

OIL ANALYSIS REPORT

Sample Rating Trend



429060-402468

Component Diesel Engine

Fluid PETRO CANADA DURON SHP 15W40 (--- 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	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0083670	GFL0080009	GFL0080018
Sample Date		Client Info		04 Jul 2023	23 May 2023	08 May 2023
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		600	0	0
Oil Changed		Client Info		Changed	Not Changd	Not Changd
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	17	9	7
Chromium	ppm	ASTM D5185m	>4	<1	1	<1
Nickel	ppm	ASTM D5185m	>2	0	<1	0
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	<1	<1
Aluminum	ppm	ASTM D5185m	>25	4	2	2
Lead	ppm	ASTM D5185m	>45	2	3	2
Copper	ppm	ASTM D5185m	>85	<1	<1	0
Tin	ppm	ASTM D5185m	>4	<1	1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	2	2	3
	ppin		÷			
Barium	ppm	ASTM D5185m		0	0	0
Barium				0 62	0 55	0 59
Barium Molybdenum	ppm	ASTM D5185m	0 60	-		
Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m	0 60	62	55	59
Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0	62 <1	55 <1	59 <1
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010	62 <1 985	55 <1 945	59 <1 956
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070	62 <1 985 1326	55 <1 945 1269	59 <1 956 1266
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150	62 <1 985 1326 1090	55 <1 945 1269 1005	59 <1 956 1266 1073
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270	62 <1 985 1326 1090 1381	55 <1 945 1269 1005 1299	59 <1 956 1266 1073 1295
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 ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 Limit/base	62 <1 985 1326 1090 1381 3676	55 <1 945 1269 1005 1299 3679	59 <1 956 1266 1073 1295 3616
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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	0 60 0 1010 1070 1150 1270 2060 Limit/base	62 <1 985 1326 1090 1381 3676 current	55 <1 945 1269 1005 1299 3679 history1	59 <1 956 1266 1073 1295 3616 history2
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	0 60 0 1010 1070 1150 1270 2060 Limit/base >30	62 <1 985 1326 1090 1381 3676 current 6	55 <1 945 1269 1005 1299 3679 history1 5	59 <1 956 1266 1073 1295 3616 history2 4
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 Limit/base >30	62 <1 985 1326 1090 1381 3676 current 6 6	55 <1 945 1269 1005 1299 3679 history1 5 5	59 <1 956 1266 1073 1295 3616 history2 4 4
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >30	62 <1 985 1326 1090 1381 3676 current 6 6 4	55 <1 945 1269 1005 1299 3679 history1 5 5 5 4	59 <1 956 1266 1073 1295 3616 history2 4 4 3
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 <i>limit/base</i> >30 <i>limit/base</i> >20	62 <1 985 1326 1090 1381 3676 current 6 6 4 current	55 <1 945 1269 1005 1299 3679 history1 5 5 4 history1	59 <1 956 1266 1073 1295 3616 history2 4 4 3 5 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 <i>limit/base</i> >30 >20 <i>limit/base</i> >3 >20	62 <1 985 1326 1090 1381 3676 current 6 6 6 4 2 0.4	55 <1 945 1269 1005 1299 3679 history1 5 5 4 4 history1 0.2	59 <1 956 1266 1073 1295 3616 history2 4 4 3 history2 0.2
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	0 60 0 1010 1070 1150 1270 2060 <i>limit/base</i> >30 >20 <i>limit/base</i> >3 >20	62 <1 985 1326 1090 1381 3676 current 6 6 6 4 current 0.4 11.3	55 <1 945 1269 1005 1299 3679 <u>history1</u> 5 5 5 4 <u>history1</u> 0.2 8.3	59 <1 956 1266 1073 1295 3616 history2 4 4 4 3 history2 0.2 7.0
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	0 60 1010 1070 1150 1270 2060 limit/base >30 limit/base >3 >20 >30 -20 >30 -20 >30	62 <1 985 1326 1090 1381 3676 current 6 6 6 4 current 0.4 11.3 22.9	55 <1 945 1269 1005 1299 3679 history1 5 5 5 4 history1 0.2 8.3 20.6	59 <1 956 1266 1073 1295 3616 history2 4 4 4 3 <u>history2</u> 0.2 7.0 19.5



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Aug3/20 -

0ct18/21

OIL ANALYSIS REPORT

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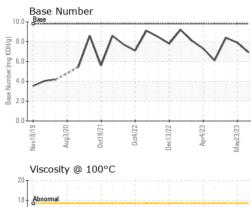
*Visual

scalar *Visual

VISUAL

White Metal

Yellow Metal



				renow wetai	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
0ct4/22	Dec13/22	Apr4/23	May23/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
00	Dec1	Api	May2	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
2				Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
• 				Free Water	scalar	*Visual		NEG	NEG	NEG
				FLUID PROPE			limit/bass			
						method	limit/base	current	history1	history2
				Visc @ 100°C GRAPHS	cSt	ASTM D445	15.4	12.9	12.7	12.9
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				¹⁰⁰						
0ct4/22	Dec13/22	Apr4/23	202	80 - iron	٨					
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				17- 16- Base	~	~	(B) (B)/HO b) b) (B) (B) (B) (B) (B) (B) (B) (B) (B) (B		\sim	\sim
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ŗ		Laborat		17 17 16 15 14 12 11 10 12 11 10 12 11 10 12 11 10 12 11 10 12 11 10 12 11 10 10 12 10 10 10 10 10 10 10 10 10 10	2		May23/23 Base Number (mg K0H/g 9. 9. 9. 9. 9. 9. 9. 9. 9. 9.	Aug320		2
	R	Laborat Sample	ory No.	: WearCheck USA - : GFL0083670	2	on Ave., Ca ≤ : 20 €	6)HOX Bul) Jungum N area 620620/epw ry, NC 27511 Jul 2023	Aug320	ironmental - 846 -	≥ Mayfield Haulin
	B	Sample Lab Nur	ory No. nber	: WearCheck USA - : GFL0083670 : 05903603	501 Madia Received Diagnose	on Ave., Ca I : 20 √ ed : 21 √	6, 6, 6, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	Aug320	ironmental - 846 -	≥ Mayfield Haulin State Route 4 Mayfield, K
		Sample Lab Nur Unique N	ory No. nber lumber	: WearCheck USA - : GFL0083670 : 05903603 : 10564959	501 Madis Received	on Ave., Ca I : 20 √ ed : 21 √	6)HOX Bul) Jungum N area 620620/epw ry, NC 27511 Jul 2023	Aug320	ironmental - 846 - 3426	Mayfield Haulin State Route 4 Mayfield, K US 4206
Testino La Contra La Contr		Sample Lab Nur Unique N Test Pa	ory No. nber lumber ckage	: WearCheck USA - : GFL0083670 : 05903603 : 10564959	501 Madis Received Diagnose Diagnost	oon Ave., Ca I : 20 √ ed : 21 √ ician : We	even (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	Aug320	ironmental - 846 - 3426 Contac	≥ Mayfield Haulin State Route 4 Mayfield, K

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Contact/Location: Jack Lindsey - GFL846