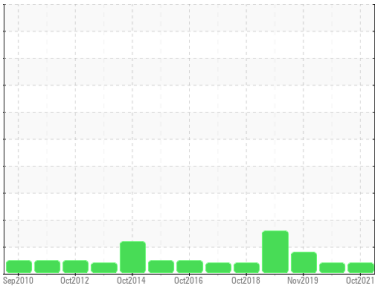
DIAMOND WTG ENGINEERING & SERVICES, INC.
a group company of MITSUBISHI HEAVY INDUSTRIES, LTD.

PROBLEM SUMMARY

Sample Rating Trend



VIS DEBRIS

Machine Id
C-10
Component
Hydraulic System
Fluid
MOBIL DTE 10 EXCEL 32 (--- GAL)

COMPONENT CONDITION SUMMARY

No relevant graphs to display

RECOMMENDATION

Re-sample to verify the actual oil condition. Replace filter elements. Change oil if cleanliness level does not improve after replacing the filter(s). We were unable to perform a particle count due to a high concentration of particles present in this sample.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL
Debris	scalar	*Visual	NONE	▲ **MODER**	NONE	NONE

Customer Id: MITODO
Sample No.: MHI019312
Lab Number: 05400228
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	Re-sample to verify the actual oil condition. Replace filter elements. Change oil if cleanliness level does not improve after replacing the filter(s).
Resample	---	---	?	Re-sample to verify the actual oil condition. Replace filter elements. Change oil if cleanliness level does not improve after replacing the filter(s).
Alert	---	---	?	We were unable to perform a particle count due to a high concentration of particles present in this sample.

HISTORICAL DIAGNOSIS

12 Oct 2020 Diag: Don Baldridge

ISO

Re-sample to verify the actual oil condition. Replace filter elements. Change oil if cleanliness level does not improve after replacing the filter(s).All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid.

view report

08 Nov 2019 Diag: Doug Bogart

ISO

Re-sample to verify the actual oil condition. Replace filter elements. Change oil if cleanliness level does not improve after replacing the filter(s).All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid.

view report

05 Nov 2019 Diag: Doug Bogart

ISO

Re-sample to verify the actual oil condition. Replace filter elements. Change oil if cleanliness level does not improve after replacing the filter(s).All component wear rates are normal. There is a high amount of particulates present in the oil. The AN level is acceptable for this fluid.

view report

DIAMOND WTG ENGINEERING & SERVICES, INC.
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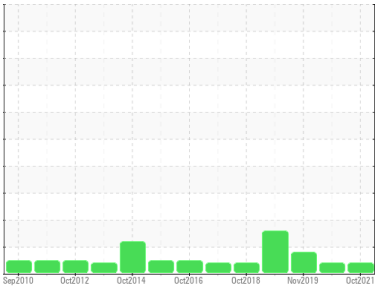
OIL ANALYSIS REPORT

Sample Rating Trend



VIS DEBRIS

Machine Id
C-10
Component
Hydraulic System
Fluid
MOBIL DTE 10 EXCEL 32 (--- GAL)

DIAGNOSIS

Recommendation
Re-sample to verify the actual oil condition. Replace filter elements. Change oil if cleanliness level does not improve after replacing the filter(s). We were unable to perform a particle count due to a high concentration of particles present in this sample.

Wear
All component wear rates are normal.

Contamination
Moderate concentration of visible dirt/debris present in the oil.

Fluid Condition
The AN level is acceptable for this fluid.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**MHI019312**	MHI025921	MHI019754
Sample Date		Client Info		**29 Oct 2021**	12 Oct 2020	08 Nov 2019
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**77860**	82283	683372
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	**10**	7	6
Chromium	ppm	ASTM D5185m		**0**	0	<1
Nickel	ppm	ASTM D5185m		**0**	<1	5
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m		**<1**	0	0
Aluminum	ppm	ASTM D5185m		**<1**	0	0
Lead	ppm	ASTM D5185m		**<1**	1	1
Copper	ppm	ASTM D5185m		**1**	2	<1
Tin	ppm	ASTM D5185m		**<1**	0	<1
Antimony	ppm	ASTM D5185m		**0**	0	2
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

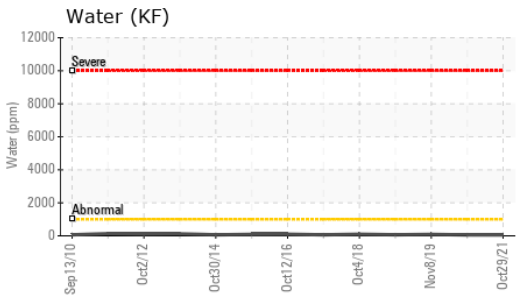
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**<1**	1	0
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**0**	0	0
Manganese	ppm	ASTM D5185m		**<1**	0	<1
Magnesium	ppm	ASTM D5185m		**0**	<1	0
Calcium	ppm	ASTM D5185m	120	**117**	110	103
Phosphorus	ppm	ASTM D5185m	475	**447**	422	420
Zinc	ppm	ASTM D5185m		**91**	86	109
Sulfur	ppm	ASTM D5185m	1275	**1648**	1518	911

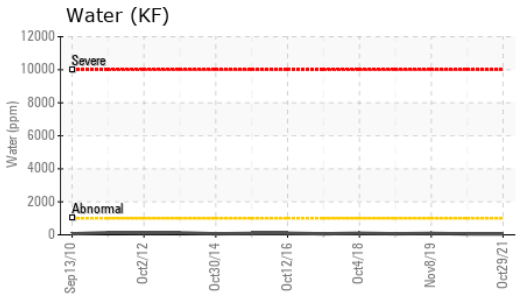
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+30	**0**	<1	0
Sodium	ppm	ASTM D5185m		**1**	2	2
Potassium	ppm	ASTM D5185m	>20	**0**	0	1
Water	%	ASTM D6304	>0.1	**0.005**	0.005	0.008
ppm Water	ppm	ASTM D6304	>1000	**51.8**	53.5	88.4

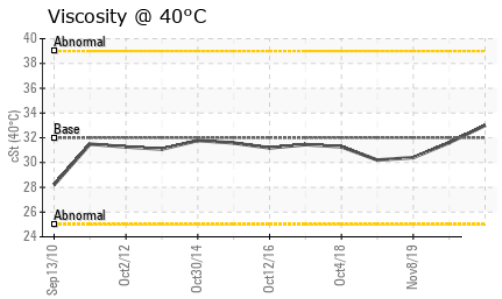
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	**---**	▲ 6925	▲ 6623
Particles >6µm		ASTM D7647	>1300	**---**	671	▲ 1753
Particles >14µm		ASTM D7647	>160	**---**	12	69
Particles >21µm		ASTM D7647	>40	**---**	2	14
Particles >38µm		ASTM D7647	>10	**---**	0	0
Particles >71µm		ASTM D7647	>3	**---**	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	**---**	▲ 20/17/11	▲ 20/18/13

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.128**	0.148	0.139

OIL ANALYSIS REPORT

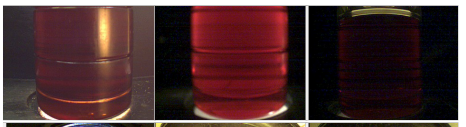




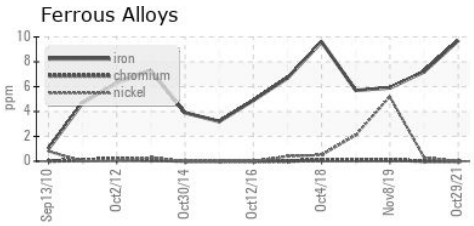


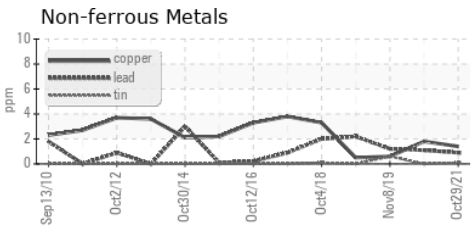
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	▲ **MODER**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

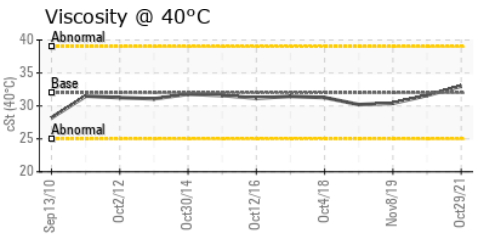
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	32	**33.0**	31.6	30.4

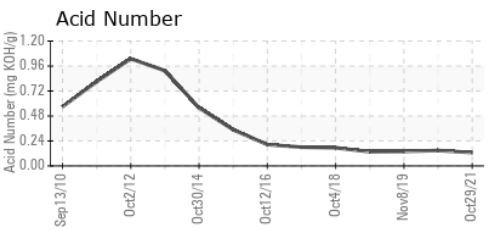
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS









Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MHI019312 **Received** : 15 Nov 2021
Lab Number : 05400228 **Diagnosed** : 16 Nov 2021
Unique Number : 9739378 **Diagnostician** : Jonathan Hester
Test Package : IND 2 (Additional Tests: KF)

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)

DIAMOND WTG - BULL CREEK - MPS BC
PO BOX 545
ODONNELL, TX
US 79351
Contact: GARY GRANT
gary.grant@diamondwtg.com
T: (806)439-6660
F: (806)439-6659