

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

471170 Component **Diesel Engine** Fluid PETRO CANADA DURON SHP 10W30 (--- QTS)

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.

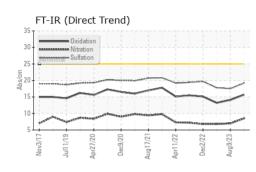
Fluid Condition

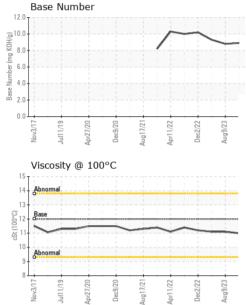
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0118861	PCA0103043	PCA0095878
Sample Date		Client Info		04 Apr 2024	09 Aug 2023	20 Mar 2023
Machine Age	mls	Client Info		0	117703	114889
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		N/A	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ON	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		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	18	29	18
Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	1	<1
Lead	ppm	ASTM D5185m	>40	<1	<1	0
Copper	ppm	ASTM D5185m	>330	1	3	<1
Tin	ppm	ASTM D5185m	>15	0	<1	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 2	current <1	history1 9	history2 16
	ppm ppm					
Boron		ASTM D5185m	2	<1	9	16
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	<1 0	9 0	16 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	<1 0 66	9 0 63	16 0 65
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	<1 0 66 <1 1041 1232	9 0 63 <1 939 1128	16 0 65 <1 866 1117
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	<1 0 66 <1 1041 1232 1138	9 0 63 <1 939 1128 1022	16 0 65 <1 866 1117 992
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180	<1 0 66 <1 1041 1232 1138 1346	9 0 63 <1 939 1128 1022 1272	16 0 65 <1 866 1117 992 1196
Boron 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	2 0 50 0 950 1050 995	<1 0 66 <1 1041 1232 1138	9 0 63 <1 939 1128 1022	16 0 65 <1 866 1117 992
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	<1 0 66 <1 1041 1232 1138 1346 3901 current	9 0 63 <1 939 1128 1022 1272 3734 history1	16 0 65 <1 866 1117 992 1196 3320 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	<1 0 66 <1 1041 1232 1138 1346 3901 current 4	9 0 63 <1 939 1128 1022 1272 3734 history1 3	16 0 65 <1 866 1117 992 1196 3320 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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	2 0 50 950 1050 995 1180 2600 limit/base >25	<1 0 66 <1 1041 1232 1138 1346 3901 current 4 3	9 0 63 <1 939 1128 1022 1272 3734 history1 3 3 3	16 0 65 <1 866 1117 992 1196 3320 history2 3 2
Boron 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	2 0 50 950 1050 995 1180 2600 limit/base >25	<1 0 66 <1 1041 1232 1138 1346 3901 current 4	9 0 63 <1 939 1128 1022 1272 3734 history1 3	16 0 65 <1 866 1117 992 1196 3320 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	<1 0 66 <1 1041 1232 1138 1346 3901 current 4 3 <1 <	9 0 63 <1 939 1128 1022 1272 3734 history1 3 3 3 3 3 history1	16 0 65 <1 866 1117 992 1196 3320 history2 3 2 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	<1 0 66 <1 1041 1232 1138 1346 3901 <i>current</i> 4 3 <1 <i>current</i> 0.6	9 0 63 <1 939 1128 1022 1272 3734 history1 3 3 3 3 history1 0.3	16 0 65 <1 866 1117 992 1196 3320 history2 3 2 <1 ×1 history2 0.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm t ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 imit/base >25 20 imit/base >20	<1 0 66 <1 1041 1232 1138 1346 3901 current 4 3 (1 4 3 <1 current 0.6 8.5	9 0 63 <1 939 1128 1022 1272 3734 history1 3 3 3 3 history1 0.3 7.0	16 0 65 <1 866 1117 992 1196 3320 history2 3 2 <1 2 <1 history2 0.3 6.8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	<1 0 66 <1 1041 1232 1138 1346 3901 <i>current</i> 4 3 <1 <i>current</i> 0.6	9 0 63 <1 939 1128 1022 1272 3734 history1 3 3 3 3 history1 0.3	16 0 65 <1 866 1117 992 1196 3320 history2 3 2 <1 ×1 history2 0.3
Boron 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	2 0 50 950 1050 995 1180 2600 imit/base >25 20 imit/base >20	<1 0 66 <1 1041 1232 1138 1346 3901 current 4 3 (1 4 3 <1 current 0.6 8.5	9 0 63 <1 939 1128 1022 1272 3734 history1 3 3 3 3 history1 0.3 7.0	16 0 65 <1 866 1117 992 1196 3320 history2 3 2 <1 2 <1 history2 0.3 6.8
Boron 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	2 0 50 0 950 1050 995 1180 2600 imit/base >25 imit/base >3 >20 >30	<1 0 66 <1 1041 1232 1138 1346 3901 current 4 3 <1 current 0.6 8.5 19.2	9 0 63 <1 939 1128 1022 1272 3734 history1 3 3 3 3 3 history1 0.3 7.0 17.5	16 0 65 <1 866 1117 992 1196 3320 history2 3 2 <1 history2 0.3 6.8 17.8



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	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
\sim	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
and the second division in the second division division in the second division di division division division division divis	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Aug9/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Aug	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
	Free Water	scalar	*Visual		NEG	NEG	NEG
	FLUID PROPER	RTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	12.00	11.0	11.1	11.1
	GRAPHS						
	Iron (ppm)			100	Lead (ppm)		
33	200 - Severe			80	Severe		
Aug9/23	100			0.0			
4	Abnormal			E 40	Abaranat		
	50			40	- 0		
1	Nov3/17	7/21-	Apri 1/22 - Dec2/22 -	Aug9/23	Nev3/17 Jul11/19	Dec9/20 -	Apr11/22 - Dec2/22 - Aug9/23 -
	Nov3/17 Jul11/19 Apr27/20 Dec9/20	Aug17/21	Apr11/22 Dec2/22	Aug	Nov3/17 Jul11/19 Apr27/20	Dec9/20 Aug17/21	Apr11/22 Dec2/22 Aug9/23
	Aluminum (ppm)				Chromium (pp	om)	
	50 T			50			
	40 - Severe			40			
~	e ³⁰ - 20 <mark>Abnormal</mark>			음			
Aug9/23	abnormal			²⁷ 20	Abnormal		
Aı	10			10			
		21	22	0		20 - 21 - 21 - 21 - 21 - 21 - 21 - 21 -	22
	Nov3/17 Jul11/19 Apr27/20 Dec9/20	Aug17/21	Apr11/22 Dec2/22	Aug9/23	Nov3/17 Jul11/19 Apr27/20	Dec9/20 Aug17/21	Apr11/22 Dec2/22 Aug9/23
		AL	P A	4		Au	A, C A,
	Copper (ppm)				Silicon (ppm)		
	400 - Sever	- +		60			
				틆.40			
	E 200				Abnormal		
	100-			20			
		_	2	0			2
	Nov3/17 Jul11/19 Apr27/20 Dec9/20	Aug17/21	Apr11/22 Dec2/22	Aug9/23	Nov3/17 Jul11/19 Apr27/20	Dec9/20 Aug17/21	Apr11/22 Dec2/22 Aug9/23
		Aug	Ap D	AI	, 4		Ap
	Viscosity @ 100°C			12.0	Base Number		
					I		~
	14 - Abnormal			9.0.0 P 8.0			
	(5-001) 12 - Base			(0)HOX BW Jack Hox BW Jack Hox BW Jach Hox BW Jack Hox BW Jach Hox BW JA HOX HOX HOX HOX HOX HOX HOX HOX HOX HOX			
	73 10 - Abnormal			4.0	+		
	8			2.0 0.0			
		7/21-	Apr11/22 -	6.0	3/17 -	9/20 -	Apr11/22 - Dec2/22 - Aug9/23 -
	Nov3/17 Jul11/19 Apr27/20 Dec9/20	Aug17/21	Apr11/22 Dec2/22	Aug9/23	Nov3/17 Jul11/19 Apr27/20	Dec9/20 Aug17/21	Apr11/22 Dec2/22 Aug9/23
			-		-		
oratory	: WearCheck USA - 501	Madieo	n Ave Carv	NC 27513	М		K LEASING #11
oratory	: PCA0118861	Recei) Apr 2024	IVI		NDUSTRIAL AVI
nple No.			Tested : 09 Apr 2024				CK HEIGHTS, N
	: 06142735	reste	a :08	1 API 2024		TIASDI (OU)	
ue Number	: 10967543 : MOB 1 (Additional Tes	Diagn	iosed : 09	9 Apr 2024 9 Apr 2024 - We	es Davis		US 0760 /IKE LONGETTI

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) F: (201)528-7053

Report Id: MILRUT [WUSCAR] 06142735 (Generated: 04/09/2024 18:34:55) Rev: 1

Certificate L2367

Contact/Location: MIKE LONGETTE - MILRUT

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