	58	65
Manganese	ppm	ASTM D5185m		<1	2	1
Magnesium	ppm	ASTM D5185m	950	631	920	980
Calcium	ppm	ASTM D5185m	1050	1539	1101	1205
Phosphorus	ppm	ASTM D5185m	995	948	892	961
Zinc	ppm	ASTM D5185m	1180	1265	1172	1309
Sulfur	ppm	ASTM D5185m	2600	3476	2683	2348
CONTAMINAN	NTS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	8	8	6
Sodium	ppm	ASTM D5185m		4	5	4
Potassium	ppm	ASTM D5185m	>20	32	37	55
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	2.1	1.8	1.2
Nitration	Abs/cm	*ASTM D7624		12.8	12.5	10
Sulfation	Abs/.1mm	*ASTM D7415	>30	29.9	27.1	22.6
FLUID DEGRA	DATION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	22.3	19.7	17
Base Number (BN)	mg KOH/g	ASTM D2896		4.9	6.1	



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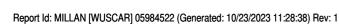




	VISUAL		method	limit/base	current	history1	history2			
	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE			
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE			
	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE			
	Silt	scalar	*Visual	NONE	NONE	NONE	NONE			
			*Visual	NONE	NONE	NONE	NONE			
	Debris									
22 - 22 - 23 - 23 - 23 - 23 - 23 - 23 -	Sand/Dirt	scalar scalar	*Visual	NONE	NONE	NONE	NONE			
Sep25/21 Aug11/22 Aug6/23	Appearance		*Visual	NORML	NORML	NORML	NORML			
S Au	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	12.4	11.5	11.8			
	GRAPHS									
	Iron (ppm) Lead (ppm)									
21	200 Severe	1		80	Severe					
Sep25/21. Aug11/22	100			0.0						
Se Au Dom	100 - Abnormal			E 40	Abnormal					
	50 -			20	T I					
	0			0						
		)/20 - 3/20 -	5/21-	3/23		3/20 -	5/21.			
	Aug4/19 Nov22/19 Feb21/20	May29/20 Sep18/20	Sep 25/21. Aug 11/22.	Aug6/23 -	Aug4/19 . Vov22/19 .	May29/20 - Sep18/20 -	Sep 25/21. Aug 11/22 Aug 6/23			
	Aluminum (ppm)	2 07	4		Chromium (p		4			
	<sup>60</sup> T			50						
	50			40	Severe					
	40 - Severe									
Sep25/21. Aug11/22	30 20 Abnormal			§	Abnormal					
Sep.	20 0			10						
	0									
	Aug4/19 - Nov22/19 - Feb21/20 -	May29/20 Sep18/20	Sep 25/21. Aug 11/22.	Aug6/23 -	Aug4/19 Vov22/19	May29/20 - Sep18/20 -	Sep 25/21. Aug 11/22 Aug 6/23			
	Aun	Sep	Sep	Au	Au	May	Sep			
	Copper (ppm)			80	Silicon (ppm)					
	600			60						
E C C C C C C C C C C C C C C C C C C C	400 - SEVEREMAL			톱 40						
	200			20	Abnormal					
		3/20 - 3/20 -	5/21-	Aug6/23		3/20 -	Sep 25/21 - \ug 11/22 - Aug 6/23 -			
	Aug4/19 Nov22/19 Feb21/20	May29/20 Sep18/20	Sep 25/21 Aug 11/22	Aug	Aug4/19 Nov22/19 Feb21/20	May29/20 Sep18/20	Sep25/21 Aug11/22 - Aug6/23 -			
	Viscosity @ 100°C				Base Number					
	16 T			8.0	T					
-	14 Abnormal									
0	Base			<u>ال</u> 4.0						
č				quin						
	10 Abnormal			(D/H0, G.0. Base Number Number Base Base S						
	8 6 6 0		21		·		2			
	Aug4/19 Nov22/19 Feb21/20	May29/20 Sep18/20	Sep 25/21	Aug6/23 -	Aug4/19 - Nov22/19 - Feb21/20 -	May29/20 Sep18/20	Sep25/21. Aug11/22 . Aug6/23 .			
	A No Fei	Se	Se	A	A No Fel	Na Se	Au Si Ai			
Laboratory	: WearCheck USA -			3 <b>M</b>		LEASING #123				
Sample No.	. : PCA0097328 Received : 20 Oct 2023 66 KELLEF									
Lab Number	· · · · · · · · · · · · · · · · · · ·									
Unique Number Test Package	: 10701817 : MOB 1 ( Additional		ostician : Sean Felton			US 17601 Contact: RON ROBERTS				
rest rackage	. IVIOD I (AUUILIONAL	TESIS. TE	) ( MIC			Contact:				

Test Package : MOB 1 (Additional Tests: TBN) Certificate L2367 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)

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