

OIL ANALYSIS REPORT

Sample Rating Trend





Component Diesel Engine

Fluid

PETRO CANADA DURON SHP 15W40 (10 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.

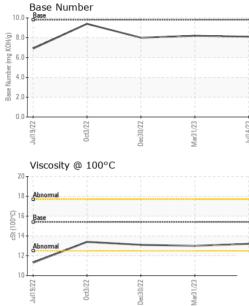
Fluid Condition

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

SAMPLE INFORM	NATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0076929	GFL0052987	GFL0055235
Sample Date		Client Info		14 Jul 2023	31 Mar 2023	30 Dec 2022
Machine Age	hrs	Client Info		2737	2159	1578
Oil Age	hrs	Client Info		2159	581	571
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	11	12	12
Chromium	ppm	ASTM D5185m	>4	<1	0	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	4	6	8
Lead	ppm	ASTM D5185m	>45	0	0	<1
Copper	ppm	ASTM D5185m	>85	<1	<1	1
Tin	ppm	ASTM D5185m	>4	<1	0	<1
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	0	11	18	11
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	66	76	85
Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Magnesium	ppm	ASTM D5185m	1010	980	917	896
Calcium	ppm	ASTM D5185m	1070	1197	1114	1168
Phosphorus	ppm	ASTM D5185m	1150	1057	943	963
Zinc	ppm	ASTM D5185m	1270	1325	1247	1261
Sulfur	ppm	ASTM D5185m	2060	3828	3363	3393
CONTAMINAN	TS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>30	3	4	4
Silicon Sodium	ppm ppm	ASTM D5185m ASTM D5185m	>30	3 1	4	4
			>30 >20			
Sodium	ppm	ASTM D5185m		1	0	1
Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	>20	1 4	0 9	1 17
Sodium Potassium INFRA-RED	ppm ppm	ASTM D5185m ASTM D5185m method	>20 limit/base	1 4 current	0 9 history1	1 17 history2
Sodium Potassium INFRA-RED Soot %	ppm ppm %	ASTM D5185m ASTM D5185m method *ASTM D7844	>20 limit/base >3	1 4 current 0.4	0 9 history1 0.3	1 17 history2 0.3
Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7624	>20 limit/base >3 >20	1 4 current 0.4 8.2	0 9 history1 0.3 7.8	1 17 history2 0.3 8.0
Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7844 *ASTM D7624	>20 limit/base >3 >20 >30	1 4 current 0.4 8.2 19.1	0 9 history1 0.3 7.8 19.3	1 17 history2 0.3 8.0 19.1



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		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
Dec30/22	Mar31/23 Jul14/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Dec	Jul	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
		Free Water	scalar	*Visual		NEG	NEG	NEG
		FLUID PROP	ERTIES	method	limit/base	current	history1	history2
		Visc @ 100°C	cSt	ASTM D445	15.4	13.2	13.0	13.1
		GRAPHS						
		Ferrous Alloys						
22		iron						
Dec30/22	Mar3 1/23	50						
	_							
		₽ ⁴⁰ 30						
		20						
		10-						
		22 0	22	23	23			
		Jul19/22 0ct3/22	Dec30/22	Mar31/23	Jul14/23			
		-	_	×	<u> </u>			
		Non-ferrous Met	_	×				
		Non-ferrous Met	_	W				
		Non-ferrous Met	_	Ð				
		Non-ferrous Met	_	W				
		Non-ferrous Met	_	W	-			
		Non-ferrous Met	_	W	-			
		Non-ferrous Met	_	W	-			
		Non-ferrous Met	_	M				
		Non-ferrous Met	als					
		Non-ferrous Met	_	Mar31/23	r F			
		Non-ferrous Met	als			Raso Number		
		Non-ferrous Met	als		Juli 4/23	Base Number		
		Non-ferrous Met	als		224 224 224 224 224 224 224 224 224 224	Base		
		Non-ferrous Met	als		224 224 224 224 224 224 224 224 224 224	Base		
		Non-ferrous Met	als		224 224 224 224 224 224 224 224 224 224	Base		
		Non-ferrous Met	als		224 224 224 224 224 224 224 224 224 224	Base		
		Non-ferrous Met	als		224 224 224 224 224 224 224 224 224 224	Base		
		Non-ferrous Met	als		10. (0) Hong (July 423)	Base		
		Non-ferrous Met	als		10.1 (6/HCJX Bull Jack 10, 10, 10, 10, 10, 10, 10, 10, 10, 10,	Base		
		Non-ferrous Met	cals	Mar31/23	10.4 CZ/H LINF (D/HO) Kull (D/HO) Kull (D/	Base	072	1/23
		Non-ferrous Met	als		10.1 (6/HCJX Bull Jack 10, 10, 10, 10, 10, 10, 10, 10, 10, 10,	Base	Dec30/22	Mar31/23
		Non-ferrous Met	rals	Mar31/23	10.0 (b)(HOX 6.0 (c)(HOX 6.0) (c)(HOX 6.0) (Base Definition Defini		_
	Laboratory Sample No.	Non-ferrous Met	rals	EZI (EPEW EZI (EPEW Son Ave., Ca	EZ7F11nr (0)HOX 6u ese 2.0 EZ7F11nr (0)HOX 6u ese 2.0 0.1 Try, NC 27511	Base Definition Defini	vironmental - 93	30 - Mosinee HO
	Laboratory Sample No. Lab Number	Non-ferrous Met	rals	EZI (EPEW EXTERNING Son Ave., Ca 1 : 20	10.0 (b)(HOX 6.0 (c)(HOX 6.0) (c)(HOX 6.0) (Base Definition Defini	vironmental - 93	30 - Mosinee H ate Highway 34
	Sample No. Lab Number Unique Number	Non-ferrous Met	rals	EZI (EPEW Son Ave., Ca 1 : 20 G ed : 21 G	EZ7FIInL (0)HOX Bui Jaquing EZ7FIINL EZ7FIINL Try, NC 27511 Jul 2023	Base Definition Defini	vironmental - 93	
trificate L2367	Sample No. Lab Number Unique Number Test Package	Non-ferrous Met	als	son Ave., Ca d : 20 c ed : 21 c iician : Wes	C2/HInn (0)Hox Bul (0)Hox Bu	Base Definition Defini	vironmental - 93 1372 St	30 - Mosinee H ate Highway 3 MOSINEE, W

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

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