

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 535M Component Diesel Engine

PETRO CANADA DURON SHP 15W40 (5 GAL)

Recommendation

Resample at the next service interval to monitor.

Fluid

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

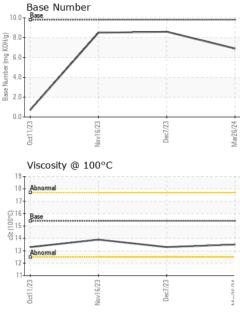
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number Client Info 26 IMar 2024 07 Doc 2023 16 Nov 2023 Machine Age hrs Client Info 7865 07 Doc 2023 16 Nov 2023 Oil Age hrs Client Info 7865 0 0 Oil Changed Lient Info Not Changed NA Sample Status Client Info Not Changed NA CONTAMINATION method imit/base current history Fuel WC Method >5 <1.0 <1.0 <1.0 Water WC Method >5 <1.0 <1.0 <1.0 Water WC Method >5 <1.0 <1.0 <1.0 Water WC Method >5 <1.0 <1.0 <1.0 Kindelistim No NeG NEG NEG NEG Chromium ppm ASTM D5185m >30 Q <1 <1 Nickel ppm ASTM D5185m >30 Q <1 <1 N		MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 7844 7685 0 0 Oil Age irrs Client Info 7685 0 0 0 Oil Changed Client Info Not Changed N/A Sample Status Imit/base current History1 History2 Fuel WC Method >5 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method >5 <1.0 <1.0 <1.0 Water WC Method >5.2 1 <1 <1 Chromium ppm ASTM 05185m >2.0 0 0 <1 Nickel ppm ASTM 05185m >3.0 2 1 1 1 Lead ppm ASTM 05185m >3.0 2 1 0 0 Silver ppm ASTM 05185m >3.0 2 1 0 0 Astm 05185m <t< th=""><th>Sample Number</th><th></th><th>Client Info</th><th></th><th>GFL0115112</th><th>GFL0105660</th><th>GFL0101606</th></t<>	Sample Number		Client Info		GFL0115112	GFL0105660	GFL0101606
Oil Age Inrs Client Info 7685 0 0 Oil Changed Client Info Not Changed N/A Sample Status Client Info Not RMAL NORMAL NORMAL CONTAMINATION method imit/base current history1 history2 Fuel WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG Vear WC Method >0.2 NEG NEG NEG Vear WEAR METALS method imit/base current history1 history2 Iron ppm ASTM D5185m >5 2 1 0 <1 Morinum ppm ASTM D5185m >3 0 0 0 1 Lead ppm ASTM D5185m >30 2 <1 0 0 Aluminum ppm ASTM D5185m >30 2 <1 0 0	Sample Date		Client Info		26 Mar 2024	07 Dec 2023	16 Nov 2023
Oil Changed Sample Status Client Info Not Changed NORMAL N/A CONTAMINATION method limit/base current History1 History2 Fuel WC Method >5 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG VEAR METALS method limit/base current History1 History2 Iron ppm ASTM D5185m >5 2 1 <1 Nickel ppm ASTM D5185m >5 2 1 <1 Silver ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >30 2 <1 0 0 Copper ppm ASTM D5185m >5 <1 0 0 0 Copper ppm ASTM D5185m >5 <1 0 0 0	Machine Age	hrs	Client Info		7844	7685	7556
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Fuel WC Method >5 <1.0	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG NEG NEG Glycol WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >5 2 1 <1 Nickel ppm ASTM D5185m >2 1 <1 <1 Nickel ppm ASTM D5185m >3 0 0 <1 Silver ppm ASTM D5185m >30 4 1 1 Lead ppm ASTM D5185m >30 2 1 0 0 Copper ppm ASTM D5185m >50 <1 0 0 0 Cadmium ppm ASTM D5185m 0 2 <1 1 1 Tian ppm ASTM D5185m 0 2 <1 <1 1 Lead ppm ASTM D5185m </th <th>CONTAMINAT</th> <th>ION</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	CONTAMINAT	ION	method	limit/base	current	history1	history2
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Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 60 53 51 56 Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 867 835 839 Calcium ppm ASTM D5185m 1010 900 956 986 Phosphorus ppm ASTM D5185m 1070 990 956 986 Phosphorus ppm ASTM D5185m 1150 966 836 960 Zinc ppm ASTM D5185m 1270 1167 1124 1116 Sulfur ppm ASTM D5185m 2060 3087 3038 2844 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 14 8 7 Sodium ppm ASTM	ADDITIVES		method	limit/base	current	history1	history2
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CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 14 8 7 Sodium ppm ASTM D5185m >20 14 8 7 Sodium ppm ASTM D5185m >20 14 8 7 Sodium ppm ASTM D5185m >20 2 0 2 Potassium ppm ASTM D5185m >20 2 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.8 1 0.7 Nitration Abs/cm *ASTM D7624 >20 14.1 10.8 8.9 Sulfation Abs/.1mm *ASTM D7415 >30 24.7 20.8 20.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 <t< th=""><th>Magnesium Calcium</th><th>ppm ppm ppm</th><th>ASTM D5185m ASTM D5185m ASTM D5185m</th><th>0 1010 1070</th><th><1 867 990</th><th><1 835 956</th><th>0 839 986</th></t<>	Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070	<1 867 990	<1 835 956	0 839 986
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Potassium ppm ASTM D5185m >20 2 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.8 1 0.7 Nitration Abs/cm *ASTM D7624 >20 14.1 10.8 8.9 Sulfation Abs/.1mm *ASTM D7415 >30 24.7 20.8 20.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 23.5 19.3 17.3	Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060	<1 867 990 966 1167 3087	<1 835 956 836 1124 3038	0 839 986 960 1116 2844
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.8 1 0.7 Nitration Abs/cm *ASTM D7624 >20 14.1 10.8 8.9 Sulfation Abs/.1mm *ASTM D7415 >30 24.7 20.8 20.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 23.5 19.3 17.3	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 1010 1070 1150 1270 2060 limit/base	<1 867 990 966 1167 3087 current	<1 835 956 836 1124 3038 history1	0 839 986 960 1116 2844 history2
Soot % % *ASTM D7844 >3 1.8 1 0.7 Nitration Abs/cm *ASTM D7624 >20 14.1 10.8 8.9 Sulfation Abs/.1mm *ASTM D7415 >30 24.7 20.8 20.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 23.5 19.3 17.3	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base	<1 867 990 966 1167 3087 current 14	<1 835 956 836 1124 3038 history1 8	0 839 986 960 1116 2844 history2 7
Nitration Abs/cm *ASTM D7624 >20 14.1 10.8 8.9 Sulfation Abs/.1mm *ASTM D7615 >30 24.7 20.8 20.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 23.5 19.3 17.3	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >20	<1 867 990 966 1167 3087 <u>current</u> 14 6	<1 835 956 836 1124 3038 history1 8 5	0 839 986 960 1116 2844 history2 7 2
Sulfation Abs/.1mm *ASTM D7415 >30 24.7 20.8 20.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 23.5 19.3 17.3	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >20	<1 867 990 966 1167 3087 current 14 6 2	<1 835 956 836 1124 3038 history1 8 5 0	0 839 986 960 1116 2844 history2 7 2 2 2
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Oxidation Abs/.1mm *ASTM D7414 >25 23.5 19.3 17.3	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm 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	0 1010 1070 1150 1270 2060 2060 200 200 200 200 200 20 20 20	<1 867 990 966 1167 3087 <u>current</u> 14 6 2 2 <u>current</u> 1.8	<1 835 956 836 1124 3038 history1 8 5 0 history1 1	0 839 986 960 1116 2844 history2 7 2 2 2 history2 0.7
	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 D51854	0 1010 1070 1150 1270 2060 imit/base >20 20 imit/base >3 >20	<1 867 990 966 1167 3087 current 14 6 2 current 1.8 14.1	<1 835 956 836 1124 3038 history1 8 5 0 history1 1 10.8	0 839 986 960 1116 2844 history2 7 2 2 2 history2 0.7 8.9
Base Number (BN) mg KOH/g ASTM D2896 9.8 6.9 8.6 8.5	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 D7844 *ASTM D7624	0 1010 1070 1150 1270 2060 imit/base >20 imit/base >3 >20 >30	<1 867 990 966 1167 3087 current 14 6 2 current 1.8 14.1 24.7	<1 835 956 836 1124 3038 history1 8 5 0 history1 1 10.8 20.8	0 839 986 960 1116 2844 history2 7 2 2 2 history2 0.7 8.9 20.5
	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm 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 D7844 *ASTM D7624 *ASTM D7415	0 1010 1070 1150 1270 2060 imit/base >20 20 imit/base >3 >20 >30 >30	<1 867 990 966 1167 3087 current 14 6 2 current 1.8 14.1 24.7 current	<1 835 956 836 1124 3038 history1 8 5 0 history1 1 10.8 20.8 history1	0 839 986 960 1116 2844 history2 7 2 2 bistory2 0.7 8.9 20.5 history2



OIL ANALYSIS REPORT

VISUAL



Whi							
••••	ite Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yell	low Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	cipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt		scalar	*Visual	NONE	NONE	NONE	NONE
Deb		scalar	*Visual	NONE	NONE	NONE	NONE
	nd/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
	bearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odd		scalar	*Visual	NORML	NORML	NORML	NORML
	ulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
	e Water	scalar	*Visual		NEG	NEG	NEG
	LUID PROPE		method	limit/base		history1	history
	c@100°C	cSt	ASTM D445	15.4	13.5	13.3	13.9
	RAPHS						
Fе ⁸⁰ т	errous Alloys						
70	iron						
60	nickel						
50				-			
E 40			/				
30			/				
20							
10	1						
				(()))))			
1/23	6/23 -		Dec7/23 -	6/24			
0ct11/23	Nov16/23		Dec	Mar26/24			
No	on-ferrous Metal	s					
10 T 2							
	copper lead						
8-	aaaaaaaaa tin						
6	tin						
6	********* tin						
6	********** tin						
6	tin						
6							
6				67:			
6			bec7/23	a26/24			
6	Mov16/23		Dec//23	Mar26/24			
6 4 2 2 4 4 5 7 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7			Dec/23		Base Numbe	24	
6 4 2 2 4 2 4 5 7 19 7 7 19	EZIGION ESCOSITY @ 100°C		Dec7/23		Base Numbe	9r	-
6 udd 4 2 0 CZ/[1] 10 Vi 19 18 4 4	Mov16/23		Dec1/23	10	Base Numbe	er	
6 4 2 0 19 18 18 17	Ezgguon iscosity @ 100°C		Deci//23	10).0 - Base	er	
6 4 2 0 19 18 18 17	EZIGION ESCOSITY @ 100°C		Dec/723	10).0 - Base	2r	
6 udd 4 2 4 2 4 2 4 2 4 5 2 19 18 4 17 10 15 15 15 15 15 15 15 15 15 15	Ezgguon iscosity @ 100°C		Dec7/23	10	0.0 Base 0.0	9r	
6 udd 4 2 0 5 5 5 5 5 5 5 5 5 5 5 5 5	iscosity @ 100°C		Dec7/23	10	0.0 Base	2r	
6 udd 4 2 2 0 5 5 5 19 18 10 10 15 14 13 13 13 13 14 13 13 13 13 13 13 13 13 13 13	Ezgguon iscosity @ 100°C		Dec/1/23	ase Mumber (mg KOH(g)	0.0 Base 0.0	er	
6 4 2 4 2 4 2 4 2 4 2 4 2 4 2 4 4 2 4 4 2 4 4 2 4 4 4 2 4 4 4 4 4 4 4 4 4 4 4 4 4	iscosity @ 100°C		Dec//23	Base Number (mg KOH(g)	0.0 Base 0.0 - Ba	9F	
6 udd 4 2 4 2 4 2 4 2 4 2 4 4 2 4 4 4 2 4 4 4 4 4 4 4 4 4 4 4 4 4	iscosity @ 100°C			Base Mumber (mg KOH(q)	Base B.0 B.0 B.0 C.0 C.0 C.0 C.0 C.0 C.0 C.0 C		23
6 udd 4 2 4 2 4 2 4 2 4 2 4 4 2 4 4 4 2 4 4 4 4 4 4 4 4 4 4 4 4 4	iscosity @ 100°C			Base Mumber (mg KOH(q)	Base B.0 B.0 B.0 C.0 C.0 C.0 C.0 C.0 C.0 C.0 C		Dec1/23
6 4 2 4 2 4 2 4 2 4 2 4 2 4 2 4 4 2 4 4 2 4 4 2 4 4 4 2 4 4 4 4 4 4 4 4 4 4 4 4 4	iscosity @ 100°C		Dec7/23	Base Number (mg KOH(g)	0.0 Base 0.0 - Ba		Dec1/23
6 udd 4 2 0 19 18 17 16 15 14 13 12 11 12 11 12 11 12 11 12 11 12 11 12 12	Erggnow iscosity @ 100°C bnormal		Dec7/23	Maz26/24	Base 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		
6 udd 4 2 0 (27)(1)po V 19 18 17 16 10 10 10 10 10 10 10 10 10 10	iscosity @ 100°C		EECTION N Ave., Cary	Maz26/24	Base 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Ezggyog	405 - Arbor H
6 udd 4 2 0 19 18 10 10 10 10 10 10 10 10 10 10	bnormal	1 Madiso Recei Teste	EEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEE	(0,40) (0,10) (0	GFL E	Environmental - 4	405 - Arbor H 7811 Chubb ORTHVILLE,
6 udd 4 2 0 (27)(1)po Vi 19 18 10 10 10 10 10 10 10 10 10 10	see bnormal bnormal crCheck USA - 500 0115112 2960 2425	1 Madiso Recei	EEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEE	(0)(0) (0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(GFL E	Ervironmental - 4	

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

Т:

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