

## **WEAR** NORMAL CONTAMINATION NORMAL **FLUID CONDITION** NORMAL



## Area Store 2 - Beaver [ro#142279] JOHN DEERE 130P 1FF130PALPF000215 Hydraulic System

HITACHI HYDRAULIC SUPER EX 46HN (49 GAL)

Recommendation         Test         UOM         Method         Current         History 1         History 1         History 1           Resample at the next service interval to monitor.         Sample Date         Citent Info         46								
Basepine at the next service interval to monitor.         Sample Number Sample Date         Client Info         IE 0004282	RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
Machine Age         Ins         Client linit         46             Oil Age         hrs         Client linit         46             Filter Age         hrs         Client linit         46             Oil Changed         Client linit         Not Changed         Client linit         Not Changed		Sample Number		Client Info				
Oil Age         hrs         Client Info         46             Filter Changed         Client Info         A6             Sample Status         Client Info         Not Change             WEAR         PQ         ASTM 0814              All component wear rates are normal.         PQ         ASTM 0814              Nickel         ppm         ASTM 0814               Nickel         ppm         ASTM 0814               Nickel         ppm         ASTM 0814         -50         13             Nickel         ppm         ASTM 08156         -5         0             Silver         ppm         ASTM 05156         -0         0              Aluminum         ppm         ASTM 05156         -0         1              Vanadum         ppm         ASTM 05156         -0         1		Sample Date		Client Info		17 Aug 2023		
Filter Age Oli Changed         Ins         Client Info         Mei Changed         ······		Ũ	hrs	Client Info				
Oil Changed Sample Status         Clint Info         Not Change Not Change Sample Status         Not Change Not Change Not Change         Image Not Cha		0	hrs	Client Info				
Filter Changed Sample Status         Client Info         Mo Changel No RMAL			hrs	Client Info		46		
Sample Status         NORMAL         Picture           WEAR         PQ         ASTM 0814         >50         13         1            All component wear rates are normal.         PQ         ASTM 08158         >30         0				Client Info		Not Changd		
WEAR         PQ         ASTM D8164         >50         13             All component wear rates are normal.         PO         ASTM D8168         >32         1             Nickel         ppm         ASTM D8168         >9         0             Nickel         ppm         ASTM D8168         >9         0             Nickel         ppm         ASTM D8168         0              Aluminum         ppm         ASTM D8168         >0              Aluminum         ppm         ASTM D8168         >0              Vanadium         ppm         ASTM D8168         >0              Vanadium         ppm         ASTM D8168         >0              Vanadium         ppm         ASTM D8168         >11         <1				Client Info		Not Changd		
All component wear rates are normal.         Iron         ppm         ASTM 0518m         -32         1             Chromium         ppm         ASTM 0518m         -5         0             Nickel         ppm         ASTM 0518m         -5         0             Nickel         ppm         ASTM 0518m         -9         -1             Aluminum         ppm         ASTM 0518m         -9         -1             Aluminum         ppm         ASTM 0518m         -9         -1             Aluminum         ppm         ASTM 0518m         -50         -1             Copper         ppm         ASTM 0518m         -50         0             Variadium         ppm         ASTM 0518m         -0         0             Copper         ppm         ASTM 0518m         -0         0             Visual         NONE         NONE               Tin ore </td <td></td> <td>Sample Status</td> <td></td> <td></td> <td></td> <th>NORMAL</th> <td></td> <td></td>		Sample Status				NORMAL		
All component wear rates are normal.         Iron         ppm         ASTM 0518m         -32         1             Chromium         ppm         ASTM 0518m         -5         0             Nickel         ppm         ASTM 0518m         -5         0             Nickel         ppm         ASTM 0518m         -9         -1             Aluminum         ppm         ASTM 0518m         -9         -1             Aluminum         ppm         ASTM 0518m         -9         -1             Aluminum         ppm         ASTM 0518m         -50         -1             Copper         ppm         ASTM 0518m         -50         0             Variadium         ppm         ASTM 0518m         -0         0             Copper         ppm         ASTM 0518m         -0         0             Visual         NONE         NONE               Tin ore </td <td></td> <td></td> <td></td> <td></td> <td>. 50</td> <th>40</th> <td>[</td> <td></td>					. 50	40	[	
All component wear rates are normal.       Chromium       ppm       ASTM 0585m       -9       0           Nickel       ppm       ASTM 0585m       -5       0           Titanium       ppm       ASTM 0585m       -9       0           Aluminum       ppm       ASTM 0585m       -9       0           Aluminum       ppm       ASTM 0585m       -9       0           Lead       ppm       ASTM 0585m       -50       0           Tin       ppm       ASTM 0585m       -50       0           Vanadium       ppm       ASTM 0585m       -50       0           Vanadium       ppm       ASTM 0585m       -50       0           Vanadium       ppm       ASTM 0585m       -20       0           Vanadium       ppm       ASTM 0585m       -20       0           There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.	WEAR		0000					
Diriched         ppm         Astmosofie         psm              Titanium         ppm         ASTM 05185m         0              Silver         ppm         ASTM 05185m         -9         -1             Lead         ppm         ASTM 05185m         -9         -1             Copper         ppm         ASTM 05185m         -28         0             Vanadium         ppm         ASTM 05185m         -20              Vanadium ppm         ASTM 05185m         50         0              Vanadium ppm         ASTM 05185m         50         0              Vanadium ppm         ASTM 05185m         20         0              Silicon         ppm         ASTM 05185m         20         0             Particles s-fum         ppm astrono         ASTM 07647         -80000         S823             Particles s-fum	All component wear rates are normal.							
Titanium         ppm         ASTM 05185m         0             Silver         ppm         ASTM 05185m         0             Aluminum         ppm         ASTM 05185m         >0             Lead         ppm         ASTM 05185m         >28         0             Copper         ppm         ASTM 05185m         >50         <1								
Silver         ppm         ASTM D5185n         0             Aluminum         ppm         ASTM D5185n         >9         <1					>5			
Aluminum         ppm         ASTM D5185m         -9         <1             Lead         ppm         ASTM D5185m         -28         0             Copper         ppm         ASTM D5185m         -50         <1								
Lead         ppm         ASTM D5185n         >28         0             Copper         ppm         ASTM D5185n         >50         <1					. 0	-		
Copper         ppm         ASTM D5185m         >50         <1             Tin         ppm         ASTM D5185m         >50         0             Vanadium         ppm         ASTM D5185m         >50         0             White Metal         scalar         'Visual         NONE         NONE             CONTAMINATION         Silicon         ppm         ASTM D5185m         >11         <1								
Tin         ppm         ASTM D5185m         >5         0             Vanadium         ppm         ASTM D5185m         0              White Metal         scalar         'Visual         NONE         NONE             CONTAMINATION         Silicon         ppm         ASTM D5185m         >11         <1								
Vanadium         ppm         ASTM D5185m         0             White Metal         scalar         'Visual         NONE         NONE             CONTAMINATION         scalar         'Visual         NONE         NONE             There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.         Silicon         ppm         ASTM D5185m         >20         0             Particles >4µm         ASTM D7647         >640         18              Particles >4µm         ASTM D7647         >640         18              Particles >2µm         ASTM D7647         >640         18              Particles >2µm         ASTM D7647         >10         0              Particles >4µm         ASTM D7647         >10         0              Particles >71µm         ASTM D7647         >10         0              Particles >71µm         ASTM D7647								
White Metal Yellow Metal         scalar         *Visual Visual         NONE             CONTAMINATION         Silicon         ppm         ASTM D5185m         >11         <1					>5			
Yellow Metal         scalar         'Visual         NONE         I         I         I           CONTAMINATION         Silicon         ppm         ASTM D5185m         >11         II         I         II         III         IIII         IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII						-		
Silicon         ppm         ASTM D5185m         >11         <1            There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.         Potassium         ppm         ASTM D5185m         >20         0            Water         WC Method         >0.075         NEG             Particles >4µm         ASTM D7647         >80000         5823             Particles >4µm         ASTM D7647         >640         18             Particles >4µm         ASTM D7647         >640         18             Particles >21µm         ASTM D7647         >640         18             Particles >38µm         ASTM D7647         >10         0             Particles >71µm         ASTM D7647         >10         0             Silt         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORH         NORH             Odor         scalar         *Vi								
Potassium         ppm         ASTM D5185m         >20         0            There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.         Water         WC Method         >0.075         NEG            Particles >4µm         ASTM D7647         >80000         5823             Particles >4µm         ASTM D7647         >640         18             Particles >1µm         ASTM D7647         >640         18             Particles >1µm         ASTM D7647         >160         6             Particles >21µm         ASTM D7647         >100         0             Particles >21µm         ASTM D7647         >10         0             Particles >21µm         ASTM D7647         >10         0             Silt         scalar         Yisual         NONE         NONE            Sand/Dirt         scalar         Yisual         NORM         NORM            Appearance         scalar         Yisual         NORM         NORM		Yellow Ivietal	scalar	visuai	NONE	NONE		
Potassium         ppm         ASTM D5185m         >20         0            There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.         Water         WC Method         >0.075         NEG            Particles >4µm         ASTM D7647         >80000         5823             Particles >4µm         ASTM D7647         >640         18             Particles >1µm         ASTM D7647         >640         18             Particles >1µm         ASTM D7647         >160         6             Particles >21µm         ASTM D7647         >100         0             Particles >21µm         ASTM D7647         >10         0             Particles >21µm         ASTM D7647         >10         0             Silt         scalar         Yisual         NONE         NONE            Sand/Dirt         scalar         Yisual         NORM         NORM            Appearance         scalar         Yisual         NORM         NORM	CONTAMINATION	Silicon	maa	ASTM D5185m	>11	د1		
There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.       Water       WC Method       >0.075       NEG           Particles >4µm       ASTM D7647       >80000       5823           Particles >6µm       ASTM D7647       >600       332           Particles >1µm       ASTM D7647       >10       6           Particles >21µm       ASTM D7647       >10       6           Particles >1µm       ASTM D7647       >10       0           Particles >1µm       ASTM D7647       >10       0           Particles >71µm       ASTM D7647       >10       0           OI Cleanliness       ISO 4406 (c)       5221/16       201/61/1           Stilt       scalar       *Uisual       NONE       NONE           Odor       scalar       *Uisual       NORML       NORML           Ropearance       scalar       *Uisual       NORML       NORML	CONTAMINATION							
size of particulates present in the system are acceptable.       Particles >4µm       ASTM D7647       >80000       5823           Particles >6µm       ASTM D7647       >20000       332           Particles >14µm       ASTM D7647       >640       18           Particles >14µm       ASTM D7647       >100       66           Particles >71µm       ASTM D7647       >10       0           Particles >71µm       ASTM D7647       >10       0           Particles >71µm       ASTM D7647       >10       0           Oil Cleanliness       ISO 4406 (c)       >2321/6       20/16/11           Silt       scalar       *Visual       NONE       NONE           Sod/Dirt       scalar       Visual       NORML       NONE           Odor       scalar       *Visual       NORML       NORML           The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.       Still       Still       Still       Still </td <td rowspan="14"></td> <td></td> <td>ppiii</td> <td></td> <td></td> <th>-</th> <td></td> <td></td>			ppiii			-		
Particles >6µm         ASTM D7647         >20000         332             Particles >14µm         ASTM D7647         >640         18             Particles >21µm         ASTM D7647         >100         6             Particles >38µm         ASTM D7647         >100         0             Particles >38µm         ASTM D7647         >10         0             Particles >38µm         ASTM D7647         >10         0             Particles >38µm         ASTM D7647         >10         0             Particles >31µm         ASTM D7647         >10         0             Oil Cleanliness         ISO 4406 (c)         >2021/6         20/16/11             Silt         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORM         NORM             Appearance         scalar         *Visual         NORM         NORM								
Particles >14µm         ASTM D7647         >640         18             Particles >21µm         ASTM D7647         >160         6             Particles >21µm         ASTM D7647         >40         0             Particles >38µm         ASTM D7647         >40         0             Particles >71µm         ASTM D7647         >10         0             Oil Cleanliness         ISO 4406 (>         >221/16         20/16/11             Oil Cleanliness         Scalar         *Visual         NONE         NONE             Obris         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORL         NORL             Appearance         scalar         *Visual         NORL         NORL            Odor         scalar         *Visual         NORL         NORL            Debris         scalar         *Visual         NORL         NORL								
Particles >21µm       ASTM D7647       >160       6           Particles >38µm       ASTM D7647       >40       00           Particles >71µm       ASTM D7647       >10       0           Oil Cleanliness       ISO 4406 (o)       29/16/11            Oil Cleanliness       Scalar       *Visual       NONE       NONE           Debris       scalar       *Visual       NONE       NONE           Sand/Dirt       scalar       *Visual       NORM       NONE           Appearance       scalar       *Visual       NORM       NORM           Odor       scalar       *Visual       NORML       NORM           Odor       scalar       *Visual       NORML       NORML								
Particles >38µm       ASTM D7647       >40       0           Particles >71µm       ASTM D7647       >10       0           Oil Cleanliness       ISO 4406 (c)       >2321/16       20/16/11           Silt       scalar       *Visual       NONE       NONE           Debris       scalar       *Visual       NONE       NONE           Sand/Dirt       scalar       *Visual       NONE       NONE           Appearance       scalar       *Visual       NORML       NORML           Odor       scalar       *Visual       NORML       NORML           Odor       scalar       *Visual       NORML       NORML           Odor       scalar       *Visual       NORML       NORML           Boron       ppm       ASTM D5185m       >21       <1								
Particles >71µm       ASTM D7647       >10       0          Oil Cleanliness       ISO 4406 (c)       >2321/16       20/16/11          Silt       scalar       *Visual       NONE       NONE          Debris       scalar       *Visual       NONE       NONE          Sand/Dirt       scalar       *Visual       NONE       NONE          Appearance       scalar       *Visual       NOR       NORM          Appearance       scalar       *Visual       NOR       NORM          Odor       scalar       *Visual       NOR       NORM          Odor       scalar       *Visual       NOR       NORM          Odor       scalar       *Visual       NOR       NORM          Promo       scalar       *Visual       NOR       NORM          Barium       ppm       ASTM D5185m       >21       <1								
Oil Cleanliness       ISO 4406 (c)       >29/21/16       20/16/11           Silt       scalar       *Visual       NONE       NONE          Debris       scalar       *Visual       NONE       NONE          Sand/Dirt       scalar       *Visual       NONE       NONE          Appearance       scalar       *Visual       NORE           Odor       scalar       *Visual       NORML       NORML           Odor       scalar       *Visual       NORML       NORML           Odor       scalar       *Visual       NORML       NORML           Odor       scalar       *Visual       NORML       NORML          Odor       scalar       *Visual       NORML       NORML								
Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMNORMLNORMLOdorscalar*VisualNORMNORMLNORMLEmulsified Waterscalar*VisualNORMNORMLEnulsified Waterscalar*Visual>0.075NEGBoronppmASTM D5185m>21<1						-		
Debrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*VisualNORMLNORMLFLUID CONDITIONSodiumppmASTM D5185m>21<1BoronppmASTM D5185m0BariumppmASTM D5185m0MolybdenumppmASTM D5185m0ManganeseppmASTM D5185m1<1			scalar					
Sand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLIIOdorscalar*VisualNORMNORMLIIEmulsified Waterscalar*VisualNORMNORMLIIEmulsified Waterscalar*Visual>0.075NEGIISodiumppmASTM D5185m>21<1								
Appearance Odorscalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.075NEGNEGSodiumppmASTM D5185m>21<1								
Odor       scalar       *Visual       NORML       NORML           Emulsified Water       scalar       *Visual       >0.075       NEG           FLUID CONDITION       Sodium       ppm       ASTM D5185m       >21       <1								
Emulsified Water       scalar       *Visual       >0.075       NEG          FLUID CONDITION         The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.       Sodium       ppm       ASTM D5185m       >21       <1								
FLUID CONDITION         The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.         Sodium       ppm       ASTM D5185m       0           Barium       ppm       ASTM D5185m       0           Molybdenum       ppm       ASTM D5185m       0           Manganese       ppm       ASTM D5185m           Magnesium       ppm       ASTM D5185m           Magnesium       ppm       ASTM D5185m       5          Phosphorus       ppm       ASTM D5185m       588								
Boron       ppm       ASTM D5185m       0           The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.       ppm       ASTM D5185m       0           Molybdenum       ppm       ASTM D5185m       0           Manganese       ppm       ASTM D5185m       0           Magnesium       ppm       ASTM D5185m       0           Calcium       ppm       ASTM D5185m       0           Phosphorus       ppm       ASTM D5185m       827       558								
Boron       ppm       ASTM D5185m       0           The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.       ppm       ASTM D5185m       0           Molybdenum       ppm       ASTM D5185m       0           Manganese       ppm       ASTM D5185m       0           Magnesium       ppm       ASTM D5185m       0           Calcium       ppm       ASTM D5185m       0           Phosphorus       ppm       ASTM D5185m       827       558	FLUID CONDITION	Sodium	ppm	ASTM D5185m	>21	<1		
suitable for further service. Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m < 1 0 Magnesium ppm ASTM D5185m < 1 0 Calcium ppm ASTM D5185m 5 0 Phosphorus ppm ASTM D5185m 827 558 0	The AN level is acceptable for this fluid. The condition of the oil is	Boron		ASTM D5185m		0		
Molybdenum       ppm       ASTM D5185m       O       I <td></td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th>0</th> <td></td> <td></td>			ppm	ASTM D5185m		0		
Magnesium         ppm         ASTM D5185m          <1             Calcium         ppm         ASTM D5185m         5             Phosphorus         ppm         ASTM D5185m         827         558		Molybdenum	ppm	ASTM D5185m		0		
Magnesium         ppm         ASTM D5185m         <1             Calcium         ppm         ASTM D5185m         5             Phosphorus         ppm         ASTM D5185m         827         558			ppm	ASTM D5185m		<1		
Calcium         ppm         ASTM D5185m         5             Phosphorus         ppm         ASTM D5185m         827         558		-	ppm	ASTM D5185m		<1		
Phosphorus ppm ASTM D5185m 827 558		Calcium						
		Phosphorus			827			

Sulfur

99

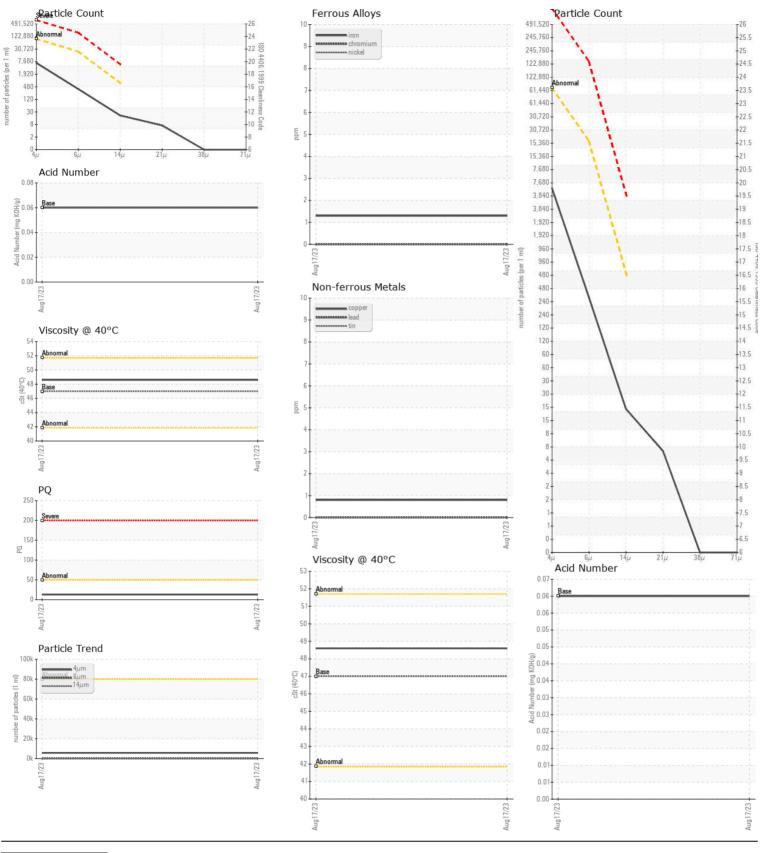
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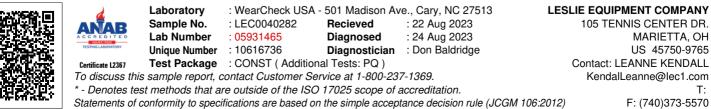
48.6

ppm ASTM D5185m 13

Acid Number (AN) mg KOH/g ASTM D8045 0.06

Visc @ 40°C cSt ASTM D445 47





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Submitted By: STORE 2 - BEAVER - CASEY TONEY