

OIL ANALYSIS REPORT

Sample Rating Trend





DIAGNOSIS Recommendation

Contamination

Fluid Condition

Wear

oil.

Machine Id **378M** Component **Diesel Engine**

Resample at the next service interval to monitor.

There is no indication of any contamination in the

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

oil is suitable for further service.

All component wear rates are normal.

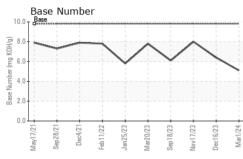
PETRO CANADA DURON SHP 15W40 (--- GAL)

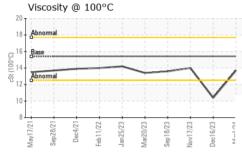
SAMPLE INFOR	MATION	method				history2
Sample Number		Client Info		GFL0108915	GFL0105658	GFL010154
Sample Date		Client Info		01 Mar 2024	16 Dec 2023	17 Nov 2023
Machine Age	hrs	Client Info		13323	0	13456
Oil Age	hrs	Client Info		600	0	11550
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	ABNORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	0.4	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	32	55	14
Chromium	ppm	ASTM D5185m	>20	1	2	<1
Nickel	ppm	ASTM D5185m	>5	<1	 7	<1
Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	11	1 3	5
Lead	ppm	ASTM D5185m	>40	2	0	<1
Copper	ppm	ASTM D5185m	>330	3	A 217	2
Tin	ppm	ASTM D5185m	>15	<1	4	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	<1
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	92	0
Barium	ppm	ASTM D5185m	0	0	<1	9
Molybdenum	ppm	ASTM D5185m	60	64	107	64
Manganese	ppm	ASTM D5185m		0	5	<1
Magnesium	ppm	ASTM D5185m	1010	982	740	929
Calcium	ppm	ASTM D5185m	1070	1070	1356	1110
Phosphorus	ppm	ASTM D5185m	1150	1033	728	1020
Zinc	ppm	ASTM D5185m	1270	1309	885	1223
Sulfur	ppm	ASTM D5185m	2060	2610	2073	2816
CONTAMINAN	ITS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	6	▲ 70	5
Sodium	ppm	ASTM D5185m		17	4	5
Potassium	ppm	ASTM D5185m	>20	19	33	9
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	1.2	0.7	0.8
Nitration	Abs/cm	*ASTM D7624	>20	10.7	11.2	8.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.5	24.6	20.4
FLUID DEGRA			limit/base	current	history1	history2
		****	05	107	04.0	1 5 7
Oxidation Base Number (BN)	Abs/.1mm mg KOH/g	*ASTM D7414 ASTM D2896	>25	19.7 5.1	24.0 6.4	15.7 8.0



OIL ANALYSIS REPORT

VISUAL





	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
23 + 24 +	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Dec16/23 Mar1/24							
	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
1 1	Free Water	scalar	*Visual		NEG	NEG	NEG
	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.4	13.7	0.4	14.0
	GRAPHS						
\mathbf{v}	Ferrous Alloys						
× 33	90 80	Λ					
Dec16/23	70 - neuronau nickel	/\					
M N	60 -	/ \					
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	May17/21 Sep28/21 Dec4/21 Feb11/22	Jan 25/23 Mar 20/23	Sep 18/23 Nov17/23 Dec16/23	Mar1/24			
			š ž d	-			
	Non-ferrous Meta	ls					
		lls					
	250 T	lls					
	250 200 copper lead	lls	/				
	250 200 150	ls	/				
	250 200 150	lls	/				
	250 200 150	ls	/				
	250 200 150	ls	/				
	250 200 150 100	ls					
	250 200 150 50 0		33	24			
	250 200 150 50 0		#18/23	dat/24			
	250 200 150 100 50 100 100 100 100 100 100 10	Jan25/23 -	Sep 18/23 Nov17/23 Dec16/23	Mari 124			
	250 200 150 0 1750 100 0 177/1/Me 100 100 100 100 100 100 100 100 100 10	Jan25/23 -	Sep18/23 Nov17/23 Dec16/23		Base Numbe	2r	
	250 200 150 100 50 121/1/kew 100 50 100 121/1/kew 121/12/kas 121/1	Jan25/23 -	Sep 18/23 Nov17/23 Dec16/23	62/Jac		er	*******
	250 200 150 150 0 1750 100 50 0 177 17 17 17 17 17 17 17 17 17 17 17 17	Jan25/23 -	Sep18/23 Nov17/23 Dec16/23	10.0	Base	er	
	250 200 150 100 0 12//1/New C27/11 100 0 100 100 100 100 100 100 100 10	Jan25/23 -	Sep18/23 Nov/17/23 Dec16/23	10.0	Base		
	250 200 150 100 0 12//1/New C27/11 100 0 100 100 100 100 100 100 100 10	Jan25/23 -	Sep 18/23 Nov17/23 Dec18/23	10.0	Base		
	250 200 150 100 50 0 12/L/Me Wiscosity @ 100°C 19 18 77 16 8ase 50 100 100 100 100 100 100 100 100 100	Jan25/23 -	Sep 18/23 Nov17/23 Dec16/23	10.0	Base	er	
	250 200 150 100 50 0 127/1/kg Wiscosity @ 100°0 100 100 100 100 100 100 100 100 10	Jan25/23 -	Sep18/23 Nov/17/23 Dec16/73	10.0	Base	er	
	250 200 150 100 50 0 12/L/Me Wiscosity @ 100°C 19 18 77 16 8ase 50 100 100 100 100 100 100 100 100 100	Jan25/23 -	Sep 18/23 Nov17/23 Dec16/73	10.0 (6,10) (6,10) (1,1	D - Base	er	
	250 200 150 100 50 0 170 100 50 0 170 170 170 170 170 170 170 170 170	Jan25/23 -	Sep 18/23 Nov17/23 Dec16/73	10.0	D - Base	2r	
	250 200 150 150 0 1750 100 50 0 1750 1	0 Jan25(23) Maz2023		10.0 (0)HOX BUD BUD BUD BUD BUD BUD BUD BUD BUD BUD	Base		
	250 200 150 150 0 1750 100 50 0 1750 1	0 Jan25(23) Maz2023		10.0 (0)HOX BUD BUD BUD BUD BUD BUD BUD BUD BUD BUD	Base		11/2/3 16/2/3
	250 200 150 100 50 127 127 127 127 127 127 127 127 127 127	Jan25/23 -	Sep18/23 - Sep18/23 - Sep18/23 - Nov17/23 - Nov17/23 - Dec16/23 -	10.0 (0)HOX BUD BUD BUD BUD BUD BUD BUD BUD BUD BUD	D = Base	Feb11/22 Jan 25/23 Mat 20/23	Sep 10/23
	250 200 150 150 100 50 177 16 100 100 100 100 100 100 100	Jan25/23	Sep 18/23	10.0 (b)HOX KOL Base Number (md 4.0 42(1)	Base Base 1/1/1/1/me 1/2/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1	Feb11/22 Jan25,233 Mat20/23	
pratory	250 200 150 100 50 100 100 50 100 100	Jan 25,223	EZBITes to Ave., Cary	10.0 (0)HOX bul) Jaquiny Berg 2.0 +72/Juny 7, NC 27513	Base Base 1/1/1/1/me 1/2/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1		5 - Michigan Ea
ple No.	250 200 150 150 100 50 127 1282 100 100 100 100 100 100 100 10	D1 Madisco Recei	EZULINON EZULINON TAVE., Cary ived : 05	10.0 (0)HOX bul) adumn see (0)HOX bul) adumn see 2.0 (0)HOX bul) adumn	Base Base 1/1/1/1/me 1/2/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1	Hamiltonia Jan25(2) Mar20(2) Convision Convisi	5 - Michigan Ea 6200 Elmridg
ple No. Number	250 200 150 100 50 100 100 50 100 100	C Teste Teste	EZULIANNI EZULIANNI STREED EXTENSION	10.0 (D) YOU BUL 10.0	GFL E	Hamiltonia Jan25(2) Mar20(2) Convision Convisi	5 - Michigan Ea 6200 Elmride ling Heights, l
ple No. Number 1e Number	250 200 150 150 100 50 127 1282 100 100 100 100 100 100 100 10	C Teste Teste	EZ811468 EX210000 EX210000 EX21000 EX21000 EX21000 EX21000 EX21000	10.0 (0)HOX bul) adumn see (0)HOX bul) adumn see 2.0 (0)HOX bul) adumn	GFL E	Jan 22/22 Jan 22/22 Ster	

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)

Certificate L2367

T: (586)825-9514

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