

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 925030

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

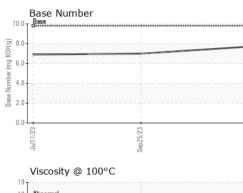
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

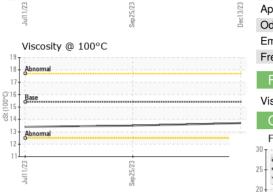
SAMPLE INFORMATION method limit/base current history1 history2 Sample Date Client Info GFL0066981 GFL0066992 GFL0067005 Machine Age hrs Client Info 21166 20517 19955 Oil Age hrs Client Info 21166 20517 19955 Oil Age hrs Client Info 0 0 0 0 Oil Changed Client Info Client Info Changed					Sep2023 Dec20		
Sample Date Client Info 13 De 2023 25 Sep 2023 11 Jul 2023 Machine Age hrs Client Info 21166 20517 19955 Oil Age hrs Client Info 0 0 0 0 Oil Changed Client Info Changed	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
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Oil Age hrs Client Info 0 0 0 Oil Changed Client Info Changed Vistor Sitory Sitory Sitory Sitory Citory Citory<	Sample Date		Client Info		13 Dec 2023	25 Sep 2023	11 Jul 2023
Oil Changed Sample StatusClient InfoChanged NORMALChanged NORMALChanged ABNORMALCONTAMINATIONmethodlimit/basecurrenthistory1history2FuelWC Method>5.5<1.0<1.0<1.0WaterWC Method>5.5<1.0<1.0<1.0GlycolWC Method>0.2NEGNEGNEGWEAR METALSmethodlimit/basecurrenthistory1history2IronppmASTM 05185n>110152128ChromiumppmASTM 05185n>2.2<100NickelppmASTM 05185n>2.2000SilverppmASTM 05185n>2.5335LeadppmASTM 05185n>4.5234CopperppmASTM 05185n>4.5234CopperppmASTM 05185n>4.4<1<1<1YanadiumppmASTM 05185n0000ADDITVESmethodlimit/basecurrenthistory1history2BoronppmASTM 05185n010910BariumppmASTM 05185n010010MagnesiumppmASTM 05185n10.01031120CadiumppmASTM 05185n10.01031120CadiumppmASTM 05185n10.01031120 </th <th>Machine Age</th> <th>hrs</th> <th>Client Info</th> <th></th> <th>21166</th> <th>20517</th> <th>19965</th>	Machine Age	hrs	Client Info		21166	20517	19965
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Sample Status NORMAL NORMAL NORMAL ABNORMAL CONTAMINATION method 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 >0.2 NEG NEG NEG WEAR METALS method imit/base current history1 history2 Iron ppm ASTM D5185m >4 <1 1 1 Nickel ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 3 3 5 Lead ppm ASTM D5185m >4 <1 <1 2 Tin ppm ASTM D5185m >4 <1 <1 <1 Vanadium ppm	Oil Changed		Client Info		Changed	Changed	Changed
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Potassium ppm ASTM D5185m >20 5 6 11 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.4 0.5 Nitration Abs/cm *ASTM D7624 >20 9.5 10.1 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 21.5 21.0 21.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.5 18.4 19.4	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	0 61 <1 948 1059 1083 1290 3075 current	0 66 <1 995 1173 1036 1304 3106 history1	0 68 <1 1015 1294 1120 1346 3734 history2
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Soot % % *ASTM D7844 >3 0.4 0.4 0.5 Nitration Abs/cm *ASTM D7624 >20 9.5 10.1 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 21.5 21.0 21.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.5 18.4 19.4	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 Limit/base >30	0 61 <1 948 1059 1083 1290 3075 current 8 4	0 66 <1 995 1173 1036 1304 3106 history1 15 4	0 68 <1 1015 1294 1120 1346 3734 history2 ▲ 45 6
Nitration Abs/cm *ASTM D7624 >20 9.5 10.1 10.6 Sulfation Abs/.1mm *ASTM D7615 >30 21.5 21.0 21.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.5 18.4 19.4	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >30	0 61 <1 948 1059 1083 1290 3075 current 8 4 5	0 66 <1 995 1173 1036 1304 3106 history1 15 4 6	0 68 <1 1015 1294 1120 1346 3734 history2 ▲ 45 6 11
Sulfation Abs/.1mm *ASTM D7415 >30 21.5 21.0 21.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.5 18.4 19.4	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 >20	0 61 <1 948 1059 1083 1290 3075 current 8 4 5 5 current	0 66 <1 995 1173 1036 1304 3106 history1 15 4 6 Kistory1	0 68 <1 1015 1294 1120 1346 3734 history2 ▲ 45 6 11 history2
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.5 18.4 19.4	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 <i>limit/base</i> >30 <i>limit/base</i> >33	0 61 <1 948 1059 1083 1290 3075 <u>current</u> 8 4 5 <u>current</u> 0.4	0 66 <1 995 1173 1036 1304 3106 history1 15 4 6 history1 0.4	0 68 <1 1015 1294 1120 1346 3734 history2 ▲ 45 6 11 11 history2 0.5
Oxidation Abs/.1mm *ASTM D7414 >25 18.5 18.4 19.4	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm TS 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> >33	0 61 <1 948 1059 1083 1290 3075 current 8 4 5 current 0.4 9.5	0 66 <1 995 1173 1036 1304 3106 <u>history1</u> 15 4 6 <u>history1</u> 0.4 10.1	0 68 <1 1015 1294 1120 1346 3734 history2 ↓ 45 6 11 11 history2 0.5 10.6
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm spm	ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 <i>limit/base</i> >30 <i>s</i> 20 <i>limit/base</i> >3 >20 >3	0 61 <1 948 1059 1083 1290 3075 current 8 4 5 current 0.4 9.5 21.5	0 66 <1 995 1173 1036 1304 3106 history1 15 4 6 <u>history1</u> 0.4 10.1 21.0	0 68 <1 1015 1294 1120 1346 3734 history2 ▲ 45 6 11 history2 0.5 10.6 21.9
Base Number (BN) mg KUHig ASIM D2896 9.8 7.7 7.0 6.9	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 60 1010 1070 1150 1270 2060 limit/base >30 20 limit/base >3 >20 >30 >30	0 61 <1 948 1059 1083 1290 3075 current 8 4 5 current 0.4 9.5 21.5 current	0 66 <1 995 1173 1036 1304 3106 history1 15 4 6 history1 0.4 10.1 21.0 history1	0 68 <1 1015 1294 1120 1346 3734 history2 ▲ 45 6 11 11 history2 0.5 10.6 21.9
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7414	0 60 0 1010 1070 1150 1270 2060 limit/base >30 >20 limit/base >3 >20 limit/base >30	0 61 <1 948 1059 1083 1290 3075 current 8 4 5 current 0.4 9.5 21.5 current 18.5	0 66 <1 995 1173 1036 1304 3106 history1 15 4 6 history1 0.4 10.1 21.0 history1 18.4	0 68 <1 1015 1294 1120 1346 3734 history2 ▲ 45 6 11 history2 0.5 10.6 21.9 history2 19.4



OIL ANALYSIS REPORT

VISUAL





	14/1 11 BA 1 1		*) /' 1	NONE	NONE	NONE	NONE
	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
23	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Sep 25/23 Dec 13/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
S 0	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		method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.4	13.7	13.5	13.4
	GRAPHS						
	Ferrous Alloys						
/23	25 - iron						
Sep 25/23	nickel						
	20 -						
	<u>۾</u> 15-						
	10						
	5-						
	73	(/23		/23			
	Juli 1/23	Sep25/23		Dec13/23			
	Non-ferrous Metal	s					
	¹⁰ T						
	8 - copper						
	tin tin						
	6						
	4						
		Toris Labora College					
	2-		Contraction of the Contraction of the Operation of the Op	and the state of the			
	0						
	Juli 1/23	Sep25/23		Dec13/23			
	, nu c	Sep		Dec			
	Viscosity @ 100°C	2			Base Number		
	19 18 - Abnormal			10.0	Base		
	17						
ē	D ¹⁶ Base			HO KOH			
	Base 15 3 14			E 0.0			
ć	3 ₁₄			⁴ 4.0	+		
	13 - Abnormal			(0,40,40, 6.0 9,838 Mumber 4.0 2.0 838 2.0			
	12			2.0			
	11	33		0.0		2	
	Jul11/23	Sep 25/23		Dec13/23	Jul11/23	Sep 25/23	
Laboratory Sample No. Lab Number Unique Number Test Package	GFL0066981 : 06049766 : 10815715 : FLEET		Environmental - 916 - Greenbay I 1799 County Trunk F DePere, V US 541 Contact: Travis Run travis.runge@gflenv.cc T: (920)351-23				

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