

# **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id

#### 388041 Component Diesel Engine Fluid PETRO CANADA DURON SHP 10W30 (--- GAL)

# DIAGNOSIS

## Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

## Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

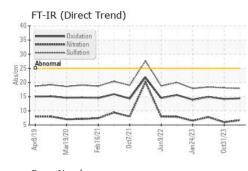
#### Fluid Condition

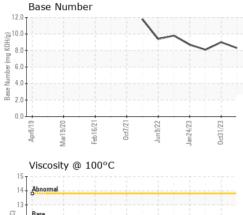
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

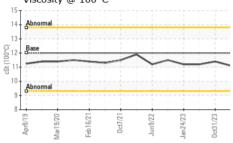
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2	
Sample Number		Client Info		PCA0128900	PCA0110470	PCA0101313	
Sample Date		Client Info		05 Jun 2024	31 Oct 2023	06 Jul 2023	
Machine Age	mls	Client Info		102432	97327	94016	
Oil Age	mls	Client Info		0	0	0	
Oil Changed		Client Info		Changed	Changed	Changed	
Sample Status				NORMAL	NORMAL	NORMAL	
CONTAMINAT	ION	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	20.2	NEG	NEG	NEG	
WEAR METAL	c	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>100	21	17	30	
Chromium	ppm	ASTM D5185m	>20	<1	<1	2	
Nickel	ppm	ASTM D5185m	>4	0	<1	<1	
Titanium	ppm	ASTM D5185m	0	0	<1	0	
Silver	ppm	ASTM D5185m	>3	0	<1	0	
Aluminum	ppm	ASTM D5185m	>20	5	2	6	
Lead	ppm	ASTM D5185m	>40	<1	<1	0	
Copper	ppm	ASTM D5185m	>330	3	2	<1	
Tin	ppm	ASTM D5185m	>15	<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	2	4	<1	13	
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	0	0	<1	13 0	
Barium Molybdenum		ASTM D5185m ASTM D5185m	0 50	0 63		0 64	
Barium Molybdenum Manganese	ppm	ASTM D5185m	0 50 0	0 63 <1	<1	0 64 <1	
Barium Molybdenum Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950	0 63 <1 933	<1 61 <1 947	0 64 <1 828	
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0	0 63 <1	<1 61 <1	0 64 <1 828 1131	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050 995	0 63 <1 933 1078 1052	<1 61 <1 947 1073 1052	0 64 <1 828 1131 1011	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180	0 63 <1 933 1078 1052 1243	<1 61 <1 947 1073 1052 1228	0 64 <1 828 1131 1011 1175	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050 995	0 63 <1 933 1078 1052	<1 61 <1 947 1073 1052	0 64 <1 828 1131 1011	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180	0 63 <1 933 1078 1052 1243	<1 61 <1 947 1073 1052 1228	0 64 <1 828 1131 1011 1175	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600	0 63 <1 933 1078 1052 1243 3506	<1 61 <1 947 1073 1052 1228 3030	0 64 <1 828 1131 1011 1175 3105	
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	0 50 0 950 1050 995 1180 2600	0 63 <1 933 1078 1052 1243 3506 current	<1 61 <1 947 1073 1052 1228 3030 history1	0 64 <1 828 1131 1011 1175 3105 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 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25	0 63 <1 933 1078 1052 1243 3506 current 4	<1 61 <1 947 1073 1052 1228 3030 history1 3	0 64 <1 828 1131 1011 1175 3105 history2 4	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25	0 63 <1 933 1078 1052 1243 3506 current 4 3	<1 61 <1 947 1073 1052 1228 3030 history1 3 0	0 64 <1 828 1131 1011 1175 3105 history2 4 0	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	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 ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 >20	0 63 <1 933 1078 1052 1243 3506 <u>current</u> 4 3 5	<1 61 <1 947 1073 1052 1228 3030 history1 3 0 4	0 64 <1 828 1131 1011 1175 3105 history2 4 0 6	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm 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 ASTM D5185m	0 50 0 950 1050 995 1180 2600 <i>limit/base</i> >20 <i>limit/base</i> >3	0 63 <1 933 1078 1052 1243 3506 current 4 3 5 5	<1 61 <1 947 1073 1052 1228 3030 history1 3 0 4 kistory1	0 64 <1 828 1131 1011 1175 3105 history2 4 0 6 kistory2	
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	ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 <i>limit/base</i> >20 <i>limit/base</i> >3	0 63 <1 933 1078 1052 1243 3506 <u>current</u> 4 3 5 <u>current</u> 0.2	<1 61 <1 947 1073 1052 1228 3030 history1 3 0 4 history1 0.2	0 64 <1 828 1131 1011 1175 3105 history2 4 0 6 history2 0.3	
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 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 >20 <b>imit/base</b> >3 >20	0 63 <1 933 1078 1052 1243 3506 <u>current</u> 4 3 5 <u>current</u> 0.2 6.7	<1 61 <1 947 1073 1052 1228 3030 history1 3 0 4 4 history1 0.2 6.0	0 64 <1 828 1131 1011 1175 3105 history2 4 0 6 history2 0.3 7.8	
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 ppm ppm ppm	ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7844 *ASTM D7415	0 50 50 950 1050 995 1180 2600 <b>imit/base</b> >25 20 <b>imit/base</b> >20 >30 30	0 63 <1 933 1078 1052 1243 3506 current 4 3 5 current 0.2 6.7 17.9 current	<1 61 <1 947 1073 1052 1228 3030 history1 3 0 4 <b>history1</b> 0.2 6.0 18.1	0 64 <1 828 1131 1011 1175 3105 history2 4 0 6 history2 0.3 7.8 18.4 history2	
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 50 0 950 1050 995 1180 2600 imit/base >25 >20 imit/base >3 >20 >30	0 63 <1 933 1078 1052 1243 3506 <u>current</u> 4 3 5 <u>current</u> 0.2 6.7 17.9	<1 61 <1 947 1073 1052 1228 3030 history1 3 0 4 history1 0.2 6.0 18.1 history1	0 64 <1 828 1131 1011 1175 3105 history2 4 0 6 history2 0.3 7.8 18.4	



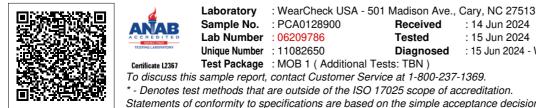
# **OIL ANALYSIS REPORT**







VISUAL		method	limit/base	current		histo	ry1	hi	story2
Vhite Metal	scalar	*Visual	NONE	NONE		NONE		NO	NE
ellow Metal	scalar	*Visual	NONE	NONE		NONE		NO	NE
Precipitate	scalar	*Visual	NONE	NONE		NONE		NO	NE
Silt	scalar	*Visual	NONE	NONE		NONE		NO	NE
ebris	scalar	*Visual	NONE	NONE		NONE		NO	NE
and/Dirt	scalar	*Visual	NONE	NONE		NONE		NO	
ppearance	scalar	*Visual	NORML	NORML		NORM	IL		RML
)dor	scalar	*Visual	NORML	NORML		NORM			RML
mulsified Water	scalar	*Visual	>0.2	NEG		NEG		NEC	
ree Water	scalar	*Visual	20.L	NEG		NEG		NE	
FLUID PROPER	RTIES	method	limit/base	current		histo	rv1	hi	story2
/isc @ 100°C	cSt	ASTM D445	12.00	11.1		11.4		11.2	
GRAPHS									
Iron (ppm)				Lead (ppm	1)				
Severa	1111			Severe					1111
Severe				00					
Abnormal	Λ		6	60 Abnormal					
dinoma				10 1 4					
				20-					
20+	21	53	23+	0	21	21	22	33	33
Apr8/19 Mar19/20 Feb16/21	0ct7/21	Jan 24/23	0ct31/23	Apr8/19	Feb16/21	0ct7/21	Jun9/22	Jan 24/23	0ct31/23
≥ ±		, j	0	2			,	, n	0
Aluminum (ppm)				Chromium	(ppm	1)			
Severe				40 - Severe					
Abnormal			mdd	20 Abnormal					
	$\wedge$			10-					
~			-	0				$\wedge$	
Apr8/19 -	0ct7/21.	Jan 24/23	0ct31/23		Feb16/21.	0ct7/21	Jun9/22 .	Jan 24/23 .	0ct31/23 -
Apr Mar1 Feb1	-20 mil-	Jan 2	0 ct3	Apr8/19 Mar19/20	Feb1	0	ղոր	Jan2	0ct3
Copper (ppm)				Silicon (pp	m)				
Severe Abnormal				80 Severe					
				60 -					
			E	40					
			dd	Abnormal					
				20		/			
	$\sim$		-		-	$\leq$	$\geq$		-
Apr8/19 - Mar19/20 - Feb16/21 -	0ct7/21	Jan 24/23	0ct31/23	Apr8/19 Mar19/20	Feb16/21	0ct7/21	Jun9/22	Jan 24/23	0ct31/23 -
2 8	0 -	Jar	0	2		0	ſ	Jar	00
Viscosity @ 100°C			1	Base Num	ber				
Abnormal			B/HOX	0.0			1	~	~
Base			Bm)	3.0					
	~		mber	5.0 - 4.0 -					
Abnormal			se Nu	2.0					
			+	0.0					
	2	53	0ct31/23	19	Feb16/21	0ct7/21	Jun9/22 .	Jan 24/23	0ct31/23
Apr8/19 -	0ct7/21	Jan 24/23	2	Apr8/19 -	16	1	6	4	



**MILLER TRUCK LEASING #119** 39 INDUSTRIAL AVE HASBROUCK HEIGHTS, NJ : 15 Jun 2024 - Wes Davis US 07604 Contact: MIKE LONGETTE mlongette@millertransgroup.com T: F: (201)528-7053

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Received

Diagnosed

Tested

: 14 Jun 2024

: 15 Jun 2024

Contact/Location: MIKE LONGETTE - MILRUT

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