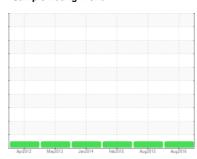


OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id **E-45** Component **Hydraulic System** Fluid

MOBIL DTE 10 (43 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 component. The amount and size of particulates present in the system is acceptable.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sample Date Client Info Q3 Aug 2016 05 Aug 2015 16 Feb 2015 Machine Age hrs Client Info 27322 21122 17793 Oil Age hrs Client Info 27322 0 0 0 Oil Age hrs Client Info N/A N/A N/A Not Changd NORMAL NORMAL NORMAL WEAR METALS method militibase current history1 history2 Iron ppm ASTM D5185m 550 <1 2 3 Chromium ppm ASTM D5185m 0 <1 <1 <1 Nickel ppm ASTM D5185m 0 0 0 0 Silver ppm ASTM D5185m 0 0 0 0 Silver ppm ASTM D5185m 0 0 0 0 Lead ppm ASTM D5185m 0 0 0 0 Lead ppm ASTM D5185m 1 0 2 Copper ppm ASTM D5185m 0 0 0 0 Lead ppm ASTM D5185m 0 0 0 0 Antimony ppm ASTM D5185m 0 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Barium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Barium ppm ASTM D5185m 0 0 0 <1 Manganese ppm ASTM D5185m 0 0 0 <1 Manganese ppm ASTM D5185m 0 0 0 <1 Manganese ppm ASTM D5185m 0 0 0 <1 Manganesum ppm ASTM D5185m 0 0 0 0 <1 Manganesum ppm ASTM D5185m 0 0 0 0 <1 Manganesum ppm ASTM D5185m 0 0 0 0 0 Prosphorus ppm ASTM D5185m 0 0 0 0 0 Prosphorus ppm ASTM D5185m 0 0 0 0 0 0 Prosphorus ppm ASTM D5185m 0 0 0 0 0 0 0 Prosphorus ppm ASTM D5185m 0 0 0 0 0 0 0 0 0			Apr2012	May2013 Jan2014	Feb2015 Aug2015	Aug2016	
Client Info	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 27322 21122 17793 Oil Age hrs Client Info 27322 0 0 Oil Changed Client Info N/A N/A N/A N/A Not Changd Sample Status NORMAL NORMAL NORMAL WEAR METALS method Imit/base current history1 history2 Iron ppm ASTM D5185m >50 <1 2 3 Chromium ppm ASTM D5185m 0 <1 <1 Nickel ppm ASTM D5185m 0 0 <1 Titanium ppm ASTM D5185m 0 0 0 Silver ppm ASTM D5185m 0 0 0 Aluminum ppm ASTM D5185m 0 0 0 Aluminum ppm ASTM D5185m 1 0 0 Lead ppm ASTM D5185m 1 0 0 Capper ppm ASTM D5185m 0 0 0 Antimony ppm ASTM D5185m 0 0 0 Antimony ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method Imit/base current history1 history2 Boron ppm ASTM D5185m 16 0 87 Manganese ppm ASTM D5185m 0 0 0 0 ADDITIVES method Imit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 ADDITIVES method Imit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 ADDITIVES method Imit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 ASTM D5185m 0 0 0 0 0 ADDITIVES method Imit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 0 ASTM D5185m 0 0 0 0 0 0 0 ASTM D5185m 0 0 0 0 0 0 0 ASTM D5185m 0 0 0 0 0 0 0 0 0 ASTM D5185m 0 0 0 0 0 0 0 0 0 ASTM D5185m 0 0 0 0 0 0 0 0 0	Sample Number		Client Info		MHI005905	MHI148073	RP148094
Oil Age hrs Client Info 27322 0 0 Oil Changed Client Info N/A N/A N/A Not Changed Sample Status method limit/base normal history1 history2 Iron ASTM D5185m >50 <1 2 3 Chromium ppm ASTM D5185m 0 <1 <1 Okckel ppm ASTM D5185m 0 0 <1 <1 Silver ppm ASTM D5185m 0 0 0 0 Silver ppm ASTM D5185m 0 0 0 0 Aluminum ppm ASTM D5185m 0 0 0 0 Lead ppm ASTM D5185m 1 0 2 2 Copper ppm ASTM D5185m 0 0 0 0 Cardium ppm ASTM D5185m 0 0 0 0 ADDITIVES met	Sample Date		Client Info		03 Aug 2016	05 Aug 2015	16 Feb 2015
Oil Changed Sample Status Client Info N/A NORMAL N/A NORMAL NoRMAL NORMAL NoRMAL NORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 <1	Machine Age	hrs	Client Info		27322	21122	17793
NORMAL NORMAL NORMAL NORMAL WEAR METALS method limil/base current history1 history2 history2 lron ppm ASTM D5185m >50 <1 2 3 3 Chromium ppm ASTM D5185m 0 <1 <1 <1 <1 <1 <1 <1	Oil Age	hrs	Client Info		27322	0	0
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 <1	Oil Changed		Client Info		N/A	N/A	Not Changd
Chromium	Sample Status				NORMAL	NORMAL	NORMAL
Chromium ppm ASTM D5185m 0 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>50	<1	2	3
Titanium ppm ASTM D5185m 0 0 0 0 Silver ppm ASTM D5185m 0 0 0 0 Aluminum ppm ASTM D5185m <1 0 0 0 Lead ppm ASTM D5185m <1 4 3 3 1 0 2 3 3 3	Chromium	ppm	ASTM D5185m		0	<1	<1
Silver ppm ASTM D5185m 0 0 0 Aluminum ppm ASTM D5185m <1 0 0 Lead ppm ASTM D5185m 1 0 2 Copper ppm ASTM D5185m 0 0 0 Tin ppm ASTM D5185m 0 0 0 Antimony ppm ASTM D5185m 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 Boron ppm ASTM D5185m 16 0 87 Molydedenum ppm ASTM D5185m 0 0 <1 0 Manganesium ppm ASTM D5185m 0 0 <1 0 Manganesium ppm ASTM D5185m 106 67 50 Phosph	Nickel	ppm	ASTM D5185m		<1	0	<1
Astronomic	Titanium	ppm	ASTM D5185m		0	0	0
Lead ppm ASTM D5185m 1 0 2 Copper ppm ASTM D5185m <1	Silver	ppm	ASTM D5185m		0	0	0
Copper ppm ASTM D5185m <1 4 3 Tin ppm ASTM D5185m 0 0 0 Antimony ppm ASTM D5185m 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 Boron ppm ASTM D5185m <1	Aluminum	ppm	ASTM D5185m		<1	0	0
Tin	Lead	ppm	ASTM D5185m		1	0	2
Antimony ppm ASTM D5185m	Copper	ppm	ASTM D5185m		<1	4	3
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 <1 0 0 Barium ppm ASTM D5185m 16 0 87 Molybdenum ppm ASTM D5185m 0 0 <1 Manganese ppm ASTM D5185m 0 0 <1 Magnesium ppm ASTM D5185m 106 67 50 Phosphorus ppm ASTM D5185m 462 356 330 Zinc ppm ASTM D5185m 73 406 394 Sulfur ppm ASTM D5185m 2014 5030 4928 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+30 <1 8	Tin	ppm	ASTM D5185m		0	0	0
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m <1 0 0 Barium ppm ASTM D5185m 16 0 87 Molybdenum ppm ASTM D5185m 0 0 <1 Manganese ppm ASTM D5185m 0 0 <1 Magnesium ppm ASTM D5185m <1 2 0 Calcium ppm ASTM D5185m 106 67 50 Phosphorus ppm ASTM D5185m 462 356 330 Zinc ppm ASTM D5185m 73 406 394 Sulfur ppm ASTM D5185m 2014 5030 4928 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+30 <1 8	Antimony	ppm	ASTM D5185m		<1	0	0
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m <1	Vanadium	ppm	ASTM D5185m		0	0	0
Boron ppm ASTM D5185m 16 0 0 87	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 16 0 87 Molybdenum ppm ASTM D5185m 0 0 -1 Manganese ppm ASTM D5185m 0 0 -1 Magnesium ppm ASTM D5185m -1 2 0 Calcium ppm ASTM D5185m 106 67 50 Phosphorus ppm ASTM D5185m 462 356 330 Zinc ppm ASTM D5185m 73 406 394 Sulfur ppm ASTM D5185m 2014 5030 4928 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+30 <1 8 2 Sodium ppm ASTM D5185m >+30 <1 8 2 Sodium ppm ASTM D5185m >+30 <1 8 2 Sodium ppm ASTM D5185m >+30 <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 D5185m 0 0 <1 Manganese ppm ASTM D5185m 0 0 <1	Boron	ppm	ASTM D5185m		<1	0	0
Manganese ppm ASTM D5185m 0 0 <1 Magnesium ppm ASTM D5185m <1	Barium	ppm	ASTM D5185m		16	0	87
Magnesium ppm ASTM D5185m <1 2 0 Calcium ppm ASTM D5185m 106 67 50 Phosphorus ppm ASTM D5185m 462 356 330 Zinc ppm ASTM D5185m 73 406 394 Sulfur ppm ASTM D5185m 2014 5030 4928 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+30 <1	Molybdenum	ppm	ASTM D5185m		0	0	<1
Calcium ppm ASTM D5185m 106 67 50 Phosphorus ppm ASTM D5185m 462 356 330 Zinc ppm ASTM D5185m 73 406 394 Sulfur ppm ASTM D5185m 2014 5030 4928 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+30 <1	Manganese	ppm	ASTM D5185m		0	0	<1
Phosphorus ppm ASTM D5185m 462 356 330 Zinc ppm ASTM D5185m 73 406 394 Sulfur ppm ASTM D5185m 2014 5030 4928 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+30 <1	Magnesium	ppm	ASTM D5185m		<1	2	0
Zinc ppm ASTM D5185m 73 406 394	Calcium	ppm	ASTM D5185m		106	67	50
Sulfur ppm ASTM D5185m 2014 5030 4928 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+30 <1	Phosphorus	ppm	ASTM D5185m		462	356	330
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+30 <1	Zinc	ppm	ASTM D5185m		73	406	394
Silicon ppm ASTM D5185m >+30 <1 8 2 Sodium ppm ASTM D5185m 4 1 9 Potassium ppm ASTM D5185m >20 0 4 0 Water % ASTM D6304 >0.1 0.003 0.005 0.020 ppm Water ppm ASTM D6304 >1000 30 50 200 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 319 565 482 Particles >6μm ASTM D7647 >1300 174 308 262 Particles >14μm ASTM D7647 >160 29 52 44 Particles >21μm ASTM D7647 >40 10 17 15 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 15/15/12 16/15/13 16/15/13	Sulfur	ppm	ASTM D5185m		2014	5030	4928
Sodium ppm ASTM D5185m 4 1 9 Potassium ppm ASTM D5185m >20 0 4 0 Water % ASTM D6304 >0.1 0.003 0.005 0.020 ppm Water ppm ASTM D6304 >1000 30 50 200 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 319 565 482 Particles >6μm ASTM D7647 >1300 174 308 262 Particles >14μm ASTM D7647 >160 29 52 44 Particles >21μm ASTM D7647 >40 10 17 15 Particles >38μm ASTM D7647 >10 1 2 2 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 15/15/12 16/15/13 16/15/13	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 4 0 Water % ASTM D6304 >0.1 0.003 0.005 0.020 ppm Water ppm ASTM D6304 >1000 30 50 200 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 319 565 482 Particles >6μm ASTM D7647 >1300 174 308 262 Particles >14μm ASTM D7647 >160 29 52 44 Particles >21μm ASTM D7647 >40 10 17 15 Particles >38μm ASTM D7647 >10 1 2 2 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 15/15/12 16/15/13 16/15/13	Silicon	ppm	ASTM D5185m	>+30	<1	8	2
Water % ASTM D6304 >0.1 0.003 0.005 0.020 ppm Water ppm ASTM D6304 >1000 30 50 200 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 319 565 482 Particles >6μm ASTM D7647 >1300 174 308 262 Particles >14μm ASTM D7647 >160 29 52 44 Particles >21μm ASTM D7647 >40 10 17 15 Particles >38μm ASTM D7647 >10 1 2 2 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 15/15/12 16/15/13 16/15/13	Sodium	ppm	ASTM D5185m		4	1	9
Water % ASTM D6304 >0.1 0.003 0.005 0.020 ppm Water ppm ASTM D6304 >1000 30 50 200 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 319 565 482 Particles >6μm ASTM D7647 >1300 174 308 262 Particles >14μm ASTM D7647 >160 29 52 44 Particles >21μm ASTM D7647 >40 10 17 15 Particles >38μm ASTM D7647 >10 1 2 2 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 15/15/12 16/15/13 16/15/13	Potassium	ppm	ASTM D5185m	>20	0	4	0
FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 319 565 482 Particles >6μm ASTM D7647 >1300 174 308 262 Particles >14μm ASTM D7647 >160 29 52 44 Particles >21μm ASTM D7647 >40 10 17 15 Particles >38μm ASTM D7647 >10 1 2 2 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 15/15/12 16/15/13 16/15/13	Water		ASTM D6304	>0.1	0.003	0.005	0.020
Particles >4μm ASTM D7647 >5000 319 565 482 Particles >6μm ASTM D7647 >1300 174 308 262 Particles >14μm ASTM D7647 >160 29 52 44 Particles >21μm ASTM D7647 >40 10 17 15 Particles >38μm ASTM D7647 >10 1 2 2 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 15/15/12 16/15/13 16/15/13	ppm Water	ppm	ASTM D6304	>1000	30	50	200
Particles >6μm ASTM D7647 >1300 174 308 262 Particles >14μm ASTM D7647 >160 29 52 44 Particles >21μm ASTM D7647 >40 10 17 15 Particles >38μm ASTM D7647 >10 1 2 2 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 15/15/12 16/15/13 16/15/13	FLUID CLEANLIN	ESS	method	limit/base	current	history1	history2
Particles >6μm ASTM D7647 >1300 174 308 262 Particles >14μm ASTM D7647 >160 29 52 44 Particles >21μm ASTM D7647 >40 10 17 15 Particles >38μm ASTM D7647 >10 1 2 2 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 15/15/12 16/15/13 16/15/13	Particles >4µm		ASTM D7647	>5000	319	565	482
Particles >21μm ASTM D7647 >40 10 17 15 Particles >38μm ASTM D7647 >10 1 2 2 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 15/15/12 16/15/13 16/15/13	Particles >6µm		ASTM D7647	>1300	174	308	262
Particles >21μm ASTM D7647 >40 10 17 15 Particles >38μm ASTM D7647 >10 1 2 2 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 15/15/12 16/15/13 16/15/13	Particles >14µm			>160			44
Particles >38μm ASTM D7647 >10 1 2 2 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 15/15/12 16/15/13 16/15/13	Particles >21μm		ASTM D7647	>40	10	17	15
Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 15/15/12 16/15/13 16/15/13	Particles >38µm		ASTM D7647	>10	1	2	2
Oil Cleanliness ISO 4406 (c) >19/17/14 15/15/12 16/15/13 16/15/13	Particles >71μm			>3	0		
FLUID DEGRADATION method limit/base current history1 history2	Oil Cleanliness					16/15/13	16/15/13
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2

Acid Number (AN)

mg KOH/g ASTM D8045

0.219 0.371

Contact/Location: SERVICE MANAGER - MITDES

0.423



OIL ANALYSIS REPORT

