

OIL ANALYSIS REPORT

Sample Rating Trend

FUEL

Machine Id **7822**

Component Diesel Engine

Fluid PETRO CANADA DURON SHP 10W30 (--- LTR)

DIAGNOSIS

Recommendation

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

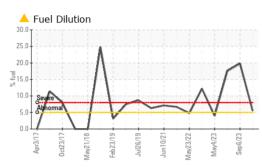
Fluid Condition

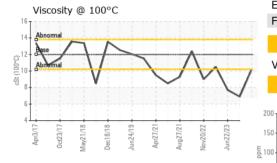
The oil is no longer serviceable due to the presence of contaminants.

Sample DateClient Info19 Sep 202306 Sep 202322 Jun 2023Machine AgehrsClient Info179751795117795Dil AgehrsClient Info490600Dil ChangedClient InfoNot ChangdN/AN/ASample StatusImather of the set	FR)		pr2017 Oct201	17 May2018 Dec2018 Jun2	019 Apr2021 Aug2021 Nov2022 Ju	n2023 Sep202	
Sample Date Client Info 19 Sep 2023 06 Sep 2023 22 Jun 2023 Machine Age hrs Client Info 17975 17951 17795 Di Age hrs Client Info 49 0 600 Di Changed Client Info Mathine Age N/A N/A Sample Status Imathine Not Change N/A N/A CONTAMINATION method limit/base current history1 history2 Clontin ppm ASTMD588(m) >110 6 17 30 Ontomium ppm ASTMD588(m) >22 0 0 0 Client Info Mathines Samb588(m) >22 1 2 3 Contramium ppm ASTMD588(m) >22 1 2 3 Mumium ppm ASTMD588(m) >25 1 2 3 Limitoma ppm ASTMD588(m) >4 0 -1 -1 Mumium	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
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Dil Age hrs Client Info 49 0 600 Dil Changed Client Info Not Changed N/A N/A Sample Status Client Info Net Changed SEVERE SEVERE CONTAMINATION method limit/base current history1 history2 Silycol WC Method Imit/base current history1 history2 Silycol WC Method Imit/base current history1 history2 Silver ppm ASTMD518(m) >10 6 17 30 Dirhomium ppm ASTMD518(m) >2 0 0 0 Silver ppm ASTMD518(m) >2 1 2 3 Cin ppm ASTMD518(m) >4 0 <1	Sample Date		Client Info		19 Sep 2023	06 Sep 2023	22 Jun 2023
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Sample Status Image of the second status ABNORMAL SEVERE SEVERE CONTAMINATION method limit/base current history1 history2 Slycol WC Method Imit/base current history1 history2 Slycol Ppm ASTM D5165(m) >110 6 17 30 WEAR METALS method limit/base current history1 history2 ron ppm ASTM D5165(m) >2 0 0 0 linkel ppm ASTM D5165(m) >2 <1	Dil Age	hrs	Client Info		49	0	600
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Copper ppm ASTM D518(m) >85 1 3 6 Tin ppm ASTM D518(m) >4 0 <1	Aluminum	ppm	ASTM D5185(m)	>25	1	2	3
Tin ppm ASTM D5185(m) >4 0 <1	ead	ppm	ASTM D5185(m)	>45	0	<1	<1
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Aranadium ppm ASTM D5185(m) 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 2 3 1 1 Barium ppm ASTM D5185(m) 0 0 0 0 Adagnesium ppm ASTM D5185(m) 50 55 43 44 Aganesium ppm ASTM D5185(m) 50 895 699 727 Calcium ppm ASTM D5185(m) 1050 972 755 774 Phosphorus ppm ASTM D5185(m) 1050 943 801 796 Cinc ppm ASTM D5185(m) 1050 2424 1908 1847 Lithium ppm ASTM D5185(m) 2600 2424 <	īin	ppm	ASTM D5185(m)	>4	0	<1	<1
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ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 2 3 1 1 Barium ppm ASTM D5185(m) 0 0 0 0 Aolybdenum ppm ASTM D5185(m) 50 55 43 44 Maganese ppm ASTM D5185(m) 0 0 <1	Beryllium	ppm	ASTM D5185(m)		0	0	0
Boron ppm ASTM D5185(m) 2 3 1 1 Barium ppm ASTM D5185(m) 0 0 0 0 Manganese ppm ASTM D5185(m) 50 55 43 44 Manganese ppm ASTM D5185(m) 0 0 -1 <1	Cadmium	ppm	ASTM D5185(m)		0	0	0
Barium ppm ASTM D5185(m) 0 0 0 0 0 Molybdenum ppm ASTM D5185(m) 50 55 43 44 Manganese ppm ASTM D5185(m) 0 0 0 1 <1	ADDITIVES		method	limit/base	current	history1	history2
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Manganese ppm ASTM D5185(m) 0 0 <1 <1 Magnesium ppm ASTM D5185(m) 950 895 699 727 Calcium ppm ASTM D5185(m) 1050 972 755 774 Chosphorus ppm ASTM D5185(m) 995 943 801 796 Cinc ppm ASTM D5185(m) 1180 1097 868 873 Sulfur ppm ASTM D5185(m) 2600 2424 1908 1847 .ithium ppm ASTM D5185(m) >30 3 5 5 .ithium ppm ASTM D5185(m) >20 <1	Barium	ppm	ASTM D5185(m)	0	0	0	0
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Phosphorus ppm ASTM D5185(m) 995 943 801 796 Zinc ppm ASTM D5185(m) 1180 1097 868 873 Sulfur ppm ASTM D5185(m) 2600 2424 1908 1847 Lithium ppm ASTM D5185(m) 2600 2424 1908 1847 CONTAMINANTS method limit/base current history1 history2 Solicon ppm ASTM D5185(m) >30 3 4 5 Solicon ppm ASTM D5185(m) >30 3 4 5 Solicon ppm ASTM D5185(m) >20 <1 2 2 Solicon ppm ASTM D5185(m) >20 <1 2 2 Solicon ppm ASTM D5185(m) >20 <1 2 2 Solicon % ASTM D7533* >5 <5 19.8 17.5 INFRA-RED method limit/base	<i>l</i> lagnesium	ppm	ASTM D5185(m)	950	895	699	727
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Bulfur ppm ASTM D5185(m) 2600 2424 1908 1847 ithium ppm ASTM D5185(m) <	hosphorus	ppm	ASTM D5185(m)	995	943	801	796
LithiumppmASTM D5185(m)<1<1<1CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185(m)>30345SodiumppmASTM D5185(m)>30355PotassiumppmASTM D5185(m)>20<1	Zinc	ppm	ASTM D5185(m)	1180	1097	868	873
CONTAMINANTSmethodlimit/basecurrenthistory1history2SoliconppmASTM D5185(m)>30345SodiumppmASTM D5185(m)>20355PotassiumppmASTM D5185(m)>20<1	Sulfur	ppm	ASTM D5185(m)	2600	2424	1908	1847
SiliconppmASTM D5185(m)>30345SodiumppmASTM D5185(m)3555PotassiumppmASTM D5185(m)>20<122Fuel%ASTM D5185(m)>5 \checkmark 5.519.817.5INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%ASTM D7844*>30.20.61JitrationAbs/cmASTM D7624*>206.08.710.2SulfationAbs/.1mmASTM D7415*>3019.423.325.3FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mmASTM D7414*>2516.124.626.8	ithium	ppm	ASTM D5185(m)		<1	<1	<1
Sodium ppm ASTM D5185(m) 3 5 5 Potassium ppm ASTM D5185(m) >20 <1	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185(m) >20 <1 2 2 Fuel % ASTM D7593* >5 ▲ 5.5 ■ 19.8 ■ 17.5 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.2 0.6 1 Mitration Abs/cm ASTM D7624* >20 6.0 8.7 10.2 Sulfation Abs/.1mm ASTM D7415* >30 19.4 23.3 25.3 FLUID DEGRADATION method limit/base current history1 history2 Dxidation Abs/.1mm ASTM D7414* >25 16.1 24.6 26.8	Silicon	ppm	ASTM D5185(m)	>30	3	4	5
Fuel % ASTM D7593* >5 5.5 19.8 17.5 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.2 0.6 1 Nitration Abs/cm ASTM D7624* >20 6.0 8.7 10.2 Sulfation Abs/.1mm ASTM D7415* >30 19.4 23.3 25.3 FLUID DEGRADATION method limit/base current history1 history2 Dxidation Abs/.1mm ASTM D7414* >25 16.1 24.6 26.8	Sodium	ppm	ASTM D5185(m)		3	5	5
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Soot % % ASTM D7844* >3 0.2 0.6 1 Nitration Abs/cm ASTM D7624* >20 6.0 8.7 10.2 Sulfation Abs/.1mm ASTM D7415* >30 19.4 23.3 25.3 FLUID DEGRADATION method limit/base current history1 history2 Dxidation Abs/.1mm ASTM D7414* >25 16.1 24.6 26.8	Fuel	%	ASTM D7593*	>5	<mark>人</mark> 5.5	• 19.8	17.5
Abs/cm ASTM D7624* >20 6.0 8.7 10.2 Sulfation Abs/.1mm ASTM D7415* >30 19.4 23.3 25.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm ASTM D7414* >25 16.1 24.6 26.8	INFRA-RED		method	limit/base	current	history1	history2
SulfationAbs/.1mmASTM D7415*>3019.423.325.3FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2DxidationAbs/.1mmASTM D7414*>2516.124.626.8			ASTM D7844*	>3	0.2	0.6	1
FLUID DEGRADATION method limit/base current history1 history2 Dxidation Abs/.1mm ASTM D7414* >25 16.1 24.6 26.8	Soot %	%					
Dxidation Abs/.1mm ASTM D7414* >25 16.1 24.6 26.8				>20	6.0	8.7	10.2
	Nitration	Abs/cm	ASTM D7624*				
28:33) Rev: 1 Submitted By: Brian Gagr	Nitration Sulfation	Abs/cm Abs/.1mm	ASTM D7624* ASTM D7415*	>30	19.4	23.3	25.3
	Vitration Sulfation FLUID DEGRAI	Abs/cm Abs/.1mm DATION	ASTM D7624* ASTM D7415* method	>30 limit/base	19.4 current	23.3 history1	25.3 history2



OIL ANALYSIS REPORT





VISUAL		method	limit/base	current	history1	history2
						matoryz
White Metal Yellow Metal	scalar	Visual*	NONE	NONE NONE		
Precipitate	scalar scalar	Visual* Visual*	NONE	NONE		
Silt	scalar	Visual*	NONE	NONE		
Debris	scalar	Visual*	NONE	NONE		
Sand/Dirt	scalar	Visual*	NONE	NONE		
Appearance	scalar	Visual*	NORML	NORML		
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG
FLUID PROF	PERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	12.00	10.2	6.9	• 7.7
GRAPHS					• •••	•
Iron (ppm)				Lead (ppm)		
200 Severe			8			
Abnormal			60	Abnormal		
100 -			튭.40	0		
50		\wedge	2	0		
0	\sim					
Apr3/17 0ct23/17 May21/18 Dec18/18	Jun24/19 Apr27/21	Aug27/21 Nov20/22	Sep 19/23	Apr3/17 0ct23/17 May21/18	Dec18/18 Jun24/19 Apr27/21	Aug27/21 Nov20/22 Jun22/23
A A May	Jun Ap	Nov	Sep	2		Aug Nov
Aluminum (ppm	ו)		10	Chromium (ppm)	
40 Severe				Severe		
E ³⁰ 20		L	E d	Abnormal		
10-				2		1
	\rightarrow				\rightarrow	$\sim \sim$
Apr3/17 0ct23/17 May21/18 Dec18/18	Jun24/19 Apr27/21	Aug27/21 Nov20/22	Sep 19/23	Apr3/17 0ct23/17 May21/18	Dec18/18 Jun24/19 Apr27/21	Aug27/21 Nov20/22 Jun22/23
Copper (ppm)	Jr A	a z -	Ö	Silicon (ppm		A N N
			50		,	
150 Severe			41	0		
100 - Abnormal			e ³⁰	0 - Abnormal		
		Λ	² 2	0	Λ	\wedge
50			10	0	\sim	
18	719-	22	23	18	18 19 121	22
Apr3/17 0ct23/17 May21/18 Dec18/18	Jun24/19 Apr27/21	Aug27/21. Nov20/22	Sep 19/23	Apr3/17 - 0ct23/17 - May21/18 -	Dec18/18 - Jun24/19 - Apr27/21 -	Aug27/21 Nov20/22 Jun22/23
Viscosity @ 100	·	~ 2 -		 Fuel Dilution		~ ~ 7 '
¹⁶			30.0	0 T		
14 Abnormal	<		25.0		٨	
Abhemal	1	Λ_{Λ}	20.0 2 15.0	0		\land
₹ 8-		1	10.0	0 Severe		\wedge / \wedge
6			5.0		V	\sim v
4 4 4 2 10 4 2 10 4 2 10 4 2 10 10 10 10 10 10 10 10 10 10 10 10 10	/19- /21-	121- 22- 73	1.0		/19 /19	22
Apr3/17 0ct23/17 May21/18 Dec18/18	Jun24/19 Apr27/21	Aug27/21 Nov20/22	Sep 19/23	Apr3/17 0ct23/17 May21/18	Feb23/19 Jul26/19 Jun10/21	May23/22 May4/23 Sep6/23
				2		
: WearCheck - C8-				.7L 5H9 GFL E		
: GFL0093900 : 02584832	Receive Diagnos		Sep 2023 Sep 2023		8409	15th Street N Edmonton, A
: 5645897	Diagnos		s Davis			CA T6P 0B
: MOB 1 (Addition					C	ontact: Tim Gre

Accredited Laboratory **Test Package** : MOB 1 (Additional Tests: PercentFuel, Visual) To discuss this sample report, contact Customer Service at 1-800-268-2131. Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

CALA

ISO 17025:2017