SAMPLE SHIP TIME (days) SAMPLE TYPE:

tea:

EXT WARR NUMBER

JOB SITE

OIL.

PHONE

FAX:

COMPANY NAME: RITCHIE EQUIPMENT, INC.

CUSTOMER EQUIP NUM: 3201 D FARLEY COMPARTMENT NAME: ENGINE

SERIAL NUMBER 7EK00157

MANUFACTURER CATERPILLAR MODEL

EXT WARR EXPIRE DATE

COMP SERIAL NUM: SHOP JOB NUM:

COMPARTMENT MODEL:

SAMPLE LABEL NUM:

FLUID BRAND/WEIGHT: 15W40

FLUID TYPE

COMP MANUFACTURER:

FUEL CONSUMED



Salem, VA 24153-5457 Fluids Analysis Laboratory 1330 Lynchburg Turnpike 540-387-1111

www.cartermachinery.com MAKE UP FLUID UNITS

FILTER CHANGED

LAB CONTROL NUMBER No Action Required NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL SAMPLE DATE 26-Jul-2019 PROCESS DATE 29-Jul-2019 EQUIPMENT METER METER ON FLUID FLUID CHANGED MAKE UP FLUID

D100-48037-0718 02-Feb-2018

No Action Required 06-Feb-2018 22349 HR

NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE, CONTINUE SAMPLING AT THE NORMAL INTERVAL

250 玉

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21-Oct-2016 27-Oct-2016 0

Yes

D470-46301-1001

Action Required

INVESTIGATE SOURCE OF FUEL DILUTION. CHANGE OIL AND FILTER. IMMEDIATELY AFTERWARDS, BRING ENGINE UP TO OPERATING TEMPERATURE AND TAKE A BASELINE SAMPLE, RESAMPLE AT HALF THE NORMAL SAMPLE INTERVAL AFTER BASELINE TO VERIFY FUEL DILUTION NO LONGER EXISTS.

D100-46026-0113

Monitor Compartment UNKNOWN/SUSPECT OIL HOURS...MODERATELY ELEVATED SOOT LEVEL MAY RELATE TO INTAKE RESTRICTION, A/F RATIO, ENG. TEMP, OIL SERVICE. OTHER READINGS APPEAR TO BE NORMAL . CHECK POSSIBLE SOURCES OF CONTAMINATION. RESAMPLE IN 250 HOURS TO MONITOR. 21-Dec-2015 26-Jan-2016 68581 HR 53614 HR Unknown

Oil Condition	D100-46028-0113	D470-48301-1001	D100-48037-0718	D100-49210-0641	Wear Metals (ppm)	
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	500 1203 1014	175 505 418	1270	984	Zn	
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Particle Count (cuml)	SI	OXI	N	SUL	₩	Þ	7	PFC	
D100-49210-0841	0	19	a	24	z	z	z		
D100-48037-0718	&	12	80	23	z	z	z		
D470-46301-1001	46	18	9	22	z	z	ס	61.17	
D100-46028-0113	80	6	φ	25	z	z	z		

Ag = Silver, Al = Aluminum, B = Boron, Ca = Calcium, Cr = Chromium, Cu = Copper, Fe = Iron, P = Phosphorus, K = Polassium, Li = Lithium, Mg = Magnesium, Mo = Molybdenum, Na = Sodium, Ni = Nickel, Pb = Lead, Si = Silicon, Sn = Tin, S = Sulphur, V = Vanadium, Zn = Zinc, A = Antifreeze, F = Fuel, W = Valer, P = Positive, N = Negative, T = Trace, E = Excessive, NIT = Nitration, OXI = Oxidation, ST = Sod, SUL = Sulfation, ISO = ISO Rating, PFC = Percent Fuel Content, PQI = Particle Quantifying index , NaW = Salt Water, FL PI = Flash Point, TAN = Total Acid Number, TBN = Total Base Number, H2O = Karl Flasher result, V100 = Viscosity@100C, V40 = Viscosity@40C, PVI = Particle Volume indicator

PAUL BARNETTE RITCHIE EQUIPMENT, INC.

P.O. BOX 1588

PRINCETON, WV 24740

PHONE: 304-325-6525 FAX: 304-325-6525

SAMPLE TYPE: COOLANT - RADI_MET SAMPLE SHIP TIME (days):

CUSTOMER EQUIP NUM: 3201 D FARLEY

COMPANY NAME: RITCHIE EQUIPMENT, INC.

COMPARTMENT NAME: RADIATOR

MANUFACTURER: CATERPILLAR SERIAL NUMBER: 7EK00157 MODEL:

SAMPLE LABEL NUM:

FLUID TYPE:

SHOP JOB NUM:

COMPARTMENT MODEL:

COMP MANUFACTURER:

EXT WARR EXPIRE DATE:

FLUID BRAND/WEIGHT:

COMP SERIAL NUM:



www.cartermachinery.com Salem, VA 24153-5457 Fluids Analysis Laboratory 540-387-1111 1330 Lynchburg Turnpike

MAKE UP FLUID MAKE UP FLUID UNITS

No Action Required

LAB CONTROL NUMBER

SAMPLE DATE 26-Jul-2019

PROCESS DATE

EQUIPMENT METER

METER ON FLUID

FLUID CHANGED

EXT WARR NUMBER:

JOB SITE:

ALL TESTS APPEAR NORMAL FOR THIS COOLANT. SAMPLE AGAIN AT REGULAR INTERVAL TO MONITOR THE COOLING SYSTEM.

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D100-49210-1024

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CON = Conductivity, App = Appearance, PAmt = Precipitate Amount, PApp = Precipitate Appearance, PCol = Precipitate Color, PPmp = Precipitate Property, CType = Coolant Type Al = Alumhrum, Cu = Copper, Fe = Iron, K = Portassium, Na = Sodium, Pb = Lead, Sn = Tin, V = Vanadium, Zn = Zinc, BO3 = Borate, CaC = Ca as CaCO3, MgC = Mg as CaCO3, MoO4 = Molybdale, PO4 = Phosphale, SIO3 = Slicate, TH = Total Hardness, CL = Chloride, CO3 = Carbonate, GLO = Glycolate, NO2 = Nitrile, NO3 = Nitrate, PO4 = Phosphate, SAC = Sebacic Acid, SO4 = Sulfate, TT = Tolytriazole, BP = Boil Point(*C), FP = Freeze Point(*C), GL = Glycolate, NO2 = Nitrile, NO3 = Nitrate, PO4 = Phosphate, SAC = Sebacic Acid, SO4 = Sulfate, TT = Tolytriazole, BP = Boil Point(*C), FP = Freeze Point(*C), GL = Glycolate, NO3 = Nitrate, PO4 = Phosphate, SAC = Sebacic Acid, SO4 = Sulfate, TT = Tolytriazole, BP = Boil Point(*C), FP = Freeze Point(*C), GL = Glycolate, TT = Tolytriazole, PO4 = No4 =

Notice: This analysis is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of this piece of equipment or a component thereof

SAMPLE SHIP TIME (days): SAMPLE TYPE:

w

EXT WARR NUMBER

OIL

PHONE:

FAX:

COMPANY NAME RITCHIE EQUIPMENT, INC.

CUSTOMER EQUIP NUM 3201 D FARLEY COMPARTMENT NAME: TRANSMISSION POWER SHIFT

SERIAL NUMBER 7EK00157

MANUFACTURER CATERPILLAR JOB SITE MODEL 789B

FUEL CONSUMED:

COMP MANUFACTURER: FLUID BRAND/WEIGHT: 30 SAMPLE LABEL NUM:

COMPARTMENT MODEL:

EXT WARR EXPIRE DATE:

COMP SERIAL NUM: SHOP JOB NUM:

FLUID TYPE:

540-387-1111 1330 Lynchburg Tumpike Salem, VA 24153-5457 Fluids Analysis Laboratory

www.cartermachinery.com

D100-45223-0337 No Action Required NORMA	No Action Required NORMA	uired	D100-45280-0632	Monitor Compartment ISO PAI 125 HO	D100-49210-0608	LAB CONTROL NUMBER
07-Aug-2015 11-Aug-2015 13908 HR NORMAL WEAR METAL READINGS. CONTINUE NORMALLY SCHEDULED SAMPLING.	NORMAL WEAR METAL READINGS, CONTINUE NORMALLY SCHEDULED SAMPLING.	NORMAL WEAR METAL READINGS. CONTINUE NORMALLY SCHEDULED SAMPLING.	04-Oct-2015	RTICLE COUNT READING EX URS TO MONITOR.	26-Jul-2019	SAMPLE DATE
11-Aug-2015 CONTINUE NORMALLY SCH	CONTINUE NORMALLY SCI	CONTINUE NORMALLY SCI	07-Oct-2015	ICEEDS RECOMMENDED CL	29-Jul-2019	PROCESS DATE E
13908 HR HEDULED SAMPLING.	HEDULED SAMPLING.	HEDULED SAMPLING.	14967 HR	EANLINESS LEVEL. OTHER	43981 HR	EQUIPMENT METER
1000 HR	86 H.	500.15	2000 HR	ISO PARTICLE COUNT READING EXCEEDS RECOMMENDED CLEANLINESS LEVEL. OTHER READINGS APPEAR TO BE NORMAL. CHECK POSSIBLE SOURCES OF CONTAMINATION, RESAMPLE IN 125 HOURS TO MONITOR.	0	METER ON FLUID
Š	ē	F	Y8	DRMAL, CHECK POSSIBLE SC	Unknown	FLUID CHANGED
				JURCES OF CONTAMINATION		MAKE UP FLUID
				. RESAMPLE IN		MAKE UP FLUID UNITS
	Unktown					FILTER CHANGED

Cu Fe Cr Al Pb Sn Sl Na K B Mo NI Ag TI V Ca Mg Zn Pb D100-49270-0808 S 13 0 6 0 0 15 8 0 88 1 0 0 0 3 0 2157 284 1178 1021	à		2484	8325	18713		21/20/18	ಕ		B.3	z	z	17	ø.	ð		0	D100-45223-0337
ON Cu Fe Cr AJ Pb Sn 83 Na K B Mo NI Ag TI V Ca Mg Zn 5 13 0 6 0 0 15 8 0 68 1 0 0 2157 284 1179 6 2 0 1 4 0 7 2 1 0 9 0 0 3780 47 1123 7 4 0 3 0 4 5 1 3 2 13 0 0 3450 192 1184 10 8 5 17 N N 13.8 4 23/2218 49752 2248 1117 10 8 5 17 N N 13.6 4 23/2218 49752 20277 3854 13	374	8	25	13945	6120		22/21/	ಜ	5 1	12.	z	z	17	6	±		0	D100-45251-0540
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Cu Fe Cr Al Pb Sn Sl Na K B Mo NI Ag TI V Ca Mg Zn 5 13 0 6 0 0 15 8 0 68 1 0 0 0 3 0 2157 284 1178 3 5 0 3 1 0 8 2 1 4 1 0 0 0 3 0 2157 284 1178 6 2 0 1 4 0 7 2 1 0 9 0 0 0 3450 192 1104 7 4 0 3 0 4 5 1 3 2 13 0 0 6 140 2989 249 1117	2949	8	97	30295	5740		23/22/	-	-	13,1	z	ż	17	თ	60		0	D100-49210-0608
Cu Fe Cr AI Pb Sn SI Na K B Mo NI Ag TI V Ca Mg Zn 5 13 0 6 0 0 15 6 0 68 1 0 0 3 0 2157 284 1178 3 5 0 3 1 0 8 2 1 4 1 0 0 3780 47 1123 6 2 0 1 4 0 7 2 1 0 9 0 0 3450 192 1184 7 4 0 3 0 4 5 1 3 2 13 0 0 2869 248 117	₹	Ť	_	ę.	ŧ		180	2	ů	V10	>	W	SUL	N	βχο		ST	Oil Condition ! Particle Count (ctind)
Cu Fe Cr Al Pb Sn Si Na K B No Ni Ag Ti V Ca Mg Zn 5 13 0 6 0 0 15 8 0 68 1 0 0 3 0 2157 284 1178 3 5 0 3 1 0 8 2 1 4 1 0 0 3 30 2157 284 1178 6 2 0 1 4 0 7 2 1 0 9 0 0 3450 192 1184 7 4 0 3 0 4 5 1 3 2 13 0 0 2 288 248 1117																		
Cu Fe Cr Al Pb Sn Sl Na K B Mo NI Ag TI V Ca Mg Zn 5 13 0 6 0 0 15 8 0 88 1 0 0 3 0 2157 284 1178 3 5 0 3 1 0 8 2 1 4 1 0 0 3 3450 47 1123 6 2 0 1 4 0 7 2 1 0 9 0 0 0 3450 192 1184			248	2889					13	2	ω				0	4	7	D100-45223-0337
Cu Fe Cr Al Pb Sn Sl Na K B Mo NI Ag TI V Ca Mg Zn 5 13 0 6 0 0 15 6 0 88 1 0 0 3 0 2157 284 1178			192	3450					9	0	_	7 2	 4	-	0	22	g,	D100-45251-0540
Cu Fe Cr Al Pb Sn St Na K B Mo NI Ag TI V Ca Mg Zn 5 13 0 6 0 0 15 8 0 68 1 0 0 3 0 2157 284 1179		1123	47	3780						4					0	O1	w	D100-45280-0632
Cu Fe Cr Al Pb Sn Si Na K B Mo Ni Ag Ti V Ca Mg Zn			284	2157	0	۵		۰	_	86	0				0	13	O1	D100-49210-0808
	_	Z _n	ž.	č.	<				₩.						្ន	Ŧ	_و	Wear Metals (ppm)

Ag = Silver, Al = Aluminum, B = Boron, Ca = Calcium, Cr = Chromium, Cu = Copper, Fe = Iron, P = Phosphorus, K = Potassium, Li = Lithium, Mg = Magnesium, Mo = Molybdenum, Na = Sodium, Ni = Nickel, Pb = Lead, Si = Sillcon, Sn = Tin, S = Sulphur, V = Vanadum, Zn = Zinc, A = Antifreeza, F = Fuel, W = Valeter, P = Positive, N = Negative, T = Trace, E = Excessive, NIT = Nitration, OXI = Oxidation, ST = Soci, SUL = Sulfation, ISO = ISO Rating, PFC = Percent Fuel Content, PQI = Particle Quantifying index , NaW = Salt Water, FL PI = Flash Point, TAN = Total Acid Number, TBN = Total Base Number, H2O = Karl Fisher result, V100 = Viscosity@100C, V40 = Viscosity@40C, PVI = Particle Volume Indicator

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SAMPLE TYPE:

OIL

EXT WARR NUMBER:

JOB SITE: MODEL:

PHONE: FAX:

> CUSTOMER EQUIP NUM: 3201 D FARLEY COMPANY NAME: RITCHIE EQUIPMENT, INC.

COMPARTMENT NAME: HYDRAULIC SYSTEM

COMPARTMENT MODEL: COMP MANUFACTURER:

COMP SERIAL NUM:

SHOP JOB NUM:

MANUFACTURER: CATERPILLAR SERIAL NUMBER: 7EK00157

SAMPLE LABEL NUM:

EXT WARR EXPIRE DATE: FLUID BRAND/WEIGHT: 10W FLUID TYPE:

Fluids Analysis Laboratory

540-387-1111 Salem, VA 24153-5457

1330 Lynchburg Turnpike

Action Required SAMPLE CONTAMINATION	D100-49210-0602	LAB CONTROL NUMBER SAN	SAMPLE SHIP TIME (days)
AINS A MODERATE AI ON. RESAMPLE IN 12:	26-Jul-2019	SAMPLE DATE	
MOUNT OF GRANULAR 5 HOURS TO MONITOR	29-Jul-2019	PROCESS DATE	EXT MANY MONDEY
SAMPLE CONTAINS A MODERATE AMOUNT OF GRANULAR METAL DEBRIS (B2). PQ IS AT CRITICAL LEVELS, OTHER READINGS APPEAR TO BE NORMAL. CHECK POSSIBLE SOURCES OF CONTAMINATION. RESAMPLE IN 125 HOURS TO MONITOR.	43981 HR	EQUIPMENT METER	EX.
CRITICAL LEVELS. OTHER REAI	0	METER ON FLUID	FUEL CON
DINGS APPEAR TO BE NORM	Unknown	FLUID CHANGED	FUEL CONSUMED:
IAL. CHECK POSSIBLE SOUI		MAKE UP FLUID	www.ca
RCES OF		MAKE UP FLUID UNITS	www.cartermachinery.com
		FILTER CHANGED	

D100-46026-0107	21-Dec-2015	26-Jan-2016	68581 HR	54673 HR	Unknown
Monitor Compartment	VISCOSITY IS HIGH AND DOES NO SOURCES OF CONTAMINATION. C	T TREND PREVIOUS SAMPL HANGE OIL/ INSTALL NEW F	E HISTORY. LPD (LARGE PAR FILTER(S). RESAMPLE IN 250	(TICLE DETECTION) READING HOURS TO MONITOR.	VISCOSITY IS HIGH AND DOES NOT TREND PREVIOUS SAMPLE HISTORY. LPD (LARGE PARTICLE DETECTION) READING EXCEEDS RECOMMENDED CLEANLINESS LEVEL CHECK POSSIBLE SOURCES OF CONTAMINATION. CHANGE OIL INSTALL NEW FILTER(S), RESAMPLE IN 250 HOURS TO MONITOR.
D100-45280-0606	04-Oct-2015	07-Oct-2015	14967 HR	2000 HR	No
Monitor Compartment	LPD (LARGE PARTICLE DETECTION CONTINUE NORMALLY SCHEDULE	V) READING EXCEEDS RECO D SAMPLING.	OMMENDED CLEANLINESS LE	VEL. OTHER READINGS APP	LPD (LARGE PARTICLE DETECTION) READING EXCEEDS RECOMMENDED CLEANLINESS LEVEL, OTHER READINGS APPEAR TO BE NORMAL, CHECK POSSIBLE SOURCES OF CONTAMINATION. CONTINUE NORMALLY SCHEDULED SAMPLING.
D100-45251-0506	02-Sep-2015	08-Sep-2015	80606 HR	500 HR	No
Monitor Compartment	ELEVATED ISO PARTICLE COUNT MAY BE DUE TO CONTAMINATION DURING SAMPLING PROCESS. OTHER READINGS APPEAR TO BE I CONTINUE NORMALLY SCHEDULED SAMPLING.	MAY BE DUE TO CONTAMIN D SAMPLING.	ATION DURING SAMPLING PRO	OCESS. OTHER READINGS A	VPPEAR TO BE NORMAL. CHECK POSSIBLE SOURCES OF CONTAMINATION.

Unknown

D100-45251-0506	D100-45280-0806	D100-48028-0107	D100-48210-0602	Oil Condition / Particle Count (ct/ml)		D100-45251-0506	D100-45280-0606	D100-48028-0107	D100-49210-0602	Wear Metals (ppm)	
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115	921	203		18µ			V 1				

Ag = Silver, Al = Aluminum, B = Boron, Ca = Caldum, Cr = Chromium, Cu = Copper, Fe = Iron, P = Phosphorus, K = Potassium, Li = Lithlum, Mg = Magnesium, Mo = Molybdenum, Na = Sodium, Ni = Nickel, Pb = Lead, Si = Silicon, Sn = Tin, S = Sulphur, V = Vanadium, Zn = Zinc, A = Antifeeza, F = Fuel, W = Waiter, P = Positive, N = Negative, T = Trace, E = Excessive, NIT = Nitration, OXI = Oxidation, ST = Soot, SUL = Sulfation, ISO = ISO Rating, PFC = Parcent Fuel Content, PQI = Particle Quentifying index, NaW = Salt Waiter, FL Pt = Flash Point, TAN = Total Acid Number, TBN = Total Base Number, H2O = Karl Flaher result, V100 = Viscosity@100C, V40 = Viscosity@40C, PVI = Particle Volume Indicator

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SAMPLE TYPE:

OIL

EXT WARR NUMBER:

JOB SITE : MODEL:

PHONE: FAX

CUSTOMER EQUIPNUM: 3201 D FARLEY

COMPANY NAME: RITCHIE EQUIPMENT, INC.

COMPARTMENT NAME: STEERING SYSTEM

MANUFACTURER: CATERPILLAR SERIAL NUMBER: 7EK00157

FLUID BRAND/WEIGHT: 10 SAMPLE LABEL NUM:

COMP MANUFACTURER: COMPARTMENT MODEL:

COMP SERIAL NUM:

SHOP JOB NUM:

EXT WARR EXPIRE DATE: FUEL CONSUMED: FLUID TYPE :



Salem, VA 24153-5457 1330 Lynchburg Turnpike Fluids Analysis Laboratory

540-387-1111 www.cartermachinerv.com

SAMPLE SHIP TIME (days)	G)			FUEL	FUEL CONSUMED:	J.W.W.M	www.cartermachinery.com	
LAB CONTROL NUMBER	SAMPLE DATE	FROCESS DATE	EQUIPMENT METER	METER ON FLUID	FLUID CHANGED	MAKE UP FLUID	MAKE UP FLUID UNITS	FILTER CHANGED
D100-49210-0603	26-Jul-2019	9 29-Jul-2019	43981 HR	0	Unknown			
Monitor Compartment	ISO PARTICLE COUNT RE	ADING EXCEEDS RECOMMEN	DED CLEANLINESS LEVEL. OT	Monitor Compartment ISO PARTICLE COUNT READING EXCEEDS RECOMMENDED CLEANLINESS LEVEL. OTHER READINGS APPEAR TO BE NORMAL. CHECK POSSIBLE SOURCES OF CONTAMINATION. RESAMPLE IN 125 HOURS TO MONITOR.	NORMAL. CHECK POSSIBLE	SOURCES OF CONTAMINATION	ON. RESAMPLE IN	

Monitor Compartment	D100-45223-0312	Monitor Compartment	D100-45251-0509	Monitor Compartment	D100-45280-0501	
UPD (LARGE PARTICLE DETECTION) READING EXCEEDS RECOMMENDED CLEANLINESS LEVEL. OTHER READINGS APPEAR TO BE NORMAL. CHECK POSSIBLE SOURCES OF CONTAMINATION.	9-0312 07-Aug-2015 11-Aug-2015 13908 HR 1000 HR Yes	OMPARTMENT SOLVED ISO PARTICLE COUNT MAY BE DUE TO CONTAMINATION DURING SAMPLING PROCESS. OTHER READINGS APPEAR TO BE NORMAL, CHECK POSSIBLE SOURCES OF CONTAMINATION.	1-0509 02-Sep-2015 08-Sep-2015 80606 HR 500 HR No	OMPATIMENT LPD (LARGE PARTICLE DETECTION) READING EXCEEDS RECOMMENDED CLEANLINESS LEVEL. OTHER READINGS APPEAR TO BE NORMAL. EXAMINE HOUSING SEALS, BREATHERS, PLUGS FOR INDICATIONS OF LEAKAGE OR DIRT/WATER ENTRY. ELEVATED ISO PARTICLE COUNT MAY BE DUE TO CONTAMINATION DURING SAMPLING PROCESS. RESAMPLE IN 250 HOURS TO MONITOR.	3-0501 04-Oct-2015 07-Oct-2015 14967 HR 1000 HR Yes	

D100-48210-0803	Oil Condition Particle Count (cuml)		D100-45223-0312	D100-45251-0509	D100-45280-0501	D100-48210-0603	Wear Metals (ppm)	
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			1180	1091	1053	1280	Z'n	
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Oil Condition / Particle Count ictml)	ST	ВХО	NIT	SUL	æ	>	V100	PQI	ISO	ŧ	ę	10µ	14µ	18μ	21µ	38µ	ь 100
D100-49210-0603	0	=	5	8	z	z	8.8	_	23/21/14	45239	16116	548	97	76	69	33	24
D100-45280-0501	0	⇉	On .	17	z	z	10,4	15	23/22/18	54228	25318	5483	1734	837	556	125	66
D100-45251-0509	0	=	G.	17	z	z	10.1	36	21/20/18	18583	6739	2646	1343	937	772	339	238
D100-45223-0312	0	#	5n	17	z	z	9,6	æ	22/21/18	32936	13785	4063	1420	658	412	61	28
	An = Silver Al = Aluminum R = Boron Cas Calcium Cr = Chromium Cu = Cooper Ea - Imp B = Bronchous K - Belonsium I = I ithium Management	Akuminum B	Boon Ca		Charles	OI = Conner			V ~ Defending	- - - - - - -		_		,	2		

Ag = Silver, Al = Aluminum, B = Boron, Ca = Calcium, Cr = Chromium, Cu = Copper, Fe = Iron, P = Phosphorus, K = Polassium, Li = Lithium, Mg = Magnesium, Mo = Molybdenum, Na = Sodium, Ni = Nickel, Pb = Lead, Si = Silicon, Sn = Th, S = Sulphur, V = Vanadium, Zn = Zlnc, A = Antifreeza, F = Fuel, W = Valer, P = Postitve, N = Negative, T = Trace, E = Excessive, NIT = Nitration, OXI = Oxidation, ST = Soot, SUL = Sulfation, ISO = ISO Rating, PFC = Percent Fuel Content, PQI = Particle Quantifying index , NeW = Salt Water, FL Pt = Flash Point, TAN = Total Acid Number, TBN = Total Base Number, H2O = Karl Flasher result, V100 = Viscosity@100C, V40 = Viscosity@40C, PVI = Particle Volume Indicator

COMPANY NAME: RITCHIE EQUIPMENT, INC.

CUSTOMER EQUIP NUM 3201 D FARLEY COMPARTMENT NAME: WHEEL BEARINGS FRONT RIGHT

SERIAL NUMBER 7EK00157

MANUFACTURER CATERPILLAR MODEL: 789B

EXT WARR NUMBER

JOB SITE

SAMPLE SHIP TIME (days): SAMPLE TYPE:

ω

OII.

PHONE: FAX

> COMP SERIAL NUM: SHOP JOB NUM:

COMPARTMENT MODEL:

COMP MANUFACTURER: SAMPLE LABEL NUM:

FLUID BRAND/WEIGHT: 50

EXT WARR EXPIRE DATE: FUEL CONSUMED FLUID TYPE:



Salem, VA 24153-5457 540-387-1111 Fluids Analysis Laboratory 1330 Lynchburg Turnpike

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No Action Required	D100-45223-0343	No Action Required	D100-45251-0557	Monitor Compartment	D100-45280-0552	Monitor Compartment	D100-49210-0654	LAB CONTROL NUMBER
NORMAL WEAR METAL READINGS. CONTINUE NORMALLY SCHEDULED SAMPLING.	07-Aug-2015	NORMAL WEAR METAL READINGS. CONTINUE NORMALLY SCHEDULED SAMPLING.	02-Sep-2015	IRON APPEARS ELEVATED, OTH SCHEDULED SAMPLING.	04-Oct-2015	SILICON (TYPICALLY DIRT) LEVE CONTAMINATION. CHANGE OIL!	26-Jul-2019	SAMPLE DATE
S. CONTINUE NORMALLY	11-Aug-2015	S. CONTINUE NORMALLY	08-Sep-2015	ER READINGS APPEAR TO	07-Oct-2015	LAPPEARS HIGH, OTHER N COMPARTMENT, RESA	29-Jul-2019	PROCESS DATE
Y SCHEDULED SAMPLING,	13908 HR	Y SCHEDULED SAMPLING.	80606 HR	IRON APPEARS ELEVATED, OTHER READINGS APPEAR TO BE NORWAL. CHECK POSSIBLE SOURCES OF CONTAMINATION. SCREEN SCHEDULED SAMPLING.	14967 HR	SILICON (TYPICALLY DIRT) LEVEL APPEARS HIGH. OTHER READINGS APPEAR TO BE NORMAL. INSPECT FOR SOURCE OF DIRT ENTRY INTO THE SYSTEM. CHECK POSSIBLE SOURCES OF CONTAMINATION. CHANGE OIL IN COMPARTMENT, RESAMPLE IN 125 HOURS TO MONITOR.	43981 HR	EQUIPMENT METER
	2000 HR		2000 HR	OURCES OF CONTAMINAT	2000 HR	AL. INSPECT FOR SOURCE	0	METER ON FLUID
	Yes		Yes	ON. SCREEN OIL FOR CUTTIN	Yes	OF DIRT ENTRY INTO THE SY	No	FLUID CHANGED
				NOIL FOR CUTTINGS, CHANGE OIL, CONTINUE NORMALLY		STEM. CHECK POSSIBLE S		MAKE UP FLUID
				E NORMALLY		OURCES OF		MAKE UP FLUID UNITS
			Unknown					FILTER CHANGED

0100-45223-0343	D100-45251-0557	D100-45280-0552	D100-48210-0854	Oil Condition / Particle Count (ct/ml)	D100-45223-0343	D100-45251-0557	D100-45280-0552	D100-49210-0654	Wear Metals (ppm)
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41	14	439		50µ	9	ಭ	ಪ	ಸ	В
					381	548	547	1065	Zn
					383	540	558	888	7

Ag = Silver, Al = Aluminum, B = Boron, Ca = Calcium, Cr = Chromium, Cu = Copper, Fa = Iron, P = Phosphorus, K = Potassium, Li = Lithium, Mg = Magnesium, Mo = Molybdenum, Na = Sodium, Nl = Nickel, Pb = Lead, Si = Sillon, Sn = Tin, S = Sulphur, V = Vanadum, Zn = Zinc, A = Antifreeza, F = Fuel, W = Water, P = Postitve, N = Negative, T = Trace, E = Excessive, NIT = Nitration, OXI = Oxidation, ST = Sod, SUL = Sulfation, ISO = ISO Reting, PFC = Percent Fuel Content, PQI = Particle Quantifying index, NaW = Salt Water, FL Pt = Flash Point, TAN = Total Acid Number, TBN = Total Base Number, H2O = Karl Fisher result, V100 = Vtscosity@100C, V40 = Vtscosity@40C, PVI = Particle Volume Indicator

COMPANY NAME: RITCHIE EQUIPMENT, INC.

CUSTOMER EQUIP NUM: 3201 D FARLEY COMPARTMENT NAME: WHEEL BEARINGS FRONT LEFT

SERIAL NUMBER: 7EK00157

MANUFACTURER: CATERPILLAR JOB SITE MODEL:

EXT WARR NUMBER

SAMPLE SHIP TIME (days): SAMPLE TYPE:

OH.

PHONE:

FAX:

FLUID BRAND/WEIGHT: 50

COMPARTMENT MODEL:

SAMPLE LABEL NUM:

FLUID TYPE:

COMP SERIAL NUM:

SHOP JOB NUM:

COMP MANUFACTURER:

EXT WARR EXPIRE DATE:



Salem, VA 24153-5457 1330 Lynchburg Turnpike Fluids Analysis Laboratory

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D100-45251-0558	Monitor Compartment	D100-45280-0551	No Action Required	D100-49210-0653	LAB CONTROL NUMBER
02-Sep-2015	IRON APPEARS ELEVATED. OTHER READINGS APPEAR TO BE NORMAL. CHECK POSSIBLE SOURCES OF CONTAMINATION. SCREEN SCHEDULED SAMPLING.	04-Oct-2015	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.	26-Jul-2019	SAMPLE DATE
08-Sep-2015	ER READINGS APPEAR T	07-Oct-2015	SOCIATED WITH THIS SAN	29-Jul-2019	PROCESS DATE
80606 HR	O BE NORMAL. CHECK POSSI	14967 HR	MPLE, CONTINUE SAMPLING A	43981 HR	EQUIPMENT METER
66698 HR	3LE SOURCES OF CONTAMINA?	1000 HR	THE NORMAL INTERVAL.	0	METER ON FLUID
Yes	TION. SCREEN OIL FOR CUTT	Yes		No.	FLUID CHANGED
	I OIL FOR CUTTINGS, CHANGE OIL, CONTINUE NORMALLY				MAKE UP FLUID
	UE NORMALLY				MAKE UP FLUID UNITS
					FILTER CHANGED

D100-45223-0342	D100-45251-0558	D100-45280-0551	D100-49210-0653	Wear Metals (ppm)	
_	_	2	0	Cu	
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311 2 2 0 5	370 2	431 3 1	124 1 4 0 0	Fe Cr	
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ćn	7	œ	10	Mg Zn	
240	289	333	10 1114 927	Zn	
383	388	425	927	P	

D100-45223-0342

07-Aug-2015

11-Aug-2015

13908 HR

2000 HR

ĕ

No Action Required

NORMAL WEAR METAL READINGS. CONTINUE NORMALLY SCHEDULED SAMPLING.

Monitor Compartment

IRON LEVEL APPEARS HIGH. OTHER READINGS APPEAR TO BE NORMAL. CHECK POSSIBLE SOURCES OF CONTAMINATION. RESAMPLE IN 250 HOURS TO MONITOR.

ಜ	æ	514	1182	6495	21672	36937	43909	23/22/20	83	20.5	z	D100-45223-0342
æ	13	139	424	4110	19807	37549	45723	23/22/19	176	21.0	z	D100-45251-0558
83	173	923	1518	5457	28363	63762	80273	24/23/20	180	20.8	z	D100-45280-0551
								NORMAL	26	15.5	z	D100-49210-0853
ş	38µ	2ήμ	龍	₹	10µ	Ę	4	88	ē	V100	æ	Particle Count (cl/ml)
												Oil Condition

Ag = Sliver, Al = Aluminum, B = Boron, Ca = Calcium, Cr = Chromium, Cu = Copper, Fe = Iron, P = Phosphorus, K = Polassium, Li = Lithium, Mg = Magnesium, Mo = Molybdenum, Na = Sodium, Nl = Nickel, Pb = Lead, Si = Silicon, Sn = Tin, S = Sulphur, V = Vanadium, Zn = Znic, A = Antifreeza, F = Fuel, W = Valair, P = Postive, N = Negative, T = Taca, E = Excessive, NIT = Nitration, OXI = Oxidation, ST = Soot, SUL = Sulfation, ISO = ISO Rating, PFC = Percent Fuel Content, PQI = Particle Quantifying index , NaW = Salt Weiter, FL Pt = Flash Point, TAN = Total Acid Number, TBN = Total Base Number, H2O = Karl Flaher result, V100 = Viscosity@100C, V40 = Viscosity@40C, PVI = Particle Volume Indicator

SAMPLE TYPE:

OIL

PHONE: FAX:

COMPANY NAME RITCHIE EQUIPMENT, INC.

CUSTOMER EQUIP NUM: 3201 D FARLEY COMPARTMENT NAME:

SERIAL NUMBER: 7EK00157 DIFFERENTIAL REAR

MANUFACTURER: CATERPILLAR

789B

JOB SITE MODEL:

> COMP MANUFACTURER: SAMPLE LABEL NUM:

FLUID TYPE:

COMPARIMENT MODEL: COMP SERIAL NUM:

SHOP JOB NUM:

FLUID BRAND/WEIGHT: 50

EXT WARR EXPIRE DATE:

Fluids Analysis Laboratory

540-387-1111 1330 Lynchburg Turnpike Salem, VA 24153-5457

			FYT WARR NITMRER	DED.			111-700-060	1111	
AMPLE SHIP TIME (days)	w		F182 77 F182 F182 F182 F182 F182 F182 F182 F182	Dane.	FUEL (FUEL CONSUMED:	WWW.Ca	ww.cartermachinery.com	
		A STATE OF THE PERSON NAMED IN		Amended to the second second					
LAB CONTROL NUMBER		SAMPLE DATE	PROCESS DATE	EQUIPMENT METER	METER ON FLUID	FLUID CHANGED	MAKE UP FLUID	MAKE UP FLUID UNITS	FII
D100-49210-0656		26-Jul-2019	29-Jul-2019	43981 HR	0	М			
		•							

	豆		2	F		ŭ	- I		2	2
No Action Required	D100-45223-0344	No Action Required	D100-45251-0559		No Action Required	D100-45280-0553		No Action Required	D100-49210-0656	LAB CONTROL NUMBER
NORMAL WEAR METAL READINGS. CONTINUE NORMALLY SCHEDULED SAMPLING.	07-Aug-2015	NORMAL WEAR METAL READINGS. CONTINUE NORMALLY SCHEDULED SAMPLING.	02-Sep-2015		NORMAL WEAR METAL READINGS. CONTINUE NORMALLY SCHEDULED SAMPLING.	04-Oct-2015		NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.	26-Jul-2019	SAMPLE DATE
, CONTINUE NORMALLY	11-Aug-2015	. CONTINUE NORMALLY	08-Sep-2015		. CONTINUE NORMALLY	07-Oct-2015		CIATED WITH THIS SAMI	29-Jul-2019	PROCESS DATE
SCHEDULED SAMPLING.	13908 HR	SCHEDULED SAMPLING,	80606 HR		SCHEDULED SAMPLING.	14967 HR		PLE. CONTINUE SAMPLING AT	43981 HR	EQUIPMENT METER
	2000 HR		80606 HR			2000 HR		THE NORMAL INTERVAL.	0	METER ON FLUID
;	No		No			8			No	FLUID CHANGED
										MAKE UP FLUID
										MAKE UP FLUID UNITS
										FILTER CHANGED

D100-45223-0344	D100-45251-0559	D100-45280-0553	D100-49210-0658	Oil Condition / Particle Count (ct/ml)	D100-45223-0344	D100-45251-0559	D100-45280-0553	D100-48210-0658	Wear Metals (ppm)
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					712	828	822	901	₽

Ag = Silver, Al = Alumihum, B = Boron, Ca = Calcium, Cr = Chromium, Cu = Copper, Fe = Iron, P = Phosphorus, K = Polassium, Li = Lithlum, Mg = Magnesium, Mo = Molybdenum, Na = Sodium, Ni = Nickel, Pb = Lead, Si = Silicon, Sn = Tin, S = Sulphur, V = Vanadium, Zn = Znc, A = Artifreeza, F = Fuel, W = Walter, P = Positive, N = Negative, T = Trace, E = Excessive, NIT = Nitration, OXI = Oxidation, ST = Soot, SUL = Sulfation, ISO = ISO Rating, PFC = Percent Fuel Content, PQI = Particle Quantifying index, NatW = Salt Water, FL Pt = Flash Point, TAN = Total Acid Number, TBN = Total Base Number, H2O = Karl Fisher result, V100 = Viscosity@100C, V40 = Viscosity@40C, PVI = Particle Volume Indicator

PHONE:

FAX:

SAMPLE TYPE: SAMPLE SHIP TIME (days) OIL

(L)

SAMPLE DATE

PROCESS DATE

EQUIPMENT METER

METER ON FLUID

8

26-Jul-2019

D100-49210-0652 LAB CONTROL NUMBER

No Action Required

NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL

EXT WARR NUMBER

JOB SITE :

CUSTOMER EQUIP NUM: 3201 D FARLEY COMPANY NAME: RITCHIE EQUIPMENT, INC.

COMPARTMENT NAME: FINAL DRIVE REAR RIGHT

MANUFACTURER SERIAL NUMBER: 7EK00157 MODEL 789B CATERPILLAR

FUEL CONSUMED

COMPARTMENT MODEL:

COMP MANUFACTURER:

FLUID BRAND/WEIGHT: 50

SAMPLE LABEL NUM:

FLUID TYPE:

EXT WARR EXPIRE DATE:

COMP SERIAL NUM:

SHOP JOB NUM:



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FLUID CHANGED MAKE UP FLUID www.cartermachinery.com MAKE UP FLUID UNITS FILTER CHANGED

Oll Condition /	G	D100-49210-0652	Wear Metals (ppm)
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D100-49210-0652

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NORMAL

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V100 13.3

P 5

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Ag = Silver, Al = Aluminum, B = Boron, Ca = Calcium, Cr = Chromium, Cu = Copper, Fe = Iron, P = Phosphorus, K = Potassium, Li = Lithium, Mg = Magnesium, Mo = Molybdenum, Na = Sodium, Ni = Nickel, Pb = Lead, Si = Silicon, Sn = Tin, S = Sulphur, V = Vanadium, Zn = Zinc, A = Antifreeze, F = Fuel, W = Valuer, P = Postitve, N = Negative, T = Trace, E = Excessive, NIT = Nitration, OXI = Oxidation, ST = Soot, SUL = Sulfation, ISO = ISO Rating, PFC = Percent Fuel Content, PQI = Particle Quentifying index , NaW = Salt Water, FL Pt = Flash Point, TAN = Total Acid Number, TBN = Total Base Number, H2O = Karl Fisher result, V100 = Viscosity@100C, V40 = Viscosity@40C, PVI = Particle Volume Indicator

SAMPLE TYPE: SAMPLE SHIP TIME (days):

OIL

tea:

SAMPLE DATE

PROCESS DATE

EQUIPMENT METER

METER ON FLUID

FLUID CHANGED

₹

29-Jul-2019

EXT WARR NUMBER:

JOB SITE : MODEL:

26-Jul-2019

PHONE:

FAX:

CUSTOMER EQUIP NUM: 3201 D FARLEY

COMPANY NAME: RITCHIE EQUIPMENT, INC.

COMPARTMENT NAME: FINAL DRIVE REAR LEFT

SERIAL NUMBER: 7EK00157

MANUFACTURER: CATERPILLAR

FLUID BRAND/WEIGHT: 50 FLUID TYPE

SAMPLE LABEL NUM:

EXT WARR EXPIRE DATE

COMP SERIAL NUM:

SHOP JOB NUM:

COMP MANUFACTURER: COMPARTMENT MODEL:



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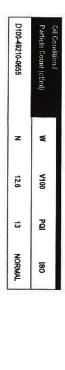
MAKE UP FLUID MAKE UP FLUID UNITS

FILTER CHANGED

No Action Required

D100-49210-0655 LAB CONTROL NUMBER

NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE, CONTINUE SAMPLING AT THE NORMAL INTERVAL.



D100-49210-0655

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Wear Metals (ppm)

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Ag = Silver, Al = Aluminum, B = Boron, Ca = Calcium, Cr = Chromhum, Cu = Copper, Fe = Iron, P = Phosphorus, K = Potassium, Li = Lithium, Mg = Magnesium, Mo = Molybdenum, Na = Sodium, Ni = Nickel, Pb = Lead, Si = Silicon, Sn = Tin, S = Sulphur, V = Vanadium, Zn = Zinc, A = Antifreeza, F = Fuel, W = Water, P = Positive, N = Negative, T = Trace, E = Excessive, NIT = Nitration, OXI = Oxidation, ST = Soot, SUL = Sulfation, ISO = ISO Rating, PFC = Percant Fuel Content, PQI = Particle Quantifying Index , NeW = Salt Water, FL Pt = Flash Point, TAN = Total Acid Number, TBN = Total Bess Number, H2O = Karl Fisher result, V100 = Viscosity@100C, V40 = Viscosity@40C, PVI = Particle Volume Indicator