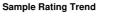


OIL ANALYSIS REPORT



ISO

HIAB 50282 - ABC SUPPLY

Component Hydraulic System Fluid AW HYDRAULIC OIL ISO 32 (--- GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a high amount of particulates present in the oil.

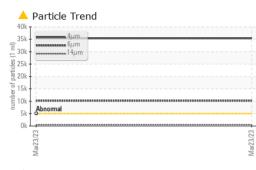
Fluid Condition

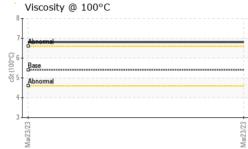
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

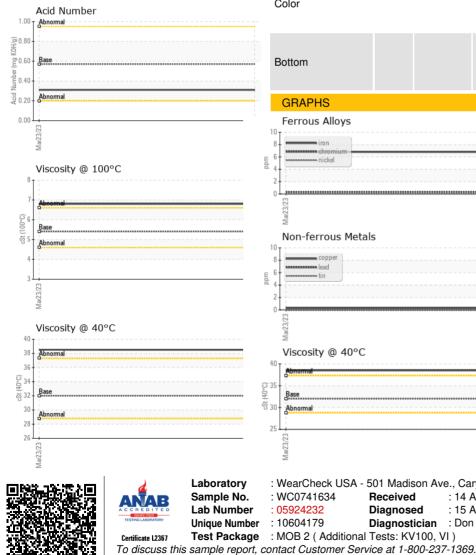
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0741634		
Sample Date		Client Info		23 Mar 2023		
Machine Age	yrs	Client Info		0		
Oil Age	yrs	Client Info		0		
Oil Changed		Client Info		Not Changd		
Sample Status				ABNORMAL		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	7		
Chromium	ppm	ASTM D5185m	>10	<1		
Nickel	ppm	ASTM D5185m	>10	0		
Titanium	ppm	ASTM D5185m		0		
Silver	ppm	ASTM D5185m		0		
Aluminum	ppm	ASTM D5185m	>10	<1		
Lead	ppm	ASTM D5185m	>10	0		
Copper	ppm	ASTM D5185m	>75	<1		
Tin	ppm	ASTM D5185m	>10	0		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	5	0		
Barium	ppm	ASTM D5185m	5	0		
Molybdenum	ppm	ASTM D5185m	5	0		
Manganese	ppm	ASTM D5185m		<1		
Magnesium	ppm	ASTM D5185m	25	3		
Calcium	ppm	ASTM D5185m	200	49		
Phosphorus	ppm	ASTM D5185m	300	331		
Zinc	ppm	ASTM D5185m	370	407		
Sulfur	ppm	ASTM D5185m	2500	4384		
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	1		
Sodium	ppm	ASTM D5185m		<1		
Potassium	ppm	ASTM D5185m	>20	<1		
FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	A 35362		
Particles >6µm		ASTM D7647	>1300	<u> </u>		
Particles >14µm		ASTM D7647	>160	<u> </u>		
Particles >21µm		ASTM D7647	>40	🔺 115		
Particles >38µm		ASTM D7647	>10	1		
Particles >71µm		ASTM D7647	>3	0		
Oil Cleanliness		ISO 4406 (c)	>19/17/14	A 22/21/16		
FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.57	0.31		



OIL ANALYSIS REPORT







fellow Metal scalar *Visual NONE Precipitate scalar *Visual NONE Sitt scalar *Visual NONE Debris scalar *Visual NONE Sand/Dirt scalar *Visual NONE Spearance scalar *Visual NORE Spearance scalar *Visual NORML NORML Stand/Dirt scalar *Visual NORML NORML Spearance scalar *Visual NORML NORML Ferrow Stater scalar *Visual NORML NORML Ferrows Alloys method limit/base current history1 history1 Solor Scalar Ferrous Alloys Solor Solor Solor <td< th=""><th>VISUAL</th><th></th><th>method</th><th>limit/base</th><th>current</th><th>history1</th><th>history2</th></td<>	VISUAL		method	limit/base	current	history1	history2
Precipitate scalar Visual NONE NONE Sitt scalar Visual NONE NONE Sadd/Dirt scalar Visual NONE NONE Scalar Visual NONE NONE Scalar Visual NORML NORML FLUID PROPERTIES method limit/base current history1 history2 Aisc @ 40°C cSt ASTM D445 32 38.5 FLUID PROPERTIES method limit/base current history1 history2 Aisc @ 40°C cSt ASTM D445 5.4 6.8 SAMPLE IMAGES method limit/base current history1 history2 Solor no image no image RGRAPHS Ferrous Alloys Viscosity @ 40°C	Vhite Metal	scalar	*Visual	NONE	NONE		
Precipitate scalar Visual NONE NONE	fellow Metal	scalar	*Visual	NONE	NONE		
Sitt scalar *Visual NONE NONE Scalar *Visual NONE LIGHT	Precipitate	scalar	*Visual	NONE	NONE		
Sand/Dirt scatar *Visual NONE NONE Appearance scalar *Visual NORML NORML		scalar	*Visual	NONE	NONE		
spearance scalar *Visual NORML bdor scalar *Visual NORML NORML mulsified Water scalar *Visual >0.1 NEG ree Water scalar *Visual >0.1 NEG FLUID PROPERTIES method limit/base current history1 history1 risc @ 40°C cSt ASTM D445 5.4 6.8 risc @ 100°C cSt ASTM D445 5.4 6.8 siccsity index (VI) Scale ASTM D445 5.4 6.8 Soltom Imit/base current history1 history1 Soltom Imit/base current history1 history1 Soltom Imit/base current history1 history1 Viscosity index (VI) Scale Scalar Non-ferrous Metals Imit index Imit index Imit index Imit index Imit index Soltom Imit index Imit index Imit index Imit index Soltom Imit index Imit index Imit index Imit index Soltom Imit index Imit index Imit index Imit index Soltom Imit index Imit index Imit index Imit index Soltom Imit index Imit index Imit index Imit index Soltom Imit index Imit index Imit index Imit index Soltom <td>Debris</td> <td>scalar</td> <td>*Visual</td> <td>NONE</td> <td>LIGHT</td> <td></td> <td></td>	Debris	scalar	*Visual	NONE	LIGHT		
scalar *Visual NORML Ddor scalar *Visual NORML mulsified Water scalar *Visual >0.1 NEG FLUID PROPERTIES method limit/base current history1 history1 fisc @ 40°C cSt ASTM D445 5.4 6.8 sicscalir Index (VI) Scale STM D445 5.4 6.8 sicscalir Index (VI) Scale ASTM D445 5.4 6.8 SAMPLE IMAGES method limit/base current history1 history2 Soltom Image no image no image no image Soltom Image no image no image no image Viscosity @ 40°C Graphe Image Image Image Viscosity @ 40°C Image Image Image Image Image Image Image Image Image Im					-		
Odor scalar *Visual NORML Enulsified Water scalar *Visual >0.1 NEG Free Water scalar *Visual >0.1 NEG FLUID PROPERTIES method limit/base current history1 history1 fisc @ 100°C cSt ASTM D445 5.4 6.8 Sample (With Counce (Vit) Scale ASTM D2270 102 135 SAMPLE IMAGES method Imit/base current history1 history1 Soltom Imit/base current history1 history1 Soltom Imit/base current history1 history1 Non-ferrous Metals Imit/base perticle Count Imit/base Imit/bas				-	-		
Emulsified Water scalar *Visual >0.1 NEG FLUID PROPERTIES method limit/base current history1 history1 Also @ 40°C cSt ASTM D445 32 38.5 FLUID PROPERTIES method limit/base current history1 history1 Also @ 40°C cSt ASTM D445 5.4 6.8 SAMPLE IMAGES method limit/base current history1 history1 Solor astm D2270 102 135 Solor ano image no image no image no image Solor ano image no image no image no image GRAPHS ferrous Alloys					-		
Fire Water scalar *Visual NEG FLUID PROPERTIES method limit/base current history1 history1 f/isc @ 40°C cSt ASTM D445 32 38.5 f/isc @ 100°C cSt ASTM D445 5.4 6.8 f/isc @ 100°C cSt ASTM D2270 102 135 SAMPLE IMAGES method limit/base current history1 history2 Solor no image no image no image no image Solor Particle Count GRAPHS Ferrous Alloys Viscosity @ 40°C Viscosity @ 40°C					-		
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Also @ 40°C cSt ASTM D445 32 38.5 Also @ 100°C cSt ASTM D445 5.4 6.8 Also cost (VI) Scale ASTM D2270 102 135 SAMPLE IMAGES method limit/base current history1 history2 Color imit/imit/base current history1 history2 Color imit/imit/base current history1 history2 Sottom imit/imit/imit/imit/imit/imit/imit/imit							
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Ariscosity Index (VI) Scale ASTM D2270 102 135 SAMPLE IMAGES method limit/base current history1 history1 Scolor no image no image no image no image no image no image no image no image no image no image no image no image no image no image	/isc @ 40°C	cSt	ASTM D445	32	38.5		
SAMPLE IMAGES method limit/base current history1 history1 Color Image no image no image Bottom Image no image no image GRAPHS Ferrous Alloys Image Image Image Image Im	/isc @ 100°C	cSt	ASTM D445	5.4	6.8		
Color no image no image Sottom no image no image GRAPHS Ferrous Alloys Viscosity @ 40°C Comment Section Compared Comment	/iscosity Index (VI)	Scale	ASTM D2270	102	135		
Color no image no image Bottom no image no image GRAPHS Ferrous Alloys		•	mothod	limit/bass	ourropt	historyd	history
Bottom no image no image	SAIVIF LE IIVIAGES)	memou	IIIIIVDase	current	history i	Thistory2
GRAPHS Ferrous Alloys	Color					no image	no image
Ferrous Alloys Particle Count Particle Count							
inon inon <td< td=""><td>Bottom</td><td></td><td></td><td></td><td></td><td>no image</td><td>no image</td></td<>	Bottom					no image	no image
iron iron 491,520 nickel 122,880 Severe 30,720 122,880 Non-ferrous Metals 1,920 Viscosity @ 40°C 400 Base Anormal Anormal 90,000						no image	no image
ECCEPT Copper Non-ferrous Metals 1,920 Eccept 1,920 Base 6,6,0 Anoma 1,920 Base 0,00 Anoma 1,920 Anoma 1,920 Anoma 1,920 Base 1,920 Anoma 1,920	GRAPHS				Particle Count	no image	no image
Comparing Solution	GRAPHS Ferrous Alloys			491.520		no image	no image
$\frac{1}{120}$ Non-ferrous Metals $\frac{1}{120}$	GRAPHS Ferrous Alloys				I	no image	
Non-ferrous Metals Non-ferrous Metals 1,220 1,220 1,220 1,220 1,220 1,220 1,220 1,220 1,220 1,220 1,220 1,220 30 8 2 0 480 120 30 8 2 0 4 14μ 21μ 36μ 71μ Acid Number 10000 10000 10000 10000 10000 10000 100000 100000 100000	GRAPHS Ferrous Alloys			122,880	Severe	no image	-24
Constrained	GRAPHS Ferrous Alloys			122,880	Severe	no image	T ²⁶
Constrained	GRAPHS Ferrous Alloys			122,880 30,720	Severe	no image	-24 -24 -22
Viscosity @ 40°C δ 2 0	GRAPHS Ferrous Alloys			122,880 30,720	Severe	no image	-24 -24 -22
Constrained	GRAPHS Ferrous Alloys			122,880 30,720	Severe Abnormal	no image	-24 -24 -22
Viscosity @ 40°C δ 2 0	GRAPHS Ferrous Alloys			122,880 30,720	Severe Abnormal	no image	-24 -24 -22
ECCEPT ECCEPT<	GRAPHS Ferrous Alloys			122,880 30,720	Severe	no image	-24
δροσια δμοτοικα	GRAPHS Ferrous Alloys			122,880 30,720 (m 1,320 2002 2002 2002 2002 2002 2002 2002	Severe	no image	-24 -24 -22 -20 -18 -16 -14
Viscosity @ 40°C 4μ 6μ 14μ 21μ 38μ 71μ Abnormal $Base$	GRAPHS Ferrous Alloys			122,880 30,720 (E 7,680 (C)(C) EV W ad sopped 480 1,920 480 120 120 30	Severe	no image	-24 -24 -22 -20 -18 -16 -14 -12
Viscosity @ 40°C 6μ 14μ 21μ 38μ 71μ Acid Number Acid Number <th< td=""><td>GRAPHS Ferrous Alloys</td><td></td><td></td><td>122,880 30,720 (E 7,680 (C)(C) EV W ad sopped 480 1,920 480 120 120 30</td><td>Severe</td><td>no image</td><td>-24 -24 -22 -20 -18 -16 -14</td></th<>	GRAPHS Ferrous Alloys			122,880 30,720 (E 7,680 (C)(C) EV W ad sopped 480 1,920 480 120 120 30	Severe	no image	-24 -24 -22 -20 -18 -16 -14
Actionum Actionum Base 0.00 Abnormal 0.00 Base 0.00	GRAPHS Ferrous Alloys			122,880 30,720 (m 1 a) 200 200 200 200 200 200 200 200 200 20	Severe	no image	-24 -24 -22 -20 -18 -16 -14 -12
Abnormal General General General Base	GRAPHS Ferrous Alloys			122,880 30,720 (In F Add spotter EC/C2/EW W spotter 480 1,920 480 120 30 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Severe Abnormal		-24 -24 -22 -20 -18 -16 -14 -12 -10 -8 -6
Base Base Abnomal ZDnommal ECZE ECZE	GRAPHS Ferrous Alloys			122,880 30,720 (m 1 a) 50,760 (m 1 a) 50,760 (m 1 a) 50,760 (m 1 a) 50,760 (m 1 a) 50,720 (m 1 a	Severe		-24 -24 -22 -20 -18 -16 -14 -12 -10 -8
Base Abnormal CZ2E CZ2E CZ2E	GRAPHS Ferrous Alloys			122,880 30,720 (m 1 a) 50,760 (m 1 a) 50,760 (m 1 a) 50,760 (m 1 a) 50,760 (m 1 a) 50,720 (m 1 a	Severe		-24 -24 -22 -20 -18 -16 -14 -12 -10 -8 -6
Abnormal 	GRAPHS Ferrous Alloys			122,880 30,720 (m 1 a) 50,760 (m 1 a) 50,760 (m 1 a) 50,760 (m 1 a) 50,760 (m 1 a) 50,720 (m 1 a	Severe		-24 -24 -22 -20 -18 -16 -14 -12 -10 -8 -6
	GRAPHS Ferrous Alloys			122,880 30,720 (m 1 a) 50,760 (m 1 a) 50,760 (m 1 a) 50,760 (m 1 a) 50,760 (m 1 a) 50,720 (m 1 a	Severe		-24 -24 -22 -20 -18 -16 -14 -12 -10 -8 -6
3/23 -	GRAPHS Ferrous Alloys			122,880 30,720 (m 1 a) 50,760 (m 1 a) 50,760 (m 1 a) 50,760 (m 1 a) 50,760 (m 1 a) 50,720 (m 1 a	Severe		-24 -24 -22 -20 -18 -16 -14 -12 -10 -8 -6
2.5 F.1 F.1	GRAPHS Ferrous Alloys			122,880 30,720 (m 130,720 (m 130,355) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c)	Severe		-24 -24 -22 -20 -18 -16 -14 -12 -10 -8 -6
Mar2 Mar2	Ferrous Alloys			122,880 30,720 (iii 1 a) 1,920 iiii 1 a) 1,920 iiiii 1,920 iiiii 1,920 iiiiii 1,920 iiiii 1,920 iiii 1,920 iiii 1,920 iiiii 1,920 iiiii 1,920 iiiii 1,920 iiii 1,920 iiii 1,920 iiii 1,920 iiii 1,920 iiii 1,920 iiii 1,920 iiii 1,920 iiii 1,920 iiiii 1,920 iiii 1,920 iii 1,920 i	Abnormal		-24 -24 -22 -20 -18 -16 -14 -12 -10 -8 -6

: 15 Aug 2023

Diagnostician : Don Baldridge

Diagnosed

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

