

# **OIL ANALYSIS REPORT**

### Sample Rating Trend

# NORMAL

# COOPER ELECTRIC HINO 388518

**Diesel Engine** 

Fluid

PETRO CANADA DURON SHP 10W30 (16 QTS)

### 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

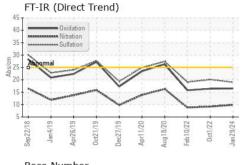
### **Fluid Condition**

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

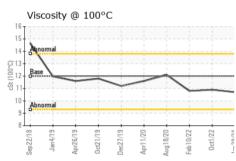
Contamination   Contaminatio	(10)			,	,		
Client Info   29 Jan 2024	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age   mls   Client Info   263669   217283   202072	Sample Number		Client Info		PCA0110167	PCA0077051	PCA005772
Dil Age	Sample Date		Client Info		29 Jan 2024	01 Oct 2022	10 Feb 2022
Changed   Changed   Changed   N/A   NORMAL   N	Machine Age	mls	Client Info		263669	217283	202072
NORMAL   NORMAL   NORMAL   NORMAL   NORMAL   CONTAMINATION   method   limit/base   current   history1   history1   history2   history3   history3   history3   history4   history4   history4   history4   history4   history4   history4   history5   hist	Oil Age	mls	Client Info		20000	12316	0
CONTAMINATION         method         limit/base         current         history1         history1           Fuel         WC Method         >5         <1.0	Oil Changed		Client Info		Changed	Changed	N/A
Variety   Vari	Sample Status				NORMAL	NORMAL	NORMAL
Water Glycol         WC Method         >0.2         NEG	CONTAMINATI	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS         method         limit/base         current         history1         history1           Iron         ppm         ASTM D5185m         >100         20         12         4           Chromium         ppm         ASTM D5185m         >20         0         <1	Water		WC Method	>0.2	NEG	NEG	NEG
Chromium	Glycol		WC Method		NEG	NEG	NEG
Description	WEAR METALS	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	20	12	4
Description	Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Description	Nickel		ASTM D5185m	>4	0	0	0
Silver	Titanium	ppm	ASTM D5185m		0	0	0
Aluminum	Silver		ASTM D5185m	>3	0	0	<1
Lead	Aluminum		ASTM D5185m	>20	4	5	2
Copper	Lead		ASTM D5185m	>40	<1		<1
Tin							
Antimony					_		
Vanadium         ppm         ASTM D5185m         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         2         14         17         9           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0         0           Magnesium         ppm         ASTM D5185m         0         1         <1         <1           Magnesium         ppm         ASTM D5185m         950         876         883         1002           Calcium         ppm         ASTM D5185m         995         1071         982         1120           Phosphorus         ppm         ASTM D5185m         995         1071         982         1120           Zinc         ppm         ASTM D5185m         2600         3630         3320         2928           CONTAMINANTS         method         limit/base         current         history1         his				710			
Description	•						
ADDITIVES							
Boron   ppm   ASTM D5185m   2   14   17   9		ррпп		limit/base	-		
Barium		nnm				•	•
Molybdenum         ppm         ASTM D5185m         50         77         75         66           Manganese         ppm         ASTM D5185m         0         1         <1         <1           Magnesium         ppm         ASTM D5185m         950         876         883         1002           Calcium         ppm         ASTM D5185m         1050         1235         1237         1166           Phosphorus         ppm         ASTM D5185m         995         1071         982         1120           Zinc         ppm         ASTM D5185m         995         1071         982         1120           Zinc         ppm         ASTM D5185m         995         1071         982         1120           Zinc         ppm         ASTM D5185m         2600         3630         3320         2928           CONTAMINANTS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D5185m         >25         4         2         4           Sodium         ppm         ASTM D5185m         >20         8         2         4           Potassium         ppm         ASTM D5185m				_			
Manganese         ppm         ASTM D5185m         0         1         <1         <1           Magnesium         ppm         ASTM D5185m         950         876         883         1002           Calcium         ppm         ASTM D5185m         1050         1235         1237         1166           Phosphorus         ppm         ASTM D5185m         995         1071         982         1120           Zinc         ppm         ASTM D5185m         1180         1269         1252         1377           Sulfur         ppm         ASTM D5185m         2600         3630         3320         2928           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >25         4         2         4           Sodium         ppm         ASTM D5185m         5         4         4           Potassium         ppm         ASTM D5185m         5         4         4           Potassium         ppm         ASTM D5185m         92         8         2         4           INFRA-RED         method         limit/base         current         hi					-		
Magnesium         ppm         ASTM D5185m         950         876         883         1002           Calcium         ppm         ASTM D5185m         1050         1235         1237         1166           Phosphorus         ppm         ASTM D5185m         995         1071         982         1120           Zinc         ppm         ASTM D5185m         1180         1269         1252         1377           Sulfur         ppm         ASTM D5185m         2600         3630         3320         2928           CONTAMINANTS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D5185m         >25         4         2         4           Sodium         ppm         ASTM D5185m         >20         8         2         4           Potassium         ppm         ASTM D5185m         >20         8         2         4           INFRA-RED         method         limit/base         current         history1         history           Soot %         %         *ASTM D7844         >3         0.6         0.5         0.3           Nitration         Abs/cm         *ASTM D7624	•						
Calcium         ppm         ASTM D5185m         1050         1235         1237         1166           Phosphorus         ppm         ASTM D5185m         995         1071         982         1120           Zinc         ppm         ASTM D5185m         1180         1269         1252         1377           Sulfur         ppm         ASTM D5185m         2600         3630         3320         2928           CONTAMINANTS         method         limit/base         current         history1         history           Solicon         ppm         ASTM D5185m         >25         4         2         4           Solicon         ppm         ASTM D5185m         5         4         4           Potassium         ppm         ASTM D5185m         >20         8         2         4           INFRA-RED         method         limit/base         current         history1         history1           Soot %         %         *ASTM D7844         >3         0.6         0.5         0.3           Nitration         Abs/.1mm         *ASTM D7415         >30         19.0         20.1         19.1           FLUID DEGRADATION         method	-				-		
Phosphorus         ppm         ASTM D5185m         995         1071         982         1120           Zinc         ppm         ASTM D5185m         1180         1269         1252         1377           Sulfur         ppm         ASTM D5185m         2600         3630         3320         2928           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >25         4         2         4           Sodium         ppm         ASTM D5185m         5         4         4           Potassium         ppm         ASTM D5185m         >20         8         2         4           INFRA-RED         method         limit/base         current         history1         history           Soot %         %         *ASTM D7844         >3         0.6         0.5         0.3           Nitration         Abs/cm         *ASTM D7415         >30         19.0         20.1         19.1           FLUID DEGRADATION         method         limit/base         current         history1         history1           Oxidation         Abs/.1mm         *ASTM D7414 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Zinc         ppm         ASTM D5185m         1180         1269         1252         1377           Sulfur         ppm         ASTM D5185m         2600         3630         3320         2928           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >25         4         2         4           Sodium         ppm         ASTM D5185m         5         4         4           Potassium         ppm         ASTM D5185m         >20         8         2         4           INFRA-RED         method         limit/base         current         history1         history           Soot %         %         *ASTM D7844         >3         0.6         0.5         0.3           Nitration         Abs/cm         *ASTM D7624         >20         9.9         9.2         8.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.0         20.1         19.1           FLUID DEGRADATION         method         limit/base         current         history1         history           Oxidation         Abs/.1mm         *ASTM D7414<							
Sulfur         ppm         ASTM D5185m         2600         3630         3320         2928           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >25         4         2         4           Sodium         ppm         ASTM D5185m         5         4         4           Potassium         ppm         ASTM D5185m         >20         8         2         4           INFRA-RED         method         limit/base         current         history1         history           Soot %         %         *ASTM D7844         >3         0.6         0.5         0.3           Nitration         Abs/cm         *ASTM D7624         >20         9.9         9.2         8.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.0         20.1         19.1           FLUID DEGRADATION         method         limit/base         current         history1         history           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.5         16.4         15.8	•						
CONTAMINANTS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D5185m         >25         4         2         4           Sodium         ppm         ASTM D5185m         5         4         4           Potassium         ppm         ASTM D5185m         >20         8         2         4           INFRA-RED         method         limit/base         current         history1         history           Soot %         %         *ASTM D7844         >3         0.6         0.5         0.3           Nitration         Abs/cm         *ASTM D7624         >20         9.9         9.2         8.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.0         20.1         19.1           FLUID DEGRADATION         method         limit/base         current         history1         history1           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.5         16.4         15.8	-						
Silicon         ppm         ASTM D5185m         >25         4         2         4           Sodium         ppm         ASTM D5185m         5         4         4           Potassium         ppm         ASTM D5185m         >20         8         2         4           INFRA-RED         method         limit/base         current         history1         history           Soot %         %         *ASTM D7844         >3         0.6         0.5         0.3           Nitration         Abs/cm         *ASTM D7624         >20         9.9         9.2         8.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.0         20.1         19.1           FLUID DEGRADATION method         limit/base         current         history1         history           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.5         16.4         15.8							
Sodium         ppm         ASTM D5185m         5         4         4           Potassium         ppm         ASTM D5185m         >20         8         2         4           INFRA-RED         method         limit/base         current         history1         history1           Soot %         %         *ASTM D7844         >3         0.6         0.5         0.3           Nitration         Abs/cm         *ASTM D7624         >20         9.9         9.2         8.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.0         20.1         19.1           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.5         16.4         15.8							
Potassium         ppm         ASTM D5185m         >20         8         2         4           INFRA-RED         method         limit/base         current         history1         history           Soot %         %         *ASTM D7844         >3         0.6         0.5         0.3           Nitration         Abs/cm         *ASTM D7624         >20         9.9         9.2         8.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.0         20.1         19.1           FLUID DEGRADATION         method         limit/base         current         history1         history1           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.5         16.4         15.8				>25			
INFRA-RED		ppm	ASTM D5185m				
Soot %         %         *ASTM D7844         >3         0.6         0.5         0.3           Nitration         Abs/cm         *ASTM D7624         >20         9.9         9.2         8.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.0         20.1         19.1           FLUID DEGRADATION method limit/base current history1         history1         history1           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.5         16.4         15.8	Potassium	ppm	ASTM D5185m	>20	8	2	4
Nitration         Abs/cm         *ASTM D7624 > 20         9.9         9.2         8.8           Sulfation         Abs/.1mm         *ASTM D7615 > 30         19.0         20.1         19.1           FLUID DEGRADATION method limit/base current         bistory         history           Oxidation         Abs/.1mm         *ASTM D7414 > 25         16.5         16.4         15.8	INFRA-RED		method	limit/base	current	history1	history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         19.0         20.1         19.1           FLUID DEGRADATION method limit/base current history1         history1         history           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.5         16.4         15.8	Soot %	%	*ASTM D7844	>3	0.6	0.5	0.3
FLUID DEGRADATION method limit/base current history1 history  Oxidation Abs/.1mm *ASTM D7414 >25 16.5 16.4 15.8	Nitration	Abs/cm	*ASTM D7624	>20	9.9	9.2	8.8
Oxidation Abs/.1mm *ASTM D7414 >25 <b>16.5</b> 16.4 15.8	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.0	20.1	19.1
	FLUID DEGRAD	OATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 <b>8.4</b> 10.2 10.1	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.5	16.4	15.8
	Base Number (BN)	mg KOH/g	ASTM D2896		8.4	10.2	10.1



## **OIL ANALYSIS REPORT**



	ise Nu	ımbe	r						
12.0									
₹10.0									
Base Number (mg KOH/g)									`
9 6.0									
4.0									
2.0									
0.0									
2/18	Jan4/19	6/19	Oct21/19	7/19	1/20	8/20	0/22	Oct1/22	1,71
Sep22/18	Jan	Apr26/19	Oct2	Dec27/19	Apr1	Aug18/20	Feb 1	Oct	
						-4,			

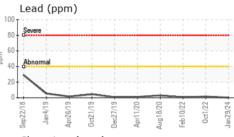


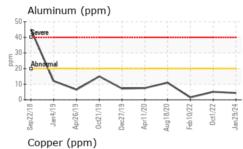
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

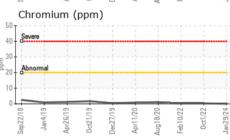
FLUID PROPI	EHILO	method			riistory i	nistoryz
Visc @ 100°C	cSt	ASTM D445	12.00	10.7	10.9	10.8

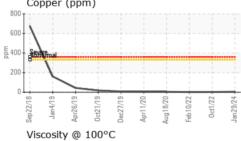
Iro	n (pp	om)							
200 - Sev	ere								
		- 1		- 1				- 1	
E 150	ormal								
50									
0				<u></u>	_		_	_	_
2/18	Jan4/19	6/19	1/19	7/19	1/20	8/20	0/22	Oct1/22	9/24
Sep22/18	Jan	Apr26/19	Oct21/19	Dec27/19	Apr11/20	Aug18/20	Feb10/22	Oct	Jan29/24
Alu	ıminı	ım (ı	opm)	)					

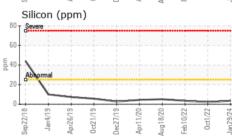
**GRAPHS** 

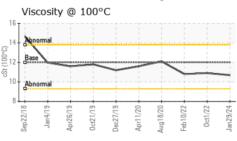


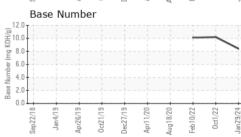
















Certificate 12367

Laboratory Sample No.

: PCA0110167 Lab Number : 06147081

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Unique Number : 10977159

Test Package : MOB 1 ( Additional Tests: TBN )

To discuss this sample report, contact Customer Service at 1-800-237-1369.

Received **Tested** Diagnosed

: 12 Apr 2024 : 15 Apr 2024

: 15 Apr 2024 - Wes Davis

NEW BRUNSWICK, NJ

Contact: Anthony Cursi acursi@millertransgroup.com T: (732)358-4027

**MILLER TRUCK LEASING #121** 

\* - 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: (732)400-8475 Contact/Location: Anthony Cursi - MILNEW

107 HOW LANE

US 08901