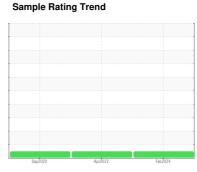


# **OIL ANALYSIS REPORT**

**-** San



NORMAL



# Machine Id DR171 Component

Diesel Engine

**DIESEL ENGINE OIL SAE 5W40 (--- 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.

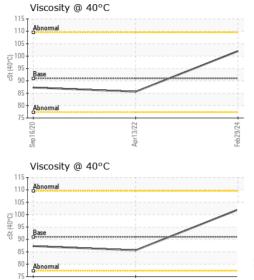
## **Fluid Condition**

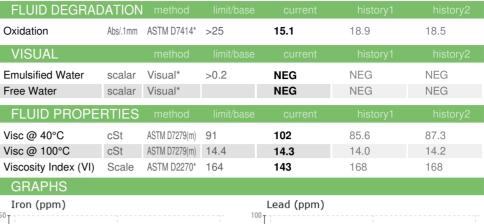
The condition of the oil is acceptable for the time in service.

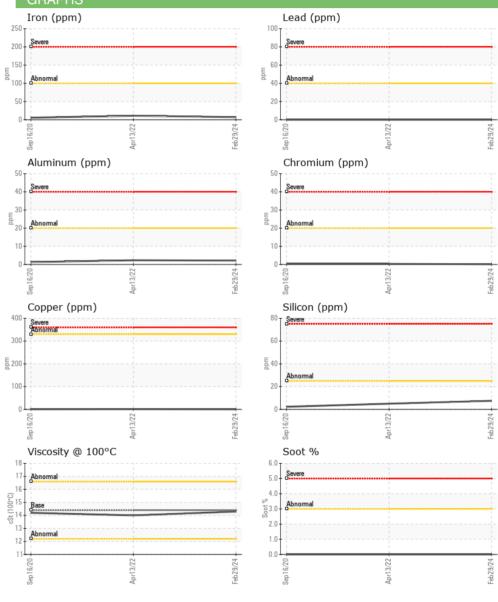
SAMPLE INFORMATION method limit/base   current   history1   history2			Sej	2020	Apr2022 Feb20	24	
Sample Date   Client Info   29 Feb 2024   13 Apr 2022   16 Sep 2020   Machine Age   hrs   Client Info   0   250   3065	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age   hrs   Client Info   0   250   3065	Sample Number		Client Info		PC	PC0060142	PC0037422
Oil Age         hrs         Client Info         NA         Changed         Ch	Sample Date		Client Info		29 Feb 2024	13 Apr 2022	16 Sep 2020
Oil Changed Sample Status         Client Info         N/A         Changed NORMAL         NORMAL NORMAL         NORMAL NORMAL           CONTAMINATION         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         >0.2         NEG         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185(m)         >10         7         11         6           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185(m)         >20         <1         <1         <1           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185(m)         >20         <1         <1         <1         <1           Silver         ppm         ASTM D5185(m)         >3 <th>Machine Age</th> <th>hrs</th> <th>Client Info</th> <th></th> <th>3728</th> <th>3357</th> <th>3201</th>	Machine Age	hrs	Client Info		3728	3357	3201
Sample Status	Oil Age	hrs	Client Info		0	250	3065
Fuel	Oil Changed		Client Info		N/A	Changed	Changed
Fuel   WC Method   S	Sample Status				NORMAL	NORMAL	NORMAL
Water Glycol         WC Method         >0.2         NEG         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185(m)         >100         7         11         6           Chromium         ppm         ASTM D5185(m)         >20         <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185(m)	>100	7	11	6
Titanium         ppm         ASTM D5185(m)         0         0         <1	Chromium	ppm	ASTM D5185(m)	>20	<1	<1	<1
Silver	Nickel	ppm	ASTM D5185(m)	>4	<1	<1	0
Aluminum	Titanium	ppm	ASTM D5185(m)		0	0	<1
Lead	Silver	ppm	ASTM D5185(m)	>3	0	0	0
Copper         ppm         ASTM D5185(m)         >330         <1	Aluminum	ppm	ASTM D5185(m)	>20	2	2	1
Tin         ppm         ASTM D5185(m)         >15         0         <1	Lead	ppm	ASTM D5185(m)	>40	0	0	0
Antimony         ppm         ASTM D5185(m)         0         0         <1	Copper	ppm	ASTM D5185(m)	>330	<1	1	<1
Vanadium         ppm         ASTM D5185(m)         0         0         0           Beryllium         ppm         ASTM D5185(m)         0         0         0           Cadmium         ppm         ASTM D5185(m)         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         250         6         49         56           Barium         ppm         ASTM D5185(m)         10         0         0         0           Molybdenum         ppm         ASTM D5185(m)         100         55         59         59           Manganese         ppm         ASTM D5185(m)         450         938         1144         1114           Calcium         ppm         ASTM D5185(m)         3000         981         839         811           Phosphorus         ppm         ASTM D5185(m)         1150         1007         1102         1058           Zinc         ppm         ASTM D5185(m)         1350         1131         1264         1229           Sulfur         ppm         ASTM D5185(m)         225         8         5	Tin	ppm	ASTM D5185(m)	>15	0	<1	0
Vanadium         ppm         ASTM D5185(m)         0         0         0           Beryllium         ppm         ASTM D5185(m)         0         0         0           Cadmium         ppm         ASTM D5185(m)         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         250         6         49         56           Barium         ppm         ASTM D5185(m)         10         0         0         0           Molybdenum         ppm         ASTM D5185(m)         100         55         59         59           Manganese         ppm         ASTM D5185(m)         450         938         1144         1114           Calcium         ppm         ASTM D5185(m)         3000         981         839         811           Phosphorus         ppm         ASTM D5185(m)         1150         1007         1102         1058           Zinc         ppm         ASTM D5185(m)         1350         1131         1264         1229           Sulfur         ppm         ASTM D5185(m)         225         8         5	Antimony	ppm	ASTM D5185(m)		0	0	<1
Cadmium         ppm         ASTM D5185(m)         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         250         6         49         56           Barium         ppm         ASTM D5185(m)         10         0         0         0           Molybdenum         ppm         ASTM D5185(m)         100         55         59         59           Manganese         ppm         ASTM D5185(m)         450         938         1144         1114           Calcium         ppm         ASTM D5185(m)         3000         981         839         811           Phosphorus         ppm         ASTM D5185(m)         1150         1007         1102         1058           Zinc         ppm         ASTM D5185(m)         1350         1131         1264         1229           Sulfur         ppm         ASTM D5185(m)         4250         2715         2938         2911           Lithium         ppm         ASTM D5185(m)         >25         8         5         2           Sodium         ppm         ASTM D5185(m)         >44	Vanadium	ppm			0	0	0
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         250         6         49         56           Barium         ppm         ASTM D5185(m)         10         0         0         0           Molybdenum         ppm         ASTM D5185(m)         100         55         59         59           Manganese         ppm         ASTM D5185(m)         450         938         1144         1114           Calcium         ppm         ASTM D5185(m)         3000         981         839         811           Phosphorus         ppm         ASTM D5185(m)         1150         1007         1102         1058           Zinc         ppm         ASTM D5185(m)         1350         1131         1264         1229           Sulfur         ppm         ASTM D5185(m)         4250         2715         2938         2911           Lithium         ppm         ASTM D5185(m)         >25         8         5         2           Sodium         ppm         ASTM D5185(m)         >24         1         4         4           Potassium         ppm         ASTM D5185(	Beryllium	ppm	ASTM D5185(m)		0	0	0
Boron	Cadmium	ppm	ASTM D5185(m)		0	0	0
Barium         ppm         ASTM D5185(m)         10         0         0         0           Molybdenum         ppm         ASTM D5185(m)         100         55         59         59           Manganese         ppm         ASTM D5185(m)         0         <1         <1           Magnesium         ppm         ASTM D5185(m)         450         938         1144         1114           Calcium         ppm         ASTM D5185(m)         3000         981         839         811           Phosphorus         ppm         ASTM D5185(m)         1150         1007         1102         1058           Zinc         ppm         ASTM D5185(m)         1350         1131         1264         1229           Sulfur         ppm         ASTM D5185(m)         4250         2715         2938         2911           Lithium         ppm         ASTM D5185(m)         4250         2715         2938         2911           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >25         8         5         2           Sodium         ppm         ASTM D5185(m) <th>ADDITIVES</th> <th></th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185(m)         100         55         59         59           Manganese         ppm         ASTM D5185(m)         0         <1	Boron	ppm	ASTM D5185(m)	250	6	49	56
Manganese         ppm         ASTM D5185(m)         0         <1	Barium	ppm	ASTM D5185(m)	10	0	0	0
Magnesium         ppm         ASTM D5185(m)         450         938         1144         1114           Calcium         ppm         ASTM D5185(m)         3000         981         839         811           Phosphorus         ppm         ASTM D5185(m)         1150         1007         1102         1058           Zinc         ppm         ASTM D5185(m)         1350         1131         1264         1229           Sulfur         ppm         ASTM D5185(m)         4250         2715         2938         2911           Lithium         ppm         ASTM D5185(m)         4250         2715         2938         2911           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >25         8         5         2           Sodium         ppm         ASTM D5185(m)         >44         1         4         4           Potassium         ppm         ASTM D5185(m)         >20         <1	Molybdenum	ppm	ASTM D5185(m)	100	55	59	59
Magnesium         ppm         ASTM D5185(m)         450         938         1144         1114           Calcium         ppm         ASTM D5185(m)         3000         981         839         811           Phosphorus         ppm         ASTM D5185(m)         1150         1007         1102         1058           Zinc         ppm         ASTM D5185(m)         1350         1131         1264         1229           Sulfur         ppm         ASTM D5185(m)         4250         2715         2938         2911           Lithium         ppm         ASTM D5185(m)         4250         2715         2938         2911           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >25         8         5         2           Sodium         ppm         ASTM D5185(m)         >44         1         4         4           Potassium         ppm         ASTM D5185(m)         >20         <1	Manganese		ASTM D5185(m)		0	<1	<1
Phosphorus         ppm         ASTM D5185(m)         1150         1007         1102         1058           Zinc         ppm         ASTM D5185(m)         1350         1131         1264         1229           Sulfur         ppm         ASTM D5185(m)         4250         2715         2938         2911           Lithium         ppm         ASTM D5185(m)         <1	Magnesium	ppm	ASTM D5185(m)	450	938	1144	1114
Zinc         ppm         ASTM D5185(m)         1350         1131         1264         1229           Sulfur         ppm         ASTM D5185(m)         4250         2715         2938         2911           Lithium         ppm         ASTM D5185(m)         <1         0         <1           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >25         8         5         2           Sodium         ppm         ASTM D5185(m)         >44         1         4         4           Potassium         ppm         ASTM D5185(m)         >20         <1	Calcium	ppm	ASTM D5185(m)	3000	981	839	811
Sulfur         ppm         ASTM D5185(m)         4250         2715         2938         2911           Lithium         ppm         ASTM D5185(m)         4250         2715         2938         2911           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >25         8         5         2           Sodium         ppm         ASTM D5185(m)         >44         1         4         4           Potassium         ppm         ASTM D5185(m)         >20         <1         1         <1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         ASTM D7844*         >3         0         0         0           Nitration         Abs/cm         ASTM D7624*         >20         7.4         9.0         8.5	Phosphorus	ppm	ASTM D5185(m)	1150	1007	1102	1058
Lithium         ppm         ASTM D5185(m)         <1	Zinc	ppm	ASTM D5185(m)	1350	1131	1264	1229
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >25         8         5         2           Sodium         ppm         ASTM D5185(m)         >44         1         4         4           Potassium         ppm         ASTM D5185(m)         >20         <1         1         <1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         ASTM D7844*         >3         0         0         0           Nitration         Abs/cm         ASTM D7624*         >20         7.4         9.0         8.5	Sulfur	ppm	ASTM D5185(m)	4250	2715	2938	2911
Silicon         ppm         ASTM D5185(m)         >25         8         5         2           Sodium         ppm         ASTM D5185(m)         >44         1         4         4           Potassium         ppm         ASTM D5185(m)         >20         <1	Lithium	ppm	ASTM D5185(m)		<1	0	<1
Sodium         ppm         ASTM D5185(m)         >44         1         4         4         4           Potassium         ppm         ASTM D5185(m)         >20         <1	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185(m)         >20         <1	Silicon	ppm	ASTM D5185(m)	>25	8	5	2
INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         ASTM D7844*         >3         0         0         0           Nitration         Abs/cm         ASTM D7624*         >20         7.4         9.0         8.5	Sodium	ppm	ASTM D5185(m)	>44	1	4	4
Soot %         %         ASTM D7844*         >3         0         0         0           Nitration         Abs/cm         ASTM D7624*         >20         7.4         9.0         8.5	Potassium	ppm	ASTM D5185(m)	>20	<1	1	<1
<b>Nitration</b> Abs/cm ASTM D7624* >20 <b>7.4</b> 9.0 8.5	INFRA-RED		method	limit/base	current	history1	history2
<b>Nitration</b> Abs/cm ASTM D7624* >20 <b>7.4</b> 9.0 8.5	Soot %	%	ASTM D7844*	>3	0	0	0
		Abs/.1mm	ASTM D7415*				19.4



# **OIL ANALYSIS REPORT**









CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No. Lab Number

: PC : 02619156 Unique Number : 5736266

Received **Tested** Diagnosed

:01 Mar 2024 : 01 Mar 2024

: 01 Mar 2024 - Wes Davis

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 Green Infrastructure and Partners Inc (GIPI) - 286 - Shoring & Foundations 151 Ram Forest Rd, Stouffville, ON CA L4A 2G8

Test Package : MOB 1 (Additional Tests: KV40, VI) To discuss this sample report, contact Customer Service at 1-800-268-2131. Contact: Shannon Abbott sabbott@gipi.com T: (905)750-5900

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.