Rotary Screw Air Compressor Maintenance Chart

Submission ID	4326220762819371480
Submission Date	05-02-2019 11:01:16
Name	Alan Bural
My E-Mail	alan.bural@unitcorp.com
Rig #	15
Start Date	05/02/2019
Completed Date	05/02/2019
Oil Type	SH 46

	OLD	NEW
#1 Compressor Style	-	✔
#2 Compressor Style	-	✔

	#1 Compressor	#2 Compressor
MODEL #:	50DG	50DG
SERIAL #:	08H024	08H023
ASSET #:	2-1189	2-1188
HOURS #:	40598	10134

	#1 Compressor	#2 Compressor
Changed Oil	✔	✔
Changed Oil Filter	✔	✔
Changed Air Filter	✔	✔
Changed Seperator	✔	✔
Pull and wash cooler core	✔	✔
Added new oil sample valve	-	-
Check and inspect drive couplings	✔	✔
Drain water from tank	✔	✔
Open panel door and check to be secure	✔	✔
Check all signal lines (black plastic)	✔	✔
Ensure it is clean and wash with solvent	✔	✔

	Asset #	Hours #
Reading	2-1467	15.8

Cold Start Model	Caterpiller
Containment	Large

	Yes	No
Change Engine Oil	-	✔
Change Engine Oil Filter	-	✔
Change Air Filter	-	✔
Change Fuel Filter	-	✔
Took Oil Sample	-	✔

	Date	Hours #
MARK DATE AND HOURS ON FILTER	11-13-18	14.8

Action Items	Both compressors need signal lines replaced
Email the Following:	Mike Almond David Baker Caleb Carpenter Frank Smith Nathan Arnett
Inspection Comments	Compressors are clean. Couplings are good. Replaced solenoid valve on #1- would not build air correctly
Ticket Status	Open

Wednesday, November 14, 2018

Engine Inspection Form

Rig #

15

Date Maintenance Started

Tuesday, November 13, 2018

Date Maintenance Completed

Tuesday, November 13, 2018

Name

Alan Bural

My E-Mail

alan.bural@unitcorp.com

Additional Technicians

Yes

Check all that apply

Larry Bennet

Total Hours:

11

Action Items

#1 expansion joint needs replaced and nalcool on engine side, #2 needs 1" ball valve on starter drain replaced, air compressors need pop off covers on separators

Fuel Tank Sample

Yes

#1 Engine Antifreeze

Green

Aftercooler?

Yes

Aftercooler Antifreeze

Green

#2 Engine Antifreeze

Green

Aftercooler?

Yes

Aftercooler Antifreeze

Green

#3 Engine Antifreeze

Green

Aftercooler?

Yes

Aftercooler Antifreeze

Green

Generator

Generator/Torque Convertor Comments

checked and greased drive couplings

#1 Floor- AC- Green Antifreeze

	Freeze Point	Na-Cool
Aftercooler		

#1 Floor- Green Antifreeze

	Freeze Point	Na-Cool
Engine		

Floor Asset Information

	Asset #	Serial #	Hours	Manufacture	Model
#1 Floor					
#2 Floor					
#3 Floor					
#4 Floor					

Exciter Air Gap

	Top	Bottom	Left Side.	Right Side
Gen. #1	66	76	58	85
Gen. #2	56	82	60	82
Gen. #3	54	73	39	95
Gen. #4				

	#1	#2	#3	#4
Grease and inspect for wear	☑	☑	☑	
Clean generator and blow out if necessary	☑	☑	☑	
Check and record exciter air gap	☑	☑	☑	

Generator Asset Information

	Model Number	Gen. Asset	KW.	1 or 2 Brg.	RPM
#1 Generator	AA27673008	24-920	1204	2	1200
#2 Generator	AA27673013	24-917	1204	2	1200
#3 Generator	AA27673013	24-916	1204	2	1200
#4 Generator					
Top Drive					

Generator

	Kato	MTU	Cat	GE	Marathon	Spectrum	Magnamax	Baylor
#1 Generator	☑							
#2 Generator	☑							
#3 Generator	☑							
#4 Generator								
Top Drive								

Torque Convertor Asset Information

	Asset #	Serial #	Manufacture	Model
#1 Torque				
#2 Torque				
#3 Torque				
#4 Torque				

Genset Engines

	#1 Genset	#2 Genset	#3 Genset	#4 Genset
Tighten pan bolts on D-379, D-398, D-399				
Ensure D-3508 & D-3512 individual gauge panels has been silicone to prevent water entry	☑	☑	☑	
Clean water passages on water cooled turbo's (one time only)				
Run overhead valve train	☑	☑	☑	
Grease fan hub bearings and idler bearings	☑	☑	☑	
Inspect and clean radiators. NOTE: Wash in opposite direction of air flow; (You should be able to see clearly through the radiators fins)	☑	☑	☑	
Test shutdown system	☑	☑	☑	
Installed new belts				
Check & clean auxiliary oil filter	☑	☑	☑	
Make sure crank case filters and being serviced (On 3508, 3512)	☑	☑	☑	

Belt Information

	Belt Number	Radiator Fan Bearing	Idler Bearing	Pulley Size	Shaft Size: Idler Shaft	Shaft Size: Fan Shaft
Record Information						

#4 AC- Green Antifreeze

	Freeze Point	Na-Cool
Aftercooler		

#4 Green

	Freeze Point	Na-Cool
Engine		

Belt Information

	Belt Number	Radiator Fan Bearing	Idler Bearing	Pulley Size	Shaft Size: Idler Shaft	Shaft Size: Fan Shaft
Record Information						

#3 AC- Green Antifreeze

	Freeze Point	Na-Cool
Aftercooler	-20	2400

#3 Green

	Freeze Point	Na-Cool
Engine	-20	2400

Belt Information

	Belt Number	Radiator Fan Bearing	Idler Bearing	Pulley Size	Shaft Size: Idler Shaft	Shaft Size: Fan Shaft
Record Information						

#2 AC- Green Antifreeze

	Freeze Point	Na-Cool
Aftercooler	-40	2400

#2 Green Antifreeze

	Freeze Point	Na-Cool
Engine	-40	2400

Belt Information

	Belt Number	Radiator Fan Bearing	Idler Bearing	Pulley Size	Shaft Size: Idler Shaft	Shaft Size: Fan Shaft
Record Information	5vx1320	2115	2115	18.7	1 15/16 x 19	1 15/16 x 68

#1 AC- Green Antifreeze

	Freeze Point	Na-Cool
Aftercooler	-50	2400

#1 Green Antifreeze

	Freeze Point	Na-Cool
Engine	-50	none

Genset Asset Information

	Asset #	Serial #	Hours	Manufacture	Model
#1 Engine	22-1333		50072	Cat	3512c
#2 Engine	22-1378		49984		
#3 Engine	22-1377		49991		
#4 Engine					

Asset Information

	Asset #	Hours
#1 Engine		
#2 Engine		
#3 Engine		
#4 Engine		
#1 Generator		
#2 Generator		
#3 Generator		
#4 Generator		
Top Drive		
Power Unit		
#1 Torque		
#2 Torque		
#3 Torque		
#1 Pump		
#2 Pump		
#3 Pump		
#1 Floor		
#2 Floor		
#3 Floor		

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RIG **15**

Pump Inspection

NAME cory / robert

JOB TITLE: **mech** **Work Order No.**

DATE MAINTENANCE STARTED: 2/28/2018 **COMPLETED:** 3/2/2018

EQUIPMENT DESCRIPTION: mud pumps

SERIAL NUMBER:

#1 Asset 38-475
Make emsco
Model f-1600

#2 Asset 38-474
Make emsco f-1600
Model

#3 Asset
Make
Model

Travel Time to Rig From: ☐ HOME ☐ SHOP

Time at Rig:

Travel Time from Rig To: ☐ HOME ☐ SHOP

ACTON ITEMS

metal rings for rear windows (complete)
internal oil pump on #2 broken (complete)

Individual Pump Inspections

Company/Division:			Asset #	38-475	
Rig:			15		
Pump#:1					
Field Inspection Report -	Make:	emsco	Model:	f-1600	
Recommended Running Clearances	Inches				
	Min.	Max.	Actual	General	
Crosshead to slide - Left	.020	.045	0.035	Check all oil lines	☑
Crosshead to slide - Center	.020	.040	0.035	Check all tied Bolts	☑
Crosshead to slide - Right	.020	.045	0.034	Drain & check Cleanouts	☑
Main Bearing - Left	.005	.020	0.010	Check and clean, gear end	☑
Main Bearing - Right	.005	.020	0.008	with diesel if needed	
Pinion Shaft Bearing - Left	.002	.015	0.009	Pony Rod Alignment	☐
Pinion Shaft Bearing - Right	.002	.015	0.009	Check pony rods for cracks	☑
Crosshead Pin Bearing - Left	.002	.005	0.003	and wear (replace if necessary)	
Crosshead Pin Bearing - Center	.002	.005	0.003	Check piston rods for cracks	☑
Crosshead Pin Bearing - Right	.002	.005	0.003	and wear (replace if necessary)	
Connecting Rod to Eccentric Bearing - LH	.002	.020	0.005	Check clamps for wear	☐
Connecting Rod to Eccentric Bearing - CTN	.002	.020	0.006	(replace if necessary)	
Connecting Rod to Eccentric Bearing - RH	.002	.020	0.005	Check all bearings w/ mirror	☑
Oil Pump Pinion to Main Gear - Backlash	.010	.025	0.020	for pitting and flaking	
Pinion Shaft to Main Gear - Backlash	.010	.050	0.027	Check all oil pump screens	☑
Bull Gear Wear			normal	Check pillow block bearings	☐
Pinion Gear Wear			normal	on independent pump	
Extension Rods				On inspection replace pony	☑
				rod seals (Regardless if the	
Comments:				rig says they have already	
installed new metal ring for rear cover				been changed seals still	
				need to be checked)	
				replace gaskets if need do not	
				use silicone unless need to fill	
				a void. (do not use to excess	
				because it gets into gear end)	

National		Gardner Denver		Continental Emsco	
Check troughs	☐	Oil pressure and Gauge	☐	Oil pressure and Gauge	☑
Check crosshead's for cracks	☐	Oil Filter	☐	Check pony rod wiper if equipped	☑
at pony rod clamp		Oil spray bar for crossheads	☐	if not equipped with wipers get parts	
Check pony rod clamp	☐	Check to see if correct pony	☐	to correct	
on bolts on crosshead's		rods are installed by gauging		Check to see if baffle plates	☑
Loosen pony rod clamp bolts and	☐	distance between it and oil		are doweled in pump	
tighten pony rod then retorque bolts		stop plate.			
		Oil pump Screen	☐		
		If new floaters are not there get	☐		
		parts to install floating seals			

Action Items:

Individual Pump Inspections

Company/Division:			Asset #	38-474	
Rig:			15		
Pump#:2					
Field Inspection Report -	Make:	emsco f-1600	Model:		
Recommended Running Clearances	Inches				
	Min.	Max.	Actual	General	
Crosshead to slide - Left	.020	.045	0.036	Check all oil lines	☑
Crosshead to slide - Center	.020	.040	0.032	Check all tied Bolts	☑
Crosshead to slide - Right	.020	.045	0.033	Drain & check Cleanouts	☑
Main Bearing - Left	.005	.020	0.015	Check and clean, gear end	☑
Main Bearing - Right	.005	.020	0.011	with diesel if needed	
Pinion Shaft Bearing - Left	.002	.015	0.007	Pony Rod Alignment	☐
Pinion Shaft Bearing - Right	.002	.015	0.009	Check pony rods for cracks	☑
Crosshead Pin Bearing - Left	.002	.005	0.003	and wear (replace if necessary)	
Crosshead Pin Bearing - Center	.002	.005	0.002	Check piston rods for cracks	☑
Crosshead Pin Bearing - Right	.002	.005	0.002	and wear (replace if necessary)	
Connecting Rod to Eccentric Bearing - LH	.002	.020	0.006	Check clamps for wear	☐
Connecting Rod to Eccentric Bearing - CTN	.002	.020	0.007	(replace if necessary)	
Connecting Rod to Eccentric Bearing - RH	.002	.020	0.004	Check all bearings w/ mirror	☑
Oil Pump Pinion to Main Gear - Backlash	.010	.025	0.020	for pitting and flaking	
Pinion Shaft to Main Gear - Backlash	.010	.050	0.038	Check all oil pump screens	☑
Bull Gear Wear				Check pillow block bearings	☐
Pinion Gear Wear				on independent pump	
Extension Rods				On inspection replace pony	
				rod seals (Regardless if the	
Comments:				rig says they have already	
installed new oil pump due to old one shaft broken off				been changed seals still	☑
installed new metal ring for rear window				need to be checked)	
				replace gaskets if need do not	
				use silicone unless need to fill	
				a void. (do not use to excess	
				because it gets into gear end)	

National		Gardner Denver		Continental Emsco	
Check troughs	☐	Oil pressure and Gauge	☐	Oil pressure and Gauge	☑
Check crosshead's for cracks	☐	Oil Filter	☐	Check pony rod wiper if equipped	☑
at pony rod clamp		Oil spray bar for crossheads	☐	if not equipped with wipers get parts	
Check pony rod clamp	☐	Check to see if correct pony		to correct	
on bolts on crosshead's		rods are installed by gauging	☐	Check to see if baffle plates	☑
Loosen pony rod clamp bolts and	☐	distance between it and oil		are doweled in pump	
tighten pony rod then retorque bolts		stop plate.			
		Oil pump Screen	☐		
		If new floaters are not there get	☐		
		parts to install floating seals			

Action Items:

internal oil pump shaft broken (complete)

Individual Pump Inspections

Company/Division:	Asset #

Rig:	15
Pump#:3	

Field Inspection Report -	Make:		Model:		
Recommended Running Clearances	Inches				
	Min.	Max.	Actual	General	
Crosshead to slide - Left	.020	.045		Check all oil lines	☐
Crosshead to slide - Center	.020	.040		Check all tied Bolts	☐
Crosshead to slide - Right	.020	.045		Drain & check Cleanouts	☐
Main Bearing - Left	.005	.020		Check and clean, gear end	☐
Main Bearing - Right	.005	.020		with diesel if needed	
Pinion Shaft Bearing - Left	.002	.015		Pony Rod Alignment	☐
Pinion Shaft Bearing - Right	.002	.015		Check pony rods for cracks	☐
Crosshead Pin Bearing - Left	.002	.005		and wear (replace if necessary)	
Crosshead Pin Bearing - Center	.002	.005		Check piston rods for cracks	☐
Crosshead Pin Bearing - Right	.002	.005		and wear (replace if necessary)	
Connecting Rod to Eccentric Bearing - LH	.002	.020		Check clamps for wear	☐
Connecting Rod to Eccentric Bearing - CTN	.002	.020		(replace if necessary)	
Connecting Rod to Eccentric Bearing - RH	.002	.020		Check all bearings w/ mirror	☐
Oil Pump Pinion to Main Gear - Backlash	.010	.025		for pitting and flaking	
Pinion Shaft to Main Gear - Backlash	.010	.050		Check all oil pump screens	☐
Bull Gear Wear				Check pillow block bearings	☐
Pinion Gear Wear				on independent pump	
Extension Rods				On inspection replace pony	
				rod seals (Regardless if the	
Comments:				rig says they have already	
				been changed seals still	
				need to be checked)	☐
				replace gaskets if need do not	
				use silicone unless need to fill	
				a void. (do not use to excess	
				because it gets into gear end)	

National		Gardner Denver		Continental Emsco	
Check troughs	☐	Oil pressure and Gauge	☐	Oil pressure and Gauge	☐
Check crosshead's for cracks	☐	Oil Filter	☐	Check pony rod wiper if equipped	☐
at pony rod clamp		Oil spray bar for crossheads	☐	if not equipped with wipers get parts	
Check pony rod clamp	☐	Check to see if correct pony		to correct	
on bolts on crosshead's		rods are installed by gauging	☐	Check to see if baffle plates	☐
Loosen pony rod clamp bolts and	☐	distance between it and oil		are doweled in pump	
tighten pony rod then retorque bolts		stop plate.			
		Oil pump Screen	☐		
		If new floaters are not there get	☐		
		parts to install floating seals			

Action Items:

Rig Inspection Form

Submission ID	4119649148225837022
Submission Date	09-05-2018 08:55:14
Rig #	15
Date Maintenance Started	08/28/2018
Date Maintenance Completed	09/01/2018
Name	Cory Calvillo
My E-mail	cory.calvillo@unitcorp.com
Job Title:	Mechanic
Additional Technicians?	Yes
Additional Name of Technicians (Check all that apply)	Brent Tuttle Chris Calvillo Michael Fisher
From:	Shop
To:	Shop

Air Hoist:

	Inspect
Check oil in air motor.	✔
Check grease in gear case.	✔
Grease throttle valve.	✔
Check brake system for wear.	✔
Check cable for fraying.	✔

Block Asset

	Asset #	Action Items:
Block 5--	407	
Block 67-		

Block Comment:	Shives have a almost 1/4" movement need to keep an eye on them on next rig move

Block Inspection

	Inspect
Check grooves for wear	✔
Check for Smoothness of Roll	✔
Check for Play in Bearings	✔
Ensure bolts are in place	✔
Grease all Zerks	✔

Eaton Brake Asset

	Asset #	Action Items:
Asset # 66-		
DS	.003	
ODS	.004	

Eaton Brakes Inspection

	Inspect
Grease all Zerks.	✔
Inspect bearing clearance.	✔
Check gap between reaction plates. Record below	✔
Record quantity of discs	✔
Check Eaton brake temp gauges	✔
Function brakes Auto Safety System	✔
Follow Eaton & Hydraulic Weekly Check Sheet	-
Test with 25 psi of air pressure	-

Reaction Plate readings

	Readings:
X gap	.387
Y gap	
Z gap	
Number of discs	3
Drillers Console	120
At the brake.	118

Dry Cooler Inspection

	Inspect
Flush Dry Cooler	-
Clean strainer	✔
Check water pressure	-

Drawworks Drum Shaft Inspection

	Inspect
Grease all zerks.	✔
Change all filters	✔
Clean screens	✔
Inspect oil lines.	✔
Check oil level	✔
Check oil quality	✔
Clean pickup screens	✔
Inspect clutches for wear	✔
Inspect clutches for air pressure	✔
Insect tight member teeth for wear and grease.	✔

Brake Linkage Inspection

	Inspect
Grease all zerks.	✔
Ensure linkage is tight.	✔
Inspect break bands for cracks and wear.	-
Check brake block bolts and ensure bolts are tight.	✔
Check brake block thickness, record thinnest.	✔

Brake Linkage Readings

	Readings:
DS	.005
ODS	.003
Brake block thinnest reading	7/8

Brake Linkage Comment:

Installed new bands

Input Inspection

	Inspect
Inspect for leaking seals.	✔

Input Readings

	Jack Bearing Readings:
DS	.006
ODS	.008
Other	
Other	
Other	

Input Comment:

Sal on off drillerside was leaking due to non grease pumped full of grease and leak has stopped

Output Inspection

	Inspect
Grease all zerks.	✔
Inspect oil system.	✔

Output Readings

	Jack Bearing Readings:
DS	.004
ODS	.005
Other	.009
Other	.007
Other	

Output Comment:

Other on top is the lower live sprocket
Other on bottom is high live sprocket

Rotary Counter Shaft:

	Inspect
Grease all zerks.	✔
Inspect oil system.	✔

Rotary Counter Shaft Readings

	Jack Bearing Readings:
DS	.007
ODS	.009
Other	.010
Other	
Other	

Rotary Counter Shaft Comment:

Other is the barrel sprocket

Cat Shaft Inspection

	Inspect
Grease all zerks.	✔
Inspect oil system.	✔
Grease cathead with 4 shots of grease.	✔

Cat Shaft Readings

	Jack Bearing Readings:
DS	.008
ODS	.006
Other	
Other	
Other	

Mud Pumps Asset

	Asset #	Action Items:
Asset # 1 38-	38-475	
Asset # 2 38-	38-474	
Asset # 3 38-		

Mud Pumps Inspection

	Inspect
Fill out pump inspection report.	✔
Check piston rods and replace if worn.	✔
Check rod clamps and replace if worn.	-

Rotary Table Inspect:

	Inspect
Pull top off and wash mud out of table.	-
Inspect through bore.	✔
Record main bearing play.	✔
Record pinion bearing play.	✔
Record backlash play in gears.	✔
Check quality of oil.	✔

Rotary Table Readings

	Readings:
Main Bearing play	.007
Pinion Bearing play	.004
Backlash play in gears	.052

Crown Asset

	Asset #	Action Items:
Asset # 10-	15	

Crown Inspect:

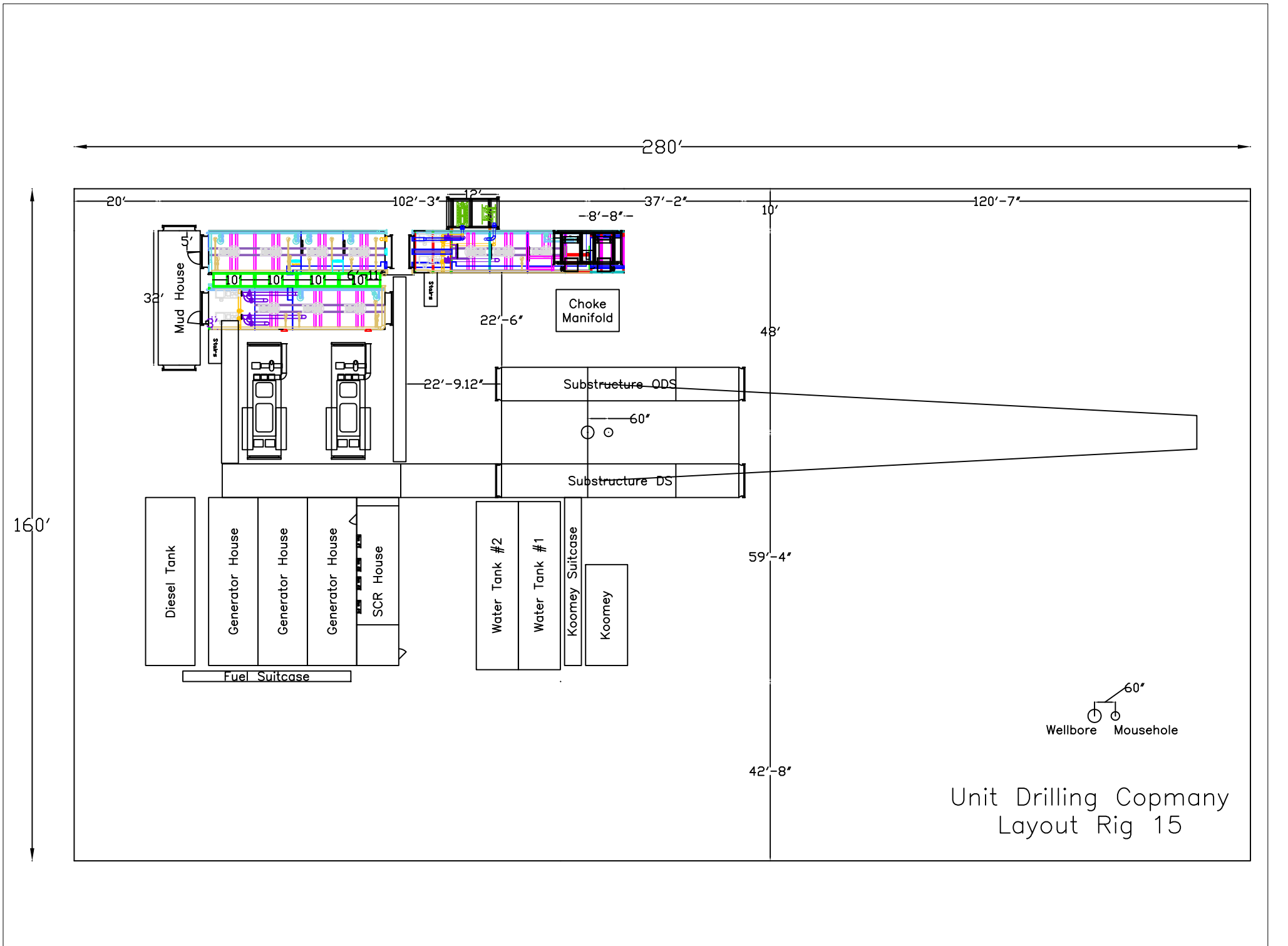
	Inspect
Inspect grooves for wear.	✔
Check for play in bearings.	✔
Check for smoothness of roll.	✔
Grease all zerks.	✔

Email the following:

Mike Almond
Frank Smith

Ticket Status

Open


280′
160′
20′
102′-3″
12′
37′-2″
120′-7″
10′
48′
59′-4″
42′-8″
-8′-8″-
32′
5′
Mud House
10′
10′
10′
6′-11″
10′
8′
22′-6″
Choke Manifold
22′-9.12″
Substructure ODS
60″
Substructure DS
Diesel Tank
Generator House
Generator House
Generator House
SCR House
Water Tank #2
Water Tank #1
Koomey Suitcase
Koomey
Fuel Suitcase
60″
Wellbore
Mousehole
Unit Drilling Copmany
Layout Rig 15