

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Machine Id

JOHN DEERE 600-161

Diesel Engine

Fluid PETRO CANADA DURON SHP 15W40 (26 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.

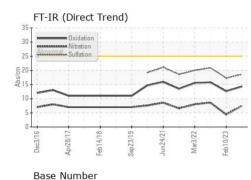
Fluid Condition

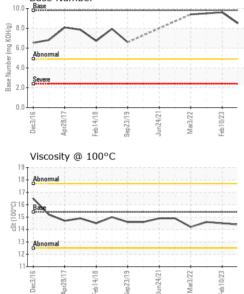
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0114634	PCA0078557	PCA0070766
Sample Date		Client Info		26 Mar 2024	10 Feb 2023	03 Aug 2022
Machine Age	hrs	Client Info		7449	6950	6400
Oil Age	hrs	Client Info		451	600	500
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>2.1	<1.0	<1.0	<1.0
Water		WC Method	>0.21	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>51	22	0	17
Chromium	ppm	ASTM D5185m	>11	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>31	3	0	1
Lead	ppm	ASTM D5185m	>26	0	0	<1
Copper	ppm	ASTM D5185m	>26	1	<1	<1
Tin	ppm	ASTM D5185m	>4	0	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
	1-1			U	0	0
ADDITIVES	le le	method	limit/base	current	history1	history2
ADDITIVES Boron	ppm		limit/base	-	-	-
		method		current	history1	history2
Boron	ppm	method ASTM D5185m	0	current	history1	history2 4
Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0	current <1 0	history1 1 0	history2 4 <1
Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current <1 0 62	history1 1 0 62	history2 4 <1 56
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current <1 0 62 <1	history1 1 0 62 0 921 1079	history2 4 <1 56 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current <1 0 62 <1 1059	history1 1 0 62 0 921 1079 1056	history2 4 <1 56 <1 893 1086 922
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270	current <1 0 62 <1 1059 1120	history1 1 0 62 0 921 1079 1056 1208	history2 4 <1 56 <1 893 1086 922 1207
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current <1 0 62 <1 1059 1120 1075	history1 1 0 62 0 921 1079 1056 1208 2960	history2 4 <1 56 <1 893 1086 922
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270	current <1 0 62 <1 1059 1120 1075 1353	history1 1 0 62 0 921 1079 1056 1208 2960 history1	history2 4 <1 56 <1 893 1086 922 1207
Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 Iimit/base	current <1 0 62 <1 1059 1120 1075 1353 3820 current 6	history1 1 0 62 0 921 1079 1056 1208 2960 history1 5	history2 4 <1 56 <1 893 1086 922 1207 2713 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	current <1 0 62 <1 1059 1120 1075 1353 3820 current 6 2	history1 1 0 62 0 921 1079 1056 1208 2960 history1 5 0	history2 4 <1 56 <1 893 1086 922 1207 2713 history2 4 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >22 >31 >20	current <1 0 62 <1 1059 1120 1075 1353 3820 current 6	history1 1 0 62 0 921 1079 1056 1208 2960 history1 5	history2 4 <1 56 <1 893 1086 922 1207 2713 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >22 >31	current <1 0 62 <1 1059 1120 1075 1353 3820 current 6 2	history1 1 0 62 0 921 1079 1056 1208 2960 history1 5 0	history2 4 <1 56 <1 893 1086 922 1207 2713 history2 4 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >22 >31 >20	current <1 0 62 <1 1059 1120 1075 1353 3820 current 6 2 1 current 0 0.7	history1 1 0 62 0 921 1079 1056 1208 2960 history1 5 0 <1 history1 0.1	history2 4 <1 56 <1 893 1086 922 1207 2713 history2 4 2 4 2 history2 0.9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >22 >31 >20	current <1 0 62 <1 1059 1120 1075 1353 3820 current 6 2 1 current 0 0.7 7.5	history1 1 0 62 0 921 1079 1056 1208 2960 history1 5 0 <1 history1	history2 4 <1 56 <1 893 1086 922 1207 2713 history2 4 2 2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >22 >31 >20	current <1 0 62 <1 1059 1120 1075 1353 3820 current 6 2 1 current 0 0.7	history1 1 0 62 0 921 1079 1056 1208 2960 history1 5 0 <1 history1 0.1	history2 4 <1 56 <1 893 1086 922 1207 2713 history2 4 2 4 2 history2 0.9
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	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >22 >31 >20 <i>limit/base</i> >3 >20	current <1 0 62 <1 1059 1120 1075 1353 3820 current 6 2 1 current 0 0.7 7.5	history1 1 0 62 0 921 1079 1056 1208 2960 history1 5 0 <1 history1 0.1 4.4	history2 4 <1 56 <1 893 1086 922 1207 2713 history2 4 2 history2 0.9 8.6
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	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >22 >31 >20 imit/base >3 >20	current <1 0 62 <1 1059 1120 1075 1353 3820 current 6 2 1 current 0.7 7.5 18.6	history1 1 0 62 0 921 1079 1056 1208 2960 history1 5 0 <1 0.1 4.4 17.3	history2 4 <1 56 <1 893 1086 922 1207 2713 history2 4 2 history2 0.9 8.6 20.9



OIL ANALYSIS REPORT





	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	
*	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE	
Mar3/22 Feb10/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML	
Ma Feb1	Odor	scalar	*Visual	NORML	NORML	NORML	NORML	
	Emulsified Water	scalar	*Visual	>0.21	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	15.4	14.4	14.5	14.6	
	GRAPHS							
	Iron (ppm)			100	Lead (ppm)			
33				80	Severe			
Mar3/22 Feb 10/23	150-			00				
	100-			E 40				
	50 - Abnormal			20	Abnormal			
	0							
	Dec3/16 Apr28/17 Feb 14/18	Sep23/19	Mar3/22	Feb 10/23	Dec3/16 Apr28/17	Sep23/19 Jun24/21	Mar3/22 Feb10/23	
	Dec Aprá Feb1	Sep2	Ma	L G B L	Dec	Sep2	Ma Feb1	
	Aluminum (ppm)				Chromium (p	pm)		
	60 50			25	Severe			
	40			20	• • • • • • • • • • • • • • • • • • •	d		
23	E 30 Abnormal			15 E	Abnormal			
Mar3/22 Feb 10/23	20-			10	1			
e E	10			5				
	049/	- 61/	/22-	0		- 10 - 10 - 10	/22	
	Dec3/16 Apr28/17 Feb14/18	Sep23/19	Mar3/22	Feb 10/23	Dec3/16 Apr28/17	Sep23/19	Mar3/22 Feb 10/23	
	Copper (ppm)			Silicon (ppm)				
	150 T			40	Timera			
	Severe			30				
E				툡 20	Abnormal			
-	50							
	Abnormal			10				
	0 18	19	22	0		19	22	
	Dec3/16 Apr28/17 Feb14/18	Sep 23/19	Mar3/22	Heb 10/23	Dec3/16	Sep23/19 Sep23/19	Mar3/22 -	
	Viscosity @ 100°C	01	-	-	Base Number		LL_	
	²⁰ I							
	18 - Abnormal			8.0 6.0 By KOH(d) 8 8 8 8 9 2.0	\sim	A		
10000	3 16 - Bose			j 6.0	Abnormal	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
ŝ	Abnormal				+			
	12			a 2.0	Severe			
		9	5	+ 0.0	9 2 3		3	
	Dec3/16 Apr28/17 Feb 14/18	Sep 23/19	Mar3/22	Heb 10/23	Dec3/16 Apr28/17	Sep23/19 .	Mar3/22 Feb10/23	
	Fe A	ŏ.		I		n Se Ju	ے ہے۔ ب	
Sample No.	WearCheck USA - 501 PCA0114634 06138331 10963139	es Davis	GE MARSHALL EXCAVATION 1351 JOLIET RD VALPARAISO, IN US 46385					
Test Package	MOB 1 (Additional Tes)			Contact: MARK STEFFEL		

Test Package : MOB 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)

Certificate 12367

Contact/Location: MARK STEFFEL - GEMVAL

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