

# **OIL ANALYSIS REPORT**

## Area MIX ROOM C [98923531] KR-GR-003111 - WEST DUMPER (S/N MIX C - 11513059) Component

Hydraulic System

AW HYDRAULIC OIL ISO 68 (--- GAL)

### DIAGNOSIS

#### Recommendation

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor. ( Customer Sample Comment: 98923531 )

#### Wear

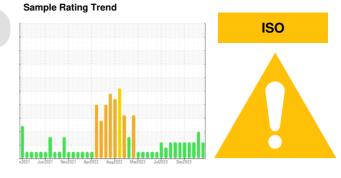
All component wear rates are normal.

#### Contamination

There is a high amount of silt (particulates < 14 microns in size) present in the oil.

#### Fluid Condition

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



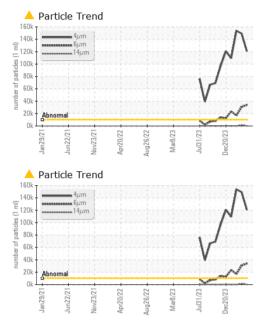
Sample Number Sample Date // I Machine Age // I Machine Age // I Machine Age // I Sample Status // I Sample Status // I CONTAMINAT// I WEAR METALS WEAR METALS WEAR METALS Nore // I Nickel // I Nickel // I Nickel // I Nickel // I Nickel // I Silver // I Aluminum // I Aluminum // I Aluminum // I Aluminum // I Copper // I Aluminum // I Copper // I Aluminum // I Copper // I Aluminum // I Solver // I Solfer // I Magnesie // I	Client In Client In Client In WC Methon M ASTM D518 M ASTM D518	hfo hfo hfo hfo d limit/ba hod >0.05 d limit/ba solution	NEG	PCA0120387 20 Mar 2024 0 0 N/A ABNORMAL NEG NEG history1 3 1 3 1 <1 <1 <1 0	PCA0116071 14 Mar 2024 0 0 N/A ABNORMAL history2 NEG history2 5 1 <1 <1 <1
Machine AgehrsOil AgehrsOil Changedsample StatusCONTAMINATIONWaterWEAR METALSIronpprChromiumpprNickelpprSilverpprAluminumpprLeadpprCopperpprCadmiumpprBoronpprBariumpprMaganesepprMagnesiumpprContAMINANTSSiliconSiliconpprSulfurpprSodiumpprSodiumpprSodiumpprParticles >4µmParticles >6µm	Client Ir Client Ir Client Ir Client Ir WC Metho WC Metho M ASTM D518 M ASTM D518	anfo       anfo       anfo       anfo       anfo       anfo       anfo       bill       anfo       bill       anfo       bill       bill <th>0 0 Not Changd ABNORMAL NEG NEG S S 1 1 0 0 0 0</th> <td>0 0 N/A ABNORMAL NEG history1 3 1 3 1 &lt;1 &lt;1</td> <td>0 0 N/A ABNORMAL history2 NEG history2 5 1 1 &lt;1</td>	0 0 Not Changd ABNORMAL NEG NEG S S 1 1 0 0 0 0	0 0 N/A ABNORMAL NEG history1 3 1 3 1 <1 <1	0 0 N/A ABNORMAL history2 NEG history2 5 1 1 <1
Oil AgehrsOil ChangedSample StatusCONTAMINATIONWaterWEAR METALSIronpprChromiumpprNickelpprTitaniumpprAluminumpprLeadpprCopperpprTinpprSariumpprBoronpprBariumpprMaganesepprCalciumpprCalciumpprSulfurpprSulfurpprSodiumpprSodiumpprFLUID CLEANLINEParticles >4µmparticles >6µm	Client In Client In Client In WC Methon M ASTM D518 M ASTM D518	nfo     limit/ba       d     limit/ba       nod     >0.05       d     limit/ba       85m     >20	0 Not Changd ABNORMAL SE Current S S 1 0 0 0 0	0 N/A ABNORMAL history1 NEG history1 3 1 <1 <1 <1	0 N/A ABNORMAL history2 NEG history2 5 1 1 <1
Oil ChangedSample StatusICONTAMINATIONWaterIWEAR METALSppmIronppmChromiumppmSilverppmAluminumppmLeadppmCopperppmCadmiumppmBoronppmBariumppmMagnesiumppmCalciumppmSulfurppmSiliconppmSodiumppmCONTAMINANTSSiliconSiliconppmSulfurppmSodiumppmSulfurppmSulfurppmSulfurppmSulfurppmPotassiumppmPotassiumppmParticles >4µmparticles >6µm	Client In metho WC Meth MC Metho M ASTM D518 M ASTM D518	Imit/ba           d         limit/ba           nod         >0.05           d         limit/ba           85m         >20	Not Changd ABNORMAL SE Current NEG S S 5 1 1 0 0 0 0	N/A ABNORMAL history1 NEG history1 3 1 <1 <1	N/A ABNORMAL history2 NEG history2 5 1 <1
Sample Status CONTAMINATION Water WEAR METALS Iron ppr Chromium ppr Nickel ppr Titanium ppr Silver ppr Aluminum ppr Lead ppr Copper ppr Cadmium ppr Cadmium ppr Barium ppr Barium ppr Malganese ppr Malganese ppr Magnesium ppr Calcium ppr Calcium ppr Silver ppr Silicon ppr Silicon ppr Silicon ppr Sodium ppr Potassium ppr FLUID CLEANLINE Particles >4µm Particles >4µm Particles >4µm	methor WC Methor methor n ASTM D518 n ASTM D518	d         limit/ba           nod         >0.05           d         limit/ba           d         limit/ba           85m         >20	ABNORMAL ase current NEG ase current 5 1 0 0 0 0 0	ABNORMAL history1 NEG history1 3 1 <1 <1 <1	ABNORMAL history2 NEG history2 5 1 <1
CONTAMINATION Water WEAR METALS Iron ppm Chromium ppm Nickel ppm Titanium ppm Silver ppm Aluminum ppm Lead ppm Copper ppm Cadmium ppm Cadmium ppm Cadmium ppm Barium ppm Magnesiem ppm Magnesiem ppm Calcium ppm Calcium ppm Calcium ppm Calcium ppm Silfur ppm Calcium ppm CoNTAMINANTS Silicon ppm CONTAMINANTS Silicon ppm Contassium ppm Catassium ppm	WC Methon methon n ASTM D518 n ASTM D518	>0.05           d         limit/ba           85m         >20	se current NEG se current 5 1 0 0 0 0	history1 NEG history1 3 1 <1 <1	history2 NEG history2 5 1 <1
WaterWEAR METALSIronprindChromiumppmChromiumppmNickelppmSilverppmAluminumppmLeadppmCopperppmTinppmCadmiumppmBoronppmBariumppmMalganeseppmMagnesiumppmCalciumppmZincppmSulfurppmSodiumppmSodiumppmPotassiumppmFLUID CLEANLINEParticles >4µmparticles >6µm	WC Methon methon n ASTM D518 n ASTM D518	>0.05           d         limit/ba           85m         >20	NEG scurrent 5 1 0 0 0 0	NEG history1 3 1 <1 <1	NEG history2 5 1 <1
WEAR METALS         Iron       ppm         Chromium       ppm         Nickel       ppm         Nickel       ppm         Silver       ppm         Aluminum       ppm         Lead       ppm         Copper       ppm         Cadmium       ppm         Cadmium       ppm         Boron       ppm         Manganese       ppm         Magnesium       ppm         Zinc       ppm         Sulfur       ppm         Sulfur       ppm         Sodium       ppm         Sodium       ppm         Potassium       ppm         Potassium       ppm         Potassium       ppm         Potassium       ppm         Particles >6µm       pm	method           n         ASTM D518           n         ASTM D518	d         limit/ba           85m         >20	se current 5 1 0 0 0 0	history1 3 1 <1 <1	history2 5 1 <1
Iron         ppm           Chromium         ppm           Nickel         ppm           Nickel         ppm           Silver         ppm           Aluminum         ppm           Lead         ppm           Copper         ppm           Yanadium         ppm           Cadmium         ppm           ADDITIVES         ppm           Boron         ppm           Manganese         ppm           Magnesium         ppm           Zinc         ppm           Sulfur         ppm           Sodium         ppm           Sodium         ppm           Potassium         ppm           Potassium         ppm           Potassium         ppm           Particles >6µm         ppm	n         ASTM D518	85m >20 85m >20 85m >20 85m 85m 85m >20 85m >20	5 1 0 0 0	3 1 <1 <1	5 1 <1
ChromiumppmNickelppmNickelppmTitaniumppmSilverppmAluminumppmLeadppmCopperppmCadmiumppmCadmiumppmADDITIVESppmBoronppmManganeseppmMagnesiumppmCalciumppmZincppmSulfurppmSodiumppmSodiumppmPraticles >4µmParticles >6µm	n         ASTM D518	85m >20 85m >20 85m 85m 85m >20 85m >20	1 0 0 0	1 <1 <1	1 <1
ChromiumppmNickelppmNickelppmTitaniumppmSilverppmAluminumppmLeadppmCopperppmTinppmCadmiumppmADDITIVESppmBoronppmManganeseppmMagnesiumppmCalciumppmZincppmSulfurppmSodiumppmSodiumppmFLUID CLEANLINEParticles >4µmParticles >6µm[1]	n         ASTM D518	85m >20 85m 85m 85m >20 85m >20	0 0 0	1 <1 <1	1 <1
Nickel ppm Titanium ppm Silver ppm Aluminum ppm Lead ppm Copper ppm Copper ppm Copper ppm Cadmium ppm Cadmium ppm ADDITIVES Boron ppm Barium ppm Molybdenum ppm Molybdenum ppm Magnesium ppm Calcium ppm Calcium ppm Zinc ppm Sulfur ppm Sulfur ppm CONTAMINANTS Silicon ppm Sodium ppm Potassium ppm Ptuticles >4µm Particles >6µm	n         ASTM D518	85m >20 85m 85m 85m >20 85m >20	0	<1	
Titanium ppm Silver ppm Aluminum ppm Lead ppm Copper ppm Tin ppm Cadmium ppm Cadmium ppm ADDITIVES Boron ppm Barium ppm Malybdenum ppm Manganese ppm Manganese ppm Calcium ppm Calcium ppm Zinc ppm Sulfur ppm Sulfur ppm CONTAMINANTS Silicon ppm Sodium ppm Potassium ppm FLUID CLEANLINE Particles >4µm Particles >6µm	n         ASTM D518	85m 85m >20 85m >20	0		<1
Silver ppr Aluminum ppr Lead ppr Copper ppr Tin ppr Vanadium ppr Cadmium ppr ADDITIVES Boron ppr Barium ppr Malganese ppr Magnesium ppr Calcium ppr Calcium ppr Zinc ppr Sulfur ppr Sulfur ppr CONTAMINANTS Silicon ppr Sodium ppr Potassium ppr Potassium ppr Potassium ppr Purticles >4µm Particles >6µm	n ASTM D518 n ASTM D518 n ASTM D518 n ASTM D518 n ASTM D518	85m 85m >20 85m >20	0		
Aluminum       ppr         Lead       ppr         Copper       ppr         Copper       ppr         Tin       ppr         Vanadium       ppr         Cadmium       ppr         ADDITIVES       Boron         Boron       ppr         Magnesium       ppr         Magnesium       ppr         Phosphorus       ppr         Zinc       ppr         Sulfur       ppr         Sodium       ppr         Potassium       ppr         FLUID CLEANLINE         Particles >4µm         Particles >6µm	n ASTM D518 n ASTM D518 n ASTM D518 n ASTM D518	85m >20 85m >20	-	-	0
Lead ppm Copper ppm Tin ppm Vanadium ppm Cadmium ppm ADDITIVES Boron ppm Barium ppm Malybdenum ppm Manganese ppm Magnesium ppm Calcium ppm Calcium ppm Zinc ppm Sulfur ppm Sulfur ppm Sulfur ppm CONTAMINANTS Silicon ppm Sodium ppm Potassium ppm Ptaticles >4µm Particles >6µm	n ASTM D518 n ASTM D518 n ASTM D518	85m >20		3	3
Copper     ppm       Tin     ppm       Vanadium     ppm       Cadmium     ppm       ADDITIVES     ppm       Boron     ppm       Barium     ppm       Malganese     ppm       Magnesium     ppm       Calcium     ppm       Phosphorus     ppm       Zinc     ppm       Sulfur     ppm       Solicon     ppm       Sodium     ppm       Potassium     ppm       FLUID CLEANLINE       Particles >4µm       Particles >6µm	n ASTM D518 n ASTM D518		0	<1	<1
Tin ppm Vanadium ppm Cadmium ppm ADDITIVES Boron ppm Barium ppm Molybdenum ppm Manganese ppm Magnesium ppm Calcium ppm Calcium ppm Zinc ppm Sulfur ppm CONTAMINANTS Silicon ppm Sodium ppm Potassium ppm FLUID CLEANLINE Particles >4µm Particles >6µm	m ASTM D518		0	<1	<1
Vanadium       ppm         Cadmium       ppm         Cadmium       ppm         ADDITIVES       ppm         Boron       ppm         Barium       ppm         Malganese       ppm         Magnesium       ppm         Calcium       ppm         Phosphorus       ppm         Zinc       ppm         Sulfur       ppm         Sodium       ppm         Potassium       ppm         FLUID CLEANLINE       Particles >4µm         Particles >6µm			0	<1	<1
Cadmium       ppr         ADDITIVES       ppr         Boron       ppr         Barium       ppr         Malybdenum       ppr         Magnesium       ppr         Magnesium       ppr         Calcium       ppr         Phosphorus       ppr         Zinc       ppr         Sulfur       ppr         Solicon       ppr         Sodium       ppr         Potassium       ppr         FLUID CLEANLINE         Particles >4µm         Particles >6µm	n ASTM D518		<1	<1	<1
ADDITIVES         Boron       ppm         Barium       ppm         Malphanese       ppm         Magnesium       ppm         Magnesium       ppm         Calcium       ppm         Phosphorus       ppm         Sulfur       ppm         Soliticon       ppm         Sodium       ppm         Potassium       ppm         FLUID CLEANLINE         Particles >4µm         Particles >6µm       []			0	<1	<1
Boron ppr Barium ppr Molybdenum ppr Manganese ppr Magnesium ppr Calcium ppr Phosphorus ppr Zinc ppr Sulfur ppr CONTAMINANTS Silicon ppr Sodium ppr Potassium ppr FLUID CLEANLINE Particles >4µm Particles >6µm	metho				
Barium ppm Molybdenum ppm Manganese ppm Magnesium ppm Calcium ppm Calcium ppm Zinc ppm Sulfur ppm CONTAMINANTS Silicon ppm Sodium ppm FLUID CLEANLINE Particles >4µm Particles >6µm				history1	history2
Molybdenum ppm Manganese ppm Magnesium ppm Calcium ppm Calcium ppm Zinc ppm Zinc ppm CONTAMINANTS Silicon ppm Sodium ppm FLUID CLEANLINE Particles >4µm Particles >6µm			0	0	0
Manganese     ppm       Magnesium     ppm       Calcium     ppm       Phosphorus     ppm       Zinc     ppm       Sulfur     ppm       CONTAMINANTS       Silicon     ppm       Sodium     ppm       Potassium     ppm       FLUID CLEANLINE       Particles >4µm       Particles >6µm			0	<1	0
Magnesium ppm Calcium ppm Phosphorus ppm Zinc ppm Sulfur ppm CONTAMINANTS Silicon ppm Sodium ppm Potassium ppm FLUID CLEANLINE Particles >4µm Particles >6µm			0	0	0
Calcium ppm Phosphorus ppm Zinc ppm Sulfur ppm CONTAMINANTS Silicon ppm Sodium ppm Potassium ppm FLUID CLEANLINE Particles >4µm Particles >6µm			0	0	0
Phosphorus ppm Zinc ppm Sulfur ppm CONTAMINANTS Silicon ppm Sodium ppm Potassium ppm FLUID CLEANLINE Particles >4µm Particles >6µm			0	<1	0
Zinc ppm Sulfur ppm CONTAMINANTS Silicon ppm Sodium ppm Potassium ppm FLUID CLEANLINE Particles >4µm Particles >6µm			2	3	3
Sulfur ppr CONTAMINANTS Silicon ppr Sodium ppr Potassium ppr FLUID CLEANLINE Particles >4µm Particles >6µm			375	428	437
CONTAMINANTS Silicon ppm Sodium ppm Potassium ppm FLUID CLEANLINE Particles >4µm Particles >6µm			0	2	2
Silicon ppr Sodium ppr Potassium ppr FLUID CLEANLINE Particles >4µm Particles >6µm	n ASTM D518	85m 2500	548	455	465
Sodium     ppm       Potassium     ppm       FLUID CLEANLINE       Particles >4μm       Particles >6μm	metho	d limit/ba	ise current	history1	history2
Potassium ppm FLUID CLEANLINE Particles >4μm Particles >6μm	n ASTM D518	85m >15	<1	2	2
FLUID CLEANLINE Particles >4μm Particles >6μm	m ASTM D518	35m	<1	0	0
Particles >4μm Particles >6μm	n ASTM D518	85m >20	<1	2	2
Particles >6µm	SS metho	d limit/ba	ise current	history1	history2
	ASTM D76	647 >10000	🔺 120486	▲ 149101	153567
Particles >14µm	ASTM D76	647 >2500	<b>A</b> 33788	▲ 30842	▲ 16752
	ASTM D76	647 >640	205	<b>1</b> 331	63
Particles >21µm	AOTHO	647 >160	10	<b>A</b> 355	11
Particles >38µm	ASTM D76	647 >40	0	17	0
Particles >71µm	ASTM D76	647 >10	0	1	0
Oil Cleanliness			6 🔺 24/22/15	▲ 24/22/18	4/21/13
FLUID DEGRADATI	ASTM D76		ise current	history1	history2
Acid Number (AN) mg KC	ASTM D76 ASTM D76 ISO 4406	d limit/ba	0.11	0.14	0.15

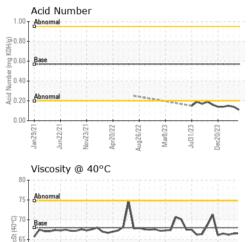
Report Id: KRAKIR [WUSCAR] 06155848 (Generated: 04/24/2024 14:21:05) Rev: 1

Submitted By: Wilberto Pacheco Garcia



# **OIL ANALYSIS REPORT**





Apr20/22

Aug26/22

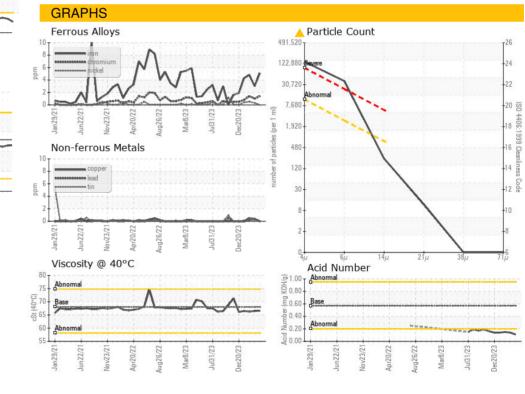
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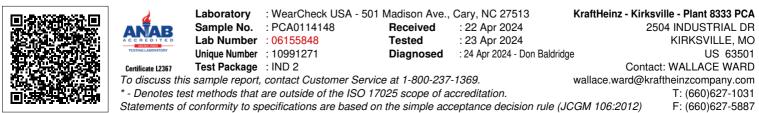
60 Abno

55

Jan29/21

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	NONE	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	>0.05	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	DTIEC	method	limit/base	current	history1	history2
FLUID FROFE	RIIES	methou	inni basc	current	Thistory I	matoryz
Visc @ 40°C	cSt	ASTM D445	68	66.6	66.5	66.2
	cSt					
Visc @ 40°C	cSt	ASTM D445	68	66.6	66.5	66.2





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